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Official Gazette of the United States Patent Office

March 3, 1970 Volume 872 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1970

Examiner affirmed	148
Examiner affirmed in part	17
Examiner reversed	28
Total	193

Calculation of Issue Fees

This notice is to clairfy the manner in which the balance of issue fee due is calculated for the printed pages of specification (including claims) in excess of the one page already paid for by payment of the Minimum Issue Fee (see the notice of January 31, 1969, 860 O.G. 2).

Under the authority of 35 U.S.C. 151, the charge is disregarded WHERE ONLY ONE ADDITIONAL PAGE OR LESS is involved. Thus, if the patent consists of two pages or less, no balance fee is due. However, if the patent consists of three pages, a Notice of Balance of Issue Fee Due for $20 is mailed together with the original patent grant. (A page consists of one side of a printed sheet containing two columns or less.)

CLARENCE A. KALK,
Acting Assistant Commissioner for Administration.

Feb. 4, 1970.

Discontinuation of the Publication "Patent Abstracts Section of the Official Gazette"

Effective Mar. 31, 1970, the Patent Office will no longer print the publication "Patent Abstracts Section of the Official Gazette." Reasons for this decision are the desire to incur a saving in printing costs, the same information now appears in the OFFICIAL GAZETTE, and the number of subscribers no longer warrants a separate publication.

The Superintendent of Documents, U.S. Government Printing Office, will contact subscribers to the "Patent Abstracts" for appropriate action regarding their subscriptions.

CLARENCE A. KALK,
Acting Assistant Commissioner for Administration.

Feb. 9, 1970.

Early Notification of Serial Number

Application Branch procedures are being revised in an effort to reduce the time of processing newly filed applications. The first step in the implementation of these procedures is the early assignment of Serial Numbers.

Therefore, effective immediately, if a self-addressed post card is transmitted with the application papers, it will be returned within one week from receipt, stamped with the Serial Number and the date received by the Patent Office. The submitted post card should adequately identify the documents as application papers and include the applicant's name and title of the invention.

It should be recognized that the identification of an application by Serial Number does not necessarily signify that the Patent Office has accepted the application as complete. After the application has been reviewed for statutory compliance and given an official filing date, the usual filing receipt will be mailed.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Feb. 2, 1970.

Adjudicated Patents

(C.A. Calif.) Proler Patent No. 25,034 (75—44), for SCRAP REFINING PROCESS AND PRODUCT. Claim 9 *Held* invalid. *Proler Steel Corporation* v. *Luria Brothers and Company,* 417 F.2d 272; 163 USPQ 321.

(Cust. & Pat. App.) Nossen Patent No. 2,737,445 (23—158), for PROCESS FOR THE THERMAL DECOMPOSITION OF METAL NITRATES. Claims 1, 2, 4, 6, 7, 8, 9 and 12 *Held* invalid. *Nossen* v. *United States,* 416 F.2d 1362; 163 USPQ 421.

(D.C. Ohio) Holmes Patent No. 3,043,445 (212—39), for BOOM CONTROLLING DEVICE FOR POWER CRANES, *Held* valid and infringed. *Holmes* v. *Thew Shovel Company,* 305 F. Supp. 139; 162 USPQ 559.

(D.C. Pa.) Campbell et al. Patent No. 3,124,806 (2—160), for GOLF TRAINING DEVICES, *Held* invalid. *Muscle-Matic, Incorporated* v. *Tournament of Champions, Incorporated,* 304 F. Supp. 163; 168 USPQ 124.

New Applications Received During November 1969

Patents	7447
Designs	437
Plant Patents	8
Reissues	31
Total	7923

Issue—March 3, 1970

Patents	1300	No. 3,497,872 to No. 3,499,171, incl.
Designs	105	No. 216,660 to No. 216,764, incl.
Reissues	7	No. 26,806 to No. 26,812, incl.
Total	1412	

Certificates of Correction for the Week of Mar. 3, 1970

Re. 26,222	3,379,940	3,398,878	3,404,624	3,407,154	3,409,226	3,428,637	3,446,086
D. 216,032	3,380,992	3,398,914	3,404,687	3,407,158	3,409,307	3,429,893	3,446,863
3,221,877	3,381,290	3,399,090	3,404,906	3,407,195	3,409,319	3,429,919	3,447,066
3,246,997	3,382,259	3,399,141	3,404,920	3,407,202	3,409,325	3,430,688	3,447,924
3,258,058	3,384,322	3,399,148	3,405,008	3,407,241	3,409,460	3,432,987	3,448,000
3,300,466	3,384,882	3,399,353	3,405,091	3,407,242	3,409,487	3,433,054	3,448,055
3,304,336	3,385,849	3,399,965	3,405,122	3,407,246	3,409,490	3,434,181	3,448,774
3,305,601	3,385,865	3,400,099	3,405,142	3,407,298	3,409,604	3,435,041	3,449,728
3,317,305	3,386,539	3,400,103	3,405,144	3,407,406	3,409,809	3,435,898	3,449,855
3,319,419	3,387,192	3,400,462	3,405,201	3,407,431	3,410,033	3,436,850	3,453,188
3,346,405	3,387,261	3,400,473	3,405,251	3,407,433	3,410,105	3,437,675	3,457,406
3,346,569	3,388,123	3,401,371	3,405,402	3,407,495	3,410,138	3,438,306	3,459,531
3,347,929	3,388,365	3,401,807	3,405,457	3,407,505	3,410,373	3,439,848	3,460,557
3,349,049	3,389,965	3,402,019	3,405,470	3,407,583	3,410,418	3,440,283	3,463,341
3,351,127	3,390,452	3,402,088	3,405,550	3,407,814	3,410,597	3,440,592	3,463,606
3,351,592	3,390,657	3,402,181	3,405,594	3,407,904	3,410,700	3,440,769	3,466,976
3,354,218	3,392,056	3,402,244	3,405,605	3,408,200	3,410,800	3,440,782	3,467,063
3,356,059	3,392,130	3,402,349	3,405,736	3,408,236	3,410,920	3,440,883	3,469,992
3,356,413	3,393,448	3,402,490	3,405,900	3,408,276	3,410,949	3,441,908	3,470,730
3,358,344	3,394,087	3,402,544	3,405,957	3,408,296	3,410,955	3,442,631	3,470,870
3,360,124	3,395,212	3,402,584	3,406,029	3,408,334	3,411,541	3,442,806	3,471,342
3,360,979	3,395,674	3,402,694	3,406,087	3,408,343	3,412,207	3,442,863	3,473,500
3,361,046	3,396,152	3,402,851	3,406,125	3,408,445	3,412,362	3,443,901	3,473,970
3,361,830	3,396,235	3,402,921	3,406,160	3,408,473	3,414,798	3,444,087	3,475,357
3,364,359	3,396,328	3,403,161	3,406,176	3,408,493	3,415,806	3,444,121	3,475,461
3,365,365	3,396,379	3,403,227	3,406,208	3,408,495	3,416,889	3,444,240	3,475,594
3,365,445	3,396,837	3,403,233	3,406,222	3,408,681	3,417,086	3,444,419	3,475,972
3,367,313	3,396,863	3,403,314	3,406,315	3,408,682	3,419,583	3,444,450	3,476,457
3,367,914	3,397,389	3,403,524	3,406,362	3,408,741	3,420,856	3,444,520	3,476,748
3,369,224	3,397,675	3,403,686	3,406,418	3,408,778	3,420,981	3,444,571	3,477,969
3,370,910	3,398,115	3,404,038	3,406,566	3,408,920	3,421,125	3,444,843	3,478,118
3,371,084	3,398,140	3,404,130	3,406,583	3,408,927	3,423,405	3,445,009	3,478,587
3,374,155	3,398,156	3,404,153	3,406,818	3,409,008	3,426,323	3,445,054	3,478,631
3,377,343	3,398,159	3,404,249	3,406,915	3,409,038	3,426,330	3,445,414	3,480,379
3,377,803	3,398,218	3,404,361	3,407,043	3,409,153	3,427,386	3,445,939	3,481,650
3,378,506	3,398,337	3,404,509	3,407,060	3,409,212	3,427,706	3,445,942	3,483,220
3,378,554	3,398,446	3,404,549	3,407,125				

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1970

*Denotes oldest new application.

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-04-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*8-29-67
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-24-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-68
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-26-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-03-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-19-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-68
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-02-68
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-29-68
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-19-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10-11-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	4-04-68
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*7-09-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	9-03-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	9-11-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	

Total number of pending applications (excluding Designs)	183,028
Total number of Design applications pending	2,920

Expiration of patents: The patents within the range of numbers indicated below expire during January 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,627,071 to 2,629,868, inclusive
Plant Patents	Numbers 1,162 to 1,171, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE RUSSELL B. NEWTON

No. 8167. Decided September 18, 1969

[56 CCPA —; 414 F.2d 1400; 163 USPQ 34]

1. PATENTABILITY—DOUBLE PATENTING—TERMINAL DISCLAIMER—DIFFERENT INVENTIONS—DIFFERENCE IN SCOPE.

"We consider first whether the claims of the application are directed to the same subject matter as those of the patent to determine whether an attempt is being made to twice claim the same subject matter. A comparison of the claims on appeal with the claims of the patent renders it manifest, we believe, that the compared claims differ more than merely in verbiage and minor scope, and resort to comparison of disclosures is unnecessary. As recognized by the Board, the claims of the patent are directed to a suction conduit means that is allowed movement or is slidably mounted, whereas the appealed claims contain no such limitations. We do not see the identical inventions argued by the Solicitor. Having established that the claims do in fact define different inventions, it is clear that the terminal disclaimer by the common assignee overcomes the double patenting rejection."

2. SAME—COMMON ASSIGNEE—TERMINAL DISCLAIMER—COMMISSIONER'S NOTICE IN 834 O.G. 1615—35 U.S.C. 102(g).

"We find the Solicitor's reliance on 35 U.S.C. 102(g) and his 'doctrine of election' inapplicable here where different inventive entities are pursuing claims to *different* inventions. See *In re Frilette*, supra. We are not unmindful that the Board believed that a terminal disclaimer would have no effect here and of its reference to the Commissioner's notice in 834 O.G. 1615 dealing with double patenting. We note only that this procedural memorandum sets forth guidelines for the Patent Office which were not even followed in this case and hence can have no bearing on its outcome here."

3. RULES OF PRACTICE—RULES HAVE EFFECT OF LAW.

"It is well settled that the Rules of Practice in the Patent Office, when not inconsistent with the statutes from which they are derived, have the force and effect of law."

4. APPLICATION — DISCLOSURE — SUFFICIENCY OF DISCLOSURE — BEST MODE—35 U.S.C. 112.

"Appellant argues that he has complied with 35 U.S.C. 112 in that he has 'set forth the best mode contemplated by the inventor of carrying out his invention' since the more specific apparatus of Ingham happens also to be the best mode contemplated by appellant for carrying out the broad invention. Granted that such is the case, the question of whether an inventor has or has not disclosed what he feels is his best mode is a question separate and distinct from that of the sufficiency of his disclosure to satisfy the requirements of the first portion of the first paragraph of 35 U.S.C. 112 reciting that 'the specification shall contain a written description of the invention * * *.' * * * However, appellant further directs our attention to the general rule that an applicant in a mechanical case is allowed claims, when the art permits, which cover more than the specific embodiment shown. We are in agreement with that general rule and share the view that here the claims are supported by the disclosure in the sense that the broad claims read on the specific embodiment described."

5. SAME—SAME—SAME—COMMON ASSIGNEE—SPECIFICATION SHOULD SPECIFY INVENTION—RULE 71(b).

"As the case is before us, no attempt has been made to point out in the specification who invented what—nor is any reference to Ingham [commonly assigned patent] present. On these facts, we do not necessarily disagree with the Examiner that the requirement of Rule 71(b) has not been met.

6. SAME—SAME—SAME—MATTERS OF FORM—RULE 71(b).

"We recognize * * * that noncompliance with Rules of Practice dealing with matters of form as contrasted with questions of patentability traditionally results in objection to the specification with review by petition to the Commissioner rather than rejection of the claims and enforcement of the law through appeals to the Board and this court. Since Rule 71(b) as applied here goes only to a matter of form in the written description, noncompliance therewith is not a proper ground for rejection of the claims."

APPEAL from the Patent Office. Serial No. 342,924.

REVERSED.

Norman C. Armitage (*Earle R. Marden*, *H. William Petry*, of counsel) for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, HOLTZOFF and MCLAUGHLIN, *Judges*, sitting by designation, ALMOND and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 6 and 7, the sole claims in appellant's application entitled "Pneumatic Cleaner." [1]

The invention relates particularly to vacuum clearing apparatus for clearing of lint and fiber from textile rolls such as those associated with spinning frames, roving frames, and the like. Looking at the top roll vacuum clearer 32, shown in cross-section in FIG. 2, reproduced below, it can be seen that it consists basically of an oval-shaped hollow shoe member 38 which engages the top front roll 22, a collar member 40 which communicates with an opening 42 in an elongated suction manifold 44, and tubular members 46 and 48 which provide communication between suction manifolds 34 and 44. The bearing surface of the shoe member 38 is curved to conform to roll 22, except for notch 54 in its forward lip which admits air and any foreign material carried by the roll. The rear lip 56 scrapes the latter from the roll, for entrainment in the admitted air and removal through the vacuum clearer 32. The specification states: "The outer dimension of the shoe member [38] is so selected that it will fit snugly into the collar member [40] to prevent leakage of air but at the same time can readily slide up and down to conform to variations in movement of the top front roll 22."

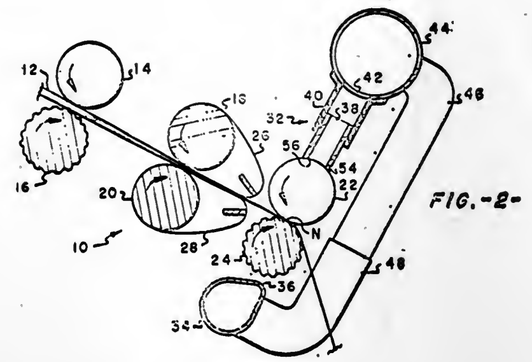


FIG.-2-

Claims 6 and 7 read:

6. Textile drafting apparatus comprising a plurality of drafting rolls and including a pair of rolls in peripheral nip-forming engagement with each other,

[1] Serial No. 342,924, filed February 6, 1964.

means supplying fiber to be drafted between said pair of rolls, suction conduit means in frictional engagement with one roll of said pair of rolls, said suction conduit means being a low friction resistant substantially rigid plastic-like material to prevent excessive wear on said one roll and said suction conduit means, means for connecting said conduit means to a source of negative pressure, and means providing fluid communication between said one roll and said suction conduit means to apply suction pressure to said one roll to remove lint scraped from said one roll by said suction conduit means.

7. The structure of claim 6 wherein said pair of rolls are oriented to provide upper and lower rolls, said suction conduit means being in frictional engagement with said upper roll.

The Examiner rejected appellant's claims on several grounds, summarized briefly here as (1) obviousness in view of prior art; (2) indefiniteness of claim recitation; (3) failure to comply with 35 U.S.C. 112 and Patent Office Rule 71(b); and (4) unpatentability over the claims of the copending application Serial No. 342,390 of R. M. Ingham, filed February 6, 1964, granted as U.S. Patent 3,251,101 on May 17, 1966.

As will be seen, the above rejections present us with a unique set of circumstances resulting in, insofar as we have been able to ascertain, a case of novel impression in this court. Prior to proceeding in detail, however, we point out that rejection (1) based on prior art was specifically reversed by the Board and is not before us, therefore rendering discussion of the involved prior art unnecessary. The Board did affirm rejection (4) based on the patent to Ingham, hence we discuss that patent here.

Of Ingham, appellant stated in his brief before the Board:

* * * this disclosure is substantially identical to a copending disclosure of an application filed on the same day by a different inventor. For the Board's information both of these applications have been assigned to the same assignee, which assignments are not of record. The applicant of the instant case is the inventor of the broad concept, as claimed. The inventor of the second application is the inventor of the *specific* embodiment disclosed but not claimed in this application. The only embodiment of the inventions presently worked out is that set forth in both applications. Applicant has only set forth in this case one embodiment of the invention to illustrate the utility of such invention. At the same time applicant is only entitled to claim that portion of the invention which is his.

We reproduce claim 3 of Ingham as representative:

3. Textile drafting apparatus comprising a pair of drafting rolls in peripheral nip-forming engagement with each other, a suction manifold mounted in a predetermined position relative to said pair of drafting rolls and in communication with a source of negative pressure, suction conduit means in fluid communication with said suction manifold, means mounting said suction conduit means in frictional engagement with one roll of said pair of rolls and allowing movement of said suction means relative to both said suction manifold and said one roll of said pair of rolls upon encountering variations in the surface of said one roll of said pair of rolls, said suction conduit means having at least two spaced wall portions, one of said wall portions being of wear resistant plastic like material and being in frictional engagement with said one roll of said pair of rolls to scrape lint and debris therefrom and the other of said wall portions being spaced from said one roll of said pair of rolls to provide an opening between said other wall portion and said one roll of said pair of rolls to allow a potential lap up to be directed to the suction source.

The Examiner's rationale for the rejections summarized above was set forth at length in his answer:

Claims 6 and 7 are further rejected as failing to comply with 35 U.S.C. 112 which states * * *. Further, Rule 71, which refers to 35 U.S.C. 112, paragraph

(b) states * * *.[2] * * * since the specification and the drawings of copending application Serial No. 342,920 and the instant application are identical, neither has clearly or specifically disclosed different inventions. While the above applications were filed on the same date, appellant states * * * that both have been assigned to the same assignee, although such assignments are not of record. Therefore the broad concept, which appellant declares his invention to be as recited in the claims, does not require the suction conduit means to be slidably mounted relative to a means connecting the conduit means to a source of negative pressure. As recited in the claims, the suction conduit means may comprise elements *40, 38* as a single member connected to manifold *44* or the suction conduit means may comprise element *38* connected directly to manifold *44*. Neither of such broad concepts is disclosed nor precisely set forth in the specification as required by 35 U.S.C. 112 or Rule 71(b).

The Examiner then stated a new ground of rejection, namely:

Claims 6 and 7 are further rejected as unpatentable over the claims of copending application Serial No. 342,920. Since the specification and the drawings are *identical* to the specification and drawings of said copending application and since there is only one species disclosed, it is quite obvious that there can be only one invention disclosed. Therefore, since the copending application is now in issue, and there has been disclosed only one invention, issuance of a second patent to the same invention would result in an improper extension of the common assignee's monopoly. Furthermore, it is a well settled fact that only a single invention is entitled to a single patent.

In making the above rejection, the Examiner also noted that in certain cases the commonly assigned "improvement" patent of an inventor will not bar a patent on the basic invention of another inventor, stating however that in his opinion the present situation did not fall into that category for the reason, among others, that no cross-referencing was made. The Examiner also directed attention to *In re Sutherland*, 52 CCPA 1683, 347 F.2d 1009, 146 USPQ 485, wherein a double patenting rejection in a related situation was reversed, distinguishing it however on the basis that the instant situation did not present independent and distinct inventions capable of use one without the other.

Finally the Examiner recited:

Claims 6 and 7 are further rejected as indefinite in the recitation "means providing fluid communication between said one roll and said suction conduit means" inasmuch as the *space* or *opening* between the roll and the conduit is recited as a means.

The Board made no mention of the last of the above discussed rejections, stating however that the rejection expressly based on 35 U.S.C. 112 and on the claims of Ingham:

* * * appear to us to point toward the same issue, i.e. whether the Ingham, Jr., patent and the instant application set forth two different inventions capable of sustaining different patents. We will accordingly treat them together. Reference is made to the Examiner's answer as to complete statement of his position.

It went on to say:

While it is true that the claims before us do not recite that the suction conduit means is allowed movement or is slidably mounted, as do the base claims

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[2] The portions of 35 U.S.C. 112 and Rule 71 quoted by the Examiner are reproduced here:

§ 112. Specification.

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Rule 71.—Detailed description and specification of the invention. * * *

(*b*) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.

1, 3 and 5 of the patent, the only embodiment disclosed in the two cases is precisely the same, i.e., with said means (shoe 38) slidable. * * *

We do not even find a statement in the instant specification that shoe 38 was alternatively intended to be held stationary relative to the suction manifold and the related roll, much less means for so holding the shoe, assuming *arguendo* that the device would be operative with a stationary shoe. Nor is there a statement in the patent specification that the invention therein constituted an improvement over the present invention and what was in fact the improvement.

One practicing appellant's claimed invention would be entitled to use the only disclosed apparatus offered to him, i.e., with the shoe slidable, which is the apparatus disclosed and claimed in the patent. On these facts, a second patent cannot be granted, whether the same applicant or different applicants with a common assignee are involved.

The Board concluded by sustaining the Examiner.

Appellant's assignee then filed a terminal disclaimer and appellant requested reconsideration. The Board adhered to its decision, responding on reconsideration that:

A terminal disclaimer cannot overcome the present rejection on the facts before us. See Commissioner's notice of January 9, 1967, at 834 O.G. 1615.

Appellant contends that the failure of the Board to mention the rejection based on indefiniteness of claim recitation presumably means that such rejection was not upheld. The Solicitor counters by arguing that the affirmance of the rejection on any of the grounds specified constitutes a general affirmance of the decision of the Examiner on that claim, *except as to any ground specifically reversed* and citing cases in support of that view. Suffice it to say, we need not consider those contentions since we find persuasive appellant's argument set forth in his reply brief that the claim language "means providing fluid communication between said one roll and said suction conduit means" is not indefinite inasmuch as it can be logically construed to refer to the *walls* defining the notch or opening 54, as well as other equivalent means.

Turning to the rejection based on the claims of the Ingham patent, we find appellant contending that as a general rule in mechanical cases one specific embodiment can support broad as well as specific claims and therefore one embodiment can support more than one invention whether disclosed in one application or in two applications. The inventions here are different, it is urged, so that a terminal disclaimer is effective to overcome the rejection. Furthermore, appellant argues that a genuine case of diversity of inventorship exists here and that denial of the second patent would serve only to penalize appellant for his diligence in ascertaining this.

The Solicitor responds by arguing that the claims here define substantially the same invention defined in the claims of the Ingham patent except for a difference in scope. As a result under the decisional case law of this court, the terminal disclaimer cannot be effective to avoid the "double patenting" rejection based on the concept that identical inventions are being claimed. Apart from "double patenting," it is contended, the Examiner's rejection can be considered under 35 U.S.C. 102(g), such as to be immune from any avoidance by terminal disclaimer. The "doctrine of election" by a common assignee is urged to be applicable here.

Needless to say, both appellant's counsel and the Solicitor have cited much case law in support of their respective positions, including decisions of this court concerned primarily with "double patenting" in related situations. We have studied the authorities referred to us,

but we are unable to find a case on all fours. Although we have had cases involving identical disclosures, as well as cases involving different inventors and common assignees, we have not dealt with the situation where the sole specific embodiment disclosed in the two specifications was relied upon to support different patents by different inventors. That is not to say, however, that our recent plethora of cases dealing with double patenting does not now provide us with the rules to be applied in situations such as that before us. Extensive citation of those cases is unnecessary.[3]

[1] We consider first whether the claims of the application are directed to the same subject matter as those of the patent to determine whether an attempt is being made to twice claim the same subject matter. A comparison of the claims on appeal with the claims of the patent renders it manifest, we believe, that the compared claims differ more than merely in verbiage and minor scope, and resort to comparison of disclosures is unnecessary. As recognized by the Board, the claims of the patent are directed to a suction conduit means that is allowed movement or is slidably mounted, whereas the appealed claims contain no such limitations. We do not see the identical inventions argued by the Solicitor. Having established that the claims do in fact define different inventions, it is clear that the terminal disclaimer by the common assignee overcomes the double patenting rejection. *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570; *In re Borg*, 55 CCPA 1021, 392 F.2d 642, 157 USPQ 359; *In re Frilette*, 56 CCPA —, 411 F.2d—, 162 USPQ 163.

[2] We find the Solicitor's reliance on 35 U.S.C. 102(g) and his "doctrine of election" inapplicable here where different inventive entities are pursuing claims to *different* inventions. See *In re Frilette*, supra. We are not unmindful that the Board believed that a terminal disclaimer would have no effect here and of its reference to the Commissioner's notice in 834 O.G. 1615[4] dealing with double patenting. We note only that this procedural memorandum sets forth guidelines for the Patent Office which were not even followed in this case and hence can have no bearing on its outcome here.[5]

We turn then to consideration of the other ground of rejection on appeal here, the alleged failure to comply with 35 U.S.C. 112 and Rule 71(b). While the Board's election to expeditiously treat this ground of rejection together with that based on unpatentability over the claims of the Ingham patent may tend to confusion, the Board made reference to the Examiner's answer where, fortunately, a complete statement of the Patent Office's position appears, as quoted here-

[3] Several of the more recent cases are cited in *In re White*, 56 CCPA 870, 405 F.2d 904, 160 USPQ 417.

[4] We reproduce a pertinent portion of that notice here:

In situations involving cases filed by different inventive entities, regardless of ownership, sections 102 and 103 of 35 U.S.C. preclude the granting of two or more patents when directed to identical inventive concepts or when one of the concepts would be obvious in view of the other. A terminal disclaimer can have no effect in this situation since the basis for refusing more than one patent is not connected with any extension of monopoly.

In view of 35 U.S.C. 135, it is necessary to determine priority of invention whenever two different inventive entities are claiming a single inventive concept, and this determination should ordinarily be made before any patent is issued. This is true regardless of ownership, and the provision of Rule 201(c) that interferences will not be declared or continued between commonly owned cases unless good cause is shown therefor does not mean that two patents are to be allowed in such cases, but that the common assignee should be called on to state which of the entities involved is prior to the other in date of invention (p. 1616).

[5] We are reminded of our observation in *In re Stanley*, 41 CCPA 956, 214 F.2d 151, 102 USPQ 234, set forth in the syllabus:

* * * if there is no patentable distinction between generic claims and improvement claims, Examiner should have rejected improvement claims and patent should not have issued; applicants should not be denied a patent because of error made by Patent Office, if such an error were in fact made.

inbefore. As can be seen, the Examiner's position is based not so much on 35 U.S.C. 112 alone but rather on his interpretation of that statutory provision as supplemented by Patent Office Rule 71(b).[6] The rejection so made is the one we treat.

[4] Appellant argues that he has complied with 35 U.S.C. 112 in that he has "set forth the best mode contemplated by the inventor of carrying out his invention" since the more specific apparatus of Ingham happens also to be the best mode contemplated by appellant for carrying out the broad invention. Granted that such is the case, the question of whether an inventor has or has not disclosed what he feels is his best mode is a question separate and distinct from that of the sufficiency of his disclosure to satisfy the requirements of the first portion of the first paragraph of 35 U.S.C. 112 reciting that "the specification shall contain a written description of the invention * * *." *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311. However, appellant further directs our attention to the general rule that an applicant in a mechanical case is allowed claims, when the art permits, which cover more than the specific embodiment shown. We are in agreement with that general rule and share the view that here the claims are supported by the disclosure in the sense that the broad claims read on the specific embodiment described.

The crux of the matter here, as recognized by the Examiner in his express reference to and quotation of Rule 71(b) requiring that the specification set forth the precise invention for which a patent is solicited in such manner to distinguish from other inventions, is, however, that the Patent Office feels that one wishing to practice appellant's claimed invention is taught only the specific embodiment disclosed, which embodiment is that disclosed and claimed in the Ingham patent. In effect then, one is not told how to carry out appellant's broad invention to the exclusion of another's more specific embodiment thereof. That appellant has invented solely the broad concept becomes clear only upon consideration of the Ingham patent. Yet this distinction is not brought out. It was not without significance that this court noted in *In re Sutherland*, supra:

> It occurs to us that much of the difficulty in this case in its progress through the Patent Office might have been avoided if the solicitors had taken more pains to point out in the two specifications, as well as in the claims, who invented what—if Carpenter had expressly stated what parts of his disclosure constituted the invention of Sutherland and if Sutherland's specification had pointed out that in part he was disclosing contemporaneous inventions of Carpenter. Neither application seems to make any reference to the other, yet, as we have indicated, the two applications contain descriptions of the same flow sheet as embodying the invention of both applicants. Each uses the other's invention as part of his "best mode" of carrying out his invention. At the same time, the Patent Office could have improved matters by enforcing its Rule 71(b) requiring that "The *specification* must set forth the precise invention for which a patent is solicited *in such manner as to distinguish it from other inventions* and from what is old." [Emphasis court's.] Both of these applications were in the hands of the same examiners.

As the quotation reveals, that statement has particular relevance to the situation here. **[5]** As the case is before us, no attempt has been made to point out in the specification who invented what—nor is any reference to Ingham present.[7] On these facts, we do not necessarily disagree with the Examiner that the requirement of Rule 71(b) has not been met.

[6] We recognize, however, that noncompliance with Rules of Practice dealing with matters of form as contrasted with questions of patentability traditionally results in objection to the specification with review by petition to the Commissioner rather than rejection of the claims and enforcement of the law through appeals to the Board and this court. Since Rule 71(b) as applied here goes only to a matter of form in the written description, noncompliance therewith is not a proper ground for rejection of the claims.

Accordingly, the decision of the Board is reversed.

REVERSED.

Judge Holtzoff participated in the hearing of this case but died before a decision was reached.

[3] [6] It is well settled that the Rules of Practice in the Patent Office, when not inconsistent with the statutes from which they are derived, have the force and effect of law. *In re Kaghan*, 55 CCPA 844, 387 F.2d 398, 156 USPQ 130; *In re Hession, Jr.*, 49 CCPA 809, 296 F.2d 930, 132 USPQ 40; *Land* v. *Dreyer*, 33 CCPA 1108, 155 F.2d 383, 69 USPQ 602.

[7] A problem here is that the claims, which admittedly are part of the specification, contribute little to description of the *structure* which Newton invented but instead merely broadly define the legal scope of protection by omitted specific reference as to whether the suction conduit is movably mounted.

U.S. Court of Customs and Patent Appeals

FRICKS' FOODS, INC. *v.* THE MAR-GOLD CORPORATION

No. 8195. Decided November 20, 1969

[57 CCPA —; F.2d —; 163 USPQ 619]

1. TRADEMARK — CONFUSING SIMILARITY — "MARGELO" AND "MAR-GOLD" FOR MARGARINE.

"We have carefully reviewed the record and considered the briefs and arguments of counsel and while resolution of the issue posed is not free from doubt, we are not persuaded of error in the decision of the Board. Appellee has proven prior and extensive use of its MAR-GOLD mark and shown substantive sales prior to appellant's first use of the term MARGELO. The products of the parties are identical and respond to the same purposes. The respective products are in direct competition and are sought and purchased by the same purchasing public. While there is no requirement of actual confusion in order to establish a likelihood of confusion, yet there is testimony of record here tending to show a degree of actual confusion among prospective customers. It is well settled that any doubt as to likelihood of confusion should be resolved against the newcomer."

APPEAL from Patent Office. Opposition No. 45,078.

AFFIRMED.

Stanford W. Berman, for appellant.

Mason, Fenwick & Lawrence, Edward G. Fenwick, Jr., for appellee.

Before RICH, *Acting Chief Judge*, MATTHEWS, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Fricks' Foods, Inc., applicant below, appeals from the decision [1] of the Trademark Trial and Appeal Board holding that appellant's mark "MARGELO" [2] so resembles opposer-appellee's previously used mark "MAR-GOLD" as to be likely to cause confusion or mistake, within the purview of section 2(d) of the Trademark Act of 1946, as amended (15 U.S.C. 1052(d)).

[1] Board opinion abstracted 153 USPQ 880.
[2] Application No. 207,033, filed November 27, 1964.

We are in agreement with this general view and [illegible]

here the claims are supported by the disclosure in the sense that the broad claims read on the specific embodiment described.

The crux of the matter here, as recognized by the Examiner in his express reference to and quotation of Rule 71(b) requiring that the specification set forth the precise invention for which a patent is solicited in such manner to distinguish from other inventions, is, however, that the Patent Office feels that one wishing to practice appellant's claimed invention is taught only the specific embodiment disclosed, which embodiment is that disclosed and claimed in the Ingham patent. In effect then, one is not told how to carry out appellant's broad invention to the exclusion of another's more specific embodiment thereof. That appellant has invented solely the broad concept becomes clear only upon consideration of the Ingham patent. Yet this distinction is not brought out. It was not without significance that this court noted in *In re Sutherland*, supra:

> It occurs to us that much of the difficulty in this case in its progress through the Patent Office might have been avoided if the solicitors had taken more pains to point out in the two specifications, as well as in the claims, who invented what—if Carpenter had expressly stated what parts of his disclosure constituted the invention of Sutherland and if Sutherland's specification had pointed out that in part he was disclosing contemporaneous inventions of Carpenter. Neither application seems to make any reference to the other, yet, as we have indicated, the two applications contain descriptions of the same flow sheet as embodying the invention of both applicants. Each uses the other's invention as part of his "best mode" of carrying out his invention. At the same time, the Patent Office could have improved matters by enforcing its Rule 71(b) requiring that "The *specification* must set forth the precise invention for which a patent is solicited *in such manner as to distinguish it from other inventions* and from what is old." [Emphasis court's.] Both of these applications were in the hands of the same examiners.

As the quotation reveals, that statement has particular relevance to the situation here. **[5]** As the case is before us, no attempt has been made to point out in the specification who invented what—nor is any

[3] It is well settled that the Rules of Practice in the Patent Office, when not inconsistent with the statutes from which they are derived, have the force and effect of law. *In re Kaghan*, 55 CCPA 844, 387 F.2d 398, 156 USPQ 130; *In re Hession, Jr.*, 49 CCPA 809, 296 F.2d 930, 132 USPQ 40; *Land* v. *Dreyer*, 33 CCPA 1108, 155 F.2d 383, 69 USPQ 602.

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FRICKS' FOODS, INC. *v.* THE MAR-GOLD CORPORATION

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1. TRADEMARK — CONFUSING SIMILARITY — "MARGELO" AND "MAR-GOLD" FOR MARGARINE.

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Before RICH, *Acting Chief Judge*, MATTHEWS, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Fricks' Foods, Inc., applicant below, appeals from the decision [1] of the Trademark Trial and Appeal Board holding that appellant's mark "MARGELO" [2] so resembles opposer-appellee's previously used mark "MAR-GOLD" as to be likely to cause confusion or mistake, within the purview of section 2(d) of the Trademark Act of 1946, as amended (15 U.S.C. 1052(d)).

[1] Board opinion abstracted 153 USPQ 880.
[2] Application No. 207,033, filed November 27, 1964.

The record reveals that appellee is engaged in the business of manufacturing and selling margarine. It is the owner of a registration [3] disclosing MAR-GOLD in association with a design. Since 1948 the design presented on a shield with the letters MG has been used in association with the word mark MAR-GOLD. Appellee sells its margarine product through wholesalers, who in turn sell to retailers and grocery chain outlets. During the period embracing 1962 through 1965, appellee sold 8,619,000 pounds of margarine in containers bearing MAR-GOLD, representing a value of $2,154,750. The product has been extensively advertised under the mark MAR-GOLD, per se and in association with the design, in newspapers, magazines, newspaper supplements, radio, television, and signs displayed on public transportation buses. During the three years immediately preceding the proceedings below, expenditures for such advertising exceeded $36,000.

Appellant's product, which is manufactured for it, is liquid margarine which it sells in the same trading area and through retail grocery stores, as does appellee.

There is no basis for dispute that the goods of the parties are both oleomargarines, manufactured, advertised, sold and used for the same end purpose. Priority clearly resides with appellee, which is conceded by appellant. The only question is whether appellant's mark so resembles that of appellee as to be likely to cause confusion or mistake or deception.

Appellant contends that the single term MAR-GOLD does not of itself constitute appellee's mark but that appellee's mark in fact comprises MAR-GOLD, MG, and a crown or shield design with the only similarity between the marks residing in the commonly used prefix "Mar."

The record, however, supports the finding of the Board that while appellee has used MAR-GOLD in close association with the shield design bearing the letters MG, it has also extensively used MAR-GOLD on its packaging separately from the shield design; that it has advertised its product as MAR-GOLD and as used presently and in the past a separable commercial impression for MAR-GOLD has been created and thus appellee has rights in MAR-GOLD, per se, created by use and is entitled to rely thereon.

Seeking to raise the issue of estoppel, appellant contended below that since appellee, when obtaining its registration, had asserted that MARIGOLD, a registration for deodorized and processed edible vegetable oil, was not confusingly similar to its mark, it could not take the position here that appellant's mark is confusingly similar to MAR-GOLD. Although appellant does not actively pursue that argument here, we point out that we are unable to say that appellee's position here is inherently inconsistent vis-a-vis the MARIGOLD registration. We therefore agree with the Board that it is not such as to justify the invocation of the principle of estoppel in the instant proceedings.

In sustaining the opposition and refusing registration to applicant-appellant, the Board stated:

> While it may well be that "MAR" is a common prefix for marks applied to margarines, we must nevertheless compare the marks in their entireties.
>
> Applicant's mark is an arbitrary designation and may be pronounced in more than one way. If the "g" in "MARGELO" is given a hard sound, it then substantially resembles "MAR-GOLD" in sound. There is also some resemblance in appearance between these marks. It is our opinion that the applicant's mark does so resemble the opposer's previously used mark "MAR-GOLD" as to be likely to cause confusion or mistake.

[3] Registration No. 585,929, registered February 23, 1954.

[1] We have carefully reviewed the record and considered the briefs and arguments of counsel and while resolution of the issue posed is not free from doubt, we are not persuaded of error in the decision of the Board. Appellee has proven prior and extensive use of its MAR-GOLD mark and shown substantive sales prior to appellant's first use of the term MARGELO. The products of the parties are identical and respond to the same purposes. The respective products are in direct competition and are sought and purchased by the same purchasing public. While there is no requirement of actual confusion in order to establish a likelihood of confusion, yet there is testimony of record here tending to show a degree of actual confusion among prospective customers. It is well settled that any doubt as to likelihood of confusion should be resolved against the newcomer.

We, accordingly, affirm the decision of the Board.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,712,507, B. K. Green, PRESSURE SENSITIVE RECORD MATERIAL; **Re. 24,899**, same, OIL-CONTAINING MICROSCOPIC CAPSULES AND METHOD OF MAKING THEM, **filed** Sept. 18, 1969, D.C., S.D. Ohio (Cincinnati), Doc. 7243, *The National Cash Register Co.* v. *U.S. Plywood-Champion Papers, Inc.*

2,786,677. (See Reg. No. 774,455.)

2,813,468, J. J. Jones, PHOTO FINISH RECORD, **filed** Dec. 1, 1969, D.C. Mass. (Boston), Doc. 69–1255–J, *Jones Precision Photo Finish, Inc.* v. *Photo-Trackmaster, Inc.*

2,923,605, Jaffe and Turobinski, METHOD OF GROWING QUARTZ SINGLE CRYSTALS, **filed** Aug. 26, 1966, D.C. Del. (Wilmington), Doc. 3252, *Clevite Corporation and Sawyer Research Products, Inc.* v. *Howard Aiken Industries, Inc.* Consent judgment, patent valid; Clevite Corp. owner of patent. Co-plaintiff, Sawyer Research Products, Inc. is a licensee with the exclusive right to grant further licenses thereunder. Defendant infringed and injunction shall issue enjoining defendant, Dec. 5, 1969.

2,935,676, L. Keltz, SENSING DEVICE FOR DIODE RECTIFIERS; **2,994,028**, I. K. Dortort, CURRENT BALANCING REACTORS FOR RECTIFIER ELEMENTS, **filed** Oct. 28, 1964, D.C., S.D.N.Y., Doc. 64–C–3290, *I-T-E Circuit Breaker Company* v. *Rapid Electric Company, Inc.* Consent judgment, claims and counterclaims are withdrawn with prejudice, Nov. 20, 1969.

2,946,948, S. Foner, MAGNETIC TEST APPARATUS, **filed** Nov. 26, 1969, D.C., N.D. Calif. (San Francisco), Doc. C69–458, *Simon Foner* v. *Ampex Corporation.*

2,952,851, M. Epstein, SELF-LOADING FASTENER MEANS, **filed** Dec. 14, 1965, D.C., S.D.N.Y., Doc. 65–C–3798, *Melvin Epstein* v. *Dennison Manufacturing Co.* Judgment in favor of defendant, Nov. 21, 1969.

2,994,028. (See 2,935,676.)

3,001,950, Q. R. Hopper, REAGENT FOR DETERMINING THE AMOUNT OF CHOLESTEROL IN SERUM AND METHOD OF PREPARING SAME, **filed** Oct. 7, 1968, D.C., W.D. Tex. (San Antonio), Doc. 68–249–SA, *Hopper Laboratories, Inc.* v. *Stanbio Laboratories, Inc. and Charles E. Miles.* Judgment, no injunction, claims 1–6 invalid, Nov. 21, 1969.

3,002,240, M. Laguerre, CLOSURE DEVICE, **filed** Nov. 27, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68C–1209, *John L. Rie, Inc.* v. *American Sponge & Chamois Company, Inc.* Consent judgment, defendant pay to plaintiff, Nov. 21, 1969.

3,007,702, R. R. Eby, PHONOGRAPH RECORD STORAGE MEANS, **filed** Dec. 2, 1969, D.C., S.D.N.Y., Doc. 69–5315, *Richard R. Eby* v. *F. W. Woolworth Company.*

3,012,423, T. C. Lyster, MACHINE FOR KNITTING PATTERNED FABRICS, **filed** Dec. 4, 1969, D.C., S.D.N.Y., Doc. 69–5382, *North American Rockwell Corporation* v. *The Singer Co.*

3,031,068, Ribbens and Dethardt, SUSPENSION FRAMEWORK, **filed** Dec. 12, 1969, D.C., N.D. Calif. (San Francisco), Doc. C–69–571–RFP, *Tab Products Co.* v. *Barry Wright Corp.*

3,059,245, A. D. Bell, TOILET VENTILATING APPARATUS, **filed** Dec. 2, 1969, D.C., S.D. Calif. (San Diego), Doc. 69–344–K, *Alfred D. Bell* v. *American Standard Corp; Western Metal Supply Co.; A. O. Reed & Co.*

3,086,529, Munz and Kelson, CONSTRICTORS, **filed** July 16, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1488, *Propper Manufacturing Company, Inc.* v. *The Cobid Corporation.* Consent judgment, defendants restrained, Nov. 6, 1969.

3,093,177, J. P. Villo, THREAD LOCK AND METHOD OF MAKING THE SAME, **filed** Dec. 8, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2538, *Standard Pressed Steel Co.* v. *Coral Corporation and USM Corporation.*

3,114,349, S. Schuman, STERILIZATION INDICATORS, **filed** Nov. 21, 1969, D.C., E.D.N.Y. (Brooklyn), Doc. 69C–1469, *Surgicot Inc. etc.* v. *Propper Mfg. Co., Inc. et al.*

3,208,318, P. M. Roberts, QUICK RELEASE FOR SOCKET WRENCHES, **filed** Dec. 12, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2573, *Peter M. Roberts* v. *Sears, Roebuck & Co.*

3,254,208, B. Moore, LIGHT FIXTURE HINGE CONSTRUCTION, **filed** Mar. 27, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c665, *Esquire, Inc.* v. *Aim Corp.* Final judgment, patent valid, defendant enjoined, Nov. 21, 1969.

3,264,882, K. Nichols, GYROSCOPE, **filed** Oct. 22, 1968, D.C. Kans. (Wichita), Doc. W–4076, *Koytt Nichols* v. *Schlumberger Well Surveying Corporation, Weston Instruments, Inc. and Garwin, Inc.* Order, dismissed with prejudice, Nov. 24, 1969.

3,275,332, E. S. May, OIL SEAL, **filed** Nov. 24, 1969, D.C., N.D. Calif. (San Francisco), Doc. C69–441, *Federal-Mogul Corporation* v. *Chicago Rawhide Manufacturing Co.*

3,307,563, R. Regina, PARTIAL WIG WITH GENERALLY ELLIPTICAL FOUNDATION FRAME, **filed** Mar. 4, 1969, D.C., S.D. Fla. (Miami), Doc. 69–281–C–WM, *Ruth Regina* v. *Wigs by Dora, Inc. et al.* Consent judgment, plaintiff is owner of patent; defendants have consented to be enjoined from infringing, Nov. 19, 1969.

3,313,477, G. Brown, TRANSPARENT BANK CONSTRUCTION HAVING COIN SORTING MEANS, **filed** Dec. 4, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2495, *Superior Toy & Mfg. Co.* v. *Marcor Incorporated.* **Same, filed** Dec. 5, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2520, *Superior Toy & Mfg. Co.* v. *Montgomery Ward & Co.*

3,353,207, H. Weinberger, SHRIMP SHELLER AND DEVEINER, **filed** Dec. 10, 1969, D.C., S.D. Fla. (Miami), Doc. 69–1448–C–CF, *Harold Weinberger* v. *Jefferson Stores, Inc.*

3,371,828, N. E. Elsas, TURNING APPARATUS, **filed** Oct. 24, 1969, D.C.S.C. (Columbia), Doc. 69–913, *Nemo Industries, Inc. and Sunbrand Corporation* v. *Devon Knitting Mills, Howard Greenfield and Carol Rosenstein.*

3,387,396, D. G. Smith, DISPLAY DEVICES, **filed** June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1073, *Lava-Simplex Internationale, Inc.* v. *Heat Tapes, Inc.* Consent decree restraining defendant; defendant's counterclaims hereby dismissed with prejudice, Nov. 25, 1969.

3,472,921. (See D. 215,478.)

3,480,210, R. P. Perrinjaquet, RACE TRACK, **filed** Nov. 26, 1969, D.C., S.D.N.Y., Doc. 69–5233, *Mattel Inc.* v. *Topper Corp.* **Same, filed** Nov. 26, 1969, D.C., S.D.N.Y., Doc. 69–5234, *Mattel Inc.* v. *Fred Bronner Corp.*

Re. 24,899. (See 2,712,507.)

Re. 25,737, Brainard, Hansen, Sedgwick, Sipek and Baechle, MACHINE TOOL WITH MECHANICAL CUTTING TOOL CHANGER, **filed** Dec. 26, 1966, D.C., E.D. Wis. (Milwaukee), Doc. 66–C–360, and 67–C–113, *Kearney & Trecker Corporation* v. *Giddings & Lewis Machine Tool Company.* Opinion, plaintiff's patent valid and defendant has infringed claims 15, 19 and 20 thereof, Nov. 13, 1969.

D. 197,836, S. B. Gross, FORCE CUP, **filed** Nov. 24, 1969, D.C. Md. (Baltimore), Doc. 21456–C, *Hancock Gross, Inc.* v. *Scully Rubber Manufacturing Co., Inc.*

D. 203,597. (See D. 203,678.)

D. 203,678, Newton and Jackson, CAMERA HOUSING FOR SURVEILLANCE SYSTEM; **D. 203,597,** same, **filed** Dec. 11, 1969, D.C., W.D. Wash. (Seattle), Doc. 8679, *Photo-Scan Corporation* v. *Foto Guard, Inc.*

D. 213,722, Earles and Blackwell, TOTE WASTE RECEPTACLE OR SIMILAR ARTICLE, **filed** Dec. 10, 1969, D.C.S.C. (Columbia), Doc. 69–1061, *E. D. Earles and Robert L. Blackwell* v. *Rubbermaid, Inc.*

D. 215,478, D. Myers, DECORATIVE LIGHT FIXTURE; **3,472,921,** P. Fyfe, METHOD OF MAKING OPTICAL FIBERS, **filed** Nov. 26, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–2376–R, *Poly-Optics, Inc.* v. *United Optical Systems, Inc. and Paul F. Fyfe.*

Reg. No. 774,455 (NARRAGANSETT), Narragansett Gymnasium Equipment Company, Basketball backstops and basketball goals (Class 22); Gymnasium seats (Class 32); **2,786,677,** Noonan and Harper, FOLDABLE BASKETBALL BACKSTOP, **filed** Nov. 25, 1969, D.C., E.D. Mo. (St. Louis), Doc. 69C–29, *Jackes-Evans Manufacturing Company* v. *Narragansett Gymnasium Equipment Corp.*

REISSUES

MARCH 3, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

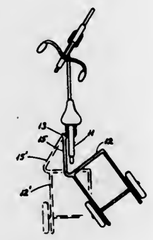
26,806
TWO-WHEELED UTILITY TRAILERS FOR CYCLES AND HITCHES THEREFOR

Russell S. Robinson, 277 Main St., Farmington, Conn. 06032

Original No. 3,347,559, dated Oct. 17, 1967, Ser. No. 434,267, Feb. 23, 1965. Application for reissue Mar. 18, 1969, Ser. No. 817,226

Int. Cl. B62k *27/02, 27/12*

U.S. Cl. 280—204 **5 Claims**



A two-wheeled utility trailer for towing behind a cycle includes a forwardly extending hitch tongue passing to one side of the rear wheel of the cycle. A quickly disconnectable and reconnectable means for connecting the hitch tongue to the cycle is located near the axle of the rear cycle wheel and provides universal movement of the hitch tongue relative to the cycle about turn, pitch and roll axes, the connecting means including two trunnions pivotally received respectively in two openings of a single block member.

26,807
COILERS

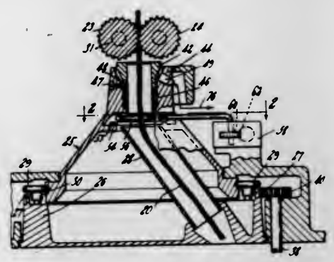
Paul B. West, Clemson, and Richard J. Savageau, Seneca, S.C., assignors to Maremont Corporation, Chicago, Ill., a corporation of Illinois

Original No. 3,334,385, dated Aug. 8, 1967, Ser. No. 400,669, Oct. 1, 1964. Application for reissue July 22, 1968, Ser. No. 753,807

Int. Cl. D01g *31/00;* **D04h** *11/00*

U.S. Cl. 19—.2 **12 Claims**

A sliver rupturing device for a textile coiler including a snubbing comb mounted adjacent the path of the sliver passing from the coiler's delivery rolls, and a laterally-movable arm for deflecting the sliver into snubbing engagement with the comb and rupturing it between the comb and the delivery rolls. The spacing of the arm from the comb and the rolls insures that the sliver break occurs at a desired location facilitating the subsequent resumption of coiling operations. Also disclosed is a stop-motion responsive to sliver chokes between the coiler's delivery rolls and tube gear.



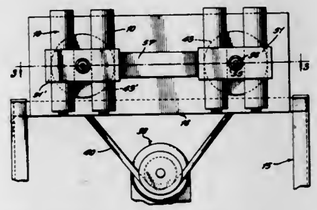
26,808
METHOD AND APPARATUS FOR MIXING AND BLENDING AN EXPLOSIVE FROM DIVERSE COMMINUTED MATERIALS

Dwight O. Corey, Memphis, Tenn., assignor to Pace Corporation, Memphis, Tenn., a corporation of Michigan

Original No. 3,331,275, dated July 18, 1967, Ser. No. 324,404, Nov. 18, 1963. Application for reissue July 18, 1968, Ser. No. 753,805

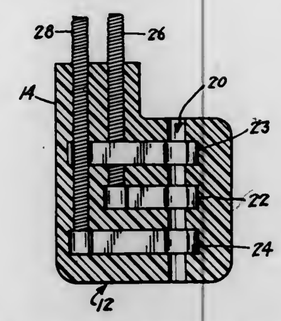
Int. Cl. F42b *33/00;* **B01f** *11/00*

U.S. Cl. 86—1 **14 Claims**



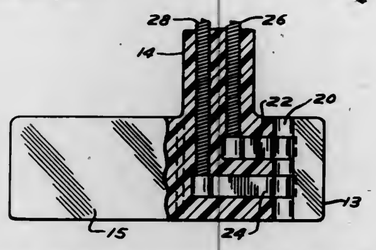
Component materials for making an explosive are deposited in a charge case which is sealed to prevent leakage of the materials and the case is then orbited while maintaining the axis of the case in a preselected attitude relative to a fixed line lying in the plane defined by the orbital movement of the axis.

26,809
IMPLANTABLE ELECTRODE
Norman R. Hagfors, Minneapolis, Minn., assignor to Medtronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Original No. 3,405,715, dated Oct. 15, 1968, Ser. No. 588,015, Oct. 20, 1966. Application for reissue Feb. 27, 1969, Ser. No. 806,751
Int. Cl. A61n *1/04*
U.S. Cl. 128—418 **12 Claims**



Electrode apparatus for stimulating an animal nerve, there being at least three electrodes, one of which is disposed between the other two, and the electrical connection being such that the two outside electrodes are in current guarding relation to the inner electrode, all to prevent stray current from stimulating adjacent nerves. The electrodes are embedded in a substance substantially inert to body fluids and tissue.

26,810
IMPLANTABLE ELECTRODE FOR NERVE STIMULATION
Seymour I. Schwartz, Rochester, N.Y., Robert C. Wingrove, Circle Pines, and James A. Anderson, Minneapolis, Minn., assignors to Medtronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Original No. 3,421,511, dated Jan. 14, 1969, Ser. No. 512,981, Dec. 10, 1965. Application for reissue Mar. 5, 1969, Ser. No. 807,460
Int. Cl. A61n *1/04*
U.S. Cl. 128—418 **4 Claims**

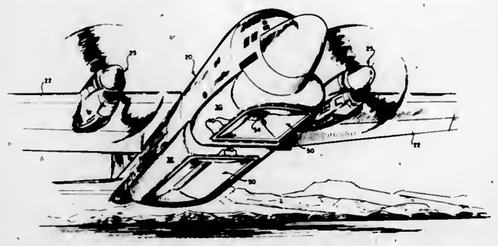


Electrode apparatus for connection to a nerve, having a pair of electrodes partially embedded within a substance inert to body fluids and tissue, the exposed portions of the electrodes lying in a groove generally conformed to the shape of the nerve for providing a traumatic egress of the nerve to the electrode, and including a further connected portion of the material inert to body food and tissue for covering the groove after the electrodes have been connected to space points on the nerve. Coiled leads are connected to the nerve, and are also encased in material inert to body foods and tissue.

26,811
BASIC, SULFURIZED PHENATES AND SALICYLATES AND METHOD FOR THEIR PREPARATION
Jerome M. Cohen, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Original No. 3,410,798, dated Nov. 12, 1968, Ser. No. 640,517, May 23, 1967, which is a continuation-in-part of application Ser. No. 481,930, Aug. 23, 1965. Application for reissue Feb. 25, 1969, Ser. No. 822,068
Int. Cl. C10m *1/42, 1/54*
U.S. Cl. 252—37.2 **40 Claims**

Basic metal salts of phenol or salicylic acid sulfides are prepared by reacting a phenol or salicylic acid, or a salt thereof, with sulfur and an alkaline earth base at a temperature of about 150–200° C., in the presence of a carboxylic acid or salt thereof and a polyalkylene glycol or alkylene or polyalkylene glycol alkyl ether. The products are useful as detergent additives for lubricants.

26,812
AIRCRAFT WITH GROUND EFFECT TYPE LANDING GEAR
Thomas Desmond Earl, Niagara-on-the-Lake, Ontario, Canada, and Wilfred James Eggington, Claremont, Calif., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Original No. 3,275,270, dated Sept. 27, 1966, Ser. No. 440,437, Mar. 17, 1965. Application for reissue July 1, 1968, Ser. No. 746,217
Int. Cl. B60v *3/08*
U.S. Cl. 244—101 **21 Claims**



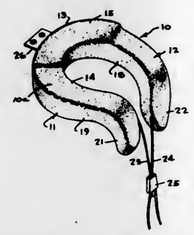
The fuselage of an aircraft is provided with an air-inflatable elastic cell structure which is normally retracted into a position in which it is compatible with the aerodynamic shape of the fuselage. When inflated, the cell structure balloons downwardly to provide and define an air cushion space laterally bounded by the inflated cell structure. The cell structure is provided with air outlet openings around its bottom contour to permit air to blast downwardly and feed the air cushion space for supporting the aircraft during take-off and landing.

PATENTS

GRANTED MARCH 3, 1970

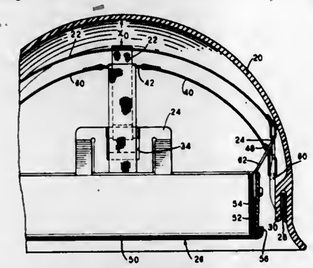
GENERAL AND MECHANICAL

3,497,872
NECK PROTECTOR
Richard Travis Mitchell, 223 E. Main, Price, Utah 84501
Filed Aug. 2, 1968, Ser. No. 749,826
Int. Cl. A41d *13/00*
U.S. Cl. 2—2 **6 Claims**



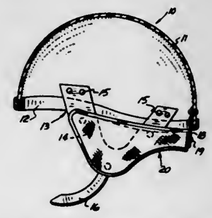
A neck protector for a user wearing a helmet having a bottom edge, generally comprising a substantially U-shaped member adapted to straddle the user's neck including a pair of leg sections engageable with the upper portions of the user's shoulders adjacent the user's neck and an intermediate section disposable adjacent the back of the user's neck, the member having a length sufficient to permit the rearward portion thereof to project rearwardly from the user's shoulders when the protector is being worn and the forward portions of the leg sections being curved forwardly and downwardly whereby the forward ends of the leg sections are engageable with the upper chest portion of the user when the member is being worn and the leg sections are resting on the user's shoulders.

3,497,873
TWO-LEVEL SUSPENSION IN A SAFETY HAT
Charles E. Benner, Grosse Pointe Woods, Mich., assignor to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York
Filed May 9, 1968, Ser. No. 728,022
Int. Cl. A42b *1/08*
U.S. Cl. 2—3 **5 Claims**



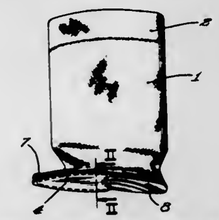
One level of suspension functions to adjust the position and fit of the hat without changing or interfering with the operating conditions of the other level of suspension, the function of which latter is to maintain a safe clearance space between the head and the inner surface of the hard shell of the hat to protect the head from impact. Under impact, the head fitting and hat positioning level of suspension is designed to fail under a relatively minor force before the full force of the impact can be transmitted from the impacting object to the hard shell. Thereupon, the impact-absorbing level of suspension functions alone to absorb the bulk of the energy of impact. The weaker level of suspension may comprise fragile or brittle material designed to break under the minor force or to elongate easily or otherwise quickly and effectively to remove itself from action under the impact. However, this material is made strong enough to perform its function properly and may be composed of plastic or other material selected for special properties such as ease of cleaning.

3,497,874
SAFETY HELMET REMOVABLE EAR PROTECTOR
Stephen J. Molitoris, Ann Arbor, Mich., assignor to American Safety Equipment Corporation, Oak Park, Mich.
Filed July 24, 1968, Ser. No. 747,290
Int. Cl. A42b *3/00*
U.S. Cl. 2—3 **3 Claims**



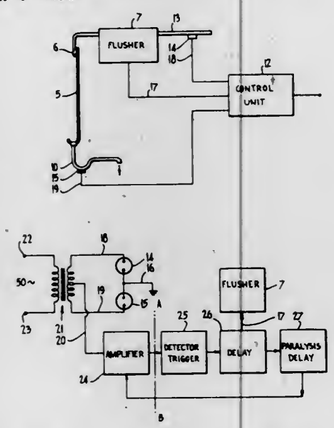
An ear protector, for removably fastening to the harness of a safety helmet, formed of a pair of roughly triangular shaped portions integrally connected by a neck covering strip portion, the protector being made of an outer, thin, plastic sheet, a central thick, foam, plastic layer and an inner, soft plastic yarn fabric, all bonded together along their peripheral edges by a heat sealed continuous border, with the border edge of the foam plastic layer tightly compressed between the border edges of the sheet and fabric, to thereby resist twisting and to maintain the protector in a normally flat position.

3,497,875
BOOTEE FOR HARD CASTS
Melberta Ann Rivera, Chicago, Ill., assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed June 24, 1968, Ser. No. 739,428
Int. Cl. A41b *11/00;* **A43b** *3/18, 1/02*
U.S. Cl. 2—239 **5 Claims**



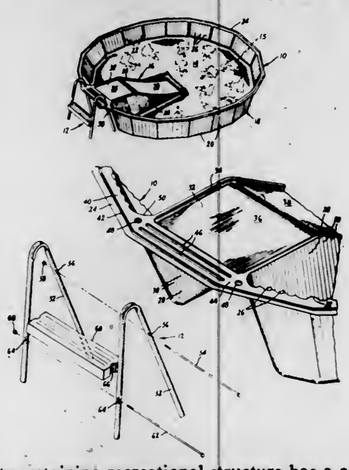
A bootee to cover a hard cast, such as a plaster of Paris cast applied to the limb of a wearer to remain in place for a period of time, the bootee keeping warm any digits that may project from the cast, and being particularly desirable for a walking cast.

3,497,876
URINAL FLUSHING CONTROL SYSTEM
Charles Edward Williams, 18 Orchard Crescent, Box Hill North, Victoria, Australia
Filed Feb. 16, 1967, Ser. No. 616,658
Claims priority, application Australia, Feb. 23, 1966, 2,048/66
Int. Cl. E04d *13/00*; G05b *5/00*
U.S. Cl. 4—100 5 Claims



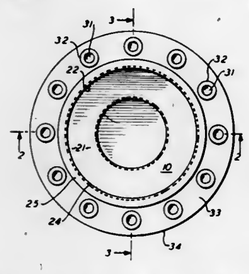
Urinal flushing control circuit whereby flushing is effected when a predetermined urinal effluent impurity content is reached by means of detection electrodes located in contact with the flushing water and the effluent, which electrodes are connected in a balanced circuit to measure the relative conductivities of the flushing water and the urinal effluent, the circuit producing a difference comparison control signal which is fed through trigger, period, and interval timing networks to control the flushing.

3,497,877
POOL WITH INTEGRAL SLIDE
Joseph Diemond, Simsbury, and Leonard E. Greenberg, West Hartford, Conn., assignors to Coleco Industries, Inc., Hartford, Conn., a corporation of Connecticut
Filed Apr. 29, 1969, Ser. No. 828,065
Int. Cl. E04h *3/16*
U.S. Cl. 4—172 11 Claims



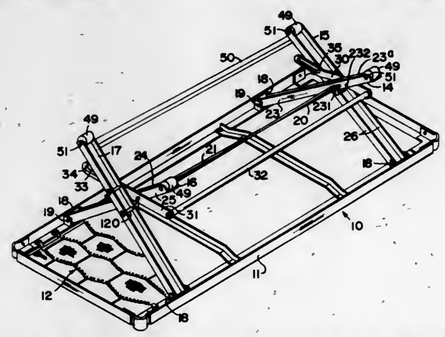
A water-retaining recreational structure has a container member integrally formed from synthetic plastic material with a slide portion extending between the sidewall and the bottom wall thereof. A peripheral flange extends outwardly about the container member and the slide portion includes a pair of side walls and a top wall providing a hollow structure. The structure may also include a ladder member which can serve to reinforce the slide portion.

3,497,878
BATHTUB WATER REGULATOR
William M. Emery, 44 Pittsford Way, New Providence, N.J.
Filed Oct. 19, 1967, Ser. No. 676,396
Int. Cl. E03c *1/244*
U.S. Cl. 4—206 5 Claims



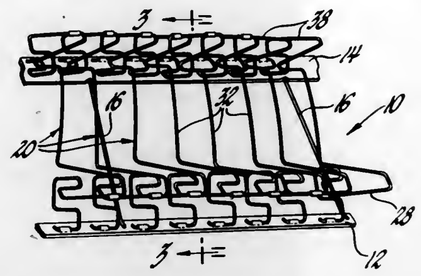
A one-piece cup or hat-like device sealable against non-flat surfaces found adjacent to conventional over-flow bathtub controls and over-flow openings, capable of adjusting the maximum water height in the tub by bodily rotation having sealing means including an outwardly extending concentric seal located at the juncture of the concentric wall of the cup and a rim extending therefrom and responsive to water pressure thereagainst while the device is in a substantially vertical position.

3,497,879
SELF-RISE BED
John T. Venaleck, Mentor, Ohio, assignor to Russo Industries, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed July 8, 1968, Ser. No. 743,202
Int. Cl. A47c *19/12*
U.S. Cl. 5—110 10 Claims



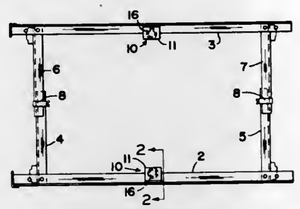
This bed includes a bedframe having a pair of transversely extending support legs pivotally secured to the bedframe adjacent each end thereof. A pair of torsion bars operatively engage one support leg of each pair and extend longitudinally of the bed to be journalled in a support leg at the other end of the bed and engage the other and adjacent support leg by a crank arm section formed on the torsion bar whereby when the support legs are moved to collapsed positon, a torsion is set up in the torsion bars to provide a self-rising action in the bed, while maintaining the bedframe substantially parallel to the floor. Lock means are provided to secure the support legs in collapsed or extended positions.

3,497,880
SPRING ASSEMBLY
Ernst G. Ott, Essex, England, assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed June 9, 1967, Ser. No. 644,934
Int. Cl. A47c *23/12, 23/00*
U.S. Cl. 5—247 12 Claims



A furniture spring assembly including a pair of first and second spaced frame members interconnected by a plurality of spring members. Each spring member includes an offset portion disposed in overlapping relationship with an adjacent spring member and a clip secures the overlapping portions of adjacent spring members together, thereby eliminating the necessity for a border wire.

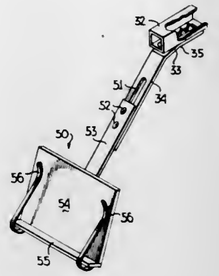
3,497,881
AUXILIARY LEG AND BRACKET ASSEMBLY FOR BEDFRAMES
Norman A. Price, Shaker Heights, Ohio, assignor to Rusco Industries, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed Dec. 11, 1967, Ser. No. 696,676
Int. Cl. A47c *23/06*
U.S. Cl. 5—310 4 Claims



An angle bracket is provided as a support for a bedframe having a metal angle support rail therein and which angle bracket has a vertical leg and a horizontal leg with the horizontal leg being of substantially flattened U-shape and having an open end adjacent the plane of the vertical leg, which flattened horizontal angle bracket leg is adapted to engage with the horizontal leg of the metal angle rail. A support means is secured to the lower portion of the horizontal leg of the angle bracket and extends downwardly therefrom for support action for the angle bracket and any means engaged thereby.

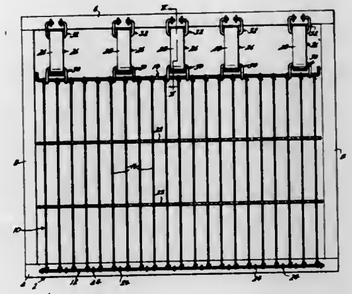
3,497,882
SUPPORT MECHANISM FOR SUPPORTING VARIOUS DEVICES TO BE EMPLOYED IN COOPERATION WITH A HOSPITAL BED
James F. Weeks, P.O. Box 5354, Macon, Ga. 31208
Filed Aug. 23, 1967, Ser. No. 662,792
Int. Cl. A47b *23/00*
U.S. Cl. 5—332 14 Claims

Disclosed herein is a support mechanism to be attached to a bed including a frame and a support member disposed above the bed. A slidable sleeve is disposed upon the support member, an arm is pivotally mounted upon the sleeve and such arm includes locking provisions for locking the sleeve and arm at a fixed position along the member.



The supporting device is disclosed as including either a pivotal reading table or a handgrip.

3,497,883
UPHOLSTERY DECK SUSPENDER
Harmon W. Arnold and John G. Platt, Carthage, and Robert O. Isaacs, Joplin, Mo., assignors to Flex-O-Lators, Inc., Carthage, Mo., a corporation of Missouri
Filed Dec. 27, 1967, Ser. No. 693,848
Int. Cl. A47c *23/18*
U.S. Cl. 5—354 4 Claims



An upholstery deck suspender adapted to support a planar or planar-surfaced upholstery padding deck resiliently in a rigid furniture frame, said suspender comprising a flattened, elongated rubber loop adapted to extend longitudinally of itself between contiguous but spaced apart edges of said frame and said deck, and a pair of U-shaped wire hangers engaged pivotally in respectively opposite ends of said loop and adapted to be secured respectively to said frame and said deck.

3,497,884
AUTOMATIC WATER LEVEL CONTROL
Oscar A. W. Tichy, St. Joseph, and John A. Lauck, Stevensville, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Feb. 6, 1968, Ser. No. 703,434
Int. Cl. D06f *31/02*
U.S. Cl. 8—158 22 Claims

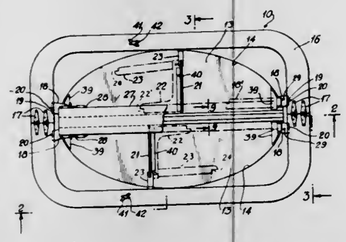
Automatic washers for clothing and other articles are customarily driven by a prime mover such as an electric motor operating through a drive train. The torque which

must be transmitted through the drive train to drive the agitator is dependent upon the water level in the washer and the size of the load being laundered. The present in-



vention senses the restraining torque exerted on the agitator and controls the water level in the washer in response to the torque detected.

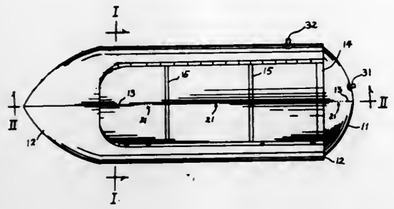
3,497,885
FOLDABLE DINGHY
Roger A. Scholle, 8 White Birch Lane, Scarsdale, N.Y. 10585
Filed Nov. 7, 1968, Ser. No. 774,041
Int. Cl. B63b *7/06*
U.S. Cl. 9—2 **16 Claims**



A foldable dinghy comprising a keel member having rigid bottom panels hingedly mounted longitudinally thereof said bottom panels being peripherally joined through flexible sidewall material to a longitudinally hinged gunwale section adapted when folded to rest upon protruding ends of said keel member, each of said bottom panels hingedly supporting brace members at opposed ends thereof interfitting with said gunwale section to support the same in spaced relation to said bottom panels and further hingedly supporting intermediate said ends a combination seat brace and side gunwale brace supported in operative position by interlocking engagement with the side gunwale, an elongated seat member adapted to overlie said keel member supported by said seat braces and interlocking engagement with said end braces, said flexible sidewall material having pleated portions adjacent the hinges of said gunwale section facilitating the folding thereof, and being of such dimensions as to dispose said bottom panels in a predetermined aligned to slight downwardly angled position with respect to said keel member when the sidewall material is fully tensioned by said side gunwale braces.

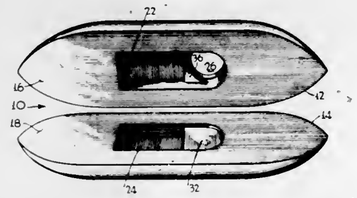
3,497,886
MOLD HULL STRUCTURE AND DEVICE OF MAKING SAME
Thomas Clarence Burnett, Hawkesbury, Ontario (R.R. 3, Peterborough, Ontario, Canada), and Martin Ming Yang Chang, 485 Allan St., Hawkesbury, Ontario, Canada
Filed Oct. 4, 1967, Ser. No. 674,379
Int. Cl. B63b *7/08*
U.S. Cl. 9—6 **15 Claims**

This invention relates to a method of molding plastic boat hull structure whereby said hull structure is molded with a flexible and pneumatically inflatable molding complex. This molding complex consists of a pair of parallel impermeable and substantially inextensible membranes, said parallel relationship being maintained during inflation by means of virtually inextensible yarns attached between membranes. The volume so defined is the molding space into which a curable plastic resin is introduced. Further to this molding space, the complex has another membrane system formed by extending the



inner membrane into a closed volume defining an inflation chamber which is to be filled with air to impart to the complex the necessary shape and structural rigidity required for the molding process. This closed portion of membrane is removed after the plastic has cured leaving the remainder of the parallel membranes and the yarns intimately bonded to the solid plastic.

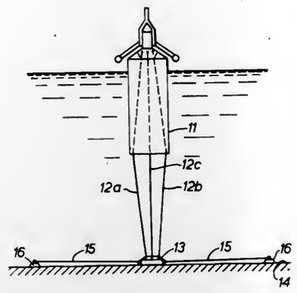
3,497,887
LIGHTWEIGHT UNSINKABLE BOAT
Raymond E. Bureau, Jr., Kulp Road, Perkiemenville, Pa. 18074
Filed Aug. 28, 1968, Ser. No. 755,864
Int. Cl. B63b *3/00, 43/10*
U.S. Cl. 9—6 **1 Claim**



A small lightweight portable boat includes top and bottom halves each having a cavity therein. An opening extends through the top half. The two halves are suitably joined together with the cavities of the two halves being aligned with respect to each other to provide an open compartment within the boat.

3,497,888
BUOYS
John William Ross, New Malden, and Kenneth William Hopkins, Long Ditton, England, assignors to BP Tanker Company Limited, London, England, a British joint-stock corporation
Continuation of application Ser. No. 514,748, Nov. 22, 1965, which is a continuation of application Ser. No. 353,332, Mar. 20, 1964. This application Oct. 11, 1968, Ser. No. 768,215
Int. Cl. B63b *21/52*
U.S. Cl. 9—8 **6 Claims**

A terminal for the mooring of sea-going vessels in which at least a major portion of the buoyancy chamber is continuously submerged. The mooring cables are continuous, passing from the buoyancy chamber to a single point mooring member anchored at the sea bed, and are of a length so as to moor the buoyancy chamber in the



submerged position, so that tension is continuously maintained on the mooring cables.

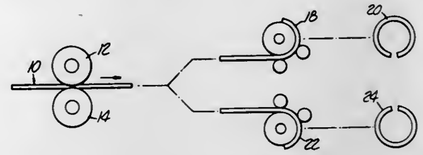
3,497,889
INFLATABLE LIFE PRESERVER
John J. Mellin, Jr., Woodbury Heights, Jonathan Harding, Camden, and William T. Schrandt, Verga, N.J., and Carmela M. Filippino, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 21, 1968, Ser. No. 714,824
Int. Cl. B63c *9/16*
U.S. Cl. 9—340 **2 Claims**

A life preserver having a pair of separate independently inflatable flotation compartments consisting of a collar lobe and two interconnected body lobes. In its deflated condition the preserver is enclosed in a T-shaped supporting cover to form a single integrated unit which is worn around the waist, up the back and which substantially encircles the neck to provide complete unencumbered operational movement for the wearer.

3,497,890
FASTENER AND METHOD OF MAKING THE SAME
Jan R. Coyle, San Dimas, Calif., assignor to Threadline Fastener Corporation, Covina, Calif., a corporation of California
Filed Aug. 31, 1967, Ser. No. 664,804
Int. Cl. F16b *37/12, 39/284;* **B21d** *53/24*
U.S. Cl. 10—86 **11 Claims**

A strip of sheet material is embossed with ribs of the character of screw threads on both of its faces and then the strip is rolled to form a longitudinally split tubular insert for use to retain a screw member in a threaded

bore of a workpiece. Self-locking action may be accomplished in various ways as follows: the insert may be noncircular for binding action on the walls of the bore; one of the two confronting ends of the tubular insert may be offset inwardly to resist relative rotation between the insert and the enclosed screw member; one of the confronting ends of the tubular insert may be offset outwardly to resist relative rotation between the insert member and the bore in which it is mounted; the tubular insert may be distorted slightly vertically for misalignment of the turns of either or both the internal and external screw threads at the confronting edges of the split insert; with the insert of normal configuration, one of the internal and external screw threads may be positioned for misalignment at the longitudinal split of the insert; with



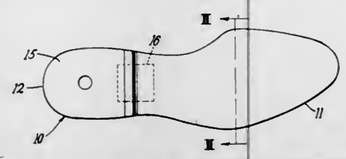
the turns of a screw thread of the insert misaligned at the confronting edges of the insert, at least a portion of the longitudinal split of the insert may be inclined relative to the axis of the insert in a direction for interference between the confronting edges when restoring the alignment tends to move the confronting edges relative to each other, the result being a self-locking action; and, with the turns of one of the screw threads misaligned at the longitudinal split of the insert the confronting edges of the insert along the longitudinal split may be shaped and dimensioned to interlock to oppose the relative longitudinal movement of the two edges that is required for alignment of the misaligned turns thereby to provide self-locking action when the insert is placed into service.

3,497,891
BOOT CARRIER
Reinhold Vöster, Stuttgart, and Erhard Marek, Gerlingen, Germany, assignors to Vereinigte Baubeschlagfabriken Gretsch & Co., G.m.b.H., Leonberg, near Stuttgart, Germany
Filed Feb. 2, 1968, Ser. No. 702,680
Claims priority, application Germany, Feb. 3, 1967, V 32,903
Int. Cl. A43b *5/16*
U.S. Cl. 12—120.5 **20 Claims**



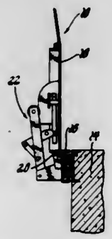
A framelike clamping device requiring very little space for straightening the soles of a pair of boots, for carrying the boots and for exhibiting and storing them in either of two different positions.

3,497,892
CONTOURED INSOLES
Benjamin F. Parrelli, Beverly, Mass., assignor to USM Corporation, Boston, Mass., a corporation of New Jersey
Filed June 3, 1968, Ser. No. 734,168
Int. Cl. A43d 3/00
U.S. Cl. 12—133 8 Claims



An insole shaped insert used with a conventional last during a lasting operation, and a method of making a shoe using such an insert. The insert has a surface contoured for mating engagement with the sole surface of a last and an opposite surface contoured to conform to the bottom surface of the insole to be inserted in the finished shoe.

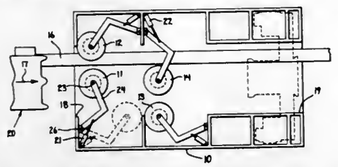
3,497,893
DOCKBOARD ASSEMBLY
Robert C. Beckwith, Milwaukee, Wis., and Robert W. Hecker, Jr., Clare, Mich., assignors to Loomis Machine Company, Clare, Mich., a corporation of Michigan
Filed Oct. 10, 1967, Ser. No. 674,240
Int. Cl. B65g 11/12; E01d 15/04
U.S. Cl. 14—71 13 Claims



A dockboard assembly including a support structure with a generally C-shaped channel member supported by the support structure through a plurality of rollers with a ramp means operatively supported by the channel member whereby the ramp means may be moved horizontally by moving the channel member horizontally along the support structure. A brake block is supported by the channel member and is normally spaced from the support structure but engages the support structure when the ramp means is in the substantially horizontal position to prevent the channel member from moving horizontally relative to the support structure.

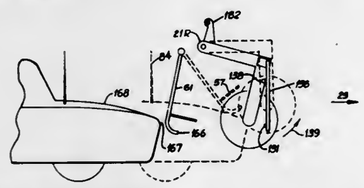
3,497,894
VEHICLE CLEANING BRUSH DRIVE SYSTEM
Dale R. Oldham, Phoenix, Ariz., assignor to Earl Dallas Smith, Phoenix, Ariz.
Continuation-in-part of application Ser. No. 663,874, Aug. 28, 1967. This application Feb. 20, 1968, Ser. No. 706,828
Int. Cl. B60s 3/00
U.S. Cl. 15—21 8 Claims

A hydraulic motor driven vehicle body cleaning brush normally disposed in the path of the vehicle and movable thereby in a horizontal arc about a vertical pivot to follow the contour of the vehicle as it is moved along the ground. An actuator responsive to pressures in the motor supply line at a certain brush load level to trigger a series of valve events reversing the hydraulic motor and thereby reversing the direction of brush rotation. A timing device operative following initiation of the valve events to enable return of the flow direction valve to initial condition, again reversing the hydraulic motor to return



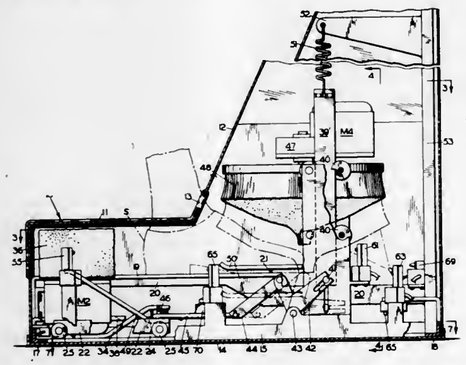
the brush rotation to its initial direction. An alternate construction employs a jointed arm assembly of configuration alterable by brush loading beyond a certain level to trigger the brush reversal.

3,497,895
VEHICLE CLEANING BRUSH SHIFTABLE FOR ANTENNA CLEARANCE
Dale R. Oldham and John K. Bunch, Phoenix, Ariz., assignors to Earl Dallas Smith, Phoenix, Ariz.
Filed Feb. 6, 1968, Ser. No. 703,404
Int. Cl. B60s 3/06
U.S. Cl. 15—21 13 Claims



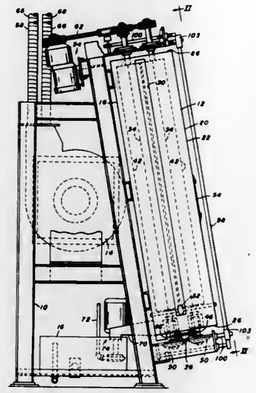
A vehicle top cleaning brush axially shiftable on signal from a sensor engageable by the vehicle antenna for clearance thereof by the brush which continues to operate during passage of the antenna thereby. An additional sensor to return the brush after passage thereof by the antenna. Duplicate sensors on both sides of center of the vehicle path for appropriate brush control regardless of which side the antenna is located. Combination balance and lift cylinder for control of brush load against the vehicle and brush lifting by remote manual control.

3,497,896
COIN-CONTROLLED AUTOMATIC SHOE CLEANING AND POLISHING DEVICE
Walter L. Richardson, Forest Grove, Oreg.
Filed Mar. 6, 1968, Ser. No. 710,911
Int. Cl. A47l 23/02
U.S. Cl. 15—32 8 Claims



An electrically-operated and coin-controlled machine in which a pair of rotating brushes move forward and back over both sides of the shoe, first performing a shoe cleaning operation and then a polish-applying and polishing operation, and in which a larger rotating brush, positioned above the toe portion of the shoe, cooperates in the cleaning and polishing of the toe portion, while the shoe remains stationary in the machine.

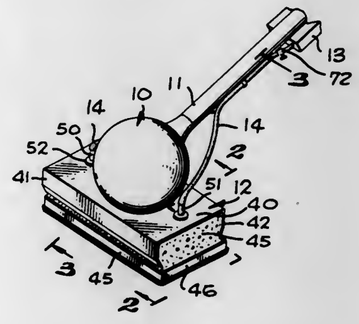
3,497,897
VERTICAL GLASS WASHER
Robert L. Wehr, Butler, Pa., assignor to Billco, Zelienople, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1968, Ser. No. 711,620
Int. Cl. A47l 15/42; F16j 15/48
U.S. Cl. 15—77 8 Claims



A vertical flat glass washer having an enclosed wash chamber with brush and pinch roll means mounted in the chamber. The brush and roll shafts pass through shaft openings in the bottom wall of the wash chamber and are journaled in bearing assemblies mounted exteriorly of the wash chamber. Sealing assemblies are provided for preventing leakage of liquid from the chamber into the bearing assemblies. The pinch rolls are mounted for self adjustment to permit the passage of various gauges of glass through the wash chamber.

3,497,898
FABRIC CLEANING DEVICE
Harold T. Sawyer, Los Angeles, Calif., assignor of seventeen and one-half percent to Vernon D. Beehler, and eighty-two and one-half percent to Harold T. Sawyer, both of Los Angeles, Calif.
Continuation-in-part of applications Ser. No. 480,310, Aug. 17, 1965, and Ser. No. 631,736, Apr. 18, 1967. This application May 29, 1967, Ser. No. 642,077
Int. Cl. B08b 7/00; A47l 11/00; D06f 95/00
U.S. Cl. 15—98 6 Claims

The invention relates to cleaning devices especially advantageous fabrics, textiles, rugs, carpets, upholstery, and the like, by employment of sonic energy in the low sonic range. In the embodiment illustrated, there is a spherical shell of relatively stiff resilient consistency which is very thin walled, light in weight and which is designed to vibrate at or near its own natural frequency. A source of energy here taking the form of an electric motor is mounted in the chamber within the shell. One end of the motor shaft is supported by an eccentric which revolves within a bearing connection installed in a supporting pedestal which is attached at one location only to the shell, namely in a line radial with respect to the direction of rotational motion of the motor. The motor casing at the opposite end is attached to a resilient isolation mount installed within a boss extending outwardly from the shell in line with the motor axis. A manipulating handle is resiliently attached to the boss. A tool holder is attached to the shell at one attachment location only of the supporting pedestal and the shell. The tool holder is designed as a plate beam and to vibrate at or near its own natural frequency which is in phase with the rotational action of the motor assembly. The tool has a perforated work contacting face behind which is a shallow accumulator chamber backed by an imperforate plate, the whole capable of being vibrated at a frequency approaching resonance. The work plate and the imperforate plate are constructed of thin wall, stiff resilient material capable of being vibrated at or near its own natural frequency. Behind the imperforate plate and making up the balance of the tool is a mass of material of such character that it may approach resonance, such for example as industrial urethane foam, the whole being attached to the tool holder plate beam in such manner that it will be free to vibrate at or near its natural frequency and in phase with the spherical shell and plate beam tool holder.

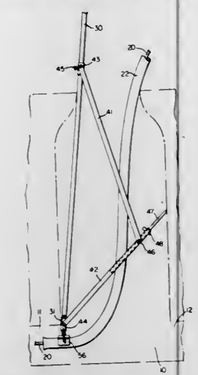


Cleaning fluid is introduced into the accumulator chamber through an appropriate feed line and there set in cavitation by sound wave energy set up by sinusoidal force action of the revolving motor mass through the shell and plate beam tool holder. The cleaning fluid then passes outwardly to the fabric through the perforated work contacting plate in a foamed condition within which cavitation is taking place and at which point the fibers of the fabric being substantially vertical individual cantilever beams, in many instances of use, are subsequently vibrated and cleaned by the cavitation action created by the compressional sound wave energy produced and transmitted by the cleaning device. The cavitation cleaning action is unique in that each individual fiber as a cantilever beam is surrounded by the cavitation action in the foam, separated one from another, prevented from tangling, individually cleaned and realigned. Cavitation is known in the art as having its most intense and efficient cleaning action at the lower sonic frequency range.

3,497,899
MANHOLE BRACE FOR SEWER ROD GUIDE TUBE
Charles B. Caperton, Montgomery Court Apts., Narberth, Pa. 19072
Continuation-in-part of application Ser. No. 689,920, Dec. 12, 1967. This application Mar. 13, 1969, Ser. No. 807,034
Int. Cl. B08b 9/06
U.S. Cl. 15—104.3 3 Claims

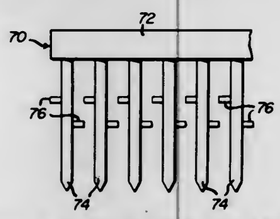
A clamp and brace assembly is provided for use in manholes for holding the sewer rod flexible guide tube stationary against reaction forces which are set up when the forwardly driven sewer rod encounters an obstruction. The assembly comprises an elongated pole having a clamp at the bottom adapted to be tightened about the

guide tube by rotation of the pole. A brace, having upper and lower legs connected together at a hinge joint, is secured to the pole. The lower leg of the brace is adjustably extendible to accommodate to different widths of manholes. When the upper end of the upper leg of the



brace is pushed slidingly downward on the pole, the hinge moves away from the pole toward a wall of the manhole. When the end of the extended lower leg abuts against the manhole wall, the clamp and brace assembly is wedged against dislodgement.

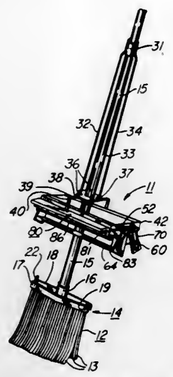
3,497,900
APPLICATOR
Louis F. Kutik, 5601 SW. 56th St., and Erich W. Gronemeyer, 3430 Galt Ocean Drive, Commodore Apt. 1401, both of Fort Lauderdale, Fla. 33308
Filed June 7, 1967, Ser. No. 644,143
Int. Cl. A46b *11/00;* **B08b** *1/00*
U.S. Cl. 15—104.93 **9 Claims**



An applicator is provided which may be pre-loaded with material such as soap, paint, cosmetics, medications or the like at the manufacturing stage, and later used to apply the pre-loaded material to an object. The applicator is in the form of a brush having bristles extending from a holder or backing element, and the bristles have protrusions projecting laterally therefrom, which serve to hold flowable material in the brush when such material is applied to the brush. The lateral protrusions may extend between adjacent bristles and join those bristles together, or the protrusions may project laterally from the bristles and terminate in free ends.

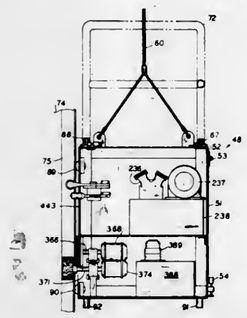
3,497,901
MOP AND WRINGER ASSEMBLY
Sam W. Shipp, 8609 May St., Chicago, Ill. 60620
Filed Aug. 23, 1968, Ser. No. 754,918
Int. Cl. A47z *13/20, 13/60*
U.S. Cl. 15—119 **10 Claims**

A mop and wringer assembly combination in which the wringer assembly is mounted upon and axially slideable relative to the mop staff and comprises a pair of spring-biased gear-driven rollers, each being arcuately adjustable relative to the other and lockable in a position to coact with a wet mop head interposed therebetween to express unwanted liquid therefrom, the mop head including



a plurality of strands and means for holding said strands relative to the mop staff.

3,497,902
BUILDING CLEANING APPARATUS
John Hartigan, 931 Faile St., Bronx, N.Y. 10459
Filed Oct. 4, 1968, Ser. No. 765,188
Int. Cl. A47l *1/02*
U.S. Cl. 15—302 **21 Claims**

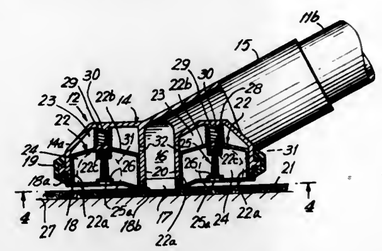


An apparatus capable of being raised and lowered alongside a building and with no personnel aboard effecting all necessary operations on the building to clean either or both the opaque and the window surfaces thereof. The apparatus includes positioning and clamping means for effecting its spaced relation to a building; a washing liquid spray system; transversely reciprocable brushes to operate on normal outwardly facing building surfaces and rotary brushes to operate on external building beams; an air blast system to remove liquid and loose soil from window sills and closely adjacent glass areas, and a sponge and squeegee system operable upon window glass areas for soil and liquid removal.

3,497,903
SELF-ADJUSTING MULTIPURPOSE NOZZLE
Kurt Alvar Jonsson, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 22, 1967, Ser. No. 684,975
Claims priority, application Sweden, Nov. 28, 1966, 16,274/66
Int. Cl. A47z *7/00*
U.S. Cl. 15—319 **9 Claims**

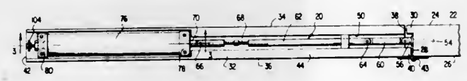
A multipurpose nozzle including a hollow body having at least one brush to provide one operating surface which

can perform a first specific type of cleaning like a floor, for example, and a suction inlet opening about which another operating surface is provided to perform a



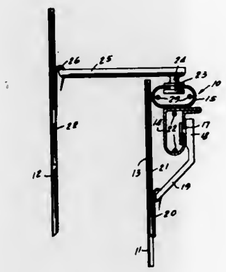
second specific type of cleaning like a carpet, for example. The hollow body provides a path of flow for air leading from the suction inlet opening to an air outlet socket connected to a suction cleaner.

3,497,904
DOOR REGULATING DEVICES
Jose L. Merayo, Ayala 10, Madrid, Spain
Filed Dec. 29, 1966, Ser. No. 605,803
Claims priority, application Spain, Dec. 30, 1965, 321,361; June 7, 1966, 327,654; July 6, 1966, 328,786
Int. Cl. E05f *3/10*
U.S. Cl. 16—52 **1 Claim**



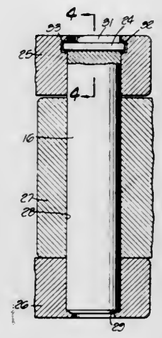
Door closing and position regulating devices having articulated bar means connected to a piston within a dual, fluid containing chamber, and having means for changeably controlling the fluid pressure, the devices being substantially concealed within the door.

3,497,905
COMBINATION DRAPERY SUPPORT
August S. Pflum, 3528 W. 59th St., Chicago, Ill. 60629
Filed Dec. 11, 1967, Ser. No. 689,492
Int. Cl. A47h *1/06, 13/12*
U.S. Cl. 16—87.2 **8 Claims**



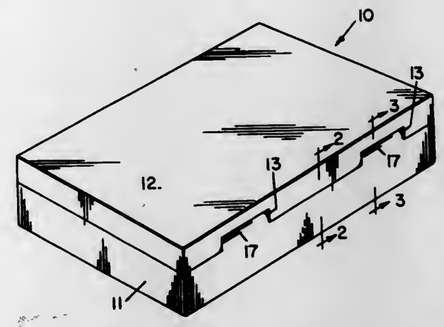
A combination drapery supporting rod has functionally integral tracks for under drape slides and over drape slides, with the combination rod concealed by the under drape heading and the over drape slides overriding the top edge of the heading.

3,497,906
HINGE PIN RETAINER
Edward J. McFadden, Houston, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of California
Filed July 10, 1968, Ser. No. 743,804
Int. Cl. E05d *5/12;* **F16c** *11/00*
U.S. Cl. 16—169 **5 Claims**



A retainer for a hinge pin for a hinged device such as a center latch or gate-type elevator, wherein a lock-bar greater in length than the diameter of the pin is positioned chord-like in a slot across the end of the hinge pin, with the lock-bar extending into recesses located on opposite sides of the hinge pin bore and extending radially outward from such bore; also, a method of forming such retainer by placing the ends of a bent lock-bar adjacent to such recesses and straightening the lock-bar to cause the ends thereof to enter such recesses.

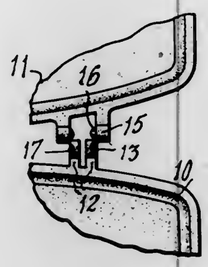
3,497,907
SNAP-FITTED HINGE ASSEMBLY
Alberto O. Colina, Golf 151, Mexico City 21, Mexico
Filed July 26, 1967, Ser. No. 656,105
Int. Cl. E05d *7/10*
U.S. Cl. 16—171 **1 Claim**



A hinge member provided with recesses having surfaces perpendicular to the hinge axis equipped with detents, and a second hinge member having projections extending into the recesses and formed with depressions in which the detents are seated. The material of the hinge members

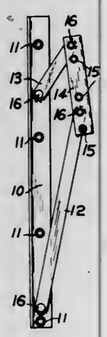
has sufficient yieldability to permit the detents to be snap-fitted into the depressions during assembly of the hinge.

3,497,908
SNAP CONNECTION HINGE
Paul A. Zamarra, Lake Road, Far Hills, N.J. 07931
Filed Feb. 16, 1968, Ser. No. 706,076
Int. Cl. E05d 1/06
U.S. Cl. 16—171 3 Claims



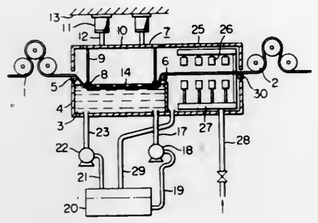
Interfoliated members of a hinge are maintained in tight but not stiff pivotal connection by spring bias resulting from the snap action seating of a pivot element in a socket that is constituted, in part, by a resilient detent which is displaced by the pivot element as it enters the socket and which thereafter remains under tension in pressure contact with a portion of the pivot element and holds it in the socket.

3,497,909
WINDOW OR THE LIKE STAYS
Ronald P. Davis, Seatoun, Wellington, New Zealand, assignor to Interlock Industries Limited, Seatoun, Wellington, New Zealand
Filed July 10, 1967, Ser. No. 652,233
Int. Cl. E05d 13/10, 15/40
U.S. Cl. 16—193 3 Claims



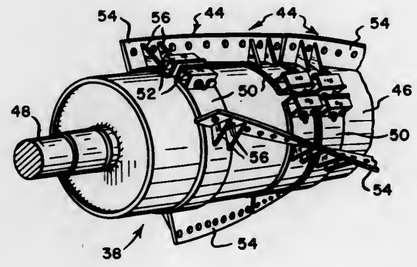
An improved window or the like stay comprising a first plate adapted for attaching to a frame of a window, two arms of different lengths each pivoted at one end to the first plate and a second plate pivoted to the other end of each arm, this second plate being adapted for attaching to a sash of the window and self-lubricating plastics bushings are located at pivot points of the arms, each pivot point being recessed in a housing in the particular arm so that increased pressure effects sufficient friction to hold the window at any desired position.

3,497,910
APPARATUS FOR THE DRAWING OF SYNTHETIC FIBER TOWS
Katsunosuke Maeda, Akihiro Shinkai, Masumi Fujiura, and Hiroyuki Watanabe, Mishima-shi, and Yoshio Kagiya, Sunto-gun, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Aug. 7, 1967, Ser. No. 658,746
Claims priority, application Japan, Aug. 13, 1966, 41/53,089; Oct. 8, 1966, 41/66,041; Oct. 14, 1966, 41/67,222
Int. Cl. B29c 17/02
U.S. Cl. 18—1 7 Claims



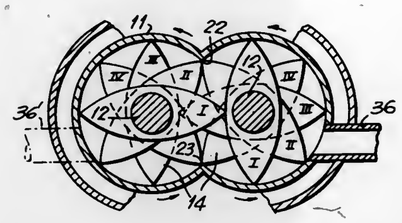
Apparatus for drawing undrawn tows in which dipping pieces movable up and down to the surface of a liquid of a hot bath are provided to immerse the tow in the hot liquid during the drawing operation, and to position it above the hot liquid when the apparatus is inoperative.

3,497,911
BALLING DRUM AND ROTARY WALL TRIMMER THEREFOR
Kenneth M. Dickie, Bloomsburg, Pa., assignor to Kennedy Van Saun Corporation, Danville, Pa., a corporation of Delaware
Filed Mar. 6, 1968, Ser. No. 711,051
Int. Cl. B29b 1/02
U.S. Cl. 18—1 6 Claims



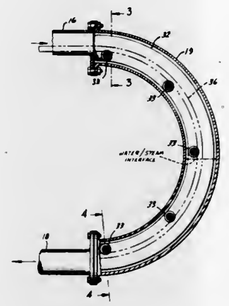
A rotatable balling drum for pelletizing finely-divided solid materials such as ores and other fines, including a rotatable balling drum provided with a rotatable helical vane type trimmer or scraper bar on the interior of the drum, wherein the bar comprises a rotatable shaft carrying a series of similar trimmer or scraper units each removably attached to the shaft and each comprising a pair of spaced clamping bands carrying a plurality of helical scraper vane segments. When the series of units are assembled on the shaft, the vane segments of one unit constitute continuations of the respective vane segments of an adjacent unit on the shaft, thereby providing helical vanes extending along the effective trimming length of the shaft.

3,497,912
APPARATUS FOR CONTINUOUS MIXING OF SOLID AND LIQUID MATERIAL AND EXTRUSION OF THE MIXTURE
Charles Frederick Fischer, Jersey City, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,803
Int. Cl. B29f 3/02
U.S. Cl. 18—2 7 Claims



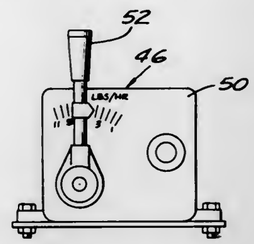
Continuous formation of extruded built synthetic laundry detergent bar by mixing and shearing the ingredients in a zone having a series of successive counter-rotating paired paddles, mounted on two parallel horizontal shafts; and extruding the mixture from said zone. The apparatus may have an extrusion passageway offset from the central plane of the device.

3,497,913
VULCANIZING SYSTEM
Robert L. Gallant, Nabnasset, Mass., assignor to General Electric Company, a corporation of New York
Filed June 30, 1967, Ser. No. 650,386
Int. Cl. B29h 5/28
U.S. Cl. 18—6 1 Claim



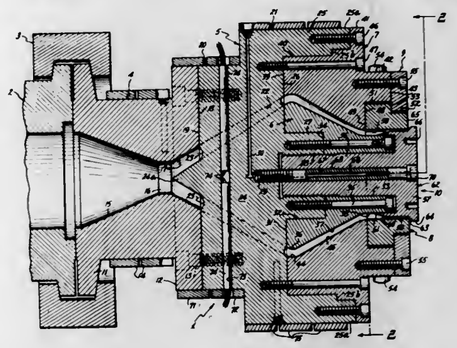
In a vulcanizing system for curing a continuous length of a polymeric composition curable under steam pressure, a first elongated tubular member, maintained under steam pressure, extends from a fabricating means, and a second elongated tubular member is disposed in spaced, longitudinal relationship thereto. A U-shaped tubular member is connected to said first and second tubular members at the end remote from the fabricating means for establishing communication therebetween, whereby the direction of the continuous length in passing from the fabricating means through said first tubular member is reversed and passed through said second tubular member. The second tubular member is filled with water, and a pressure sensing means maintains a steam-water interface in the U-shaped tubular member.

3,497,914
BLENDING AND EXTRUDING MACHINE FOR THERMOPLASTIC
Aart R. Tybout, Gardena, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,250
Int. Cl. B29f 3/02
U.S. Cl. 18—12 6 Claims



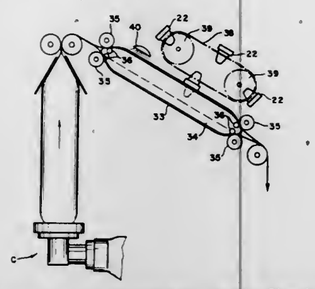
A machine for blending and extruding granular thermoplastic work materials, such as a base material and a color concentrate, the machine having a screw extruder receiving a first work material through an infeed passage and a variable speed conveyor feeding a second work material into the passage to provide a homogeneous thermoplastic mixture which is plasticized and extruded by the extruder and contains the work materials in regulated proportions which may be selectively variated by adjusting the conveyor infeed rate.

3,497,915
EXTRUSION DIE
Clifford P. Ronden, Edmonton, Alberta, Canada, assignor to Cupples Container Company, Austin, Tex., a corporation of Missouri
Filed Mar. 16, 1967, Ser. No. 623,643
Int. Cl. B29d 23/04
U.S. Cl. 18—14 3 Claims



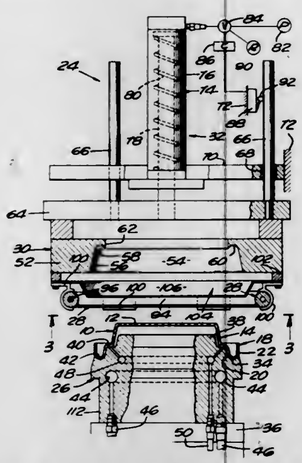
An extrusion die for extruding thermoplastic material, wherein the different structural parts which define the flow channel leading to the die orifice are maintained at substantially uniform temperatures. The die includes a die orifice and spaced apart inner and outer body members which cooperate to define a tubular flow channel leading to the die orifice. The inner body structure is connected to the outer body by a plurality of spider arms which extend across the tubular flow channel. Each spider arm has a bore which extends lengthwise thereof and opens into a mating bore in the outer body structure. Heating elements, such as an electrical cartridge, are placed in each bore and operate to heat both the inner body structure and the spider arms. Heating rings are placed around the outer body member.

3,497,916
APPARATUS FOR FORMING VALVE POCKETS IN PLASTIC FILM
Friedrich Reifenhäuser, Troisdorf, Germany, assignor to Reifenhauser K.G., Troisdorf, Germany
Filed Jan. 7, 1966, Ser. No. 519,383
Claims priority, application Germany, Feb. 1, 1965, R 39,782
Int. Cl. B29d *7/22*; B29c *17/00*
U.S. Cl. 18—19 4 Claims



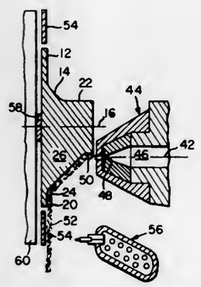
Valve pockets are formed in plastic film by means of a deforming device which is moved synchronously with the film. The deforming device may include a suction means for retaining spaced points of the film. The film is deformed in the area between the retained spaced points by means of suction or by a reciprocating mandrel. The mandrel may cooperate with the suction retaining device to move the retained spaced points closer together prior to formation of the pocket. The film may be tubular when the pocket is formed and may be fused together transversely of its length along lines which bisect the pockets so that adjacent bags are formed in the tubular film with each bag having a valve defined by one-half of the pocket which was formed.

3,497,917
BEAD FORMATION
Kaiji Negoro, Montibello, Calif., assignor to Kimatic, Inc., Tustin, Calif., a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 630,018
Int. Cl. B29c *17/02*
U.S. Cl. 18—19 8 Claims



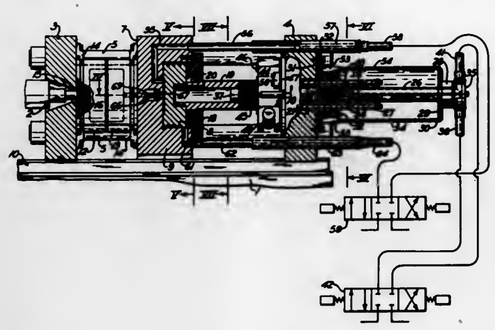
Apparatus for forming a beaded edge about the rim of a thin-walled thermoplastic article, having a preformed outwardly directed rim flange, including an outer depending marginal skirt portion, by supporting the article on a holding die and effecting relative movement of the holding die and a curling die mounting in advance thereof a heat source conforming to the contour of the article skirt portion in such a way that relative movement of the dies and heat source occurs through an initial heating position, wherein the heat source is disposed opposite the article skirt portion for heating the latter to a relatively soft plastic forming state, to a final curling position, wherein the curling die engages and curls the heated skirt portion into a cylindrical bead configuration.

3,497,918
APPARATUS FOR MAKING A NONWOVEN FIBROUS SHEET
Frank Scott Pollock, Jr., Richmond, Va., and James Gerald Smith, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 6, 1967, Ser. No. 628,871
Int. Cl. B22d *23/08*
U.S. Cl. 18—2.6 10 Claims



An apparatus for making a nonwoven fibrous sheet, including a spinneret for spinning a fibrous strand, a rotatable baffle for receiving the strand and deflecting it downward while simultaneously spreading the strand into a web and causing the web to oscillate, means for rotating the baffle, and a collection surface located below the baffle and spinneret. The baffle is an integral body composed of a disc portion, a boss portion, and a lobed fillet portion.

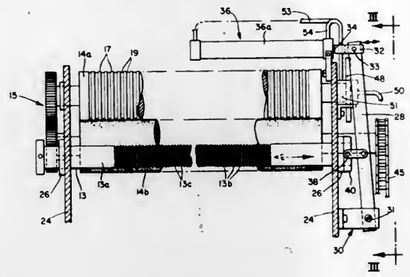
3,497,919
MOLD LOCK-UP MECHANISM FOR INJECTION MOLDING MACHINES
Raymond E. Brochetti, 1212 Windermere Drive, Pittsburgh, Pa. 15218
Filed Nov. 7, 1966, Ser. No. 592,580
Int. Cl. B29c *1/16*; XB29f *1/00*
U.S. Cl. 18—43 7 Claims



This disclosure relates to injection molding machines, and more particularly to the mechanism by which pairs

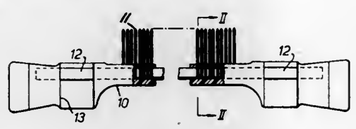
of molds are locked tightly together while plastic material is being injected into their mold cavity under high pressure.

3,497,920
APPARATUS AND METHOD FOR DE-REGISTERING TOW
John R. Brownell, Telford, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Oct. 25, 1967, Ser. No. 677,910
Int. Cl. D01b *3/04*; D02g *3/00*
U.S. Cl. 19—65 9 Claims



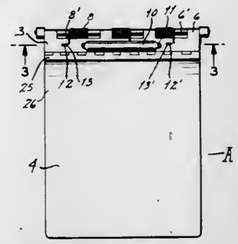
A tow of crimped textile material is passed through a machine to de-register the crimp, that is, to move the adjacent filaments in the tow with respect to one another so that the crimps in the filaments are out of phase or non-aligned with one another. The machine includes a pair of draw rollers which are elastically surfaced and have interroll pressure to supply the force necessary to draw the tow sheet through the machine. Spaced ahead of these rollers, is a second pair of elastically surfaced tension rollers with interroll pressure, at least one of which has a circumferentially profiled surface. The tow passes between this roller and its mating elastically surfaced roller and then through the draw rollers, thereby displacing some of the filaments relative to other filaments in the tow. Spaced ahead of this second pair of tension rollers, is a roller which has a series of sharp circumferential grooves and ridges thereon, and the tow, which is under tension, is separated into separate bundles with various tensions as it passes over this roller. A mechanism actuates this roller to reciprocate it transversely to the direction of advancement of the tow. These reciprocations are adjustable as to length of stroke, frequency, and dwell at the end of each stroke.

3,497,921
FALLER BARS FOR TEXTILE COMBING MACHINES OR OTHER COMB-LIKE MEMBERS
Matthew K. Mann, Shipley, and Norman Rushworth, Baildon, England, assignors to Plastex Limited, Dublin, Ireland, a corporation of Ireland
Filed Sept. 6, 1967, Ser. No. 665,884
Claims priority, application Great Britain, Sept. 7, 1966, 39,978/66
Int. Cl. D01g *19/00*
U.S. Cl. 19—129 8 Claims



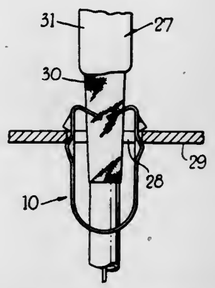
In a textile combing machine, of the type which employs faller bars made of synthetic resin material, the bars are adapted to prevent build-up of static electricity in the fibres. For this purpose, a metal conductor (which may include a reinforcing member) extends between the pins and a position where it contacts part of the machine.

3,497,922
CHART HOLDER
Richard L. Wade, St. Louis County, Mo., assignor to Professional Specialties Co., St. Louis, Mo., a corporation of Tennessee
Filed May 24, 1968, Ser. No. 731,941
Int. Cl. B42f *1/00, 9/00*
U.S. Cl. 24—67.7 8 Claims



A chart holder as for use in hospitals and the like having mutually hinged front and back covers, said front cover having upper and lower sections joined along a hinge axis parallel to that of the front and back covers. A latch bar mounted on said back cover and adapted for engagement with the upper section of said front cover during usage of said chart holder, said latch bar being urged into open position so that upon full opening of said chart holder the same will be maintained in opened position without requiring forcible retention of said covers in parted condition.

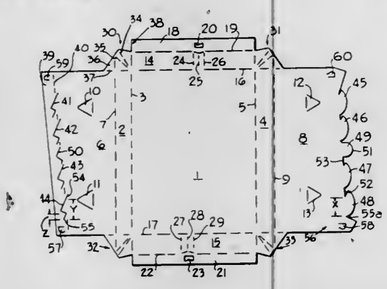
3,497,923
CABLE CLIP
Clifford A. Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,672
Claims priority, application Great Britain, Aug. 11, 1967, 36,936/67
Int. Cl. H02g *3/26*; F16b *7/04, 7/22*
U.S. Cl. 24—81 3 Claims



A resilient clip for retaining a cable in position through an aperture in a panel, the clip being so designed to provide a wide tolerance on the cable diameters with which it can be effectively used. The clip is generally U-shaped and comprises two outwardly splayed limbs joined by an apertured web through which the cable passes. Each limb has a foot at its free end which is directed inwardly and rearwardly towards the web, the free ends of the feet being clamped against the cable. When the clip is located on the cable and is inserted into the aperture

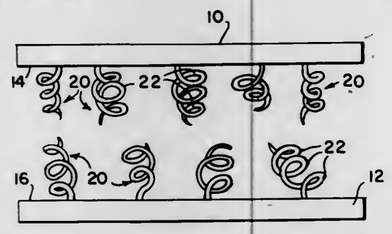
in the panel the limbs are compressed together by the rim of the aperture and the feet are simultaneously pinched between the limbs and the cable making a firm connection between the clip and the cable.

3,497,924
PANEL INTERLOCKING MEANS
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 2, 1967, Ser. No. 672,100
Int. Cl. B65d *5/10, 65/10*
U.S. Cl. 24—204 4 Claims



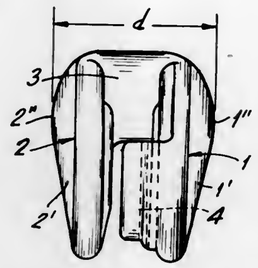
A six-sided container having bottom, side and end walls is provided with a pair of closure panels which, when interlocked, constitute a sixth side of the container. Web structure is provided at each of the four corners of the carton to aid in rendering the carton substantially dust tight and a locking flap is foldably joined to an edge of each end panel and is provided with a locking aperture disposed in coincidental relationship with overlying locking tabs formed in the carton closure panels and by this means the interlocked locking flaps are held in closed position. The closure panels are interlocked according to the invention by means of locking tabs and slots provided respectively in the closure panels.

3,497,925
SELF-GRIPPING FASTENING ASSEMBLY
George C. Brumlik, 154 Upper Mountain Ave., Montclair, N.J. 07042
Filed July 31, 1967, Ser. No. 657,295
Int. Cl. A44b *21/00*
U.S. Cl. 24—204 3 Claims



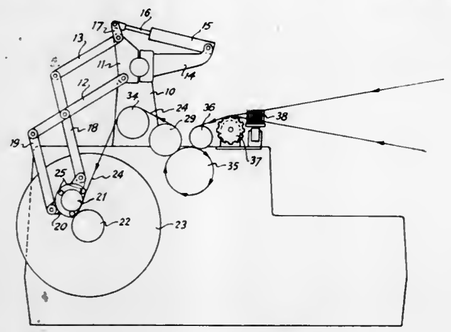
A self-gripping fastening assembly consisting of a plurality of flexible fastening elements of helical shape secured to the surfaces of articles to be fastened together, with the fastening elements extending substantially perpendicularly from the surfaces of the articles and the helical turns thereof arranged to mesh and interlock when the surfaces of the articles are brought together. The helical fastening elements may be formed by the method of extruding filaments of two different plastics having different coefficients of expansion, blowing the filaments in straight form upon the surface of the article and thereafter treating the filaments to cause them to curl into helical form.

3,497,926
SLIDER FOR SLIDE-FASTENER CLOSURES
Alfons Fröhlich, Essen, Germany, assignor to Opti-Holding A.G., Glarus, Switzerland, a corporation of Switzerland
Filed July 7, 1967, Ser. No. 651,757
Claims priority, application Germany, July 8, 1966, O 11,791
Int. Cl. A44b *19/00*
U.S. Cl. 24—205.15 2 Claims



A slider for slide-fastener closures capable of withstanding ironing and similar fabric-handling treatment in which the upper and lower slider shields are interconnected by a wedge-like bridge member defining between the shields a pair of guide channels for the coupling elements of the slider, the shields being of round configuration and substantially coextensive with outwardly convex lens-like profiles with relatively thick portions aligned with one another and with the wedge-like connnecting web. The overall thickness of the slider is greatest at the wedge-like web member.

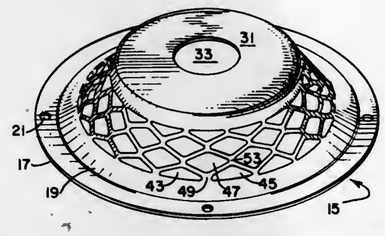
3,497,927
METHOD AND APPARATUS FOR WINDING BEAMS
Jack Norton, Darwen, England, assignor to Leesona Limited, a corporation of Great Britain, Northern Ireland and the Isle of Man
Filed Feb. 15, 1968, Ser. No. 705,813
Claims priority, application Great Britain, May 13, 1967, 22,286/67
Int. Cl. D02h *5/00*
U.S. Cl. 28—32 10 Claims



A method and apparatus for winding beams with yarn having a flat configuration to ensure that the yarns all lie with their longer cross-sectional dimension parallel to the beam and in an untwisted state, which requires the yarn to be turned positively before being presented to the beam so that it will lie flat and untwisted. The apparatus consists essentially of a roller which lies on the yarn as it is being wound and guides it onto the beam, the roller being mounted on a pantograph link system so that it can maintain the same relative position throughout winding,

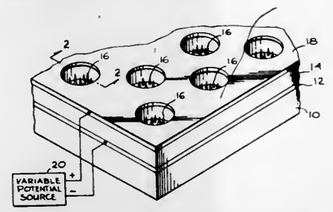
the means for turning the yarn consisting of off-setting the wraith or comb relative to the direction of movement of the yarn so that each individual yarn of the sheet is turned in the same direction. Tension control being provided by passing the yarn over a roller mounted in strain gauges which control electronically the winding speed of the yarn.

3,497,928
METHOD OF FABRICATING EXPANDED METAL PRODUCTS, SUCH AS SPEAKER BASKETS
Aldo L. Coen, Chicago, Ill., assignor to Alpha Products, Inc., Chicago, Ill., a corporation of Illinois
Filed May 31, 1967, Ser. No. 642,375
Int. Cl. B21d *31/02, 31/04*
U.S. Cl. 29—6.1 16 Claims



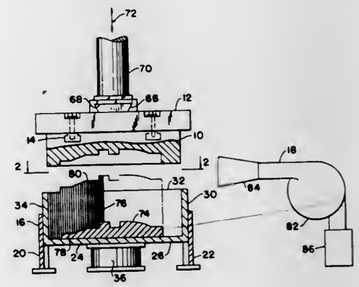
A method for fabricating three-dimensionally expanded metal products having a central hub lying in one plane, a peripheral flange lying in a remote generally parallel plane, and a webbed framework coupling the hub to the flange and lying between the two planes, predominantly normal thereto, and surrounding the hub and flange. The webbed framework comprises a plurality of web portions each having a radial and a circumferential component. The radial components of adjacent web portions are circumferentially offset so as to be out of contact with one another. The web portions are selectively spaced by a plurality of perforations which, during fabrication of the product from a planar blank to a three-dimensional form, radially expand into the normal plane between the hub and flange. Fabrication is accomplished without drawing or stretching of the metal by the application of force normal to the plane of the perforated blank while immobilizing the peripheral flange to thereby induce expansion of the webbed framework by effective radial spreading of the perforations.

3,497,929
METHOD OF MAKING A NEEDLE-TYPE ELECTRON SOURCE
Kenneth R. Shoulders, Woodside, and Louis N. Heynick, Palo Alto, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Original application May 31, 1966, Ser. No. 553,832, now Patent No. 3,453,478, dated July 1, 1969. Divided and this application Nov. 22, 1968, Ser. No. 778,278
Int. Cl. P01j *17/00*; H01l *7/00*
U.S. Cl. 29—25.17 3 Claims



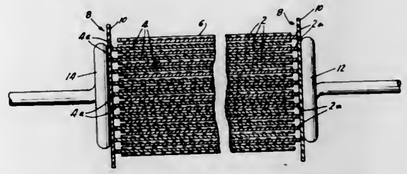
A multiple needle electron emitting source is provided comprising a conductive layer having spaced thereover a plurality of sharp raised points, and successively placed thereover, with holes therethrough to permit exposure of these needle points, an insulating surface and a conductive surface on top thereof, said conductive surface comprising an accelerator electrode.

3,497,930
METHOD OF ABRASIVELY SHAPING AN ELECTRODE FOR ELECTRIC DISCHARGE MACHINING
Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich.
Filed Apr. 27, 1966, Ser. No. 545,585
Int. Cl. B24d *17/00*; B24b *7/00*
U.S. Cl. 29—25.18 5 Claims



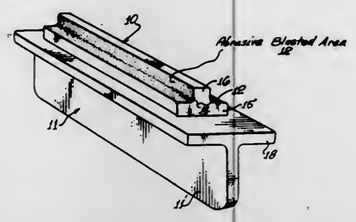
Mechanical structure including a mirror image of an electrode to be formed, means for vibrating the mirror image of the electrode and a plurality of hard rods supported on one end on the mirror image of the electrode all of which are the same length is disclosed along with means for moving electrode material such as carbon toward the other ends of the rods during vibration of the mirror image of the electrode. The rods positioned on end on the mirror image pattern of the electrode are vibrated while the electrode material is moved toward the other end of the rods whereby mechanical abrasion of the electrode material is accomplished to produce the electrode. An air pressure differential is created across the other ends of the rods between the rods and electrode material to remove material abraded from the electrode material.

3,497,931
CAPACITOR WITH ATTACHED LEAD AND METHOD OF FORMING SAME
Willis E. Rieman, Florence, and Christopher Sutphin, Darlington, S.C., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed May 24, 1966, Ser. No. 552,521
Int. Cl. H01g *13/00*
U.S. Cl. 29—25.42 12 Claims



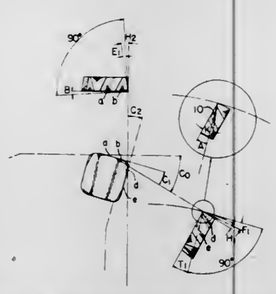
A lead is physically and electrically secured to a portion of an electrode of a capacitor which extends out beyond the dielectric layer between the electrodes by means of a thermoplastic body, the lead being forced through that body and into contact with the electrode while the body is softened, the body thereafter hardening around the lead and holding it in position.

3,497,932
ELECTRODE DRESSING TOOL
Eugene G. Freehauf, Ontario, Calif., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,292
Int. Cl. B23d 73/02
U.S. Cl. 29—78 4 Claims



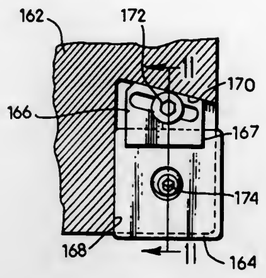
This disclosure relates to a structure and method of making an electrode dressing tool which is properly shaped, provided with cutting edges, and employed as a file to dress the faces of welding electrodes and provide same with the proper radii. The illustrated embodiment of the tool is produced by machining a bar of stock into a T-shaped form having suitable radii between the legs, abrasively blasting those radii areas to produce minute cutting or burnishing edges, and bonding the resultant article in an inverted position onto a T-shaped aluminum extrusion or the like to provide a square orientation. The cutting edges of the tool may be refurbished by an additional abrasive blast.

3,497,933
INDEXABLE CUTTER INSERT AND MILLING CUTTER HEAD THEREFOR
Minoru Okada, Itami-shi, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a corporation of Japan
Filed Apr. 19, 1967, Ser. No. 632,066
Claims priority, application Japan, Apr. 20, 1966, 41/25,389
Int. Cl. B26d 1/12
U.S. Cl. 29—95 8 Claims



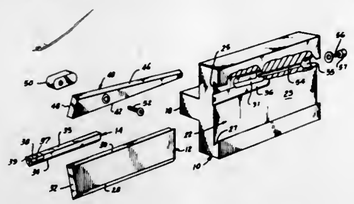
An indexable and reversible symmetrical cutter insert of polygonal shape having two polygonal parallel faces each of which have an even number of trapezoidal shaped identical sides, one-half of which form with each of the faces, respectively, a cutting edge less than ninety degrees in angular extent. Grooves may be provided in each of the faces each of which extends into one of the trapezoidal sides forming a cutting edge with a corresponding insert face to provide each of the cutting edges, so formed, with a cross-sectional contour corresponding to that of the groove. A chamfered surface may be formed on each edge defined by the juncture of each trapezoidal side with an adjacent trapezoidal side to increase the strength of the cutting edge.

3,497,934
MOUNTING FOR TOOL BITS
Arthur Franklin Hudson, % Art Hudson Tool, Box 1025, Huntington, Ind. 46750
Continuation-in-part of application Ser. No. 519,277, Jan. 7, 1966. This application June 8, 1966, Ser. No. 575,200
Int. Cl. B26d 1/00
U.S. Cl. 29—96 3 Claims



I propose an adjustable mounting for tool bits which includes a pocket of a size which can be adjusted in order to position the tool bit, this being by means of a movable element within the pocket in the form of a wedge which provides one locating surface for the tool bit, and additional locating surfaces for the tool bit which will provide a back-up for the tool bit regardless of its adjusted position whereby the tool bit is held against movement in its adjusted position, and a hold down device which retains the tool bit within the pocket at its desired position.

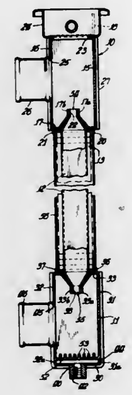
3,497,935
CUT-OFF TOOL ASSEMBLY
Carlton L. Bowling, Pearland, Tex., assignor to C. & L. Machine Shop, Inc., Houston, Tex., a corporation of Texas
Filed Feb. 15, 1967, Ser. No. 616,261
Int. Cl. B26d 1/00
U.S. Cl. 29—96 6 Claims



A cut-off tool assembly formed of a tool holder having a tang by which the assembly may be secured to the tool post of a machine tool. A longitudinal dovetail groove extends along the side of the tool holder opposite the tang. The upper longitudinal wall of the groove is angularly inclined to the bottom wall. A support blade having an angular bottom edge mating with the angular bottom wall of the dovetail groove and a V-groove top wall is positioned along the bottom wall of the dovetail groove. A cutting bit having a V-shaped bottom wall is positioned on top of the support blade. A clamping member is positioned between the top of the insert cutting bit and the top wall of the groove and threaded means are provided which are threadedly engaged with the clamping member to draw the clamping member into engaging contact with the top wall of the groove and the insert bit and force the insert bit and support blade into engaging

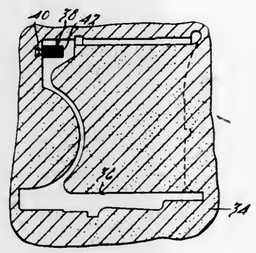
contact with one another and the support blade into engaging contact with the bottom wall of the groove, thereby securely retaining the insert cutting bit and support blade in the dovetail groove.

3,497,936
METHOD OF MAKING A HEAT EXCHANGER
Desmond M. Donaldson, Oakville, Ontario, Canada, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Nov. 14, 1963, Ser. No. 323,654, now Patent No. 3,265,126, dated Aug. 9, 1966. Divided and this application Feb. 25, 1966, Ser. No. 555,654
Int. Cl. B23p 15/26
U.S. Cl. 29—157.3 2 Claims



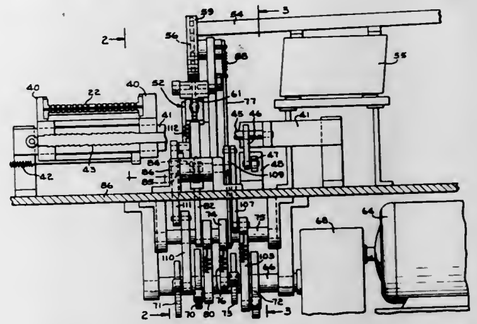
A method of making a heat exchanger which includes forming an oil cooler and a mounting flange for mounting the heat exchanger to a structure as an integral part of one of the header tanks of the heat exchanger.

3,497,937
METHOD OF MAKING CAST WHEEL BODY
Paul G. Willer, Rockford, Ill., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,135
Int. Cl. B21h 1/02
U.S. Cl. 29—159.01 4 Claims



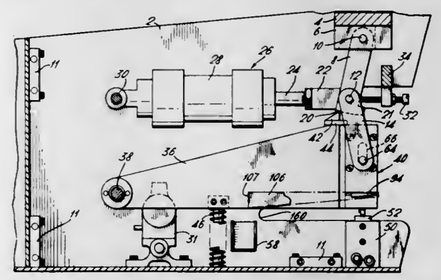
A method for making a cast wheel body which eliminates the presence of voids and blowholes in sections of the casting to be subjected to machine operations by positioning machinable metal inserts in a sand mold at locations corresponding to the positions at which subsequent machining operations are to be performed and thereafter pouring molten metal into the mold cavity, effecting an embedment of the inserts in a solidified casting. The resultant casting is thereafter removed from the mold and the inserts are removed by a metal cutting tool, providing cavities or bores which are receptive for receiving and engaging ancillary components such as studs and the like.

3,497,938
APPARATUS FOR INSERTING AND FASTENING TERMINAL ELEMENTS INTO A TERMINAL STRIP
Ben L. Wright, Chicago, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 21, 1967, Ser. No. 655,020
Int. Cl. H01r 1/00
U.S. Cl. 29—203 9 Claims



An apparatus for successively attaching a plurality of contacts or terminal elements into laterally extending grooves in a plastic terminal strip, wherein the grooves are bisected by a longitudinally extending channel having a depth greater than the grooves, by inserting each terminal element into a groove, moving the element longitudinally and bending the midportion of the element into the channel, thereby foreshortening the element and causing outwardly-extending portions of the terminal element to engage overhanging portions of the plastic terminal strip, thus permanently holding the terminal element in place.

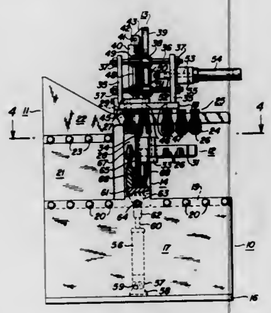
3,497,939
CONNECTOR STAKING MACHINE
Henri de Saint-Pierre, Paris, Jean Bernard Guerout, Conflans-Sainte-Honorine, and Jean Claude Joly, Paris, France, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 27, 1967, Ser. No. 693,977
Claims priority, application France, Jan. 4, 1967, 89,966
Int. Cl. B21d 28/00
U.S. Cl. 29—203 18 Claims



Connector staking machine shears connectors from a strip and stakes them in position on a printed circuit board. The machine, according to one mode of operation, stakes the connectors on the printed circuit board

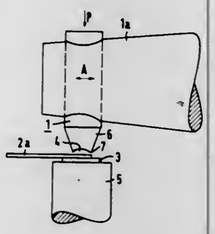
so that the insertion axes are in a vertical orientation relative to the printed circuit board, and according to another mode of operation, stakes the connectors on the printed circuit board so that the insertion axes are in a parallel disposition relative to the printed circuit board.

3,497,940
SHELL AND PLUG ASSEMBLY MACHINE
Warren J. Wise, Myerstown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,597
Int. Cl. B23p *19/04;* **B23a** *7/10*
U.S. Cl. 29—208 **6 Claims**



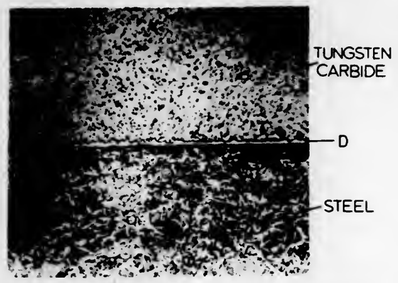
A machine for automatically inserting a plug in an expansion shell having a first station for expanding the depending leaves of the shell and a second station in horizontal alignment with the first station for inserting a plug between the leaves of the shells. Shells are fed to the first station and transferred horizontally to the second station. Plugs are fed beneath the shells to the second station, and the assembled plug and shell is discharged from the machine.

3,497,941
METHOD AND APPARATUS FOR JOINING CONTACTS FOR CONTACT CARRIERS
Helmut Moll, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Apr. 20, 1967, Ser. No. 632,439
Claims priority, application Germany, Apr. 21, 1966, S 103,301
Int. Cl. B23k *27/00*
U.S. Cl. 29—470.1 **9 Claims**



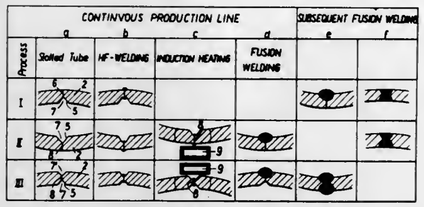
A method and apparatus wherein a contact which is made of a material which is highly resistant to welding is joined with a contact carrier without using any intermediate material which can be easily soldered or welded. The contact material is fed to the vibrator of an ultrasonic device, and this vibrator has a working head provided with a recess which determines the final configuration of the contact. By the simultaneous application of pressure and ultrasonic energy the contact material is welded to the contact carrier while being provided with a predetermined contact configuration. The contact material which is fed to the vibrator of the ultrasonic device can be in the form of a suitable blank, or the contact material may be fed to the vibrator in layer form, having the configuration of a sheet or a relatively narrow strip or even a band of relatively great width. In this latter case the working head of the vibrator of the ultrasonic device is provided at the edge of its recess which determines the congfiuration of the contact with a cutter construction which serves to cut the contact material from the layer which is fed to the vibrator.

3,497,942
METHOD OF WELDING TUNGSTEN CARBIDE MATERIALS TO STEEL
Carl D. Weiss, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 21, 1967, Ser. No. 632,588
Int. Cl. B23k *27/00*
U.S. Cl. 29—470.3 **3 Claims**



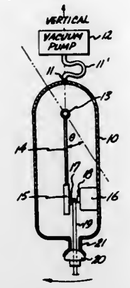
Method of joining tungsten carbide materials to steel by the inertial welding process including parameters for surface velocity, upset pressure and energy used to make satisfactory welds.

3,497,943
METHOD OF PRODUCING TUBES
Wilfried Niederstrasser, Emil Greiner, Albert Krafft, and Felix Kusenberg, Mulheim an der Ruhr, Germany, assignors to Thyssen Roehrenwerke Aktiengesellschaft, Duesseldorf, Germany
Filed Feb. 1, 1966, Ser. No. 524,279
Int. Cl. B23k *31/02*
U.S. Cl. 29—477 **10 Claims**



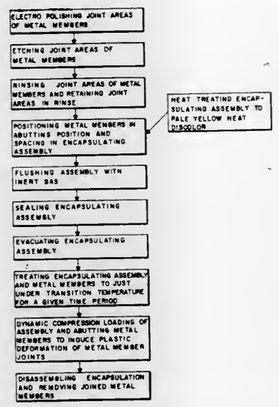
In producing a tube from a strip of weldable material having two longitudinally extending parallel edge faces, at least one edge face is provided with a longitudinally extending facet inclined to the remainder of the edge face. The strip is arcuately transversely deformed until the edge faces are juxtaposed and define a longitudinally extending groove. The non-faceted portions of the edge faces are pressure-welded together. A filler material is introduced into the groove and fusion-welded to the surrounding material of the strip. Finally, the pressure-welded edge faces are also fusion-welded to merge with the preceding fusion-welded seam.

3,497,944
DEVICES FOR VACUUM BRAZING
William K. Antle, Kent, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,635
Int. Cl. B23k *35/12*
U.S. Cl. 29—494 **7 Claims**



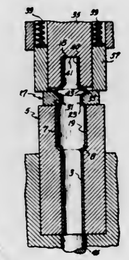
A method of bonding surfaces of members to establish atomically clean, impurity-free surfaces and bonds comprises (1) establishing a vacuum environment for the members for performing the subsequent steps, (2) depositing a joining material on the surfaces and (3) physically contacting the surfaces through gravity means, bellows means or magnetic means. A vacuum brazing apparatus comprises vacuum chamber means with two openings, the chamber means being connected to a vacuum drawing means through one opening and the chamber means having a sealing means filling the other opening with the sealing means movably holding an evaporation filament means, said chamber means supporting two mounting means each capable of holding apart the surfaces of which are to be joined and said mounting means being capable of being moved into contact with each other.

3,497,945
METHOD FOR SOLID STATE WELDING
Eugene D. Green, La Mesa, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,303
Int. Cl. B23k *31/02*
U.S. Cl. 29—494 **11 Claims**



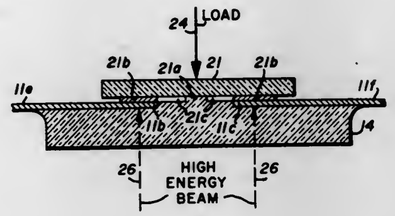
A metal joining method which encapsules the parts to be joined in a pack which is designed to deform so that the joining pressure is applied only to the parts to be joined. Joining takes place between the portions of the parts in contact which have been carefully cleaned and raised to an elevated temperature in an inert environment before being subjected to joining pressure.

3,497,946
METHOD OF FORMING A BOLSTER CASE WITH A COLLAR MEMBER THEREON
Loyal H. Tingley, Jr., Box 406, Havana, Ill. 62644
Filed Nov. 8, 1967, Ser. No. 681,351
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—512 **7 Claims**



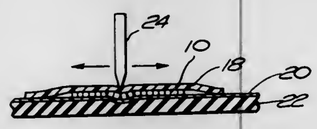
A machine element or the like, and a process for producing the same, wherein a tubular member is provided with a collar intermediate its ends and the collar is firmly engaged between an enlarged tubular portion formed at one side thereof and a bead formed at the other side.

3,497,947
MINIATURE CIRCUIT CONNECTION AND PACKAGING TECHNIQUES
Frank J. Ardezzone, P.O. Box 242, Santa Clara, Calif. 95052
Filed Aug. 18, 1967, Ser. No. 661,634
Int. Cl. B01j *17/00;* **H01l** *1/16*
U.S. Cl. 29—577 **11 Claims**



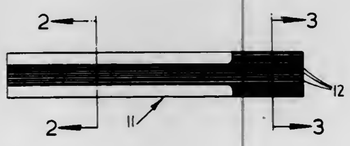
A semiconductor packaging method and machine utilizes metal lead members surrounded on three sides by a transparent insulating member to form leads for connecting to pads on semiconductor devices. The metal leads are flush with one surface of the insulating member so that the preform leads directly contact the pad areas on the device. Alignment of the pad areas with the preform may be observed through the transparent member and the resulting junction welded without the use of solder or other agents by a high energy beam projected through the member.

3,497,948
METHOD AND APPARATUS FOR SORTING SEMI-CONDUCTOR DEVICES
Mordechai Wiesler, Lexington, Avigdor Goren, Lynnfield, and Robert E. Hunt, Andover, Mass., assignors, by direct and mesne assignments to Transistor Automation Corporation, Cambridge, Mass., a corporation of Massachusetts.
Filed Sept. 5, 1967, Ser. No. 665,635
Int. Cl. B01j 17/00; H01l 7/66
U.S. Cl. 29—583 11 Claims



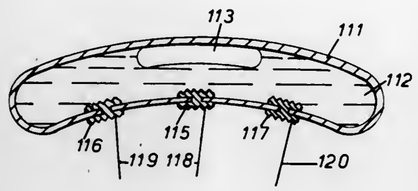
A wafer of an array of apparently identical semi-conductor devices in practice include grades of quality within a given wafer. The individual devices are physically sorted into separate categories or grades from the slice by mounting the slice, after it has been scored in a grid pattern, onto a pressure sensitive adhesive tape, pressing the wafer and the tape against a release surface of a resilient character and then running a tool of a small radius against the back surface of the tape and wafer in both score directions causing the individual elements to separate from the wafer. The tape with the individual disconnected semi-conductor devices adhering to the tape surface are separated from the release surface and then passed through a radii translation process. This process involves advancing the tape with the adhering semi-conductor elements over a straight edge having a small radius which causes each row of devices to be elevated with respect to the sides of the leading and trailing rows and in position to be grabbed by the jaws of an electro-mechanical tweezer which picks off each device from the tape and transfers it to a predetermined group of other devices of the same grade. Operation of the sorting mechanism is under the control of automatic positioning units which in turn is controlled by recorded quality control data obtained by prior tests carried out on the individual wafer being sorted. A self-packaging system is provided for packaging each individual element sorted.

3,497,949
METHOD OF MAKING LAMINATED CORES
John Salt, Shenstone, Lichfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Aug. 8, 1967, Ser. No. 659,171
Claims priority, application Great Britain, Aug. 8, 1966, 35,374/66
Int. Cl. H01f 3/04
U.S. Cl. 29—609 3 Claims



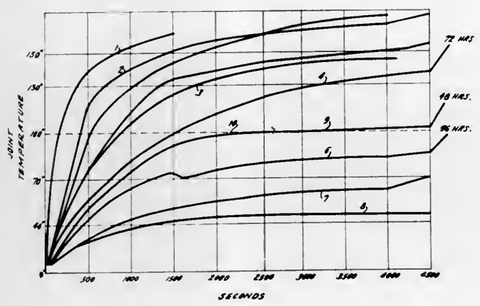
A method of manufacturing laminated cores comprising, stacking a plurality of generally rectangular laminae to form a pile, and subjecting said pile, along at least part of its length, to an operation whereby some or all of the laminae are deformed to produce a pile which will fit into a cylinder of smaller diameter than that into which the original pile will fit.

3,497,950
TILT-SENSITIVE DEVICES
Allan Maurice Squire, Harpenden, and Donald Fulton Alexander MacLachlan, Surrey, England, assignors to British Aircraft Corporation Limited, London, England, a British company
Original application June 1, 1965, Ser. No. 460,075, now abandoned. Divided and this application Sept 28, 1967, Ser. No. 671,351
Int. Cl. B23k 31/02
U.S. Cl. 29—622 1 Claim



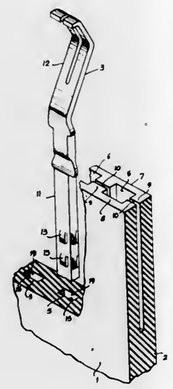
A tilt sensitive device comprises a tubular body having a concave upper wall and contains an electrically conducting fluid and a non-conducting bubble; it has a central electrode and an end electrode on each side of the centre electrode; the length of the bubble is less than the distance between the two end electrodes. The electrodes are formed by flowing a conductive cement through holes in the walls and firing it, after which it is given a spongy surface.

3,497,951
BUS-BAR JOINTS AND METHODS FOR PRODUCING THEM
David H. Reighter, Roslyn, Pa., assignor, by mesne assignments to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,806
Int. Cl. H01r 43/00
U.S. Cl. 29—628 3 Claims



Bus-bar ends which are later to be joined in a bus-bar assembly, are coated with a low melting solder. Upon assembly of the bus-bar system the pressure of adjacent bus-bars upon each other, caused by the assembling bolts, is sufficient to maintain electrical contact. Such a system, however, has a comparatively high resistance, and as the electrical load upon the bus-bar increases, the temperature of the joint is raised, causing the solder to melt thus producing a fused joint. This joint possesses the desirable characteristics of low electrical resistance, and low mechanical strength.

3,497,952
METHOD OF ASSEMBLING PLASTIC AND METAL PARTS
Julius King, Norwalk, and George E. Hood, Ridgefield, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Aug. 24, 1967, Ser. No. 662,954
Int. Cl. B23p 11/02; H01r 9/00
U.S. Cl. 29—629 2 Claims



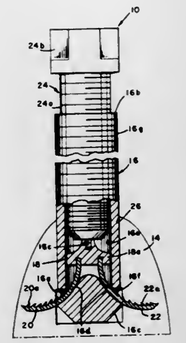
A method of assembling metal and plastic parts in which one or more metallic elements are force-fitted into cavities provided within a molded thermoplastic housing. The elements are fitted in such a manner that one or more portions of the housing adjacent each cavity are undesirably stressed by insertion of the element. By selectively heating the elements independently of the housing, the stressed portions only of the housing are warmed and stress relieved. The method may include the additional step of treating the stressed portions of the housing with a fluid having a swelling effect thereon, prior to the heating of the metallic element.

ERRATUM

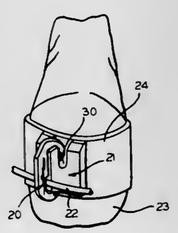
For Class 30—28 see:
Patent No. 3,497,956

3,497,953
DENTAL PROSTHETIC STRUCTURE HOLDING DEVICE
Bernard Weissman, 304 Ashland Place, Brooklyn, N.Y. 11217
Filed Nov. 1, 1968, Ser. No. 772,481
Int. Cl. A61c 13/00; C08f
U.S. Cl. 32—10 4 Claims

A device for connecting a dental prosthetic structure, such as a crown, bridge, false tooth, etc., to the patient's jawbone, the device having engaging elements movable from a storage position within the body into a horizontally extending position therefrom in which firm engagement is made to the jawbone, the dental prosthetic structure then being advantageously secured to the upper exposed portion of the device.



3,497,954
BYPASS CLAMP FOR ORTHODONTIC BRACKET
Peter C. Kesling, Green Acres, La Porte, Ind. 46350
Filed July 3, 1968, Ser. No. 742,316
Int. Cl. A61c 7/00
U.S. Cl. 32—14 12 Claims

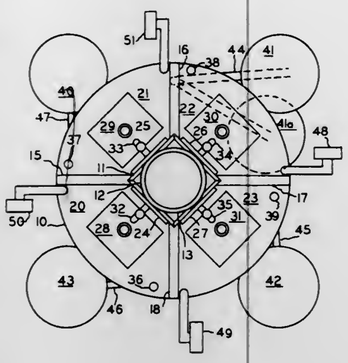


Bypass clamp mountable on the labial side of an orthodontic bracket to restrain an arch wire while permitting relative tipping between the bracket and wire. The clamp is formed to prevent any appreciable relative rotation between the bracket and clamp. A notch is formed along the lingual side of the clamp to coact with the bracket and define an arch wire receiving opening having an occlusal-gingival dimension substantially greater than that of the wire. The clamp may also include an arm extending mesially or distally and engaging the arch wire to apply a rotational stabilizing or movement force to the tooth.

3,497,955
DENTAL STATION
Walter N. Gallagher, 4312 Glenridge St., Kensington, Md. 20795
Filed Sept. 8, 1966, Ser. No. 578,438
Int. Cl. A61c 19/02
U.S. Cl. 32—22 6 Claims

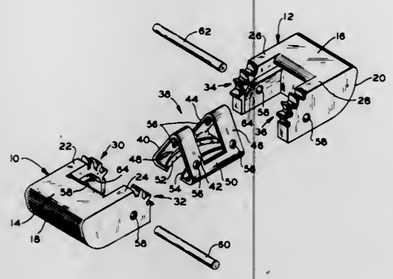
This invention discloses a unique combination of dental apparatus comprising a compactly designed four unit dental station capable of providing dental care for four patients simultaneously utilizing the services of only one

dental technician. The dental station includes a table divided into several parts by partitions, individual seats, and head rests for each part, and a centrally disposed



cupola containing the necessary apparatus for concurrently providing several patients with the three agent stannous fluoride treatment.

3,497,956
CLIPPERS
Thomas S. Bowers, Toledo, Ohio
(3366 Mt. Diablo Blvd., Lafayette, Calif. 94349)
Filed Mar. 14, 1968, Ser. No. 713,040
Int. Cl. A45d *29/02*
U.S. Cl. 30—28 **16 Claims**

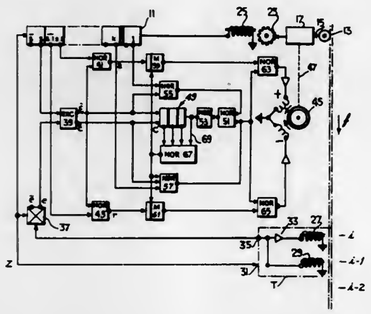


This disclosure pertains to clippers having a pair of actuating members. In one of the embodiments the actuating members are geared together and each is secured to a spring for pivotal rotation with respect thereto by a pin. The spring is housed within the two actuating members and is wider at its base than at its top so that when its base portion is squeezed, cutting surfaces provided on the base are moved toward each other to perform a cutting operation. Cam surfaces are provided on the inner portions of both actuating members so that upon upward pivotal rotation of the actuating members the cams will engage the spring at four places and, due to the geared connection between the actuating members, provide an equal force distribution on the spring to move the cutting surfaces together to perform the cutting operation.

In another embodiment of the invention a cam ring is placed over the cutting spring and each of the actuating members are geared to the cam ring to press it downwardly over the spring upon upward pivotal movement of the actuating members so that the cutting surfaces on the base of the spring are moved toward each other. The cam ring and the cutting spring may also be provided with flared portions to provide a second cutting edge or, alternatively, a gripping device upon pivotal movement of the actuating members.

Another embodiment discloses a cutting ring having a "U" shaped member extending therethrough for connecting one arm to each of the actuating members. The actuating members are geared together and through a cam surface compress the ring to perform a cutting operation upon vertical pivotal movement of the actuating members.

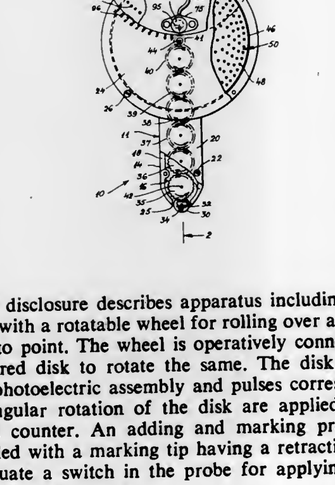
3,497,957
METHOD AND APPARATUS FOR MEASURING AND MARKING LENGTHS OF MOVING MATERIAL
Pierre Jorgensen, 1 Rue Isabeau, L'Hay-les-Roses, France
Continuation-in-part of application Ser. No. 343,742, Feb. 10, 1964. This application Aug. 7, 1967, Ser. No. 658,925
Claims priority, application France, Feb. 11, 1963, 924,360, Patent 1,357,676
Int. Cl. G01b *5/04*
U.S. Cl. 33—129 **27 Claims**



A double measurement is applied to a length of moving material, for instance to a length of glass sheet in preparation for cutting it, the first measurement being continuous and totalized, the second being intermittent and exact, the two being combined to provide corrections which eliminate error and the accumulation of error.

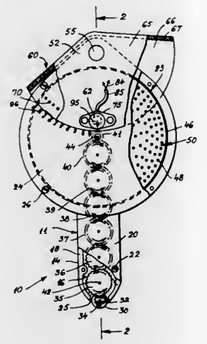
3,497,958
SYSTEMS AND METHODS FOR DETERMINING THE POSITION OF A TOOL IN A BOREHOLE
Lee H. Gollwitzer, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed May 2, 1966, Ser. No. 546,806
Int. Cl. G01b *5/04;* **E21b** *47/00*
U.S. Cl. 33—133 **42 Claims**

In accordance with an illustrative embodiment of the present invention, methods and apparatus are shown for continuously and accurately determining the position of a cable supported tool in a borehole. To accomplish this, the movement of the cable at the surface of the earth and the tension in the cable at the tool and at the surface of the earth are measured and combined in accordance with a given relationship to produce a corrected cable movement measurement. Additionally, a calibration correction function and a correction function for cable stretch with temperature can be utilized for additional depth correction. The accumulation of this corrected cable movement measurement will then give the position of



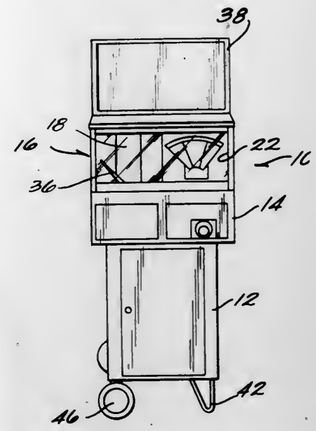
the tool in the borehole. If desired, this position can be referred to a depth position corresponding to drill pipe length.

3,497,959
APPARATUS FOR MAKING MEASUREMENTS AND COUNTING ITEMS ON MAPS, DRAWINGS, AND THE LIKE
Coert Engelsman, 106 Garfield Ave., Atlantic Highlands, N.J. 07716
Filed June 9, 1967, Ser. No. 644,838
Int. Cl. G01b *3/12, 7/04;* **B23q** *17/02*
U.S. Cl. 33—142 **2 Claims**



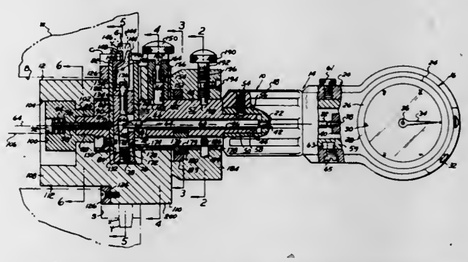
The disclosure describes apparatus including a scaling probe with a rotatable wheel for rolling over a sheet from point to point. The wheel is operatively connected to an apertured disk to rotate the same. The disk is scanned by a photoelectric assembly and pulses corresponding to the angular rotation of the disk are applied to a calibrated counter. An adding and marking probe is also provided with a marking tip having a retracting member to actuate a switch in the probe for applying pulses to the calibrated counter.

3,497,960
TESTING APPARATUS
Patrick H. Joyce, Deerfield, Ill., and Everett R. Ohrmund, Menomonee Falls, Wis., assignors to Display Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 2, 1966, Ser. No. 576,870
Int. Cl. G01b *3/22, 5/00*
U.S. Cl. 33—172 **10 Claims**



An automotive tire tread depth checking apparatus having a body including a viewing panel, a pointer and an operator for moving the pointer relative to the viewing panel, A probe controls the operator and is moveable independent of the body for insertion into a tire tread and affects movement of the pointer on the viewing panel in accordance with tread depth to indicate minimal, average or unsafe tire wear.

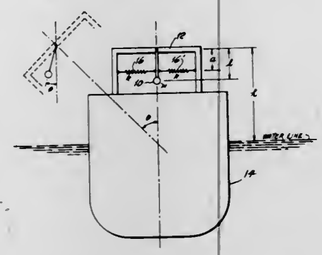
3,497,961
RETRACTABLE DUAL-MEASUREMENT SINGLE-INDICATOR GAUGE FOR VARIABLE-WIDTH INTERNAL GROOVES
Andrew Eisele, 20460 Brookwood Ave., Dearborn Heights, Mich. 48127
Filed May 2, 1968, Ser. No. 726,104
Int. Cl. G01b *5/24*
U.S. Cl. 33—174 **20 Claims**



The axial widths of a tapered or stepped internal groove within a workpiece bore are measured at radially-spaced locations by this single-indicator gauge. Its measuring head is rotated by a rotary handle and has a forward pilot portion snugly engaging the workpiece bore and also has fixed and movable probes or feelers which can be retracted into and projected out of a circumferential recess in an eccentric rotary body in order to insert them and withdraw the feelers from the internal groove to be measured. Means is also provided for positioning the feelers at two different radial distances from the axis of the bore in order to measure the axial widths of the tapered or stepped

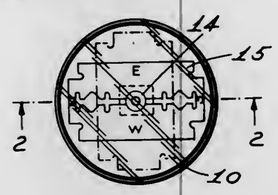
groove at these two locations. Motion-transmitting mechanism converts the swinging motion of the movable feeler to axial motion of a rod which engages the plunger of a conventional dial indicator mounted in a rearwardly-located stationary handle which is optionally slidable relative to the rotary handle rotatably mounted therein.

3,497,962
METHOD AND MEANS FOR MINIMIZING HORIZONTAL ACCELERATIONS IN SHIPBOARD VERTICAL PENDULA
Conrad Diehl, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 6, 1967, Ser. No. 680,684
Int. Cl. G01c *9/08*
U.S. Cl. 33—220 **3 Claims**



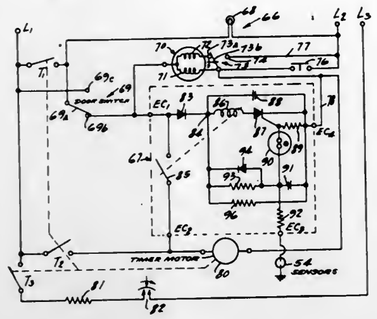
A pendulum, suspended from the frame of a vehicle which moves in three-dimensional space and located above roll and pitch axes of the vehicle, is fastened to the frame by a pair of opposingly disposed, horizontal springs which act to damp out the horizontal acceleration which would otherwise displace the pendulum from its normal vertical position. The pair of roll springs, for example, are disposed on opposite sides of the pendulum in a plane perpendicular to the roll axis of the vehicle. The spring rate is calculable from a formula once the motional frequency which is to be cancelled is selected and the pendulum's physical dimensions and location have been fixed.

3,497,963
COMPASS
Walter G. Von Meyer, 1504 Port Jefferson Road, Sidney, Ohio 45365
Filed May 15, 1967, Ser. No. 640,439
Int. Cl. G01c *17/08*
U.S. Cl. 33—223 **4 Claims**



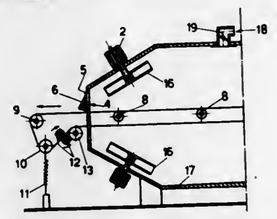
A combination advertising device and compass, the direction indicator of the compass being a razor blade which is magnitized. The exterior of the compass is formed by a transparent plastic case indented at the bottom for receiving a pivot pin. A supporting cone is pressed through the center opening of the razor blade, the cone being adapted to be supported by the pivot pin. The compass unit can be used to demonstrate the surface tension of liquids in that the case can be partially filled with water and the razor blade caused to normally float on the surface of the water.

3,497,964
ELECTRONIC CONTROL CIRCUIT FOR A DRYER
Alvin J. Elders, Lincoln Township, Berrien County, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Michigan
Filed Dec. 18, 1967, Ser. No. 691,351
Int. Cl. F26b *25/22*
U.S. Cl. 34—45 **6 Claims**



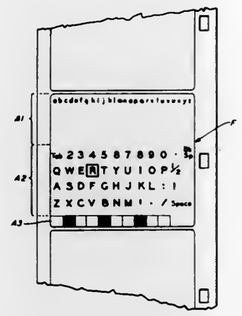
This invention is directed to a control system for an appliance wherein a sensor is associated with the appliance to provide a current path whose resistance is proportional to a sensed condition within the appliance. The control system includes an electronic control circuit which generates a control signal in response to a predetermined value of the sensed condition. Selectable timer means having a plurality of preprogrammed sequential cycles of operation is connected to the control circuit for operation therefrom when the timer means is in one of its preselected cycles of operation. The control circuit includes a switch which is operated by the timer and connected in circuit with the electronic control circuit to disable the electronic control circuit when the timer is in another preselected sequential cycle of operation. One form of the electronic control circuit associated with the control system of the present invention utilizes a silicon controlled rectifier having a sensor connected in series with the gate to cathode junction thereof to develop a firing potential across the gate to cathode junction in response to the sensor sensing a predetermined value of the sensed condition. The voltage level on a capacitor of relatively low capacitance value connected in the gate circuit of the silicon controlled rectifier is controlled by the sensor in response to the sensed condition.

3,497,965
MEANS AND METHOD FOR DEFROSTING FROZEN PRODUCTS
Giancarlo Cortellessa, Via Alessandro Severo 73, Rome, Italy
Filed Nov. 30, 1967, Ser. No. 687,024
Claims priority, application Italy, Dec. 3, 1966, 43,329/66
Int. Cl. F26b *15/18, 25/00*
U.S. Cl. 34—216 **3 Claims**



A means for defrosting frozen products comprising, a chamber in which the frozen products are placed on either a stationary foraminous support or are carried on a movable mesh conveyor, the chamber receiving a gaseous fluid such as steam which is whirled about in the chamber to impinge against the frozen products which receive the condensation of the steam, the steam being thermostatically maintained at a suitable defrosting temperature. The chamber has entrance and egress openings for the products, which openings have closures that are arranged to prevent the outflow of the steam when the products enter and leave the chamber.

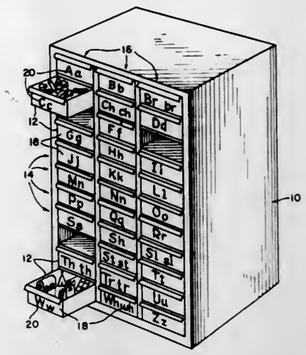
3,497,966
TEACHING MACHINE
Thomas J. Gaven, Livingston, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 618,295
Int. Cl. G09b *7/08*
U.S. Cl. 35—9 **19 Claims**



An audio-visual teaching machine providing a set course of instruction projects picture frames onto a viewing screen and may supplement each visual presentation with an audio message. Each frame includes an item of instruction projected onto an upper program area of the screen, background information projected onto a pupil's response area of the screen giving the pupil a multiple choice, and light signals projected off the screen according to a binary code. The pupil's response area is covered by a transparent conductive pattern of which a selected portion overlying the correct choice is activated by the coded light signals so that when the pupil touches a conductive pointer to this portion of the screen the machine will advance to a next item of instruction The coded light signals also determine the mode of operation of the machine, i.e., whether the projector provides a still view of a single frame or a motion picture run and whether the audio machine is operated or not, and if so, whether the audio message is given before or after the pupil's response.

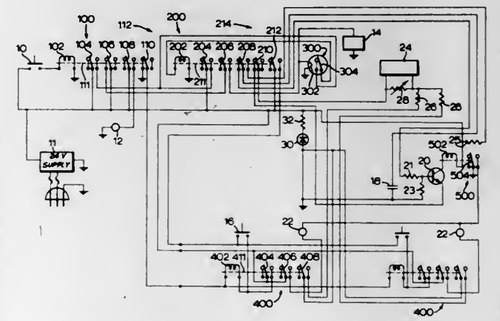
3,497,967
METHOD AND APPARATUS FOR TEACHING READING
Isabel Lewis, 1942 Maybelle Drive, Pleasant Hill, Calif. 94523, and Ruth A. French, 104 Dracena Ave., Piedmont, Calif. 94611
Filed Apr. 1, 1968, Ser. No. 717,799
Int. Cl. G09b *1/34*
U.S. Cl. 35—35 **10 Claims**

A method and apparatus for teaching reading in which a student is instructed to compare graphemes he finds in a word he reads with graphemes displayed on containers. The containers carry objects the name of which when it is pronounced includes a phoneme which corresponds to the graphemes displayed on the container. The displayed graphemes are selected to represent a linguistic series. The apparatus provides a storage structure with a storage



space for each container. The spaces are arranged to position the containers closely adjacent each other.

3,497,968
TEACHING MACHINE
Maxime Ferris, 299 Langford Place, Waterloo, Ontario, Canada
Filed Feb. 1, 1968, Ser. No. 702,347
Int. Cl. G09b *7/00*
U.S. Cl. 35—48 **3 Claims**

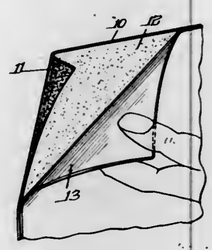


A teaching machine having a central console and connected thereto, an instructor's switch and a plurality of student switches. When the instructor's switch is closed, paper within the console is advanced one line and when the switch is opened a tone sounds for a predetermined period. Each student switch is connected to a separate relay within the console and when closed and while the tone sounds, activates its associated relay. When the tone stops sounding, a printing mechanism within the console makes a permanent recording of activated relays and a meter, remote from the console, displays the number of activated relays.

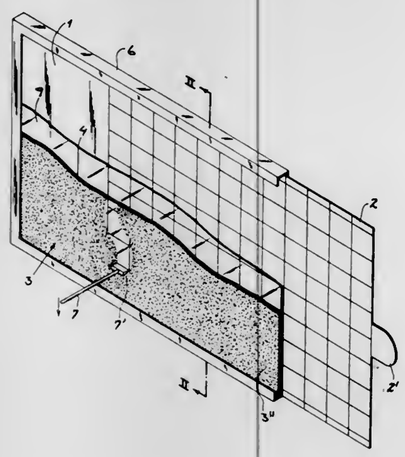
3,497,969
FLEXIBLE, ROLLABLE CHALKBOARD SURFACES
Edward J. Schwoegler, 7533 State Line Ave., Munster, Ind. 46321
Continuation-in-part of application Ser. No. 460,278, June 1, 1965. This application Dec. 6, 1967, Ser. No. 693,041
Int. Cl. B43l *1/08*
U.S. Cl. 35—66 **4 Claims**

A flexible, rollable chalkboard in the form of flexible, rollable sheet material on one surface of which there is

a coating of an abrasive material to delineate a chalk mark thereon and on the other surface of which there is a coating of a pressure sensitive adhesive. Releasably attached to said pressure sensitive adhesive coating is a protective sheet which, upon removal, permits the flexible, rollable chalkboard to be mounted on a supporting surface, subsequently removable therefrom, and adapted to be recovered by said protective sheet and stored away, if desired, by rolling the chalkboard into the form of a roll.

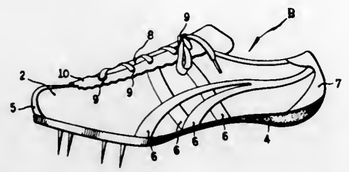


3,497,970
TRACING BOARD
Miron Padowicz, Kottbusser Domm 70/1, Berlin 61, Germany
Continuation-in-part of application Ser. No. 515,570, Dec. 22, 1965. This application Aug. 5, 1968, Ser. No. 750,296
Claims priority, application Germany, Dec. 24, 1964, P 24,588
Int. Cl. B43l *1/00*
U.S. Cl. 35—66 **7 Claims**



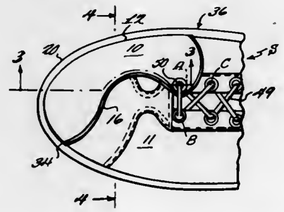
Tracing board in which a base is overlain by a flattened bag of flexible and preferably transparent material filled with a deformable mass of shape-retentive character, i.e. a mixture of mineral oil or low-viscosity, high-penetration grease with a thickener constituted by a wax, a metal soap or a high-viscosity mineral-oil grease in the presence of a small proportion of a coloring agent; the oil or low-viscosity grease preferably represents between about 20% and 50%, by weight, of the thickener.

3,497,971
UPPER MATERIAL FOR SHOES
Hideo Hayashi, Kakogawa, Japan, assignor to Onitsuka Co., Ltd., Kobe, Hyogo Prefecture, Japan
Filed Nov. 13, 1967, Ser. No. 682,213
Claims priority, application Japan, Aug. 29, 1967, 42/73,867
Int. Cl. A43b *1/02*
U.S. Cl. 36—9 **5 Claims**



An upper material for shoes is woven or knit of a string member. By rolling up a film sheet upon itself over and over, or by folding said film sheet into a number of layers, said string member is formed. Said film sheet is of a wide strip shape and of a rigid synthetic resin. For reinforcement, twist may be provided to the string member.

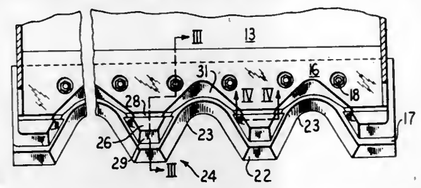
3,497,972
BASEBALL SHOE OVERLAY PROTECTOR
Walter E. Lyman, P.O. Box 455, Starkville, Miss. 39759
Filed July 31, 1968, Ser. No. 748,989
Int. Cl. A43b *5/00*; A43c *13/14*
U.S. Cl. 36—72 **4 Claims**



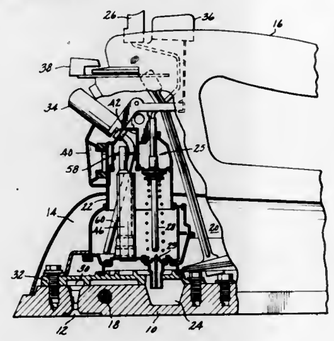
An overlay for the forward portion of a baseball pitcher's shoe is disclosed having a bottom edge which extends from the toe of the shoe around the inside edge of the shoe to a point opposite the ball of the foot and an upper edge which extends over the toe portion of the shoe to an eyelet of the shoe. The overlay is secured to the shoe by stitching the bottom edge of the overlay to the top surface of the welt, and securing the top edge of the overlay across the upper of the shoe by threading a shoe lace through an eyelet near the uppermost part of the overlay.

3,497,973
COMPACT HIGH STRENGTH REPLACEABLE CUTTING EDGE
Trevor G. Campbell, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 1, 1967, Ser. No. 635,208
Int. Cl. E02f *3/81*; A01b *35/20*
U.S. Cl. 37—141 **5 Claims**

To strengthen a replaceable cutting element of a loader bucket or the like, one or more sockets are provided along the upper surface of the element to receive structural members which project forward from the bucket floor, the sockets being situated forwardly from the bolts or the like which attach the cutting element to the bucket. This transfers stress at the front of the cutting element to the bucket structure thereby avoiding shearing of the bolts and providing for a more compact construction. In a preferred form, means within the sockets exert a wedging force between the cutting element and the bucket projections, a compressed resilient material such as rubber being particularly advantageous for this purpose.

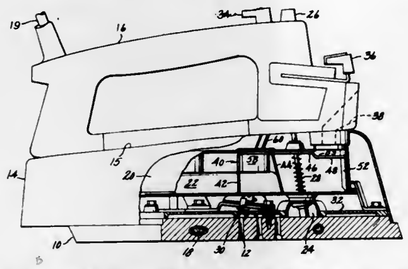


3,497,974
STEAM IRON SPRAY VALVE STRUCTURE
William E. Davidson, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Filed June 24, 1968, Ser. No. 739,537
Int. Cl. D06f *75/06, 75/10, 75/22*
U.S. Cl. 38—77.5 **21 Claims**



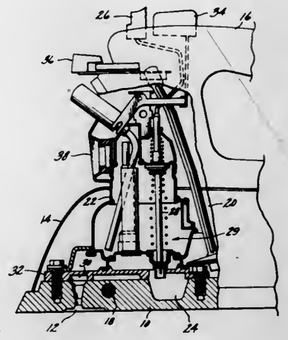
The invention discloses a steam iron spray valve structure and steam system to permit use of tap water for steam generating and spray valve purposes. The spray valve structure is designed to screen the steam used on the fabric for steaming or spraying and is primarily directed to an anti-fouling spray structure. The screening is achieved by a baffling structure through which all steam must pass before admission to the fine fluid ports and passages.

3,497,975
STEAM IRON BAFFLING
Larry Ledbetter, Fort Smith, Ark., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1968, Ser. No. 720,857
Int. Cl. D06f *75/06, 75/14*
U.S. Cl. 38—77.82 **3 Claims**



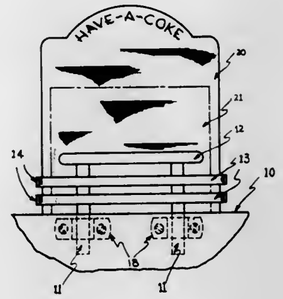
The invention discloses a steam iron which contains a water tank and a fill opening low on the front of the iron at the joint between the handle and iron shell. The possibility of back-splashing or up-chucking of the water out of the fill opening is minimized by a unique baffle structure.

3,497,976
STEAM IRON WATER VALVE WICK STRUCTURE
William E. Davidson, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Filed June 24, 1968, Ser. No. 739,535
Int. Cl. D06f *75/06, 75/18*
U.S. Cl. 38—77.83 **8 Claims**



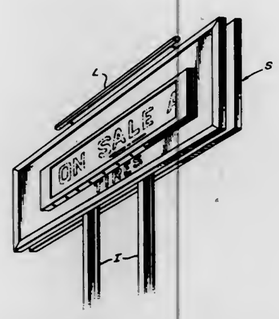
The invention discloses a steam iron water valve structure with improved wicking means to provide for continuous and regular dripping of water into a steam generating chamber. The wicking structure is of predetermined dimensions, simple, easy to assemble, and of entirely or partially low cost sheet metal construction.

3,497,977
INTERCHANGEABLE ADVERTISING MEANS FOR LUNCH COUNTERS AND MENU SUPPORT
Gene R. Bradford 1856 N. Sargent, Stockton, Calif. 95201
Filed Nov. 30, 1967, Ser. No. 687,420
Int. Cl. G09f *3/18*
U.S. Cl. 40—10 **2 Claims**



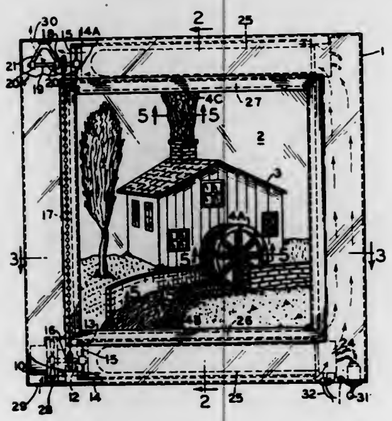
A menu and support and condiment holder has a forward portion to position the condiments and a rear portion to hold the menu. The back wall of the menu holding portion is constituted by a display panel which removably attached and which extends upwardly above the other portion and thereby serves as a guide when the menu is placed in the menu holder.

3,497,978
TRAVELING SIGN BOARD
William N. Miller, Jr., P.O. Box 565, Greenville, S.C. 29602, and Ronald Emus, Greer, S.C.; said Emus assignor to said Miller
Filed Sept. 18, 1967, Ser. No. 668,410
Int. Cl. G09f *11/28*
U.S. Cl. 40—32 9 Claims



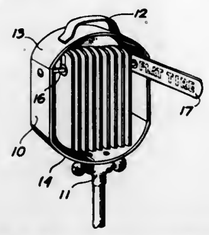
A traveling sign comprising indicia carrying endless belt means trained about spaced drums for rotation of said belt. Motor means is provided for tilting the drums to maintain the proper position of the belt, the motor means being actuated in response to coaction of spaced means disposed adjacent the belt with spaced zones on said belt, which means senses movement of said belt from its normal position for effecting correction of said belt position in varying degrees at various times.

3,497,979
ANIMATED DISPLAY DEVICE
Thomas J. Buitkus, 838 Lenox Ave., Waukegan, Ill. 60085
Filed June 7, 1967, Ser. No. 644,340
Int. Cl. G09f *13/36*
U.S. Cl. 40—106.53 1 Claim



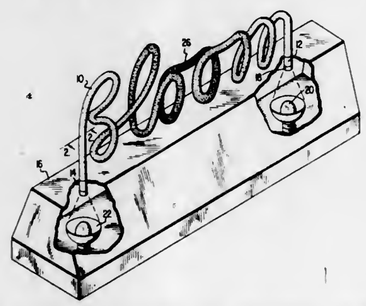
A display device for animating a picture responsive to changes in light polarity by the use of polarized light projected from rotating cylinders housed in a framework and cooled by force ventilation.

3,497,980
PORTABLE EMERGENCY SIGN
Robert L. Brown, 1646 Jacobs Road 44505, and Edward W. Wall, 545 Samuel Ave. 44502, both of Youngstown, Ohio
Filed Jan. 15, 1968, Ser. No. 697,691
Int. Cl. G09f *7/00*
U.S. Cl. 40—129 3 Claims



A portable roadside sign incorporating a plurality of individual signs pivoted in a holder adjacent there ends and movable from a normal vertical hidden position to a horizontal extended visible position.

3,497,981
SIGN FORMED OF LIGHT CONDUCTING AND EMITTING MEMBERS
George Henry Tyne, 1152 Crater Hill Road, Nashville, Tenn. 37215
Filed Dec. 13, 1967, Ser. No. 690,243
Int. Cl. G09f *13/00*
U.S. Cl. 40—130 1 Claim

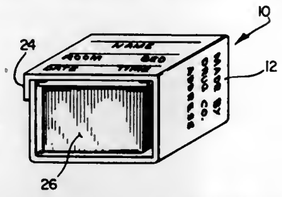


The disclosure is directed to illuminated signs of the type utilizing a light conducting rod to form the various sign characters. The rod is differentially etched along at least a portion of its length and is illuminated at opposite ends thereof. The degree of etching is maximal adjacent the center of the rod and diminishes toward the illuminated ends for the purpose of controlling light emission.

3,497,982
PACKAGE AND METHOD FOR DISPENSING OF PHARMACEUTICAL PREPARATIONS
Paul Henry Schulz, Scotch Plains, N.J., assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware
Continuation-in-part of application Ser. No. 573,515, Aug. 19, 1966. This application Nov. 22, 1968, Ser. No. 778,289
Int. Cl. G09f *3/02*; B65d *5/38*
U.S. Cl. 40—312 7 Claims

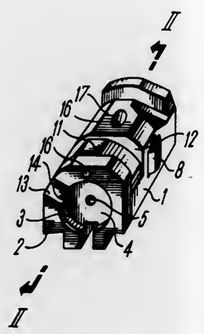
A novel package is provided for dispensing of pharmaceuticals which is comprised of a sleeve and a sealed container for the pharmaceuticals. The sleeve has an upper panel which is adapted to receive the identification of the intended recipient, and the remaining panels, which comprise the sleeve, have the identification of the packaged pharmaceutical printed thereon. The container is releasably secured inside the protective sleeve to the upper

panel. In dispensing the pharmaceuticals, the identification of the intended recipient is written on the upper panel,



the accuracy of the dispensing is rechecked and the drug identification removed before administering the pharmaceutical to the intended recipient.

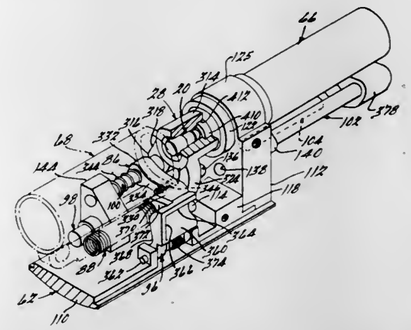
3,497,983
CARTRIDGE CASE EXTRACTOR FOR AUTOMATIC FIREARMS
Tilo Möller, Brandsacker, Germany, assignor to Firma Heckler & Koch GmbH, Oberndorf, Germany
Filed Jan. 12, 1968, Ser. No. 697,337
Claims priority, application Germany, Jan. 12, 1967, H 61,537
Int. Cl. F41c *15/02*
U.S. Cl. 42—25 3 Claims



A breechblock for firearms has a breechblock head provided with an extractor means in the form of a lever which is disposed in a recess extending parallel to the forward end face of the breechblock and which is pivotal about an axis parallel to the longitudinal axis of the breechblock, one end of the lever being loaded by a spring inserted in the breechblock head, and the other end of the lever being provided with a claw which is directed parallel to the forward end face and is adapted to engage over the rim of a cartridge case bottom supported on an abutment surface which is provided on the forward end face of the breechblock head.

3,497,984
AIR OPERATED PROJECTILE FIRING APPARATUS
Ronald W. Joyce, Springdale, Eugene E. Billingslea, Rogers, Leopold C. Sage, Fayetteville, and Robert K. Marshall, Rogers, Ark., assignors, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Original application Nov. 30, 1966, Ser. No. 598,087, now Patent No. 3,399,596, dated Sept. 3, 1968. Divided and this application Mar. 29, 1968, Ser. No. 739,575
Int. Cl. F41c *5/02*, *7/00*, *11/00*
U.S. Cl. 42—39.5 9 Claims

1. A gun comprising:
barrel means having a bore through which a projectile is guided when the gun is fired,
ammunition holding means for holding a round of ammunition in a firing position in alignment with said barrel means and being axially movable from the firing position to a transfer position and pivotally movable about a pivotal axis from the transfer position to a loading position out of alignment with said barrel means and pivotally movable back from the loading position to the transfer position and axially movable back from the transfer position to the firing position,
said ammunition holding means having an ammunition holding chamber extending generally parallel to and being spaced radially from said pivotal axis,



said ammunition holding means including axially and pivotally movable arm means extending radially from said pivotal axis and movably supporting said ammunition holding chamber,
support means mounting said arm means for axial movement between the firing position and the transfer position and for pivotal movement between the transfer position and the loading position, and
operating means for actuating said ammunition holding means and for conditioning the gun for firing and for firing the gun.

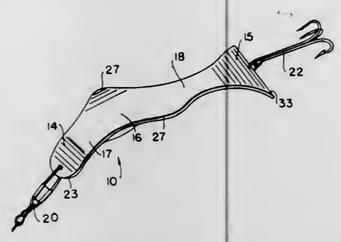
3,497,985
FISH LURES
Joel Margulies, 29—30 137th St., Flushing, N.Y. 11354
Filed Apr. 22, 1968, Ser. No. 723,075
Int. Cl. A01k *85/00*
U.S. Cl. 43—35 13 Claims



A fish lure includes an elongated, flexible, worm-simulating body having a leading head region, an elongated, trailing tail region, and an intermediate housing region fixed at one end to the tail region and having a hollow interior for accommodating a hook. A yieldable elastic means is carried by the housing region and operatively connected to the hook for normally maintaining the latter in a rest position enclosed within the housing region. An elongated stretchable tubular region of the worm-simulating body extends between and is connected with the head region and the other end of the housing region, and a flexible substantially non-elastic means is connected at one end to the head region, extends along the interior of the tubular stretchable region, and at its opposite is connected to the hook for responding automatically to

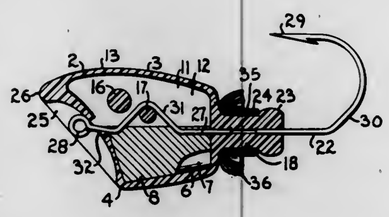
stretching of the tubular stretchable region of the body to displace the hook in opposition to the yieldable elastic means to the operating position where the hook projects outwardly beyond the housing region.

3,497,986
FISHING LURE
Romolo Peter Blanco, 2803 Grindley Park, Dearborn, Mich. 48124
Filed Mar. 11, 1968, Ser. No. 711,930
Int. Cl. A01k *85/04*
U.S. Cl. 43—42.5 **2 Claims**



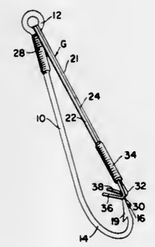
An elongated fishing lure of stamped sheet metal in uniform thickness throughout and plated to present a high gloss reflective appearance has a body portion upwardly concave and downwardly convex in transverse cross section at a medial area or zone in its length, the concavo-convexity being quite deep, as compared with the remaining head and tail portions of the body, which respectively merge rearwardly and forwardly into the medial zone. The medial zone includes substantially triangular wing-like side extensions having rectilinear sides. The tail portion resembles in plan a sharply flared-out caudal fluke substantially flat and rectilinear at its rearmost edge and merges forwardly and upwardly in a longitudinally and vertically convex curvature to a substantially flat zone, which in turn merges with the concavo-convex, extension-bearing intermediate portion. The head portion of the lure body is substantially flat, being convexly rounded at its forward edge.

3,497,987
ARTIFICIAL FISHING LURE
George S. Perrin, 3008 S. Dallas Drive, Fort Smith, Ark. 72901
Filed May 15, 1968, Ser. No. 729,192
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.28 **10 Claims**



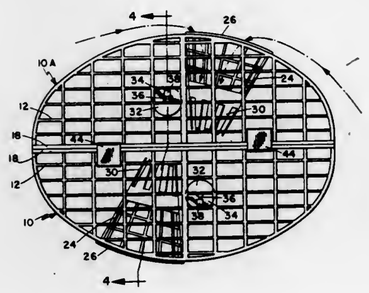
An artificial fishing lure has a body member with a cavity therein and a weight in said cavity and an elongate hook shaft extending longitudinally through the body and a portion of the cavity. The hook shaft has an eye portion at the front end of the lure and a barbed hook portion at the rear end thereof and the weight is fixed to a portion of the hook shaft and positioned within the cavity. The body is formed from two side halves each with mating grooves and cavity forming portions for the hook shaft and weight. The hook shaft has an offset or bight portion which cooperates with locating pins and sockets in opposite side halves for positioning the hook shaft between said halves when secured together with sealed margins to enclose the hook shaft and weight. The fishing lure has a concave front face which slopes downwardly and rearwardly from a forward and upper edge of the body portion for effecting movement of the lure when pulled through water.

3,497,988
WEED GUARD FOR FISH HOOKS
Grady T. Childers, 2409 Patriot Way, Greensboro, N.C. 27408
Filed Feb. 12, 1968, Ser. No. 704,794
Int. Cl. A01k *83/00*
U.S. Cl. 43—43.4 **2 Claims**



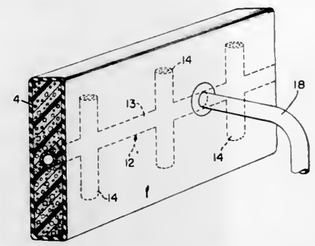
A spring-biased weed guard having two parallel legs fixed at one end to the shank of a fish hook adjacent the eye of the hook. Each leg of the weed guard has at its other end a downwardly and outwardly extending arm with a free end. The weed guard is biased toward the shank and the other end of the guard is normally frictionally supported outwardly of the shank of the hook beyond the point of the hook by the arms. When a fish strikes, the weed guard moves under spring pressure toward the shank.

3,497,989
SHELLFISH TRAP
Nils C. Schultz, La Jolla, and Joseph J. Manno, San Diego, Calif., assignors to Fathoms Plus, Inc., a corporation of California
Filed June 14, 1968, Ser. No. 737,023
Int. Cl. A01k *69/08*
U.S. Cl. 43—100 **4 Claims**



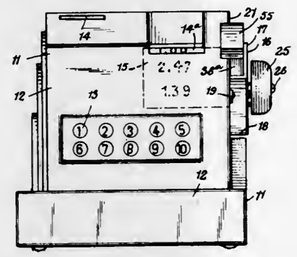
The trap is basically elliptical in plan form, with inlets and bait holders positioned so that shellfish moving around the trap come gradually closer to the bait and are more likely to enter the trap quickly. Plastic construction is used for resistance to wear and to prolonged immersion in water, the inlets and bait holders being separable for ease of maintenance, and the trap being easily opened for full access and to facilitate stacking.

3,497,990
CELLULAR ANTIFOULING COVERING FOR SUBMERGED MARINE OBJECTS
Frank A. Jeffries, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 15, 1967, Ser. No. 683,230
Int. Cl. C23f *15/00*; **A01n** *23/00, 17/00*
U.S. Cl. 43—131 **8 Claims**



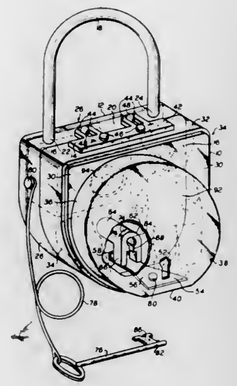
An antifouling protective covering for preventing growth of barnacles and other marine organisms on the exterior of marine objects such as sonar domes and the like submerged in sea water. The covering consists of a layer of foam material having interconnected cells which are filled with diffusible antifoulant material and an outer cover layer of elastomeric material which is permeable to the antifoulant. The antifoulant material diffuses through the outer cover layer and provides a continuous supply of antifoulant material to the exposed outer surface to replace any antifoulant washed away by the sea water. The covering includes a conduit system running throughout the cellular layer to assist in distribution of antifoulant solution in the cellular layer when same is injected therein.

3,497,991
TOY CASH REGISTER
Martin H. Lewis, 94 Brentwood Lane, Valley Stream, N.Y. 11581
Filed Nov. 28, 1967, Ser. No. 686,190
Int. Cl. A63h *33/30*
U.S. Cl. 46—2 **10 Claims**



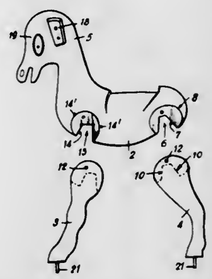
A toy bank or cash register shaped to resemble a conventional cash register and having a coin opening and a window through which a rotative money-designating cylinder is visible. A plunger located at one side of the body operates through a ratchet mechanism to rotate the cylinder with a step-by-step movement to thereby present different money-designations on the cylinder in registry with the window. A bell is provided and a clapper therefor is caused to ring the bell each time that the plunger is depressed and the ratchet mechanism is thus actuated.

3,497,992
SIMULATED PADLOCK TOY CARRY CASE
David W. Balter, New York, N.Y., assignor, by mesne assignments, to Uneeda Doll Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1968, Ser. No. 697,807
Int. Cl. A63h *33/00*
U.S. Cl. 46—11 **6 Claims**



A toy carry case made of transparent plastic material and formed as a padlock comprising a locking mechanism featuring simplicity of design and operation. The padlock may be utilized for storage therein of small, fanciful toy objects and it may be locked and unlocked by a key.

3,497,993
PROCESS OF FABRICATION OF A TOY AND TOY OBTAINED BY THIS PROCESS
Rene Lang, Divonne-les-Bains, France
Filed May 10, 1966, Ser. No. 548,974
Claims priority, application Switzerland, Nov. 1, 1965, 15,040/65
Int. Cl. A63h *3/02*
U.S. Cl. 46—158 **1 Claim**



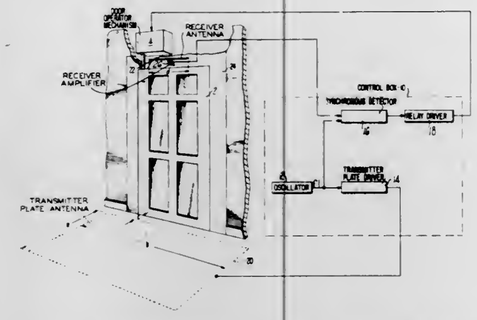
This disclosure relates to a process for making a toy having an elastic plush covering stretched on a shell having a desired form comprising providing a covering slightly smaller than the shell, assembling the shell from moulded pieces and successively inserting the pieces in the covering, assembling at least some of these pieces before said insertion and closing the covering to give the toy its finished appearance.

3,497,994
ELECTROSTATIC TOY SYSTEM AND PACKAGE
Bert Lee, Salt Lake City, Utah, assignor to Jefferson D. Morgan, Enid, Okla.
Filed Feb. 20, 1968, Ser. No. 706,981
Int. Cl. A63h 33/26, 33/00
U.S. Cl. 46—233 3 Claims



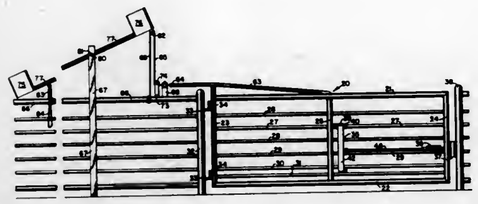
An electrostatic toy system comprising a chargeable rod, a flight member such as a feather and a charging member such as a silk cloth is packaged within a second outer hollow chargeable rod with end plug caps, so that when disassembled the two rods are charged by rubbing with the cloth and are used to direct flight of the feather. In order to sustain flight special "secret" instructions are packed within the hollow outer rod with directions for producing an appropriate charge to the flight member to permit efficient control by manual manipulation of the two rods.

3,497,995
HEIGHT SENSITIVE PROXIMITY DOOR OPERATOR SYSTEM
Roy W. Forsberg, Southington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Apr. 19, 1968, Ser. No. 722,599
Int. Cl. E05f 15/20, 15/12
U.S. Cl. 49—25 12 Claims



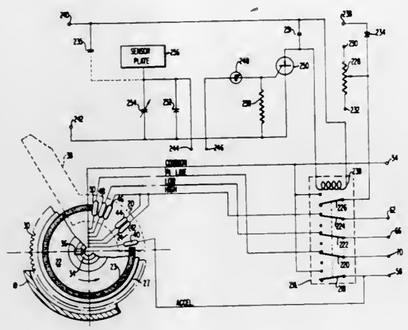
An unobtrusive approach or height sensitive proximity door operator system in which an electrically isolated oscillator driven transmitter plate antenna on the floor adjacent the door opening cooperates with an electrically isolated receiver antenna mounted by a grounded header above the doorway. The presence of a conductive object, such as a person, increases the capacitive coupling between the transmitter plate and receiver antennas to produce an increase in the receiver antenna output which, in practice, is essentially proportional to the height of the object. This signal is amplified and is fed, along with the oscillator signal, to a synchronous detector whose output charges an integrating capacitor. When the capacitor charge reaches a sufficient level, a relay switch is closed to actuate the door operator mechanism. The transmitter plate and receiver antennas are sized to provide a preselected range of sensitivity above the transmitter plate antenna.

3,497,996
ADJUSTABLE, SELF-CLOSING, BUMP GATE
Elbert M. Stevens, Box 157, Rte. 4, Medina County, Tex. 78228
Filed Nov. 25, 1968, Ser. No. 778,604
Int. Cl. E06b 11/02; E05f 1/02, 13/00
U.S. Cl. 49—30 7 Claims



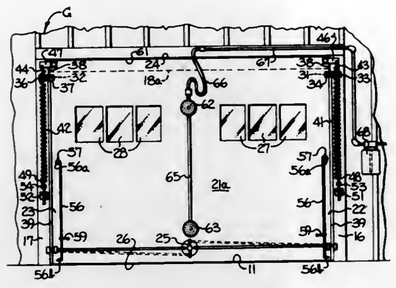
An adjustable, self-closing, bump gate including a striker bracket mounted thereon and adapted to be activated by the bumper of a vehicle, said bracket connected to coacting latch parts for said gate; spaced, liquid carrying containers in fluid flow relationship with a tubular member are pivotally mounted adjacent said gate whereby fluid flowing from one container through said tubular member to the second container closes the gate in a predetermined time interval.

3,497,997
QUARTERLINE STOP CONTROL SYSTEM FOR POWER DRIVEN REVOLVING DOORS
Amuel E. Sheckells, Evansville, Ind., assignor to International Steel Company, Evansville, Ind., a corporation of Indiana
Filed June 14, 1968, Ser. No. 737,207
Int. Cl. E05d 15/02; E05f 15/12
U.S. Cl. 49—43 16 Claims



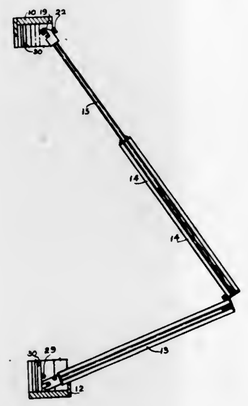
Control apparatus for electrically driven revolving doors wherein a plurality of magnetically actuated reed switches are selectively actuated as the revolving door turns upon initiation of movement from a stop position to effect preselected speeds of rotation during various portions of a revolution of the door and coming to a controlled stop at the quarterline position after a complete revolution. For example, when activated by power-assisted fingertip pressure or other means from the quarterline position, the door wings commence a revolving cycle, turning approximately five-eights of a revolution at walking speed, slowing for the balance of one revolution at a relatively slower speed and finally stopping at the quarterline position.

3,497,998
COMBINATION DOOR AND CANOPY
Lewis H. Thomas, 804 Sloop St., Charleston, S.C. 29406
Filed July 31, 1968, Ser. No. 757,179
Int. Cl. E05d 15/00
U.S. Cl. 49—70 2 Claims



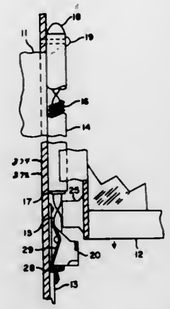
A frame structure such as the wall of a garage or the like having an opening in which is mounted a door for pivotal movement between a closed position and a substantially horizontally extending canopy position forwardly of the frame structure with spring means attached to the door and frame structure for yieldingly urging the door into the canopy position.

3,497,999
WINDOW STRUCTURE HAVING DOUBLE HUNG SASHES THAT ARE BALANCED, SLIDABLE, SWINGABLE AND REMOVABLE
Henry J. Hendra, 4505 Cote-des-Neiges Road, Montreal, Quebec, Canada
Filed June 3, 1968, Ser. No. 733,864
Claims priority, application Canada, Nov. 29, 1967, 803,233
Int. Cl. E05d 15/22
U.S. Cl. 49—149 1 Claim



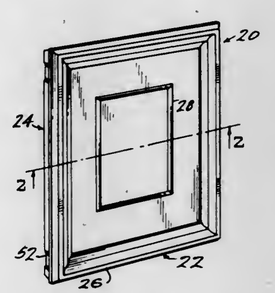
A double hung window structure wherein the upper and lower sashes contain within their stiles tubular spiral balances one end of each balance projects outside the sash and is fitted with a socket. The two sockets of each sash swing on pins suitably located in the jambs of the window frame which have vertical steps fitted with guide rails on which the sashes slide when in the normal vertical position.

3,498,000
TAKEOUT APPARATUS FOR ALUMINUM WINDOW SASH
William Douglas Nobes, Rochester, N.Y., assignor to The Caldwell Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed Aug. 16, 1966, Ser. No. 572,801
Int. Cl. E05d 13/12
U.S. Cl. 49—446 5 Claims



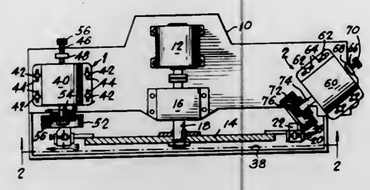
An apparatus for effecting a detachable connection between a sash in a window, and a sash balance, carried by the window frame, having a sash carrier mounted on the sash balance with a sash clip, which includes a pair of opposing arms, the arms engaging an extension on the sash balance when the sash is lowered on to the carrier, and the arms disengaging when the sash is withdrawn.

3,498,001
ENCLOSURE PANEL
Robert D. MacDonald, Tecumseh, Mich., assignor to Cardinal of Adrian, Inc., Adrian, Mich., a corporation of Michigan
Filed Aug. 21, 1967, Ser. No. 662,069
Int. Cl. E06b 3/00; E04c 2/22
U.S. Cl. 49—501 5 Claims



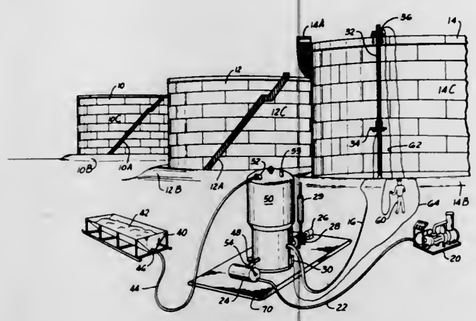
A door or drawer front, particularly for kitchens, and a method of making same are provided. The door or drawer front includes a molded, self-supporting plastic front and back with a foam plastic core. The product provides an extremely attractive wood-like appearance and yet in less costly, as to both material and labor, than a similar product made of wood, and particularly c selected hardwood. Further, the construction does not have the disadvantages of wood, such as warping and dimensional changes from season to season, and is not as heavy as a similar panel of solid hardwood. The new door or drawer front also is more resistant to damage, such as nicking or scratching, than wood.

3,498,002
KNIFE GRINDER
Joseph Andrew Lapointe, Pointe Claire, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada
Filed June 26, 1967, Ser. No. 648,776
Int. Cl. B24b *3/36*
U.S. Cl. 51—3 1 Claim



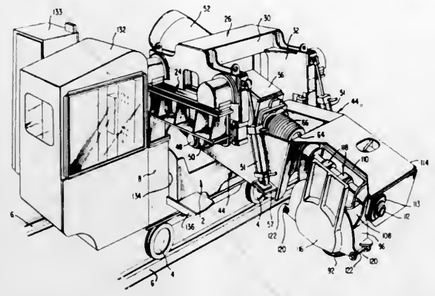
The present invention relates to a grinder for sharpening discrete wood wafer cutting knives having two cutting edges meeting at an angle and comprises a rotatable head upon which a plurality of such knives may be clamped, a pair of grinding stations in the path of travel of the knives, one station grinding in a plane substantially perpendicular to the axis of rotation of the head to sharpen one edge of each knife and the other station grinding at an angle to the axis to sharpen the other edge.

3,498,003
PRODUCT TRANSFER VESSEL
Clarence E. Hulbert, Jr., Houston, Tex., assignor to W. D. Gunnels, Freeport, Tex.
Original application June 14, 1965, Ser. No. 463,781. Divided and this application Nov. 2, 1967, Ser. No. 698,677
Int. Cl. B24c *3/00*; B65g *53/40*
U.S. Cl. 51—12 9 Claims



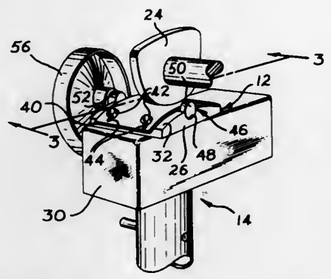
Apparatus for transferring pulverulent solid materials comprising a first vessel adapted to be subjected alternately to pressure and vacuum and a second vessel adapted to be constantly under pressure, a valve for transfer of material from the first vessel to the second vessel, an inner receptacle in the first vessel, a downwardly extending inlet pipe for transfer of material to the first vessel, an outlet in the top of the inner receptacle, a baffle between the downwardly extending pipe and the outlet, a filter system intermediate the inner receptacle and the wall of the first vessel, means for alternately applying pressure and vacuum to the first vessel, means for opening and closing the valve between the first and second vessel, an eductor for removing material from the second vessel, and a compressor for pressurizing the second vessel.

3,498,004
GRINDING MACHINES
James L. Hensley, Knoxville, Tenn., assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,058
Int. Cl. B24b *7/00, 9/00, 55/04*
U.S. Cl. 51—99 13 Claims



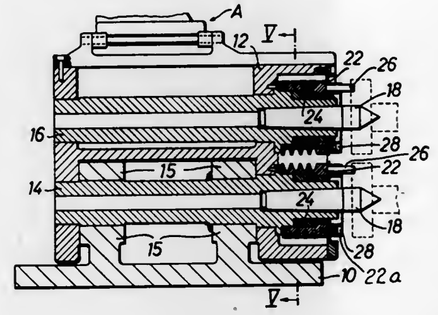
A grinding machine having a grinding wheel supported on a boom for relative movement with respect to a movable body and with the power driving unit also mounted on the boom to move therewith. The output shaft of the power unit is in axial alignment with the axis of bodily movement of the grinding wheel, which latter is suspended below the axis for operating on the work and is capable of bodily movement transversely relative thereto. Means is provided for effecting driving connection from the output shaft of the power unit to the drive shaft of the wheel to drive the latter and to maintain the driving connection in the different transverse positions of the wheel. The bodily shifting movement of the wheel is effected by power means acting transversely of a line extending from the axis of swinging movement of the center of the wheel.

3,498,005
ADJUSTABLE PATTERN SHOE FOR LENS EDGING MACHINE
Milo O. Brandt, Sturbridge, Mass., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Mar. 19, 1968, Ser. No. 714,177
Int. Cl. B24b *9/14*
U.S. Cl. 51—101 6 Claims



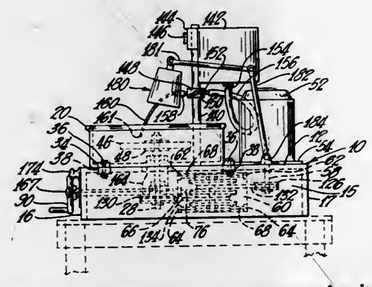
A pattern shoe for a lens edging machine having a base and an upper surface covering of thin flat spring stock shaped to conform intimately to the configuration of the base when relaxed thereagainst. A cam is incorporated in the base by means of which the surface covering may be selectively deflected upwardly away from the base to increase the effective height of the shoe in the edging machine. The cam may be operated to release the surface covering whereby, under the influence of its spring tension, it will automatically assume the aforesaid relaxed conformity with the base to lower the effective height of the shoe.

3,498,006
MACHINE TOOL FOR SIMULTANEOUSLY TREATING SEVERAL WORKPIECES
Walter Lang, Dusseldorf, and Wendelin Rehbein and Hans Appel, Remscheid, Germany, assignors to Gebrueder Honsberg, Remscheid-Hasten, Germany
Filed Oct. 10, 1967, Ser. No. 674,136
Claims priority, application Germany, Oct. 13, 1966, H 60,743
Int. Cl. B24b *5/00, 41/06*
U.S. Cl. 51—105 23 Claims



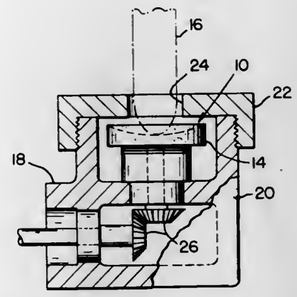
A machine tool having a headstock and a tailstock, both affixed to a frame, and a tool holder for a rotary tool reciprocably supported by the frame for movement toward and away from the common vertical plane of axes of two pairs of work spindles mounted in the housings of the headstock and tailstock. The housings are pivotable about the common axis of the two lower spindles by adjusting devices provided on the headstock and tailstock. The workpieces which are held by centers of the spindles or by chucks which are rotatable in the spindles of the headstock can be driven through the intermediary of the chucks or by eccentric pins mounted on pulleys which are rotatably supported by the spindles of the headstock.

3,498,007
STONE POLISHING AND PROCESSING APPARATUS
Anthony S. Janicki, Jr., Toledo, Ohio (118 Rockledge Circle, Perrysburg, Ohio 43551)
Filed July 17, 1967, Ser. No. 653,794
Int. Cl. B24b *7/00, 9/00*
U.S. Cl. 51—109 8 Claims



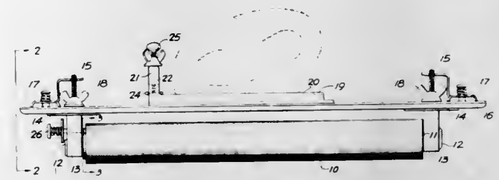
This disclosure embraces an apparatus for lapping or polishing stones and more especially to a compact portable apparatus for polishing stones used for jewelry and decorative purposes, the apparatus being motor operated through a variable speed drive to provide various speeds for the stone lapping or polishing instrumentality.

3,498,008
DRESSING DEVICE FOR SPOT WELDING ELECTRODES
Milo I. Turner, Jr., 2011 E. Henrietta Road, Apt. 1, Rochester, N.Y. 14623
Filed July 10, 1967, Ser. No. 652,052
Int. Cl. B24b *5/18*
U.S. Cl. 51—170 1 Claim



A device for dressing and cleaning the curved tips of spot welding electrodes including a grinding wheel having a curved surface normal to its axis of rotation, an annular guide for aligning the wheel coaxially at the end of an electrode, and an off-set drive arrangement to facilitate insertion of the wheel and guide between two opposed electrodes. In the preferred form, the wheel is rim mounted within the central aperture of a ring gear, and both end faces of the wheel are curved to constitute working surfaces.

3,498,009
CYLINDRICAL SANDING TOOL
Alfred J. Taafe, Jr., Girard, Ohio, assignor of fifty percent to Alfred J. Taafe, Sr., Girard, Ohio
Filed June 9, 1967, Ser. No. 645,046
Int. Cl. B24b *15/00*
U.S. Cl. 51—393 4 Claims

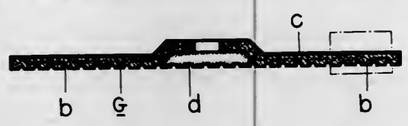


A cylindrical sanding tool releasably mounted for rotary adjustment and replacement and attachable to a portable sanding device.

3,498,010
FLEXIBLE GRINDING DISC
Nobuyoshi Hagihara, 79–1 Funaocho nishi 2-cho, Hamadera, Sakai, Osaka Prefecture, Japan
Filed June 3, 1965, Ser. No. 461,087
Int. Cl. B24b *11/00, 27/00*
U.S. Cl. 51—395 5 Claims

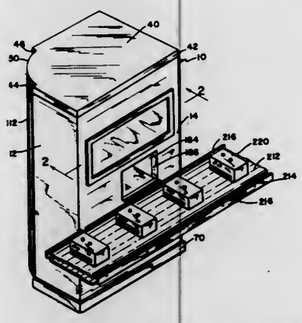
A flexible grinding disc having a core of woven fabric coated with a bonding agent, a layer of grinding grains coated with a bonding agent on both faces of the disc, a reinforcing material saturated with a plastic bonding

agent positioned on the surface opposite the grinding side, and the entire grinding part being cracked mechanically to such a degree that the cracks are invisible to the naked



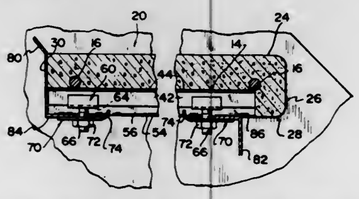
eye for dividing layers of grinding grains into innumerable small blocks connected with one another, the core and the reinforcing material.

3,498,011
UTILITY ROOM
Erik A. Lindgren, 4515 N. Ravenswood, Chicago, Ill. 60640
Filed Nov. 6, 1967, Ser. No. 680,653
Int. Cl. B66b *9/00;* E04h *3/04*
U.S. Cl. 52—31 7 Claims



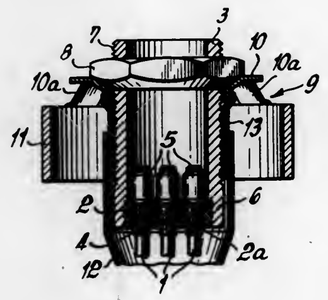
The disclosure describes a compact, portable utility room comprising as an illustrated embodiment an enclosure formed with insulated walls which are impermeable to various types of air-borne interference and having a combined door and seat pivotally mounted in one corner which is automatically locked in closed position by the occupant. The enclosure is a substantially impermeable barrier to vapors, sound and wave-formed interference wherein tests may be conducted of an analytical or electrical nature on products or components of a product in a convenient manner under controlled environmental conditions. In one embodiment a sectional wall is provided with an essentially seamless outer shell and a sound-, radio wave-, or vapor-absorbing core.

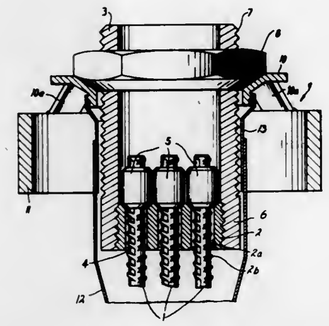
3,498,012
STAIR TREAD WITH RISER LOCKING MEANS
Glen A. Seegers, 357 N. Charlotte, Lombard, Ill. 60148
Filed Jan. 31, 1968, Ser. No. 701,991
Int. Cl. E04f *11/00;* E04b *1/38*
U.S. Cl. 52—189 12 Claims



The application is directed to structures and methods for producing pre-formed stair treads which are readily assembleable into complete stair units. The stairs are produced utilizing a mold designed to minimize the weight of individual star treads, to reinforce such treads, and to provide them with an essentially integral locking device for connecting each of the treads to a riser assembly. Each prefabricated stair tread is reinforced and of a minimum weight and is ready for installation in a variety of stair unit environments. The stair tread locking devices employed are connected to a tread in a manner permitting their movement on the undeside of the tread to obtain proper alignment of locking device with a particular riser element and permitting the removal of a locking device from the stair tread when necessary. A number of stair treads can be connected in ascending or descending relationship to a combination of stringers and interconnected risers.

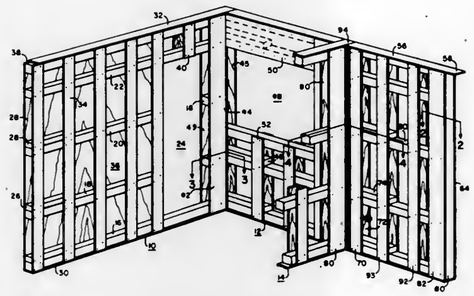
3,498,013
APPARATUS FOR ANCHORING PRESTRESSING MEMBERS IN PRESTRESSED CONCRETE
Georg Kern, Munich, Germany, assignor to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany
Filed June 9, 1967, Ser. No. 644,841
Claims priority, application Germany, June 13, 1966, D 50,303
Int. Cl. E04c *3/10, 3/26, 5/08*
U.S. Cl. 52—225 8 Claims





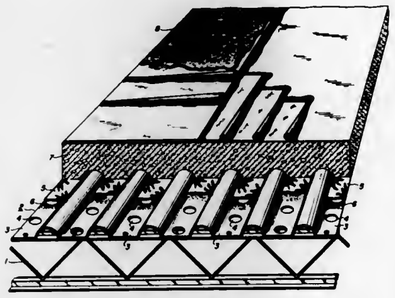
Anchoring means for prestressing members in prestressed concrete, including an abutment member to be embedded in concrete, a tubular anchoring body having an externally threaded end portion receiving a nut for engaging the abutment member and having an internally threaded portion which receives a disk provided with apertures through which extend the threaded ends of anchoring rods secured in said anchoring body by nuts seated against the disk from the inside.

3,498,014
CONSTRUCTION OF BUILDING WALL PANELS
Robert F. Fergen, 7373 Colony Road, La Mesa, Calif. 92041
Filed June 19, 1967, Ser. No. 647,002
Int. Cl. E04b *2/72;* E04c *2/10, 2/36*
U.S. Cl. 52—284 2 Claims



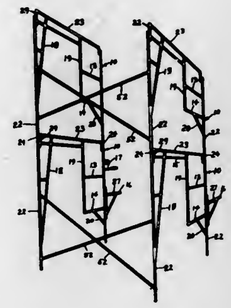
This invention relates to a method and construction of building wall panels that are individually framed at one location on a flat square table layout and are then transported to the place of use and assembled and which wall panels comprise a network of spacer bars joined by pairs of studs positioned on each side of the panel.

3,498,015
POURED GYPSUM ROOF STRUCTURE WITH LOWER VENT MEANS FOR REMOVING EXCESS MOISTURE
Paul A. Seaburg, 11621 N. Bobolink Lane 30 W., Mequon, Wis. 53092; Donald A. Green, 3460 Catherine Drive, Allentown, Pa. 18103; and James M. Galloway, 1131 Kimberly Road, Bethlehem, Pa. 18018
Filed Nov. 15, 1966, Ser. No. 594,502
Int. Cl. E04b *1/16;* E04c *2/24, 5/04*
U.S. Cl. 52—310 8 Claims



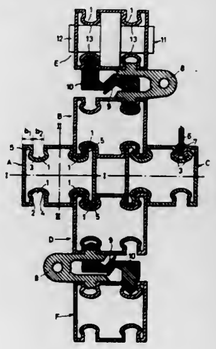
A roof construction and process therefor having a high strength backing sheet with a "built-in" venting feature for removing excess moisture from a roof slab. The venting feature provides for moisture removal even after the outer wearing surface has been installed on the top of the slab. The vents are formed by a series of apertures in the valleys of the corrugated sheets which are covered by a thin pliant layer of wicking and bonded in full contact to the upper surface of the sheets.

3,498,016
SCAFFOLD
Leonard F. Nowak, 20 Washington St., Silver Creek, N.Y. 14136
Filed May 27, 1968, Ser. No. 732,138
Int. Cl. E04g *1/06*
U.S. Cl. 52—638 9 Claims



A scaffold made up of spaced scaffold sections. Each said scaffold section being made up of spaced vertically extending channels with channel legs extending outward from each other. A splice channel is attached to each vertically extending channel and it extends above the upper end of the vertical channel. A laterally extending plank support is attached to each splice channel and the plank support holds the two splice channels together to form a rigid scaffold section. The lower ends of each vertical channel have a frame lock on it. When one scaffold section is stacked upon another, the frame lock on each vertical leg extends through a hole in a said plank support. The frame locks each have a locking means on their lower end. Adjustable outriggers are provided. These outriggers each have a specific sliding connection between them and one of the vertical channels. A winch is attached to a vertical channel above each outrigger so that the outrigger can be lifted up and down. An improved locking means including a blade and a spring prevents the outrigger from sliding down.

3,498,017
FRAME PROFILE
Ernst Koller, 64 Paradiesstrasse, 4102 Binningen, Switzerland
Filed Sept. 20, 1965, Ser. No. 488,604
Claims priority, Switzerland, July 19, 1965, 10,080/65
Int. Cl. E04c *3/40;* E06b *1/18*
U.S. Cl. 52—720 1 Claim



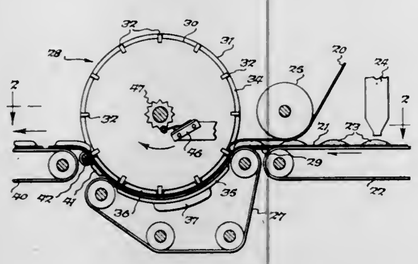
A frame profile of approximately rectangular cross-section for doors, windows and the like, and having a

frame member provided with two identical longitudinal grooves arranged on each of two opposite sides, and having a web on one side of each groove with the width of the web being at most equal to the width of the groove.

3,498,018
METHOD OF FORMING A PACKAGE
Oscar E. Seiferth and Glenn M. Austin, Madison, and Maurice J. Gifford, Monona, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1965, Ser. No. 445,579
Int. Cl. B65b *31/00*
U.S. Cl. 53—22 **5 Claims**

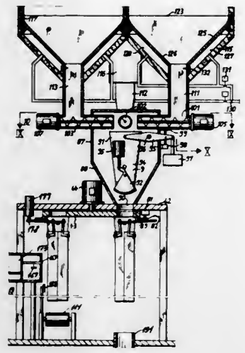
A package and a method of forming the same wherein a quantity of a compressible product is arranged in the form of an upright mass on a bottom forming, raised panel portion of a semi-rigid preformed plastic base which has flange-like, peripherally extending marginal portions connected by a peelable adhesive to like marginal portions of an inverted cup-shaped, transparent body member of semi-rigid, preformed plastic and the product is compressed by a pressure applying plate engaging the bottom panel so as to completely fill the available space within the package with the product and to shape the product to conform substantially to the interior of the container while being sealed under vacuum.

3,498,019
METHOD AND APPARATUS FOR FORMING SEALED PACKAGES
Joseph M. Rait, Snyder, N.Y.
(1100 Amherst St., Buffalo, N.Y. 14216)
Filed Oct. 23, 1965, Ser. No. 503,097
Int. Cl. B65b *9/02, 9/12, 51/30*
U.S. Cl. 53—28 **7 Claims**



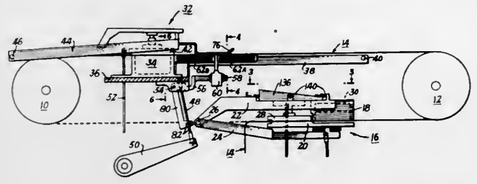
An endless belt conveyor continuously delivers sheets of heat sealable plastic sheets from a source to filling station where material to be packaged is deposited between layers of the plastic sheet and thence to a sealing station. A rotating sealing drum compresses the layers of plastic sheet together at intervals in the presence of heat supplied by an arcuate heated platen which is concentric with the drum and circumscribes a substantial arcuate surface of the drum. At the outlet of the sealing station, a rotating cutter synchronized with the rotation of the drum separates the sealed package into individual units. In one embodiment a printing device imprints a label on each package. Another embodiment utilizes a single layer of sheet material; a sealing station for forming sheet material into a tubular configuration precedes the filling station and a second sealing station for forming the tube into individual packets follows the filling station.

3,498,020
SACK-FILLING EQUIPMENT
Paul Eppenberger, Auenhofen, Switzerland, assignor to Gebruder Buhler AG, Uzwil, Switzerland
Continuation-in-part of application Ser. No. 392,727, Aug. 28, 1964. This application Mar. 19, 1968, Ser. No. 714,259
Claims priority, application Switzerland, Sept. 3, 1963, 10,883/63
Int. Cl. B65b *1/32, 43/50, 65/08*
U.S. Cl. 53—55 **16 Claims**



Equipment for filling sacks with material of a powdery nature includes a multi-station, carousel-type, sack holding and filling means, weighing means above the sack filling means discharging metered quantities of material directly into a sack on the filling apparatus at a filling station, plural silo compartments, respective feeding mechanisms for each compartment selectively operable to feed material from the respective compartment directly to the weighing means, automatic selecting means operable to stop operation of an activated feeding mechanism upon completion of delivery of a predetermined number of charges of equal weight to the bag filling apparatus and to activate another feeding mechanism, bag marking mechanism, and a central control means controlling the operation of the entire sack filling equipment responsive to control signals from the control means. The control means is preferably controlled by a punched tape mechanism.

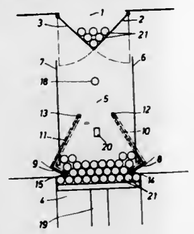
3,498,021
PACKAGING MACHINE
John R. Harder, Cedar Grove, Reid A. Mahaffy, Montclair, and George W. Anderson, Little Falls, N.J., assignors to Mahaffy & Harder Engineering Company, Totowa, N.J.
Filed June 29, 1967, Ser. No. 649,971
Int. Cl. B65b *9/04, 31/04*
U.S. Cl. 53—112 **15 Claims**



Automatic packaging machine wherein a continuous web of flexible plastic film is indexed in intermittent steps by chain-driven clips around a path past a forming station where the film is drawn into product receiving cups and thereafter to a finishing station including a sealing die

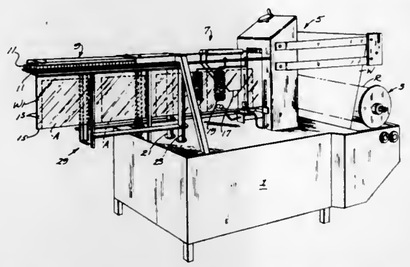
in which the cup is sealed to a plastic top and evacuated, there being provided a power-operated slitter knife arranged for high-speed penetration of the film to make an evacuation opening, there further being provided in the sealing die a reciprocable pressure bar with an interior passage normally aligned with the previously made evacuation opening, the film adjacent the opening being held away from the pressure bar during evacuation by support surfaces located on opposite sides of the bar.

3,498,022
DEVICES FOR FILLING STORAGE CONTAINERS WITH ROD-SHAPED PRODUCTS AND ESPECIALLY CIGARS
Jean Godet, Paris, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment
Filed June 5, 1967, Ser. No. 643,627
Claims priority, application France, June 7, 1966, 64,392
Int. Cl. B65b *19/26, 19/28, 35/32*
U.S. Cl. 53—149 **2 Claims**



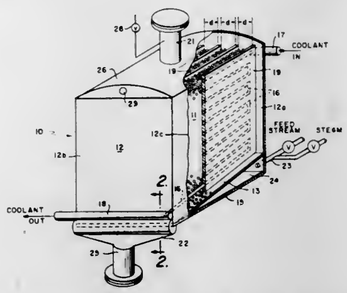
A device for automatically filling with rod-shaped products, such as cigars, a plurality of containers passing successively beneath feeding means comprising an intermediate storage receptacle having an outlet cross-sectional area which is equal at a maximum value to the inlet cross-sectional area of the containers, means for retaining the products above said containers and means for effecting the relative separation of said retained products and said containers.

3,498,023
PACKAGING APPARATUS
Laurie M. Reid, Lawrence H. Kilgore, and James V. Ferguson, Birmingham, Ala., assignors to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed Aug. 28, 1967, Ser. No. 663,837
Int. Cl. B65f *9/06, 51/26*
U.S. Cl. 53—182 **18 Claims**



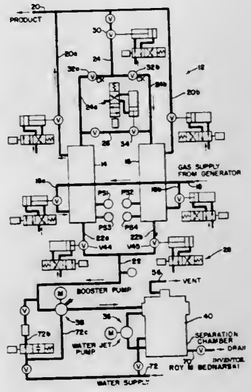
A packaging machine in which a center-folded web of flexible heat-sealable sheet plastic material is intermittently fed forward in increments equal to twice the package length interval, with a dwell between successive feed cycles, the web having its center fold at the bottom, thereby being of trough formation. The web first traverses a loading station and then a sealing station. During each dwell, two articles are dropped into the center-folded web, one behind the other, spaced one package length interval with a gap therebetween. Also during each dwell, two packages are simultaneously sealed and segmented at the sealing station by a pair of F-shaped sealing jaw members.

3,498,024
METHOD AND APPARATUS FOR GAS DECONTAMINATION
Willard R. Calvert, Sr., 809 Teakwood Drive, Severna Park, Md. 21146
Filed Mar. 26, 1968, Ser. No. 716,157
Int. Cl. B01d *53/04*
U.S. Cl. 55—33 **10 Claims**



Gas separation arrangement enabling decontamination of gases containing moisture with decontaminating gases and vapors, the arrangement having a cyclically regenerative adsorbent bed contained within a housing. A plurality of heat exchange separators is disposed in such relation to the adsorbent bed that heat transfer from the bed during adsorption is efficient preventing gaseous re-contamination due to accumulation of heat of adsorption, and that heat transfer to the bed during desorption is efficient enabling rapid release of desorbates to disposal.

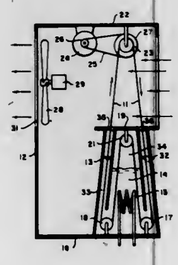
3,498,025
ADSORPTION PROCESS AND APPARATUS
Roy M. Bednarski, Parma Heights, Ohio, assignor to Alco Standard Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 25, 1968, Ser. No. 739,857
Int. Cl. B01d *53/04*
U.S. Cl. 55—33 **13 Claims**



An adsorption process and apparatus wherein a feed stream fed alternately through first and second adsorption beds remove therefrom components which are adsorbable

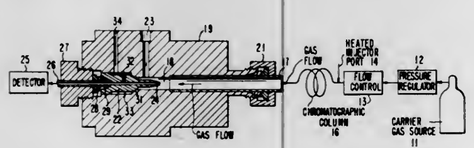
in the beds produce a product stream. While one of the beds is on an adsorption cycle, the other bed is being desorbed. Regeneration of the bed being desorbed is improved by carrying out the desorption step at a high vacuum of at least about 26" Hg, preferably at least about 28" Hg (about 49 mm. Hg abs.), impressed upon the bed first by means of a jet pump, and then by means a lobe type rotary pump.

3,498,026
ION EXCHANGE PROCESS AND APPARATUS FOR CONTINUOUS REMOVAL OF GASES
Harry Messinger, 305 Sumner Road, Annapolis, Md. 21401, and Joseph F. Daly, 5615 Regency Park Court, Suitland, Md. 20023
Filed June 24, 1968, Ser. No. 739,317
Int. Cl. B01d *53/06*
U.S. Cl. 55—73 **8 Claims**



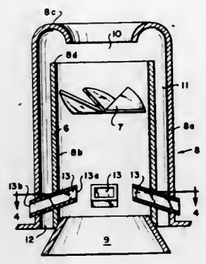
An arrangement for removing contaminating gases from the atmospheres of closed environmental systems utilizing an endless belt fabricated from a porous or fibrous material treated chemically to adsorb CO_2 or other gases from the surrounding atmosphere. The moving belt, after adsorbing the gas, enters a zone of hot water which causes the adsorbed gas to be released.

3,498,027
STREAM SPLITTER FOR GAS CHROMATOGRAPHY
Forrest L. Buchtel, Jr., Orinda, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 11, 1967, Ser. No. 666,618
Int. Cl. B01d *15/08*
U.S. Cl. 55—197 **9 Claims**



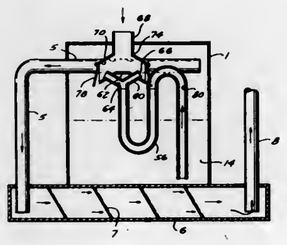
A stream splitter for either the input or output stream of a chromatographic column. A splitter insert having an axial bore is positioned opposite the gas stream so as to divide the stream into two unequal flows, with the smaller flow going through the axial bore. When the insert is used as an input splitter, the axial flow becomes the input stream to a capillary column. When used as an output splitter, the axial flow goes to a flame ionization detector or other detector requiring small gas flow. A radial bore in the insert allows hydrogen to be mixed with the axial flow when the insert is used as an output splitter.

3,498,028
APPARATUS FOR CONTACTING LIQUIDS AND GASES
Cornelis Trouw, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 19, 1967, Ser. No. 646,875
Claims priority, application Netherlands, June 22, 1966, 6608631
Int. Cl. B01d *47/10*
U.S. Cl. 55—237 **9 Claims**



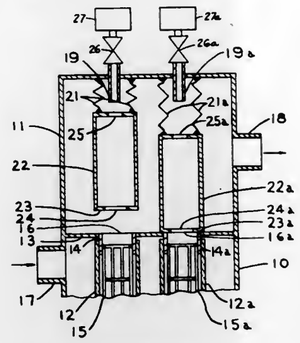
A liquid-vapor contacting apparatus comprising a cylindrical vessel having a vapor inlet at one end and a vapor outlet at the opposite end with liquid inlets protruding into the vessel not more than 30% of the inner diameter of the vessel. A set of overlapping, arcuately-spaced vanes extend radially from substantially the longitudinal center line of the vessel at a point upstream of the liquid and vapor inlet in order to impart rotational movement to the mixture of vapor and liquid.

3,498,029
FUEL FEED SYSTEM
Louis Feuersänger, 59 am Wickrater Tor, 405 Monchen-Gladbach-Rheindahlen, Germany
Continuation-in-part of application Ser. No. 508,295, Nov. 17, 1965. This application Oct. 16, 1967, Ser. No. 675,685
Int. Cl. B01d *47/00*
U.S. Cl. 55—257 **5 Claims**



Fuel feed systems for internal combustion engines wherein the engine intake port is connected to an opening above the fuel line in a fuel containing sealed tank. A Y-shaped hollow fitting has a vertical leg inserted into another opening above the original opening in the tank. The two sloping legs of the fitting are disposed in the tank below the vertical leg. Each leg has a manually closed valve opened only by engine suction. A hollow fuel feeding unit has a lower end in the tank below the fuel line and an upper end with two conduits, each of which communicates with the corresponding sloping leg.

3,498,030
CLEANING DEVICES FOR GAS FILTERING APPARATUS
John L. Wilki, 1511 Spring Lane, Wilmington, Del. 19809
Filed Nov. 1, 1967, Ser. No. 679,933
Int. Cl. B01d *45/06, 45/04*
U.S. Cl. 55—302 **1 Claim**



An apparatus having a dust-laden gas chamber, a filtered gas chamber provided with a supported filter bag, a movable tubular casing suspended over the filter bag, and a nozzle coaxially mounted therewith to provide an application of high pressure gas into said casing wherein the high pressure gas release induces a flow of filtered gas into the filter bag simultaneously with the seating of the tubular casing about the filter bag opening.

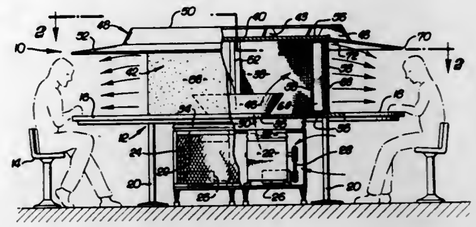
3,498,031
FILTER BAG HAVING A FELT-LIKE INSERT
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., Far Rockaway, N.Y., a corporation of New York
Filed Sept. 27, 1966, Ser. No. 582,334
Int. Cl. B09d *29/10, 29/14*
U.S. Cl. 55—368 **4 Claims**



A vacuum cleaner filter bag comprising in combination a container composed of air-permeable filter paper and an insert of felt-like material within said bag coextensive with a portion of the interior of the front and rear walls thereof.

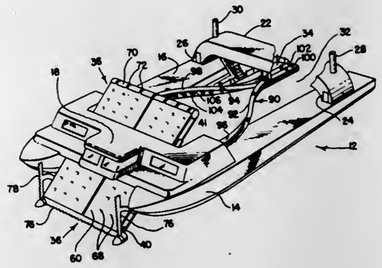
3,498,032
HIGH CAPACITY LOW CONTAMINATION BENCH
Robert D. Scott, West Covina, Calif., assignor to Moore & Hanks Company, El Monte, Calif., a corporation of California
Filed Aug. 31, 1967, Ser. No. 664,846
Int. Cl. B01d *46/00*
U.S. Cl. 55—471 **2 Claims**

A clean bench having an increased number of work stations relative to previous benches with a given size submicron filter is provided. A wider work station area with a relatively smaller filter area is achieved with positive sweeping of all work surfaces by changing the profile



of the air stream emanating from the filter to a lower, wider profile capable of filling the entire volume above the work surface.

3,498,033
METHOD AND APPARATUS FOR HARVESTING SEA PLANTS
Walter Huff, West Vancouver, British Columbia, Canada, assignor, by mesne assignments, to Sea-Chem Industries Ltd., Vancouver, British Columbia, Canada, a corporation of the Province of British Columbia
Filed Jan. 31, 1967, Ser. No. 612,858
Int. Cl. A01d *45/08*; B65b *35/28, 43/00*
U.S. Cl. 56—9 **10 Claims**

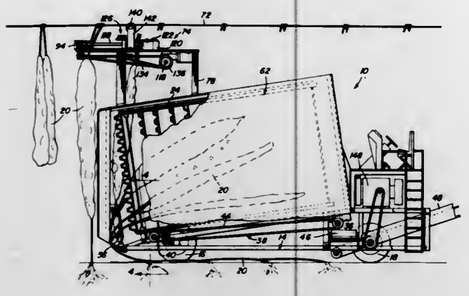


An improved harvesting vessel and method for cutting and bundling sea plants such as kelp. The vessel includes a cutting apparatus secured on an inclined endless belt type conveyor adjustably mounted on the forward end of the vessel, and a pair of guide rails equipped with drive rollers for propelling an elongated web beneath the discharge end of the conveyor and folding the web around the severed sea plant material deposited therein. The method comprises continuously cutting, collecting and bundling severed sea plant material on a sea-going vessel, and thereafter depositing the bundles into the sea and towing them to a processing factory.

3,498,034
HOP PICKING MACHINE
Alfred Woltt, 210 S. 46th Ave., Yakima, Wash. 98901
Filed Feb. 2, 1967, Ser. No. 613,588
Int. Cl. A01g *19/02*
U.S. Cl. 56—19 **18 Claims**

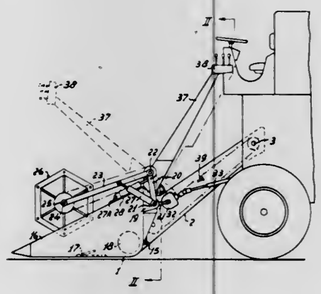
A machine for picking hops directly from the vine in the field. A cutting unit releases each vine from the overhead supporting trellis and positions the vine within a

picking unit through which it is continuously forwardly drawn by grasping rollers which ultimately lay the vine on the ground beneath the machine and between the



supporting wheels. The hops released by the picking unit are conveyor carried to an ultimate rearwardly directed discharge point.

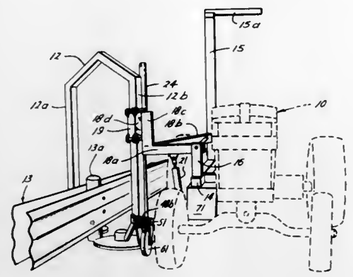
3,498,035
COMBINE HARVESTERS
Cornelis van der Lely, Zug, Switzerland, Leendert van Wingerden, Dubbeldam, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Netherlands limited-liability company
Filed Mar. 8, 1965, Ser. No. 437,694
Claims priority, application Netherlands, Mar. 18, 1964, 6402854
Int. Cl. A01d *35/14*
U.S. Cl. 56—23 **17 Claims**



In accordance with the invention there is provided a combine harvester having a detachable moving platform, wherein a quick-release mechanism for attaching and detaching the mowing platform is provided, the quick-release mechanism being located between the mowing platform and a front side of the combine harvester.

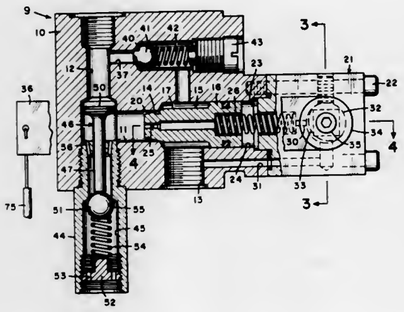
3,498,036
MOWING APPARATUS
Robert E. Cowling, William H. Harris, and Carl Wayne Lafitte, Houston, Tex., assignors to Astron Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 13, 1968, Ser. No. 712,684
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **9 Claims**

An inverted U-shaped yoke is mounted on a tractor for the spaced, parallel legs of the yoke to be positioned on opposite sides of a fence. A mower head is supported by each leg. The mower heads mow overlapping swaths with a portion of both swaths extending below the fence. The mower heads are mounted on the legs of the yoke to



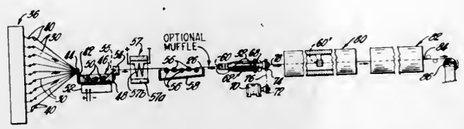
move around the fence posts. The yoke is movable from an operating position astraddle a fence to a traveling position. In the traveling position the yoke does not increase the width of the tractor substantially, if at all, so the tractor does not exceed highway width limitations.

3,498,037
AUTOMATIC HEADER CONTROL MEANS
Willis S. Hobson, John T. Gregory, and Marvin L. Garrison, Seymour, Ind., assignors to Seymour Manufacturing Co., Seymour, Ind., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,385
Int. Cl. A01d *67/00;* **F16k** *31/18*
U.S. Cl. 56—210 **10 Claims**



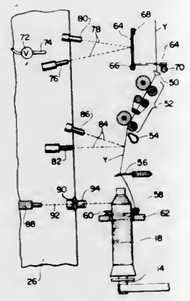
The header control means includes a meter valve regulating the fluid supply to a ram operatively attached to the header. The meter valve includes a body portion, having a chamber in communication with first, second and third ports. A poppet valve regulates flow into the chamber and a metering plunger in the chamber regulates flow from the chamber through the second and third ports. A compartment is provided at the side of plunger remote from the chamber, and a bleed passage through the plunger communicates between the chamber and the compartment. A dump passage is provided between the compartment and the second port, and a sensing valve regulates flow through the dump passage. The header is coupled to the sensing valve, and as the header rises and falls, the sensing valve is operated to provide automatic pressure control to the ram, whereby to maintain the header at a predetermined height.

3,498,038
TENSILE MEMBERS, APPARATUS AND METHOD FOR PRODUCTION
William Shulver, Saylesville, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 439,907, Mar. 15, 1965. This application July 11, 1966, Ser. No. 564,092
Int. Cl. D04d *7/04;* **D02g** *3/40, 3/18*
U.S. Cl. 57—7 **14 Claims**



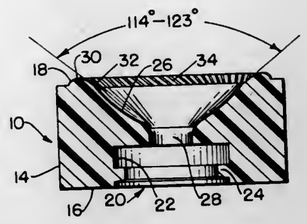
Elongated, line-type tensile members are provided, made up of plural strands of no yield material, e.g., glass, supported in a matrix, with a helical overwrap, in equally load bearing relation; apparatus and method are also provided for making the tensile members by orienting and compacting plural strands into a bonding matrix.

3,498,039
CONTROL SYSTEM
Edward L. Kent, Johnston, and William R. Whitney, Cranston, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 29, 1968, Ser. No. 748,412
Int. Cl. D01h *13/26*
U.S. Cl. 57—34 **6 Claims**



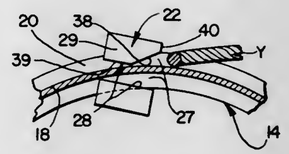
A control system for a tender which services bobbin winding stations on a spinning or twisting machine, or the like. The system provides optical-electronic signals for operating the tender. These signals include a signal indicating when a particular station is in operational condition and another signal indicating when the station requires servicing. Upon receipt of both of these signals the control system initiates a work cycle of the tender to service. If the tender is unable to adequate service the station, an indicator which cooperates in providing the operational signal is moved to a non-operational position so that this signal is not provided and thereafter the tender by-passes the station until the station is again placed in operational condition as by an attendant. When the indicator is moved to its non-operational position it causes the strand to be broken prior to entering drafting rolls of the station. The servicing signal is provided either when the bobbin at the particular station is ready to be doffed or when there is an interruption in the advancing strand to the bobbin.

3,498,040
GROMMET FOR ROVING MACHINE
William Argereu, Hickory Drive, Pole 4, North Scituate, R.I. 02857
Filed Aug. 20, 1968, Ser. No. 754,037
Int. Cl. D01h *7/24, 13/04*
U.S. Cl. 57—115 **3 Claims**



A grommet for leading roving to the flyer of a roving machine composed of an oil impervious plastic material which may be molded and which has an upwardly flaring conical opening with a friction means adjacent its upper end for contacting the roving, the conical surface being adapted to the angle of approach of the roving which passes through the opening and so shaped that the friction means is contacted by the roving sufficiently to impart a twist to the roving.

3,498,041
RING TRAVELER
William Sandager, North Dighton, Mass., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 5, 1968, Ser. No. 702,863
Int. Cl. D01h *7/60, 15/00*
U.S. Cl. 57—125 **5 Claims**



Yarn guiding apparatus for a spinning or twisting machine adapted to automatically thread-up a spindle. An offset portion of a ring traveler engages a strand of yarn held against a guiding ring, which provides a track for the traveler. The traveler is moved against the strand and the offset portion slides across the strand and positions the traveler so that the strand is operatively engaged in the traveler.

3,498,042
STAPLE BLEND OF 3-METHYLBUTENE-1 COPOLYMER AND CELLULOSIC FIBERS
Walter J. Polestak, Summit, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,572
Int. Cl. D01f *3/00;* **C08b** *23/00*
U.S. Cl. 57—140 **9 Claims**

Staple blend prepared from cellulosic fibers and fibers formed from a copolymer of a major amount of 3-methyl-butene-1/minor amount of at least a 9 carbon

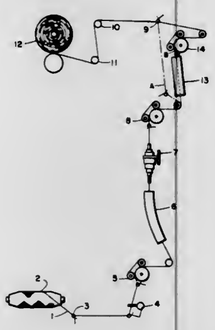
chain monoethylenically unsaturated hydrocarbon, the copolymer fibers in the blend being characterized by a load-bearing capacity of at least 1.8 grams per denier at the break-elongation characteristic of the cellulosic fibers.

3,498,043

METHOD OF TEXTURING YARN

Robert T. Moffett, Jr., and Robert C. Parker, Charlotte, N.C., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 1, 1968, Ser. No. 764,243
Int. Cl. D02g *3/02*; D04h *17/00*; D05c *15/00*
U.S. Cl. 57—140 **13 Claims**



A process for texturing an entangled yarn comprising a cellulose ester yarn and a nylon yarn, said process comprising advancing the yarn at a first rate of speed through a temperature zone to a twisting zone, inserting a twist in the yarn computed from the formula

$$\text{Twist}=K/\sqrt{\text{denier}}$$

heating the twisted yarn to a temperature of from about 160 to 210 degrees centigrade for 0.25 to 2 seconds, advancing the yarn at a second rate of speed, which is about 95 to 110 percent that of the first rate, and taking up the untwisted yarn at a rate of from about 98 to 80 percent of the second rate of speed.

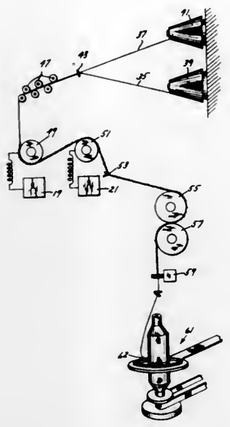
3,498,044

METHOD FOR PRODUCING A LATENT TEXTURIZED YARN

John G. Hopkins, Boonton, N.J., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 15, 1968, Ser. No. 776,186
Int. Cl. D02g *3/02*; D02j *13/00*
U.S. Cl. 57—157 **6 Claims**

The subject invention relates to a method for producing a latent texturized effect in a multifilament thermoplastic yarn. The multifilament thermoplastic yarn is drawn around a heated surface under a controlled tension such that some of the multifilaments shrink, whereas other of the multifilaments do not shrink but rather some of the filaments are caused to become convoluted or looped. After being passed about the heated surface, the multifilament yarn is wound under a sufficient tension in order to straighten out the convolutions or loops in said filaments and thereafter the yarn is collected in an unlooped state whereby a latent texturized yarn is produced. When the yarn is woven or knitted into a fabric, the texturizing effect is noticed as it produces a soft or silky hand.

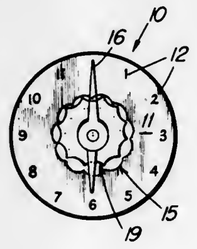


3,498,045

SPEED REDUCER MECHANISM ESPECIALLY AS EMBODIED IN CLOCKWORK

Miklos V. Kemenczky, Point Pleasant Beach, N.J., assignor to Paul Guilden, New York, N.Y.

Filed July 12, 1967, Ser. No. 652,948
Int. Cl. G04b *13/00*
U.S. Cl. 58—7 **10 Claims**



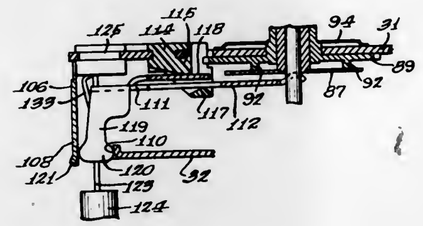
A mechanism for a clockwork in which the minute hand is mounted on central shaft, adapted to be rotated at a constant speed of one revolution per hour. An eccentric is connected with the shaft and rotates in unison therewith about the axis of the shaft. A rotary star wheel is mounted on the eccentric for rotative movement independently of the movement of the eccentric and serves as the structure to which the clockwork hour hand is connected, the star wheel having a plurality of circularly spaced teeth extending around the periphery thereof. Encircling the star wheel is a fixed frame structure presenting a plurality of curvilinear camming surfaces arranged circularly of the axis of the central shaft. Rotation of the eccentric produces an orbiting bodily movement of the rotary star wheel about a common central area within which is located the axis of the central shaft. In the course of the orbital movement, the teeth of the star wheel each engage and disengage with a different one of successive camming surfaces on the fixed structure during correspondingly successive orbital revolutions, thereby producing a revolution of the star wheel about its own axis. The number of camming surfaces on the fixed frame totals eleven whereas the rotary star wheel is provided with twelve teeth, this being the mathematical arrangement required to enable the star wheel to make an advance of 1/12 revolution about its own axis during each orbital revolution thereof accompanying a corresponding complete revolution of the eccentric, thereby advancing the clock hour hand from one to a succeeding hour hand designation on the clock dial face.

3,498,046

ALARM APPARATUS AND CLOCK MOVEMENT

Ivar Jepson, South Duxbury, Mass., and John W. Morgan, Elmhurst, and James W. Richmond, Bensenville, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Application Aug. 18, 1965, Ser. No. 480,578, now Patent No. 3,389,452, dated June 25, 1968, which is a division of application Ser. No. 322,218, Nov. 7, 1963, now Patent No. 3,248,867, dated May 3, 1966. Divided and this application Apr. 11, 1968, Ser. No. 720,528
Int. Cl. G04b *23/02*; G04c *21/16*
U.S. Cl. 58—16 **8 Claims**



An alarm clock having frame means supporting a motor and movement driving an hour gear, a selectively rotatable alarm gear mounted in coaxial alignment with said hour gear, said gears being mounted for relative axial movement, cam means for maintaining said gears in a first axially spaced relation or position until a time predetermined by the selected rotative position of said alarm gear relative to said hour gear, said cam means including structure permitting axial relative movement of said gears to a second position at said predetermined time, a pivotal alarm lever having one end movable in response to the movement of said gears between said first and second positions and an opposite end movable between an alarm disabling position when said gears are in said first position on alarm or on position when said gears are in said second position, and means for biasing said one end of alarm lever against one of said gears urging said gears to assume said second position.

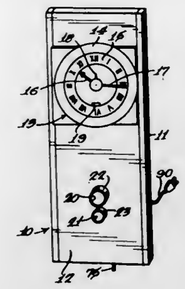
3,498,047

ALARM TERMINATING MEANS

Charles A. McLeod, Oak Park, Leon M. Roszyk, Berwyn, and John Vancha, Lemont, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Apr. 26, 1967, Ser. No. 633,746
Int. Cl. G04b *13/00*
U.S. Cl. 58—21.15 **11 Claims**

An electric alarm clock is provided in which the alarm may be shut off by the user without touching the clock or any part thereof. The electric alarm clock is provided with a light and a photoelectric control means, whereby, when the alarm comes on, a light beam is directed over the bed of the user. Then the user, by merely moving an arm or the like, will cause at least some of the light from the beam to reflect back to the photoelectric control means in the clock with the result that the alarm is shut off.

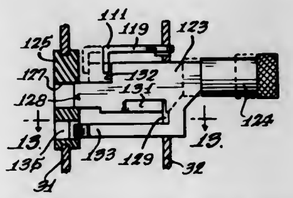


3,498,048

ALARM CONTROL APPARATUS FOR ALARM CLOCK

Ivar Jepson, South Duxbury, Mass., John W. Morgan, Elmhurst, and James W. Richmond, Bensenville, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Application Aug. 18, 1965, Ser. No. 480,578, now Patent No. 3,389,452, which is a division of application Ser. No. 322,218, Nov. 7, 1963, now Patent No. 3,248,867. Divided and this application Apr. 11, 1968, Ser. No. 720,608
Int. Cl. G04b *13/02*; G04c *21/16*
U.S. Cl. 58—21.15 **11 Claims**



An alarm clock including frame means supporting a motor and movement for actuating an alarm means to produce an alarm signal at a selected time, including a manually actuated shutoff member having one end portion projecting outwardly of said frame means for manual movement toward and away therefrom between an inward off position disabling said alarm means and an outward alarm or on position permitting actuation of said alarm at said selected time. Mounting means on said frame means for supporting said shutoff member for movement between said off and on positions and detent means cooperating with said shutoff member and said mounting means for releasably retaining said member in said off position and permitting manual movement thereof to said on position.

3,498,049

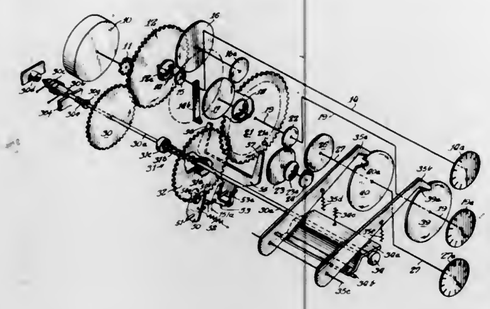
REMOTE CLOCK SYSTEM

Robert A. Kulick, Streamwood, Ill., assignor to Du Kane Corporation, St. Charles, Ill., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 694,946
Int. Cl. G04c *13/00*
U.S. Cl. 58—24 **17 Claims**

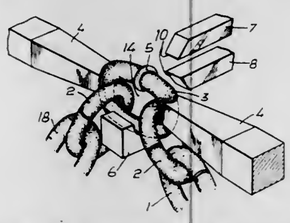
An electric clock system including master and remote clocks has each remote clock powered by an individual synchronous electric motor energized from its own local electric power source. In such a system, a remote clock receives reset electric pulses over a signal circuit from a master clock. The pattern of such pulses is as an example a

57 second pulse every hour and every twelve hours (or twenty-four) successive similar pulses spaced 63 seconds apart are received for some twenty odd minutes for major reset. When reset is not required at a remote clock embodying the invention, all time corrective physical movement of remote clock parts is reduced to two cam follow-



ers sliding along two cam surfaces, of such mechanical simplicity and ruggedness, that the reset pulse sensing means inherently has a long useful life. When reset is required, the sensing means unlocks suitable mechanical means and permits reset pulses to control remote clock mechanism for reset.

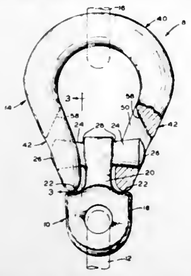
3,498,050
METHOD AND APPARATUS FOR PRODUCING A ROUND-LINK CHAIN
Gerhard Lange, Reutlingen, Germany, assignor to Wafios Maschinenfabrik Wagner, Ficker & Schmid G.m.b.H., Reutlingen, Germany
Filed July 18, 1967, Ser. No. 654,252
Claims priority, application Germany, July 21, 1966, 1,627,714
Int. Cl. B21l *15/00*
U.S. Cl. 59—29 **5 Claims**



A method and an apparatus for producing a round-link chain, wherein the mold bead on each chain link is trimmed off immediately following the electrical welding of each link by only two operations which permit the apparatus to be made of a very simple construction and the entire production of the chain to be carried out within a much shorter length of time than was required by previous methods.

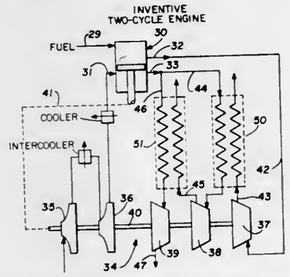
3,498,051
SAFETY DRAFT HOOKS
Franklin M. Brawand, 7706 SW. Florence Lane, Portland, Oreg. 97223
Filed Oct. 30, 1967, Ser. No. 678,992
Int. Cl. F16g *15/06*
U.S. Cl. 59—93 **11 Claims**

A draft line terminal member **10** can be disengaged from a load line holder **14** only by first swinging the member **10** to a position at right angles to the holder **14** and then turning the member **10** about an axis parallel to its longitudinal axis to swing tapered pins **24** out of undercut sockets **50**. A draft line terminal member **70**, to be disengaged from a load line holder **14**, requires, in addition to the steps outlined above, the removal of a key keeper **69** from keyways **95** in the holder. The keeper



has a bar **97** which is prevented from being moved into alignment with key portions **99** of the keyways except when the member **70** extends transversely of the holder **74**.

3,498,052
REGENERATIVE COMPOUND ENGINE
David H. Silvern, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 576,259, Aug. 31, 1966. This application July 29, 1968, Ser. No. 748,260
Int. Cl. F02b *41/10, 75/02;* **F01k** *23/14*
U.S. Cl. 60—13 **10 Claims**

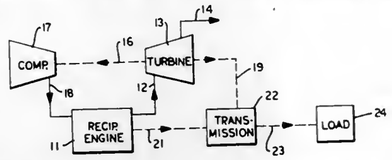


A cylinder for a two cycle engine includes a high pressure (blowdown) exhaust port which opens prior to the opening of a low pressure exhaust port; and the exhaust gas streams from these ports are conducted separately from the cylinder. An exhaust driven turbocharger for providing scavenging air includes separate turbine stages which are driven respectively by the separate exhaust gas streams. Exhaust gas from the high pressure exhaust port drives a first turbine stage, and the spent exhaust gas from this first stage is passed in heat exchange relation with the exhaust gas from the second exhaust port which drives the second turbine stage. The exhaust gas from the high pressure port may be conducted through a vortex chamber which converts the pulsating gas stream into a steady flow, more highly pressurized gas stream.

3,498,053
COMPOUND ENGINE
Robert D. Johnston, Brownsburg, Ind., assignor to Belcan Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 16, 1968, Ser. No. 759,994
Int. Cl. F01k *23/14;* **E02b** *41/10*
U.S. Cl. 60—13 **10 Claims**

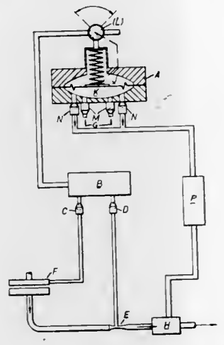
A two-cycle, compression-ignition engine employs opposed pistons and rigid connecting rod between them with a Scotch yoke connection to an output shaft. A gas turbine machine has inlet means connected to the exhaust mani-

fold of the engine and drives a compressor to supercharge the engine, the turbine also having an output shaft, the two output shafts being combined through a transmission to an output shaft for a load. The compressor supplies



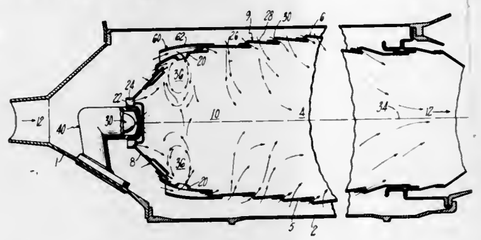
excess air for direct cooling of the cylinders internally, the heated air being received at the turbine inlet means. Ultra-high cylinder pressures and temperatures are employed.

3,498,054
EXHAUST PURIFICATION
William D. L. Theed, Wargrave, England, assignor to Sir George Godfrey & Partners (Holdings) Limited, West Hanworth, Middlesex, England
Filed Dec. 14, 1965, Ser. No. 513,751
Int. Cl. F01n *3/14;* **B01d** *53/34*
U.S. Cl. 60—30 **11 Claims**



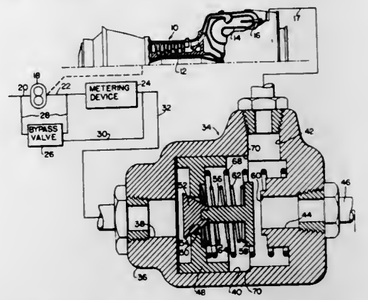
Arrangement for purification of the exhaust from an automobile engine. A catalytic chamber is included in the exhaust pipe and is supplied with air by a positive displacement diaphragm pump operated by the pressure depression at the engine induction.

3,498,055
SMOKE REDUCTION COMBUSTION CHAMBER
Joseph J. Faitani, East Hartford, and William W. Mieczkowski, Jr., South Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 16, 1968, Ser. No. 767,953
Int. Cl. F02c *7/22, 1/00*
U.S. Cl. 60—39.06 **14 Claims**



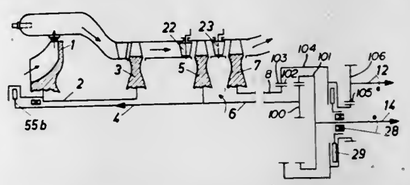
A combustion chamber either an annular or can-annular type, which substantially elimnates the production of smoke while maintaining all other performance parameters of the combustion chamber. The combustion chamber is provided with a front end configuration which substantially eliminates local fuel rich regions and which provides a means for mixing the incoming fuel and air.

3,498,056
PRESSURIZING AND DRAIN VALVE
Paul A. Avery, Shelton, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Apr. 3, 1968, Ser. No. 718,612
Int. Cl. F23n *5/24;* **F02c** *9/00;* **F16k** *23/00*
U.S. Cl. 60—39.09 **8 Claims**



The disclosure illustrates a pressurizing and drain valve in a gas turbine engine fuel control system to maintain fuel system pressures at a level sufficient for proper operation and to permit a rapid drain of fuel from the fuel system nozzles upon shutdown to prevent coking of the fuel in the nozzles and manifolds. The valve includes a pair of valve elements displaceable relative to one another and to the valve body so that when the valve inlet pressure drops below a given level, the flow from the inlet to the valve outlet is blocked and simultaneously the outlet is connected to a drain outlet through a relatively unobstructed flow path to permit a rapid draining of fuel from the fuel system nozzles.

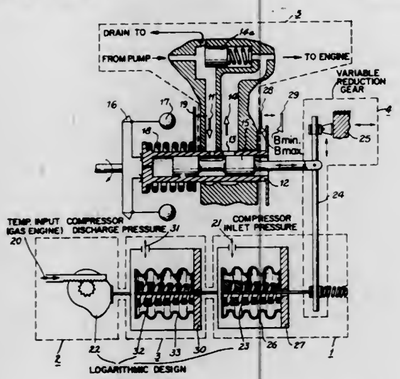
3,498,057
GAS TURBINE POWER PLANT
Sven-Olof Kronogard and Clas-Olof Kronogard, Lomma, Sweden, assignors to Turbokonsult AB, Goteborg, Sweden
Filed Oct. 4, 1967, Ser. No. 672,869
Claims priority, application Great Britain, Oct. 13, 1966, 45,726/66
Int. Cl. F02c *3/10, 7/02;* **F16h** *37/06*
U.S. Cl. 60—39.16 **12 Claims**



A gas turbine power plant comprising a gas producer, a main power turbine and an auxiliary turbine with the latter having at least one power take off means separate from that of the main turbine. The rotors are arranged in a common gas passage from the gas generator. The power take off from the auxiliary turbine can be utilized independently of the main drive, but when no main drive is required, also take care of the full output of the gas generator for auxiliary purposes. By introducing power transformer means, the auxiliary turbine may be utilized

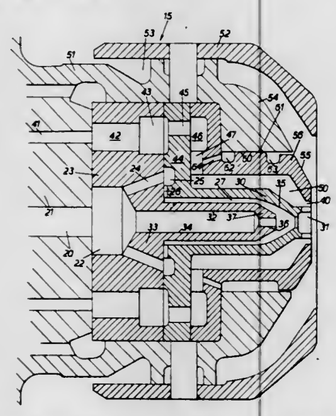
for augmenting the main power output and/or for accelerating the gas producer. With an automotive plant the arrangement provides a good aerodynamic braking.

3,498,058
CONTROL DEVICE FOR GAS TURBINE ENGINES
Christian Greune, 8 Bahnhofstr. 8081 Schongeising, Germany; Hilbert Holzhauer, 127/129 IV, Leopoldstr., 8000 Munich 23, Germany; Siegfried Steuer, 54 Pelkovenstr., 8000 Munich 54, Germany; and Friedhelm Zimmer, 7779 Kluftern 142, Germany
Filed July 5, 1967, Ser. No. 651,286
Claims priority, application Germany, July 21, 1966, M 70,303
Int. Cl. F02c *9/04;* F02g *3/00*
U.S. Cl. 60—39.28 3 Claims



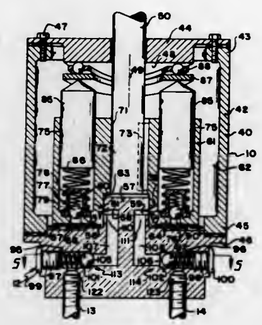
The operating values of an engine such as the r.p.m., temperature, compression pressure, etc., are logarithmically mechanically represented in a valve to control the fuel fed to the engine.

3,498,059
BURNER, E.G., FOR A GAS TURBINE ENGINE COMBUSTION CHAMBER
Keith Gradon and Richard Alfred Harvey, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Feb. 12, 1968, Ser. No. 704,803
Claims priority, application Great Britain, Mar. 20, 1967, 13,054/67
Int. Cl. F02c *3/00;* F23d *11/24*
U.S. Cl. 60—39.74 7 Claims



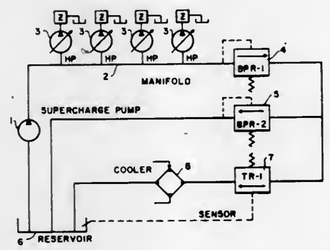
A burner has a jet orifice, a first conduit for supplying the jet orifice with an annular vortex flow of fuel, and a second conduit for supplying air liquid fuel to a hollow central region of the annular vortex to reduce the passage of combustion gases upstream through the jet orifice.

3,498,060
HYDRAULIC STEERING CONTROL APPARATUS
Darcy Smith, 1052 Verdier Ave., Brentwood Bay, British Columbia, Canada
Filed Apr. 10, 1968, Ser. No. 720,270
Int. Cl. F15b *15/18;* B63h *25/22*
U.S. Cl. 60—52 4 Claims



Hydraulic steering control apparatus for craft having a rotatable steering wheel and a steered member wherein a reversible hydraulic pump operated by the wheel is arranged to pump fluid to a reversible hydraulic motor connected to the steered member. The fluid passes through check valves which normally prevent the return flow thereof from the motor to the pump. Check valve operating means operably responsive to fluid pressure in each side of the pump operate the check valves to permit fluid discharge from the motor only when the pump is operated.

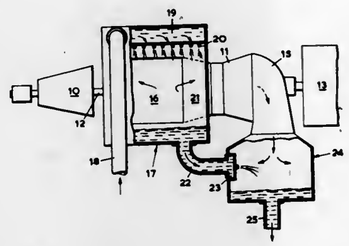
3,498,061
HYDRAULIC SUPERCHARGE AND COOLING CIRCUIT
Harold E. Prucha, 12915 Travilah Road, Rockville, Md. 20854, and Franklin I. Siegrist, 32 Philadelphia Ave., Takoma Park, Md. 20012
Filed May 29, 1968, Ser. No. 732,979
Int. Cl. F15b *15/18*
U.S. Cl. 60—52 12 Claims



Apparatus which provides automatic control of the inlet pressure to high pressure pumps and simultaneously diverts excess fluid to a cooling unit as required to maintain the fluid temperature of the system at a specified

value. A digital control monitors and controls a plurality of independent hydraulic actuators. A lock-up and release circuit provides a means for remotely holding a load on a hydraulic ram and a means for remotely releasing the load at a set rate.

3,498,062
TURBINE PLANT
John Harold Daltry, Rugby, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Aug. 24, 1967, Ser. No. 663,042
Claims priority, application Great Britain, Aug. 24, 1966, 37,888/66; Dec. 9, 1966, 55,230/66
Int. Cl. F01b *31/16;* F01k *19/10;* F01n *3/04*
U.S. Cl. 60—64 8 Claims



The invention provides improved arrangements of stepped-series condenser system, that is to say a system comprising a number of condensers, each connected to a steam turbine exhaust outlet which are arranged at different levels and connected in series by feeding the condensate from each condenser to the cooling water inlet of the next lower condenser.

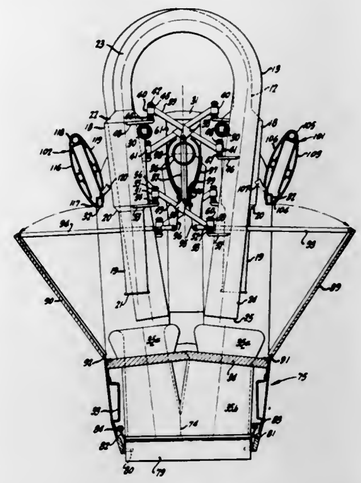
The improved arrangements provide a reduction in the basement height normally required for such system.

Thus, one arrangement comprises arranging the uppermost condenser of the system at or above the level of its corresponding turbine exhaust outlet, and another arrangement comprises providing a plurality of cooling water inlets and condensate outlets at different levels over the height of each condenser, thus enabling several series connections to be made between adjacent condensers of the system over the height of said condensers.

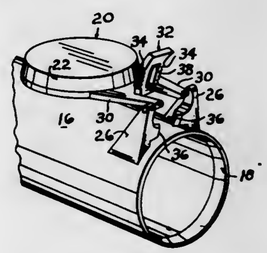
The two arrangements may be combined to at least reduce the basement height to a minimum.

3,498,063
MULTIPLE-COMBUSTOR PULSE JET ENGINE STRUCTURE
Raymond M. Lockwood and Edward L. Bennett, Los Altos, David A. Graber, Menlo Park, and Elbert R. Sargent, Sherman Oaks, Calif., assignors to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Delaware
Filed Mar. 27, 1968, Ser. No. 716,522
Int. Cl. F02k *9/06, 7/02;* B64b *1/24*
U.S. Cl. 60—225 14 Claims

An engine structure comprising a plurality of pulse-jet combustors (individual engines) arranged in banks with those combustors in any one bank being interconnected in a manner enforcing thereon a predetermined operational-phase relationship relative to each other. As an example, six generally U-shaped pulse-jet combustors each having a combustion chamber therealong are arranged in banks of three with those combustors in any one bank being interconnected at their combustion chambers by flow tubes effective to enforce on the combustors of such one bank a coincident operational-phase relationship.



3,498,064
IRRIGATION CONDUIT END CONTROL
William E. La Ferney, Rte. 1, Box 25, Griffithville, Ark. 72060
Filed June 11, 1968, Ser. No. 736,225
Int. Cl. E02b *7/44*
U.S. Cl. 61—25 1 Claim

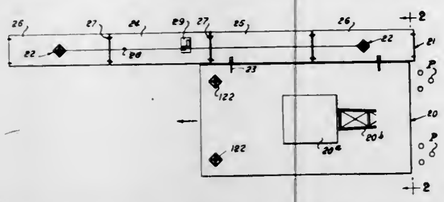


A disk-like stop, shaped to be partially inserted into one end of a tubular conduit, is connected to the conduit by a hinge for pivoting movement of the stop toward and away from the conduit end. Frictionally engaged members, supported by the hinge, holds the stop in selected angular positions adjacent the conduit end.

3,498,065
METHOD AND APPARATUS FOR BARGE ANCHORING AND STABILIZING
John B. Templeton, 1000 Singleton Blvd., Dallas, Tex. 75212
Filed Oct. 30, 1967, Ser. No. 678,820
Int. Cl. E02b *17/06;* B63b *21/00*
U.S. Cl. 61—46.5 25 Claims

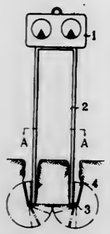
A system and method for anchoring and stabilizing a work barge, such as a pile driver barge, where longitudinally interconnected anchor barges have end units anchored by a spud driven into the water bed through a well in the barge. The work barge is also anchored by one or more spuds and is stabilized by one or more

brackets coupling adjacent sides of the anchor barge assembly and the work barge. The work barge is movable along the row of anchor barges to new work positions



without moving the anchor barges. The anchor barge assembly also is shiftable relative to the work barge to establish a new line or work locations.

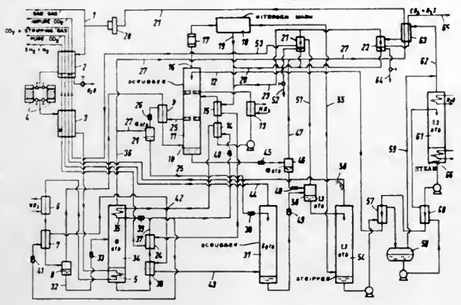
3,498,066
SOIL COMPACTING METHOD AND A MEANS THEREFOR
Mitsuo Nishimura, 51–10 2-chome, Juso Minamino-cho, Higashi-Yodogawa-ku, Osaka, Japan, and Setsuo Matsumoto, 45 Omasu-cho, Ashiya-shi, Hyogo-ken, Japan
Filed Mar. 8, 1968, Ser. No. 711,744
Claims priority, application Japan, Mar. 12, 1967, 42/15,495; Mar. 28, 1967, 42/19,307; Apr. 15, 1967, 42/24,171; Oct. 23, 1967, 42/68,152, 42/89,723
Int. Cl. E02d *5/38, 7/18, 3/10*
U.S. Cl. 61—63 **7 Claims**



A soil compacting means comprising a pile provided with automatically swingable wings at the bottom thereof. While being vibrated, the pile is subsided down to a predetermined subsurface level so as to form a shaft, and then pulled up to the ground level while repeatedly elevated and subsided little by little, whereby the wall of the shaft is collapsed and the collapsed soil is transferred under the wings and compacted there together with the soil originally under the wings. The seepage water extraction and cement grouting are united with the compaction by particularly provided means built in the compacting means.

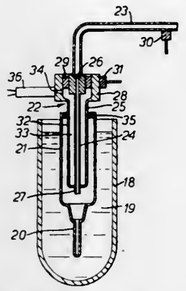
3,498,067
SYSTEMS FOR REMOVAL OF CO_2 FROM GASEOUS MIXTURES
Gerhard Ranke, Munich, Germany, assignor of fifty percent each to Linde Aktiengesellschaft, Wiesbaden, Germany and Metallgesellschaft A.G., Frankfurt, Germany
Filed Nov. 15, 1966, Ser. No. 594,456
Claims priority, application Germany, Nov. 15, 1965, L 52,150
Int. Cl. F25j *3/08, 3/06*
U.S. Cl. 62—17 **13 Claims**

A high pressure hydrogen-containing gas is treated to remove H_2S CO_2 by condensing out a portion of CO_2 in the liquid phase by heat exchange with products that have been separated and by heat exchange with CO_2 evaporating under reduced pressure after it had been liquefied. The resultant uncondensed gaseous mixture is scrubbed with a scrubbing liquid, which is removed from the scrubbing column as a CO_2-loaded, H_2S-free scrubbing liquid at a point where the rising gaseous mixture contains substantially no H_2S. The removed scrubbing liquid is used to scrub H_2S and CO_2 from a vaporized liquid



CO_2 fraction which fraction was derived from the CO_2 evaporating under reduced pressure after it had been liquefied. The invention is set forth in process and apparatus claims.

3,498,068
SPECTROPHOTOMETRIC SAMPLING CELLS
Jamal Tadayon, Richmond, Surrey, England, assignor, by mesne assignments, to Beckman Instruments, Inc., Fullerton, Calif.
Filed Dec. 3, 1964, Ser. No. 415,601
Claims priority, application Great Britain, Dec. 10, 1963, 48,797/63
Int. Cl. G01n *21/16;* **F25j** *1/02*
U.S. Cl. 62—40 **14 Claims**

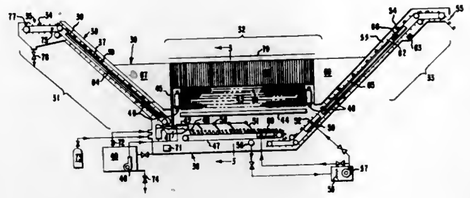


A sampling cell formed from a tube of suitable material to provide an inlet conduit and a cell chamber adapted to hold a sample for spectrometric examination, the cell chamber having parallel walls with fused edges and encased in a rigid container, some forms of the cell having an inlet chamber and condensing apparatus for introducing the sample into the cell, the apparatus including an inlet nozzle assembly and refrigerant in a container.

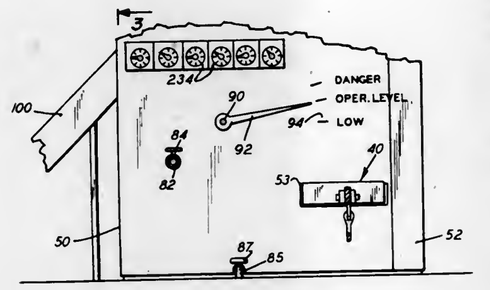
3,498,069
METHOD OF EXTRACTING HEAT FROM ARTICLES WITH AN EBULLIENT LIQUID FREEZANT
Vincent H. Waldin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 725,257, Apr. 19, 1968, which is a continuation-in-part of application Ser. No. 703,393, Feb. 6, 1968. This application Feb. 19, 1969, Ser. No. 800,683
Int. Cl. F25d *13/06;* **F25b** *49/00*
U.S. Cl. 62—63 **25 Claims**

Method of extracting heat from articles, as in the freezing of food, by direct contact with an ebullient

liquid freezant in an open vessel without significant loss of freezant vapor to the atmosphere which comprises maintaining by means of a vapor condenser a noncondensable gas-100% freezant vapor interface within the vessel below the level of all paths to the outside atmosphere and above the level at which the articles come in direct contact with the liquid freezant, and introducing the articles into and removing the articles from the vessel without substantially disturbing the noncondensable gas such as air above the interface or introducing essentially any noncondensable gas below the interface.



3,498,070
METHOD AND APPARATUS FOR QUICK FREEZING FOOD PRODUCTS
Kenneth M. Allen and Chester H. Harper, both of P.O. Box 352, Newberg, Oreg. 97132
Continuation of application Ser. No. 401,758, Sept. 23, 1964, which is a continuation-in-part of application Ser. No. 310,800, Sept. 23, 1963. This application June 30, 1969, Ser. No. 845,603
Int. Cl. F25d *17/02, 25/04*
U.S. Cl. 62—64 **22 Claims**



1. The method of freezing food products comprising dropping in a substantially free falling path discrete, solid, unfrozen, moist particles of food products into a body of a liquefied cryogenic gas maintained in an insulating enclosure,
freezing at least the outer surfaces of the particles while in the body and removing the particles from the body.

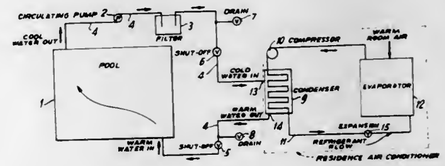
3,498,071
APPARATUS AND PROCESS FOR FREEZING LIQUID IN A SECTION OF A PIPE
Harry H. Tremont, 6234 NW. Miami Place, Miami, Fla. 33150
Filed Aug. 7, 1968, Ser. No. 750,893
Int. Cl. F16l *57/00;* **F25d** *31/00;* **F28f** *7/00*
U.S. Cl. 62—66 **5 Claims**

Apparatus and process for freezing liquid in a section of a pipe which includes placing a supply line leading from a container of liquified gas along a length of a pipe in which fluid is flowing and jacketing the supply line in sealed relation about the section of the pipe so



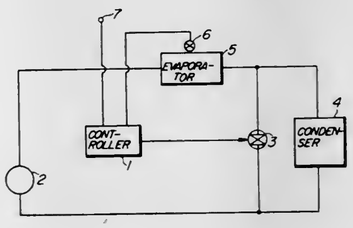
that the liquified gas may be caused to flow through the jacket to extract heat and rapidly freeze the section of the pipe.

3,498,072
AIR CONDITIONING METHOD
Rudy C. Stiefel, Quakerbridge Road E., Croton-on-Hudson, N.Y. 10520
Filed Aug. 9, 1968, Ser. No. 751,418
Int. Cl. F25d *17/02; 13/00; 23/12*
U.S. Cl. 62—118 **2 Claims**



An air conditioning system for cooling the air in a house includes a water-cooled condenser and an evaporator. The water for cooling the condenser is pumped from a swimming pool. The swimming pool water is warmed and simultaneously the condenser is cooled.

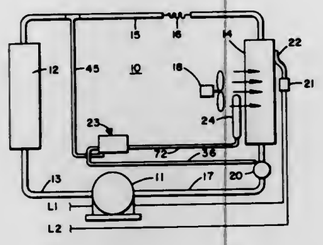
3,498,073
DEFROSTING CONTROLLER FOR ELECTRIC REFRIGERATOR
Zenji Kusuda, Ibaragi-shi, and Takeji Kobayashi, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Aug. 27, 1968, Ser. No. 755,528
Claims priority, application Japan, Aug. 31, 1967, 42/56,277
Int. Cl. F25d *21/02, 21/08;* **F25b** *49/00*
U.S. Cl. 62—155 **2 Claims**



A defrosting controller for electric refrigerators which is selectively operable so as not to start the defrosting operation even at the arrival of a defrosting signal when there is no frost in the freezer and which can automatically stop the operation of the defrosting heater as soon as

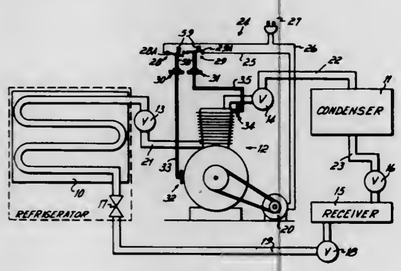
the temperature within the freezer reaches a predetermined value, thereby ensuring positive defrosting and avoiding an unnecessary temperature rise within the freezer.

3,498,074
CONTROL SYSTEM FOR REFRIGERATING APPARATUS
Solomon S. Fineblum, Silver Spring, Md., assignor to Ranco Incorporated, a corporation of Ohio
Filed Nov. 23, 1966, Ser. No. 596,563
Int. Cl. F25b *41/00*
U.S. Cl. 62—197 9 Claims



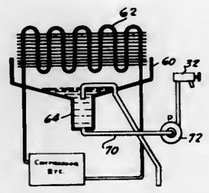
The flow of refrigerant in a compressor-condenser-evaporator type of refrigerating system is controlled by a circular vortex chamber connected in the refrigerant return line from the evaporator to the compressor. The flow of refrigerant through the vortex chamber is restricted by imparting rotary motion to the fluid in the chamber and the degree of restriction increases as the rate of rotation of the fluid in the chamber increases. The rotation of fluid in the chamber is created by a control jet stream of refrigerant injected tangentially into the vortex chamber from the high pressure side of the system. The intensity of the control jet is regulated by a valve which is actuated in accordance with the temperature of the medium chilled by the evaporator so as to restrict the return of refrigerant to the evaporator as the temperature of the medium approaches a given temperature.

3,498,075
REFRIGERATION CONTROL APPARATUS
William A. Zumbiel, 85 Dudley Road, South Fort Mitchell, Ky. 41017
Continuation-in-part of application Ser. No. 680,379, Nov. 3, 1967. This application Jan. 22, 1969, Ser. No. 814,486
Int. Cl. F25b *25/00*
U.S. Cl. 62—209 8 Claims



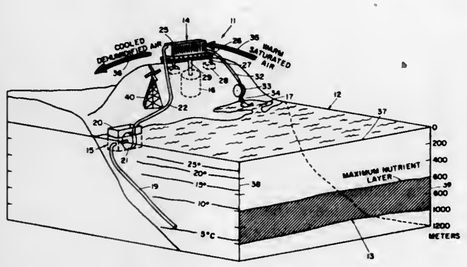
A refrigeration system including a pressure actuated switch for controlling the refrigeration compressor. The switch is actuated by changes of pressure in the refrigerant of the system but is isolated from the refrigerant by a fluid filled capillary tube having pressure actuators at its opposite ends, one of which senses changes of refrigerant pressure and the other of which senses changes in condition of the first pressure actuator and effects changes in the condition of the control switch.

3,498,076
DRINKING WATER SUPPLY AND COOLING SYSTEM FOR AUTOMOTIVE VEHICLES
Charles L. Michael, Rte. 1, Box 29A, Prince Frederick, Md. 20678
Filed Jan. 16, 1968, Ser. No. 698,204
Int. Cl. B60h *3/04*; F25d *21/14*; B67d *5/62*
U.S. Cl. 62—244 4 Claims



A drinking water supply and cooling system comprising an insulated tank to be secured to a portion of an automotive vehicle; an air line connected to said tank adjacent to its top and a pump for supplying air pressure to said line, said pump being mounted adjacent the driver's seat; a water line entering said tank adjacent the bottom thereof, said line being connected to a spigot mounted adjacent a passenger seat in said vehicle.

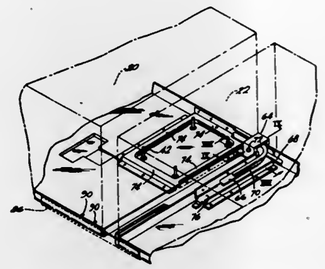
3,498,077
ATMOSPHERIC WATER RECOVERY METHOD AND MEANS
Robert Daniel Gerard and John L. Worzel, Palisades, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 26, 1968, Ser. No. 708,342
Int. Cl. F25d *23/12*
U.S. Cl. 62—260 5 Claims



A method and means are provided whereby potable water may be obtained economically by condensing moisture from the atmosphere in suitable seashore or island areas. Deep, cold, offshore seawater is used as a source of cold and pumped to condensers set up on shore to intercept the flow of high humidity maritime air masses. This air, when cooled, condenses moisture which is conducted away and stored for use as a water supply. Wind-

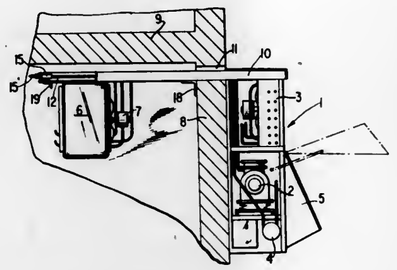
mill-driven generators may be employed to supply low-cost power for the operation. Side benefits are derived by using the large concentration of nutrients in deep water to support aquiculture in nearby lagoons or to enhance the productivity of the outfall area.

3,498,078
SPLIT UNIT FOR BOTH DOUBLE-HUNG AND SLIDING WINDOWS
Richard F. Sharp, Hillsdale, Mich., and Alfred J. Kopp, East Gary, Ind., assignors to Addison Products Company, Addison, Mich., a corporation of Michigan
Filed Aug. 20, 1968, Ser. No. 753,960
Int. Cl. F25d *19/00, 21/14*
U.S. Cl. 62—262 7 Claims



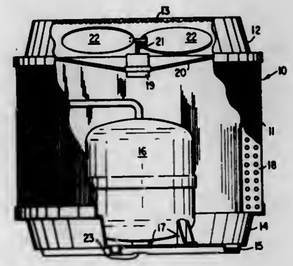
The present invention relates to improvements in the base structure and reinforcement thereof for air conditioning units of the "split" type adapted for installation in either a horizontal sliding or a double-hung window.

3,498,079
REFRIGERATION OR AIR CONDITIONING SYSTEM FOR INSTALLATION PARTLY WITHOUT AND PARTLY WITHIN AN EXISTING BUILDING
Daniel E. Kramer, Yardley, Pa., assignor to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 676,322, Oct. 18, 1967. This application Feb. 4, 1969, Ser. No. 796,449
Int. Cl. F25d *23/12*
U.S. Cl. 62—263 11 Claims



An all weather refrigerating or air-conditioning system having its high side provided with horizontal supporting arms whereby the system may be operatively installed in connection with a previously constructed building with the high side depending on the exterior of the building wall and the low side supported interiorly of the building, by merely piercing appropriate holes in the wall, passing the arms therethrough, and fastening the low side to the arms within the building room to be conditioned, together with means for uncoupling and valved recoupling the usual refrigerant conduits at such a point that the low side may be positioned near the ceiling of the room and adequately spaced from the wall to provide headroom under the said low side with no obstruction in the said space and convenience in recoupling the conduits. As an alternative, the low side may be provided with a centrifugal blower and positioned nearer the wall with the air stream flowing parallel to the wall and, on occasion, this position may be resorted to with fan equipped systems, when the wall of the building is very thick and the arms are not long enough for the preferred arrangement due to restrictions in highway truck transportation of the crated system. Finally, in any case the arms may project from the low side while, in some installations, a single arm may be sufficient.

3,498,080
APERTURED SLIDABLE MEMBER FOR AIR CONDITIONERS
Robert E. Campbell, East Syracuse, and George L. Bon, Fayetteville, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,486
Int. Cl. F25d *21/14*; F25b *39/04*
U.S. Cl. 62—285 3 Claims

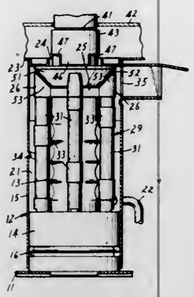


A fluid receptacle exemplified by a base pan for an air-conditioner condensing unit having drain openings therein which function additionally to receive bolt means or the like for shipping and mounting purposes, the base pan featuring in the drain openings an apertured cooperative slidable clip member of relatively simple sheet metal construction providing adequate fluid egress from the interior of the unit and yet being fully adjustable to accommodate variable positioning of the shipping and mounting fastening means.

3,498,081
AUGER ICE MAKER
Edgar O. Benesh, Minneapolis, Minn., assignor to McQuay, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 15, 1968, Ser. No. 713,437
Int. Cl. F25c *1/14, 5/04*
U.S. Cl. 62—320 4 Claims

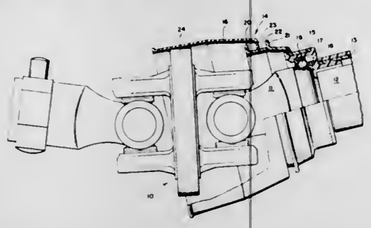
An icemaking machine having a central evaporator casing surrounded by an outer casing to form a liquid receiving chamber therebetween. Chilling of the inner evaporator casing causes a quantity of the liquid to freeze to the evaporator outer surface. An icebreaking device is mounted for rotation in the chamber between the inner and outer casings, the icebreaker breaking the frozen liquid from the outer surface of the evaporator; and the icebreaker, in conjunction with a helical land projecting inwardly from the outer casing, transports the removed icechunks toward an ice outlet in one end of the outer casing. A frusto-conical element is mounted in

stationary relationship to the rotating icebreaking and transporting member so that the inclined surface of the frusto-conical element engages the ice being transported



by the member and to deflect it transversely to its path of travel through the ice outlet in the one end of the outer casing.

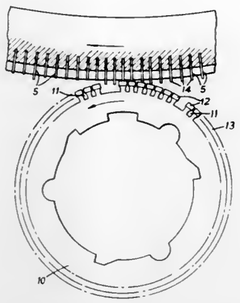
3,498,082
PROTECTIVE DEVICE FOR A UNIVERSAL JOINT
Hubert Geisthoff, Donrath, and Hubert Grosse-Entrup, Albach Post Franzhauschen, Germany, assignors to Jean Wallerscheid, K.G., Siegburg-Lohmar, Germany, a corporation of Germany
Filed Nov. 12, 1968, Ser. No. 775,058
Claims priority, application Germany, Nov. 22, 1967, 1,625,845
Int. Cl. F16d *3/84*
U.S. Cl. 64—32 **5 Claims**



A protective device is mounted on a stationary tube which surrounds the universal joint shaft on one side of the universal joint. The protective device consists of a resilient funnel-shaped member having one end fastened to the tube with there being a peripheral groove around the free end of this member. A second funnel-shaped member has its inner end bent inwardly so as to be received within the groove for axial movement therein. The second member extends over the universal joint and is made of a substance which can withstand wear by friction.

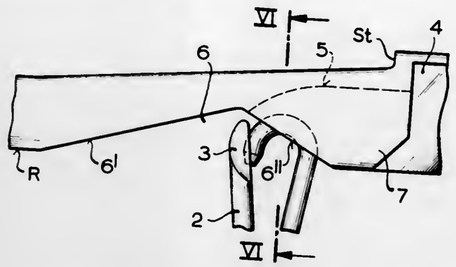
3,498,083
ROTARY PATTERNING DISCS FOR CIRCULAR KNITTING MACHINES AND A METHOD OF PRODUCING SAME
Albert H. Widdowson and Ernest L. Farmer, Leicester, England, assignors to Wildt Mellor Bromley Limited, Leicester, England, a British company
Filed July 9, 1968, Ser. No. 743,414
Claims priority, application Great Britain, Aug. 4, 1967, 35,806/67
Int. Cl. D04b *15/76*
U.S. Cl. 66—50 **9 Claims**

A patterning disc for a rotary pattern unit applicable to a circular knitting machine for action selectively on patterning butts on stitch or loop forming elements or associated controlling elements in order to influence the same for producing pattern effects in knitted fabric. The patterning disc has peripheral tooth-like formations separated by radial slits or slots normally corresponding widthwise with the butts and the entrances to the slits



or slots are narrowed widthwise by lateral deformation of the outer portion of the tooth-like formations in order to prevent entry of the patterning butts into the slits or slots when the pattern unit is working.

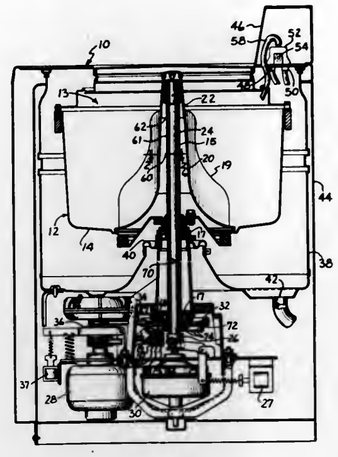
3,498,084
KNITTING MACHINE
Wilhelm Hadam, Reutlingen, and Ernst Goller, Pfullingen, Germany, assignors to H. Stoll & Company, Wurttemberg, Germany, a partnership
Filed Nov. 21, 1967, Ser. No. 684,719
Claims priority, application Germany, Nov. 25, 1966, St 26,158
Int. Cl. D04b *7/04*
U.S. Cl. 66—70 **3 Claims**



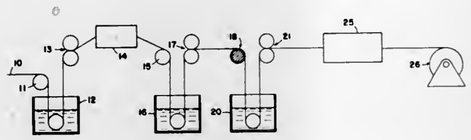
A knitting machine of the type having opposed angularly disposed beds equipped with latch needles for transferring stitches from needles in one bed to needles in the opposed bed. The latch needles are arranged so that when the hooks of the receiving needles in one bed are inserted into the transferring needles of the other bed the spoons of the pivotable latch members which normally close the hooks, strike abutment surfaces formed on the transferring needles thereby pivoting the latch members away from the hooks to open the hooks.

3,498,085
WATER LEVEL CONTROL FOR LAUNDRY MACHINES
Clifford F. Czech, Westchester, Ill., assignor to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,270
Int. Cl. D06f *33/00*
U.S. Cl. 68—12 **9 Claims**

A water level control for laundry machines in which a vertically positioned electrical sensor is mounted on the agitator post to complete a water fill control circuit through water in the tub when the water reaches the sensor level and in which the sensor is shielded from splashing and turbulence by the surrounding agitator.



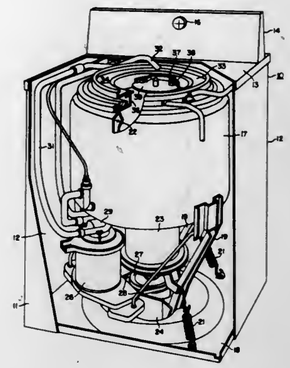
3,498,086
APPARATUS FOR PRODUCING CONTRASTING COLORED EFFECTS
Sumner H. Williams, Short Hills, N.J., and Joseph Reid Ellis, Easton, Pa., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 660,167
Int. Cl. D06c *23/00;* **D06p** *7/00*
U.S. Cl. 68—13 **6 Claims**



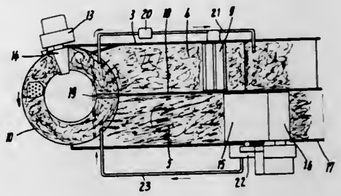
A method and apparatus for providing patterns of intensified color with respect to the background by preferentially migrating one dye or colorant over another. Moreover, the contrast may be substantially improved by migrating any remaining dye in the material subsequent to the production of the pattern by contacting the material with a plain heated roller on the side opposite the pattern.

3,498,087
LINT FILTER
William A. English, Export, and Leonard A. Spoelman, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1967, Ser. No. 693,421
Int. Cl. D06f *39/10;* **B10d** *33/06*
U.S. Cl. 68—18 **3 Claims**

A filter for removing lint from the water recirculated in a washing machine. The filter is characterized in that it is mounted on a stationary support but is adapted to be rotated by the recirculating water in order to ball the lint and to cause the balled lint to be carried to the marginal portion of the bottom wall of the filter.



3,498,088
APPARATUS FOR THE WET-TREATMENT OF LOOSE FIBROUS STOCK
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland
Filed Mar. 13, 1968, Ser. No. 712,733
Claims priority, application Germany, Apr. 26, 1967, V 33,531
Int. Cl. D06f *29/02, 17/02*
U.S. Cl. 68—22 **17 Claims**

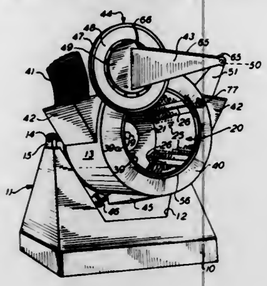


The present disclosure is directed to an apparatus for the wet-treatment of loose fibrous stock which comprises at least first and second treatment bowls which are arranged side by side, said treatment bowls containing a treatment bath, means for introducing the fibrous stock into the first treatment bowl, a perforated conveying element rotatably disposed at the end of the treatment bowls, a portion of said conveying element extending into the treatment bath of both of the treatment bowls and providing a surface for conveying the fibrous stock from the first treatment bowl to the second treatment bowl thereby changing the direction of material passage.

3,498,089
LAUNDRY MACHINE
John Joseph Miller, Norwood, and William B. Beebe, Cincinnati, Ohio, assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed June 28, 1968, Ser. No. 740,904
Int. Cl. D06f *37/10*
U.S. Cl. 68—139 **8 Claims**

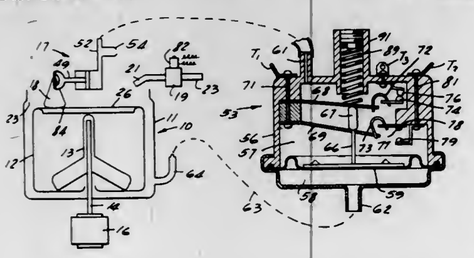
A laundry machine usable as a washer and extractor or as a dry cleaning machine has a rotatable drum mounted within a surrounding cylindrical casing both of

which are open at one end for loading and unloading the machine. The opening of the casing has a door pivoted about a fixed axis for simple swinging movement laterally of the opening between open and closed position. An angle iron turned inwardly along one-half of the opening engages a radial flange on the leading one-half portion of the door and another angle iron turned outwardly along



the remaining one-half of the opening engages an inner flange on the other one-half of the door to lock the door along its entire circumference to the casing as the door is closed. A pneumatic sealing ring is inflated after the door is closed to seal the door to the casing and to secure the door in closed position by the clamping pressure of the door against the angle irons.

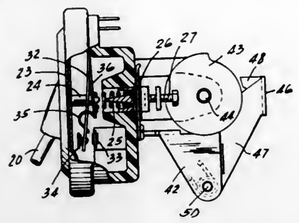
3,498,090
TORQUE RESPONSIVE WATER LEVEL CONTROL
Anthony Mason, Benton Harbor, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,228
Int. Cl. D06f *37/00, 39/00*
U.S. Cl. 68—207 **18 Claims**



A control system for use in an automatic washer to automatically control the quantity of water added to the machine's tub during the wash and rinse operations, so as to maintain water at the proper height, and which utilizes a torque signal generated in the machine by action of the agitator. A sensor is mounted between the tub and basket of the washer to sense motion of the basket relative to the tub, which is proportional to the torque between the agitator and the basket.

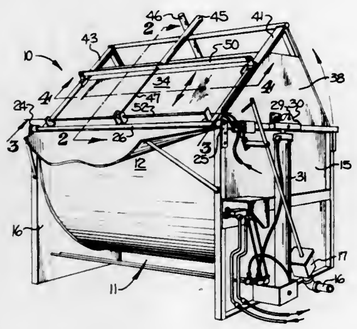
3,498,091
PRESSURE RESPONSIVE SWITCH HAVING AUTOMATIC RESET MEANS
Anthony Mason, Benton Harbor, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed June 7, 1968, Ser. No. 735,270
Int. Cl. D06f *33/02;* **H01h** *35/40*
U.S. Cl. 68—207 **11 Claims**

A pressure responsive switch assembly of the type employed in washing machines provided with an automatic reset mechanism, whereby the water level at which the pressure responsive switch operates can be selectively



modified and wherein the pressure switch will be simultaneously reset thereby necessitating only a single actuating movement.

3,498,092
TEXTILE GOODS DYEING APPARATUS WITH VAPOR COVER
Thomas Berry and Frank R. Peacock, Rome, Ga., assignors to Rome Machine & Foundry Company, Rome, Ga., a corporation of Georgia
Filed June 7, 1968, Ser. No. 735,254
Int. Cl. D06f *13/00, 17/08*
U.S. Cl. 68—210 **6 Claims**

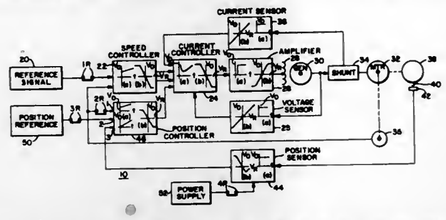


A dyeing apparatus for textile goods wherein a foraminated basket, carrying textile goods agitating means, is normally positioned within an open top vat and is mounted to be pivotally moved upwardly from the vat for discharging the dyed goods and wherein cover means mounted on the basket and movable therewith covers the open top of the vat when the basket is in the normal position.

3,498,093
POSITION CONTROL SYSTEM
Hermann Eisele, Williamsville, and Mohammed Safiuddin, Buffalo, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 9, 1967, Ser. No. 681,707
Int. Cl. B21b *27/12*
U.S. Cl. 72—8 **10 Claims**

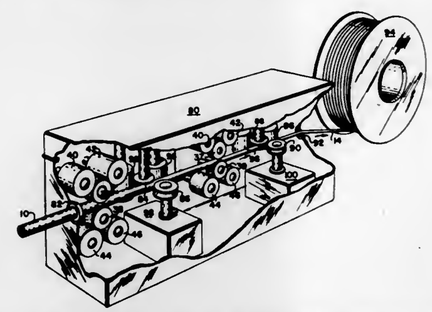
This disclosure sets forth apparatus for accurately positioning the roll receiving spindles to receive the new rolls in an automatic roll changing system for a steel mill. During the positioning operation, a signal functionally related to the displacement of the spindle from its desired roll receiving position is generated which then provides a linear or non-linear feedback signal to a position controller; thereupon, the position controller provides a signal which will turn the spindle to its desired orienta-

tion. The system requires only additional regulator functions in cooperation with the main drive motors thus dispensing with the auxiliary drive motors, inching clutch,



clutch to disengage the main drive motors, pulse generators, and other hardware commonly found in a conventional roll changing system.

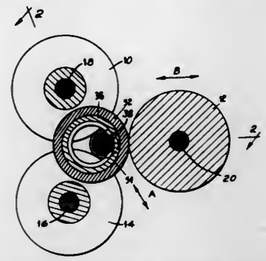
3,498,094
METALLURGY
Warner H. Simon, 6511 Comanche Ave., Canoga Park, Calif. 91306
Filed Oct. 22, 1965, Ser. No. 501,019
Int. Cl. B23k *35/40;* **B21b** *15/02*
U.S. Cl. 72—38 **2 Claims**



1. A method of making a substantially contamination-free welding wire comprising the following steps:
(1) passing the welding wire into an environment which is inert to said welding wire;
(2) exerting a force on the welding wire with a pair of rollers such that the force in the direction normal to the wire is sufficient to cause a permanent reduction in the diameter of the wire, while the force parallel to the wire is sufficient only to cause movement of the wire parallel to the direction of the wire;
(3) collecting the substantially uncontaminated welding wire.

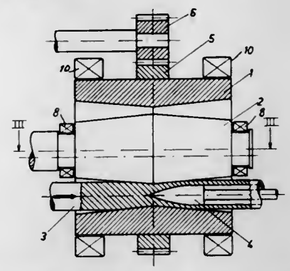
3,498,095
PROFILING OF ANNULAR WORKPIECES
Jacob Marcovitch, Rosebank, Johannesburg, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein
Filed Mar. 24, 1966, Ser. No. 537,197
Claims priority, application Republic of South Africa, Mar. 29, 1965, 65/1,649
Int. Cl. B21b *1/08, 19/14*
U.S. Cl. 72—87 **6 Claims**

A machine for profiling workpieces that are figures of revolution produces an article that is accurately dimensioned both axially and radially, and requires at most a minor finishing operation akin to the removal of flash. The profiling is carried out in a space defined between three or more rollers, at least one of which is rotated to impose rotation frictionally on the workpiece. The workpiece is an annulus, and a mandrel is threaded loosely through it and the mandrel ends roll on at least two of the rollers, the workpiece being profiled between the mandrel and a control ring which surrounds the workpiece and limits



its djametral spread. Surplus workpiece material is extruded through an escape gap.

3,498,096
HOT PIERCING MILL WITH SKEW ROLLS FOR THE PRODUCTION OF SEAMLESS METAL TUBES
Carlo Montagna, Via Luciano Manara 15, Milan, Italy
Filed Oct. 20, 1967, Ser. No. 676,823
Claims priority, application Italy, Nov. 3, 1966, 29,542/66
Int. Cl. B21b *19/04*
U.S. Cl. 72—97 **6 Claims**



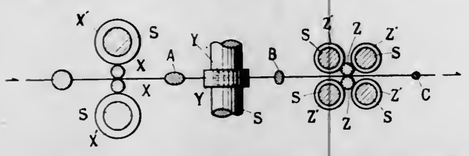
This invention relates to a novel hot piercing mill for the production of seamless metal tubes from round blooms using skew rolls.

In the novel hot piercing mill one of the rolls is hollow and the other one, of traditional barrel design, is positioned inside said hollow roll, the bloom to be pierced being positioned between the inner surface of the hollow roll and the outer surface of the barrel roll.

3,498,097
WIRE DRAWING APPARATUS AND METHOD
Minoru Mishuku, Tokyo, Japan, assignor to Fuji Dies Co., Ltd., Tokyo, Japan and Nissho Ltd., Tokyo, Japan
Filed Apr. 28, 1967, Ser. No. 634,537
Int. Cl. B21c *1/04*
U.S. Cl. 72—234 **12 Claims**

A wire drawing apparatus wherein the cross section of the wire is reduced by successive pairs of roller dies. Each pair of roller dies are respectively provided with grooved peripheries which abut each other and define between themselves, where they butt against each other, the cross section which is provided for the wire when it passes through each pair of roller dies. Each pair of roller dies is engaged by at least one pair, respectively, of pressure rolls respectively having diameters substantially greater than those of the roller dies and serving as the exclusive means for pressing the roller dies of each pair against each other, these pressure rolls themselves being operatively connected with shafts of relatively large diameter, respectively, through which pressure is trans-

mitted to the pressure rolls so that the latter will then transmit the pressure to the smaller roller dies. The plurality of pairs of roller dies and the pressure rolls coacting therewith are successively arranged along a drawing path with each pair of roller dies and the pressure rolls coacting therewith respectively having parallel axes which are perpendicular to the axes of the next following pair of roller dies and pressure rolls coacting therewith, so that the successive sets of roller dies and pressure rolls are angularly displaced about the drawing path by 90° one with respect to the other. While the final pair of roller dies can provide the wire with a circular cross section of a given diameter smaller than its initial



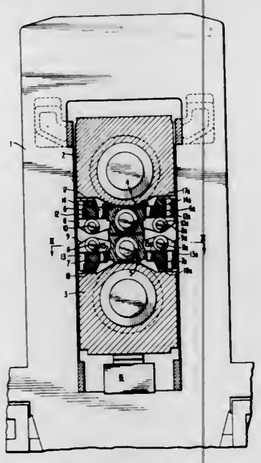
cross section, the pair of roller dies which immediately precede the final pair of roller dies provide the wire with an oval cross section whose minor diameter is approximately equal to the diameter of the final circular cross section, and where additional pairs of roller dies are provided each pair provides the wire with an oval cross section the minor diameter of which is approximately equal to the major diameter of the oval cross section provided by the next following pair of roller dies. The roller dies have no shafts connected thereto and they are supported exclusively by the pressure rolls which serve as the exclusive means for transmitting pressure to the roller dies.

3,498,098

APPARATUS FOR VARYING THE FORCES EXERTED ON WORK ROLL CHOCKS IN MULTI-ROLL ROLLING MILLS

Lucien R. Bournez, Paris, and Robert Fabre, La Garenne-Colombe, France, assignors to Société Nouvelle Spidem, Paris, France

Filed Apr. 24, 1967, Ser. No. 633,297
Claims priority, application France, Apr. 22, 1966, 58,572
Int. Cl. B21b *31/32*
U.S. Cl. 72—237 **8 Claims**



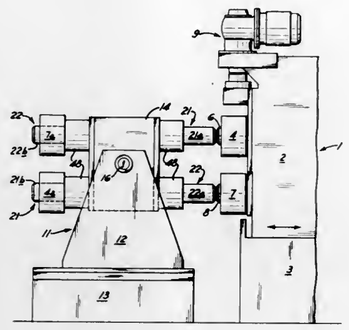
Multiroll rolling mill, in which pivoting levers, activated by jacks and placed in the window on either side of each work roll chock, condition the vertical movements, in both directions, of the said roll chocks.

3,498,099

ROLL CHANGING SYSTEM FOR STRAIGHTENERS AND THE LIKE

Elbert Gordon Thompson, State College, Pa., assignor to Sutton Engineering Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1968, Ser. No. 704,085
Int. Cl. B23q *3/00;* **B21d** *3/02*
U.S. Cl. 72—238 **10 Claims**



This disclosure relates to a roll changing system for straighteners, levelers, and like apparatus, particularly those having outboard rolls, i.e., rolls mounted on spindles having a free end over which the roll can be removed and a new roll mounted in its place. In accordance with the present invention, the roll changing mechanism includes a rotatable frame disposed adjacent to the straightener and at least one pair of roll gripping elements supported on the frame and rotatable with it. The two roll gripping elements that make up a pair are mounted on opposite sides of the frame, with one of those elements initially in close proximity to and axially aligned with a spindle of the straightener for removing a roll therefrom. When the frame is rotated 180°, the second roll gripping element of the same pair is brought in close proximity to and axially aligned with the same spindle for mounting a new roll thereon. Each roll gripping element is reciprocable axially towards and away from the adjacent spindle for removing or mounting a roll. In addition, each roll is normally held on its spindle by quick release retaining means operable to release an old roll or accept a new one by reciprocation of the roll gripping elements. There are preferably as many separate pairs of roll gripping elements mounted on the rotatable frame as there are rolls on the straightener, so that all rolls can be changed simultaneously.

3,498,100

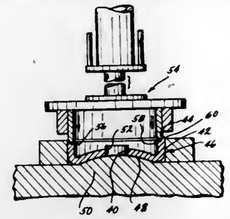
PROCESS FOR MANUFACTURING RETAINER RINGS

Arthur Gudish, 7607 W. Norton, Apt. 1 90046, and Morton Rovner, 845 S. Manhattan Place 90005, both of Los Angeles, Calif.

Filed Feb. 13, 1968, Ser. No. 705,188
Int. Cl. B21d *53/00*
U.S. Cl. 72—335 **8 Claims**

A process is disclosed for forming a retaining ring (as for use in an electrical commutator) from a sheet metal workpiece, which ring has a substantially-increased thickness (in radial section) over the thickness of the sheet metal blank from which it is formed. In the illustratively-disclosed process, a workpiece of heavy sheet metal or plate is first formed into a cup with an axially-indented and apertured bottom. Next, while supporting the cup externally and through the aperture therein, an

annular indentation is formed in the upper edge to develop a pair of concentric ridges or rises, one of which is then employed as a shoulder for subsequent die-forming operations to develop a desired radial dimension in the



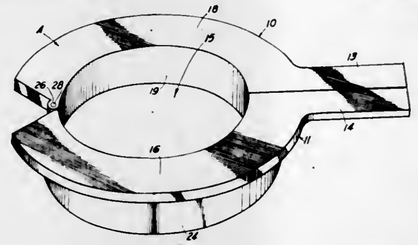
ring. Subsequent to the die-forming operations, during which the workpiece is externally supported and locked through the bottom aperture, the central portion of the bottom is removed to accomplish the desired retaining ring.

3,498,101

CAULKING TOOL

John L. Daniell, 1111 Six Flags Drive, Austell, Ga. 30001

Filed Oct. 2, 1967, Ser. No. 672,097
Int. Cl. B21j *19/00*
U.S. Cl. 72—479 **10 Claims**



A caulking tool for use in caulking bell and spigot type pipe joints which includes an annulus which encircles the spigot portion of the joint, the annulus being formed of two semicircular segments pivoted together to facilitate placement of the tool about the spigot portion of the pipe joint, an axially oriented inner resilient caulking flange respectively depending from each of the semicircular segments and which have their extending edges beveled to cause the inner caulking flanges to be urged toward the spigot portion of the pipe joint when the joint is being caulked, and an axially oriented outer resilient caulking flange depending respectively from the semicircular segments outwardly of and concentrically of the inner caulking flanges and having their extending edges beveled to cause the outer caulking flanges to be urged outwardly toward the bell portion of the pipe joint as the joint is being caulked.

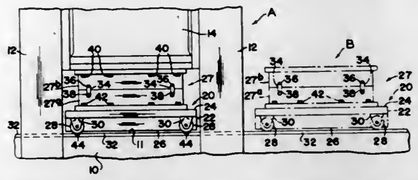
3,498,102

METHOD AND APPARATUS FOR DIE CHANGING

Clarence Leroy Warstler, Navarre, Ohio, assignor to E. W. Bliss Company, Canton, Ohio

Filed July 17, 1967, Ser. No. 653,822
Int. Cl. B21d *37/14*
U.S. Cl. 72—470 **10 Claims**

This application discloses improved apparatus for changing dies in forming presses, as well as a method for using such apparatus. The apparatus includes a wheeled die carrier adapted to move die sets into and out of the press on tracks extending across the press bed. Mechanism is provided to permit the carrier to be connected to the press ram so that upward movement of the ram lifts the die set and carrier away from the tracks. Portions of the tracks in the press bed are removable to permit the carrier to be "bottomed out" against the press bed when the carrier is subsequently lowered. This provides a firm foundation for the carrier and allows it to remain in the press during press operation.

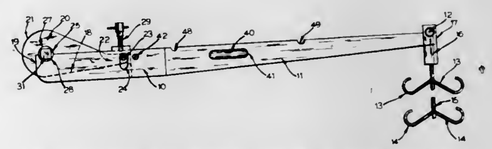


3,498,103

DEAD WEIGHT CHECKING ATTACHMENT FOR CALIBRATED TORQUE WRENCH TESTING APPARATUS

Kenneth R. Larson, Des Plaines, Ill., assignor to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware

Filed Nov. 27, 1967, Ser. No. 685,881
Int. Cl. G01l *25/00*
U.S. Cl. 73—1 **7 Claims**



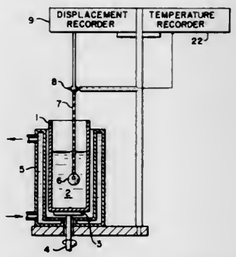
An apparatus for testing torque wrench calibrators or other torque measuring devices. A beam or arm is provided with means for attaching it to the torque measuring device in a horizontal position and hooks for attaching known weights to the beam at fixed positions. A spirit level is mounted on the beam and means are provided for incrementally adjusting the beam to horizontal regardless of the position of the beam attaching means.

3,498,104

AUTOMATIC POUR POINT ANALYZER

Willem J. van Kerkvoort, Albertus C. H. Borsboom, and Henricus G. J. van Noesel, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Aug. 3, 1966, Ser. No. 569,919
Claims priority, application Netherlands, Aug. 6, 1965, 6510270
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 **5 Claims**



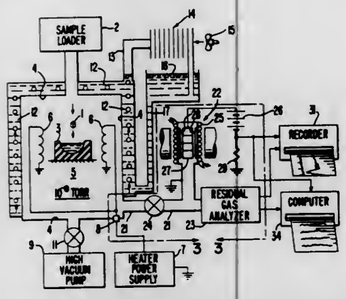
A method and apparatus for determining the pour point of a liquid wherein a sample is placed in a container, a body at least partially immersed in the container and the container and sample being moved relative to the

body. The displacement of the body is measured to determine the pour point of the liquid.

3,498,105
VACUUM FUSION ANALYZER EMPLOYING A HOT FUSION CHAMBER WALL TO PREVENT ADSORPTION EFFECTS

James S. Hetherington, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 8, 1967, Ser. No. 621,582
Int. Cl. G01n *7/14*
U.S. Cl. 73—19 **10 Claims**

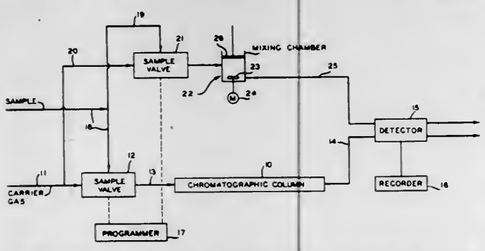


A vacuum fusion analyzer is disclosed for monitoring the types and amounts of gases adsorbed on and dissolved in metals. The analyzer includes a fusion chamber which is evacuated to on the order of 10^{-8} torr and thoroughly outgassed. A heated carbon crucible is contained within the fusion chamber. A sample loading apparatus drops a small cube, as of 1 to 5 grams, of the sample metal to be analyzed into the heated crucible for melting thereof. The gases which are evolved from the sample are measured both qualitatively and quantitatively to yield both the type and amount of the various type gases evolved from the sample. The walls of the fusion chamber are temperature regulated such as to fall within the range of 55° C. to 250° C. such that gases evolved from the sample are not adsorbed on the walls of the fusion chamber. Such adsorbed gases can interfere with obtaining a correct total quantitative measurement of the evolved gas and can also mask attempts to separate surface gases from internal dissolved gases. In a preferred embodiment, the chamber wall is regulated to 100° C. by a boiling water coolant jacket.

3,498,106
CHROMATOGRAPHIC ANALYSIS

Edward N. Fuller and Buell O. Ayers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 20, 1967, Ser. No. 654,771
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **8 Claims**

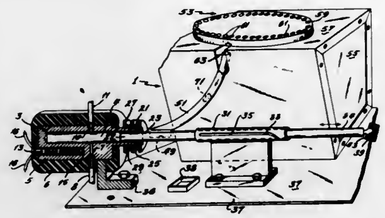


The trailing edge of a peak in a chromatogram is eliminated by use of a differential detector and the introduction of diminishing amounts of a reference material into the reference channel of the detector to balance out the trailing edge.

3,498,107
AUTOMATIC SAMPLE INTRODUCTION SYSTEM FOR GAS ANALYTICAL CHROMATOGRAPHS

Bernard S. Kim, St. Louis, and Charles P. Fetterman, Kirkwood, Mo., and John Q. Walker, Edwardsville, Ill., assignors to Research Assistants Corporation, St. Louis, Mo., a corporation of Missouri

Filed Apr. 23, 1968, Ser. No. 723,515
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **7 Claims**

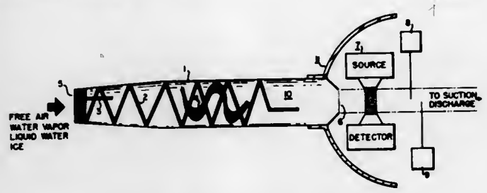


Encapsulated samples carried by a rotary table are sequentially dropped into a slot in the lateral face of a piston. The piston moves the sample into a heated chamber through which the carrier gas of a gas chromatograph passes, and the sample within the capsule is released. The piston then withdraws and discharges the remains of the capsule.

3,498,108
CLOUD WATER EVAPORATOR

Robert E. Ruskin and Ben G. Julian, Accokeek, Md., and Jules M. Averitt, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1967, Ser. No. 657,739
Int. Cl. G01n
U.S. Cl. 73—29 **12 Claims**



A cloud water collector-evaporator apparatus having an elongated housing containing a high collection efficiency heater to vaporize liquid water and ice for subsequent determination of total cloud water content. Representative sampling is insured by connecting the collector to an airborne instrument unit having a source of reduced pressure.

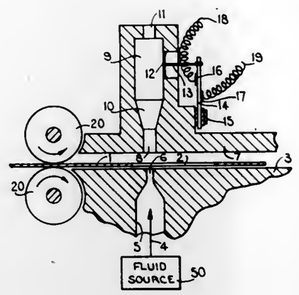
3,498,109
PRESSURE TO ELECTRICAL TRANSDUCERS AND APPARATUS

Brian John Steptoe, Hitchin, and David Hawgood, Stevenage, England, and David George Parkins, Rockford, Ill., assignors to International Computers and Tabulators Limited, London, England

Filed July 3, 1967, Ser. No. 650,825
Claims priority, application Great Britain, July 8, 1966, 30,677
Int. Cl. G01b *13/04*
U.S. Cl. 73—37.7 **6 Claims**

A transducer is disclosed for producing electrical signals in response to pressure fronts occurring in a flow of fluid

through a chamber having an inlet opening and an outlet opening aligned therewith. A fluid source introduces fluid into the chamber at a point remote from the outlet. An object is passed along a track which intersects the fluid

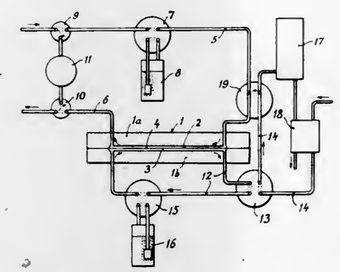


flow between the source and the chamber. A change of pressure is produced by the passage of the object across the flow of fluid and said change of pressure is measured by a piezo-electric member which is mounted so as to be acted upon by said change in pressure.

3,498,110
METHOD AND APPARATUS FOR MEASURING THE GAS AND VAPOR PERMEABILITY OF FILMS

Hans Brun, Oslo, Norway, assignor to Sentralinstitutt for industriell forskning Forskningsveian, Oslo, Norway

Filed July 20, 1967, Ser. No. 654,754
Claims priority, application Norway, July 21, 1966, 164,020
Int. Cl. G01m *3/00*
U.S. Cl. 73—38 **11 Claims**

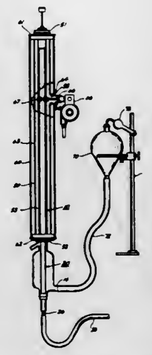


A method and apparatus for measuring the gas and vapor permeability of films by placing the film in a test cell divided by the film in two chambers of which one chamber contains a test gas and the other another gas. The diffusion rate of the test gas through the film in a measuring period that is started with no test gas in the second chamber, is measured by passing substantially all the gas present in the second chamber at the end of the measuring period to a gas chromatograph. The second chamber is connected with a supply conduit for carrier gas to the gas chromatograph through a switch valve. A further valve is connected into both the carrier gas supply conduit and a test gas conduit to permit the transfer of certain amounts of test gas into the carrier gas conduit to calibrate the gas chromatograph.

3,498,111
APPARATUS FOR MEASURING VAPOR-LIQUID RATIO

James L. Keller, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed June 28, 1967, Ser. No. 649,655
Int. Cl. G01n *11/00, 25/02*
U.S. Cl. 73—53 **26 Claims**

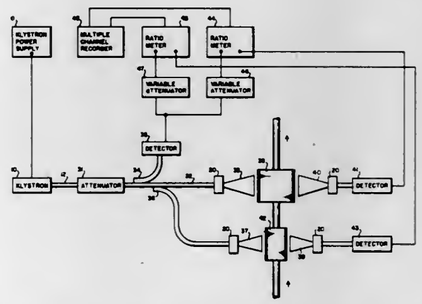


A test apparatus for dynamically measuring the vapor-liquid ratio of a volatile liquid which includes a gas buret provided with an internal heat exchange conduit through which heat exchange fluid can be passed to heat the fluid contents of the buret. The heat exchange conduit is preferably a thin-walled tube constructed of a material having a high thermal conductivity so as to assure that the fluid contents of the buret are maintained substantially in thermal equilibrium with the heat exchange fluid as the temperature of the heat exchange fluid is adjusted over a range of interest. The buret can be provided with external heating fluid and insulating air jackets to reduce heat losses.

3,498,112
MICROWAVE SYSTEM FOR DETERMINING WATER CONTENT IN FUEL OIL

Dean D. Howard, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

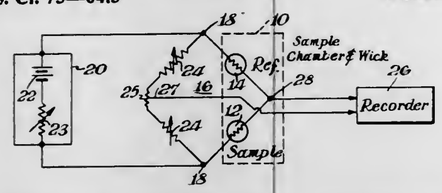
Filed Apr. 30, 1968, Ser. No. 725,353
Int. Cl. G01n *23/24*
U.S. Cl. 73—61.1 **2 Claims**



In an apparatus for determining the water content of fuel oil, microwave energy is directed through a chamber through which the fuel oil passes and a measure of the attenuation of the microwave energy is made. The attenuation of microwave energy as it passes through the oil determines the amount of water contamination within the oil. The system operates in the millimeter wave range

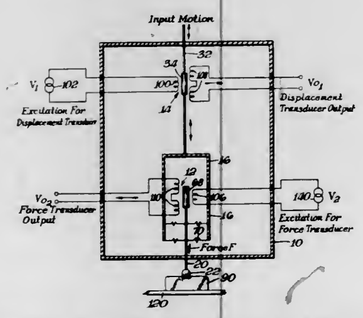
where there is little attenuation caused by uncontaminated oil and a high attenuation caused by even small amounts of water contamination.

3,498,113
METHOD AND APPARATUS FOR DETERMINING SOLUTE CONCENTRATIONS
Thomas A. Whatley, Northridge, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 27, 1968, Ser. No. 755,535
Int. Cl. G01n *13/04*
U.S. Cl. 73—64.3 **6 Claims**



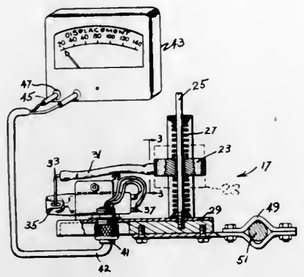
Solute concentrations are determined by placing a sample of a solution containing the solute in question and a solvent for the solute in a closed chamber. The normal temperature increase of the solution sample due to vapor condensation is altered by a heater contiguous to the solution. The solution sample is heated to overcome the normal heat losses. This permits the sample to approach a true thermodynamic equilibrium where its vapor pressure equals the vapor pressure of the solvent. The solute concentration is determined by measuring the temperature increase of the sample solution once the sample's temperature, volume, or weight has achieved a zero draft rate.

3,498,114
TRANSDUCER FOR MEASURING FORCE AND DISPLACEMENT
Thomas Garber, Framingham, and William L. Kelleher, Newburyport, Mass., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 11, 1968, Ser. No. 720,689
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.2 **7 Claims**



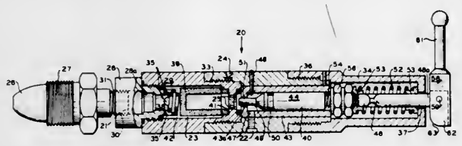
A transducer is constructed to include both a force sensor and a displacement or velocity sensor. The force sensor is free to move longitudinally on bearings inside the transducer and is coupled to receive a mechanical input signal through the input element of the displacement or velocity sensor. The displacement or velocity sensor is coaxially aligned with the force sensor and is secured fixedly within the transducer. The input element of the force sensor is spring biased to the force sensor. The output signals from the respective sensors may be operated on or combined mathematically to obtain, for example, work performed on an object.

3,498,115
ELECTRONIC AUTOMOTIVE VIBRATION TESTER
George W. Liskey, 1576 Pontchartrain Drive, Okemos, Mich. 48864
Filed Aug. 22, 1967, Ser. No. 662,414
Int. Cl. G01n *29/00*
U.S. Cl. 73—71.2 **4 Claims**



An electronic vibration tester of the inertial type. A mass is spring suspended in a frame which also supports a phonograph type detector cartridge with a needle arm. The frame is affixed to any element or component of an automobile structure to be tested and vibrates therewith. The mass, being spring suspended, remains substantially motionless and thus vibrates relative to the frame and needle arm of the cartridge. This relative motion is transmitted from the mass to the needle arm via a flexible linkage therebetween. Thus a vibration responsive signal is generated by the cartridge and transmitted by appropriate circuitry to an ammeter calibrated to read vibrational displacement.

3,498,116
MOISTURE DETERMINATION APPARATUS
Dallas W. Snelson, Tulsa, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 13, 1966, Ser. No. 586,534
Int. Cl. G01n *5/02*
U.S. Cl. 73—73 **7 Claims**

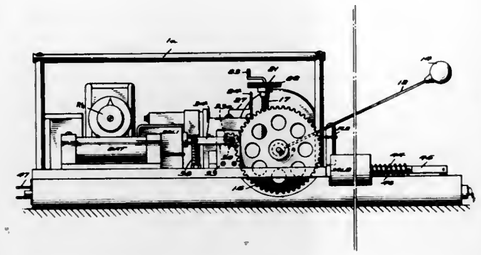


An apparatus for determining moisture content of liquid petroleum gas. The apparatus includes a flow distributor, a filter, and a flow control means which is adjustable to a calibrated setting.

3,498,117
REBOUNDING HAMMER TYPE HARDNESS GAUGE
Donald D. Dalrymple, North Warren, Pa., assignor to National Forge Company, Irvine, Pa., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 661,715
Int. Cl. G01n *3/52*
U.S. Cl. 73—79 **6 Claims**

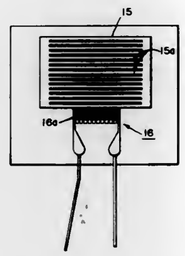
A hardness gauge of the rebounding hammer type particularly suited for use in determining the hardness of surfaces at generally inaccessible locations such as the interior surface of a pipe mould or other tubing com-

prises a sled type of support for the gauge adapted to be pulled through the tubing. The gauge mechanism on the support includes a motor driven hammer which is arranged to be raised for a predetermined distance above the surface being tested and then dropped. The amplitude of the hammer rebound is determined by an electrical



translation device such as a potentiometer or differential transformer mechanically coupled to the hammer, and the response of the translation device is fed over a cable to the exterior of the tubing and thence to an electrical recorder which charts the amplitude of the hammer rebounds.

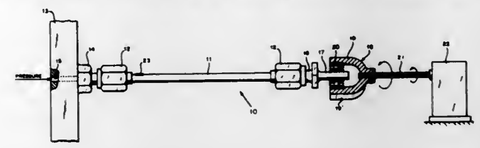
3,498,118
SELF-HEATING COMPENSATION FOR BONDED FILAMENT STRAIN GAGE TRANSDUCERS
Arthur C. Ruge, Lexington, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 608,060
Int. Cl. G01n *3/00*
U.S. Cl. 73—88.5 **9 Claims**



Self-heating zero drift of bonded filament strain gage transducers is effected by thermally-conductive material, preferably in the form of a slitted metal foil, adhesively secured atop one of the bridge-connected transducer gages in position to reduce zero drift of the bridge output and to minimize its constraint of the gage.

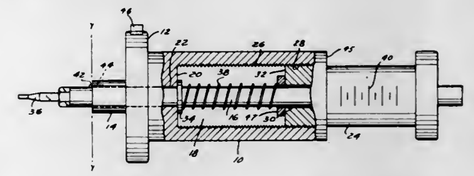
3,498,119
APPARATUS FOR CIRCUMFERENTIALLY STRESSING TUBING
David J. St. Jean, Westfield, Mass., Francis P. Donaghy, Sr., Gloucester, N.J., and Louis P. Cavaliere, Upper Darby, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 24, 1968, Ser. No. 723,707
Int. Cl. G01n *3/32*
U.S. Cl. 73—100 **3 Claims**

The subject invention concerns a method and apparatus for applying and measuring the effects of circumferential loads on a substantially rigid, cylindrical pressure vessel or the like. An eccentric mass is rotated by means of a flexible coupling on a bearing surface mounted ad-



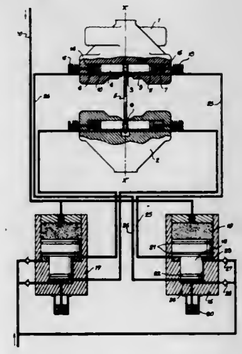
jacent one end of a vessel which is fixed at its other end so that the vessel is deflected equally in all directions to produce a circumferential stress thereon.

3,498,120
FABRIC STRENGTH MEASURING DEVICE
Henry J. MacMillan, Delmar, N.Y., assignor to Albany Felt Company, Albany, N.Y., a corporation of New York
Filed Apr. 16, 1968, Ser. No. 721,724
Int. Cl. G01n *3/42*
U.S. Cl. 73—102 **5 Claims**



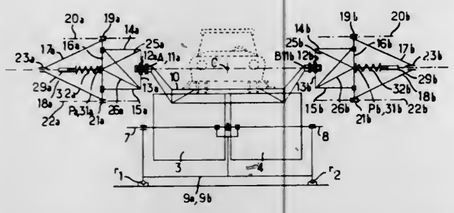
A device for testing a papermakers felt while in position upon a machine in order to determine whether the felt has retained sufficient strength to safely continue in operation and also to measure the remaining strength of the felt. A non-cutting blade is pressed against the felt in order to test its strength.

3,498,121
TEST PIECE CENTERING MEANS FOR STRESS-STRAIN MACHINES
Ludwig Engelbrecht and Edwin Madlener, Nuremberg, Germany, assignors to Maschinenfabrik Augsburg-Nuremberg Aktiengesellschaft, Nuremberg, Germany
Filed June 27, 1968, Ser. No. 740,592
Claims priority, application Germany, July 1, 1967, 1,648,616
Int. Cl. G01n *3/04*
U.S. Cl. 73—103 **3 Claims**



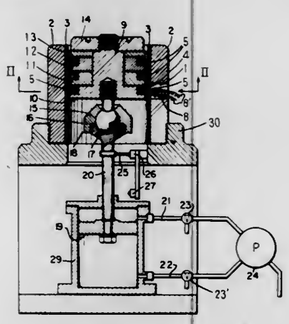
Diametrically opposed hydraulically operated piston grippers are used to center a test piece in the heads of a stress-strain machine.

3,498,122
STATIONARY TEST-BENCH FOR AUTOMOBILE VEHICLES
Jean Odier, 100 Avenue Aristide Briand, 92 Antony, France, and Aymar Lefrançois, 10 Rue Lamartine, Geneva, Switzerland
Filed Jan. 18, 1968, Ser. No. 698,919
Claims priority, application France, Jan. 24, 1967, 92,217; Dec. 27, 1967, 133,850
Int. Cl. G01m *15/00*; G01l *5/28*
U.S. Cl. 73—117 11 Claims



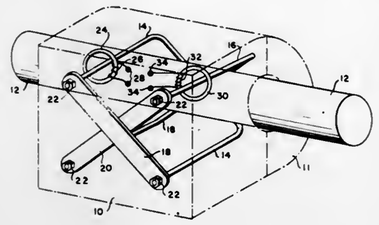
A stationary test-bench especially intended for braking tests of automobile vehicles, comprising four rollers each supporting one wheel of the vehicle to be tested, all said rollers being driven at the same speed by the driving wheels of the vehicle, the mass equivalent to the total inertia of the rollers about their axes of rotation simulating the mass of the vehicle; an adjustable positioning device to maintain the centre of gravity of the vehicle in a fixed transverse vertical plane so as to fix the longitudinal position of the vehicle on the test-bench while permitting the vehicle to retain its other degrees of freedom of movement; and means for measuring all the forces acting between the wheels of the vehicle and the rollers.

3,498,123
APPARATUS FOR TESTING PISTON RINGS
Takeshi Tsuchiya, Tokyo, Japan, assignor to Nippon Piston Ring Kabushiki Kaisha, Tokyo, Japan
Filed May 23, 1968, Ser. No. 731,568
Claims priority, application Japan, June 8, 1967, 42/36,225
Int. Cl. G01m *15/00*
U.S. Cl. 73—120 8 Claims



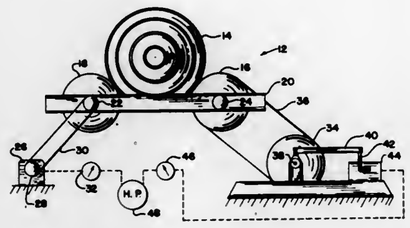
Apparatus for testing piston rings having a rigid cylinder provided with at least one radial passage therethrough. An outer face portion of a more flexible sleeve conformingly received in the cylinder is exposed in the cylinder passage and carries a strain gage. When a piston ring is held in engagement with the inner face of the sleeve near the recess in the cylinder, the gage measures the deformation of the sleeve portion on which it sits in the passage and thereby provides a measure of the ring pressure.

3,498,124
APPARATUS FOR MEASURING TENSION IN A RUNNING LINE OF MAGNETIC MATERIAL
Herman A. Soulant, Montgomery County, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1967, Ser. No. 693,396
Int. Cl. G01l *5/10*
U.S. Cl. 73—143 7 Claims



A device for measuring tension in a magnetically conductive member which provides for generation of a magnetic field around the member and a pickup magnetically coupled to the member. The output of the pickup is directly proportional to the tension in the member coupling the magnetic field to the pickup.

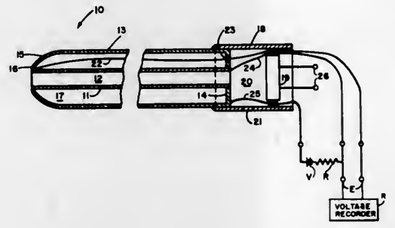
3,498,125
METHOD OF CONTROLLING AND MEASURING TIRE FORCES
Lawrence R. Sperberg, 6740 Fiesta Drive, El Paso, Tex. 79912
Filed Jan. 5, 1968, Ser. No. 695,959
Int. Cl. E01c *23/00*; B60c *19/10*
U.S. Cl. 73—146 18 Claims



A method of measuring the energy transmitted between the tread surface of a rotating tire and a moving surface which supports the tire. The power output of the prime mover which rotates the tire may be determined from the measured revolutions per minute (r.p.m.) and manifold pressure (M.P.) or from the fuel flow of an internal combustion engine. This power output is correlated with the actual torque or force exerted by the tire tread surface against a moving surface whereupon the effects of the drive-train, differential, wheel bearings, and tire flexing losses are eliminated from the observed indicated power output of the engine. The correlation is attained by placing the vehicle upon a force measuring device which has previously been calibrated to measure power expended upon the device in any suitable power unit, such as horsepower. A dictionary of stored data relating engine performance, such as the observed r.p.m. and manifold pressure, with the actual torque or power exerted by the surface of the tire is provided whereby test data in the form of power output may be subsequently obtained which directly relates the force exerted by the tread surface of the tire to the indicated power delivered by the engine in propelling a vehicle down a highway.

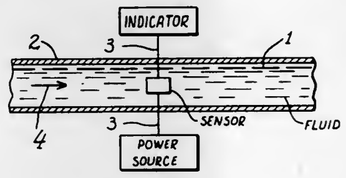
This expedient therefore changes the vehicle into a mobile dynamometer, since the dictionary of stored terms can be compared to the indicated engine power output under any operating conditions to enable rapid determination of the actual torque or developed hp. which is expended in overcoming the various forces which resist movement of the vehicle.

3,498,126
APPARATUS FOR MEASURING THE ENTHALPY OF HIGH TEMPERATURE GASES
Franklin Allen Vassallo, Cheektowaga, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Mar. 21, 1966, Ser. No. 536,156
Int. Cl. G01k *17/06*
U.S. Cl. 73—190 5 Claims



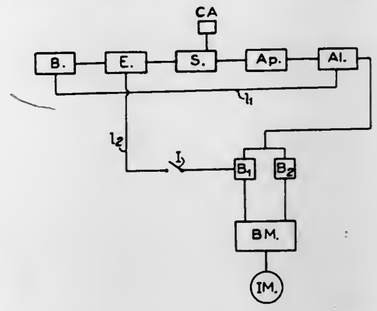
A probe for measuring the enthalpy of high temperature gases having a tubular member in heat exchange relation with a gas sample flowing therethrough, the probe being sufficiently long such that substantially all of the heat energy of the sample is transferred to the member, a gaseous thermal insulator on the side of the member remote from the side thereof in contact with the sample, temperature sensors in contact with the member and sample gas flow measuring instrumentation.

3,498,127
MEASURING FLUID FLOW
Albert M. Richards, 5 Crocus Place, St. Paul, Minn. 55102
Filed June 9, 1966, Ser. No. 556,427
Int. Cl. G01f *1/00*
U.S. Cl. 73—204 6 Claims



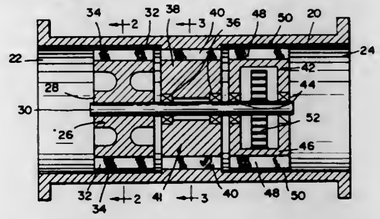
A number of elements, which are capable of producing an energy field when energized, are coupled to a source of power and all are placed in contact with the fluid to produce an energy field having its center within the fluid. The elements are arranged in a circuit configuration so that the direction and degree of fluid flow can be ascertained by measuring the change in certain characteristics of the elements brought about by the flow of fluid. In a general case, a number of sets of elements are arranged to indicate fluid flow about the X, Y and Z axis.

3,498,128
APPARATUS FOR MEASURING A PHYSICAL QUANTITY BY THE USE OF PULSED ENERGY
Pierre Jean Félix Calvet, 26 Rue des Sorrieres, Meudon, Hauts-de-Seine, France
Filed June 28, 1966, Ser. No. 561,162
Claims priority, application France, June 28, 1965, 22,532; Feb. 17, 1966, 50,015; June 22, 1966, 66,478
Int. Cl. G01f *1/04*
U.S. Cl. 73—204 6 Claims



Apparatus and methods for the measurement of a physical quantity with an active detector by creating a variation in the state of the detector in the form of short impulses and measuring an output signal of the detector created at the detector by the disturbance of each impulse, which is a function of the quantity to be measured.

3,498,129
FLUID MASS FLOWMETER
Philip K. Bodge, 45 Abbot St., Andover, Mass. 01810
Filed Oct. 3, 1967, Ser. No. 672,514
Int. Cl. G01f *1/06*
U.S. Cl. 73—231 5 Claims

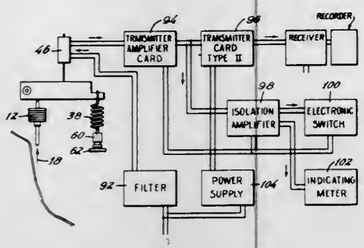


A fluid mass flowmeter formed of a tubular casing enclosing a driving turbine and a metering turbine coaxially mounted, the former having skewed vanes so as to derive its rotation from a flow stream. The metering turbine is torque-responsively coupled to the driving turbine, and its turbine blades are axially directed. A flow director is positioned so that the fluid flow into the metering turbine is parallel to the blades of the latter.

3,498,130
PRESSURE OPERATED TRANSDUCER-CONTROLLER
William R. Brown, St. Paul, Minn., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 23, 1967, Ser. No. 640,718
Int. Cl. G01f *3/20*
U.S. Cl. 73—301 6 Claims

A pressure operated transducer-controller having a diaphragm or bellows responsive to changes in liquid pressure to activate a spring loaded beam adjacent one end.

Linear movement of the beam is transduced to a linear voltage by a linear variable differential transformer (LVDT) actuated by beam movement. Preferably the

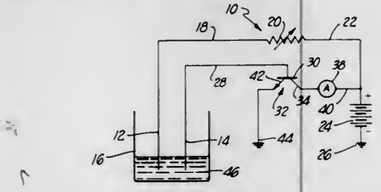


LVDT is connected to a solid state plug in circuit board. Suppression up to 80 percent is obtained by a pre-loaded spring and adjustment of the beam.

3,498,131
LIQUID LEVEL MEASURING OR INDICATING DEVICE

Ronald P. Rickey, Orange, Calif., assignor to Eltop Corp., Orange, Calif., a corporation of California

Filed Aug. 29, 1967, Ser. No. 670,493
Int. Cl. G01f *23/00*
U.S. Cl. 73—304 **1 Claim**

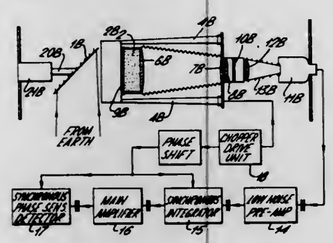


A liquid level responsive device having immersible primary and common electrodes. The amount of liquid varies the resistance between the electrodes. An indicator circuit including a transistor responds to changes in liquid level. The amount of liquid in the tank displayed by either an ammeter or light bulbs.

3,498,132
RADIOMETER APPARATUS

Stanley Desmond Smith, Reading, and John Theodore Houghton, Oxford, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Feb. 23, 1968, Ser. No. 707,599
Claims priority, application Great Britain, Mar. 1, 1967, 9,790/67; Feb. 9, 1968, 6,645/68
Int. Cl. G01j *5/10*
U.S. Cl. 73—355 **28 Claims**

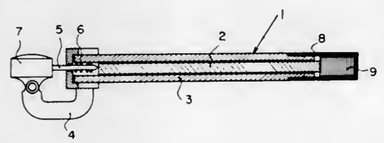


An apparatus for detecting or measuring infrared radiation emitting from a region of the atmosphere to provide an indication of the temperature of the region. Basically the apparatus comprises an optical system, a band pass filter, a chopper, a detector, and a chamber containing carbon dioxide. These components are arranged to provide an output signal which is dependent on the radiation intensity at wavelengths of the absorbtion lines of the radiation, this intensity being related to the temperatures of the region from which the radiation is emitted. The apparatus may be mounted in a satellite to measure the temperature of the earth's atmosphere or in an aircraft to detect clear air turbulence.

3,498,133
APPARATUS FOR MEASURING HIGH TEMPERATURES

Toshio Hiratsuka and Yoichiro Tominaga, Totsuka-ku, Japan, assignors to Nippon Carbon Company, Limited, Chuo-ku, Tokyo, Japan

Filed Aug. 28, 1967, Ser. No. 663,701
Claims priority, application Japan, Sept. 30, 1966, 41/64,051
Int. Cl. G01k *5/50*
U.S. Cl. 73—362.3 **9 Claims**

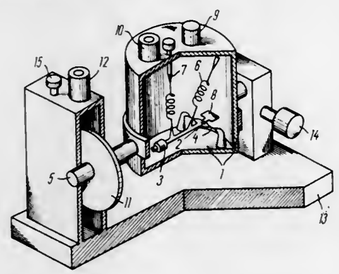


Pyrolytic graphite deposited by the decomposition of a carbonaceous gas at 2000° C. and upwards, and characterized by the combination of a high refractoriness and a high anisotropy of thermal expansion between the directions parallel and perpendicular to the plane thereof is taken advantage of as a thermally responsive element in a pyrometer of this invention. The pyrometer comprises an elongated tubular body of a refractory material in which a number of pyrolytic graphite pieces laminated in a direction parallel to the plane thereof are provided at one end to be exposed to a high temperature zone of an object the temperature of which is to be measured and a temperature measurement is indicated on a dial gauge fixed to the other end thereof.

3,498,134
GRAVIMETER

Jury Dmitrievich Bulanzhe, Ul. Dmitria Ulianova 4/34, korpus B, kv. 64; and Valentin Antonovich Romanjuk, Ul. Vavilova 37–a, kv. 46, both of Moscow, U.S.S.R.; and Sergei Alexeevich Poddubny, Ul. Mal. Podyacheskaya 6, kv. 18, Leningrad, U.S.S.R.

Filed Aug. 17, 1967, Ser. No. 661,427
Int. Cl. G01m *1/12*
U.S. Cl. 73—382 **3 Claims**



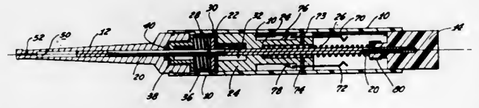
A gravimeter having a resilient system which comprises a pendulum sensitive to gravitation acceleration and mounted on a rotary frame in such a manner that

the axis of rotation of the pendulum is perpendicular to the axis of rotation of the rotary frame, thus providing for practically an unlimited range of measurements. The pendulum of the resilient system may be astatized to ensure an increased precision of measurements.

3,498,135
PIPETTE

Lamont J. Seitz, Huntington Beach, and Louis Jerg, Costa Mesa, Calif., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

Filed Nov. 13, 1968, Ser. No. 775,252
Int. Cl. G01n *1/14*
U.S. Cl. 73—425.6 **10 Claims**

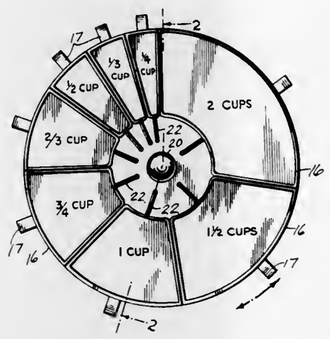


An outer tube has a hollow elongated member attached to one end of the tube in a coaxial relationship. A rod slidable in the tube causes a replaceable tip, mounted on the hollow elongated member, to fill with fluid when the rod is moved in a first direction and discharges the fluid when the rod is moved in the opposite direction. A first spring surrounds the rod and exerts a force between a stop, mounted at an intermediate position within the tube, and the rod to bias the rod in the first direction. A second spring surrounds the rod and is interposed between the stop and the inner end of the hollow elongated member. A first limiting member is mounted on the rod to compress the second spring when the rod is moved in the opposite direction beyond a predetermined limit.

3,498,136
CONDIMENT MEASURING DEVICE

Philip G. Le May, 38 High St., Lebanon, N.H. 03766

Filed Mar. 18, 1968, Ser. No. 713,754
Int. Cl. G01f *19/00*
U.S. Cl. 73—426 **1 Claim**

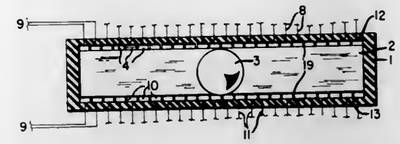


A dispenser having a base, top wall and a cover within which are carried a plurality of different sized containers which hold a specific amount of condiments. In the center of the apparatus is included a shaft which extends above the cover of the apparatus and push buttons on the upper end of the locking rod serves to release any one of the radially spaced apart containers in order that they may be removed therefrom.

3,498,137
MOTION MEASURING INSTRUMENT

Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017

Filed July 22, 1965, Ser. No. 474,123
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **3 Claims**

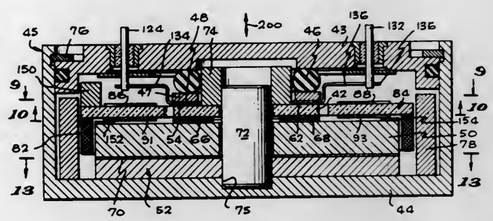


This device measures movement or acceleration by registering instantaneously the position of a sphere within a viscous fluid contained in a horizontal housing whose top and bottom are parallel round plates spaced apart sufficiently to permit unhampered movement of the sphere between them, the inner surface of each plate containing a grid made of two perpendicular sets of parallel conducting strips at minute intervals, each strip being individually connected to computer equipment that registers the sphere's position by coordinates as current flows through each of the two perpendicular strips closest to the sphere on one side, then across to and through the sphere, then across to the two perpendicular strips on the other side, then to the computer.

3,498,138
ACCELEROMETER

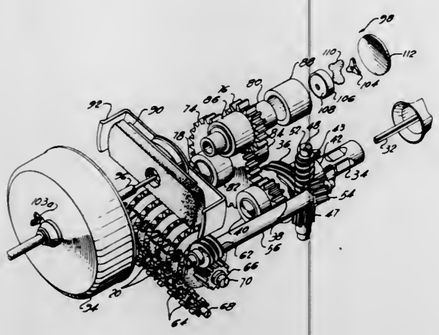
Robert E. Stewart, Woodland Hills, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Sept. 9, 1966, Ser. No. 578,172
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **19 Claims**



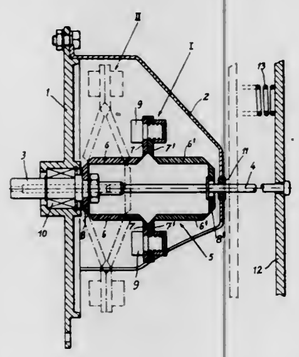
An accelerometer having a sensing member which includes a nonconductive wafer divided, by a slot formed therein, into radially interior and exterior portions. The exterior portion is supported for rotation relative to the interior portion by a pair of flexible hinge members connected such that translation of the outer portion results in restoring forces tending to produce only translational displacement thereof. A servo system for positioning the exterior portion to a neutral position, includes magnetic means for super-imposing a permanent magnet's unidirectional field with a field produced by an electromagnet, to apply a restoring torquing force couple to the sensing member. Means are provided for varying the working air gap of the permanent magnet circuit to compensate for changes in the characteristics of the magnet due to temperature variations.

3,498,139
SPEEDOMETER
Patrick L. Powell, Franklin Park, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Jan. 22, 1968, Ser. No. 699,590
Int. Cl. G01p 3/22
U.S. Cl. 73—519 4 Claims



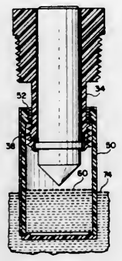
The following specification describes a speedometer utilizing an integral frame structure for rotatably supporting an input shaft driven by a flexible shaft, an idler shaft and magnet shaft in parallel relationship to permit coaxial independent journalling of the magnet and pointer shafts and avoid transmission of axial shaft loading. In additioni the iuput shaft transmits movement to a transverse shaft rotatably supported in the frame structure for driving an associated odometer.

3,498,140
CENTRIFUGAL GOVERNOR
Christian Porquet and Pierre Ventre, Billancourt, France, assignors to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, and Automobiles Peugeot, Paris, France
Filed Jan. 15, 1968, Ser. No. 698,039
Claims priority, application France, Jan. 18, 1967, 91,645
Int. Cl. G01p 3/18
U.S. Cl. 73—535 3 Claims



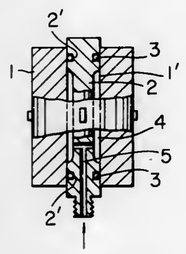
Governor for controlling the movement of a member as a function of the velocity of rotation of any shaft, characterised in that the driving shaft and the driven member to be moved are interconnected by a coupling member consisting of a plastic material in which inertia weights are incorporated, said inertia weights being adapted, under the influence of the centrifugal force and as a consequence of the elastic bending of the plastic coupling member, to move said driven member to a position subordinate to the velocity of rotation of said driving shaft against the action of return spring means.

3,498,141
LIQUID LEVEL INDICATOR IN PROTECTIVE ENVIRONMENT
John F. Nelson, Des Plaines, and Ougljesa J. Poupitch, Itasca, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 13, 1969, Ser. No. 790,655
Int. Cl. G01f 23/06
U.S. Cl. 73—319 10 Claims



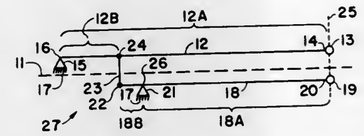
An optical liquid level indicator for a container having a protective casing including a buoyant portion which contains a measured amount of controlled liquid, the buoyant portion of said casing being movable relative to the indicator by the varying liquid levels in the container, and the controlled liquid being isolated from the liquid in the container or external environment in which the user wishes to measure a state of change.

3,498,142
FLUID PRESSURE MEASURING DEVICE
Kazuo Yasunami, Ashiya-shi, Japan, assignor to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan
Continuation of application Ser. No. 472,762, July 19, 1965. This application Jan. 16, 1968, Ser. No. 698,357
Claims priority, application Japan, July 24, 1964, 39/41,728
Int. Cl. G01l 9/00
U.S. Cl. 73—398 3 Claims



A fluid pressure measuring device comprising in combination: a vessel, said vessel being made of a material having a thickness, shape and tensile and a compressive elastic strength capable to withstand given limits of pressure strains; said vessel forming a pressure receiving chamber with at least a portion of its wall symmetrically curved to provide equality of its actual strain-pressure relationship with its theoretically determined strain-pressure relationship, means to introduce fluid into said vessel under pressures within said given limits; means to detect the strain produced by the pressures of the introduced fluid, a bridge circuit comprising a set of at least one pair of complementary semiconductor strain gauges spaced on the walls of said vessel to detect said strains as a resistance change; a voltage source and a voltmeter, whereby said gauges change their characteristic parameters in consequence of changes of strains in the walls of said chamber, the changes of the parameters of said gauges resulting in voltage changes in the output of said bridge, said voltage changes being detected with said voltmeter.

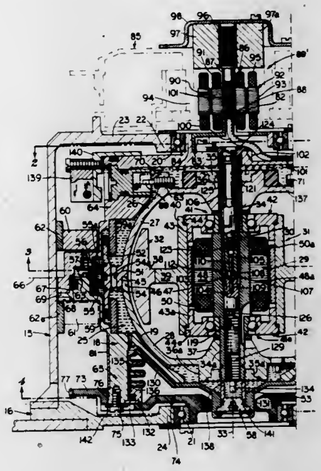
3,498,143
INERTIALLY BALANCED LEVER SYSTEM
Philip H. Sanford, Walpole, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Mar. 8, 1968, Ser. No. 711,785
Int. Cl. F16h 37/00
U.S. Cl. 74—1 10 Claims



A pair of levers are disposed alongside one another, with a pair of masses respectively attached to said levers in a manner to be positioned closely to one another, the levers being flexibly linked together at points on each lever facing one another, and having respective fulcrums oppositely offset along the lever lengths from the linkage points; by arranging suitable force multiplications in the levers the masses may be made both statically balanced and dynamically balanced with respect to external forces acting similarly upon both masses; a symmetrical arrangement of a pair of such lever systems effectively substitutes for the function of one of the fulcrums of each system; these lever arrangements are useful for applications benefiting from compensation for the effects of a variety of environmental forces.

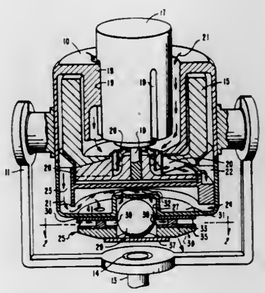
3,498,144
STABLE TWO-AXIS CASE ROTATING GYROSCOPES
Lawrence W. Gooss, Jr., Oakland, N.J., assignor to Singer-General Precision Inc., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,288
Int. Cl. G01c 19/14
U.S. Cl. 74—5 15 Claims

1. A two-axis case rotating gyro comprising a hollow outer housing, a hollow inner case fitted to and rotatably supported by the outer housing, the axis of rotation of the inner case being co-axial with one axis of the outer housing, the inner case having a spherical segmental inner surface formed therein, a hollow float of generally spherical segmental outer contour fitted to the interior of the inner case, co-axially with the axis of rotation of the inner case, the volume between the inner surface of the inner case and the float being filled with a flotation fluid, a tubular central shaft fitted to the float, co-axially with the longitudinal axis thereof, a flexure support member fitted to the inner case extending into the tubular central shaft of the float, nominally co-axially with the longitudinal axis of the tubular central shaft, flexure means supported by said flexure support member, co-axially therewith, said flexure means being operative to allow the float to be angularly displaced relative to the axis of rotation of the inner case about the flexure means, and wherein said flexure support member is formed in a plurality of sections including a first flexure support section fixedly attached to one end of the inner case, a second flexure support section inserted into the tubular shaft of the float between the first flexure support section and the flexure means, co-axially with the flexure means, one end of the flexure means being fixedly attached to



the second flexure support section of the flexure support member, and a third flexure support section adjustably fitted to the tubular central shaft of the float, said third flexure support section being located near the end of the flexure means opposite the end attached to the second flexure support section, the end of the flexure means opposite the end attached to the second flexure support section, being fixedly attached to the third flexure support section.

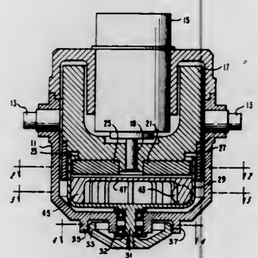
3,498,145
ERECTION SYSTEM FOR VERTICAL GYROS
Richard B. Clark, Granada Hills, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 2, 1966, Ser. No. 591,586
Int. Cl. G01c 19/30
U.S. Cl. 74—5.43 17 Claims



A gyro erection control mechanism is disclosed for producing an erecting torque on the gyro in response to

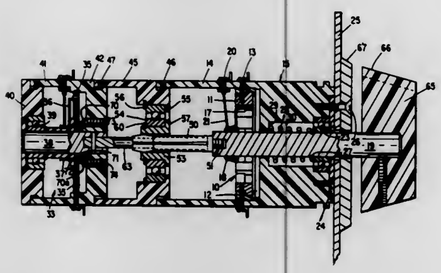
minute displacements of a spherical control element resulting from tilting of the gyro. The control element regulates the flow of control streams in fluid amplifiers whose power streams are thereby directed as required to apply a large restoring torque to the gyro.

3,498,146
GYRO ERECTION SYSTEM
Robert M. Hulle, Hidden Hills, and Felix M. Dunkel, Thousand Oaks, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 21, 1966, Ser. No. 595,863
Int. Cl. G01c *19/30, 19/46*
U.S. Cl. 74—5.44 **9 Claims**



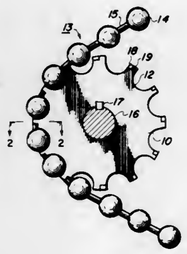
A gyroscope with a ball type erecting mechanism. A metallic container containing the erecting balls is mounted for rotation on an axis coincident with the spin axis of the gyro rotor. The container is driven by an eddy current type arrangement wherein permanent magnets integral with the gyro rotor are mounted in a closely spaced relation to the container whereby the ball erecting container is driven at a much less speed than the rotor speed.

3,498,147
DUAL COMPONENTS ADJUSTABLE SEPARATELY, OR IN UNISON, BY A FRONT SHAFT
James H. Cameron and Charles M. Tygard, West Covina, Calif., assignors to Spectrol Electronics Corporation, City of Industry, Calif., a corporation of Delaware
Filed May 29, 1968, Ser. No. 732,911
Int. Cl. F16h *35/18;* **H01h** *3/00*
U.S. Cl. 74—10.45 **3 Claims**



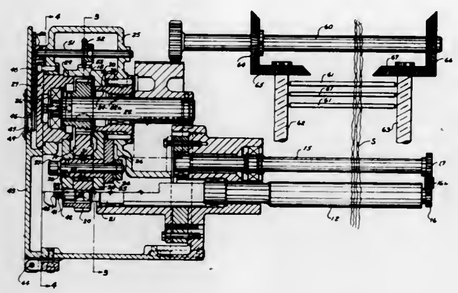
A pair of rotatably adjustable electrical components are arranged in tandem, each component having a rotatable shaft. The shafts are normally coupled for rotation in unison. Upon axial movement of one shaft, the shafts are uncoupled, whereby one component may be adjusted, or phased, without disturbing the setting of the other component. Preferably, the coupling means includes a round spring collet, whereby relative movement between the shafts during engagement and disengagement of the coupling means, is avoided.

3,498,148
CHAIN DRIVE
Dennis P. Gerbasi, Webster, and Richard C. Palermo, West Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 7, 1968, Ser. No. 765,536
Int. Cl. F16h *55/08, 55/30*
U.S. Cl. 74—229 **7 Claims**



A bead chain and sprocket drive system having a castable sprocket capable of guiding the bead chain along a pre-determined path of travel.

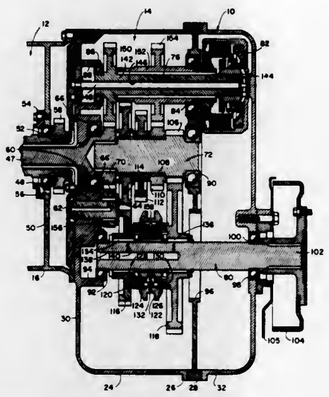
3,498,149
TEXTILE APPARATUS AND CHANGEABLE GEAR TRANSMISSION THEREIN
Steven W. Kundrach, South Euclid, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 29, 1968, Ser. No. 701,283
Int. Cl. F16h *3/08, 3/34*
U.S. Cl. 74—325 **8 Claims**



An intermediate gear in the transmission, which meshes with the changeable gear for the output draft rolls of a gill box, is carried by a holder that may be turned by a manually-operated handle located outside the casing so as to position the intermediate gear in or out of engagement with the changeable gear before and after changing it. An indicator arm, which is visible through a window on a cover of the transmission casing, is coupled to the holder to designate which changeable gear is in use and

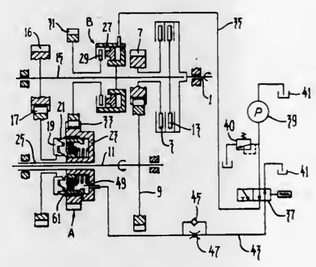
the corresponding draft produced by the draft rolls, in accordance with the angular position of the holder with the intermediate gear in mesh with the changeable gear.

3,498,150
TRANSMISSION
Howard C. Funk, Coffeyville, Kans., assignor to Funk Mfg. Company, Coffeyville, Kans., a corporation of Oklahoma
Filed July 15, 1968, Ser. No. 744,778
Int. Cl. F16h *3/08*
U.S. Cl. 74—331 **14 Claims**



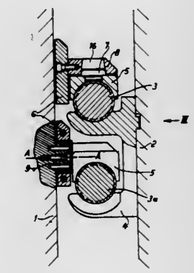
A transmission device particularly for use in conjunction with heavy duty industrial engine units, large off highway vehicles, or the like. The transmission device has four forward speeds and two reverse speeds and utilizes a single shift lever for operation of all positions. In addition, the device utilizes only three clutches for the operation thereof.

3,498,151
TRANSMISSION CLUTCH CONTROL APPARATUS
Robert W. King, Birmingham, Mich., assignor to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland
Filed Feb. 19, 1968, Ser. No. 706,475
Int. Cl. F16h *3/16*
U.S. Cl. 74—356 **6 Claims**



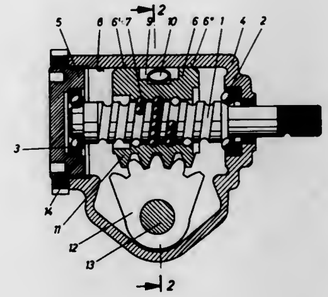
A change speed transmission employing jaw tooth type overrunning clutch means having hydraulic piston lock up means to prevent separation of jaw teeth when drive is through the clutch and permitting overrun when the drive is through another clutch. A variable volume device is provided to allow rapid separation of the jaw teeth when the other clutch takes over the drive without high fluid pressure build up on the piston and high loads on the jaw clutch teeth.

3,498,152
ADJUSTABLE SPINDLE NUT FOR MACHINE TOOL CARRIAGES
Heinz Gerner, Eichendorffweg 9, Coburg, Germany
Filed July 5, 1968, Ser. No. 742,611
Claims priority, application Germany, July 6, 1967, W 40,104
Int. Cl. F16h *55/18*
U.S. Cl. 74—409 **5 Claims**



A machine tool carriage is advanced by a spindle engaging a half-nut and the half-nut is rendered free of backlash by mounting it floatingly on a rocker rotatable about an axis perpendicular to the spindle and biased towards the spindle by a spring acting through a bell-crank lever.

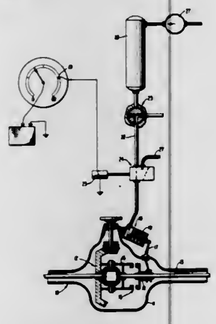
3,498,153
STEERING GEAR WITH ROTARY BALL NUT
Heinrich Wagner, Schwabisch Gmund, Germany, assignor to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany
Filed Jan. 30, 1968, Ser. No. 701,646
Claims priority, application Germany, Feb. 10, 1967, Z 12,696
Int. Cl. B62d *1/20*
U.S. Cl. 74—499 **6 Claims**



A steering gear worm mechanism of the ball nut type having a gear rack, one important feature being that the nut is slideably supported in its motion during heavy

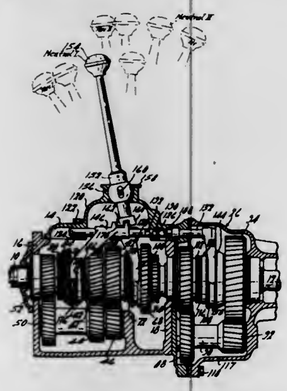
steering loads by a housing which encompasses the steering spindle worm. By providing a construction such that the spindle worm has bearing support at both ends, a smaller nut of fewer balls can be utilized.

3,498,154
INSTALLATION FOR LOCKING A DIFFERENTIAL GEAR IN VEHICLES, ESPECIALLY MOTOR VEHICLES
Alfred H. Müller-Berner, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 29, 1968, Ser. No. 709,358
Claims priority, application Germany, Mar. 3, 1967, D 52,428
Int. Cl. F16h *1/44*
U.S. Cl. 74—710.5 **6 Claims**



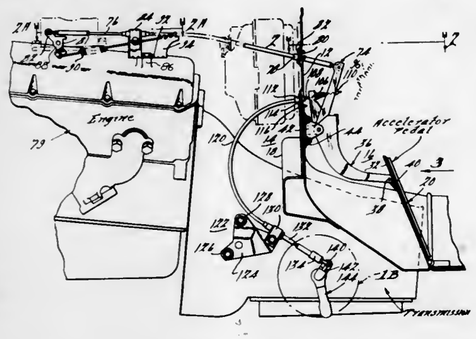
An installation for locking a differential gear in vehicles in which two elements of the differential gear are adapted to be coupled with each other by means of a clutch that is actuated by a shifting member, and in which the disengagement of the clutch is controlled automatically in dependence on the driving velocity.

3,498,155
MULTIPLE-RATIO, MANUALLY-CONTROLLED POWER TRANSMISSION MECHANISM WITH TWO DRIVE RANGES
Peter George Ivanchich, Dearborn, and Clevoe D. Jones, Franklin, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,940
Int. Cl. F16h *3/02*
U.S. Cl. 74—745 **8 Claims**



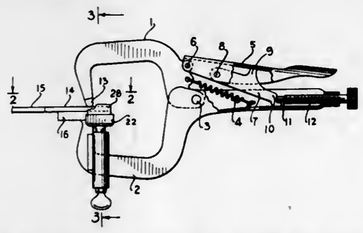
A geared power transmission comprising auxiliary gearing and a cooperating synchronizer clutch mechanism for establishing a direct-drive connection between the torque output element of the main transmission gearing and the output shaft during a first driving mode, and for establishing an auxiliary speed-ratio witr the auxiliary gearing during operation in another mode, including synchronizer clutches controlled by shift forks carried by axially movable shift rails wherein separate motion transmitting patterns for the gearshift mechanism cause controlled shifting movement of the shift rails, including the shift rail for the auxiliary gearing, each pattern corresponding to its separate driving mode.

3,498,156
COMBINED ENGINE THROTTLE AND TRANSMISSION KICK-DOWN CONTROL FOR AN AUTOMOTIVE VEHICLE DRIVELINE
Morris McAllister, Plymouth Township, and Robert C. Gardner, Romulus, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 722,916
Int. Cl. G05g *9/04*
U.S. Cl. 74—879 **8 Claims**



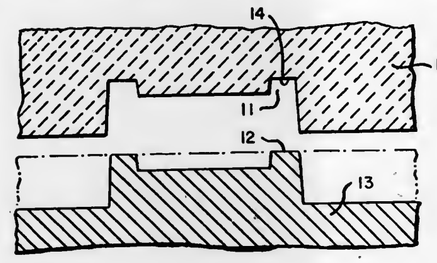
A driver controlled linkage mechanism in an automotive vehicle driveline for controlling the engine carburetor throttle and the ratio downshift control elements for a multiple-ratio, automatic power transmission, including a bipartite lever connected operatively to the vehicle accelerator pedal, one part of the lever being joined to the other through a preloaded spring connection, the separate parts being connected respectively to the engine throttle and to the transmission downshift control whereby separate operating limits are established for the displacement of each lever part.

3,498,157
TOOL FOR FIXING CUTTING TIPS TO SAWS
William R. McKillip, Portland, Oreg., assignor, by mesne assignments, to James Talcott Inc., New York, N.Y., a corporation of New York
Filed May 3, 1968, Ser. No. 726,360
Int. Cl. B23d *63/00;* **B25b** *7/00, 7/02*
U.S. Cl. 76—80 **3 Claims**



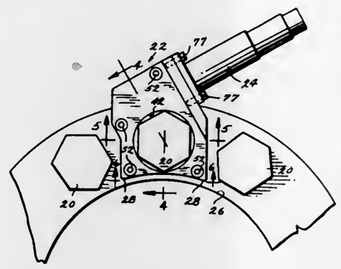
A tool for holding a cutting tip to the saw blade body during the fixing of the tip to the blade having upper and lower jaws biased apart and a pair of handles for gripping the tool and forcing the jaws together. The lower jaw has attached thereto a table support for the cutting tip so as to adjust it and hold it in proper position while it is brazed or otherwise affixed to the saw tooth.

3,498,158
STEEL EMBOSSING DIE AND METHODS OF MAKING THE SAME
Jack I. Kougel, Leesburg, Ind., assignor to GTI Corporation, a corporation of Rhode Island
Filed June 7, 1968, Ser. No. 735,428
Int. Cl. B21k *5/20;* **B23k** *9/00*
U.S. Cl. 76—107 **3 Claims**



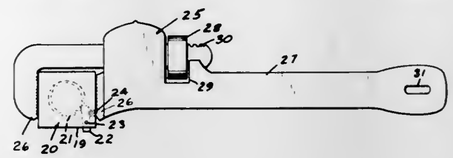
A method of making a steel embossing die is provided including the steps of hardening a suitable blank and cutting a series of successive impressions by electrical discharge machining to produce a final steel die having sharp, hardened cutting edges.

3,498,159
POWER WRENCH FOR OIL FIELD USES
Claude H. Wilmeth, New Orleans, La., assignor to C. & D. Power Tool Co., Inc., New Orleans, La., a corporation of Louisiana
Filed Sept. 26, 1967, Ser. No. 670,594
Int. Cl. B23p *19/06;* **B25b** *17/07*
U.S. Cl. 81—57 **7 Claims**



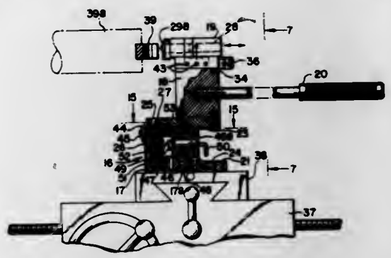
An improved power driven wrench is described, and the wrench has special features of construction which meet specific needs of oil field uses wherein a power wrench must be used in confined places for tightening or loosening nuts and other connectors. The improved wrench includes an uninterrupted socket member having integral gear teeth formed about its periphery for being driven by a detachable power means. The gear driven socket member is mounted between bearing plates included within a very thin housing, and the housing includes means for preventing the wrench from whipping or swinging about when power is applied to it. Also, the housing is constructed to provide for an inspection of gear teeth carried by the socket member.

3,498,160
FLANGE TIGHTENER
James H. Brockway, Erie, and Frank F. Bernardini, Pittsburgh, Pa., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 17, 1968, Ser. No. 709,847
Int. Cl. B25b *13/02, 13/46*
U.S. Cl. 81—90 **7 Claims**



The tool disclosed herein is intended for use by plumbers and other mechanics to tighten pipe flanges and similar devices. In its simplest form, the tool is made up of a bar having two laterally extending pins supported in longitudinal slots or spaced holes. The spacing of the pins can be changed by moving them along the slot or from one hole to another. The side of the bar opposite the pins has a laterally extending part which may receive a wrench, a plumber's ratchet handle, or other handle. The laterally extending member can have a mating member on it to receive a plumber's ratchet or the like. The pins can be provided with quick release latches, such as snap washers, safety pins, rings, or nuts.

3,498,161
MULTIPLE PURPOSE MACHINE TOOL ATTACHMENT
Fred John Kump, 80—19 88th St., Glendale, N.Y. 11227
Filed Feb. 20, 1968, Ser. No. 706,866
Int. Cl. B23b *3/28;* **B23d** *13/02;* **B28d** *1/00*
U.S. Cl. 82—12 **7 Claims**



A device removably attachable to various machine tools, viz.—to a lathe as a dresser and radius cutter; to a grinder for dressing grinding wheels; to a shaper as the cutter mounted on the clapper box of the reciprocating ram; and, in each instance, providing a self-contained precision instrument of few parts, sturdy and durable in construction, easy to operate and a valuable time saver for tool makers and machinists in general.

3,498,162
MICROMETRIC STOP ROD MECHANISM FOR MACHINE TOOLS
Leo Malchin, 525 Park Ave., New York, N.Y. 10021
Filed Feb. 17, 1967, Ser. No. 616,837
Int. Cl. B23b *3/36;* **G01b** *3/18, 5/00*
U.S. Cl. 82—34 **2 Claims**

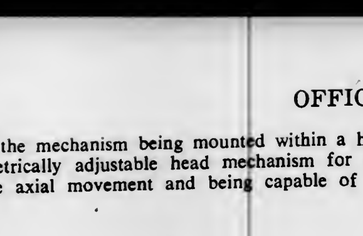
A stop rod mechanism for machine tools to be used in place of existing threaded stop rods, the spindle por-

tion of the mechanism being mounted within a hollow micrometrically adjustable head mechanism for initial slideable axial movement and being capable of being



locked in position with respect to said head for predetermined adjustment of the position of said spindle with micrometric accuracy.

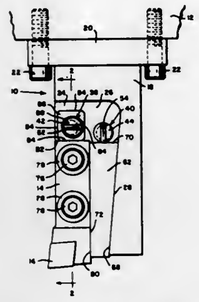
3,498,163
REVOLVING TURRET FOR SLIDE LATHES AND THE LIKE MACHINES
Jules Louis Jeanneret, 21 bis Boulevard Victor Hugo, Neuilly-sur-Seine, France
Filed Apr. 10, 1967, Ser. No. 629,705
Claims priority, application France, Apr. 28, 1966, 59,487
Int. Cl. B23b *29/00*
U.S. Cl. 82—36 **4 Claims**



A turret for a machine tool the rotation of which is arrested in any number of angular positions for which one of a number of tools enters its operative position. The handle rotating the turret projects beyond the outer end of a locking lever adapted to hold fast selectively the turret in one of said angular positions so that the operator grasping the handle can simultaneously depress the locking lever with a finger of the same hand and release the turret for rotation.

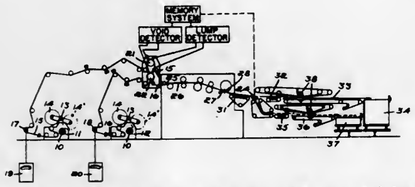
3,498,164
ADJUSTABLE TOOL SUPPORT
Steven I. Miko, Bridgeport, Conn., and Harry R. McCue, San Diego, Calif., assignors to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Mar. 14, 1968, Ser. No. 713,197
Int. Cl. B23b *29/10, 29/00*
U.S. Cl. 82—37 **6 Claims**

A tool support for a metal cutting tool in which a wedge is movably mounted on the support so that a guide surface of the wedge is maintained in parallel alignment with the longitudinal axis of the support and has translatory motion only along the transverse axis of the support as the wedge is moved. The guide surface is held in contact with a reference surface or the tool to maintain the alignment of the tool relative to the support while the position of the tool is adjustably changed in directions precisely parallel to either the longitudinal or transverse axes of the support. Two rotatable eccentrics mounted on the support are used



to adjust the tool position, one eccentric acting on the wedge to move the wedge and translate the guide surface relative to the support, thereby rectilinearly moving the tool in a direction parallel with the transverse axis of the support, and the other eccentric acting on the tool to rectilinearly move the tool relative to the stationary wedge in a direction parallel with the longitudinal axis of the support.

3,498,165
PROCESS FOR CUTTING UNIFORM SIZE SHEETS FROM A CONTINUOUS MULTILAYER WEB
Stanley F. Austin, Gorham, Maine, assignor, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Filed Jan. 16, 1967, Ser. No. 609,532
Int. Cl. B26d *7/14*
U.S. Cl. 83—18 **2 Claims**

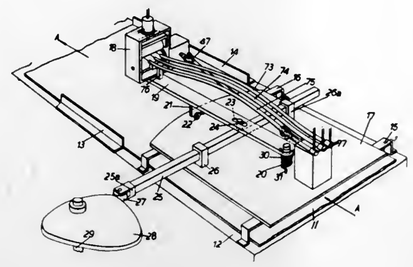


A plurality of rolls of paper or other material are unwound and merged into a multilayer running web which is cut periodically to form multilayer cut sheets. In order to assure that the final size of the individual cut sheets is uniform, the tension in the individual strands is monitored and adjusted prior to merging into the multilayer web.

3,498,166
CUT FIBRE DISTRIBUTION
Francis Harold Pook, Sale, England, assignor to Fibreglass Limited, Liverpool, England, a corporation of Great Britain
Filed Nov. 24, 1967, Ser. No. 685,630
Claims priority, application Great Britain, Nov. 30, 1966, 53,678/66
Int. Cl. A26d *1/40*
U.S. Cl. 83—23 **9 Claims**

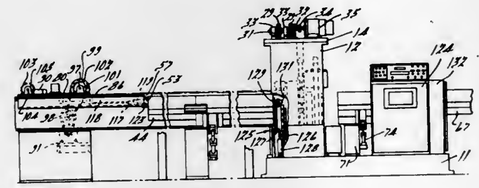
Fibre distribution apparatus for the manufacture of fibre (e.g. glass fibre) reinforced resinous sheeting, in which an oscillatable support is disposed above a movable

conveyor and carries a high speed fibre cutter from which cut fibres are sprayed onto a receiving surface moving with the conveyor. The cutting means includes



a cutting roller and a cushion roller in contact with each other and disposed in a common vertical plane, with means for guiding fibres to the rollers.

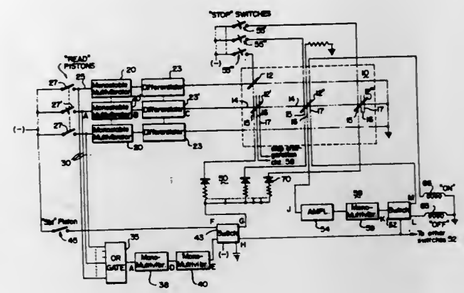
3,498,167
AUTOMATIC PRECISION NUMERICAL CONTROLLED PUNCHING AND SHEARING MACHINE
Walter P. Hill, Bloomfield Hills, Mich., assignor to Walter P. Hill Inc., Troy, Mich., a corporation of Michigan
Filed Feb. 19, 1968, Ser. No. 706,533
Int. Cl. B26d *5/30*
U.S. Cl. 83—71 **10 Claims**



The automatic precision punch and shearing machine is herein illustrated as operating on angle stock through a sequence of operations programmed by a tape or other numerical controlled device. The workpiece is automatically advanced to a roller conveyor where it is secured by an advancing device which moves the workpiece against a retractable stop to set a zero from which sequential punching and shearing of pieces to predetermined lengths is initiated. The pieces are advanced along a similar roller conveyor from which they are ejected by the tilting thereof.

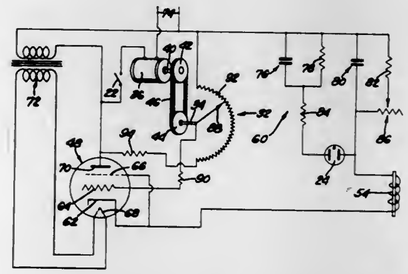
3,498,168
DIGITAL COMBINATION ACTION
Thomas W. Cunningham, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 22, 1966, Ser. No. 603,796
Int. Cl. G10b *3/10*
U.S. Cl. 84—345 **13 Claims**

An electric organ having a plurality of distinct organ voices that may be called forth by selected operation of switches on an organ keyboard includes an array of binary memory elements arranged in groups, each memory element associated with a respective predetermined organ voice, and in which a binary number is entered into any group of the memory elements in the array to represent the combination of organ voices with which that group of elements is to be associated, for subsequently calling forth that combination upon accessing of the group of memory elements into which that number has been entered. Any group of memory elements in the array is accessed at will, according to the desired combination of organ voices to be brought on, to read out the number that had been



entered into the accessed group of memory elements. In response to readout of the number from an accessed group of memory elements the respective combination or organ voices is called forth and simultaneously therewith the number that has been read out is re-entered into the same group of memory elements to permit subsequently calling forth the same combination of organ voices at a later time in the musical selection.

3,498,169
ACCELERATING METRONOME
William J. Gollan, P.O. Box 686, Redlands, Calif. 92373
Filed Sept. 27, 1968, Ser. No. 763,219
Int. Cl. G04b *21/00*
U.S. Cl. 84—484 **6 Claims**

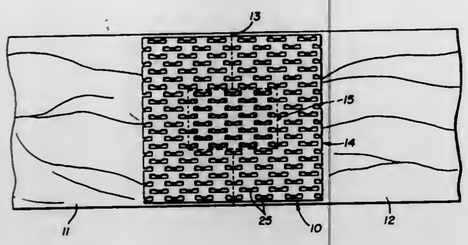


An electronic metronome in which the beat may be preset to any desired starting frequency, and in which the frequency slowly and imperceptibly accelerates over a period of time to a faster rate, thereby gradually leading the student to a faster rate of playing without his being aware of the speed-up. Timing is by an R-C series circuit, in which the time constant is varied by means of an adjustable potentiometer. A motor having a drive shaft turning at 1 revolution per hour is connected to the potentiometer, so as to advance the potentiometer slowly while the unit is in operation.

3,498,170
CONNECTOR PLATE COMBINATION

Arthur Carol Sanford, 400 S. Ocean Blvd., Palm Beach, Fla. 33480

Filed Oct. 20, 1966, Ser. No. 588,167
The portion of the term of the patent subsequent to Dec. 17, 1985, has been disclaimed
Int. Cl. F16b *15/00*
U.S. Cl. 85—13 12 Claims

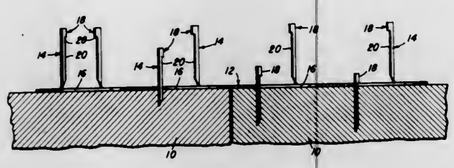


A connector plate combination for wooden members having two elements: a toothed plate and grommet plate of lesser area having a plurality of apertures, the central portion of said toothed plate overlying and abutting said grommet plate, some of the teeth being received through said apertures to prevent lateral movement of said grommet plate relative to said toothed plate when all of the teeth are embedded in a wood member abutting said grommet plate.

3,498,171
CONNECTOR

John C. Jurelt, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida

Filed May 7, 1968, Ser. No. 727,300
Int. Cl. F16b *15/00, 9/00*
U.S. Cl. 85—13 23 Claims

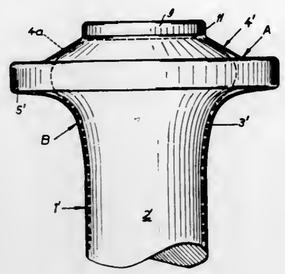


The connector plate has a plurality of slender, elongated, nail-like teeth struck therefrom to project integrally from a side face thereof. The head portions of the teeth are spaced from the plate and a slender strip of metal connects the pointed end portion of each tooth with the plate providing the sole connection therebetween. In use, the opposite side face of the plate is applied against adjoining wooden members and each tooth is struck, as by a hammer, to sever the metal strip, thereby to drive the teeth through the associated slots left in the plate into the wooden members. Lugs are formed to project into the slots for guiding the teeth through the slots. The heads of the teeth are struck to provide lateral enlargements, which, when the teeth are driven home, clamp the plate to the wooden members. The teeth bear in like cross sectional slots in the plate to prevent relative lateral movement of the joined wooden members.

3,498,172
ANCHORAGE NAIL

Elmar Thurner, Feldkirch-Gisingen, Austria, assignor to HILTI Aktiengesellschaft, Schaan, Liechtenstein

Continuation-in-part of application Ser. No. 704,753, Feb. 12, 1968. This application Jan. 16, 1969, Ser. No. 791,554
Claims priority, application Germany, Mar. 7, 1967, H 62,048
Int. Cl. F16b *15/02*
U.S. Cl. 85—28 5 Claims

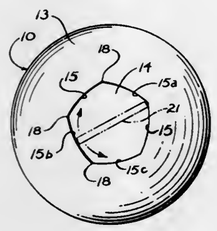


A nail of a type which is adapted to be driven in a hard receiving material such as concrete includes a large head diameter compared to its shaft diameter. The nail shaft is widened in a convex manner toward the head over a length adjacent the head corresponding substantially to the shaft diameter. The widening curve is preferably made such that the first and second thirds of the curve in a direction proceeding toward the head are relatively flat but become rapidly steep in the last third-portion which terminates in the outside diameter of the rim of the head. A flat rim of a height which is less than half the height of the total head portion is stamped around the head. The rim diameter is substantially double or triple the shaft diameter. The head is formed with a raised central portion which is either curved or convex or includes a raised central flat portion.

3,498,173
ANTI-TAMPERING FASTENER

Allen C. Wright, Moraga, Calif., assignor to Haws Drinking Faucet Company, Berkeley, Calif., a corporation of California

Filed Dec. 9, 1968, Ser. No. 782,225
Int. Cl. B25b *15/00;* F16b *23/00*
U.S. Cl. 85—45 5 Claims



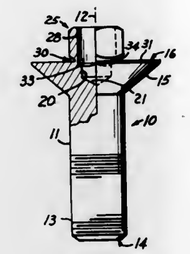
A screw fastener having tamper-proof characteristics requiring use of a special screw-driving implement to effect its rotation. The fastener has a threaded shank and a round or button head at an end of the shank, such

head being provided with a tool-receiving opening of generally equilateral pentagonal configuration (in plan view) with each of the sides thereof defining a circular arc having its origin at the junction of the sides opposing the side having such origin.

3,498,174
INHERENTLY TORQUE-LIMITED BOLT HAVING REMOVAL MEANS

Michael M. Schuster, Inglewood, and Edwin E. Hatter, Torrance, Calif., assignors to Hi-Shear Corporation, Torrance, Calif., a corporation of California

Filed Nov. 19, 1968, Ser. No. 776,876
Int. Cl. F16b *31/02*
U.S. Cl. 85—61 10 Claims

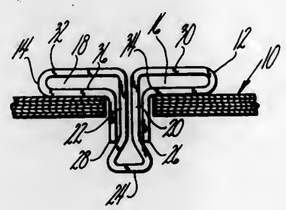


An inherently torque-limited bolt having a shank, a thread, and two ends. A hollow drive body is joined to one end by a shear section of least torsional shear strength so as to shear and to release the drive body from the shank at a predetermined torque. The drive body has an inner and an outer boundary, one of which is non-circular for engagement by a torque tool, whereby torque up to the predetermined level can be exerted to install the bolt, after which the drive body shears off and no further torque can be applied. A non-circular recess is formed in the same end as the drive body. The recess is accessible through the drive body in order to receive a torque tool for removal of the bolt both before and after installation without exerting torque on the drive body.

3,498,175
PULL TYPE BLIND FASTENER

Charles B. Goodstein, Buff Cap Road, Tolland, Conn. 06084

Filed Aug. 29, 1968, Ser. No. 756,239
Int. Cl. F16b *19/00, 5/00*
U.S. Cl. 85—85 6 Claims

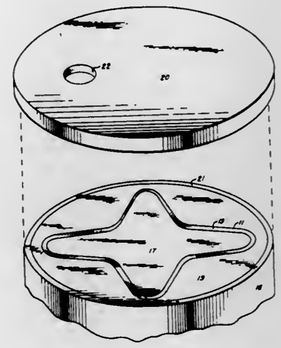


A blind fastener has a shank portion with inner and outer parallel legs. The inner legs are connected to one another and define a triangular nose portion at their lower ends. These inner leg portions also extend upwardly and define a head portion of the fastener with pull tabs which serve to lift the nose portion to spread the outer shank legs and anchor the fastener in a panel opening or the like.

3,498,176
METHOD FOR CASTING A PARTIAL IMPULSE ROCKET MOTOR

Samuel L. Champion, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Apr. 25, 1968, Ser. No. 724,045
Int. Cl. F42b *15/10;* F02k *9/06*
U.S. Cl. 86—1 5 Claims

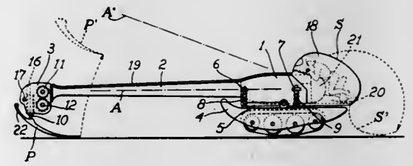


The method which includes the placing of a sheet of inert pliable backing material in a propellant mold, applying a layer of a propellant grain onto the backing, curing the propellant grain, removing the propellant grain from the mold, applying the propellant grain to a core or mandrel, positioning the core or mandrel in a rocket motor case, casting an inert material into the rocket motor case and then pressure curing the propellant grain in the rocket motor case.

3,498,177
MINE CLEARING MACHINE

Alberto Moro, 24 Via Giorgio Pallavicino, 00149 Rome, Italy

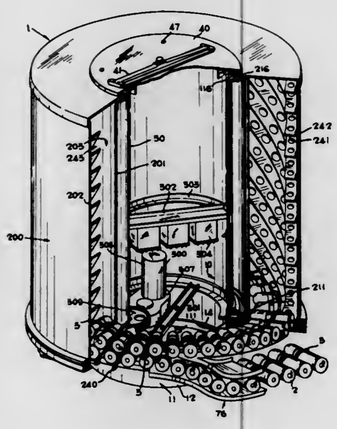
Filed Sept. 16, 1968, Ser. No. 759,887
Claims priority, application Italy, Oct. 3, 1967, 39,810/67
Int. Cl. F41h *11/12*
U.S. Cl. 89—1 8 Claims



The mine clearing machine substantially consists of a gas generator (for example rocket or turbojet engine), throwing through a barrel its gas stream into a head assembly, having proper devices in order to produce, by controls, on the ground, with the said gas stream, a cur-

tain of pressure of a certain breadth, capable to blow up the mines and thus to open, advancing, a corresponding passage in the mine field. This gas generator, with its barrel and the said head assembly, is supported by a pair of free-tracks, as all the movements and the maneuvers of this machine are effected in virtue of the thrust of the same gas stream, suitably shared, regulated and directed by the above said devices and controls.

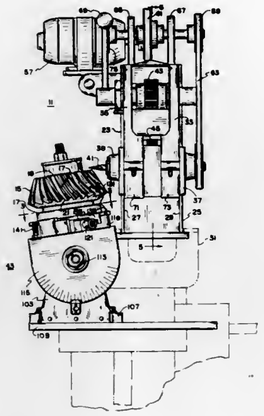
3,498,178
CYLINDRICAL AMMUNITION MAGAZINE FOR STORING AND DISCHARGING LINKED AMMUNITION
Elwyn A. Meyer, Granite City, Ill., and Charles L. Brownfield, St. Louis, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Feb. 23, 1968, Ser. No. 707,697
Int. Cl. F41c *25/10*
U.S. Cl. 89—34 **9 Claims**



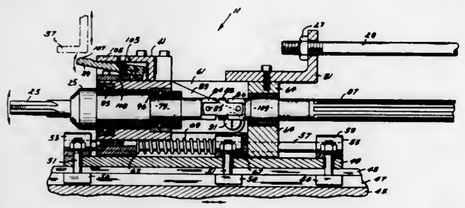
An ammunition magazine for storing and discharging linked ammunition. The magazine includes a fixed support assembly including a fixed helical ramp ascending the height of one layer of ammunition in a single turn and a fixed vertical drum interior of the ramp; a rotating vertical drum assembly rotatably supported by the fixed support assembly, including an inner and an outer rotating drum joined at the top, the space between the two rotating drums defining an ammunition storage channel; driving fingers attached to the inner surface of the outer rotating drum to drive ammunition along the fixed ramp; and helical support fins to guide and support ammunition above the fixed ramp. A drive mechanism synchronously drives a gun and turns the rotating drum assembly.

3,498,179
DEBURRING MACHINE
James V. Browne, 460 Carlston St., Richmond, Calif. 94805
Filed Dec. 7, 1967, Ser. No. 688,799
Int. Cl. B23f *19/10*
U.S. Cl. 90—1.4 **7 Claims**

A deburring machine having a shaped cutter rotated by a chuck which is movable in an arc to remove the sharp edges of spiral gear teeth and a semi-automatic indexing table for rotating a gear in increments to position each successive sharp edge of the teeth of a gear in position for machining.



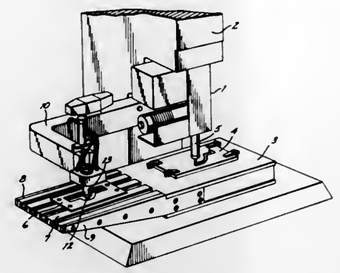
3,498,180
RECESS MILLING ATTACHMENT
Earl E. Grable, 1223 W. Miller Road, Lansing, Mich. 48910
Filed Apr. 2, 1968, Ser. No. 718,104
Int. Cl. B23c *3/28, 3/32, 1/00*
U.S. Cl. 90—11.4 **10 Claims**



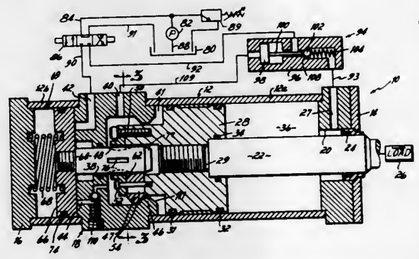
A tool holder for automatic screw machines. The holder is adapted to hold recess milling tools and mounts to an end tool slide of the screw machine. It engages also with the draw bar (in the usual fashion), and the drive shaft of the machine. The tool spindle of the apparatus is swing actuated to cut independently of the feed motion of the tool slide. The transmission means for the rotary drive is provided with a universal joint to permit the recess swing of the tool, and also to allow lateral offset of the spindle axis, as compensation for various factors.

3,498,181
AUTOMATIC MILLING MACHINE
Victor A. Park, 7707 Danvers St., Lynwood, Calif. 90240
Filed Apr. 15, 1968, Ser. No. 721,233
Int. Cl. B23c *1/16*
U.S. Cl. 90—13 **8 Claims**

Modern milling machines are frequently controlled or activated by a tape, which tape is an integral part of an electronic circuit and certain electronic elements in that circuit. To move the cutting tool in a desired pattern in order to transfer the operation of the machine from its tape control to a manual control is the purpose of this invention, and under the manual control the machine will function faster and more effectively than if it were under the control of the tape. Also it is possible to manually control the machine for certain special purposes which are not included in the tape. In other words, the cutting tool of the machine might be required to cut an odd shaped pattern. My attachment can be affixed to a standard tape controlled milling machine and can be activated or deactivated by means of a single switch, which is included in the electronic circuit of the milling machine.



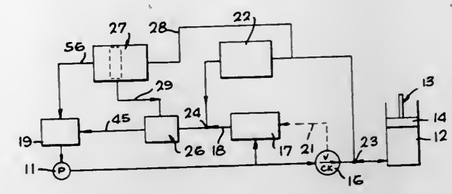
3,498,182
LOCKING CYLINDER
Harvey I. Sheffer and Donald A. Selke, Cincinnati, Ohio, assignors to The Sheffer Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed May 7, 1968, Ser. No. 727,184
Int. Cl. F15b *15/26*
U.S. Cl. 91—44 **5 Claims**



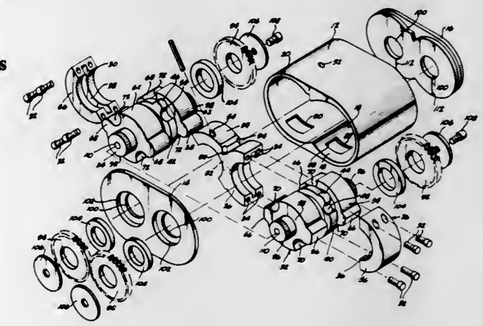
A locking cylinder for mechanically locking a piston rod in predetermined position. Movable locking members are cammed into locking position with respect to the main or work piston, by a secondary or locking piston. The locking piston holding the members in locking position is hydraulically or pneumatically withdrawn from engagement with the members before fluid pressure is applied to move the work piston from the pretermined position in which it was locked. Application of pressure to move the work piston is automatically valved, in accordance with movement of the locking piston, to commence only after the members are relieved of load.

3,498,183
FLOW CONTROL FOR FLUID SYSTEM
Daniel W. Risk, Los Angeles, Calif., assignor to Coast Elevator Company, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 611,741, Jan. 25, 1967. This application Apr. 7, 1969, Ser. No. 817,247
Int. Cl. F15b *13/024;* **F16k** *31/143, 31/38*
U.S. Cl. 91—48 **3 Claims**

An elevator system has a ram to which hydraulic liquid under pressure is supplied by a pump, in order to raise the elevator. To lower the elevator, the hydraulic liquid is returned to a sump, under the control of valves, bypassing the pump. To maintain a substantially constant pressure drop across the control valves under varying loads on the elevator, a variable restriction is interposed between the control valves and sump. This restriction is controlled so as to produce a substantially constant pressure drop across the control valves.



3,498,184
MULTISTAGE ENERGY-CONVERTING DEVICE
William E. Gatlin, Manhattan Beach, Calif. (4302 Western Road, Flint, Mich. 48506)
Filed Nov. 20, 1967, Ser. No. 684,424
Int. Cl. F01c *1/16, 1/18;* **F01d** *13/02*
U.S. Cl. 91—87 **9 Claims**

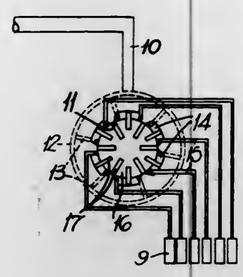


A multistage energy-converting device including a housing, two counter-rotating rotors having power disks formed thereon with lobes and recesses formed on their peripheries which mesh with one another, a first-stage inlet portion which is periodically opened by the recess on one of the power disks to feed expandable fluid to a first expansion stage, an open first-stage outlet to feed partially expanded fluid to a second expansion stage where the fluid is further expanded and then exhausted through an outlet port, and a bypass formed in the surface of the chambers to equalize fluid pressure during critical stages of operation.

3,498,185
FLOW DISTRIBUTOR DEVICES FOR INTERNAL COMBUSTION ENGINE FUEL INJECTION SYSTEMS
Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 6, 1968, Ser. No. 734,974
Int. Cl. F01c *1/00;* **F04b** *13/02*
U.S. Cl. 91—121 **1 Claim**

A fluid distributor device for use in a fuel injection system for an internal combustion engine comprising,

a body containing a rotor, a single inlet, and a plurality of outlet passages, the body having a plurality of equiangularly spaced chambers disposed adjacent to the rotor periphery, each chamber communicating with the inlet and with one of the outlets respectively, the rotor



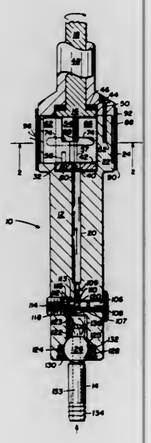
carrying a plurality of equiangularly spaced vanes which are radially slidable with respect to the axis of rotation of the rotor 16 to sweep through the chambers in turn so that fluid flows between the inlet and the outlets through the chambers respectively.

3,498,186

MULTIPLE LOBED CHAMBER AIR MOTOR

Oren Van Northcutt, Rte. 1, Box 982, Dallas, Tex. 75221

Filed May 19, 1967, Ser. No. 639,767
Int. Cl. F01c *1/00, 3/00*
U.S. Cl. 91—129 **17 Claims**



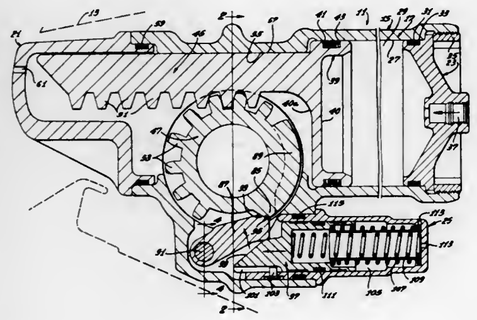
An air motor including an outer casing having a three lobed chamber defined in one end thereof which rotatably receives a cylindrical rotor. Air under pressure is fed through a suitable inlet into one end of the chamber. Two pairs of perpendicularly disposed vanes are slidably disposed in slots in the rotor and radially extend from the rotor into unoccupied outer portions of the three lobed chamber. The vanes have relieved portions along the sides thereof to provide, along with the slots in the rotor, communication between the air inlet and the outer portions of the three lobed chamber. Passage of air under pressure through the air inlet into the outer portions of the chamber acts upon the vanes to cause rotation of the rotor. A valve may be included in the outer casing to vary the passage of air in order to control the rotation speed of the rotor.

3,498,187

HYDRAULICALLY OPERATED RACK AND PINION ACTUATOR

William D. Stringfellow, Downey, Calif., assignor to Sargent Industries Inc., Los Angeles, Calif., a corporation of Delaware

Filed May 13, 1968, Ser. No. 728,523
Int. Cl. F15b *15/26;* **F01b** *9/00;* **F16h** *1/04*
U.S. Cl. 92—24 **10 Claims**



An actuator which is particularly adapted for moving the flaps of an airplane between the extended and retracted positions thereof. The actuator includes a housing defining a chamber, a piston movable in the chamber and affixed to a rack, an output shaft, and means for drivingly connecting the rack to the output shaft. In use of the actuator, forces are applied to the rack and these forces are absorbed by a special bearing surface on the housing rather than by the wall surface defining the chamber for the piston. A differentially splined shaft drivingly connects the output shaft of the actuator to the input shaft for the flaps.

3,498,188

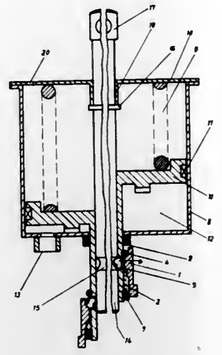
CYLINDER FOR SPRING-APPLIED BRAKE WITH EMERGENCY BRAKE RELEASE

Jose Antonio Rodriguez, Berenbostel, Germany, assignor to Westinghouse Bremsen-und Apparatebau G.m.b.H., Hannover, Germany

Filed Oct. 23, 1967, Ser. No. 677,346
Claims priority, application Germany, Oct. 26, 1966, W 38,388
Int. Cl. F01b *9/00, 7/00;* **B65h** *59/10*
U.S. Cl. 92—29 **13 Claims**

A cylinder for spring-applied brake with emergency brake release having a tubular piston extension releasably locked in a telescopic position relative to a piston rod by a ball carried in an aperture on the extension for transverse movement into and out of engagement with a concave peripheral slot on the piston rod, the transverse position of the ball being controlled by a releasable lock member carried on the extension and biased in an axial direction for camming the ball into a locked position in the slot, and manually movable against the bias to remove the cam and thereby release the ball whereupon the

application of force moving the rod relative to the extension cams the ball from the slot for permitting the piston



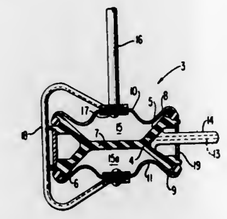
rod to be moved to a brake release position independently of the piston and piston extension.

3,498,189

DOUBLE-ACTING PNEUMATIC SERVO-MOTOR, ESPECIALLY ADJUSTING MOTOR FOR FLAPS OR OTHER RECIPROCATING STRUCTURAL PARTS IN MOTOR VEHICLES

Rudolf Andres, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Mar. 8, 1968, Ser. No. 711,753
Claims priority, application Germany, Mar. 11, 1967, D 52,502
Int. Cl. F01b *19/00;* **F16j** *3/00*
U.S. Cl. 92—98 **9 Claims**



A double-acting pneumatic servo-motor, especially an adjusting motor for dampers, flaps or other reciprocating structural parts in motor vehicles, in which one diaphragm each is arranged on each of the two sides of a bearer body to form a respective working space with the same for the pneumatic medium while a mechanical connection which connects the diaphragms with each other surrounds the bearer-body-diaphragm unit.

3,498,190

HYDRAULIC CYLINDER

Daniel A. Katko, Hubbard, Ohio, assignor to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio

Filed June 7, 1967, Ser. No. 644,229
Int. Cl. F01b *31/10*
U.S. Cl. 92—155 **2 Claims**

In the manufacture of hydraulic cylinders, especially ones having a piston rod having an *L/R* ratio of 120 or more, favorable results as respects avoidance of galling are obtained, although in use the piston is substantially flexed and forced against the walls of the hydraulic cylinder, by shrink-fit sleeving at least a recess-containing



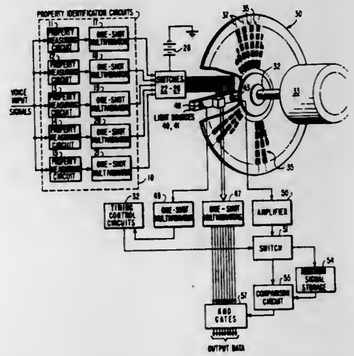
central portion of the piston rod in a suitably wear-resistant plastic, such as polytetrafluoroethylene.

3,498,191

METHODS OF PREPARING REFERENCE PATTERNS FOR PATTERN RECOGNITION SYSTEMS

Wesley E. Dickinson, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application May 26, 1961, Ser. No. 112,939, now Patent No. 3,234,392, dated Feb. 8, 1966. Divided and this application May 20, 1965, Ser. No. 457,377
Int. Cl. G03b *41/00*
U.S. Cl. 95—1 **1 Claim**



A method of preparing separate areas within a reference pattern element for automatic recognition of manifestations of intelligence such as speech repeats the given manifestation, such as spoken word, a number of times for sampling purposes. In each repetition, selected properties or speech characteristics in the manifestation being analyzed are monitored to ascertain their presence or absence in the repetition. For each such reading, a light is flashed for a selected interval to expose a chosen segmental area of a reference pattern film, which then effectively stores the cumulative total of the number of exposures. The film is developed in a non-linear manner to give complete reference pattern comprising a number of areal divisions, in each of which the number of exposures for each individual area are weighted so as to enhance the recognition function, as by representing the logarithm of the probability of occurrence of the property.

3,498,192

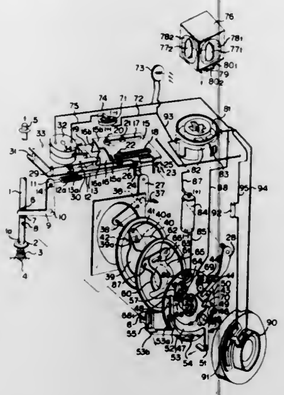
CAMERA HAVING AN AUTOMATIC FLASH-PHOTOGRAPHY MEANS

Tadashi Ito, Tokyo, Kanehiro Sorimachi, Yokohama-shi, and Mutsuhide Matsuda, Kawasaki-shi, Japan, assignors to Canon Camera Kabushiki Kaisha, Tokyo, Japan, a Japanese corporation

Filed Apr. 28, 1967, Ser. No. 634,665
Claims priority, application Japan, May 6, 1966, 41/42,157; July 8, 1966, 41/64,741
Int. Cl. G01j *1/00*
U.S. Cl. 95—10 **8 Claims**

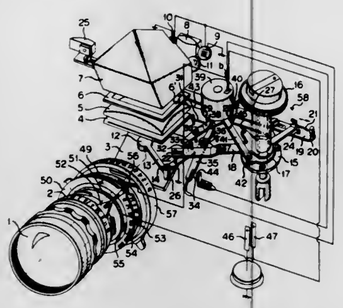
For daylight photography, a photoelectric element, galvanometer and scanning means control the shutter

speed and diaphragm opening of a camera. Upon insertion of a flash bulb into its socket, a circuit interlocked with



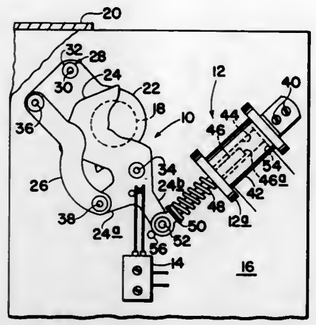
the focusing adjustment automatically sets the shutter speed and diaphragm opening for flash photography.

3,498,193
EXPOSURE METER FOR MEASURING THE ILLUMINATION OF IMAGE AREA
Jun Shimomura, Tokyo, Shigeo Ono, Yokohama-shi, and Takashi Kageura, Tokyo, Japan, assignors to Nippon Kogaku K.K., Tokyo, Japan, a Japanese corporation
Filed May 18, 1967, Ser. No. 639,348
Claims priority, application Japan, May 28, 1966, 41/33,872
Int. Cl. G03b *7/02*; **G01j** *1/42*
U.S. Cl. 95—10 **12 Claims**



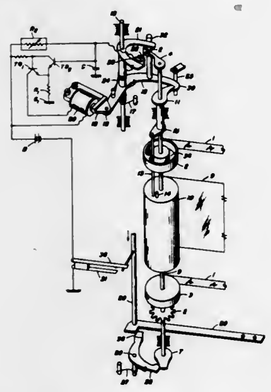
A camera is provided with an exposure meter in which a pair of photoconductors are responsive to the light of an image of a scene. The first photoconductor is operable to vary an electric signal in accordance with the brightness of the whole area of the image and the second photoconductor is operable to vary an electrical signal in accordance with the brightness of the partial area of the image. Switching means operable from outside of the camera is provided for selectively connecting either or both of said two photoconductors to electrically actuated means having an indicator. Compensation means are provided for correcting the alternation of the current flowing in the electrically actuated means in accordance with the operation of the switching means, so as to maintain the output of the exposure meter unchanged for the image of whole area during the time the switching means is operated.

3,498,194
CAMERA EXPOSURE APPARATUS
Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,132
Int. Cl. G01j *1/00, 1/52*
U.S. Cl. 95—10 **7 Claims**



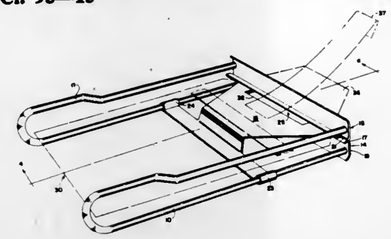
A shutter-diaphragm apparatus for a camera including means for automatically controlling operation relative to prevailing light conditions. A shutter-diaphragm component is driven by electromagnetic means such as a solenoid which receives a pulse from a charged capacitor. A stored charge in the capacitor, corresponding in terms of voltage to the ambient light level, is provided by three coacting resistance components, namely, a dividing resistor, a photoresistor and a shaping resistor, to effect correct aperture settings.

3,498,195
ELECTRONIC SHUTTER SPEED ADJUSTING MEANS
Shigeo Ono, Yokohama-shi, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Oct. 4, 1967, Ser. No. 672,838
Claims priority, application Japan, Oct. 7, 1966, 41/93,711 (utility model)
Int. Cl. G01j *1/00, 1/52*; **G03b** *9/28*
U.S. Cl. 95—10 **11 Claims**



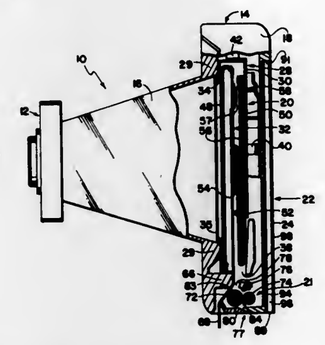
An electronic shutter is provided with a speed adjusting means wherein a variable time delay circuit is caused to be energized by a separate lever which is actuated by a front screen lever. After the predetermined delay has run, a rear screen lever is released and, under the urging of the separate lever, releases the rear screen. No lag time compensating means is necessary when this apparatus is utilized and the mean portions of the shutter consist of conventional type structure which had previously been used in prior mechanical devices.

3,498,196
PHOTOGRAPHIC APPARATUS FOR DISTRIBUTING PROCESSING FLUID FROM A POD
Patrick L. Finelli, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,835
Int. Cl. G03b *17/50*
U.S. Cl. 95—13 **9 Claims**



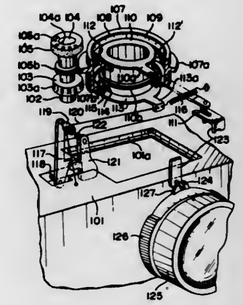
A photographic apparatus for distributing a processing fluid as a layer between two layers of sheet material as they pass through a narrow pressure-generating gap. This gap is defined by spaced apart portions of a pair of rigid members. A pair of facing surfaces converge toward each other to guide the sheet material towards the gap, one of which surfaces is relieved in a zone immediately before the gap to receive a portion of the fluid containing pod as the pod is introduced into the gap.

3,498,197
SELF DEVELOPING CAMERA TEMPERATURE CONTROL
James M. Conner, Glendale, and Henry Dreyfuss, South Pasadena, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,434
Int. Cl. G03b *17/50*
U.S. Cl. 95—13 **5 Claims**



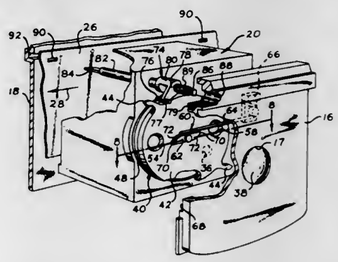
A photographic camera records and developes images according to the diffusion transfer development process. The photographic products used in the process are designed for the production of color prints in temperatures at or above a predetermined level. A heat sink is provided for use with the camera to raise the environmental temperature of the photographic products, during the development process, to the predetermined level when the temperature in the location where photographs are being produced is below such level. A pair of opposed channels securely mount the heat sink upon the camera body and store the heat sink when it is not in use.

3,498,198
SINGLE REFLEX CAMERA WITH INTERCHANGEABLE FOCUSSING SCREENS
Tatsuo Fujii, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Feb. 17, 1966, Ser. No. 528,032
Claims priority, application Japan, Feb. 18, 1965, 40/9,309; Feb. 24, 1965, 40/10,591
Int. Cl. G03b *19/12*; **G01j** *1/56*
U.S. Cl. 95—42 **4 Claims**



A single lens reflex camera having interchangeable focussing screens and provided with a compensatory mechanism to correct for the light transmissive characteristics of the various focussing screens used. Compensations are made in the resistance value of a variable resistor in the exposure meter circuit through an adjusting device positionable in accordance with the light transmissive characteristics of the particular screen used. Each focussing screen has a signal abutment thereon which is positioned on one edge of the screen in accordance with the light transmissive characteristics of the screen. The signal abutment of the focussing screen being used engages a portion of the adjusting device to cause a change in the value of the resistance of the exposure meter circuit through the variable resistor.

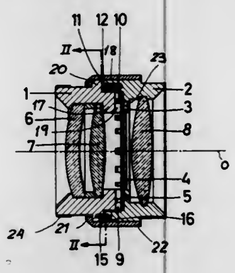
3,498,199
CAMERA SHUTTER AND FILM ACTUATED SHUTTER LATCHING MEANS
Donald E. Everburg, Southbridge, Mass., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Aug. 7, 1967, Ser. No. 658,932
Int. Cl. G03b *9/10*
U.S. Cl. 95—58 **3 Claims**



A camera having a rotatable disc shutter with a shutter latch for preventing accidental double exposure of marginally perforated strip film in the camera. The shutter has

one or more openings therethrough arranged to pass across an exposure aperture in the camera upon rotation of the shutter. The shutter is resiliently biased to normally assume a position of rest occluding the exposure aperture. Following each passage of a shutter opening over the exposure aperture, the shutter actuating rod engages the film perforation to prevent further rotation of the shutter and double exposure of the film. Movement of the film disengages the actuating rod from the film perforation and unlatches the shutter. The shutter automatically assumes its position of rest and readiness for further rotation in passing the same or another opening across the camera exposure aperture. Each rotation of the shutter disc is initiated manually and carried through to completion by the resilient biasing thereof.

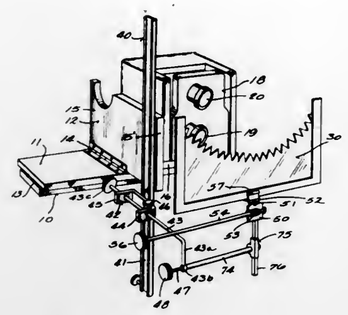
3,498,200
DIAPHRAGM CONTROL FOR OPTICAL OBJECTIVE
Karl-Heinz Holderbaum, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co., Bad Kreuznach, Germany, a corporation of Germany
Filed May 24, 1967, Ser. No. 640,985
Claims priority, application Germany, June 10, 1966, Sch 39,097
Int. Cl. G03b *9/02*
U.S. Cl. 95—64 **5 Claims**



Optical objective with a lens barrel divided into two axially adjoining parts each supporting one or more lenses, the two parts having confronting annular shoulders bracketing an iris diaphragm whose leaves are pivoted on one shoulder and coact with radial slots or other guiding formations on the other shoulder whereby the diaphragm aperture can be adjusted by relative rotation of the two parts about the optical axis of the objective.

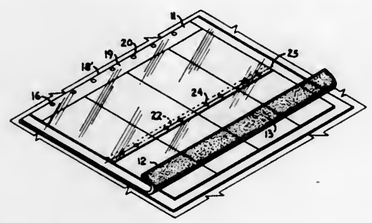
3,498,201
VIGNETTING ATTACHMENT FOR PORTRAIT CAMERA
Sarkis H. Bogosian, 1733 Rapids Drive, Racine, Wis. 53404
Filed June 26, 1967, Ser. No. 648,899
Int. Cl. G03b *11/00*
U.S. Cl. 95—65 **10 Claims**

A vignetting attachment for a twin lens portrait camera which can be moved from one lens to the other without the loss of adjustment on a slide. A three part base is made up of a base platform hinged to an intermediate platform to permit tilting the camera with respect to the fixed base. A final camera supporting platform is hinged to the intermediate platform to permit the camera to be supported in a vertical, horizontal or intermediate position. The camera supporting platform of the base supports the slide on which the vignetter moves from one lens to the other. The accuracy of such movement is uneffected by the camera position. The slide is provided with stops for such movement. The vignetting screen is supported for lateral pivoting movement, vertical adjustment, forward and backward adjustment with respect to the optical



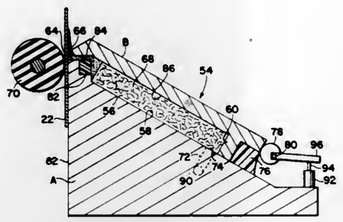
axis of either lens. The controls are grouped conveniently for use by the operator from one position.

3,498,202
METHOD OF MAKING REGISTERING LAYOUT ASSEMBLIES FOR PRINTING PLATES AND A NEGATIVE CARRIER THEREFOR
Claude K. Hulen, Kansas City, Mo., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed Sept. 11, 1967, Ser. No. 666,762
Int. Cl. G03b *27/14*
U.S. Cl. 95—85 **14 Claims**



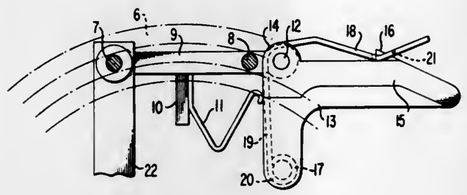
A method of preparing copy layout flat assemblies in the making of printing plates for black and white or color separation printing including punching aligned index holes in a plurality of image bearing sheets in a predetermined relation to said image, trimming the edges of the image bearing sheets in a predetermined relation to the index holes, providing a master layout with pin indexing for page positioning and an indexing pin register bar at a gripper edge, arranging punched strips of masking sheets on the master layout and positioning the punched and trimmed sheets in selected index location, and adhering a negative carrier in the form of a transparent sheet with index holes therein on one surface of the arranged sheet and strips in covering relation to and using the completed layout and carrier for making necessary exposures and process steps in preparing of printing plates. A negative carrier of thin transparent film with pressure sensitive adhesive on one face and index holes adjacent one edge for registering with index pins in the indexing pin register bar at the gripper edge and adhering arranged pages of copy forming a copy layout assembly for preparation of printing plates.

3,498,203
CAPILLARY APPLICATOR
Richard J. Chen, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,152
Int. Cl. G03d *3/00*
U.S. Cl. 95—89 **24 Claims**



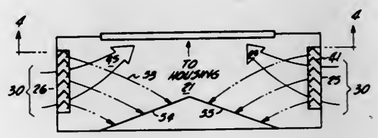
A photographic processing apparatus consisting of two members movable between a first position in which cooperating faces on the members form a capillary channel and a second position in which the faces seal the channel, an elastically deformable element for connecting the two members together, and a mechanism for moving the members between their first and second positions. The two members have complementary surfaces which form a variable volume chamber therebetween that communicates with the capillary channel and has a device therein for receiving a supply of processing liquid and delivering it to the channel. The deformable element normally maintains the two members in their second position but also cooperates with the mechanism for moving the members to their first position. The volume of the chamber and the pressure of the liquid in the chamber are changed in an inverse manner in response to movement of the members between their first and second positions.

3,498,204
FILM TAKE-UP GUIDING CLIP
Harumi Tanaka and Yoshio Asano, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed Sept. 5, 1967, Ser. No. 665,601
Claims priority, application Japan, Sept. 6, 1966, 41/83,870
Int. Cl. G03d *13/10, 13/14*
U.S. Cl. 95—90.5 **1 Claim**



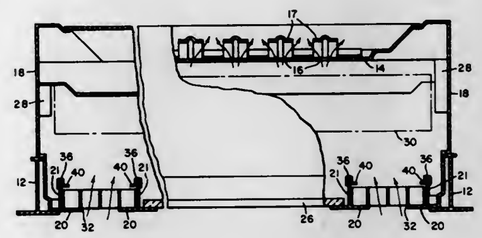
A clip for holding the leading end of a film and guiding it along a spiral groove provided in the inner surface of a developing tank without loosening its grip on the film as the clip moves to the center of the spiral. The clip has a spring-biased pivoted lever nipper arrangement to hold the film tighter as the film tension tends to open the clip when it approaches the center of the spiral. The nipper arrangement consists of an L-shaped lever pivotably mounted about an intermediate lever and forming the lower nipper portion, and a second lever pivotably mounted on the L-shaped lever which forms the upper nipper portion and is biased into engagement with the nipper portion of the L-shaped lever. The intermediate lever has sliding members thereon for engaging the grooves of the developing tank.

3,498,205
ROOFTOP AIR INTAKE UNIT LOUVER
Franz A. Kautz, Philadelphia, Forrest A. Brewer, Levittown, and Paul P. Vanderneut, Philadelphia, Pa., assignors to International Telephone & Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed July 26, 1968, Ser. No. 748,094
Int. Cl. F24f *7/02*
U.S. Cl. 98—37 **2 Claims**



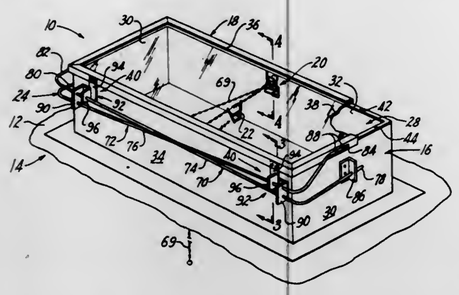
The air intake of an air conditioning housing has vertical louvers with a somewhat L-shaped cross-section. At the toe-end tip of the lower line of this L-shaped cross-section, the louver is bent upward somewhat as a serif might appear at the toe-end tip of a printed letter L. This serif bent on the louver serves three functions: first, it forms a low speed air foil creating a dead air zone where the louver is not wiped by the on-rushing airstream; second, it forms a gutter for catching the raindrops in the airstream; and third, it tends to bend the airstream and swing it around toward an entrance of an airduct in the housing.

3,498,206
AIR-HANDLING LUMINAIRE
Carle E. Rackley, Westlake, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 673,550
Int. Cl. F21v *29/00*
U.S. Cl. 98—40 **2 Claims**



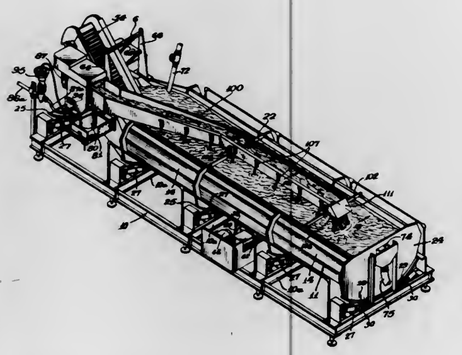
An air-handling luminaire having enlarged air entrance slots within the door frame ends for returning air from a room or occupied space through the lamp compartment of the lighting fixture and into the plenum space thereabove. Disposed within the enlarged air entrance slots are louvers in the form of an eggcrate which shield the lamps from sight at normal viewing angles but offer almost no resistance to the flow of air through the air entrance slots into the lamp compartment.

3,498,207
TORSION BAR OPERATED VENTING UNIT
John O. Hazen, Monaca, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 28, 1968, Ser. No. 716,852
Int. Cl. F23l 17/02
U.S. Cl. 98—86 17 Claims



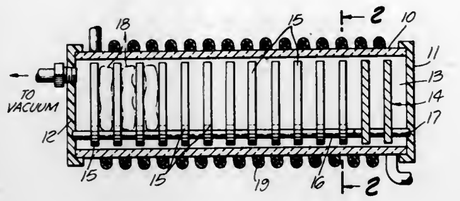
A venting unit of the type adapted to quickly release explosion pressures and/or heat and smoke from the interior of a building. The venting unit includes a curb defining at least one discharge opening, a releasably retained, pivotal damper or cover biased in an open position but which normally seals the discharge opening, and torsion bars for forcibly opening the damper. The torsion bars are mounted externally of the curb and do not obstruct the discharge opening.

3,498,208
HEAT EXCHANGE APPARATUS
Patrick J. Longe, Bloomfield Hills, Mich., and William A. Root, Ottumwa, Iowa, assignors to International Agri-Systems, Inc., a corporation of Iowa
Original application Mar. 1, 1965, Ser. No. 436,231, now Patent No. 3,402,053, dated Sept. 17, 1968. Divided and this application Mar. 18, 1968, Ser. No. 713,760
Int. Cl. A22c 17/00
U.S. Cl. 99—234 11 Claims



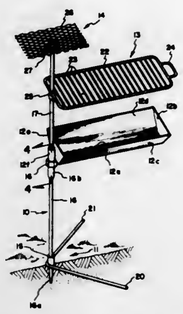
Apparatus for achieving heat exchange between food products and a heat exchange fluid such as water. The apparatus comprises a rockable tank having the heat exchange fluid continuously recirculated therethrough. A flume is provided along the top of the tank which has spaced adjustable discharge ports whereby the heat exchange fluid may be introduced back into the tank at selective segments thereof.

3,498,209
SYSTEM FOR DEHYDRATING FOOD OR THE LIKE
Donald G. Morgan, 2858 Ellesmere, Box 1439, Costa Mesa, Calif. 92626
Filed Aug. 15, 1968, Ser. No. 752,919
Int. Cl. A23b 5/02; A23c 1/00; A23l 3/00; B65d 9/00
U.S. Cl. 99—246 9 Claims



A system for dehydrating foods or the like in which the food is positioned between the plates of a rack enclosed in a suitable insulated and evacuated chamber. The food is heated by means of eddy currents induced in the plates. The eddy currents are induced by a coil wrapped around the chamber. The coil is part of a resonant circuit which is caused to resonate at conventional power frequencies.

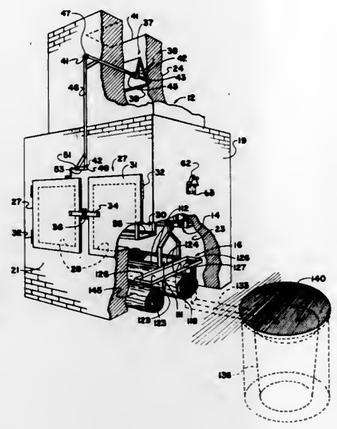
3,498,210
PORTABLE BARBECUE GRILL
William Michael O'Toole, 1980 South 150 West, Bountiful, Utah 84010
Filed June 3, 1968, Ser. No. 733,980
Int. Cl. A47j 37/07
U.S. Cl. 99—357 2 Claims



A compact, easily assembled barbecue grill having a firebox, grate-type grill, and shelf, all adapted to be cantilevered from or supported on a sectional stake that is adapted to be driven into the ground at a desired location. The stake is passed through a sleeve portion of a spread base that rests on the ground into which the stake is inserted to thereby stabilize the grill.

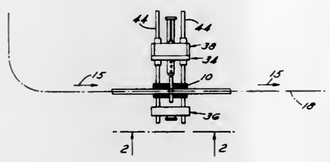
3,498,211
PRODUCT AND WASTE DISPOSAL CARRIER FOR BARBECUE OVENS
Temple H. Atkins, 2420 S. Oliver, Wichita, Kans. 67210
Filed Apr. 1, 1968, Ser. No. 717,565
Int. Cl. A47j 37/04
U.S. Cl. 99—443 5 Claims

This invention relates to a rotatable product carrier mountable in cooking ovens for barbecuing, roasting, broiling, and the like, but preferably, for barbecuing operations. More particularly, this invention relates to a cage-type product and waste disposal carrier mountable within a cooking oven including a plurality of spaced, downwardly depending tray assemblies thereon rotatable about a central axis adapted to convey meat juices and the like therefrom to a common collecting tray for conveyance externally of the cooking oven. Still, more particularly,



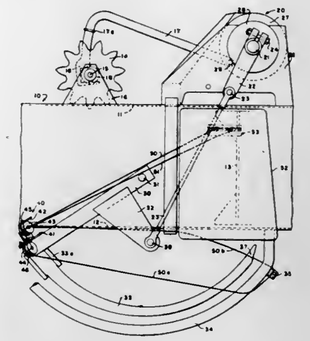
this invention relates to a cooking oven having a rotatable product carrier therein provided with a plurality of inclined basket assemblies mounted for rotation about a common axis and means for controlling the air flow in the oven in order to maintain a basking and smoking type atmosphere for the barbecuing of various meats as desired.

3,498,212
COIL COMPACTING AND BANDING APPARATUS
Walter G. Boehm, Birmingham, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Jan. 22, 1968, Ser. No. 699,398
Int. Cl. B65f 13/00, 27/06
U.S. Cl. 100—7 12 Claims



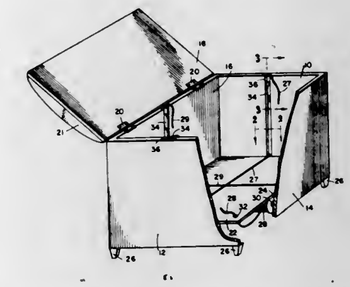
Apparatus for compacting and banding a coil of wire or rod while suspended from a carrier, preferably a carrier of an overhead conveyor. A pair of fixtures are movable longitudinally of the coil axis from a clearance position relative to the coil carrier to an operative position adjacent the ends of the coil, and are locked against separating movement. Pressure pads mounted on one of the fixtures are movable into engagement with one end of the coil to compact the coil against the other fixture for the application of bands to the coil. Means are provided on the fixtures for locating the coil carrier relative thereto, and the coil is supported or cradled from below prior to the application of the compacting force. The apparatus is suitable for automatic operation.

3,498,213
TWINE TENSIONING ATTACHMENT
John H. Shepley, Lancaster, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,670
Int. Cl. B65b 13/08
U.S. Cl. 100—19 3 Claims



A twine tensioning attachment for a baling machine, having a pair of offset twine guides disposed between a twine box and a needle eye on a pivotal yoke, for movement therewith toward and away from a bale forming case, whereby tension is applied to the twine during a bale forming operation and on return of the needle to the home position from a knot tying operation because of the circuitous route taken by the twine through the tensioning attachment.

3,498,214
FOOTREST-PAPER CONTAINER
Farrell J. Bailey, Box 357, Monon, Ind. 47959
Filed Mar. 4, 1968, Ser. No. 710,004
Int. Cl. B65b 13/04; A47c 9/12
U.S. Cl. 100—34 8 Claims



A combination footrest and paper container, comprising a rectangular box having four walls, a floor, and a hinged cover, of a size in which newspapers may be stacked and accumulated. The floor of the box is solidly supported in grooves in the walls, above their bottom edges, and a string dispenser is mounted beneath the floor, with the string threaded through a hole in the floor for easy access. The walls are each provided with a central vertical string-retainer to hold two lengths of string cross-wise in the box ready to be tied about the accumulated bundle of papers. The string retainer on each wall comprises a

dovetail groove, running from the top of the wall to the floor, and a slide of a triangular cross-section received in the groove. The back face of each slide is provided with a string receiving channel, and the angular inner face of each slide is provided with a notch to permit the user to grasp the slide for removing it from the dovetail groove. Thus, the strings lie across the floor and are held in the slide channels in the vertical walls with the string ends available at the top of the box. In a modification the strings are held by four spring clips on the floor adjacent the centers of the walls and by eyelets mounted at the upper edges of the walls, directly over the spring clips.

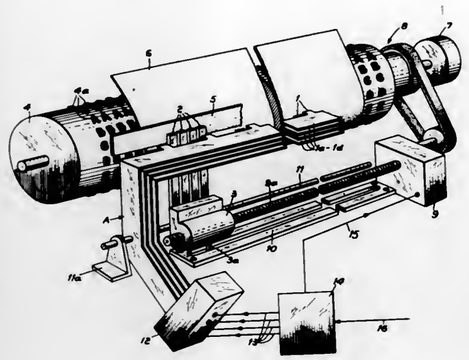
3,498,215
LAMINATING DEVICE
Lloyd D. Brinkman, Dallas, Tex., assignor, by mesne assignments, to Royal Industries, Pasadena, Calif., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,908
Int. Cl. B30b *3/00, 15/14, 3/04*
U.S. Cl. 100—155 **10 Claims**



A pinch roller bonding device including at least two opposed, spaced roll mechanisms for exerting opposed pressure upon a laminated workpiece as it is displaced between the roll mechanisms to effect the adhesion between laminate. At least one said opposed roll mechanisms including a series of axially displaceable separate rollers that may be relatively positioned one with respect to another to accommodate easy passage of workpiece protrusions through the roll mechanism between spaced rollers. A safety device shield the operator of the pinch roller from the roll mechanisms to minimize the chance of the operator being caught between the roll mechanisms and to accommodate prompt separation of the roll mechanisms to relatively remote locations to release the operator, should be become caught.

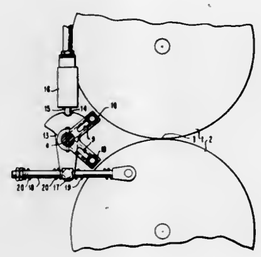
3,498,216
PRINT HAMMER INTERPOSER MEANS FOR HIGH SPEED PRINTERS
Wolfgang Kaiser, Stuttgart-Vaihingen, and Bernhard Cramer, Pforzheim-Sonnenberg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 603,297, Dec. 20, 1966. This application Dec. 9, 1968, Ser. No. 782,249
Claims priority, application Germany, Dec. 30, 1965, St 24,825
Int. Cl. B41f *33/16*
U.S. Cl. 101—93 **3 Claims**

A printing mechanism having a continuously moving type carrier which is opposed by a plurality of printing hammers. A plurality of intermediate members are actuated by the printing hammers to effect a printing of a selected type. The printing hammers and members are assembled in groups, such that the number of hammers and members comprising a group cause the corresponding



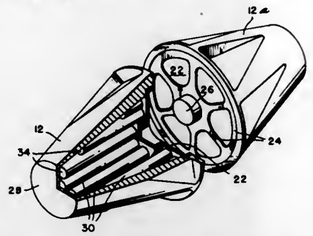
number of characters to be printed during each complete passage of the type carrier.

3,498,217
SAFETY DEVICE FOR MACHINES HAVING OPPOSITELY ROTATING CYLINDERS
Paul F. Kletti, Sandhausen, Germany, assignor to Heidelberger Druckmaschinen Aktiengesellschaft, Heidelberg, Germany, a corporation of Germany
Filed Jan. 26, 1968, Ser. No. 700,832
Claims priority, application Germany, Mar. 11, 1967, Sch 40,377
Int. Cl. B41f *5/00*
U.S. Cl. 101—216 **7 Claims**



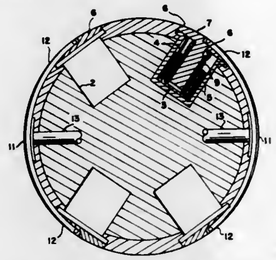
A safety device for a machine, such as a printing machine, which has oppositely rotating cylinders which define a contact gap between themselves. A swingable switch-actuating assembly is provided to actuate a control current limit switch to stop the operation of the machine when this assembly is turned. The switch-actuating assembly includes a pair of elongated protective members which are respectively located adjacent the pair of oppositely rotating cylinders while at the elevation of the contact gap therebetween there is a rotary shaft which extends parallel to the oppositely rotating cylinders. This latter shaft fixedly carries a pair of bell cranks whose arms respectively extend to ends of the pair of elongated protective members to carry the latter. A mounting means mounts the ends of these protective members on the bell crank arms for free rotary movement with respect thereto as well as for movement toward and away from the rotary shaft, and a spring means coacts with the elongated protective members to urge the latter away from the rotary shaft.

3,498,218
BOMBLET
Jack A. Myers, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 6, 1968, Ser. No. 711,470
Int. Cl. F42b *25/12*
U.S. Cl. 102—6 **5 Claims**



Bomblet formed of two frusto-conical containers separably secured togther at their bases, the containers being substantially filled with cylindrical tubes of various lengths, each closed at one end, and containing a gelled chemical and volatile gas under pressure. Upon ground impact, the containers are explosively separated and the gas and chemical particles issuing from the tubes project them by jet propulsion, dispersing the chemical particles to various loci.

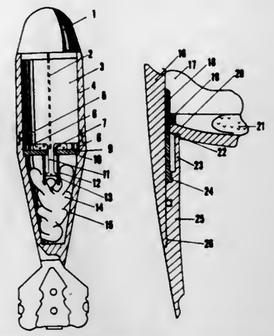
3,498,219
TRIP LINE SENSOR AND RELEASE MECHANISM FOR MUNITION
Thomas A. Axelson, Minneapolis, Minn., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 19, 1968, Ser. No. 740,818
Int. Cl. F42b *23/00*
U.S. Cl. 102—8 **3 Claims**



A spherical munition has wells regularly spaced around its surface. Each well contains a trip line wound on a reel with one end attached to an arming mechanism and the other end attached to a cover held in place by a spring. Upon release of the spring an ejection means projects the cover thereby unwinding the trip line and arming the munition.

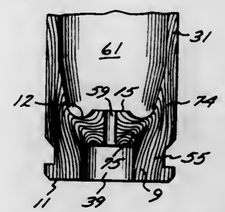
3,498,220
PARACHUTE SHELL WITH DIVISIBLE CASE
Johan E. H. Bergman, Hagersten, Sweden, assignor to Forsvarets Fabriksverk, Eskilstuna, Sweden, an agency of the Department of Defense of the Kingdom of Sweden
Filed Dec. 15, 1967, Ser. No. 691,024
Claims priority, application Sweden, Jan. 23, 1967, 942/67
Int. Cl. F42b *13/38*
U.S. Cl. 102—35.6 **3 Claims**

In a shell, an active body such as a smoke or luminous charge is provided with a sliding member that fits around or into a hole in a rigid push plate in the shell case and to which a parachute is attached. These parts are packed into a divsible shell case. The powder charge will, when ignited, accelerate the active body forwardly and the parachute and the tail of the shell case, backwardly. This



motion continues until a stop in the free end of the sliding member is reached. The kinetic energy gained by the parts will then assist in pulling out the parachute and in spreading out the parts so that they will not contact with and destroy the parachute.

3,498,221
ALUMINUM CARTRIDGE CASE
Ralph W. Hilton, Torrance, and Gilbert A. Moudry, Palos Verdes Estates, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed July 11, 1968, Ser. No. 744,182
Int. Cl. F42b *5/28, 9/28*
U.S. Cl. 102—43 **19 Claims**

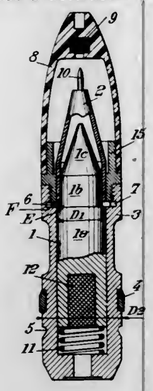


A high-strength cartridge case made of an Al-Cu-Mg-Si type alloy is fabricated by backwardly extruding a deep drawn cylindrical blank into a cup-shaped member with a resultant movement in the metal blank of at least about 70%, the walls of the cup-shaped member are thinned and elongated by drawing the same through a die aperture of reduced diameter to effect a total metal movement in the original blank of at least about 90%, the resultant drawn member is solution heat treated and quenched in cold water to strengthen the metal, and a primer cavity is then forged in the base portion of the member to impart thereto at least about 15% cold work.

3,498,222
AMMUNITION HAVING A SUBCALIBRE SHELL COMPRISING A FRONT CAP AND MEANS FOR DESTROYING THIS CAP IN FLIGHT
Louis Birkigt, Pregny, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed Oct. 28, 1968, Ser. No. 771,149
Claims priority, application Luxembourg, Nov. 3, 1967, 54,786
Int. Cl. F42b *11/14*
U.S. Cl. 102—52 **6 Claims**

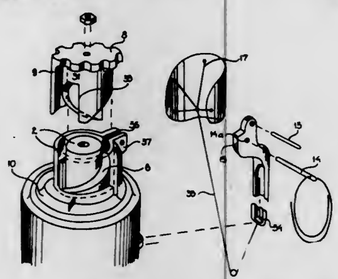
The subcalibre shell comprises a front cap in the form of an ogive, which lengthens the ammunition. This front

cap resists the shocks that the subcalibre shell undergoes during its travel through the barrel of the firing arm. The shell is equipped with a destructor device for destroying



the front cap, but only after the shell has left the barrel, so that there will be no debris of the front cap in the barrel.

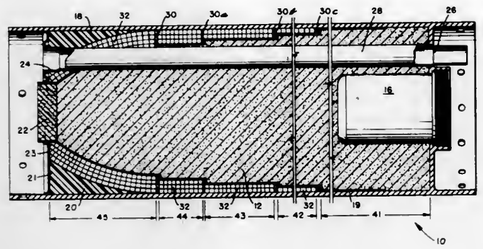
3,498,223
LEVER-CONTROLLED FUSE FOR HAND GRENADES
Karl Erik Andersson, Eskilstuna, and Eric Wilhelm Wallberg, Vallingby, Sweden, assignors to Forsvarets Fabriksverk, Eskilstuna, Sweden, a Swedish corporation
Filed May 27, 1968, Ser. No. 732,264
Int. Cl. F42b *27/08*
U.S. Cl. 102—64 **5 Claims**



The invention relates to a hand grenade fuse which is armed by the operation of a rotatable knob transforming a turning motion to an axial loading motion of a firing pin fixed to the knob. The end of the knob and/or its contact surface in the fuse head are shaped like screw threads with such a pitch that arming is completed in about a 180° turn of the knob. The knob then rests entirely upon the heel or shoulder of a locking lever that is inserted radially into the head, and also having a drop safety released by the acceleration of the grenade when the grenade is launched, or by its friction with the air.

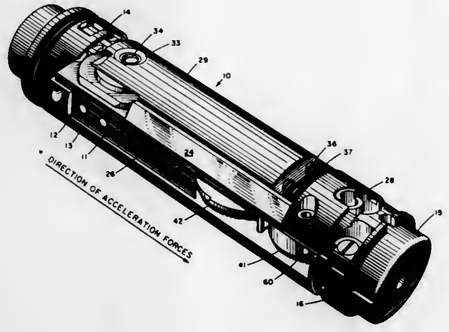
3,498,224
FRAGMENTATION WARHEAD HAVING CIRCUMFERENTIAL LAYERS OF CUBICAL FRAGMENTS
Paul E. Cordle and Richard P. Birge, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1968, Ser. No. 766,040
Int. Cl. F42b *13/48*
U.S. Cl. 102—67 **4 Claims**

A missile warhead comprising an explosive charge surrounded by varying members of circumferential layers of steel cubes resulting in varying the charge to metal ratio with respect to the warhead longitudinal axis which



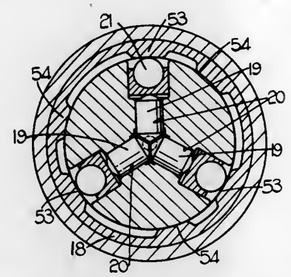
yields a predictable fragment beam pattern made up of fragments having varying velocities.

3,498,225
COUNTER-ROTATING DUAL ROTOR SAFETY AND ARMING MECHANISM
Louis Voida, Canoga Park, Calif., Ralph W. Kell, Lincoln, Nebr., and Warren R. Hoelzen and Charles R. Hamilton, Corona, Calif., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 7, 1958, Ser. No. 772,152
Int. Cl. F42c *15/06*
U.S. Cl. 102—70.2 **5 Claims**



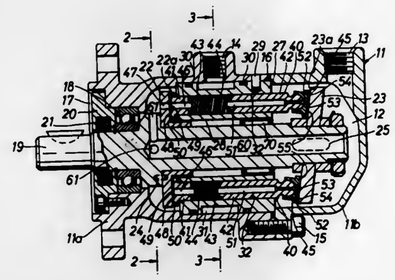
1. An inertia operated safety and arming device for a missile having longitudinal and lateral accelerations due to steering of the missile in flight comprising an escape block having forward and aft ends and whose longitudinal axis passes through the forward and aft ends thereof, a pair of spaced apart plates rigidly mounted at the aft end of said escape block and projecting outwardly therefrom, a header block mounted on the forward end of said escape block and plates in their assembled condition, a lead block mounted on the free ends of said plates projecting outwardly from said escape block, a setback weight having a forward end proximate to the forward end of said escape block and adapted to reciprocate longitudinally parallel to the longitudinal axis of said escape block in a guide way on one of said plates, apertures in the forward end of said setback weight and said one plate, a solenoid mounted in said escape block including a locking pin adapted to reciprocate in said apertures whereby said setback weight is locked in its forward position, a pair of eccentrically weighted geared together rotors pivotably mounted between said plates adjacent said escape block and responsive to longitudinal acceleration forces and a control means connecting said setback weight and one of said rotors whereby rotary motion of said rotors is controlled by the sliding movement of said setback weight.

3,498,226
LIQUID FUEL PUMPING APPARATUS
Dorian Farrar Mowbray, Burnham, England, assignor to C.A.V. Limited, London, England, a British company
Filed Oct. 31, 1968, Ser. No. 772,163
Claims priority, application Great Britain, Nov. 6, 1967, 50,291/67
Int. Cl. F04b *1/00, 1/04;* **F02m** *39/00*
U.S. Cl. 103—2 **1 Claim**



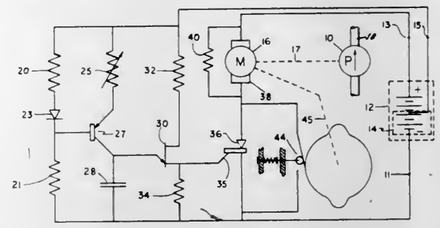
A liquid fuel pumping apparatus for supplying fuel to a six-cylinder compression ignition engine having unequal firing angles and including a rotary distributor member in which are mounted three radially movable but equiangularly spaced pumping plungers, there being provided a cam ring having two sets of cam lobes, formed on its internal periphery for imparting inward movement to the plungers, the sets of cam lobes being displaced angularly relative to each other by the required firing angle of the engine.

3,498,227
AXIAL PLUNGER PUMP
Yasuo Kita, % Sanjyo Factory, Shimadzu Seisakusho Ltd., 18 Kuwabara-cho, Nishinokyo, Nakagyo-ku, Kyoto, Japan
Filed June 11, 1968, Ser. No. 736,169
Claims priority, application Japan, June 14, 1967, 42/38,001
Int. Cl. F04b *23/04, 1/14*
U.S. Cl. 103—5 **1 Claim**



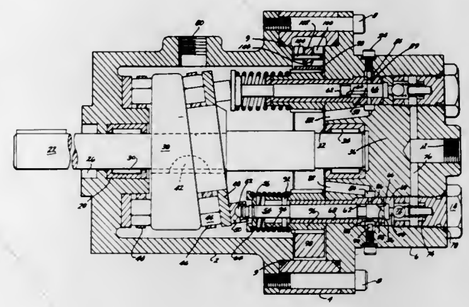
This invention provides improved axial plunger pumps in which containment of the thrust involved with the plunger piston operation can be achieved between a pair of disks fixed on the rotating shaft by supporting plunger pump mechanism between said disks so that no use of a thrust bearing is required for supporting the rotating shaft.

3,498,228
PORTABLE INFUSION PUMP
Charles A. Blumle, 2968 S. Moreland, Cleveland, Ohio 44120, and Leo J. Blumle, 12300 La Plata, Silver Spring, Md. 20904
Filed May 1, 1967, Ser. No. 634,964
Int. Cl. F04b *49/02;* **B65h** *5/28;* **H02h** *7/08*
U.S. Cl. 103—25 **2 Claims**



Infusion pumps are devices for pumping intravenously or intra-arterially through a catheter drugs of one type or another. Often it is desirable to continuously inject carefully metered quantities of drugs into an ambulatory human. This invention provides an infusion apparatus, which may be portable, in which a battery may be employed to drive an electric motor through an electronic timing circuit.

3,498,229
HYDRAULIC PUMP ASSEMBLY
Kenneth A. Prelesnik, Grand Haven, Mich., assignor to Dake Corporation, Grand Haven, Mich., a corporation of Michigan
Filed Nov. 1, 1967, Ser. No. 679,676
Int. Cl. F04b *49/00, 1/14;* **F04d** *15/02*
U.S. Cl. 103—37 **4 Claims**

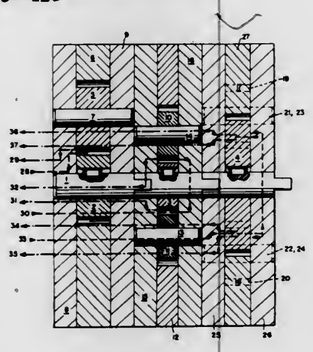


This disclosure relates to a hydraulic pump in which a plurality of piston cylinders are circularly located. Pistons in the cylinders are driven by a rotating cam plate, and the pistons are helically grooved, whereby rotation of the pistons with respect to the piston cylinders will vary the output volume of the pump.

A linearly reciprocatable shaft actuates a circular gear ring which in turn engages a slotted collar on each gear ring. Each piston shaft has a protruding foot which slides in the slot of the slotted collar.

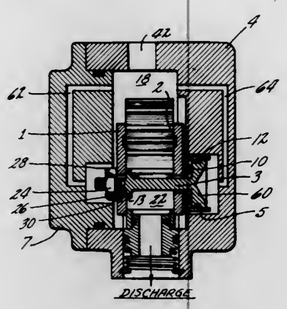
The output volume of the pump can be varied by employing an element responsive to the output pressure of the pump, operably connected to the linearly reciprocatable shaft. A handle or knob can also be used to adjust the position of the shaft to vary the output pump volume.

3,498,230
SPINNING APPARATUS FOR MULTICOMPONENT THREADS
Heinz Schippers, Ringstr. 39, Remscheid-Lennep, Germany
Filed Apr. 14, 1966, Ser. No. 542,661
Claims priority, application Germany, Apr. 14, 1965, B 81,458
Int. Cl. F04c *1/04*
U.S. Cl. 103—126 **5 Claims**



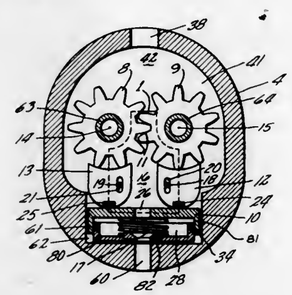
Apparatus for producing multicomponent threads, said apparatus including gear wheel pumps arranged axially on a common drive shaft and separated by intermediate plates, said gear wheel pumps including one or more paired gears for dividing and conveying a molten stream of filament forming material. The construction of the multiple pump is compact and makes it possible to supply to a spinning nozzle individual streams of melt which are combined either immediately prior to, within, or after passing through the nozzle to form an individual thread.

3,498,231
GEAR PUMP WITH UNITIZED SEALING ELEMENTS
Jack G. Sundberg, Meriden, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed Apr. 26, 1968, Ser. No. 724,535
Int. Cl. F04c *5/00, 17/10, 27/00*
U.S. Cl. 103—126 **4 Claims**



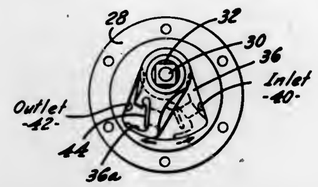
A gear pump incorporating a movable sealing element disposed between movable sideplates and having a through bolt with an enlarged section on one end, including a spring intermediate said enlarged section and one sideplate, said bolt positioned through both sideplates and adjacent said movable sealing element to thereby tie together the sideplates, gears and floatable sealing element as a unitized structure with an accurately controlled preload and operating force combining to control the sealing engagement of the mating sealing surfaces of the elements of said unitized structure.

3,498,232
GEAR PUMP WITH SEPARATING FORCE DISTRIBUTING ELEMENTS
Godwin L. Noell, Middletown, and David L. Moorcroft, Glastonbury, Conn., assignors to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,749
Int. Cl. F04c *5/00, 17/10, 27/00*
U.S. Cl. 103—126 **7 Claims**



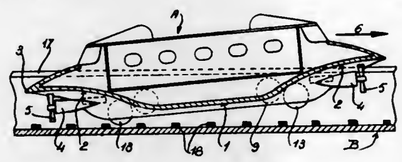
A gear pump including a pair of sideplates having separate independently movable gear tooth peripheral sealing elements positioned therebetween to maintain pump volumetric efficiency; with each peripheral sealing element slideably pinned to the sideplates to reduce the discharge pressure generated separating loads imparted to the gears by distributing the separating force to the sideplates through the connecting pins as an opposed balanced force, or in the alternative connecting integral hinge abutments of the sealing elements with a hinge pin to cancel the separating force at the hinge pin.

3,498,233
VANE PUMP
Raymond E. Dillberg, Temple City, Calif., assignor to Ormco Corporation, Glendora, Calif., a corporation of California
Filed Feb. 15, 1968, Ser. No. 705,673
Int. Cl. F04c *9/00*
U.S. Cl. 103—146 **3 Claims**



A compact vane-type pump is described which is particularly useful for dental hygiene purposes, but which has general utility. A vane is reciprocally mounted in an inner chamber in the pump, and the vane has a port extending through it with a flutter valve positioned in the port. The vane is reciprocally moved from one angular position to the other in the inner chamber during the operation of the pump, so as to draw fluid into the chamber and to force fluid out of the chamber, as will be described.

3,498,234
AERODYNAMICALLY-SUPPORTED TRAIN AND TRACK SYSTEM
Leon Roumejon, 22 bis Blvd. de Bellevue, Chambery, France
Filed Aug. 10, 1967, Ser. No. 659,640
Claims priority, application France, Sept. 5, 1966, 47,682; June 6, 1967, 48,756
Int. Cl. B60v *3/00;* **B61d** *15/00;* **B61c** *11/00*
U.S. Cl. 104—23 **5 Claims**

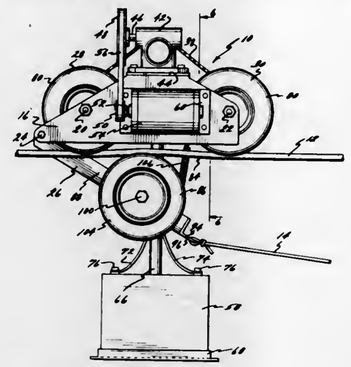


An aerodynamic train including at least one self powered car having screws which produce air circulation within a U-shaped track. The air provides support and propulsion as it circulates under a longitudinal tunnel extending under the full length of the car and ending in domes at each end of the car. When the car is in motion, guide wheels located on the vehicle cooperate with a stabilizing wing with flaps, located on the roof of the vehicle, to keep the vehicle out of contact with the sides of the track.

3,498,235
REFRACTORY COMPOSITION
Jacques R. Martinet, San Jose, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Oct. 16, 1967, Ser. No. 675,308
Int. Cl. C04b *35/04, 35/70*
U.S. Cl. 106—58 **10 Claims**

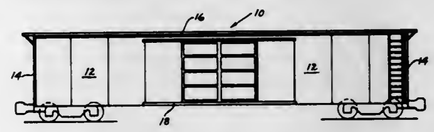
A periclase refractory with greatly enhanced high temperature strength is obtained when an evanescent alkali metal compound, for example sodium hydroxide, and finally divided silica, for example volatilized silica, are incorporated in the bond.

3,498,236
SELF-PROPELLED CABLE SUPPORTED CARRIAGE
Lonnie E. Meek, Box 827, Meeker, Colo. 81641
Filed Mar. 12, 1968, Ser. No. 712,461
Int. Cl. B61c *11/02, 13/06;* **B61b** *7/06*
U.S. Cl. 105—30 **6 Claims**



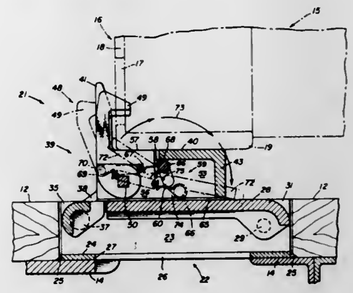
This invention relates to a self-contained and self-propelled line-stringing block that is driven by a battery-powered electric motor, both of which are carried by the frame. A longitudinally-aligned pair of circumferentially-grooved drive-wheels ride atop a previously-strung aerial tramway cable or the like, while a third idler-wheel aligned therebeneath holds said drive-wheels in rolling frictional contact with the cable. The idler-wheel is mounted on a pivoted arm that is spring-biased upwardly and also carries the wire or cable to be strung, the latter functioning as a tensioning device that provides the primary upward bias to said idler-wheel.

3,498,237
INSULATED WALL STRUCTURE FOR CONTAINERS AND METHOD OF FORMING
Arthur F. Loveland, St. Charles, and Glenn W. Sitler, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 20, 1966, Ser. No. 558,650
Int. Cl. B61d *17/18, 17/08, 17/12*
U.S. Cl. 105—355 **8 Claims**



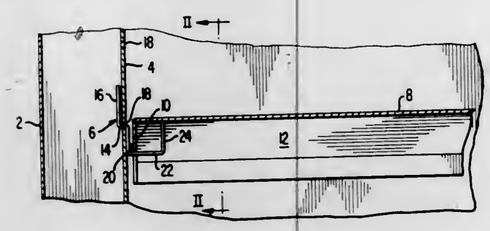
An in-place foam insulated wall for a container structure, such as a railway car, in which a pair of spaced, generally parallel sheets are secured adjacent the outer wall of a container and form an enclosure in which the expanding foam material is poured. A slightly flexible outer sheet is spaced from the outer wall and is lightly fastened to have a lesser resistance to flexure and bulging from the internal pressure of the foam material. The outer sheet tends to bulge or bow outwardly into the space adjacent the outer wall upon expansion of the foam material.

3,498,238
DEVICE FOR SECURING A CONTAINER TO THE UNDERFRAME OF A RAILWAY CAR
Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 5, 1968, Ser. No. 703,005
Int. Cl. B61d *45/00*
U.S. Cl. 105—366 **11 Claims**



A latch hook is automatically moved from an unlatched position on a housing secured to the underframe of a railway car to a latched position with a bottom container fitting, is released manually from the latched position, automatically moves to unlatched position on removal of the container, and can be swung manually to a concealed position below the deck or floor of the car.

3,498,239
METAL SHELVING
Robert N. Bartlett and William F. Pendergast, Grand Rapids, Mich., assignors to Steelcase Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 15, 1968, Ser. No. 705,825
Int. Cl. A47b 57/10, 57/16
U.S. Cl. 108—110 10 Claims

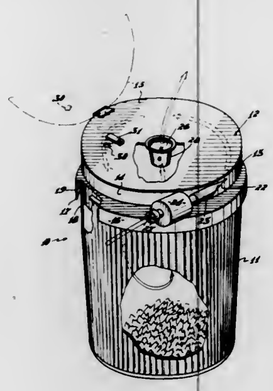


This disclosure relates to metal shelving in which a frame structure supports one or more shelf units through brackets which engage slots in the frame. The brackets have a slot which interlocks with a downwardly extending tongue on the shelf to restrain inadvertent lateral movement of the shelves relative to the brackets.

The brackets contain upwardly extending tabs which are positioned behind the frame wall and a downwardly extending flange which is positioned on the inner surface of the frame wall to protect the wall from paint chipping and scratching during the placement and removal of the shelf units. The brackets also contain a laterally extending support surface and an upwardly extending flange which aids in positioning the shelf on the clips during assembly.

A downwardly extending flange on the edge of the shelf contains the tongue and slots for engaging the bracket.

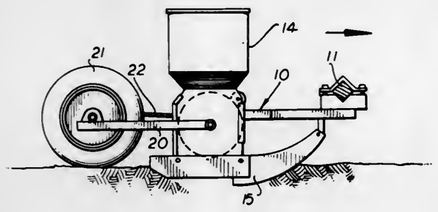
3,498,240
LEAF BURNER
David H. Trott, Cincinnati, Ohio, assignors, by mesne assignments, to Burns Investment Corp., Cincinnati, Ohio, a corporation of Ohio
Filed June 10, 1968, Ser. No. 735,839
Int. Cl. F23g 5/00; F23b 1/38
U.S. Cl. 110—18 12 Claims



A method of burning combustible material utilizing a container which, during the burning process, is closed except for two openings at the top, one being an inlet for forced air which is introduced to support and hasten combustion, and the other being an outlet for combusted gases.

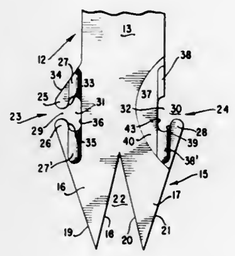
A lid having means adapting it to be mounted on a trash can and having a blower for driving air into the trash can and having an outlet hole through which combusted gases can pass, the lid forming, with a trash can, a burner for combustibles.

3,498,241
VERTICAL SEED PLATE PLANTER
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,912
Int. Cl. A01c 7/18
U.S. Cl. 111—77 6 Claims



A rotatable vertical seed plate has its upper portion in communication with seed in a hopper and has peripheral seed cells each of which is so shaped as to receive and frictionally retain a single seed and carry it downwardly for discharge when the cell is inverted during rotation of the plate. The size of the seed received by the cell may vary but it cannot exceed the size of the cell. Each cell is frusto-conical in shape with its small end directed radially inwardly and the cell's angle of taper is held within relatively narrow limits below which the cell will have limited tolerance for seed size, and above which the seed will not be retained in the cell. A knockout wheel is provided having teeth penetrating the inner end of the cell to dislodge the seed.

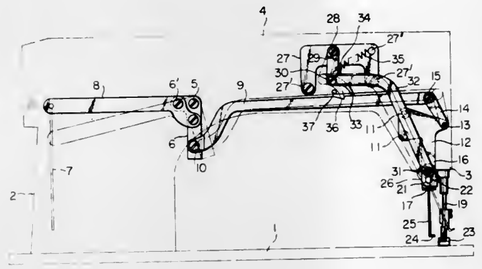
3,498,242
SEWING MACHINE NEEDLES
Wesley R. Peterson, Bound Brook, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 9, 1967, Ser. No. 673,555
Int. Cl. D05b 85/10
U.S. Cl. 112—224 8 Claims



A sewing machine needle of the hollow type formed from a blank of sheet metal having an edge configuration

designed to provide for the formation of the essential characteristics of a needle, so that the blank when rolled forms a hollow needle which satisfactorily will sew in a standard sewing machine.

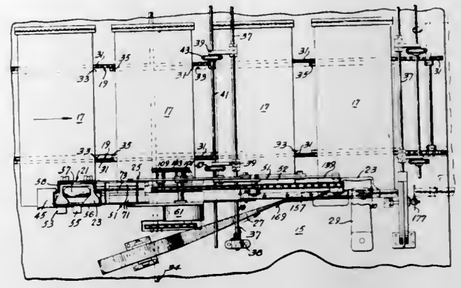
3,498,243
WIPER MECHANISM IN SEWING MACHINE
Noritoshi Aoyama, Tokyo, Japan, assignor to Tokyo Juki Kogyo Kabushiki Kaisha, Chofu-shi, Tokyo, Japan
Filed Dec. 29, 1967, Ser. No. 694,668
Claims priority, application Japan, Jan. 16, 1967, 42/3,034
Int. Cl. D05b 65/06, 47/04
U.S. Cl. 112—252 1 Claim



Wiper mechanism in a sewing machine for taking up above the presser foot the thread ends extending from the stitched cloth under the needle plate after they are cut by a thread cutting device at the end of the stitching operation, said sewing machine being provided with an automatic device for positioning the needle at a position adjacent to its lower dead point at the end of the stitching operation and thereafter, by the actuation of a lever in said device in one direction, retracting the needle from the cloth toward its upper dead point and stopping the needle at a position adjacent to its upper dead point, said thread cutting device being operatively coupled with said automatic device so as to cut said thread ends while the needle is moving toward its upper dead point, said wiper mechanism comprising a wiper located above the presser foot and adapted to be moved along a path intersecting the path of the up-and-downward movement of the needle which carries with it the upper thread, said wiper being made ready to be moved along said path intersecting the path of the needle when the needle is positioned above the presser foot in connection with the actuation of the lever of said automatic device in said one direction, said wiper being thereafter moved along said path intersecting the path of the needle by the return movement of said lever so as to take up said thread ends extending from the cloth above the presser foot, and said wiper being returned to its initial position clear of the path of the needle just before said lever is returned to its initial position.

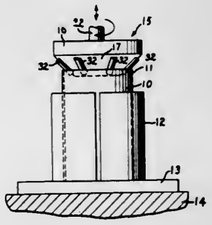
3,498,244
BAG HANDLING APPLICATOR
Jean Paul Blanchette, Ville Jacques Cartier, Quebec, Canada, assignor to Consolidated Paper (Bahamas) Limited, Nassau, Bahamas
Filed Oct. 30, 1967, Ser. No. 678,825
Int. Cl. D05b 3/22, 13/00, 21/00
U.S. Cl. 112—262 10 Claims

A bag handle applicator which includes a magazine having a floating core, a chain conveyor retrieving plastic handles one by one from the magazine and feeding them individually to bags passing by on an assembly line



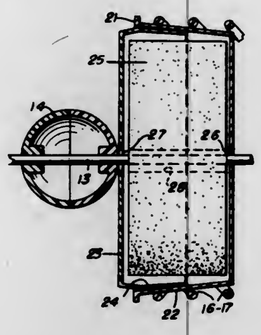
conveyor and simultaneously forming a strip seam over the handle base, fixing it to the edge of the bag.

3,498,245
FLEXING AND SPIN FLANGING OF CAN BODY EDGES
Ants Hansson, Evanston, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 273,598, Apr. 17, 1963. This application Feb. 24, 1966, Ser. No. 534,608
Int. Cl. B21d 19/04
U.S. Cl. 113—120 7 Claims



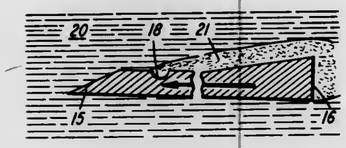
3. A method of flanging tubular bodies comprising the steps of supporting a tubular body at a major body portion thereof so as to leave a minor circumferential end portion of the body at all times free and unsupported, providing a space between the point at which the tubular body is supported and the juncture point between the tubular body and a flange to be formed generally normal thereto, providing relative rotation between the tubular body and a flanging head, providing relative axial movement between the tubular body and the flanging head to progressively direct the minor circumferential end portion radially outwardly while also maintaining the minor circumferential end portion continually free and unsupported, and working the material of the minor circumferential end portion beyond its elastic limit as it is progressively directed radially outwardly by directing a plurality of forces against the minor circumferential unsupported end portion to effect rapidly reversing tension and compression forces in incremental areas of the unsupported end portion whereby the end portion is transformed into a flange in the absence of polygonization and cracking of the flange.

3,498,246
TURBULENCE-REDUCING DEVICE FOR SWIMMING POOLS
Adolph G. Kiefer, Northfield, Ill., assignor, by mesne assignments, to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Original application Aug. 5, 1964, Ser. No. 387,628, now Patent No. 3,304,560, dated Feb. 21, 1967. Divided and this application Dec. 16, 1966, Ser. No. 627,566
Int. Cl. B63b 21/52; A63b 69/12
U.S. Cl. 114—.5 3 Claims



A float for turbulence reducing devices tethered by a restraining cable includes a body of yieldable buoyant material contained in a two-part enclosure of rigid material for protecting the yieldable material, the whole device having aligned passages for the cable.

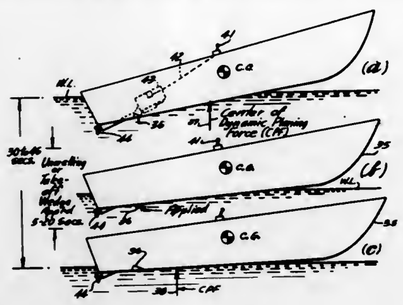
3,498,247
SUPERCAVITATING HYDROFOIL
Eugene H. Handler, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1967, Ser. No. 686,654
Int. Cl. B63b 1/18
U.S. Cl. 114—66.5 5 Claims



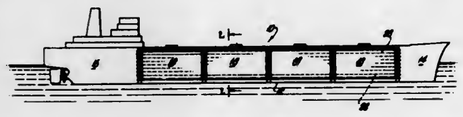
A supercavitating hydrofoil having a sharp leading edge, a blunt trailing edge, and a spanwise sharp edged slot of small depth and width machined a small percentage of the hydrofoil chord behind the leading edge on the low pressure (upper) hydrofoil surface. The slot provides a line of detachment of the cavity from the upper surface of the hydrofoil and serves to stabilize the cavity.

3,498,248
HYDRODYNAMIC TRIMMING METHOD AND DEVICE
Vordaman H. Van Bibber, 4201 Mariner Drive, Panama City, Fla. 32401
Filed Mar. 22, 1968, Ser. No. 715,336
Int. Cl. B63b 1/18; B64c 3/38, 9/00
U.S. Cl. 114—66.5 12 Claims

A method for trimming a watercraft while underway, including introducing a quantity of gas beneath the after hull of said watercraft; and apparatus for practicing the aforesaid method featuring a wedge selectively retractable into the bottom of the hull of said watercraft which is of minor dimensions in comparison to the hull dimensions of the watercraft.

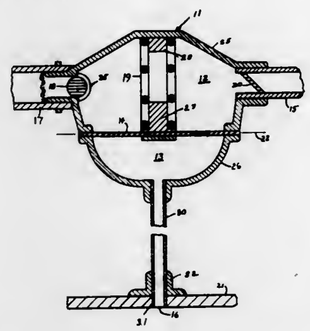


3,498,249
TANKER VESSEL
Terrell M. Jones, Morris Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 690,552, Dec. 14, 1967. This application Sept. 16, 1968, Ser. No. 768,590
Int. Cl. B63b 5/14, 25/08
U.S. Cl. 114—74 13 Claims



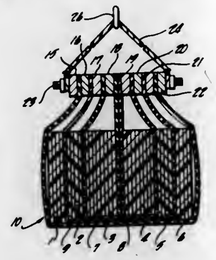
A cargo vessel having a prestressed concrete hold compartment for liquid storage and transport. The concrete hold section may be fitted with steel bow and stern portions and may include an inner lining of insulation to which a liquid impervious membrane barrier is attached. The vessel is particularly adaptable to the transport of liquefied natural gas cargoes at atmospheric pressure and cryogenic temperatures.

3,498,250
BAILING DEVICE FOR A BOAT
Ignatius M. Pomorski, 1110 Brewster St., Erie, Pa. 16503
Filed May 31, 1968, Ser. No. 733,370
Int. Cl. B63b 13/00
U.S. Cl. 114—183 3 Claims



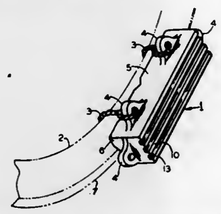
Disclosed herein is a pump which removes water that may accumulate in the bilge of a boat. The pump has a hollow body divided into a first compartment and a second compartment by a hollow diaphragm. The first compartment has an inlet connected to the bilge of the boat with a check valve in the inlet and an outlet connected to the first compartment with a check valve in the outlet and a spring urging the diaphragm toward the second compartment. The outlet of the pump is connected to an opening in the side of a boat which must be above the normal waterline of the boat. The second compartment is connected to an opening in the bottom of the boat. Thus, when the boat pitches forward and aft, the differential pressures on the two sides of the diaphragm are changed and a pumping action results which will remove the water from the bilge of the boat.

3,498,251
BOAT FENDER
Duff L. Dean, North Hollywood, Calif., assignor to Triple D Industries, Inc., Burbank, Calif., a corporation of California
Continuation-in-part of application Ser. No. 616,373, Feb. 15, 1967. This application Apr. 26, 1968, Ser. No. 732,480
Int. Cl. B63b 59/02; E02b 3/22
U.S. Cl. 114—219 16 Claims



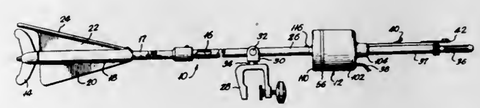
A structure permitting construction of large, relatively light boat fenders that do not deform substantially in the course of use. A first block of buoyant material is enclosed within an inner supporting bag. A second block of buoyant material is contiguous to the inner bag. The blocks each have two parallel sides, the parallel sides of the second block being arranged in parallel relationship with the parallel sides of the first block. An outer supporting bag encloses the second block and the inner bag. In this fashion, more blocks of buoyant material can be added to provide a thick boat fender without deformation of the structure. The open ends of each bag are clamped together between bars running the length of the top of the structure.

3,498,252
PNEUMATIC BOAT FENDER
Neil Peacock, 4441 S. 12th St., Sheboygan, Wis. 53081
Filed Sept. 11, 1968, Ser. No. 758,979
Int. Cl. B63b 59/02
U.S. Cl. 114—219 6 Claims



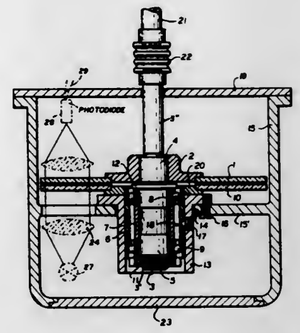
A pneumatic fender for boats comprising a tubular, elongated body having two rectangular ends and four, generally rectangular sidewalls, one sidewall including ribs extending the length thereof and the opposite sidewall including longitudinal and transverse V-grooves for partially surrounding the gunwale of the boat to prevent the fender from slipping up and over the gunwale, and upstanding integral lugs formed in the end walls and one sidewall of the fender for attaching it to a boat.

3,498,253
ELECTRIC POWER PACK FOR BOATS
Garfield A. Wood, Jr., 4565 Sabal Palm Road, Bay Point, Miami, Fla. 33137
Filed Sept. 25, 1967, Ser. No. 670,224
Int. Cl. B63h 21/26
U.S. Cl. 115—18 7 Claims



A portable electric power pack shaped similar to an oar having a propeller on the end thereof. A clamp is provided intermediate the ends of the oar for releasably clamping the power pack on the rear of the boat.

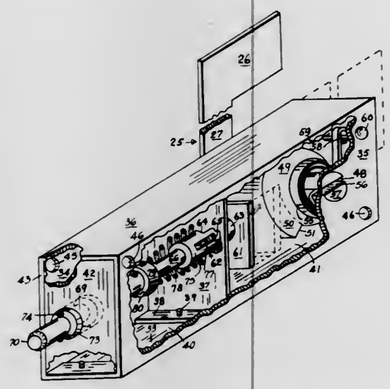
3,498,254
SUPPORTING DEVICE FOR DISCS CARRYING A DIVISION
Johannes Heidenhain, Egerer, near Chieming, and Arthur Brunner, Trostberg, Germany, assignors to Wenczler & Heidenhain, Traunreut, Germany, a corporation of Germany
Filed Apr. 19, 1966, Ser. No. 543,752
Claims priority, application Germany, Apr. 24, 1965, W 39,041
Int. Cl. G09f 9/00
U.S. Cl. 116—129 6 Claims



A supporting device for discs carrying a division in digital electric angle measuring devices, which comprises a housing and a first disc rotatably mounted in the housing and carrying a division. An annular socket means supports the first disc and a second disc is rotatably mounted in the housing parallel to and spaced apart from the first disc and carries a pattern of the division of the first disc. An axle is rotatable in the housing and has a collar, and the annular socket is secured to the

axle for joint rotation therewith. Roller bearings surround the axle and engage operatively the collar of the axle. A ring is secured to the roller bearings and supports the second disc thereto. The axle, the first disc, the second disc and the bearings constitute a unitary structural group independent from the housing.

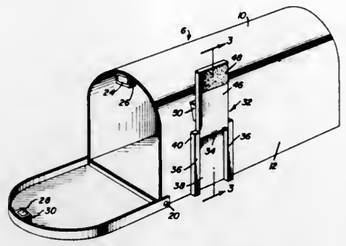
3,498,255
MAIL DELIVERY SIGNAL
Alois G. Haeberle, R.R. 1, St. Peters, Mo. 63376
Filed Dec. 26, 1967, Ser. No. 693,445
Int. Cl. G08c *5/00*
U.S. Cl. 116—132 **4 Claims**



In combination with an conventional, Rural-District mail box having a pivoted vertically swinging door adapted to close upon the entrance thereof when disposed in a vertical position in respect thereto, of a mail delivery signal comprising a flag, associated integrally with the upper end of an arm member, said member in turn being pivotedly associated with a spring loaded mechanism, said mechanism being disposed in detachably secured relation with the inner face of the left-hand side wall of said mail box, as when observed through the entrance thereof, in a manner whereby said arm member will be disposed adjacent the outer face of said wall, said mechanism having holding means for releasably securing said arm member in a non-indicating horizontal position parallel to the axis of said mail-box, as when said door is disposed in a closed position, said mechanism further including triggering means for releasing said holding means; whereby, said arm member will be influenced to swing radially in a clock-wise direction, from its initial said position, to an upstanding position in respect thereto; thereby said flag signal will be disposed above the dome of said mail-box, as when said door is swung into an open position in respect to said entrance, and wherein said flag signal may be visually observed by the user when spaced radially and remotely therefrom.

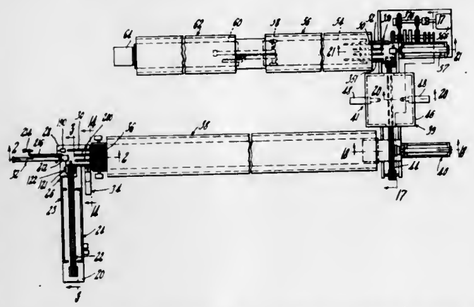
3,498,256
RURAL MAILBOX SIGNALLING FLAG
William F. Hebal, 717 Vincent Court, Stevens Point, Wis. 54481
Filed Jan. 11, 1968, Ser. No. 697,178
Int. Cl. G09f *19/00*
U.S. Cl. 116—132 **3 Claims**

The mailbox proper is conventional. The regular flag is dispensed with and an improved signalling attachment is installed in lieu thereof. All parts of the regular mail-box will now be made from nonmagnetic material. In fact, only the two companion magnets will be metal. Two bar-like cleats are fixed on a vertical side and define a pocket for a pivoted plate having an embedded permanent magnet which is cooperable with a companion



magnet bracketed on a coacting sidewall portion of the box to hold the plate either up or down.

3,498,257
APPARATUS FOR TREATING RAZOR BLADES
Philipp G. Grefe, Braintree, Edward M. Lewiecki, Hingham, and Meyer J. Shnitzler, Brookline, Mass., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
Continuation of application Ser. No. 331,080, Dec. 10, 1963, which is a continuation of application Ser. No. 30,265, May 19, 1960. This application Oct. 5, 1964, Ser. No. 403,693
Int. Cl. B05c *7/06, 13/02, 11/00*
U.S. Cl. 118—6 **20 Claims**

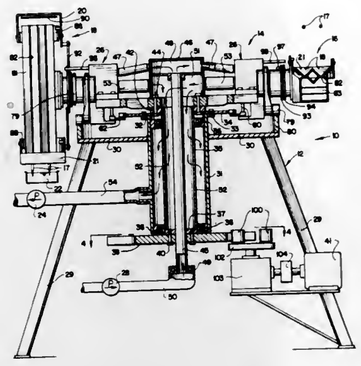


Apparatus for treating razor blades wherein a stack of razor blades disposed in a holder is successively passed through a blade cleaning unit, a preheater, a spraying unit for depositing a thin coating of shaving facilitating material on the blade edges, a heating unit for curing said material, and a cooling unit. The blades are contained loosely in the blade holder while passing through the cleaning unit to permit them to be thoroughly cleaned and are thereafter clamped together in a compact stack for subsequent treatment. The cleaning unit includes a plurality of nozzles, the operation of which is in timed relationship with the conveyor so that only those nozzles which are opposite specific holder locations on the conveyor emit cleaning fluid.

3,498,258
APPARATUS FOR TINNING THE ENDS OF INSULATED CONDUCTORS
Ralph H. Swaisgood, Fort Collins, Colo., assignor to Storm Products Company, Los Angeles, Calif., a corporation of California
Filed Oct. 18, 1967, Ser. No. 676,202
Int. Cl. B05c *3/00, 11/00;* **C23c** *13/08*
U.S. Cl. 118—50 **8 Claims**

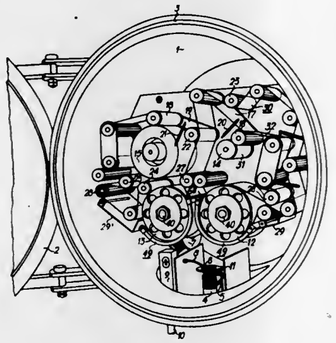
A fully automated machine which tins the ends of electrical wires or cylindrical shaped electronic com-

ponents having been previously precut to length with the ends stripped of insulation. The machine includes a series of rotating working heads which pass the wire ends through flux and solder stations, whereby the heads



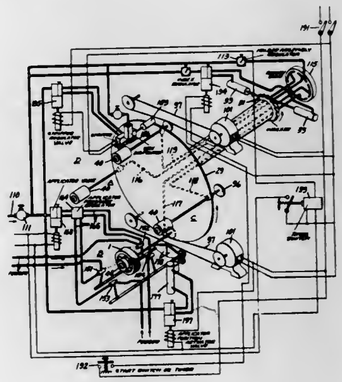
employ alternately superatmospheric or positive and subatmospheric or negative air pressure to transport and hold the wires in place during the dipping and transportation cycle of movement.

3,498,259
APPARATUS FOR CONTINUOUS METALLIZATION OF DIELECTRIC STRIPS
Michel A. Braguier, 6 Rue de Commaille, 75 Paris, France
Filed Dec. 13, 1967, Ser. No. 690,272
Int Cl. C23c *13/08*
U.S. Cl. 118—49 **4 Claims**



Apparatus for continuous vacuum metallization of a strip of insulating material in which the strip passes on cooling rollers, each including: (a) a hollow rotating drum made of thin metal which is a good heat conductor, the cylinder outer surface being polished and the cylinder inside surface being blackened; (b) inside the drum, a nonrotating stationary cylinder made of a thin metal which is a good heat conductor, the casing outer surface being blackened, the casing being flowed through by a fluid coolant; (c) in the casing, a stationary cylinder formed with ducts for supplying and removing the said fluid coolant, the rotatable drum being adapted to rotate freely around the stationary cylinder, and provided with means for directing the metal vapor flow towards selected parts of the cooling roller.

3,498,260
MACHINE FOR APPLYING COATINGS ONTO ARTICLES OF MANUFACTURE
Milton V. De Jean, Pitcairn, Pa., and Dean E. Shaffer, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 569,373, Aug. 1, 1966, which is a division of application Ser. No. 295,073, July 15, 1963, now Patent No. 3,355,310. This application July 18, 1968, Ser. No. 746,690
Int. Cl. B05c *11/14;* **B05b** *13/02*
U.S. Cl. 118—70 **12 Claims**

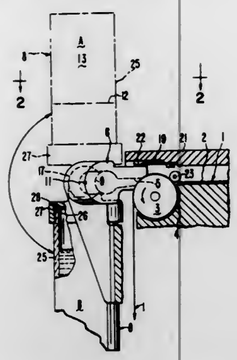


A machine especially adapted for applying coatings on pre-selected surfaces of a magnetic core, including a rotatable member which carries a plurality of article holders in angularly spaced apart relationship. The holders are each mounted for independent rotation relative to the rotatable member and are independently movable between extended and retracted positions. These holders are periodically driven from a loading station A, to a coating applying station B, and to an article unloading station C, where the coated article is removed. After removal from the holder, the holder passes into a reconditioning station D where excess coating material is removed from the circumference of the holder.

3,498,261
STATIC VACUUM HEAD GRAVITY FEED ELECTROGRAPHIC INKER
Roy E. Uhlenberg, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 20, 1967, Ser. No. 654,898
Int. Cl. B05b *5/02*
U.S. Cl. 118—637 **7 Claims**

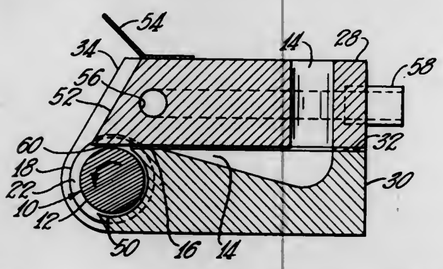
There is disclosed for use in electrographic recording apparatus including a charge retentive recording medium a gravity fed inking system comprising a pivotably supported ink reservoir in liquid communication with an inking slot past which the charge retentive recording medium is drawn for inking. In a first or raised position ink is permitted to flow from the reservoir to the inking slot and a vacuum head is created in the reservoir above the liquid to prevent ink from pouring out of the inking slot. In a second or lower position ink flows from the inking slot to

the reservoir for storage. The motion of the reservoir maintains the electrographic toner in colloidal suspension. The inking slot geometry is such as to store sufficient



liquid to ink a limited amount of area on the recording medium and prevent loss of the vacuum head when the reservoir is raised to its first position.

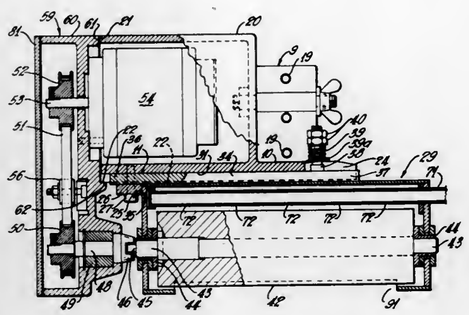
3,498,262
THIXOTROPIC GEL APPLICATOR
Homer G. Hill, Newark, Richard M. Haines, Warsaw, and Charles R. Morrison, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,348
Int. Cl. B05c *1/08;* **C03c** *25/02*
U.S. Cl. 118—234 **12 Claims**



Apparatus for applying a thixotropic gel to glass fibers comprising a support-mounted applicator roll rotatable about a central axis, a pressure confining feed passage discharging tangentially across the width of the roll at the gel pick-up zone, and a smooth shearing surface opposite the surface of the roll for contacting the gel conveyed by the roll.

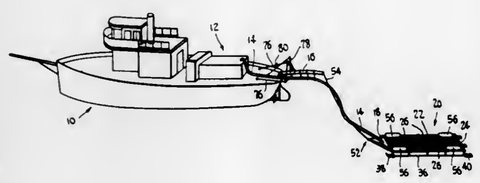
3,498,263
APPARATUS FOR COATING CONTINUOUSLY PRODUCED FILAMENTS
Fernando Alvarez de Toledo, Battice, and Leon E. Charlier, Thimister, Belgium, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 12, 1968, Ser. No. 720,759
Int. Cl. B05c *1/06*
U.S. Cl. 118—234 **29 Claims**

Coating apparatus for continuous filaments comprising a support frame unit, a coating unit, and means for removably securing said coating unit to said support frame. One of the support frame and coating units has a guide bar element with two alignment surfaces formed thereon. The other of the support frame coating units has a reference groove formed therein to receive the guide bar element, the groove having two alignment surfaces. The alignment surfaces of the guide bar element and the groove, when brought into mutually abutting engagement, cooperate to vertically and horizontally position the coat-



ing unit to apply coating to the filamentary material. The support frame and coating unit may each have third alignment surfaces formed thereon which cooperate, when brought into mutually abutting engagement, to position the coating unit in a predetermined lateral alignment with respect to the filamentary material.

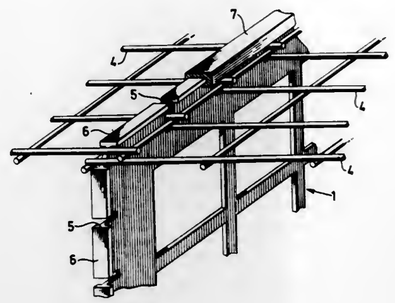
3,498,264
PROCESS FOR EXTERMINATING PREDATOR MARINE LIFE
George H. Hooper, Bridgeport, Conn., assignor of one-half to Douglas A. Finkelstone, Bridgeport, Conn.
Filed Mar. 19, 1968, Ser. No. 714,260
Int. Cl. A01m *25/00*
U.S. Cl. 119—4 **5 Claims**



Extermination of starfish and drills living in an oyster bed by subjecting them to destructive fluids, as for example live steam or chemicals, delivered over large bed areas by multi-nozzle spreader which travels on runners and is hauled and supplied by a boat making runs or passes over the bed.

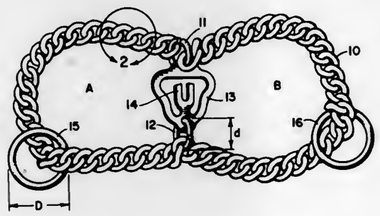
3,498,265
WALL STRUCTURE FOR CAGES
Sven Olof Fredrik Sterner, Varnamo, Sweden, assignor to AB Overlidasystem, Varnamo, Sweden, a company of Sweden
Filed June 7, 1968, Ser. No. 735,300
Claims priority, application Sweden, June 9, 1967, 8,110/67
Int. Cl. A01k *31/06*
U.S. Cl. 119—17 **6 Claims**

In a wall structure comprising a grid type wall including grid members and an element abutting said wall on one side thereof and connected thereto a plurality of recesses are provided in the abutting element receiving the grid members and a portion of the element projects on the



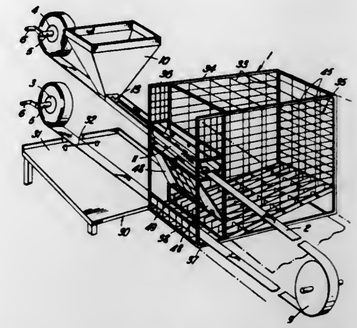
other side of the wall and is provided with a detachable locking member closing the recesses to retain the grid members therein.

3,498,266
PSYCHOSONIC DOG TRAINING DEVICE AND METHOD OF USING SAME
Gene Dare Miller, 11927 Montana Ave., Los Angeles, Calif. 90049
Filed Apr. 18, 1968, Ser. No. 722,315
Int. Cl. A01k *29/00*
U.S. Cl. 119—29 **12 Claims**



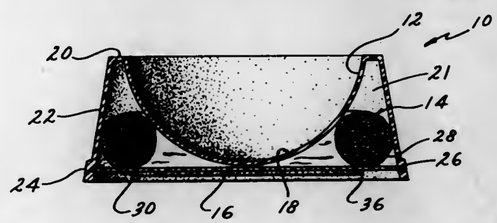
A dog training device comprising an assemblage of metallic members including a closely linked endless loop chain is provided, the device emitting a sound spectrum upon being jingled or upon impact when tossed having maximum or peak values at frequencies slightly above the upper hearing limit of the dog. In addition to the chain links themselves forming the device, there is included a metallic frame shaped to define a tuning fork structure and various rings of metal loosely coupled to the chain in such a manner that the frequency sound spectrum peaks at the desired values of frequency to stimulate the dog on a subliminal psychosomatic level when the device is thrown or tossed or jingled in the hands. The method of training is primarily directed towards training a dog against the doing of undesirable acts and includes the steps of tossing the device close to the dog at the moment of the starting or doing of the undesirable act so that the dog effects mentally a counter association against his act as opposed to any connection between the person tossing the device and the act. Immediate praise is given upon the dog's resulting response provided it is a desirable one. Praise reinforces the desirable response making it permanent.

3,498,267
APPARATUS FOR CONVEYING FOOD TO BIRDS
David Christopher Leeming, % Broiler Equipment Co. Ltd., Winnall, Winchester, Hampshire, England
Filed Sept. 25, 1967, Ser. No. 670,098
Int. Cl. A01k *5/00*
U.S. Cl. 119—61 **9 Claims**



Apparatus for conveying food to birds comprises a flat shiny conveyor belt comprising the moving base of a trough, means for depositing food on to the belt and a stop for closing the far end of the trough the stop acting to maintain the depth of food in the trough at a predetermined level, further movement of the belt resulting in a relative slipping action between the food and the belt. The return portion of the belt may be employed for collecting the birds' eggs and conveying them to an egg-collecting station.

3,498,268
WEIGHTED PET FEEDING DISH
Robert W. Sleith and George E. Langevin, Wilbraham, Mass., assignors to Suburban Plastics, Inc., North Wilbraham, Mass., a corporation of Massachusetts
Filed May 17, 1968, Ser. No. 730,156
Int. Cl. A01k *5/00*
U.S. Cl. 119—61 **4 Claims**

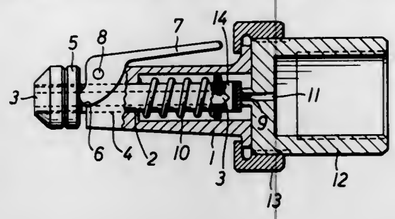


A weighted pet feeding dish of molded synthetic plastic. The feeding dish comprises a bowl portion having a snap-in base plate and an elongated plastic bag filled with sand for weight purposes disposed along the underside of the bowl portion and retained therein by the base plate.

3,498,269
ANIMAL DRINKING FOUNTAIN
Rainer Von Taschitzki, Cologne-Rath, Heumar, Germany, assignor to Aratowerk Walter von Taschitzki, Cologne-Rath, Heumar, Germany
Filed May 23, 1967, Ser. No. 640,658
Claims priority, application Germany, May 25, 1966, A 52,581
Int. Cl. A01k *7/12*
U.S. Cl. 119—75 **10 Claims**

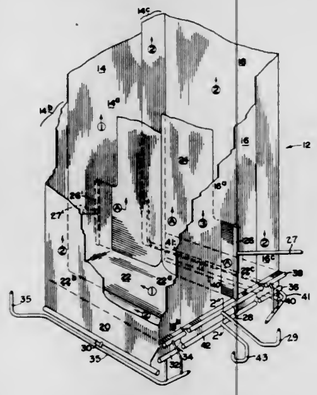
An animal drinking fountain including an elongated tap housing attached to a water pipe, the tap housing being shaped to fit within an animal's mouth, a valve plung-

er movable within the tap housing and slidably attached to the front of the valve housing through a duct therein, valve means within the valve housing, and valve operat-



ing means attached to the outside of the tap housing and operable to open the valve means when the valve operating means is bitten by the animal.

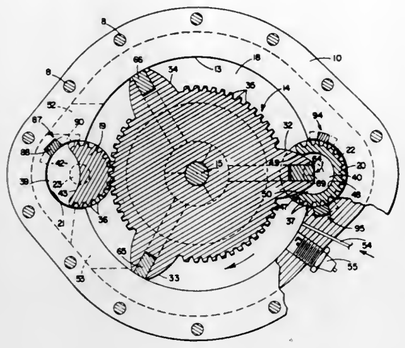
3,498,270
ALL-WELDED FURNACE CONSTRUCTION
Walter P. Gorzegno, Florham Park, N.J., and Jacob Cooper, Los Angeles, Calif., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed May 1, 1968, Ser. No. 725,764
Int. Cl. F22d *1/10;* **F28d** *7/00;* **F28f** *1/22*
U.S. Cl. 122—406 **8 Claims**



An all-welded furnace construction wherein the walls of the furnace are formed of a plurality of passes in series, each pass occupying a portion of the furnace periphery. The design of the furnace is such that it permits the all-welded type construction to be used even in the bottom or lower portion of the furnace. In particular, the corners of the furnace are comprised of tubes of the same pass to permit the lower or bottom corners to be welded together, and the layout of the passes is such that one pass will be adjacent in its longitudinal dimension to a pass which either immediately precedes or immediately follows it in the flow circuitry. The invention is applicable to both a flat bottom type of furnace and a hopper bottom type of furnace.

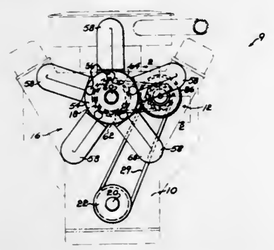
3,498,271
ROTARY ENGINE
Dale F. Marean, 1626 1st St., Manhattan Beach, Calif. 90266
Filed Mar. 18, 1968, Ser. No. 713,608
Int. Cl. F02b *3/02, 55/00*
U.S. Cl. 123—13 **6 Claims**

A rotary engine that includes a housing having a circular chamber within which rotates a master rotor having at least one vane projecting outwardly to the wall of the chamber. Additional smaller rotors are rotatable with the master rotor and extend into recesses defined by circular segments off the main chamber. The smaller rotors are recessed so that the vane may pass through the recesses and pass the smaller rotors as the master rotor



turns. One of the rotors includes a larger recess adapted to seal around the periphery of the vane and to receive gases compressed forwardly of the vane as the vane is moved toward the rotor. These gases are transferred from the recess of the rotor to the rearward side of the vane, where they may be ignited to drive the rotor forwardly.

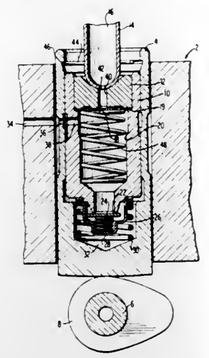
3,498,272
ENGINE ACCESSORY DRIVE
Daniel W. Roper, Rochester, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1968, Ser. No. 702,341
Int. Cl. F01p *7/02, 1/06, 7/10*
U.S. Cl. 123—41.12 **11 Claims**



A viscous fluid coupling is associated with an internal combustion engine of a vehicle, and specifically is mounted remotely from the axis of rotation of a water pump impeller and radiator cooling fan driven from the viscous fluid coupling. The coupling is, however, mounted within the air stream created by the rotation of the fan blades and, specifically, is located adjacent the alternator of the vehicle.

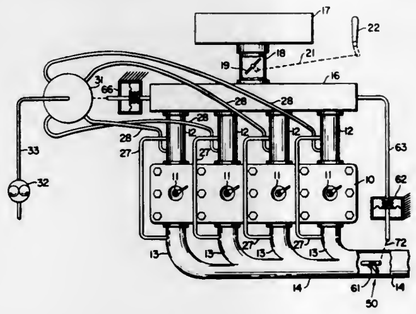
3,498,273
ANTIPUMP-UP TAPPET
John W. Humphreys, Muskegon, Mich., assignor to Johnson Products Inc., Muskegon, Mich., a corporation of Michigan
Filed Apr. 23, 1968, Ser. No. 723,463
Int. Cl. F16n *17/06;* **F01l** *1/00*
U.S. Cl. 123—90 **3 Claims**

A hydraulic tappet having, in addition to the plunger biasing spring, a spring within the plunger biasing the push rod socket outwardly of the plunger to take up hydraulic lash during valve spring surge to prevent pump-



up of the tappet. The latter spring also maintains a lubricant metering plate in engagement with a metering valve seat on the push rod socket.

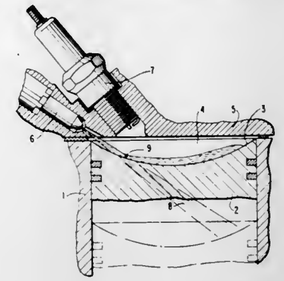
3,498,274
FUEL INJECTOR FOR INTERNAL COMBUSTION ENGINES
James E. Chapman, Marina Del Rey, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 29, 1968, Ser. No. 724,963
Int. Cl. F02b *33/00, 33/32, 39/00*
U.S. Cl. 123—119 **5 Claims**



An internal combustion engine having a fuel injector nozzle disposed at each intake port and a fuel distribution system that feeds predetermined quantities of fuel to each nozzle synchronous with the engine speed. Each nozzle is connected to the exhaust of the respective cylinder to cause some of the hot exhaust gases to pass axially through the nozzle to vaporize the fuel.

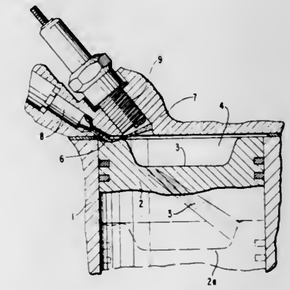
3,498,275
FUEL INJECTION TYPE ENGINE
Horst Hardenberg, Stuttgart-Unterturkheim, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 12, 1967, Ser. No. 667,265
Claims priority, application Germany, Sept. 15, 1966, D 51,103
Int. Cl. F02b *3/04, 75/02*
U.S. Cl. 123—32 **16 Claims**

A process and apparatus for controlling the injection of the fuel quantity in externally controlled internal combustion engines operable with an injection beginning advanced with increases in load, in which the fuel jet, which is initially injected at least partly atomized over a free injection path of substantial length, is applied as



to its rest in a film-like and reflection-free manner against the piston top from a place on the piston top remote from the ignition source to a place more close thereto.

3,498,276
INJECTION-TYPE INTERNAL COMBUSTION ENGINE
Horst Hardenberg, Stuttgart-Unterturkheim, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 14, 1967, Ser. No. 667,770
Claims priority, application Germany, Sept. 15, 1966, D 51,104
Int. Cl. F02b *3/02;* **F02m** *61/16*
U.S. Cl. 123—32 **4 Claims**

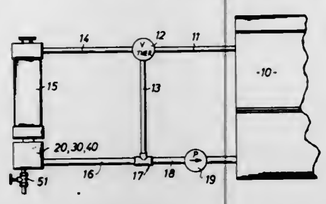


A process and apparatus for the injection of fuel into the combustion space of an externally controlled internal combustion engine of the injection type in which the last part of the injected fuel is deflected in the direction toward the ignition source, preferably by a groove provided in the piston top at such place as intersects the injected fuel jet portion just prior to the end of the injection and deflects the same toward the ignition source.

3,498,277
DEVICE FOR PREVENTING LIQUID FLOW IN A CLOSED BRANCH CIRCUIT
Joachim Schulz, Sudring, Mudau, Odenwald, Germany, assignor to Aurora-Fahrzeugheizungen, Konrad G. Schulz KG, Sudring, Mudau, Odenwald, Germany
Filed July 1, 1968, Ser. No. 741,417
Claims priority, application Germany, July 3, 1967, A 56,164
Int. Cl. F01p *7/16, 7/14, 7/00*
U.S. Cl. 123—41.1 **10 Claims**

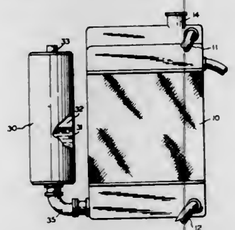
A device for preventing coolant flow through the radiator of an internal combustion engine, when a thermostat

controlling the radiator flow is closed, includes a floating body normally closing an opening in the lower tank of a radiator and displaced from closing position upon flow



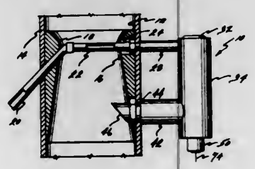
of coolant under pressure downwardly through the radiator. The device may be provided as original equipment or as a unit for installation in existing equipment.

3,498,278
AUTOMOBILE ENGINE COOLING SYSTEM
Bert Lee, Salt Lake City, Utah, assignor of one-third each to Jefferson D. Morgan, Enid, and David Morgan, Blackwell, Okla.
Filed Apr. 18, 1968, Ser. No. 722,415
Int. Cl. F01p *3/20, 11/02, 11/20*
U.S. Cl. 123—41.51 **7 Claims**



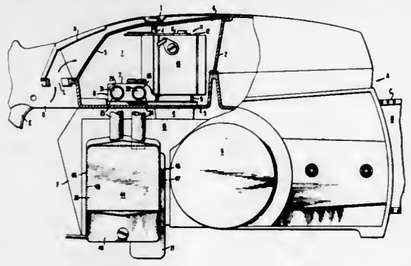
For use with a liquid cooled combustion engine circulation system having a cooling radiator, a pressure expansion tank partially filled with a compressible medium such as air is provided for coupling into the system to receive liquid coolant at a lower temperature position. Thus, the partial charge of the coolant liquid can expand and contract with engine operation against the charge of compressible medium. The expansion tank has a one way air inlet valve and the cooling system has a one way pressure relief valve.

3,498,279
FUEL VAPORIZER FOR INTERNAL COMBUSTION ENGINES
Harvey E. Seeley, Jr., 1300 Emporia St., Aurora, Colo. 80010
Filed Mar. 4, 1968, Ser. No. 709,973
Int. Cl. F02m *31/04, 31/08;* **B60l** *1/02*
U.S. Cl. 123—122 **15 Claims**



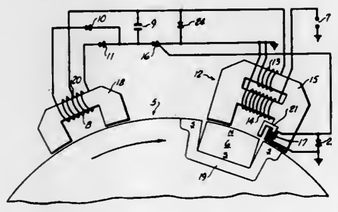
This invention relates to a miniature fuel vaporizer for internal combustion engines that takes raw fuel from the fuel pump and preheats it on a continuous basis to a temperature at which it vaporizes prior to its being introduced into the intake of the fuel combustion system of the engine. Two versions of the unit are encompassed in the instant application, the first an electrically-operated heater powered by the vehicle's 12 v. ignition system and the second being a gas-heated exchanger wherein the hot gaseous products of combustion in the exhaust manifold are bypassed through the unit in heat-exchange relation to the raw fuel. Both versions incorporate a spirally-finned heat-transfer element, the electrical type being a closed system containing a resistance heating element inside thereof, whereas the hot gas type is an open system wherein the exhaust gases are continuously passed therethrough.

3,498,280
CHAIN SAW WITH CARBURETOR HEATER
John Louis Zimmerer, Torrance, and James Franklin West, Palos Verdes Peninsula, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 744,948
Int. Cl. F02m *31/08;* **B27b** *17/00;* **F02n** *17/02*
U.S. Cl. 123—122 **10 Claims**



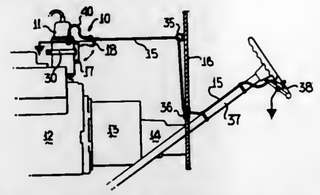
A chain saw where a heater is mounted in an enclosed cavity defined by a fuel tank, air filter and engine mounting means. A carburetor is also enclosed in this cavity. The heater is operable to transmit heat to the carburetor, air filter, and fuel tank.

3,498,281
SMALL ENGINE CAPACITOR DISCHARGE IGNITION SYSTEM
Joseph R. Harkness, Germantown, Wis., assignor to Briggs & Stratton Corporation, Wauwatosa, Wis., a corporation of Delaware
Filed Aug. 23, 1968, Ser. No. 754,874
Int. Cl. F02p *1/02;* **H05b** *37/02, 39/04*
U.S. Cl. 123—149 **8 Claims**



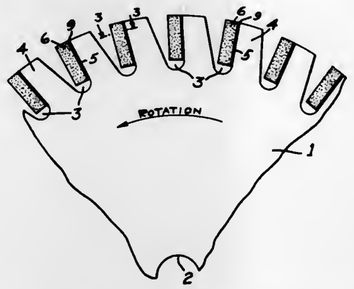
Poor cold starting of engines results when a capacitor discharge ignition apparatus provides a spark of only brief duration. To prolong the plug firing interval in such a system, the core of the step-up transformer or ignition coil is juxtaposed to the orbit of a flywheel-carried magnet, whereby a current is induced in the secondary that provides for continuance of plug firing after condenser discharge. Alternatively, a separate coil, connected in series with the secondary and the plug, is arranged to cooperate with the magnet in generating such current.

3,498,282
MECHANISM FOR AUTOMATICALLY STOPPING INTERNAL COMBUSTION ENGINES
Donald P. Dattilo, 2395 Tyler Lane, Louisville, Ky. 40205
Filed Dec. 21, 1967, Ser. No. 692,554
Int. Cl. F02p *1/00, 7/00, 11/00*
U.S. Cl. 123—198 **10 Claims**



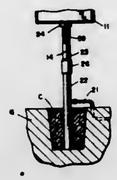
This disclosure relates to a mechanism for automatically stopping internal combustion engines which include a magneto as part of the conventional ignition system thereof. The mechanism includes a conductive arm connected to a grounded housing of the magneto and a non-conductive arm carrying a conductive contact which is normally biased toward the conductive arm. A conductor spanning the flywheel bell housing area normally maintains the conductive arm and the contact in noncontacting relationship. However, upon the accidental fragmentation of the conventional clutch and/or transmission housings causing the severance of the conductor, the contact of the nonconductive arm is brought into contact with the conductive arm under the influence of a spring to ground the ignition system and automatically stop the automobile engine.

3,498,283
ABRASIVE CUTTING TOOL
Arnold M. Cook, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 17, 1967, Ser. No. 623,868
Int. Cl. B28d *1/04;* **B24d** *5/06*
U.S. Cl. 125—15 **5 Claims**



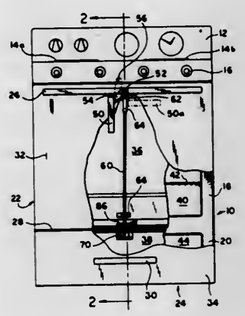
An abrasive cutting tool comprising:
(a) a steel disc having a given thickness, a periphery and a center mounting hole;
(b) periodically spaced indentations in said periphery defining land and intervening slots;
(c) each of said slots having a straight radial leading surface; and
(d) a rectangular bonded diamond segment with a thickness greater than said given thickness mounted on each of said radial leading surfaces in substantial alignment with said center mounting hole and extending to said periphery.

3,498,284
POST ASSEMBLY FOR OUTDOOR GAS GRILL
Blond E. Swaddey, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Sept. 12, 1968, Ser. No. 759,301
Int. Cl. A47j *37/07;* **F24b** *3/00*
U.S. Cl. 126—41 **13 Claims**



An outdoor gas grill is provided with a support post which permits the grill to rotate freely and which permits ready access to the gas supply pipe within the post for inspection and maintenance. The casing of the gas grill is supported by the upper portion of a two-part cylindrical support post, and one of the upper and lower post portions is slidably and rotatably received by the other. A gas supply pipe extends transversely through the wall of the lower post portion and then extends upwardly generally axially within the post. A gas manifold is rotatably joined to the gas supply pipe by a swivel connection and is attached to the upper post portion for rotation therewith. The grill casing carries a control valve which is interposed in the gas supply line by a supply tube which extends from the manifold to the control valve and by a return tube which extends from the control valve to the manifold. The return tube communicates with a gas orifice which is received by the venturi end of the gas burner carried by the grill casing.

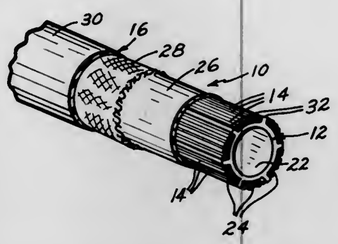
3,498,285
STOVE LATCH
George McArthur, Jr., Delaware, and Anthony J. Schwartz, Worthington, Ohio, assignors to Glenwood Range Company, Taunton, Mass., a corporation of Massachusetts
Filed June 27, 1968, Ser. No. 740,599
Int. Cl. F24c *15/02, 15/36;* **E05c** *9/16*
U.S. Cl. 126—197 **11 Claims**



A stove latch system is disclosed for permitting an oven door and a broiler door which are mounted to a stove body to be simultaneously latched by a simple rotary movement of a handle mounted near the top of the oven door. The handle has a plate fixed to it which is positioned within the oven door. The plate has an extended portion functioning as a first latch member. When the handle is rotated to the latch position, the first latch member extends from the top of the oven door into a keeper

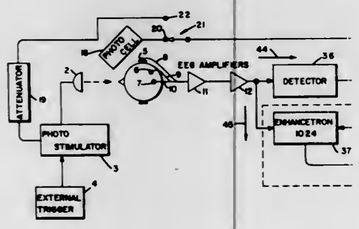
mounted on or above the oven door frame portion of the stove body. A second latch member, which is a steel rod, is pivotally fixed to the plate and mounted vertically in the door to move longitudinally when the handle is rotated. When the handle is rotated, the rod extends from the bottom edge of the oven door and, without passing through the door frame portion of the stove body, directly enters the broiler door to seat against a keeper mounted therein. A movable cover is provided to block the rod and prevent it from extending out of the bottom of the oven door unless both the oven door and the broiler door are closed.

3,498,286
CATHETERS
Michael L. Polanyi, Webster, and Robert E. Innis, Southbridge, Mass., and Charles J. Koester, South Woodstock, Conn., assignors, by mesne assignments, to American Optical Corporation, a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 580,963
Int. Cl. A61b *5/02;* **G02b** *5/14*
U.S. Cl. 128—2 **10 Claims**



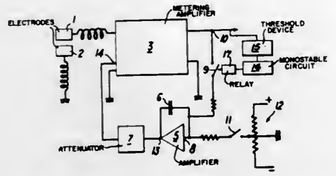
An elongated flexible catheter for insertion into the cardiovascular system for in vivo examination of intravascular and intracardiac environments, having a clear lumen therethrough defined by an annular wall having smooth inner and outer surfaces between which long and slender light-conducting fibers are extended from one end to the other of the catheter.

3,498,287
INTELLIGENCE TESTING AND SIGNAL ANALYZING MEANS AND METHOD EMPLOYING ZERO CROSSING DETECTION
John P. Ertl, Ottawa, Ontario, Canada, assignor to Neural Models Limited, Ottawa, Ontario, Canada
Filed Apr. 28, 1966, Ser. No. 546,080
Int. Cl. A61b *5/04;* **G01r** *23/16, 27/02*
U.S. Cl. 128—2.1 **20 Claims**



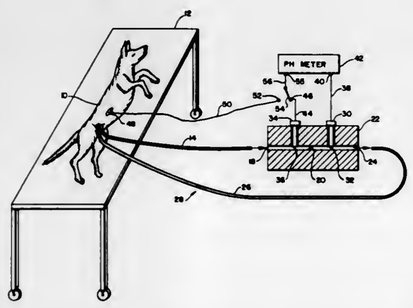
An apparatus and a method are disclosed employing a stimulative event to trigger responsive EEG signals that are analyzed by zero crossing detectors to provide a photographic readout from which the subject's response time to the event may be determined.

3,498,288
DEVICE FOR CORRECTING THE MEASUREMENT OF POTENTIALS DETECTED BY CONTACT ELECTRODES
Jacques Max, Pont-de-Claix, and Francis Merdrignac, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Feb. 16, 1967, Ser. No. 621,720
Claims priority, application France, Feb. 22, 1966, 50,627
Int. Cl. A61b *5/04;* **H03f** *3/68, 1/00*
U.S. Cl. 128—2.1 **1 Claim**



A device for rapidly correcting the measurement, supplied by an apparatus comprising a continuously operating metering amplifier, of the potential detected in surroundings (e.g. an organ of the human body) by means of two contact electrodes, said device comprising means for resetting the zero of said metering amplifier, and means for compensating the polarization voltage of the contact electrodes in use.

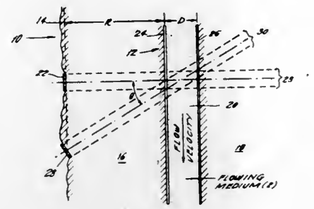
3,498,289
METHOD FOR IN VIVO POTENTIOMETRIC MEASUREMENTS
Hideo Watanabe and John E. Leonard, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Oct. 20, 1967, Ser. No. 676,970
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.1 **2 Claims**



A method for measuring in vivo the ion concentration of body fluid which circulates within the organs of a living subject. The circulating fluid is contacted with an ion sensing electrode while reference contact with the subject is made on the skin of the subject with a suitable electrode.

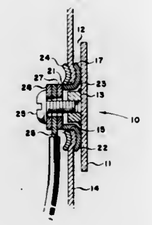
3,498,290
PULSED DOPPLER VOLUMETRIC BLOOD FLOWMETER
Robert F. Shaw, 2316 Leavenworth St., San Francisco, Calif. 94133, and Louis B. Lambert, 48 Vernon Place, Mount Vernon, N.Y. 10552
Filed Apr. 22, 1966, Ser. No. 544,443
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **16 Claims**

A volumetric blood flowmeter in which a first transducer locates and measures the diameter of a vessel and a second transducer determines the velocity of blood in the vessel by Doppler frequency shift techniques. The



vessel diameter and velocity of blood therethrough are then used to compute volumetric flow through the vessel.

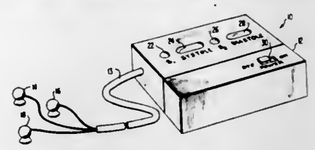
3,498,291
BODY SIGNAL SENSING ELECTRODE APPARATUS
John P. Bunn, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 10, 1966, Ser. No. 526,425
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.06 **2 Claims**



An improved body electrode for sensing electrical impulses present on the skin of a person. The electrode is useful, for example, for sensing electrical impulses generated by the operation of the heart and to be recorded on an electrocardiogram. The present electrode requires no conductive paste or other externally applied substances for enhancing the conductivity of the contact region between the electrode and the skin. Instead, the present electrode includes an impervious, imperforate metallic body contact surface which promotes and retains a film of perspiration between the electrode and the skin, and the saline property of the perspiration enhances the conductivity of the electrode.

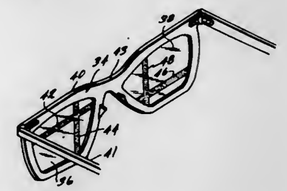
3,498,292
HEART SOUND SEQUENCE INDICATOR
Clinton O. Jorgensen, South Ogden, Utah, and Harvey F. Glassner, Los Angeles, and Lee R. Baessler, Manhattan Beach, Calif., assignors, by mesne assignments, to Humetrics Corporation, a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,880
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.06 **10 Claims**

Apparatus for indicating the temporal position of a heart sound in a cardiac cycle with respect to the functional intervals of the heart's action, which includes trigger means responsive to suitable electrocardiac voltages, multivibrator means responsive to the output of the trigger means and to the frequency of the heart rate for initiating a series of controlled signals representative of the temporal sequence of the heart sound of the cardiac cycle, and indicator means responsive to the control signals for



providing visual indications of the temporal sequence of the heart sound.

3,498,293
ORIENTATION APPARATUS FOR HUMAN SUBJECTS
Jess Oppenheimer, 549 Moreno, Los Angeles, Calif. 90049
Filed Oct. 6, 1966, Ser. No. 584,714
Int. Cl. A61b *5/00;* **G02c** *7/16*
U.S. Cl. 128—76.5 **5 Claims**

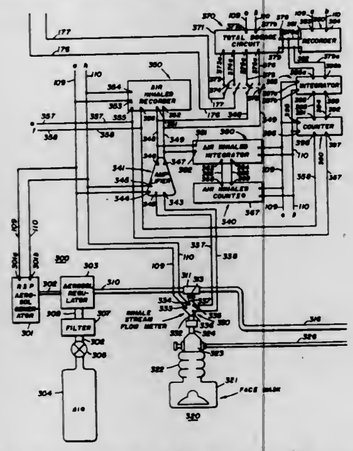


Laterally-supported concentrator devices, providing spaced-apart reference or individually distinguishable i.e. complementary sensations, are disclosed to be supported at like, opposed body locations. Several specific forms are disclosed including eyepieces which each carry one component (two perpendicular lines) of a square, supported in a frame whereby the wearer fuses the two complementing components to maintain a visual "square" and thereby preserve stability. Orientation sensors (gravity) are also disclosed to provide variable sensation images, as for use by persons in flight. Tactile and auditory concentrator units are also disclosed.

3,498,294
INHALATION AEROSOL DOSIMETER AND METHOD OF MEASURING DOSAGE
Jack D. Zeff, Highland Park, and Mark W. Norell, Chicago, Ill., assignors to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Jan. 22, 1964, Ser. No. 339,475
Int. Cl. A61m *15/00;* **G01n** *27/62, 29/02*
U.S. Cl. 128—185 **31 Claims**

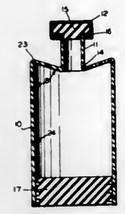
1. In apparatus for continuously and simultaneously measuring the input concentration of an agent in the input gas stream to a processing station and the output concentration of the agent in the output gas stream from the processing station, the combination comprising a first housing defining a first closed detecting chamber and having a first inlet connecting with the input gas stream for introducing a first gas sample into said first detecting chamber and a first outlet for removing gases therefrom, a first hydrogen flame ionizing unit within said first detecting chamber for ionizing at least a portion of the first gas sample introduced thereinto, means for supplying fuel to said first ionizing unit, first means for measuring the ionization of the gases within said first detecting chamber, a second housing defining a second closed detecting chamber and having a second inlet connecting with the output gas stream for introducing a second gas sample into said second detecting chamber and a second outlet for removing gases therefrom, a second hydrogen

flame ionizing unit within said second detecting chamber for ionizing at least a portion of the second gas sample introduced thereinto, means for supplying fuel to said second ionizing unit, second means for measuring the ionization of the gases within said second detecting chamber, a third housing defining a closed cooling chamber and having an inlet connection communicating therewith and connected both to said first outlet and to said second outlet and having an outlet connection communicating with said cooling chamber for removing gases therefrom, means within said cooling chamber for cooling and condensing a portion of the condensable gases passing thereinto, a fourth housing defining a closed ballast chamber and having an inlet conduit connected to said outlet connection and an outlet conduit for removing gases from said ballast chamber, a flow meter for measuring the rate of flow of gases and having an inlet tube connected to said outlet conduit and an outlet tube for removing gases from said flow meter, a fifth housing defining a closed relatively low vacuum chamber and having a first inlet passage communicating therewith and connected to said outlet tube and having a second inlet passage communicating with said low vacuum chamber and having an outlet passage communicating with said low vacuum chamber for removing gases there-



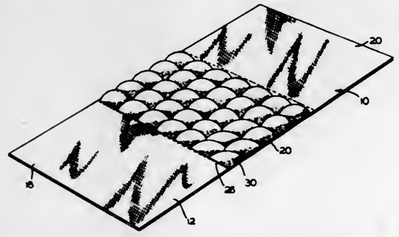
from, a sixth housing defining a closed relatively high vacuum chamber and having an inlet pipe communicating therewith and connected to said outlet passage and having an outlet pipe communicating with said high vacuum chamber for removing gases therefrom, a source of subatmospheric pressure having a relatively low pressure and connected to said outlet pipe, a source of gas having a relatively high pressure, a pressure regulator having an inlet thereto connected to said source of high pressure gas and an outlet therefrom, said regulator passing gas from the inlet thereof to the outlet thereof upon demand at a predetermined pressure in said regulator outlet intermediate said relatively low pressure and said relatively high pressure, and means interconnecting said second inlet passage and said regulator outlet, said regulator maintaining the pressure in said low vacuum chamber at said predetermined value between said relatively high pressure and said relatively low pressure and thus to maintain the same predetermined pressure in both said detecting chambers and a predetermined rate of flow of the first and second gas samples respectively thereinto and past said ionizing means, whereby continuously and simultaneously to measure the input concentration of the agent in the input gas stream to the processing station and the output concentration of the agent in the output gas stream from the processing station.

3,498,295
CARTRIDGE FOR USE IN MULTIPLE INJECTION DEVICE
William L. Brickson, Indianapolis, Ind., and Henry Tamagni, Vineland, N.J., assignors to Bio-neering, Inc., Carmel, Ind., a corporation of Indiana
Filed May 17, 1967, Ser. No. 639,193
Int. Cl. A61j *1/06*
U.S. Cl. 128—272 **1 Claim**



A prefilled liquid medicinal containing cartridge for use in a multidose injection device which comprises a glass walled cylinder having at its dispensing end an orifice of reduced diameter having a sealable pierceable closure means, said orifice being located in an axially oriented diapensing neck of reduced diameter by a lateral glass wall tapered at an angle of more than 75° and less than 90° from the interior surface of said cylinder, and at the other end an internal sealable plunger means frictionally slidably moveable towards said dispensing end causing said contained liquid medicine, upon the slidable movement of said plunger means, to be dispensed through a hypodermic needle which has pierced said closure means.

3,498,296
DIAPER PANTY AND THE LIKE
Marion C. Gallagher, 2415 Foxhall Road NW., Washington, D.C. 20007
Filed Oct. 3, 1966, Ser. No. 583,807
Int. Cl. A61f *13/16*
U.S. Cl. 128—284 **3 Claims**

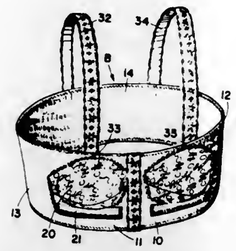


A diaper is provided consisting of a pair of opposed sheet-like elements at least one of which is water adsorbent. The pair of opposed sheets are divided into a central portion and a pair of end portions and the central portion is provided with a batt of non-water-wettable fibrous material such as Dacron and the fibrous material is generally immobilized in the central portion by suitable quilting.

3,498,297
BREAST PROSTHESIS
Patricia I. Lord, 300 Mohawk Road E., Apt. 96, Hamilton, Ontario, Canada
Filed Mar. 12, 1968, Ser. No. 712,499
Int. Cl. A41c *3/10;* **A61f** *1/00*
U.S. Cl. 128—478 **3 Claims**

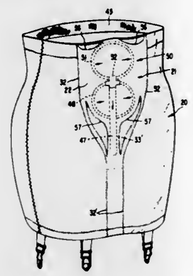
A brassiere for use during a post mastectomy convalescent period, which includes a comparatively wide torso-encircling band of an inelastic fabric at least 7 inches

in width and formed with one or more pleats or folds therein. Relatively wide shoulder straps are provided and arranged so as to be capable of selective adjustment as to



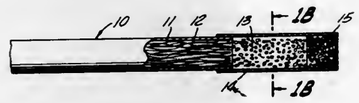
their length. Carried by the band is a conventional cup for reception of the healthy remaining breast and also a cup which is arranged to have a pad removably positioned therewithin at the location of the removed breast.

3,498,298
GIRDLE WITH MOVABLE STAY FOR THE ABDOMINAL REGION
Henry M. Herbener, 803 N. Dawson St., Thomasville, Ga. 31792
Filed Dec. 20, 1967, Ser. No. 692,139
Int. Cl. A41c *5/00, 1/08*
U.S. Cl. 128—533 **28 Claims**



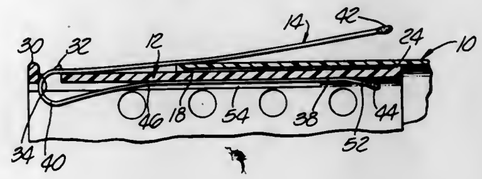
A girdle having a front abdominal control panel or portion comprised of a pocket structure and an abdominal control insert removably mounted in the pocket structure and characterized by the fact that the main rib or stay of the controlling insert has complete freedom of movement in the longitudinal direction during bending movements by the wearer.

3,498,299
FILTRATION OF TOBACCO SMOKE
Ernest W. White, Fountain Valley, Calif., assignor to Wesley C. Bose
Continuation-in-part of application Ser. No. 576,958, Sept. 2, 1966. This application Jan. 10, 1969, Ser. No. 790,407
Int. Cl. A24d *1/04;* **A24b** *15/02*
U.S. Cl. 131—265 **11 Claims**



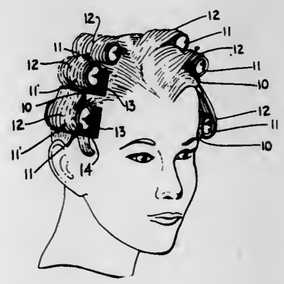
A filter for tobacco smoke comprising particulated vitric glass. The preferred filter is a mixture of minute and larger glass particles. In one embodiment the minute particles are present in an amount effective so that substantially no combustible residuals pass through the filter and so that the pressure drop through the filter does not exceed 15 cm. of water.

3,498,300
SLEEVE TYPE HAIR CURLER
Bernard J. Lehn, % T. L. Cantley, 7635 Ben Ave., North Hollywood, Calif. 91605
Filed Sept. 7, 1967, Ser. No. 666,119
Int. Cl. A45d *2/00*
U.S. Cl. 132—40 **1 Claim**



The device is a two piece hair curler of the type having a spring clip for holding the hair to the curler. The improvement resides in the configuration of the clip which is a U-shaped member normally having one leg on the inside and one on the outside of the curler. The inner leg is configurated to have bends in it to provide a part of substantial extent that lies juxtaposed against the inside surface of the inner member of the curler, the configuration of the clip being such that in the unstressed condition the said part of the inner leg of the clip lies against and parallel to the outer leg.

3,498,301
CURLER PAD
Joyce H. Zimmerman, 3713 Klemer Road, North Tonawanda, N.Y. 14120
Filed Nov. 1, 1967, Ser. No. 679,925
Int. Cl. A45d *2/18*
U.S. Cl. 132—43 **8 Claims**

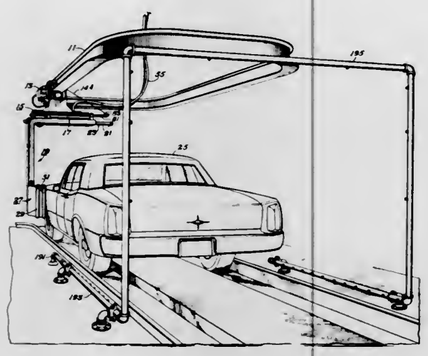


A curler pad of generally solid rectangular configuration including a foam-like cushioning surface for location next to the scalp and a hooked pile fabric for releasable attachment to hair wound on a curler.

3,498,302
CAR WASH SYSTEM
H. L. Null, Haltom City, Tex., assignor of one-half to Billy J. Graham, Fort Worth, Tex.
Filed Nov. 2, 1967, Ser. No. 680,211
Int. Cl. B60s *3/04;* **B08b** *3/02*
U.S. Cl. 134—45 **11 Claims**

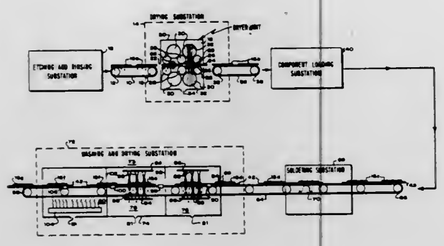
A car wash system utilizing a generally overhead oval track upon which is mounted a movable trolley that sup-

ports a laterally reciprocating spray bar. The lateral position of the spray bar is determined by a sensing element secured to a spray bar assembly and actuated by engagement with a side or end surface of a vehicle being washed. The configuration of the sensing element minimizes the possibility of damage to either itself or the



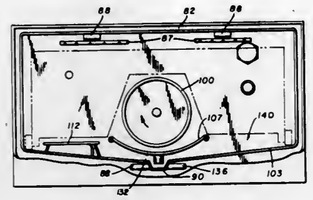
vehicle finish. Further, a wheel wash and pre-spray system is disclosed for use in combination with the overhead track system. Moreover, a control system that includes parallel timers is used to prevent interference with the wheel wash or pre-spray system by the overhead track system.

3,498,303
APPARATUS FOR WASHING AND DRYING PRINTED CIRCUIT BOARDS
Maynard D. Eaves, Sunnyvale, and John M. Gilbert, Woodside, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Original application Mar. 17, 1966, Ser. No. 535,071, now Patent No. 3,421,211, dated Jan. 14, 1969. Divided and this application Apr. 29, 1968, Ser. No. 725,116
Int. Cl. B05c *5/00;* **B08b** *3/02*
U.S. Cl. 134—46 **1 Claim**



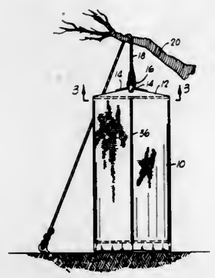
Moist printed circuit boards are driven between resilient rollers and vacuum suction ports to dry them by squeezing and sucking the moisture therefrom. The dried printed circuit boards are mounted on universal racks and loaded with circuit components. These circuit components are then soldered to the printed circuit boards. The soldered printed circuit boards are washed and dried by successively conveying them through a washing chamber where they are sprayed with a cleaning solvent, a blowing chamber where they are blown with a warm gas, and a heating chamber where they are radiantly heated.

3,498,304
APPARATUS FOR CLEANING DISHWARE
Hugh M. Rumbaugh, 1370 Revere Road, Akron, Ohio 44313
Continuation of application Ser. No. 504,775, Oct. 24, 1965. This application June 12, 1968, Ser. No. 757,170
Int. Cl. B08b *3/00, 9/00;* **B67d** *5/06*
U.S. Cl. 134—58 **3 Claims**



A dishware cleaning appliance with a detergent cleaning system having a timer to control the re-use of detergent charged reconditioned fluid upon reactivation of the fluid impeller to impel said fluid in a subsequent cleaning period. A system to initially wash detergent into said appliance's cleaning chamber by controlling the flow of detergent dispensing fluid in a flexible conduit by a pinch valve is also disclosed, said fluid flushes and pushes detergent out of a detergent reservoir into a dishware cleaning chamber.

3,498,305
TENT
Bonnie R. Hulin, 6032 NW. 55th St., Oklahoma City, Okla. 73122
Filed Feb. 7, 1968, Ser. No. 703,687
Int. Cl. A45f *1/06*
U.S. Cl. 135—1 **1 Claim**



A tent including a fabric top panel secured to a generally cylindrical side wall panel with the side wall panel being retained in cylindrical configuration by a pair of rigid, vertically spaced rings, and with the top panel of the tent being suspended from an overhead supporting member. The lowermost of the two rigid rings is anchored to the earth, and both of the rigid rings are detachable from the fabric portion of the tent so that the entire structure may be compactly stored in a small space.

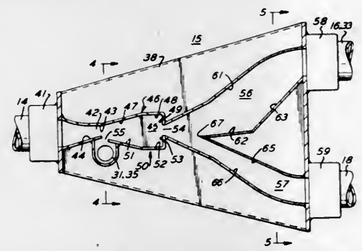
3,498,306
UMBRELLA COVER
Dorothy Edelking, 1276 Carolyn Drive NE., Atlanta, Ga. 30329
Filed Feb. 2, 1968, Ser. No. 702,575
Int. Cl. A45b *25/18*
U.S. Cl. 135—33 **1 Claim**

The present invention comprises an umbrella having a rod with collapsible ribs connected thereto. A transparent cover is connected to the ribs and is provided with a plurality of widely dispersed light reflective areas so that



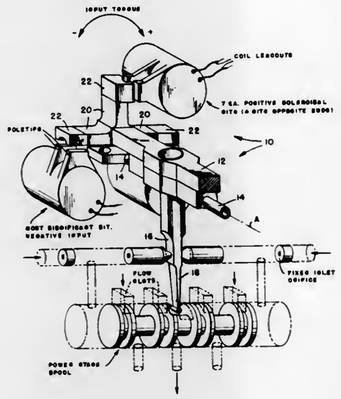
light impinging on these light reflective areas will be reflected thereby locating the umbrella and its user.

3,498,307
FLOW CONTROL APPARATUS
Robert B. Adams, Tredyffrin Township, Chester County, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed June 28, 1967, Ser. No. 649,664
Int. Cl. F15c *1/04*
U.S. Cl. 137—81.5 **8 Claims**



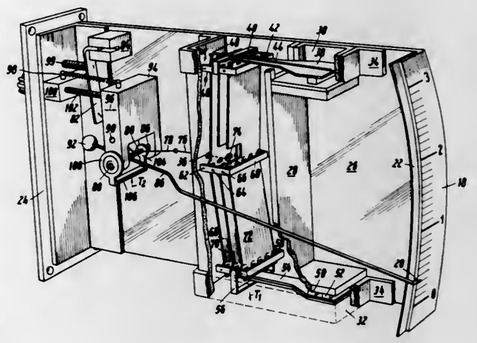
Flow control apparatus including a diverting valve for fluid flow control with provisions for holding the fluid level available in lines for use, to speed up delivery when fluid is called for.

3,498,308
ARMATURE-TORSION SPRING SUSPENSION ASSEMBLY
George T. Miller, Jr., Granada Hills, and Marion L. George, Studio City, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 5, 1968, Ser. No. 757,589
Int. Cl. G05d *7/06;* **G08c** *9/04;* **F16k** *31/08*
U.S. Cl. 137—85 **4 Claims**



A rotor-suspension assembly for a servovalve which converts digital word value input commands to analog hydraulic power outputs. A torsionally supported armature for operating a conventional flapper valve is driven by an array of solenoid torquers which receive parallel word command voltages. The voltages are applied in a ±7 bit, two's complement, parallel binary input mode, enabling the generation of all word values inclusive to ±127.

3,498,309
DEVICE FOR MEASURING NARCOTIC GASES IN CLINICAL ROUTINE
Helmut Philipp Vonderschmitt, Zeppelinstrasse 5, Neu-Isenburg, Germany, and Peter Emo Moyat, Vilbeler Landstrasse 6, Bergen, Kreis Hanau, Germany
Filed May 1, 1967, Ser. No. 634,958
Claims priority, application Germany, May 5, 1966, V 31,002
Int. Cl. G05d *11/08;* **A61m** *17/00;* **G01d** *5/34*
U.S. Cl. 137—88 **10 Claims**

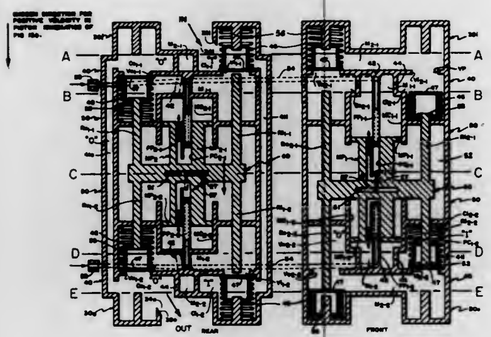


A device for measuring the concentration of a narcotic vapor in a gaseous flow to be inhaled by a patient comprises a casing housing at least one tape of a material that is capable of reversibly swelling in the presence of the narcotic vapor in the gaseous flow, the preferred material being silicone rubber having a thickness between 0.1 mm. and 1 mm. The tape is supported and mechanically biased, and the casing comprises means for transferring a variation of the length of the tape that is due to the narcotic vapor to an indicating member or to optical detecting means. The optical detecting means may generate electrical signals for controlling a recorder or for controlling the addition of the narcotic vapor to the gaseous flow. Means may be provided for compensating for water vapor carried by the gaseous flow.

3,498,310
FLUID PROPORTIONING DEVICE
Valentine Hechler IV, 26 Meadow View, Northfield, Ill. 60093
Filed Jan. 14, 1966, Ser. No. 520,568
Int. Cl. G05d *11/02;* **F16k** *45/00;* **F04f** *7/02*
U.S. Cl. 137—99 **22 Claims**

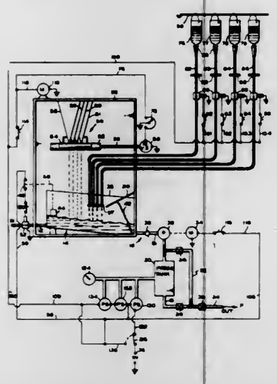
A fluid proportioning device in which each of a pair of fluid motor pistons positively controls the valve action of the other while coordinated to reciprocate 90° out of phase with each other for each to operate pump means discharging a fluid into the fluid discharged from the cylinders of the respective pistons for a device in which a liquid motor of driven pistons actuates self-priming pump pistons directly with a nonconstant crankshaft velocity and acceleration to provide a nonpulsating constant flow

rate output in which the exhaust of all pistons mix in exact and controlled ratios within the device. The driven pistons are arranged in pairs with each pair actuating the



valves that control the action of the other pair and the pairs are linked to assure operation in stepped relationship.

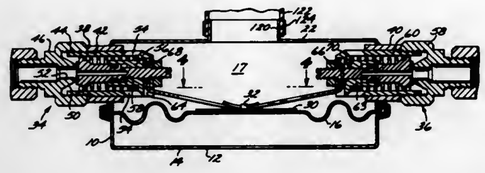
3,498,311
APPARATUS FOR DISPENSING AND DELIVERING FEED ADDITIVES TO LIVESTOCK AND POULTRY
Roland J. Hawes, Jr., 10 Mesa Vista Drive, Boise, Idaho 83705
Filed Apr. 14, 1966, Ser. No. 542,521
Int. Cl. G05d *11/02;* **A01k** *5/02;* **E03c** *1/046*
U.S. Cl. 137—101.25 **11 Claims**



Apparatus for dispensing and delivering microingredient feed additives to livestock and poultry by metering and dispensing several dry additives and several liquid additives separately, simultaneously and without premixing into a common fluent carrier such as water or molasses, either automatically on demand or selectively.

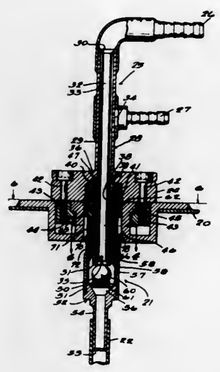
3,498,312
RESPIRATORY GAS REGULATOR
John J. Geiszler, Costa Mesa, Calif., assignor to U.S. Divers Company, Inc., Santa Ana, Calif., a corporation of California
Filed Oct. 18, 1967, Ser. No. 676,320
Int. Cl. B63c *11/18;* **G05d** *7/01;* **F16k** *31/12*
U.S. Cl. 137—102 **3 Claims**

An underwater respiratory gas regulator is described in which a respiratory gas chamber having a pressure sensitive diaphragm as one of its walls, is provided with a pair of valves, both pressure balanced and both actuated



by the diaphragm, one valve admitting gas to and the other releasing gas from, the respiratory gas chamber.

3,498,313
BEER KEG TAP
Daniel E. Belich, 8126 W. National Ave., West Allis, Wis. 53214
Filed May 23, 1967, Ser. No. 640,630
Int. Cl. F16k *43/00;* **F16l** *55/10;* **B65d** *83/14*
U.S. Cl. 137—322 **11 Claims**

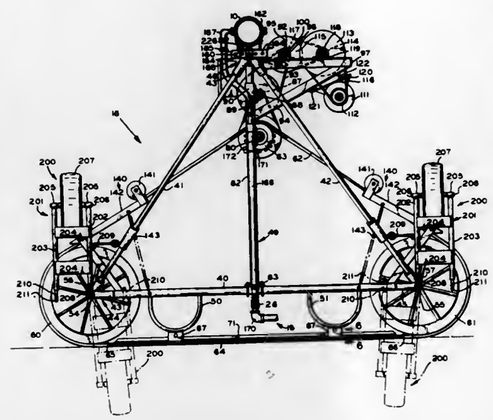


This application discloses a tap in which the portion of the tap from the head to the bottom of the keg may remain in place during merchandising. The user needs only a small coaxial outlet unit attached to tap beer and gas pressure lines. The outlet unit is small and easily cleaned, and represents only a modest investment for the tavern keeper. The portion of the device which is retained in the barrel contains valving arrangements which prevent the escape of beer or gas pressure from a partially used keg when the outlet is withdrawn, and provide improved valve arrangements which rely on elastic valve members for admission of air under pressure.

3,498,314
MOVABLE IRRIGATION LINE
Lyndle G. Gheen, Eugene, Oreg., assignor to R. H. Pierce Manufacturing Company, Eugene, Oreg., a corporation of Oregon
Filed May 24, 1967, Ser. No. 640,991
Int. Cl. A01g *25/02*
U.S. Cl. 137—344 **14 Claims**

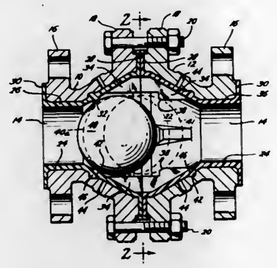
A movable irrigation line including a pipe carried by a plurality of carriages each supporting a cradle and the carriages being arranged in groups with one of the carriages of each group carrying a motor which drives a line shaft driving the other carriages of the group. Each carriage is connected adjustably to its cradle to drive the cradle either at right angles to the cradle or at an acute

angle to the cradle. Each carriage includes a pair of vertical posts supporting a longitudinal member pivoted to the cradle for adjustment of the carriage relative to the cradle. The posts are supported by horizontal bottom sides of a pair of inclined triangular frames connected at their upper ends to the ends of the longitudinal member. The ends of the horizontal sides journal axles carried by wheels around which an endless, open mesh sup-



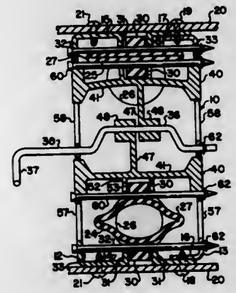
porting track travels. The track also travels along a guide shoe extending between the wheels. A drive sprocket supported by the posts is driven by the line shaft which is carried by the posts. A pair of auxiliary wheels are pivotal on the axles between normal retracted positions and operating positions supporting the wheels and track above the ground for moving the line longitudinally. Each carriage also supports a branch pipe connected to a trailing line extending to the rear thereof and carrying sprinklers.

3,498,315
CORROSION RESISTANT BALL CHECK VALVE
Gail W. Graves and Clarence H. Hester, Houston, Tex., assignors to John L. Doré Co., Houston, Tex., a corporation of Texas.
Filed Apr. 24, 1968, Ser. No. 723,713
Int. Cl. F16k *15/04;* **F16l** *58/00*
U.S. Cl. 137—375 **5 Claims**



The invention relates to a ball check valve formed of two complementary body members each defining one-half of a body cavity, one body member being lined completely interiorly with a liner having an annular raised face forming a seat. The other body member is likewise provided with a liner member completely covering the interior thereof and provided with a plurality of stops. Both liners have axial vanes circumferentially spaced around the body cavity within which is disposed a slidable seal member which may seat against the raised face to close flow through the valve or which may slide into engagement with the stops to open flow through the valve.

3,498,316
POSITIVE POSITION PINCH VALVE
James M. Pinder, North Canton, and Warren A. Humphrey, Canton, Ohio, assignors to Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,358
Int. Cl. F16l *55/14*
U.S. Cl. 137—595 **8 Claims**

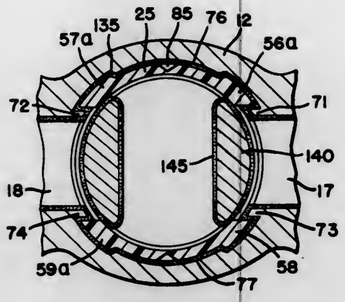


A pinch valve structure for controlling flow through fluid conduits comprising a collapsible conduit, pinch means for collapsing the conduit to interrupt fluid flow and an operating mechanism for the pinch means comprising a driving crank operating a single plastic molding of resilient plastic material which acts to pinch the conduit closed and includes portions functioning as a crank bearing, a connecting rod, side thrust bearings, rocking and sliding bearings, positioning guides for the collapsible conduit, positive stop for the open and closed conduit positions, a snap action spring for holding the conduit closed and tolerance take-up means. The valve element is so made that it acts as a snap spring in its open position to hold the operating means in valve open position.

3,498,317
PLUG VALVES HAVING RELIEVED HIGH PRESSURE SEAL AREAS
Donn W. Duffey, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York
Filed Mar. 22, 1968, Ser. No. 715,433
Int. Cl. F16k *5/02, 5/16, 25/00*
U.S. Cl. 137—375 **10 Claims**

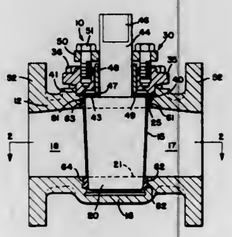
Corrosion resistant plug valves including a polytetrafluoroethylene (PTFE) sleeve seal element wherein the sleeve is secured against axial, radial and deflecting movements are described. The valve body has a pattern of relief areas in the bore such that the portions of the sleeve in the relief areas are under relatively high sealing pressure. The relief areas include top and bottom axially spaced circumferentially extending relief bands joined together by axially extending relieved sections arcuately spaced from angularly disposed body ports to provide a flange on each side of the body ports. The bore above and below the body ports is also relieved so that the flanges form axially extending bore flanges at the junction of the ports and the bore to prevent rotation of the

sleeve. Spaced arcuately from the flanges and between the ports are portions which are relieved to a lesser amount and which also act to prevent rotation of the



sleeve. The surface of the sleeve includes relieved areas opposite the portion of the bore between the ports. Two-way and multiple port valves as well as fully lined sleeve valves are also described.

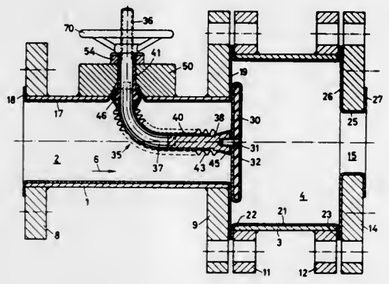
3,498,318
PLUG VALVES HAVING RELIEVED HIGH PRESSURE SEAL AREAS
Donn W. Duffey, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York
Filed Mar. 22, 1968, Ser. No. 715,434
Int. Cl. F16k *5/02, 27/06, 25/00*
U.S. Cl. 137—375 **10 Claims**



Corrosion resistant plug valves including a polytetrafluoroethylene (PTFE) sleeve seal element wherein the sleeve is secured against axial, radial and deflecting movements are described. The valve body has a pattern of relief areas in the bore such that the portions of the sleeve in the relief areas are under relatively high sealing pressure. The relief areas include top and bottom axially spaced circumferentially extending relief bands joined together by axially extending relieved sections arcuately spaced from angularly disposed body ports to provide a flange on each side of the body ports. The bore above and below the body ports is also relieved so that the flanges form axially extending bore flanges at the junction of the ports and the bore to prevent rotation of the sleeve. Spaced arcuately from the flanges and between the ports are bore areas which are not relieved and which also act to prevent rotation of the sleeve. The surface of the sleeve includes relieved areas opposite the portion of the bore between the ports. Two-way and multiple port valves as well as fully lined sleeve valves are also described.

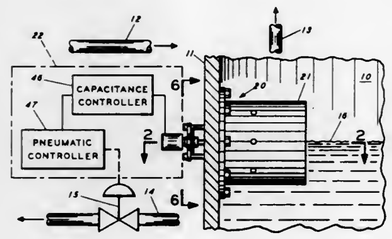
3,498,319
VALVE, PARTICULARLY LINED WITH PLASTIC MATERIAL
Ernst Schnabel, 354 Postfach, 2650 Limburg (Lahn), Germany
Filed July 3, 1968, Ser. No. 742,220
Claims priority, application Germany, Aug. 23, 1967, Sch 41,197
Int. Cl. F16k *25/04, 31/44, 41/00*
U.S. Cl. 137—375 **8 Claims**

Valve for installation in a pipe line includes a pair of different-diameter pipe lengths coaxially and serially disposed in a flow direction and defining a chamber. A valve seat formed with a flow opening disposed in the chamber and having a seating surface extending between and transversely to the axis of the pipe lengths. A valve member located within the pipe length of larger diameter is movable in the flow direction normally to the seating surface, the valve member having a diameter smaller



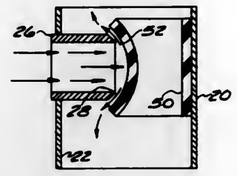
than that of the larger-diameter pipe length so as to form an annular flow passage at the periphery thereof, and actuating means for moving the valve member extending out of the valve chamber and including a flexible member operatively connected at one end to the valve member and having a bend therein so that a portion thereof extends transversely to the flow direction.

3,498,320
PRESSURE LIQUID LEVEL INDICATOR
Walter D. Hughes, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,745
Int. Cl. F16k *31/12;* **G01f** *23/22;* **G05d** *9/00*
U.S. Cl. 137—412 **13 Claims**



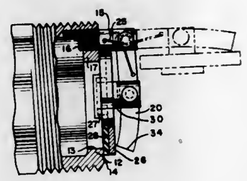
A sensor member for use in a liquid level control system for maintaining a predetermined liquid level within a vessel composed of at least two elements formed of materials of different specific gravities adapted to angularly rotate in response to deviations of the controlled liquid relative to an established elevational set-point level coincident with the location of the sensor member.

3,498,321
SELF-SEALING VALVE ASSEMBLY
Paul C. Barrett, Kent, and Robert J. Kolar, Akron, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio
Filed Oct. 16, 1967, Ser. No. 675,461
Int. Cl. F16k *15/14*
U.S. Cl. 137—525 **4 Claims**



The invention relates to a self-sealing valve assembly in which the control element consists simply of a cylindrical elastomeric sleeve positioned relative to the fluid conduit to be controlled, so that a portion of the outer surface of the sleeve is forced against the end of the conduit.

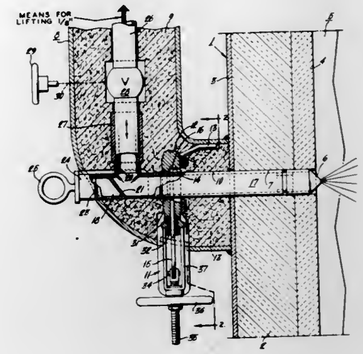
3,498,322
CHECK VALVE
James P. Gilliam, R.R. 1, Box 880, Deland, Fla. 32720
Filed May 10, 1967, Ser. No. 637,516
Int. Cl. F16k *15/03, 27/00, 15/06*
U.S. Cl. 137—527.2 **4 Claims**



A check valve for use in restricted space at the end of an inexpensive pipe nipple with a removable valve unit of non-corroding material including a sleeve secured by very fine screw threads to the inner periphery of the nipple providing the valve seat structure and the support for a movable valve head including a lug which movably supports the stem of the valve head, any transverse dimension of the valve head being appreciably less than the nipple diameter so that adequate clearance for opening of the valve is provided by a female coupling attached to the nipple.

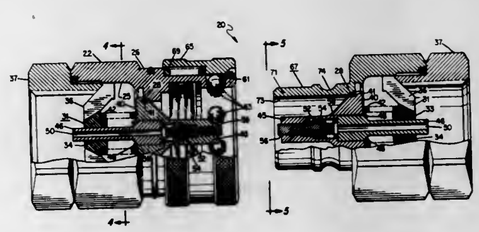
3,498,323
RETRACTABLE NOZZLE
Edward Rahm, Philadelphia, Pa., assignor, by direct and mesne assignments, of fifty percent each to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey, and Howe-Baker Engineers, Inc., Tyler, Tex.
Filed Nov. 9, 1967, Ser. No. 681,837
Int. Cl. F23d *11/36;* **F23m** *11/02;* **F16k** *3/00*
U.S. Cl. 137—592 **6 Claims**

A vessel, to which fluid is to be fed by means of a conduit, has an aperture through its wall, and the conduit is mounted for axial sliding movement in a hole longitudinally aligned with this aperture, so that it can enter into and be withdrawn from the aperture. A goggle valve, located in the hole and through whose opening the conduit normally extends, is movable to provide a seal in the hole upon withdrawal of the conduit. Normally, fluid is supplied to the conduit through a branch pipe



which communicates with the conduit by way of an opening in the side wall thereof, this opening being located on the opposite side of the goggle valve from the vessel.

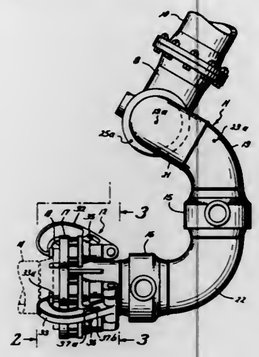
3,498,324
QUICK CONNECT HIGH PRESSURE COUPLING
Erich E. Breuning, Union City, Pa., assignor to Snap-Tite, Inc., a corporation of Pennsylvania
Filed Mar. 17, 1967, Ser. No. 624,067
Int. Cl. F16l *37/22, 37/28;* **F16k** *59/04*
U.S. Cl. 137—614.04 **1 Claim**



A quick connect and disconnect coupling comprising a female socket member and a male nipple member insertable thereinto. In connected condition the members are held together by ball detents carried by the socket member and extending into a groove on the nipple member and held in this position by a locking sleeve which is retractable when it is desired to disconnect the two members.

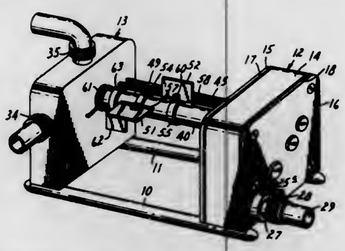
Each member has a primary valve normally closed which has a secondary flow passage therethrough with a secondary valve in each, normally maintained closed. As the nipple and socket members are brought together the secondary valves first engage each other and open causing a flow through the secondary flow passages from the high pressure side to the low pressure side of the coupling. This flow causes at least a momentary drop (under normal circumstances and particularly under static head conditions) in the high pressure which is acting toward keeping the associated primary valve closed and further manual bringing together of the members is permitted because of this pressure drop. This bringing together of the members causes the primary valves to be engaged and opened.

3,498,325
LOADING ARM AND QUICK RELEASE COUPLER
Albert A. Ashton, Dallas, and Walter T. Krause, Houston, Tex., assignors to The Youngstown Sheet and Tube Company, Boardman, Ohio, a corporation of Ohio
Filed Sept. 14, 1967, Ser. No. 667,716
Int. Cl. F16l 21/04; B63b 27/24
U.S. Cl. 137—615 5 Claims



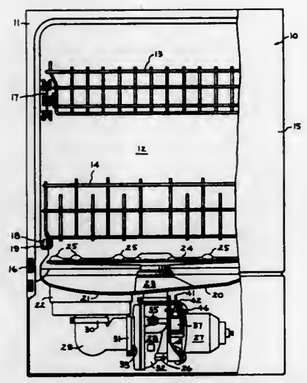
This patent discloses a swivel system for connecting a loading arm to a ship's manifold and a hydraulically operated quick release coupling. The swivel system provides for rotation in three mutually perpendicular planes and holds the coupler face perpendicular, or slightly looking down, for quick coupling to the ship's manifold while at the same time reducing the moment arm of the load imposed upon the ship's manifold. The quick release coupler is hydraulically operated by a plurality of circumferentially arranged pistons and is of small size and light weight.

3,498,326
FLUID DISTRIBUTION DEVICE
James H. Snyder, Battle Creek, Mich., assignor of twenty-two percent each to Fred Hallway, Plymouth, Mich., and Harmon W. Ruliffson and Daniel F. Eckoldt, Minneapolis, Minn., and eleven and one-third percent each to John B. Becker, Excelsior, and Robert C. Becker, Minneapolis, Minn.
Filed May 1, 1968, Ser. No. 725,758
Int. Cl. F16k 31/36, 51/00; A01g 25/00
U.S. Cl. 137—625.11 13 Claims



This application discloses a water distribution device for multiple head lawn sprinkler systems. A hollow, rotatable rotor is journaled in a frame and biased to rotate through a plurality of different positions in each of which an opening in the rotor is aligned with one of several distributing pipes for the system. A fluid operated motor is provided to drive a lead screw on which is mounted a threaded stop member that travels along said lead screw upon rotation thereof. A plurality of cam members mounted on the rotor successively engage the stop member as it travels along the lead screw to hold the rotor in the different positions. Water flows through the fluid motor and through the rotor into the distributing pipes, one at a time.

3,498,327
PUMP OUTLET VALVE MEANS
John A. Dicken, Jr., Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 13, 1968, Ser. No. 712,815
Int. Cl. F16k 11/02, 25/00
U.S. Cl. 137—625.44 9 Claims

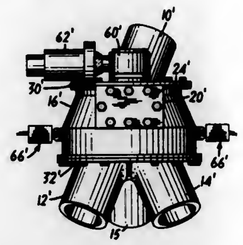


Improved valve means for controlling the flow of pressurized fluid through a pump outlet. The pump housing has an outlet opening surrounded by a seat for a movable valve element that is movable between a first position uncovering and a second position covering the opening. The valve element is mounted within the housing upstream of the opening and comprises two generally circular discs fastened together adjacent their centers. One of the discs is stiffly resilient and has a concavo-convex portion adjacent its outer circumference, the concave side of which is aligned over the seat when the element is in the second position. The second disc is substantially rigid and has a generally flat surface adjacent its outer circumference that is spaced behind the convex side of the concavo-convex portion of the first disc. Pressure applied to the valve element by the flow of the fluid through the housing moves the element to its second position, initially causing the stiffly resilient disc portion to form a seal with the seat and subsequently compressing it between the seat and the rigid disc which then carries the fluid load and prevents deflection or bowing of the stiffly resilient disc into the opening.

3,498,328
ROTARY VALVE
Lauritz E. Mylting, Ardmore, Pa., assignor to Buell Engineering Company, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 411,418, Nov. 16, 1964. This application Dec. 29, 1967, Ser. No. 694,756
Int. Cl. F16k 11/08, 31/04
U.S. Cl. 137—625.46 19 Claims

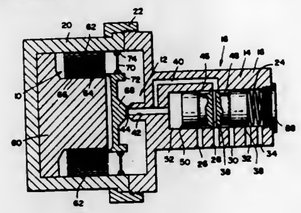
A rotary valve comprising a housing having a pair of spaced-apart housing end members with parallel inner surfaces, an inlet conduit communicating with the housing through one of the end members and at least two outlet conduits communicating with the housing through the other end member. A valve plug is rotatably mounted in the housing and is formed with a passage arranged to be in selective registration with the inlet and with any one of the outlets, as determined by the angular position of the plug. The axis of rotation of the plug lies

at substantial angles to the plane through the axes of any two adjacent outlet conduits and to the axis of the inlet conduit and it is also perpendicular to the parallel



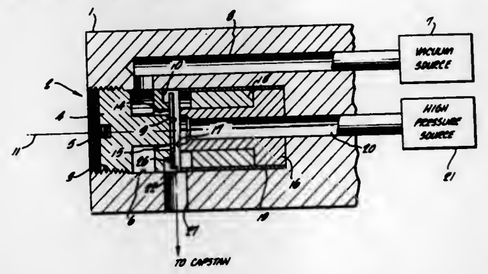
surfaces of the housing end members. The valve is used to divert fluids flowing through a conduit to one or more distribution points.

3,498,329
SERVO VALVE
Joseph F. McCormick, Hingham, Mass., assignor to Delta Hydraulics Company, Braintree, Mass., a corporation of Massachusetts
Filed Oct. 12, 1967, Ser. No. 674,893
Int. Cl. E03b; F16k 31/06; H04r 9/00; H02k 33/00
U.S. Cl. 137—625.64 3 Claims



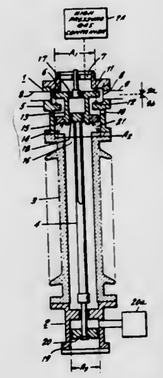
A servo valve having a multi-coil bobbin in the force motor, which bobbins controls the position of the flapper valve. Individual energy action of the coils achieves step changes in the position of the flapper valve which in turn achieves step changes in the main control valve and incremental mechanical displacements of the member being controlled.

3,498,330
HIGH-SPEED PNEUMATIC VALVE
Walter Griffin Paige, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 27, 1967, Ser. No. 626,261
Int. Cl. F17d 3/00; F16k 31/06
U.S. Cl. 137—625.65 4 Claims



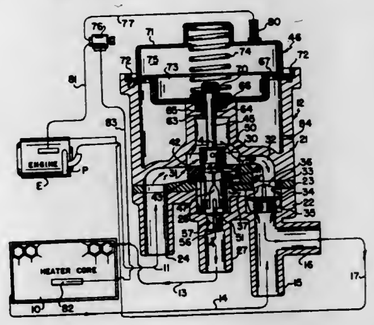
One end of a cylindrical chamber in which a disc valve moves is defined by a threaded plug. In one position the disc valve is seated on the surface of the plug. The distance of travel of the disc valve is adjusted by screwing the plug in and out of the chamber. The surfaces on which the disc valve is seated in its two positions protrude from the ends of the chamber to define annular grooves. These grooves provide a wider passage for the radially moving air passing through the valve without increasing the distance of travel of the valve.

3,498,331
VALVE
Per Olof Grune, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 26, 1967, Ser. No. 678,359
Claims priority, application Sweden, Oct. 28, 1966, 14,827/66
Int. Cl. F17d 1/04; F16k 17/10, 39/04
U.S. Cl. 137—625.66 4 Claims



A valve structure for controlling the flow of high pressure gas comprising a piston having opposing surfaces of generally equal area, exposed to the pressure being controlled; and a second piston connected to control pressures for moving the main piston.

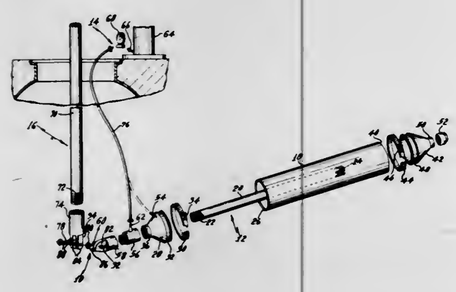
3,498,332
LIQUID FLOW CONTROL VALVE
Arnold T. Lybrook, Lancaster, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Aug. 24, 1967, Ser. No. 663,138
Int. Cl. F16k 31/145; F17d 3/00
U.S. Cl. 137—630.14 4 Claims



A valve body has a chamber therein with a liquid inlet at one side, a liquid outlet at another side and at a different level, and an outlet port at one end. A valve assembly

is moved relative to the port to control the flow of liquid therethrough and when in the flow restricting position, is also adapted to partially block the flow of liquid into the chamber through the inlet opening and when the assembly is in a position to permit relatively unrestricted flow through the outlet port, it is effective to partially block flow of liquid from the chamber through the outlet opening in the side of the chamber. The valve assembly comprises an annular valve closure with a plunger adapted to slide through the central opening and the plunger has a recess in a side thereof which is more or less exposed to opposite sides of the closure member, according to the position of the plunger, to modulate the flow of liquid through the outlet port. The plunger is effective to raise the valve member from its seat when it is moved a predetermined distance in its flow increasing direction.

3,498,333
PIPE PLUG
Frank W. Jones, 642 W. 46th St., Jacksonville, Fla. 32208
Filed Sept. 21, 1967, Ser. No. 669,418
Int. Cl. F16l *55/12*
U.S. Cl. 138—93 **5 Claims**

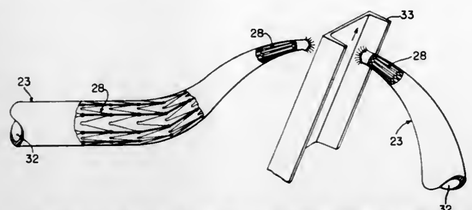


A plug assembly for insertion into a sewer pipe to stop the flow therein including an elongated structural member having opposite end portions and selectively operable inflatable sealing member surrounding the structural member for sealing within the sewer pipe. The plug assembly further includes a handle connected to one structural member end portion by a limited and freely pivotal connection to permit angular changes therebetween whereby the sealing member is readily insertable in and positionable in an end of the pipe from the ground surface thereabove. Control means in the form of stop means are operatively associated with the structural member adjacent the pivotal connection for limiting the included angle between the handle and the structural member to less than 180°.

3,498,334
TREATMENT OF CONCRETE
James H. Pittman, Jr., and Edward E. Runyan, Midland, Tex., assignors to Permian Enterprises, Inc., Midland, Tex., a corporation of Texas
No Drawing. Continuation-in-part of application Ser. No. 554,649, June 2, 1966. This application May 1, 1967, Ser. No. 634,886
Int. Cl. C04b *41/26*
U.S. Cl. 138—145 **20 Claims**

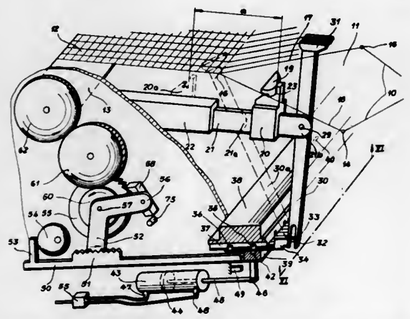
This patent discloses a cement product such as a cement-lined pipe and a process of treating cement with a silicofluoride solution to obtain an acid-resistant surface on the cement.

3,498,335
SELF-CLOSING TUBE
Richard L. Cook, Flagstaff, Ariz., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed June 13, 1968, Ser. No. 736,713
Int. Cl. F16l *11/12, 11/08, 55/10*
U.S. Cl. 138—178 **8 Claims**



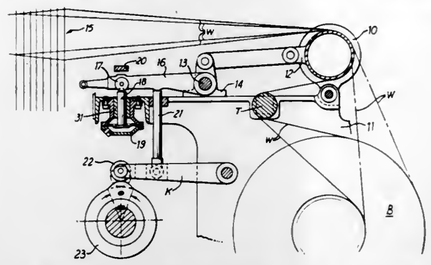
A self-closing tube for use as a fuel line and for carrying other liquids. The various layers of the tube permits high elongation and reduction in tube diameter to completely close off the flow of fluid through the tube before the tube breaks in two or ruptures. The tube has a fluid impervious liner, an interwoven reinforcing sheath surrounding the liner, a stabilizer layer surrounding the reinforcing sheath, and a constrictor sheath which greatly reduces the tube diameter upon extensive elongation of the tube thereby closing off the interior passage within the tube to prevent fluid loss from the tube when it breaks due to excess of elongation.

3,498,336
DEVICE FOR RESUMING WEAVING ON A WAVE WEAVING LOOM
Heinrich Fend, Zurich, Switzerland, assignor to Werkzeugmaschinenfabrik Oerlikon Buhrle & Co., Zurich, Switzerland
Filed June 26, 1968, Ser. No. 740,293
Claims priority, application Switzerland, June 27, 1967, 9,101/67
Int. Cl. D03d *41/00, 49/60*
U.S. Cl. 139—12 **5 Claims**



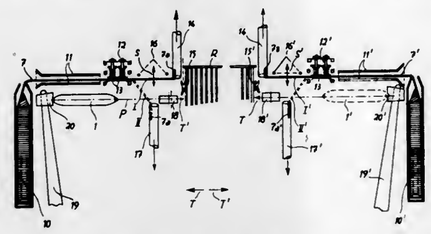
A wave weaving loom having a cloth feed roll and beating-up members forming a beating front serving for the beating up of weft threads against a beat-up line of the cloth. A drive member varies the direction of the weft threads and the direction of the beating front relative to one another. Means are provided connected on one hand to the feed roll and on the other hand to the drive member to control the speed of the drive member depending on the speed of rotation of the feed roll. The means comprise a coupling effective only in one direction of rotation and the drive member is displaceable by means of a source of power acting on the coupling on being displaced in said direction of rotation.

3,498,337
LOOM WARP LETTING-OFF MECHANISM
Thomas Hindle, Blackburn, England, assignor to Hindle, Son & Co. Limited, Blackburn, England
Filed Oct. 17, 1967, Ser. No. 675,817
Claims priority, application Great Britain, Oct. 21, 1966, 47,206/66
Int. Cl. D03d *49/06, 51/00*
U.S. Cl. 139—110 **10 Claims**



An automatic let-off mechanism for a weaving loom in which the backrest of the loom has a part thereof which is movably sensitive to the tension in the warp threads, the part being arranged to control the feed of yarn threads according to its movement.

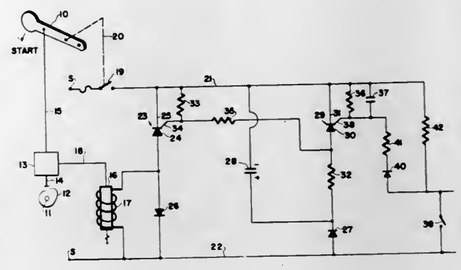
3,498,338
METHOD AND APPARATUS FOR INTRODUCING WEFT THREADS IN WEAVING MACHINES
Volker Lutze, 4173 Nieukerk, Kleine Bleiche, Germany
Filed Jan. 23, 1968, Ser. No. 699,837
Claims priority, application Germany, Jan. 23, 1967, 1,710,290
Int. Cl. D03d *45/00, 41/00*
U.S. Cl. 139—126 **10 Claims**



A method and device for inserting weft threads by means of a reciprocating shuttle. The starting ends of threads wound on a pair of spools on each side of a warp are held by suction in a position exteriorly of the path of travel of the shuttle and are brought in timed relationship to the reciprocation of the shuttle into another position. In this position one thread is taken along by the shuttle and inserted in the warp of the fabric. The thread is then trimmed. During the return flight of the shuttle the other starting end of the thread is taken along in an opposite direction, inserted in the warp and trimmed.

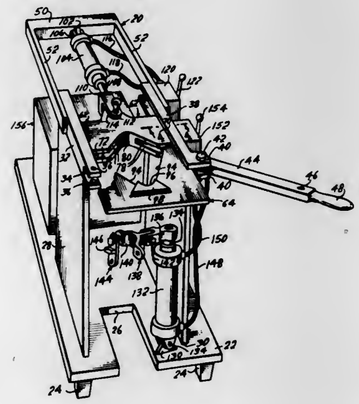
3,498,339
FAIL SAFE WARP STOP CIRCUIT
Charles H. Davis, Greenville, S.C., and Warren A. Barber, Martinsville, and Daniel H. Lambros, Dover, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 30, 1968, Ser. No. 756,451
Int. Cl. D03d *45/10, 49/08*
U.S. Cl. 139—336 **3 Claims**

A circuit is disclosed controlling the energization of the solenoid for actuating the conventional power stop motion of a loom in the event either of power failure or of breakage of warp threads. The circuit is energized from an A.C. source through a switch actuated by moving the loom shipper handle to normal run position. A first controlled rectifier (SCR) supplied by A.C. is triggered into conduction to energize the solenoid responsively to the switch closure. A second SCR supplied by D.C. and normally non-conducting is triggered into latched conduction by actuation of the conventional warp-break drop wires



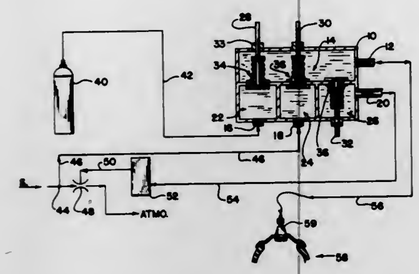
and shunts current away from the gate of the first SCR which stops conducting at first zero anode current to deenergize the solenoid and shut down the loom in conventional manner. The second SCR distinguishes between actual warp breakage and normal transient waving or jiggling of the drop wires by a time delay in the gate circuit. When once fired, the second SCR remains in latched conduction due to the D.C. anode voltage until the shipper is knocked to stop position, which resets the entire circuit.

3,498,340
METHOD AND AN APPARATUS FOR POSITIONING A WIRE ROPE IN A SOCKET
Irving Epstein, 4605 S. Andover, Seattle, Wash. 98118
Filed Feb. 27, 1967, Ser. No. 618,711
Int. Cl. B21f *15/02*
U.S. Cl. 140—113 **12 Claims**



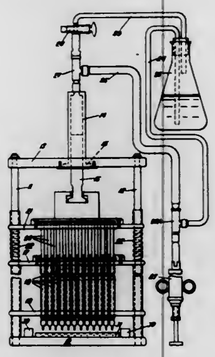
This invention relates to a method and to an apparatus for rapidly positioning the broom of a wire rope in a socket so as to be able to secure the rope in the socket even when exerting considerable pull upon the wire rope to pull it out of the socket.

3,498,341
METHOD AND APPARATUS FOR INFLATING PNEUMATIC TIRES WITH INERT GAS
Lawrence R. Spereberg, 6740 Fiesta Drive, El Paso, Tex. 79912
Filed Sept. 5, 1967, Ser. No. 665,592
Int. Cl. B65b *31/04;* **B60c** *29/00*
U.S. Cl. 141—4 **9 Claims**



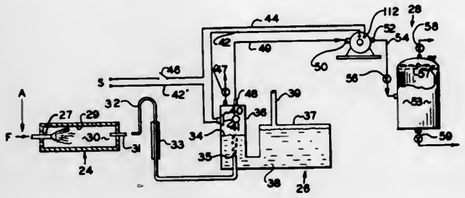
Method and apparatus for inflating the air chamber of pneumatic tires with inert gas, which includes a valve housing having multiple valve means therein, each connected to a common flow line, with a first valve means being connected to a source of inert gas, the second valve means being connected to a source of air pressure, and the third valve means being connected to a source of reduced pressure. The common outlet from the valve housing is connected to the air chamber of a pneumatic tire, and the valve means are sequentially actuated to the opened position to thereby set the beads of the tire, evacuate the air chamber of the tire, and fill the tire with an inert gas, all of which is accomplished in a rapid and orderly manner.

3,498,342
MULTIPLE DROPPERS
Colin John Sanderson, Bardon, Brisbane, Queensland, Australia, assignor to The University of Queensland, Brisbane, Queensland, Australia, a corporation of Australia
Filed May 16, 1968, Ser. No. 729,778
Claims priority, application Australia, May 17, 1967, 21,896/67
Int. Cl. B67c *3/04;* **B67d** *5/52*
U.S. Cl. 141—238 **5 Claims**



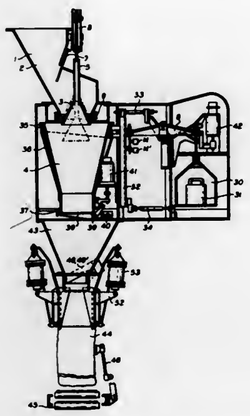
A multiple dropper for supplying equal measured drops of liquid simultaneously, comprises spaced dropper syringes, means actuating the plungers of all syringes in concert, a hydraulic ram for moving said actuating means and a cyclically operable fluid supply means for said ram, successive full cycles of operation of said supply means moving said actuating means successively in the same direction by predetermined equal amounts.

3,498,343
APPARATUS FOR INFLATING PNEUMATIC TIRES WITH AN INERT GAS
Lawrence R. Sperberg, 6740 Fiesta Drive, El Paso, Tex. 79912
Filed Dec. 13, 1966, Ser. No. 601,451
Int. Cl. B01j *7/02;* **B65b** *31/00;* **B60c** *29/00*
U.S. Cl. 141—311 **4 Claims**



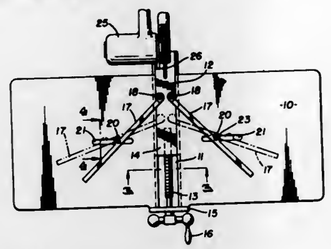
Apparatus and method for the production of an oxygen free compressed inflating agent for pneumatic tires using the products of incomplete combustion obtained from burning fuel and insufficient air together, and compressing the mixture either before or after the combustion process.

3,498,344
APPARATUS FOR FILLING BAGS WITH PREWEIGHED QUANTITIES OF MATERIAL
Paul Schwake and Alfred Bruder, Oelde, Westphalia, Germany, assignors to Haver & Boecker, Oelde, Westphalia, Germany
Filed June 6, 1966, Ser. No. 555,348
Claims priority, application Germany, June 5, 1965, H 56,242; Aug. 11, 1965, H 56,825
Int. Cl. B65b *3/06, 1/06;* **G01g** *13/02*
U.S. Cl. 141—317 **1 Claim**



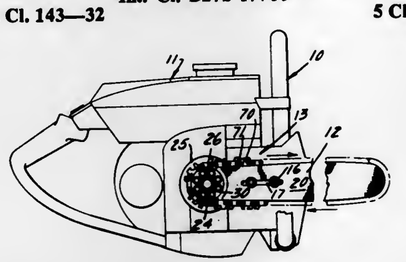
An apparatus for filling bags with preweighed quantities of materials from a bulk supply to be packed within a single bag which is accomplished by gravity flow alone, the feed of the material from the supply hopper into the weighing vessel being controlled according to the position of the weighing scale beam, the flow passing through a conduit to guide the flow of the materials into the bag for containing same, and then into the bag which is held by the clamping device, which defines the bag opening in fixed communicating relation to the intermediate conduit outlet during the filling of the bag.

3,498,345
SIMULTANEOUSLY ADJUSTABLE SAW MOUNT AND MITERING DEVICE
Henry D. Sexton, Columbus, Ohio, assignor to Miter Associates, Ltd., a limited partnership
Filed Aug. 30, 1967, Ser. No. 664,506
Int. Cl. B27b *27/06*
U.S. Cl. 143—6 **3 Claims**



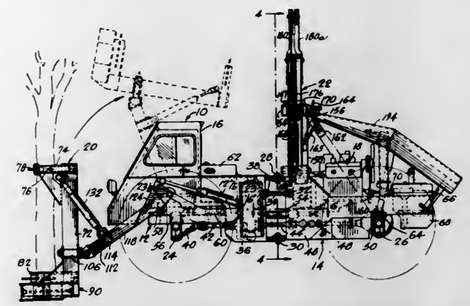
A combined saw mount, preferably for a power saw, and a mitering device which includes guides for properly positioning the material to be cut relative to the saw blade of the saw carried by the mount so as to cut a predetermined angle thereon. The guides are opposed and angularly disposed relatively with the saw mount adapted to position the saw blade at the vertex of the included angle formed therebetween in bisecting relationship therewith. The saw mount and guides are adjustably mounted and connected for simultaneous adjustment so that adjustment of the guides to reproduce a predetermined included angle between the guides also results in simultaneous adjustment of the saw mount thereof so that the saw blade will always be maintained in proper position relative to the vertex of the angle between the guides to bisect that angle so as to cut the material in contact with either of the guides at the exact mitering angle. By positioning two pieces of the material selectively in contact with the opposed guides complemental angles will be cut by the saw blade on the ends of the respective pieces to form an exact mitered corner when the pieces are subsequently joined, with a single previous adjustment of the guides.

3,498,346
SPROCKET AND CHAIN FOR CHAIN SAW
William L. Gasner, Gardena, and Jack W. Ehlen, Torrance, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Oct. 23, 1965, Ser. No. 502,995
Int. Cl. B27b *17/00*
U.S. Cl. 143—32 **5 Claims**



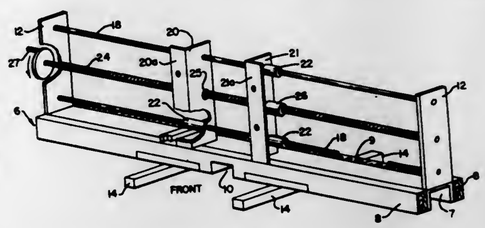
A chain saw including a drive sprocket assembly provided with pockets for receiving drive tangs of a cutter chain. The pockets are provided with converging inlets and diverging discharge passages.

3,498,347
APPARATUS FOR HARVESTING TREES
Rudy Vit, Ste. Therese, Quebec, Canada, assignor to Sicard, Inc., Montreal, Quebec, Canada
Filed Aug. 14, 1967, Ser. No. 660,302
Claims priority, application Great Britain, Apr. 4, 1967, 15,305/67
Int. Cl. B27b *29/00*
U.S. Cl. 144—3 **8 Claims**



The apparatus comprises an articulated vehicle having a front and a rear hinged chassis with a tree grabbing and cutting arrangement mounted on the front chassis and a pair of tree bunching arms on the rear chassis for bunching and holding the cut trees when the vehicle is moving.

3,498,348
WORK-HOLDING CARRIAGE FOR SAW TABLE
Joseph B. Spalding, 145 Armory Hill, Springfield, Ky. 40069
Filed July 17, 1967, Ser. No. 653,968
Int. Cl. B27c *5/06;* **B27f** *1/12;* **B23g** *3/18*
U.S. Cl. 144—133 **1 Claim**

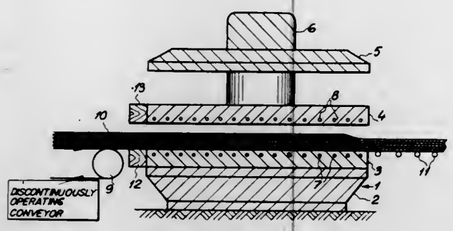


An elongate work-holding carriage having an elongate base removably mounted on a saw table to extend lengthwise through the major vertical plane of the table's rotary saw, and a pair of uprights mounted and spaced along the base to receive and hold (between them) one (preferably both) of the wooden parts used in forming a tongue-and groove joint. The base is arranged on the table for table-guided "slot-cutting" movement transversely toward and away from the cutting edge of the saw.

3,498,349
PRESS FOR GLUING AN ENDLESS MAT OF PILED VENEERS
Olli Heikinheimo, Helsinki, Finland, assignor to Plan-Sell Oy, Helsinki, Finland, a corporation of Finland
Filed Oct. 24, 1967, Ser. No. 677,532
Claims priority, application Finland, Oct. 21, 1966, 2,792/66
Int. Cl. B27d *3/04*
U.S. Cl. 144—281 **4 Claims**

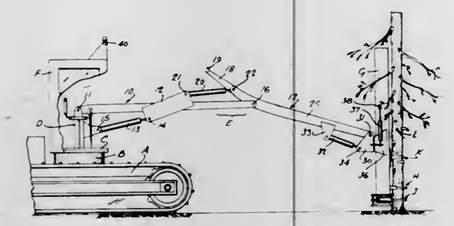
The invention relates to a press for gluing an endless mat of piled veneers, comprising heated press platens form-

ing at least one pressure space, means for discontinuously feeding said mat of veneers into said pressure space, and, after a pressing step, out of the same, said press



platens having on the side adjacent to the incoming mat of veneers extensions consisting at least on their veneer engaging surfaces of a material having poor heat conducting properties.

3,498,350
TIMBER HARVESTING
Edward D. Maradyn, Fort William, Ontario, Canada, assignor to The Northern Engineering & Supply Co., Limited, Fort William, Ontario, Canada
Filed Sept. 26, 1967, Ser. No. 670,567
Claims priority, application Canada, Aug. 15, 1967, 997,887
Int. Cl. B27b *1/00*
U.S. Cl. 144—309 **8 Claims**



A timber harvesting machine and method in which a standing tree is grasped by a tree processing unit tiltably supported on the end of an extensible boom mounted on a vehicle.

The processing unit has a shear mechanism to cut down the tree, a grasping mechanism to hold the tree trunk and a slidable delimbing unit to remove branches. As well as cutting the tree down, the delimbing unit and shear mechanism cooperate to buck the tree into bolts.

The delimbing unit is formed of three blades movable between an open position for receiving the tree trunk and a closed position in which the trunk is fully encircled by the blades.

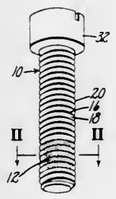
3,498,351
SCREWDRIVER WITH SCREW-GRIPPING JAWS
George Zahnor Edwards and Carolus M. Osborn, Salt Lake City, Utah, assignors to Kedman Company, Salt Lake City, Utah, a corporation of Utah
Filed Dec. 1, 1967, Ser. No. 687,228
Int. Cl. B25b *23/10, 15/02*
U.S. Cl. 145—52 **6 Claims**

A screw-holding screwdriver of the type equipped with gripping jaws for holding screws during driving and removal thereof. Resilient gripping jaws have elongate flat strip extensions, whose ends are secured by means of a press fit between inner and outer collars encircling the shank of the screwdriver and arranged for limited sliding movement therealong. A cylindrical actuator tube slidably encircles the screwdriver shank and the jaw extensions for back and forth movement therealong. The jaw-actuating end of such tube is flattened to approximately



elliptical formation for accommodating outwardly sloped portions of the jaws when forcing jaw contracting. A strip corresponding to but shorter than the jaw extensions and similarly mounted is outwardly turned and received as a stop by a keeper slot in the cylindrical end portion of the actuator tube for limiting movement of such tube in the direction of the gripping jaws.

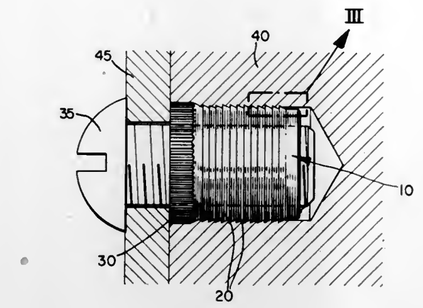
3,498,352
SELF-LOCKING THREADED ELEMENT
Richard J. Duffy, Salem, Mass., assignor to USM Corporation, Boston, Mass., a corporation of New Jersey
Continuation-in-part of application Ser. No. 599,042, Dec. 5, 1966. This application Apr. 5, 1967, Ser. No. 628,683
Int. Cl. F16b *39/24;* **B23g** *9/00*
U.S. Cl. 151—7 **5 Claims**



A self-locking threaded fastener element e.g., a screw including a strongly adhered convexly curved plastic body on its threaded surface. The plastic body has a special configuration allowing smooth assembly and giving strong frictional engagement between the element and a mating threaded surface with which it may be assembled.

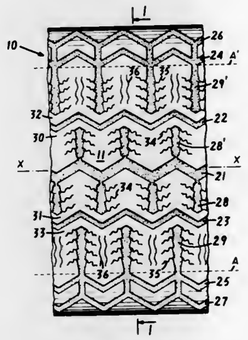
3,498,353
PRESS INSERT
John K. Barry, Springfield, Pa., assignor to Southco, Inc., Lested, Pa., a corporation of Delaware
Filed June 3, 1968, Ser. No. 734,087
Int. Cl. F16b *39/00*
U.S. Cl. 151—41.73 **2 Claims**

An internally-threaded externally barbed hardened metal insert is disclosed designed to be pressed into an untapped drilled or cast hole in softer metal material, such as aluminum, zinc or malleable iron. The barbs are tiny and numerous, a typical barb being .006" high and .015"



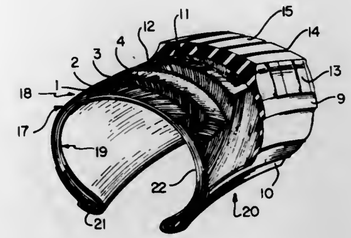
wide and having an approach angle of between 15° and 25°, preferably 22°. Due to spring-back of the softer material, the numerous tiny barbs provide very high pull-out resistance.

3,498,354
RADIAL TIRE
Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie General des Etablissements Michelin Raison Sociale Michel & Cie, Clermont-Ferrand, France
Filed Apr. 24, 1968, Ser. No. 723,835
Claims priority, application France, Apr. 27, 1967, 104,523
Int. Cl. B60c *11/06, 11/08*
U.S. Cl. 152—209 **8 Claims**



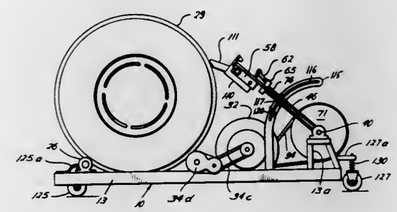
A pneumatic tire cover has a carcass ply of radial cords, at least one ply rigidifying the crown, and a tread. The tread is formed with circumferential and transverse grooves and, on each side of the median plane of the tire, with circumferential ridges extending substantially continuously around the circumference of the tread. Each circumferential ridge is substantially equidistant from the median plane of the tire and one of the edges of the tread and is bordered on one side by a circumferential groove and on the other side by a circumferential row of transverse grooves. In this way, the circumferential ridges are rendered circumferentially extensible.

3,498,355
TIRE HAVING PLIES MADE OF RAYON, POLYESTER, POLYETHYLENE, AND POLYAMIDE
Lawrence R. Sperberg, 6740 Fiesta Drive, El Paso, Tex. 79912
Filed July 9, 1968, Ser. No. 743,501
Int. Cl. B60c *9/14*
U.S. Cl. 152—354 **7 Claims**



A biased constructed tire which uses a high impact energy moisture resistant cord, such as nylon, in the outer ply and a low growth heat resistant material, such as rayon, in the inner ply, with polyester or polyethylene being used as the tire cord material in the plies located between the nylon and rayon plies.

3,498,356
APPARATUS FOR GROOVING TIRES
Roscoe Magers, Houston, Tex., assignor of fifty percent to Lloyd Leo Magers, Warren, Mich.
Filed Oct. 17, 1967, Ser. No. 675,961
Int. Cl. B29h *21/08*
U.S. Cl. 157—13 **8 Claims**

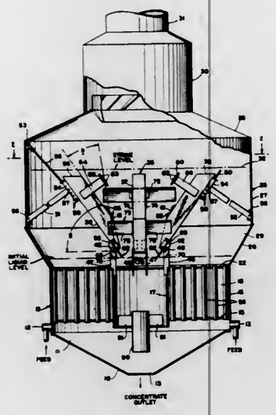


The disclosure is of apparatus for grooving tires. The apparatus has simplified arrangements for advancing the cutter toward and away from the tire, and has provision for easily and accurately removing the groove cutter laterally of the tread face of the tire in order to move the groove to the correct position for cutting a groove. The apparatus may be employed for cutting grooves in both tires of a dual wheel arrangement without removing and remounting the tires and wheel on the apparatus.

3,498,357
INTERNAL CIRCULATION INDUCING SYRUP CONCENTRATING VACUUM PAN
Thomas M. Hamill, P.O. Box 362, Kailua, Hawaii 96734
Filed Aug. 22, 1967, Ser. No. 662,423
Int. Cl. B01d *1/08*
U.S. Cl. 159—27 **6 Claims**

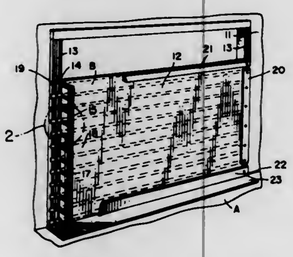
A vacuum pan for concentrating sugar syrups in which a series of angularly disposed ducts extend from immediately beneath the periphery of the strike surface to

positions adjacent the downtake. An additional duct is centrally disposed within the downtake and protrudes into



the conical bottom chamber of the pan to insure the continuous circulation of even the more heavily concentrated product.

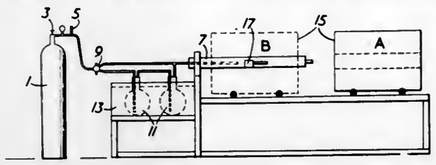
3,498,358
FREIGHT VEHICLE CLOSURE
William E. Bruning, Omaha, Nebr., assignor of one-half to International Paper Company, New York, N.Y., a corporation of New York, and one-half to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Mar. 12, 1969, Ser. No. 806,496
Int. Cl. A47h *15/00, 3/00;* **E04c** *5/16*
U.S. Cl. 160—368 **2 Claims**



A freight vehicle closure especially useful for grain-carrying boxcars where the doorway closed by the sliding storm doors is additionally closed temporarily by a strap-equipped temporary door, the door being anchored to slot-equipped metal nailing posts where the posts are equipped with retainer bars for taking the sideward bearing of the securing nail.

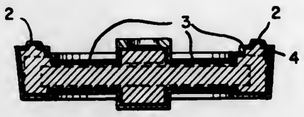
3,498,359
MOULDS FOR USE IN METAL CASTING
Adam Dunlop, Rotherham, England, assignor, by mesne assignments, to Imperial Metal Industries (Kynoch) Limited, Birmingham, England, a British company
Filed Mar. 8, 1967, Ser. No. 621,680
Claims priority, application Great Britain, Mar. 9, 1966, 10,282/66; Mar. 19, 1966, 12,217/66
Int. Cl. B22c *3/00*
U.S. Cl. 164—14 **4 Claims**

A process for making a mould for use in casting highly reactive metals such as titanium and zirconium in which the mould is impregnated with pure carbon by heating



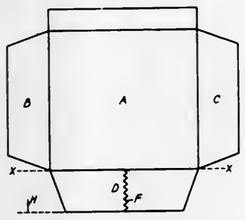
the mould in an atmosphere containing a hydrocarbon gas or vapor.

3,498,360
METHOD OF CASTING IN A MOLD WHICH IS COATED DURING CASTING
Adalbert Wittmoser, Lampertheim, Germany, Johannes Schade, Petit-Lancy-Geneva, Switzerland, and Erich Krazyzanowski, Ludwigshafen (Rhine), Germany, assignors, by mesne assignments, to Full Mold Process, Inc., Lathrup Village, Mich., a corporation of Delaware
Application July 30, 1963, Ser. No. 298,676, now Patent No. 3,314,116, dated Apr. 18, 1967, which is a continuation-in-part of application Ser. No. 270,085, Apr. 2, 1963. Divided and this application Nov. 1, 1966, Ser. No. 615,866
Int. Cl. B22c *9/04*
U.S. Cl. 164—47 **5 Claims**



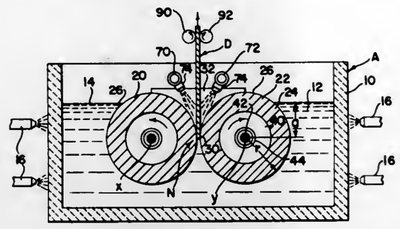
A method of casting, comprising the steps of forming a pattern which is gasifiable substantially without residue when subject to a molten casting charge, and which is shaped for exact reproduction as a casting, covering the surface of the pattern with a layer of gas permeable refractory material suspended in a liquid, drying said material, embedding the covered pattern in a mold body, providing in the mold body and the layer a passage for a molten casting charge, and pouring into the passage a molten casting charge to gasify and replace the embedded pattern in the mold body.

3,498,361
IN-MOULD INOCULATION OF CAST IRON
Clifford Hall, 285 Long Acre Nechells, Birmingham 7, England
Filed July 8, 1966, Ser. No. 563,845
Claims priority, application Great Britain, July 19, 1965, 30,606/65
Int. Cl. B22d *27/18*
U.S. Cl. 164—56 **6 Claims**



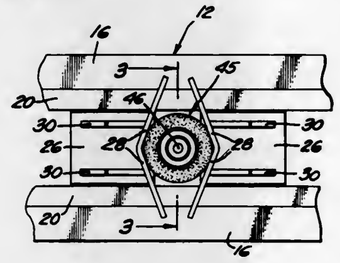
In casting molten iron, a block of additive composition is placed in the mould prior to pouring. The additive is ferrosilicon dispersed in a wax or wax-like substance such as stearic acid.

3,498,362
METHOD OF FORMING CONTINUOUS ELEMENTS FROM MOLTEN METAL
John C. Lewis, Hamilton, Wentworth, Ontario, Canada, assignor to Park-Ohio Industries, Inc., a corporation of Ohio
Filed Mar. 9, 1967, Ser. No. 621,876
Int. Cl. B22d *11/06*
U.S. Cl. 164—87 **1 Claim**



Two closely spaced, cooled rolls are rotated in a bath of molten metal with the nip between the rolls being below the upper level of the molten metal so that the hydrostatic pressure on the molten metal forces the metal between the rolls where it is solidified and conveyed away as a continuous, self-sustaining element.

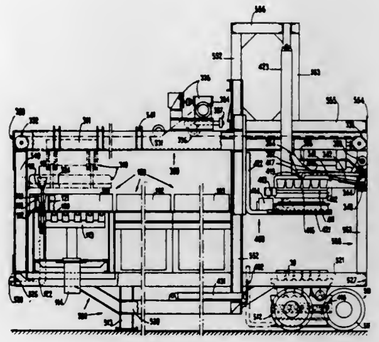
3,498,363
METHOD OF MAKING BEARING FOR INDUSTRIAL TRUCK WHEEL
Wilfried K. Spindler, 16652 Queenside Drive, Covina, Calif. 91722
Filed June 27, 1967, Ser. No. 649,178
Int. Cl. B22d *19/08*
U.S. Cl. 164—112 **1 Claim**



A poured-in-place babbitt metal bearing for the wheel of an industrial truck of the type used in food processing industries, where bearings are exposed to severe corrosion due to frequent washing and steam-cleaning, and exposure to organic acids and processing chemicals. Babbitt metal is poured into the bearing cavity in the hub of the wheel, with a molded-in central bore of a diameter to receive the axle shaft. Bearing is locked to the wheel hub by means of a local discontinuity in the surface of the cavity, which is embedded in the babbitt metal.

3,498,364
MACHINE FOR CASTING AND STACKING INGOTS
Jacques Chambran, Tarascon sur Ariege, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques
Filed Dec. 6, 1966, Ser. No. 599,605
Claims priority, application France, Dec. 7, 1965, 41,149; Jan. 6, 1966, 45,036; Aug. 11, 1966, 72,779
Int. Cl. B22d *47/02, 9/00*
U.S. Cl. 164—269 **17 Claims**

A machine for casting and stacking ingots which includes a casting zone embodying a group of ingot molds with means for pouring molten metal into the molds, means for cooling the molds and means for removal of the cast ingots from the molds; a conveyor for transportation of the ingots released from the molds to a stacking zone including a gripper capable of gripping the entire group of ingots removed from a single group of ingot



molds and means which cooperate with the conveyor to displace the group of ingots into side by side relationship in a row; and a stacking zone which includes a table on which the ingots are stacked and in which the table is mounted for rotational movement so that the table can be turned through an angle of 90° after stacking each row of ingots.

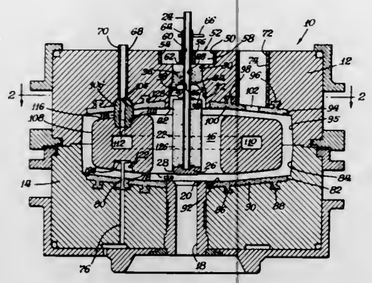
3,498,365
CASTING MOLD INCLUDING CELLULAR PLASTIC PATTERN WITH FLAME-PREVENTATIVE MATERIAL
Adalbert Wittmoser, Hesse, Germany, assignor to Full Mold Process, Inc., Milwaukee, Wis., a corporation of Delaware
No Drawing. Filed Feb. 18, 1965, Ser. No. 433,766
Claims priority, application Germany, Feb. 29, 1964, G 39,981
Int. Cl. B22c *7/00*
U.S. Cl. 164—349 **6 Claims**

1. In a casting arrangement, in combination,
a molding material having embedded therein a body consisting essentially of a cellular plastic pattern having substantially the configuration of an article to be cast and adapted to be gasified at the elevated temperature of the molten casting charge which is to be cast to form said article, said cellular plastic pattern having distributed therethrough from 5% to 30% by weight of a flame-preventative material.

3,498,366
GRAPHITE MOLD HAVING RESIN-BONDED SAND PORTIONS
Robert Edward Merrick and Donald Christensen, Chicago, Ill., assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Aug. 5, 1966, Ser. No. 570,628
Int. Cl. B22c *1/22, 9/10;* **B22d** *27/04*
U.S. Cl. 164—368 **4 Claims**

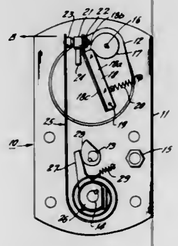
A graphite mold for casting ferrous articles having a portion thereof formed of resin-bonded sand to provide

improved surface conditions of the cast articles and to produce articles having chilled wear surfaces at the



graphite contacting portions thereof and softer surfaces at the sand contacting portions thereof.

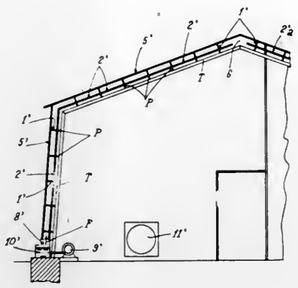
3,498,367
CYCLICALLY OPERATIVE TEMPERATURE CONTROL MEANS
Donald I. Bohn, Asheville, N.C., assignor to Bohn and Jensen, Inc., Malvern, Pa., a corporation of Pennsylvania
Filed July 10, 1967, Ser. No. 652,122
Int. Cl. H01h *37/12, 37/52*
U.S. Cl. 165—26 **7 Claims**



A thermostatic control means is constructed with a pair of cooperating contacts one of which is carried by a temperature responsive bimetal element and the other carried by a follower arm biased into engagement with a cam wheel that is in continuous rotation at uniform angular velocity and acts to drive the contacts toward engagement. The cooperating contacts are constructed of material having relatively high magnetic permeability and a permanent magnet, whose flux field extends through the cooperating contacts, is provided for achieving contact engagement with snap action. The cooperating contacts are connected in the gating circuit of a bidirectional controllably conductive solid state device having its main electrodes connected in series circuit with the main operating control for the heating or cooling device being controlled by the thermostatic control means.

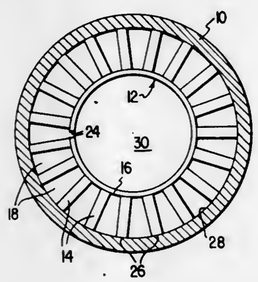
3,498,368
DOUBLE-WALLED CONSERVATORY
Maxime Albert Conangle, Alpes-Maritimes, La Suve, Vence, France
Filed Nov. 22, 1967, Ser. No. 685,066
Claims priority, application France, Feb. 13, 1967, 94,759
Int. Cl. F24h *9/08;* **F24f** *3/14, 7/00*
U.S. Cl. 165—53 **4 Claims**

A conservatory for horticultural purposes provided with a double glass wall forming a jacket into which hot or cold air and/or water is injected so as to adjust the temperature of the conservatory to the desired value. The heating or cooling water is caused to flow over the inner glass wall and is preferably recycled. Air, advan-



tageously moistened to the desired extent, can pass out of the jacket into the conservatory through an opening provided at the upper end of the inner glass wall.

3,498,369
HEAT PIPES WITH PREFABRICATED GROOVED CAPILLARIES AND METHOD OF MAKING
William J. Levedahl, Baltimore, Md., assignor to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed June 21, 1968, Ser. No. 738,905
Int. Cl. F28d *15/00;* **B21d** *53/02;* **F25b** *15/00*
U.S. Cl. 165—105 **5 Claims**

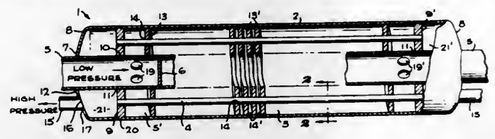


A prefabricated, flexible, grooved capillary structure inserted within a heat pipe enclosure to conform to the heat pipe cross-sectional configuration.

3,498,370
HEAT EXCHANGER
Joseph E. Baggs, 5331 Harvard Ave., Westminster, Calif. 92683
Filed May 6, 1968, Ser. No. 749,893
Int. Cl. F28d *7/12*
U.S. Cl. 165—156 **6 Claims**

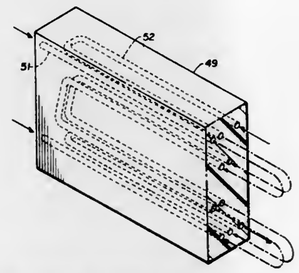
Heat exchanger comprising an outer casing, a core member disposed axially within the casing, a spiral sheet positioned within the casing in the annular space between the inner wall of the casing and the core member, such spiral sheet extending axially of the casing, and a plurality of tubes positioned through the spiral sheet and disposed in an axial direction in said annular space in the casing. A fluid inlet is provided to the tubes which define a first

fluid path, and a fluid outlet is provided at the opposite ends of the tubes, and a fluid inlet is also provided to the annular space between adjacent spirals of the spiral



sheet which defines a second fluid path, and a fluid outlet is provided therefrom. The resulting heat exchanger has improved effectiveness and efficiency, and is of relatively low cost and provides high reliability.

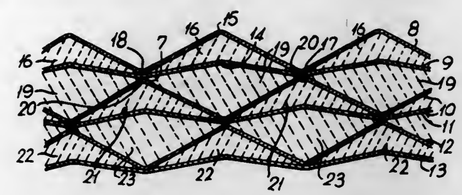
3,498,371
HEAT TRANSFER DEVICE
Alfred E. Zygiel, 2510 Hillsboro, Dallas, Tex. 75228
Filed June 12, 1967, Ser. No. 645,436
Int. Cl. F28d *7/02;* **F28f** *3/12;* **B29c** *17/04*
U.S. Cl. 165—164 **9 Claims**



Heat transferring apparatus cast from a resinous metallic composition and having a plurality of passages formed therein. The resinous metallic composition includes a base material, such as an epoxy resin, mixed with a solidifying hardener and metallic particles to enhance the heat transferring abilities of the solidified resin. Individual heat exchanger passages are formed by pressurizing flexible tubing arranged in the desired configuration during the solidifying process of the resinous metallic composition.

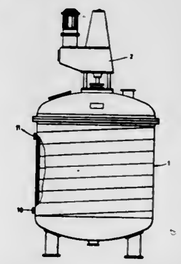
3,498,372
HEAT EXCHANGERS
Thomas Dlery Patten, Edinburgh, Scotland, and John Leslie Collins, Kings Heath, Birmingham, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Apr. 10, 1968, Ser. No. 720,112
Claims priority, application Great Britain, Apr. 14, 1967, 17,365/67
Int. Cl. F28f *3/00*
U.S. Cl. 165—166 **8 Claims**

A heat exchanger matrix made of superimposed plates each embossed with a regular pattern of pyramid-shaped projections interspersed with indentations. These are called "Type I plates." The plates are in pairs with the projections of one plate of the pair (the deep plate) being deeper than those of the other (the shallow plate). Viewed from the side of, and looking down upon, the projections, the shallow plate lies beneath the deep plate with the crests of the projections aligned so that the crests of the shallow plate are convex towards the undersides of the projections of the deep plates. The next pair below 13 displaced laterally of the direction of fluid flow between the plates by half the crest-to-crest pitch of the projections so that the two pairs meet with the space beneath each projection of a shallow plate of the pair opposite to an indentation of the deep plate of the pair below. Thus the cross-sectional area of the fluid flow path between the plates of a pair is less than that between adjacent pairs of plates. In a first form of matrix the projec-



tions of the plates are interspersed with indentations of complementary shape so that each base side of a projection is coincident with a base side of an adjacent indentation. The plates of a pair are identical except for the heights and depths of the crests of the projections and indentations from a common media plane.

3,498,373
CONTAINER FOR LIQUIDS TO BE HEATED OR TO BE COOLED
Werner Lughausen, Hoffnungsthal, Germany, assignor to E. Gessner KG., Chem. Apparatebau, Bensberg-Untereschbach, Germany, a corporation of Germany
Filed Nov. 20, 1967, Ser. No. 684,345
Claims priority, application Germany, Feb. 15, 1967, G 36,454
Int. Cl. F28f *3/12*
U.S. Cl. 165—169 **2 Claims**

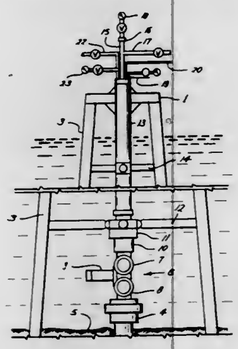


A heat exchange container structure formed from extruded sectional bar material having closed and semicylindrical channels on both sides thereof with lateral flanges helically wound in abutting relationship to define a container for liquids to be heated or cooled.

3,498,374
UNDERWATER SAFETY CONNECTOR
Andre H. Drouin, Houston, Tex., assignor to Rockwell Manufacturing Company, Houston, Tex., a corporation of Pennsylvania
Filed Nov. 14, 1967, Ser. No. 682,765
Int. Cl. E21b *7/12, 41/00;* **F16l** *35/00*
U.S. Cl. 166—.5 **15 Claims**

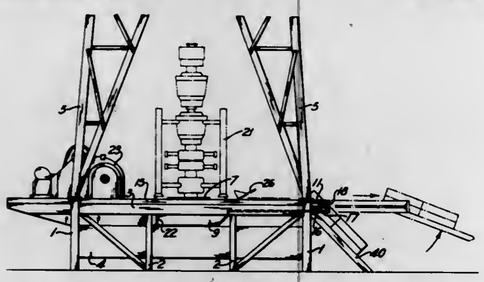
A safety connector for connection between an underwater wellhead in an oil or gas well and its production platform. The connector comprises two main parts which are connected just above the underwater Christmas tree. The lower part is rigidly connected to the tree or made integral therewith. The upper part is connected to the support members of the platform. The lower part of the safety connector is bored to provide for tubing runs and access to casing annulus if desired. The upper portions of these bores are enlarged to receive a mating nipple screwed into the upper part of the safety connector. The

upper face of the lower part has groups of hydraulic sockets arranged at approximately 90 degree intervals around the face. Each group contains a number of sockets equal to the number of hydraulic functions performed at the Christmas tree. The sockets representing the same hydraulic function in each group are connected by suitable cross-drilling. The upper part of the safety connector has nipples substantially shorter than the tubing run nipples, which register with the hydraulic sockets of the lower part. All nipples are solid except for the ones in line with hydraulic runs which run to hydraulic fail-safe operators of the Christmas tree valves. The upper part of the safety



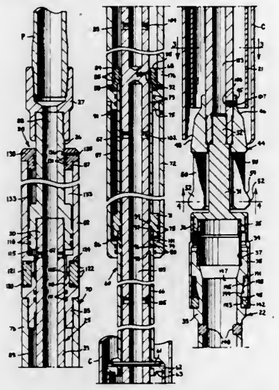
connector includes connection means for production tubing and hydraulic lines which extend to the platform above water. An outside marine riser may also be connected to the upper part for extension to the platform. The mating upper and lower parts of the safety connector are connected by studs and nuts in a flanged connection. These studs and nuts are of a selected material whose yield and ultimate strength are very close to their normal load. No equipment below the safety connector is connected to the platform legs or braces. Only the upper part of the safety connector and above equipment are anchored to the platform and are subject to the stresses therein.

3,498,375
OIL WELL DERRICK SUBSTRUCTURE WITH BLOWOUT PREVENTER DOLLY
John D. McEwen, South Pasadena, Calif., and Robert B. Donnally, Tulsa, Okla., assignors to Lee C. Moore Corporation, Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 4, 1968, Ser. No. 695,648
Int. Cl. E21b *33/06, 3/04*
U.S. Cl. 166—79 **10 Claims**



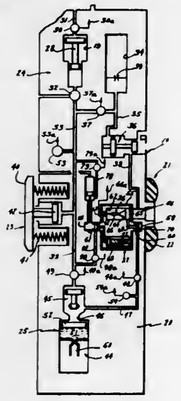
A removable rotary table support is normally mounted on the central area of the structural steel framework of an oil well derrick substructure. Also normally mounted on the framework at one side of the central area is a blowout preventer dolly which can be moved into the central area after the rotary table support has been removed therefrom.

3,498,376
WELL APPARATUS AND SETTING TOOL
Phillip S. Sizer, 14127 Tanglewood Drive, Dallas, Tex. 75234, and Harry E. Schwegman, 2500 Bighorn Lane, Richardson, Tex. 75080
Filed Dec. 29, 1966, Ser. No. 605,870
Int. Cl. E21b *3/04, 43/10, 43/00*
U.S. Cl. 166—120 **17 Claims**



A method of completing a well by installing in the well a flow conductor, performing various operations such as cementing the flow conductor in the well bore, drilling out excess cement from the flow conductor, perforating the casing at desired locations, and the like, installing a liner in the flow conductor of smaller internal diameter than the internal diameter of the flow conductor to provide an internal seal surface and oppositely facing stop shoulders in the flow conductor, setting a packer in the liner, and then installing an inner production flow conductor in the well and securing it to the packer. A setting tool for simultaneously locating a liner and a packer in a flow conductor, expanding the liner into sealing and anchored engagement in the flow conductor and then setting the packer in the liner.

3,498,377
WELL COMPLETION METHODS AND APPARATUS
Ulrich E. Voetter, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Aug. 1, 1968, Ser. No. 749,421
Int. Cl. E21b *43/11, 47/06*
U.S. Cl. 166—250 **4 Claims**



This application discloses new and improved methods and apparatus for testing earth formations traversed by

a cased well bore and then reliably plugging the resultant perforations in the casing when the tests are completed.

3,498,378
OIL RECOVERY FROM FRACTURED MATRIX RESERVOIRS
Herbert L. Stone, Houston, John W. Graham, Bellaire, and Robert J. Blackwell, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed June 9, 1967, Ser. No. 644,897
Int. Cl. E21b *43/20*
U.S. Cl. 166—263 **6 Claims**

A method for recovering oil from fractured matrix reservoirs using cyclic pressure waterflooding and rendering the surface of the rock matrix oil-wet prior to the production phase.

3,498,379
FLOODING METHOD FOR RECOVERING PETROLEUM EMPLOYING AQUEOUS SOLUTION OF HYDROCARBON SULFONATE
Charles L. Murphy, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 28, 1968, Ser. No. 755,799
Int. Cl. E21b *43/22*
U.S. Cl. 166—275 **8 Claims**

This specification discloses a method for recovering petroleum from a petroliferous subterranean formation by passage through the formation of an aqueous solution of a hydrocarbon sulfonate. The aqueous solution contains 2–20 percent by weight of sodium carbonate, sodium tripolyphosphate, tetrasodium pyrophosphate, or sodium borate. Further, the aqueous solution must contain not more than 0.5 percent by weight of sodium chloride.

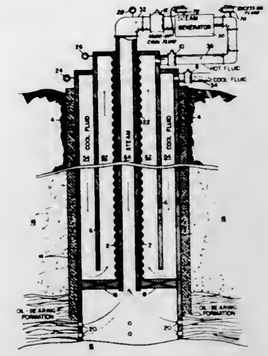
3,498,380
METHOD FOR PLACING GRAVEL PACKS
Derry D. Sparlin, Ponca City, Okla., and William C. Bond, Casper Wyo., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 647,597, June 21, 1967. This application Mar. 28, 1969, Ser. No. 811,678
Int. Cl. E21b *43/04*
U.S. Cl. 166—278 **13 Claims**

A method of gravel packing a well comprising pumping into the well at a low pump rate a slurry of a high concentration of finely divided solid particulate matter, such as gravel, suspended in a viscous carrier liquid.

3,498,381
METHOD FOR INJECTION OF HOT FLUIDS INTO AN UNDERGROUND FORMATION
Robert C. Earlougher, Jr., Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed July 25, 1968, Ser. No. 747,726
Int. Cl. E21b *43/24*
U.S. Cl. 166—303 **12 Claims**

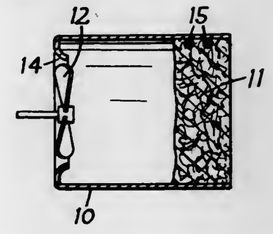
The thermal efficiency of a hot fluid injection system for the recovery of hydrocarbons from subterranean oil-bearing formations is improved by inserting two or more concentric tubular strings within a casing wherein hot fluids are injected into a first tubing string which is in fluid communication with the oil-bearing formation, and a second tubing and the annular space between the well casing and the outer tubing is partitioned from the oil-bearing formation by a packer or other means so that a cool fluid may be injected into the outer tubing-casing annulus and returned to the surface through the second tubing. As the cool fluid approaches the surface through the second tubing string its enthalpy is increased by heat transfer from the hot injected fluids through the first tubing string.

The cool fluid circulation system described above serves to insulate the injected hot fluids from the formation as



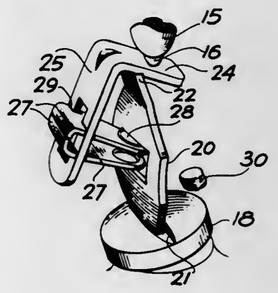
well as act as a preheater of fluids for the production of hot fluids on the surface.

3,498,382
FIRE FIGHTING APPARATUS
Kenneth A. Rust, London, England, assignor, by mesne assignments, to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York
Filed June 7, 1967, Ser. No. 644,127
Int. Cl. A62c *35/00*
U.S. Cl. 169—15 **1 Claim**



A high expansion foam generator comprises a fan and mesh at opposite ends of a wind tunnel. Within the mesh there are a pair of pipes for supplying a foam generating liquid mixture throughout the mesh.

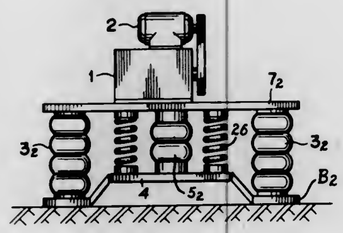
3,498,383
CENTER STRUT SPRINKLER ASSEMBLY
Theodore Vorkapich, Campbell, Ohio, assignor to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 15, 1967, Ser. No. 690,957
Int. Cl. A62c *37/12*
U.S. Cl. 169—39 **3 Claims**



A fire extinguishing sprinkler including a frame having a discharge orifice and a deflector spaced with respect

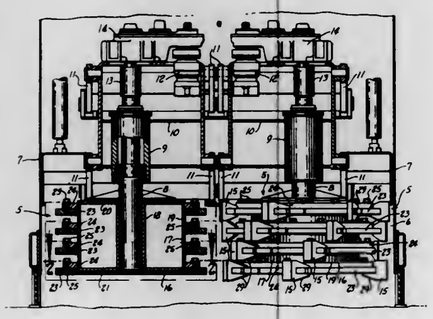
thereto, a cap on said discharge orifice and levers positioned between said frame and said cap and a pair of spaced sears engaging openings in said levers so as to hold said levers in assembly, said sears normally held in spaced relation by a fusible element.

3,498,384
VIBRATORY IMPACT DEVICE
Tatsuo Ogura, Icikawa, Japan, assignor to Chyugoku Kogyo Kabushiki Kaisha, Hiroshima City, Japan, a corporation of Japan
Filed Nov. 8, 1966, Ser. No. 592,925
Int. Cl. E02d *3/04;* **E01c** *19/38;* **F16h** *33/20*
U.S. Cl. 172—40 **1 Claim**



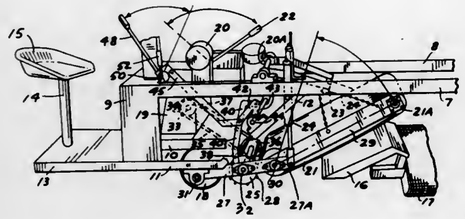
A vibratory impact device having two degrees of freedom in which a vibratory body and a resonating member with an integral impacting member are mounted on a base and two groups of respective springs are mounted between the base and the vibrating body and the resonating member whereby the output of the impacting member may be substantially increased due to the resonance, while the amplitude of vibration of the vibrating body may be kept close to zero by regulation of the spring constants of the springs.

3,498,385
CUTTING TOOL WITH DETACHABLE BLADE MEANS
Dean B. Chenoweth, Minneapolis, Minn., assignor to RayGo, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 12, 1968, Ser. No. 698,685
Int. Cl. A01b *77/00, 33/06*
U.S. Cl. 172—111 **11 Claims**



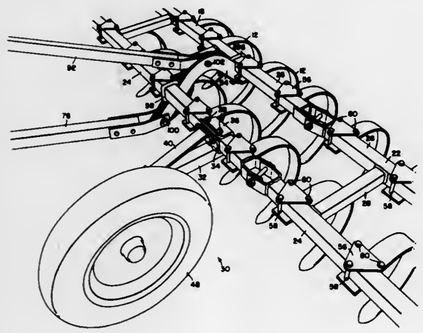
A cutting tool comprises a flat blade detachably but firmly mounted on a carrier without screw threaded fasteners. A number of such carriers fixed to a rotatable shaft provide a rotary cutting unit in which groups of angularly equispaced blades are mounted on each carrier with the blades of each group angularly offset with relation to the blades of the other groups.

3,498,386
STARTING ROLLER CONTROLS FOR SOD ROLLING MACHINE
Robert C. Daymon, 7450 Weller Road, Gregory, Mich. 48137
Continuation-in-part of application Ser. No. 577,067, Sept. 2, 1966. This application June 7, 1967, Ser. No. 644,307
Int. Cl. A01b *45/00, 29/00*
U.S. Cl. 172—19 **6 Claims**



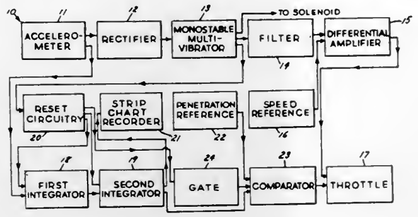
This application discloses means for adjusting the position of the starting roller of a sod rolling machine. The invention resides in means for making micromatic adjustment of the starting roller of the sod rolling machine so that proper relative positions may be effected between the starting roller and the ground. Other and remote control means are also provided, whereby the starting roller may be quickly lifted out of operating positions.

3,498,387
FIELD CONDITIONER
Robert Richard Roth, Rock Island, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 670,993
Int. Cl. A01b *63/102, 65/06, 35/06*
U.S. Cl. 172—456 **5 Claims**



An agricultural implement having a center section and pivoted outrigger sections, all of the sections being shiftable by hydraulic means about a transverse axis from a normal working position to a field transport position, and subsequently about upwardly and rearwardly extending axes to a folded transport position.

3,498,388
PILE DRIVING SYSTEM
Arthur Jovis, New York, N.Y. (1501 Undercliff Ave., Bronx, N.Y. 10453)
Filed Dec. 5, 1967, Ser. No. 688,184
Int. Cl. E21c *3/24;* **E02d** *5/34;* **G01n** *3/42*
U.S. Cl. 173—2 **9 Claims**

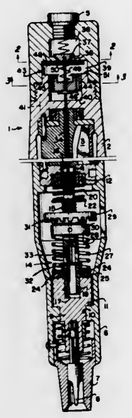


System: automatically controlling the pile driver, utilizing Engineering News formula

$$\left(P=\frac{2E}{S+C}\right)$$

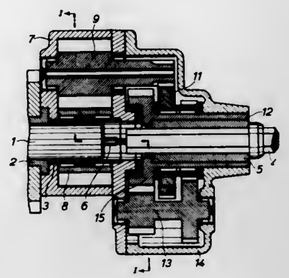
marking the penetration per hammer blow on the pile; and keeping a permanent record of operation.

3,498,389
AUTOMATIC THROTTLE TORQUE-RESPONSIVE POWER TOOL
David W. Tibbott, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 3, 1968, Ser. No. 742,281
Int. Cl. B23q *5/06;* **F01c** *21/14*
U.S. Cl. 173—12 **12 Claims**



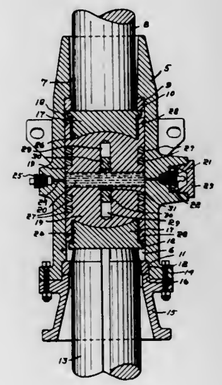
A fluid-operated rotary power tool having a motor supply valve means including first and second valves interconnected together for simultaneous movement. The valve means is movable from a first position to a second position wherein the first valve is open to admit motive fluid to the motor and to a third position wherein the second valve is closed to shut off the motive fluid. The valve means moves to the third position in response to the tool reaching a predetermined torque load.

3,498,390
ROCK DRILL
Pekka Mauno Salmi, Kuninkaankatu 36 A 25, Tampere, Finland
Filed July 17, 1968, Ser. No. 745,537
Claims priority, application Finland, Jan. 16, 1968, 107/68
Int. Cl. B25d *9/04, 17/22;* **E21c** *1/12*
U.S. Cl. 173—105 **2 Claims**



The present invention concerns a rock drill comprising an axial, percussion piston which strikes the rear end of a drill rod, and a gear motor, operated by fluid under pressure, for imparting rotation to the drill socket located at the front end of the rock drill and to the drill rod inserted in the latter, and a gear transmission for reducing the speed of the motor to a value appropriate for the drill rod, the motor and transmission having been placed at the front end of the rock drill. The invention is characterized in that of the two gears of the gear motor one gear surrounds the percussion piston or the drill rod.

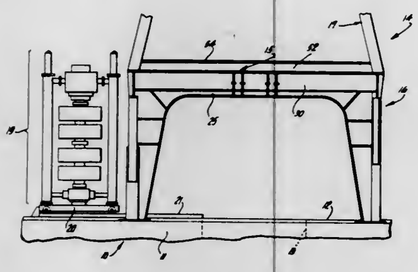
3,498,391
HYDRAULIC CUSHION BLOCK AND IMPACT TYPE PILE DRIVING HAMMERS
Charles L. Guild, 100 Water St., East Providence, R.I. 02914, and Willard B. Goodman, 5 Larkspur Drive, Belleville, Ill. 62221
Filed Oct. 24, 1968, Ser. No. 770,345
Int. Cl. E02d *7/02;* **E02f** *3/04*
U.S. Cl. 173—131 **7 Claims**



Hydraulic cushion blocks for pile driving hammers of the impact type are disclosed, each block having a cylinder in which upper and lower heads are slidably confined, the upper head for engagement by the ram point,

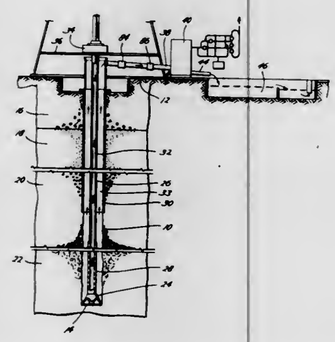
the lower head for engagement with the pile. A pair of anvils are slidably sealed in the cylinder and confine a fluid body between them. The outer face of each anvil is in engagement with the inner face of an appropriate one of the heads, one engaged face being concave and the other convex.

3,498,392
DRILLING RIG FLOOR STRUCTURE
Gordon Dayton Knorr, Long Beach, Calif., assignor to Global Marine Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 7, 1968, Ser. No. 735,365
Int. Cl. E21b *7/12, 15/02;* **E21c** *19/00*
U.S. Cl. 175—5 **22 Claims**



A drilling rig floor structure, especially useful in offshore drilling installations, in which a power operated hinged door extends from an edge of the floor to a rotary table which is retractably mounted in the center of the floor. Hinging of the door and retraction of the rotary table relative to the stationary portion of the floor provides an access passage from the side to the center of the floor through which may be moved a blowout preventer stack or the like.

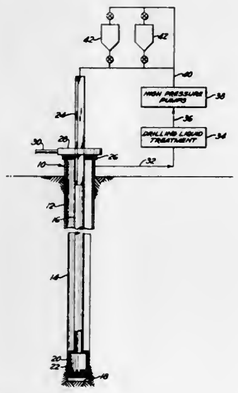
3,498,393
WELL CONTROL METHOD
Alfred Gordon West, Chester M. Harden, and Clyde E. Pearce, Midland, Tex., assignors to W&H Production-Drilling, Inc., Midland, Tex., a corporation of Texas
Filed Sept. 26, 1967, Ser. No. 670,559
Int. Cl. E21b *21/04;* **E21c** *7/08*
U.S. Cl. 175—48 **2 Claims**



A method is provided for preventing blowouts during drilling of an oil or gas well, which includes circulating a drilling fluid down the borehole, the drilling fluid absorbing gas from the strata being cut by the drill bit. The returning drilling fluid is passed into a separator wherein the gas is separated from the drilling fluid. The flow rate of the gas is continuously measured and from the results of the flow rate measurements the porosity of the formation and bottom hole pressure of the well are indicated. Since it is generally necessary to keep the hydrostatic head somewhat greater than the bottom hole pressure, the hydrostatic head is then adjusted by increasing or decreasing the density of the drilling fluid.

Apparatus is provided for measuring the gas flow rate from the separator which includes a plurality of parallel pipes of differing sizes. Each pipe has a flow rate detector, and suitable valves are included for passing the gas flow into whichever pipe is desired, depending on the flow rate. If the flow rate is great, a large pipe is used; if the flow rate is small, a small pipe is used.

3,498,394
ASBESTOS-LADEN DRILLING FLUID AND USE THEREOF IN HYDRAULIC JET DRILLING
Robert J. Goodwin, Oakmont, and William K. Meyer, Indiana Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 711,932
Int. Cl. E21b *7/18*
U.S. Cl. 175—67 **8 Claims**

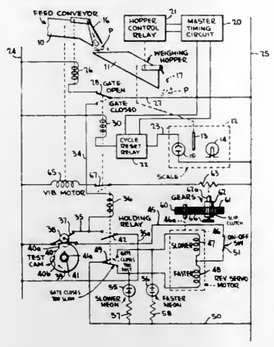


A drilling liquid capable of suspending ferrous abrasives and characterized by a low pressure drop on flowing through pipe. The drilling liquid comprises clay solids, asbestos fibers and ferrous abrasive particles suspended in water. To increase to an acceptable range the ability of the drilling liquid to suspend ferrous abrasive particles, the drilling liquid is sheared by passing it through a nozzle at a velocity causing a pressure drop through the nozzle of at least 4,000 p.s.i.

3,498,395
AUTOMATIC FEED CONTROL FOR HIGH SPEED WEIGHING
Nelson R. Henry, Decatur, Ga., assignor to The Woodman Company, Inc., Decatur, Ga., a corporation of Georgia
Filed Mar. 17, 1967, Ser. No. 623,900
Int. Cl. G01g *9/00, 17/00, 19/00*
U.S. Cl. 177—1 **14 Claims**

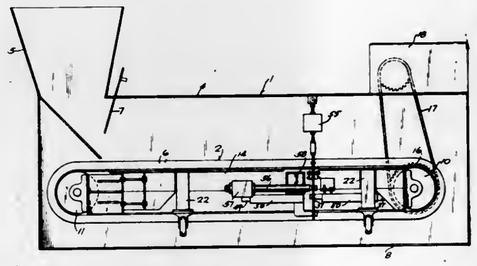
An apparatus and method for detecting the direction for a desired feed rate correction in a high speed weighing operation and applying a fixed correction during a feed rate correction period of each cycle. The correction is determined by a test cam having a fixed dwell period

operating a microswitch connected to a reversible servo motor for ultimately controlling the speed of the feed conveyor; the detection being performed by comparison of the cut-off of the feed to the scale hopper in response to



the scale making weight and the start of the test period. A gear train with built-in backlash is combined with the servo motor to effect a delay during each first correction of a series in a single direction.

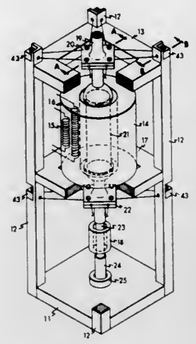
3,498,396
WEIGH FEEDER
William F. Johnston, Delafield, Thomas J. Stencel, Waukesha, and Fred Fixari, Greendale, Wis., assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 20, 1968, Ser. No. 714,733
Int. Cl. G01g *11/14*
U.S. Cl. 177—16 **6 Claims**



A weigh feeder has a belt conveyor and a compact weighing system removable intact from its operating position within the conveyor housing. The weighing system incorporates shortened lever arms and X-flexures at the primary pivots to reduce sag in the system under load to a minimum.

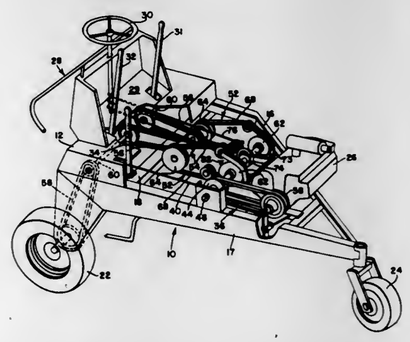
3,498,397
BEAMLESS ELECTRICAL WEIGHING DEVICES
Joseph J. De Santo, Neshanic, N.J., assignor to Thomas Russell et al., known and operating as Intec, East Millstone, N.J.
Filed Jan. 13, 1969, Ser. No. 790,802
Int. Cl. G01g *3/15, 21/24*
U.S. Cl. 177—210 **10 Claims**

Beamless electrical weighing devices comprising a central assembly for supporting the weighing pan have been improved by attaching said central support assembly to the structural frame of the weighing device by means of guy wires in at least two, spaced, horizontal planes to prevent lateral or horizontal movement of said support assembly and thereby maintaining the axis of the support assembly perpendicular to said planes while permitting limited vertical movement thereof when objects are placed on the weighing pan. Such vertical movement actuates suitable displacement sensors which transform such vertical movement into an electrical signal which is directly



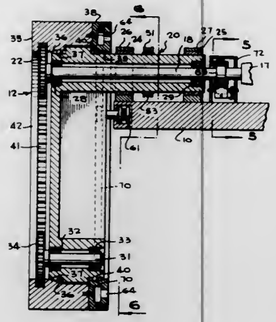
proportional to the weight of the object piaced on the weighing pan. Accuracy and durability of the weighing device is improved by the use of such guy wires rather than spiral or leaf springs or any sleeve-type guide members which produce friction in preventing lateral movement of the weighing pan support assembly.

3,498,398
WINDROWER DRIVE AND CONTROL THEREFOR
Donald E. Burrough and Arie Eugene Breed, Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 16, 1968, Ser. No. 729,740
Int. Cl. B62d *11/02*
U.S. Cl. 180—6.66 **6 Claims**



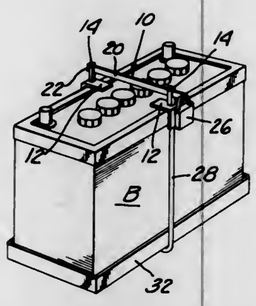
The propulsion drive for a self-propelled windrower includes a variable-speed belt drive driven by the engine for varying the ground speed of the machine and a pair of identical variable-speed belt drives having reversing mechanisms associated with their outputs and driven by the engine-driven belt drive, the speeds and direction of rotation of the separate reversible drives being separately controlled to steer the machine. The reversing mechanisms utilize bevel-type differential gearing and the separate belt drives are provided with idlers which provide the proper amount of belt tension both in normal operation and when the engine is being used to brake the vehicle.

3,498,399
VEHICLE WITH VERTICALLY ADJUSTABLE DRIVEN WHEELS
Thomas Gaskins, Palmdale, Fla. 33944
Filed Dec. 27, 1966, Ser. No. 605,074
Int. Cl. B62d *55/00, 11/00, 21/00*
U.S. Cl. 180—10 **11 Claims**



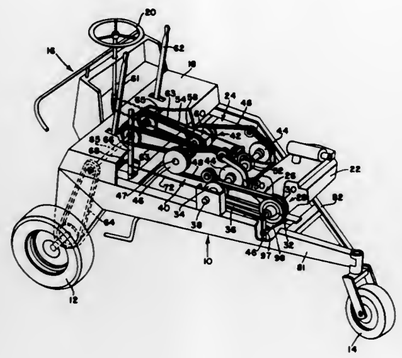
A vehicle comprising a chassis, at least one pair of first and second coaxially disposed shafts mounted on the chassis, the shafts being rotatable independently of each other, a support arm member secured to the first shaft for rotation therewith, a wheel rotatably mounted on the end portions of the arm member whereby the arm member is disposed diametrically relative to the wheel and means for transmitting drive from the second shaft to the wheel for rotating the wheel about its axis.

3,498,400
BATTERY LOCKING MEANS
Herbert Hysmith, 2722 Denton St., Riverside, Calif. 92507
Filed Nov. 24, 1967, Ser. No. 685,403
Int. Cl. B62d *25/00;* **E05b** *17/00;* **F16b** *41/00*
U.S. Cl. 180—68.5 **2 Claims**



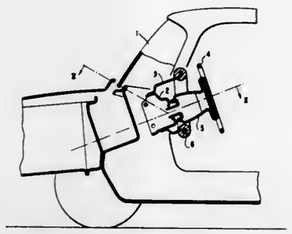
An apparatus for preventing the unwanted movement or theft of an automobile battery consisting of a pair of L-shaped clamp members with openings sized to admit a pair of holddown bolts positioned either side of the battery, a pair of posts with internal bores, and a crossbar. The clamps are designed to fit down around the holddown bolts and make clamping contact with the top edges of the battery, the posts to screw onto the bolts and hold the clamps in position, and the crossbar to fit through aligned openings in the posts where it can be secured against removal.

3,498,401
CONTROL FOR BELT-TYPE AGRICULTURAL MACHINE PROPULSION DRIVE
John Joseph Hennen, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 16, 1968, Ser. No. 729,739
Int. Cl. B60k *17/00*
U.S. Cl. 180—70 **5 Claims**



A self-propelled windrower has a pair of forward drive wheels, driven by separate variable-speed and reversible drives, which in turn are driven by the engine through a variable-speed belt drive, including a variable-diameter sheave having an adjustable section shiftable to vary the drive ratio. The position of the adjustable sheave section is controlled by a lever at the operator's station through a linkage, and a tension spring acts on the linkage to assist the manual adjustment of the linkage.

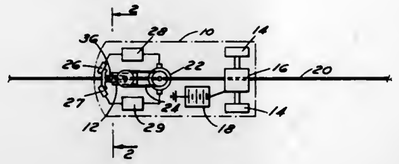
3,498,402
DRIVER SAFETY DEVICE FOR MOTOR VEHICLE
Bela Barenyi, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 29, 1967, Ser. No. 654,031
Claims priority, application Germany, July 2, 1966, D 50,455
Int. Cl. B60k *37/00;* **B60r** *27/00*
U.S. Cl. 180—90 **30 Claims**



A motor vehicle of the type either with or without instrument panel which includes a steering column on which is mounted a steering wheel and at least one or several deformation members arranged about or adjacent to the control unit of the vehicle whereby the deformation member or members project into the vehicle interior space; the deformation member or members become enlarged in a

funnel-like manner in the direction toward the vehicle interior space and are supported at the vehicle forward closure wall either by way of the instrument panel and/or by means of additional or separate supports.

3,498,403
VEHICLE GUIDANCE CONTROL SYSTEM
James P. Kohls, Detroit, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Aug. 9, 1967, Ser. No. 659,463
Int. Cl. B60k *27/00;* **G05b** *11/00*
U.S. Cl. 180—98 **19 Claims**



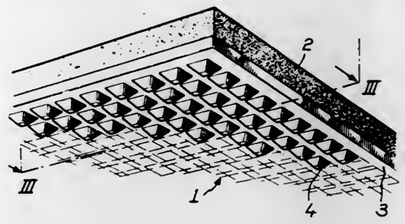
A vehicle guidance control system of the type wherein the steering mechanism of the vehicle is operated by a reversible driving device energized in accordance with any difference between error signals produced by left and right direction sensing units mounted on the vehicle to cause the vehicle to follow a guide path. The direction sensing units are positioned so that the sum of the error signals produced thereby is substantially constant within a range of deviation of the vehicle to either side of the guide path. The control system provides compensation for changes in the intensity of the guide path signal along the route by adjusting the error signals to maintain the sum thereof constant within the range of deviation, and to maintain the amplification of the error signals at a level such that a maximum signal difference is supplied to the steering driving device as a result of a given difference in the error signals.

3,498,404
FIRE RESISTANT POROUS ACOUSTIC BOARD WITH PERFORATIONS THROUGH METAL FACING SHEET
James R. Roberts, Palatine, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,233
Int. Cl. E04b *1/99*
U.S. Cl. 181—33 **11 Claims**

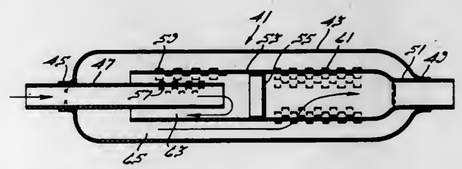
An acoustical ceiling board comprising a metal facing sheet adhered to a porous backing board with an acrylic adhesive, said facing sheet extending to within about ⅛ inch from each edge of said backing board and having perforations extending through said sheet and to within about 1/16 inch from the back surface of said board, said backing board preferably having a bend up to between ¼ inch and ⅝ inch depending on the size of the board concave to the surface of the facing sheet.

3,498,405
ACOUSTIC PANELS
Roger L. Charpentier, Pau, France, assignor to Société Anonyme dite: Le Panneau Magnetique L.P.M., Paris, France, a French society
Filed Dec. 18, 1967, Ser. No. 691,540
Claims priority, application France, Dec. 22, 1966, 88,421; Nov. 21, 1967, Ser. No. 129,086
Int. Cl. G10k *11/04;* **E04b** *5/52*
U.S. Cl. 181—33 **17 Claims**

A sound insulating panel of foamed phenolic resin has one face provided with a foil having projection in the form of truncated pyramids or elongate ridges of trapezoidal cross-section. The foil is secured to the foam material but is spaced over a part of its extent to form an acoustic diaphragm.

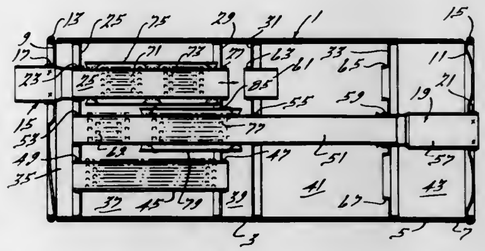


3,498,406
TRIFLOW MUFFLER FOR EXHAUST GASES
Robert A. Heath, Jackson, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,577
Int. Cl. F01n *1/10*
U.S. Cl. 181—53 **5 Claims**



A very small diameter and simple muffler construction has aligned inlet and outlet tubes with means to block straight-through communication between them so that gas flows transversely from the inlet point and then longitudinally through the muffler outside of the tubes and then transversely into the outlet tube.

3,498,407
MUFFLER PARTITION ASSEMBLY
Eldred G. Straw, Grass Lake, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,575
Int. Cl. F01n *7/18*
U.S. Cl. 181—61 **5 Claims**



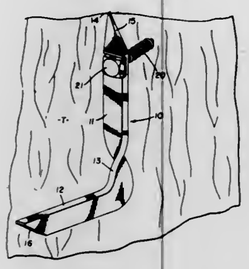
A tubular shell in a muffler is tightly secured to a transverse partition by forming a large radius neck in the partition and using the shell as a forming punch to enlarge the neck so that it tightly grips the shell, nibs on the shell engaging the butt end of the neck to act as a positive stop against withdrawal.

3,498,408
GARMENT-HARNESS COMBINATION
Ronald S. Foote, 2672 Hubbard St., Brooklyn, N.Y. 11235
Filed Jan. 16, 1968, Ser. No. 698,191
Int. Cl. A47l *3/04*; **A62b** *1/16*; **A63b** *29/02*
U.S. Cl. 182—6 **8 Claims**



A garment-harness combination to be used by firemen, painters, riggers, window-washers, and the like. The combination includes an outer garment and a harness permanently attached thereto. The harness fixedly carries a fastening means for releasably fastening the harness to a structure which at least partly supports the wearer of the garment. Thus, with this combination the simple wearing of the garment will result in the presence of a harness which is ready for use.

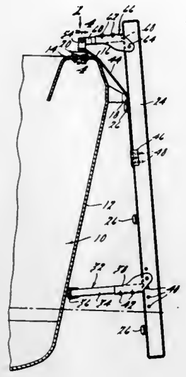
3,498,409
PORTABLE CLIMBING STEP FOR CLIMBING TREES OR POLES
Leonard S. Meyer, 6449 Bridgewood Road, Columbia, S.C. 29209
Filed Mar. 5, 1969, Ser. No. 804,399
Int. Cl. E06c *9/00*; **E04g** *3/00*
U.S. Cl. 182—92 **5 Claims**



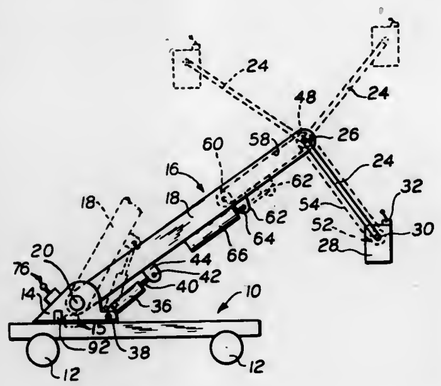
A portable tree climbing step of crank or L-shape which can be removably secured to poles or trees by means of standard lag screws or bolts.

3,498,410
BOAT LADDER
Harold A. Storch, Birmingham, Mich., assignor to Mayfair Engineering Company, Birmingham, Mich., a corporation of Michigan
Filed Oct. 24, 1968, Ser. No. 770,268
Int. Cl. E06c *1/36*
U.S. Cl. 182—96 **10 Claims**

A folding boat ladder in which the steps of the ladder are hinged to the ladder's side rails. The ladder folds to a position in which the side rails are closely spaced with the steps being aligned parallel to the side rails. The ladder is supported on the boat by means of flexible straps which are secured to mounting plates fixed to the boat hull.

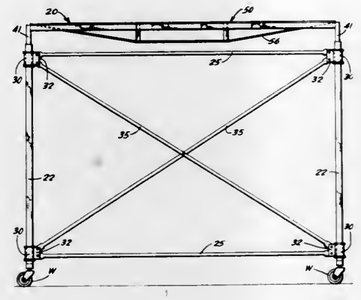


3,498,411
FLUID ACTUATOR SYSTEM FOR REMOTE CONTROL
Donald A. Worden, Pompton Plains, N.J., assignor to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey
Filed Aug. 16, 1967, Ser. No. 661,116
Int. Cl. E04g *1/18*, *3/00*
U.S. Cl. 182—148 **13 Claims**



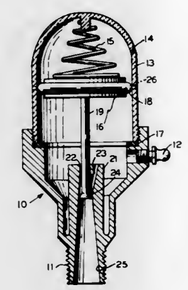
This specification discloses a fluid actuator system having at least one, and usually a plurality, of motors, for performing various functions of the system. In a simple illustrated embodiment of the invention, the system controls the movement of a carriage or "bucket" in which a workman rides for working on overhead telephone or electric power lines, or for pruning trees, or similar operations. The bucket is carried on a conventional jointed boom; and there is one motor for moving the entire boom and another motor for actuating the joint of the boom to shift the upper end, that carries the bucket, with respect to the lower end. The invention includes novel valve means for controlling, from the bucket, the power supply to the motors and for obtaining much more accurate remote control than has previously been possible. Servo motors are used to avoid having to carry high-pressure fluid lines up the boom to the manual controls on the bucket.

3,498,412
PORTABLE CARRIAGE
Leon H. Best, Galva, Ill., assignor to John H. Best & Sons, Inc., Galva, Ill., a corporation of Illinois
Filed Sept. 18, 1968, Ser. No. 760,443
Int. Cl. E06c *1/00*; **A47l** *3/02*
U.S. Cl. 182—152 **4 Claims**



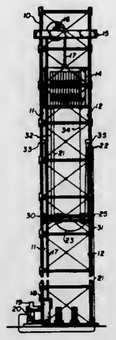
A collapsible carriage is extendible to afford a ladder and a platform capable of supporting a workman in an elevated position. When collapsed, the carriage is easily movable through doorways or down narrow corridors.

3,498,413
GREASE CUPS
John N. Krieger, Dallas, Tex., assignor to Solotronics Corporation, St. Louis, Mo., a corporation of Missouri
Filed June 20, 1968, Ser. No. 738,455
Int. Cl. F16n *11/04*
U.S. Cl. 184—45 **4 Claims**



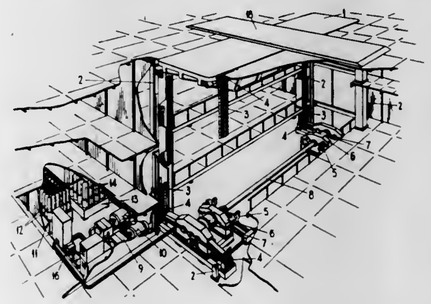
A grease cup apparatus for supplying a uniform and continuous flow of lubricant to parts to be lubricated, arranged to be charged with lubricant under high pressure, and designed to prevent an excessive amount of lubricant from entering and damaging the parts in the event charging under pressure is unduly prolonged.

3,498,414
TRAVELING GUIDE FOR CONTROL CABLE
Gerome R. White, Tenafly, N.J. (% White Personnel-Material Hoist Co., Inc., 92 Kennedy St., Hackensack, N.J. 17601)
Filed May 20, 1968, Ser. No. 730,514
Int. Cl. B66b *9/00*, *11/04*, *7/02*
U.S. Cl. 187—1 **6 Claims**



A traveling guide for the traveling control cable that hangs in a catenary loop from the bottom of an elevator car is disclosed. The traveling guide for the control cable comprises a carriage that is mounted on the vertical guide rails of the elevator shaft below the elevator car and that is supported by at least one carriage support cable one end of which is secured to the bottom of the elevator car and the other end of which is secured to the side of the elevator shaft. The carriage which travels vertically up and down within the elevator shaft a distance equal to the vertical travel of the catenary loop at the lower end of the control cable, is provided with guide means for the lower end of said catenary loop. The catenary loop extends through the guide means mounted on the carriage, the guide means receiving and loosely confining the lower end of the loop without subjecting the control cable to undue stresses or loads.

3,498,415
LIFTS
Robert Andrew Wright, Canterbury, Kent, England, assignor to The General Electric Company Limited, London, England, a British company
Filed Jan. 24, 1968, Ser. No. 700,306
Claims priority, application Great Britain, Jan. 24, 1967, 3,586/67
Int. Cl. B66b *9/04*
U.S. Cl. 187—17 **6 Claims**



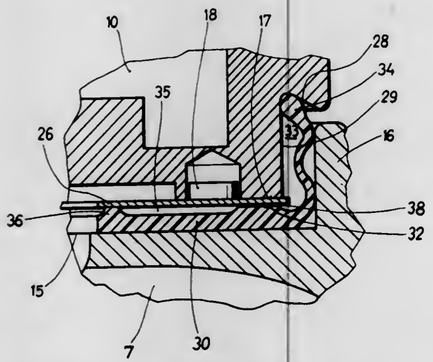
A driving arrangement for a lift, especially of the kind used on board ship for transporting articles of cargo or the like to various deck levels, including a hydraulic

motor unit controlling the movement of the lift platform, and balancing means in the form of a hydraulic accumulator supplying fluid under pressure to the pump means feeding the motor unit.

3,498,416
DAMPING DEVICE FOR OBJECT TRACKING MEANS

Franz Pfister, Hochstadt, Eicke Maus and Josef Durner, Ottobrunn, and Anton Schipf, Munich, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany

Filed May 16, 1968, Ser. No. 729,575
Claims priority, application Germany, Mar. 20, 1968, 1,773,004
Int. Cl. F16f *11/00*
U.S. Cl. 188—1 9 Claims



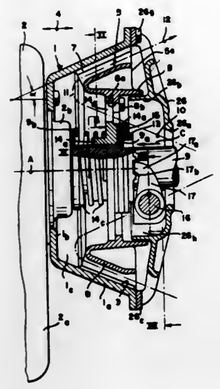
A damping device, for regulating the relative angular velocity of two relatively rotatable members, includes two bearing members having slidably engaged bearing surfaces. One surface comprises tetrafluorethylene and the other surface is a polished steel surface. A film of highly viscous and temperature-resistant oil is interposed between the sliding surfaces. Adustable spring means control the contact pressure of the surfaces, and the area of the surfaces as well as the spring pressure are so selected, relative to the preselected relative angular velocity that the relative angular velocity is maintained below 30 m./min.

3,498,417
LOCKING BRAKE FOR THE POWER TRAIN OF AN AUTOMOTIVE VEHICLE

Leopold Franz Schmid, Stuttgart, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 12, 1968, Ser. No. 704,694
Claims priority, application Germany, Feb. 15, 1967, T 33,206
Int. Cl. F16d *13/24, 55/00*
U.S. Cl. 188—72 4 Claims

A mechanically operable brake for the drive train of an automotive vehicle having a housing or structure and a shaft constituting part of the drive chain, and extending from the housing, the brake being formed with a frustoconical drum mounted upon the housing around the shaft and diverging conically from the housing, and a rotor keyed to the shaft and axially shiftable therealong while having a frustoconical rim of a conicity identical to the drum for engagement therewith to brake rotation of the shaft relative to the drum, the drum being closed by a cover which preferably is sealed against entry of contaminants and/or permits the rotor to act as a blower for cooling of the brake surfaces. The frustoconical rotor

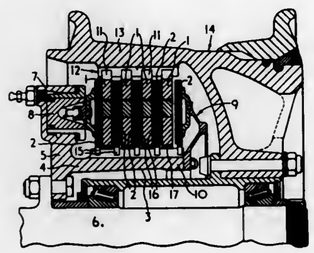


flange is formed with a friction lining engageable with the inner surface of the drum.

3,498,418
MULTI-PLATE DISC BRAKE AND DISC SPACING MEANS

Douglas Dewar, Stretton-on-Dunsmore, near Rugby, England, assignor to The Dunlop Company Limited, Birmingham, England, a corporation of Great Britain

Filed May 13, 1968, Ser. No. 728,590
Claims priority, application Great Britain, May 18, 1967, 23,114/67
Int. Cl. F16d *55/40*
U.S. Cl. 188—72 2 Claims



A disc brake of the multi-plate type having rotor discs formed from separate ring segments, annular spacing members being arranged around the torque tube between the torque tube and the rotor discs.

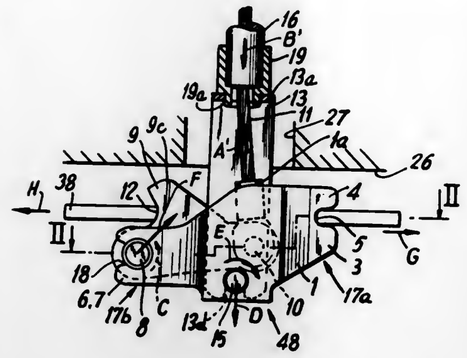
3,498,419
MECHANICAL ACTUATING MEANS FOR INTERNAL-EXPANSION BRAKES

Juan Belart, Walldorf, Hesse, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 26, 1968, Ser. No. 708,016
Claims priority, application Germany, Feb. 28, 1967, T 33,303
Int. Cl. F16d *51/22, 65/30*
U.S. Cl. 188—78 9 Claims

A Bowden-cable actuating device for internal-expansion brakes which comprises a U-shaped lever having a fulcrum carried by a linearly shiftable U-shaped bracket

attached to the sheath of the Bowden cable and bearing with one arm of the lever on a force-transmitting member acting upon the brakeshoes while a double-arm lever

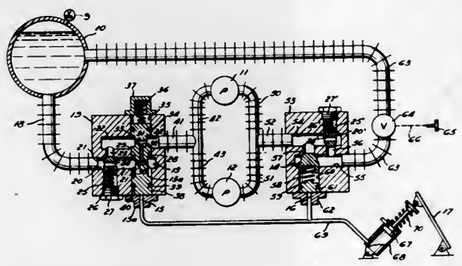


is fulcrumed on the U-shaped lever at a location on the other side of its pivot and is acted upon by the core wire of the Bowden cable.

3,498,420
HYDRAULIC BRAKING SYSTEM

Thomas L. Fawick, Shaker Heights, Ohio (Hotel Statler Hilton, Cleveland, Ohio 44101)

Filed Feb. 7, 1968, Ser. No. 703,778
Int. Cl. F16d *57/06*
U.S. Cl. 188—90 2 Claims



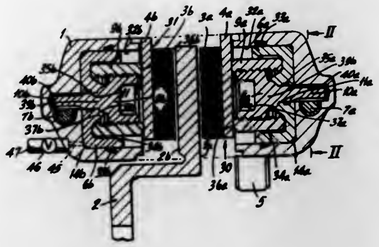
The present vehicle braking system has two gear pumps, one on each side of the transmission, which are driven by a continuously running gear in the transmission. Normally, a limited flow of hydraulic liquid is continuously circulated by the pumps to and from a reservoir which is under air pressure. When the vehicle brake is applied, first a flow-limiting valve at the inlet side of the pumps is opened fully and then a valve at the outlet side of the pumps is actuated to restrict the outlet flow and thereby provide a braking load on the engine.

3,498,421
HYDRAULIC DISK BRAKE WITH MECHANICAL ACTUATING MEANS

Siegfried Ohmayer, Offenbach am Main, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 22, 1967, Ser. No. 669,907
Claims priority, application Germany, Sept. 24, 1966, T 32,130
Int. Cl. B60t *11/10;* F16d *65/18*
U.S. Cl. 188—152 11 Claims

A motor-vehicle disk brake having a hydraulic actuating piston slidable in a disk-brake yoke and having a relatively small effective area (as contrasted with that of the power piston) and wherein, between the auxiliary actuating piston and the backing plate of the brakeshoe,

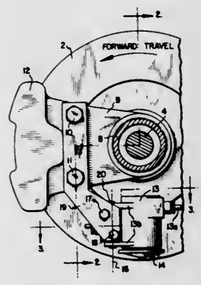


a mechanical rack-and-pinion threaded spindle drive is provided to advance the shoe through the brake play prior to application of the main brake force.

3,498,422
SIGNALLING MEANS FOR A BRAKE CONTROL SYSTEM

Heinz Leiber, Leimen, Germany, assignor to TELDIX Gesellschaft mit beschrankter Haftung

Filed Feb. 16, 1968, Ser. No. 706,182
Claims priority, application Germany, Feb. 16, 1967, T 33,220
Int. Cl. B60t *8/16*
U.S. Cl. 188—181 12 Claims



A coupling device permitting the signaling means of a brake control system to be attached to a wheeled vehicle to sense the condition of motion of one of the vehicle wheels. The coupling device inculdes a friction wheel mounted on an axle in the signaling device and arranged to roll on a portion of the friction surface of the brake assembly of the particular vehicle wheel.

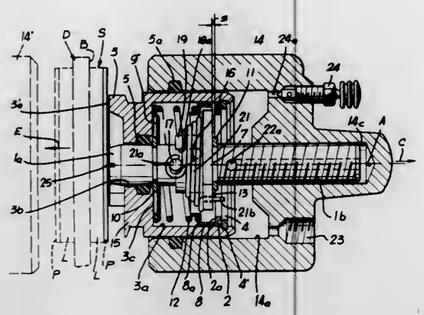
3,498,423
ADJUSTING DEVICE FOR DISK BRAKE

Juan Belart, Walldorf, Hesse, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

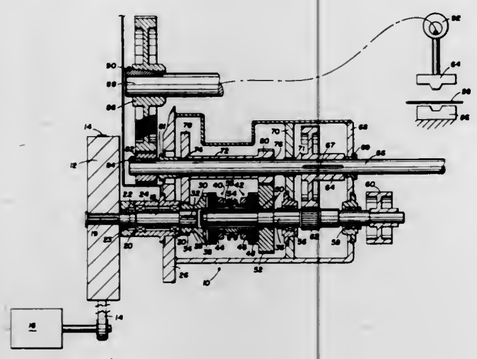
Filed Jan. 25, 1968, Ser. No. 700,515
Claims priority, application Germany, Jan. 27, 1967, T 33,091
Int. Cl. F16d *65/38, 55/00*
U.S. Cl. 188—196 11 Claims

A wear-compensating disk brake in which the wheel-brake cylinder is hydraulically pressurizable to urge the piston and its brakeshoe against the disk and, at least in one yoke half of the brake housing, spring means applies

a restoring force to the piston whose return stroke is limited by a stop ring on a bolt adjustably threaded axially into the bottom of the wheel-brake cylinder. The bolt carries a camming sleeve which is effective, during the forward stroke of the piston, to advance the threaded bolt and establish a new rest position for the piston when the stroke of the latter exceeds the desired brake play.

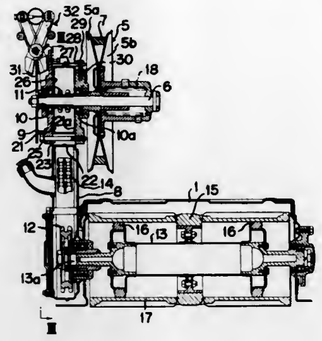


3,498,424
MULTIPLE SPEED MECHANICAL TRANSMISSION SYSTEM
Jene A. Beneke and John C. Flanagan, Dallas, Tex., assignors to Verson Manufacturing Company, Dallas, Tex., a corporation of Texas
Filed Oct. 2, 1967, Ser. No. 672,249
Int. Cl. F16d *67/00;* **F16h** *3/08*
U.S. Cl. 192—4 **17 Claims**



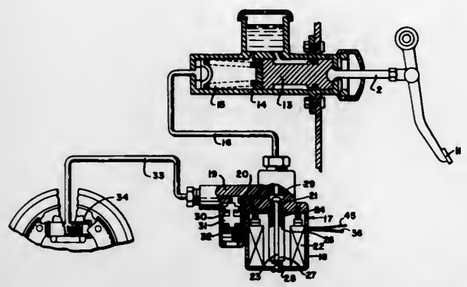
A two-speed mechanical transmission having a driving shaft rotated by a flywheel at one speed, with a clutch mounted at the end of the driving shaft and selectively operable to directly connect the driving shaft with a coaxially aligned driven shaft. An intermediate shaft is disposed parallel to the driven shaft and includes a rotatably mounted idler gear. The idler gear is selectively operable in dependency on the clutch for transmitting rotative motion around the clutch to rotate the driven shaft at another speed. A brake is located on the end of the driven shaft to allow selective breaking. In one embodiment, a gear on the driven shaft imparts rotative motion to the intermediate shaft, which in turn drives a parallel output shaft.

3,498,425
CHAIN TRANSMISSION WITH CALIPER BRAKE
Norio Takada, Hamamatsu-shi, Japan, assignor to Yamaha Halsudoki Kabushiki Kaisha, Shizuoka-ken, Japan, a corporation of Japan
Filed Nov. 27, 1968, Ser. No. 779,469
Int. Cl. F16d *13/76;* **F16h** *55/30;* **B62d** *55/30*
U.S. Cl. 192—4 **8 Claims**



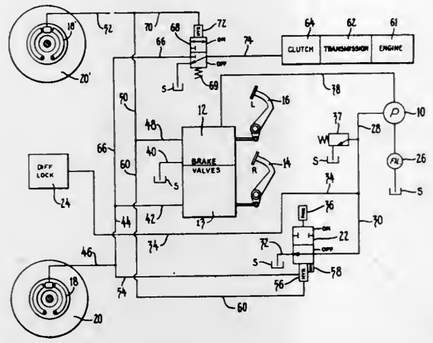
The device includes a countershaft, a front shaft, and an endless chain extending over the shafts through sprockets. The countershaft is rotatably mounted in a bracket which is movable to change the center distance between the shafts in order to adjust the tension of the endless chain. A brake disk mounted on the countershaft is in friction engagement with a pair of cooperating shoe-carrying brake calipers, when the brake calipers are in operative positions. Since the calipers are connected to the bracket, the relative positions between the brake disk and brake calipers are not changed even if the bracket is adjustably moved.

3,498,426
HYDRAULIC BRAKE OPERATING SYSTEM FOR A MOTOR VEHICLE
Akio Nakano, 12–2, 1-chome Honhaneda Ota-ku, Tokyo, Japan
Filed Oct. 5, 1967, Ser. No. 673,145
Claims priority, application Japan, Oct. 21, 1966, 41/16,910, 41/68,912, 41/97,355
Int. Cl. F16d *67/04*
U.S. Cl. 192—13 **3 Claims**



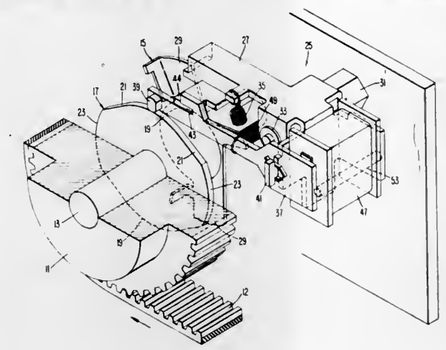
In a motor vehicle a hydraulic brake system includes an electromagnetic valve in the fluid line between the master cylinder and the brake cylinders. A generator operated by rotation of the speedometer holds a normally closed relay in open position during movement of the vehicle. A fluid pressure clutch operating mechanism includes a clutch pedal and a pressure operated switch in the circuit to the electromagnetic valve. Closing of the speedometer controlled switch and the clutch controlled switch completes a holding circuit and applies holding pressure on the brake cylinders regardless of further operation of the brake pedal. Release of the clutch pedal opens the holding circuit and removes the holding pressure to permit operation of the vehicle.

3,498,427
CLUTCH RELEASED PY SIMULTANEOUS ENGAGEMENT OF SEPARATE BRAKES
George W. Bingley, Stow, Ohio, assignor to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland
Filed Aug. 13, 1968, Ser. No. 752,222
Int. Cl. F16d *67/02*
U.S. Cl. 192—13 **6 Claims**



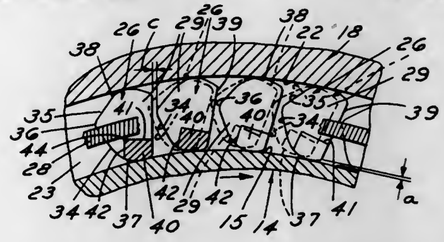
A vehicle has a transmission with a normally engaged clutch, a brake for each of two driving wheels, a control for each brake, and a differential locking mechanism. A hydraulic circuit is provide for each brake, one of which is connected to a clutch actuator through a control valve. The other brake circuit is connected to an actuator for the control valve so that operation of both brakes simultaneously causes disengagement of the clutch to disestablish the drive between the transmission and the wheels.

3,498,428
LOW POWER OPERATED CLUTCH LATCHING MECHANISM
George N. Liles, Southfield, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 19, 1967, Ser. No. 676,443
Int. Cl. F16d *11/00, 13/04*
U.S. Cl. 192—28 **4 Claims**



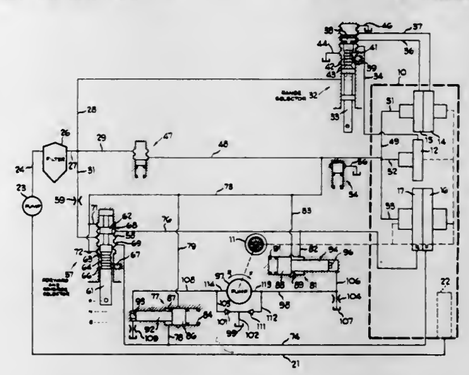
A small, compact clutch latching mechanism selectively controlled by a low power solenoid and a continually rotating cam. The latching mechanism is pivotable into and out of the path of movement of a clutch mechanism to effect disengagement and engagement of the clutch. A solenoid mounted on the latching mechanism pivots a cam follower into the path of the continually rotating cam. The cam acting on the low inertia clapper of the solenoid as a lever, pivots the entire latching mechanism out of the path of the clutch mechanism thereby allowing the clutch to engage. A cam face knock-off removes the cam follower from the cam.

3,498,429
SPRAG AND SPRAG CLUTCH ASSEMBLY
Charles E. Frakes, Mount Clemens, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan
Filed May 20, 1968, Ser. No. 730,249
Int. Cl. F16d *15/00, 41/06*
U.S. Cl. 192—45.1 **6 Claims**



A sprag is disclosed in a combination in multiple with and between a pair of clutch races, being energized by garter spring means, to provide a so-called loose sprag or full complement sprag clutch assembly of the centrifugally disengaging type. The sprags are generally D-shaped in cross section and a pair of endless annular garter springs act against integral, axially projecting shoulder or extension formations adjoining a wedging surface of each sprag. There is only one pair of such shoulders on the sprag and each thereof is relieved across a circumferentially facing edge which is rearward in reference to the direction of rotation of the driving race frictionally engaged by the wedging surface race.

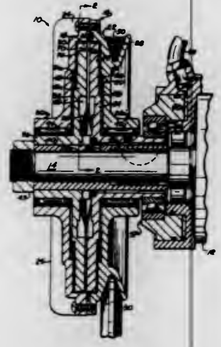
3,498,430
SHIFTING CONTROL FOR A POWER SHIFTED TRANSMISSION
Michael Briski, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill.
Filed July 19, 1968, Ser. No. 746,141
Int. Cl. F16d *25/10, 13/04;* **F16h** *5/42*
U.S. Cl. 192—51 **6 Claims**



A control circuit for engaging forward and reverse clutches of a power shifted transmission includes a bi-di-

rectional pump connected to a vehicle wheel supplying pressure proportional to vehicle speed. The pump output is connected to a pilot circuit for controlling the engaging pressure of the clutches and is arranged to "buffer" the engagement of either clutch when the vehicle is travelling in the opposite direction.

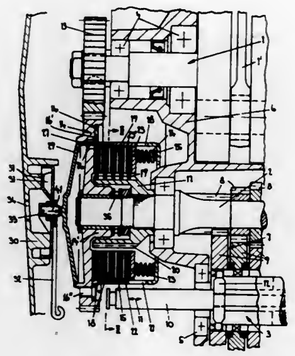
3,498,431
FLUID COUPLING MECHANISM
Alex Sutaruk, Hazel Park, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Original application Dec. 6, 1966, Ser. No. 599,630. Divided and this application Jan. 13, 1969, Ser. No. 790,599
Int. Cl. F16d *25/00, 13/42, 43/28*
U.S. Cl. 192—57 **13 Claims**



An improved drive mechanism for driving an air compressor includes a driving member which is adapted to be connected to an engine of a vehicle and a driven member which is adapted to be connected to the air compressor. The drive mechanism is controlled by the air pressure output of the compressor to provide a mechanical drive between the driving and driven members when the air pressure output of the compressor is below a first predetermined pressure and a fluid drive between the members when the air pressure is above the first predetermined pressure. The fluid drive between the members is discontinued when the output of the compressor reaches a second predetermined pressure. A speed responsive valve assembly is provided for limiting the speed at which the compressor can be driven by the fluid drive.

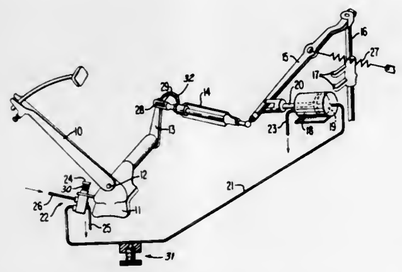
3,498,432
POWER TRAIN FOR A MOTORCYCLE AND THE LIKE
Hans Seibt, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs Aktiengesellschaft
Filed Feb. 29, 1968, Ser. No. 709,265
Claims priority, application Germany, Mar. 7, 1967, F 51,744
Int. Cl. F16d *13/54*
U.S. Cl. 192—70.23 **6 Claims**

A power train for a motorcycle with parallel input, clutch, and transmission output shafts, the input and clutch shafts being connected by meshing gears in a first radial plane, and the clutch and output shafts by a selected one of three pairs of meshing gears in a second radial plane, and the shafts being partly axially coextensive between the planes. The single gear coaxially associated with the clutch disc in the first radial plane carries a clutch casing, and the driven and driving discs of the clutch are respectively secured to the casing and clutch shaft against rotation. The gear ratio between the gear



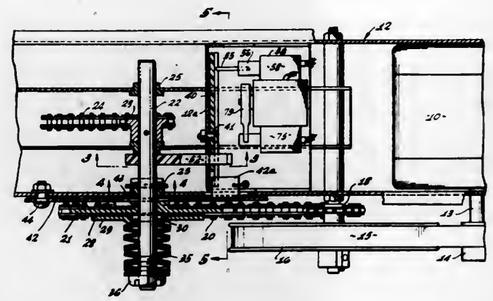
and output shafts is changed by shfting a coupling member in a slot of the output shaft between engagement with recesses in the several gears on the output shaft.

3,498,433
ACTUATING MECHANISM FOR VEHICLE FRICTION CLUTCHES, ESPECIALLY FOR MAIN CLUTCHES OF MOTOR VEHICLES
Helmut Lohmann, Gaggenau, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 6, 1967, Ser. No. 651,418
Claims priority, application Germany, July 6, 1966, D 50,486
Int. Cl. F16d *19/00;* **G05g** *1/14*
U.S. Cl. 192—99 **17 Claims**



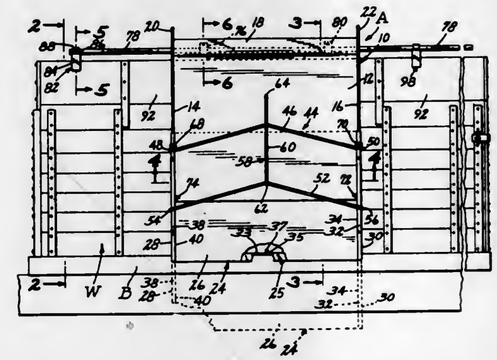
An actuating mechanism for vehicle friction clutches, especially for main clutches of motor vehicles in which the clutch pedal is connected with the clutch-disengaging lever by way of a linkage and the transmission ratio of this linkage is so selected that at least nearly the entire stroke of the pedal is used for a first range corresponding to the pressure build-up at the pressure plate of the clutch and an auxiliary force actuation is used, controlled by the pedal near the end of the first range so as to further actuate the disengaging lever in a second range to completely lift off the pressure plate; a lost-motion connection is thereby provided in the linkage between the pedal and the disengaging lever so that the pedal is not taken along when the disengaging lever is further actuated by the auxiliary force actuating mechanism in the second range.

3,498,434
LOAD LIMITING POWER TRANSMISSION SYSTEM
Moscow K. Richmond, 2819 Butler Ave., Los Angeles, Calif. 90064
Filed Jan. 4, 1968, Ser. No. 695,618
Int. Cl. F16d *13/48*
U.S. Cl. 192—150 **9 Claims**



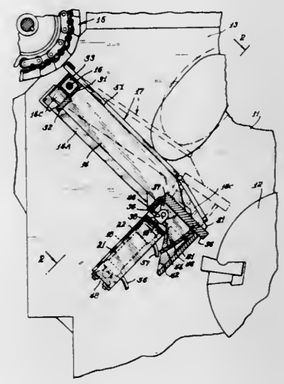
A mechanical load or speed-change sensing device is located in a power transmission system to interrupt the supply of power in the event of stoppage, overload, engagement with a limit stop, or other reduction in speed. The mechanism operates to shut off and/or reverse an electric motor supplying power so that it may operate as a safety device to guard against an overload or it may actuate a switch to reverse the electric motor at a given point in the travel of a driven member.

3,498,435
CHUTE FOR TRUCK BODY
Robert K. Tellefson, Makoti, N. Dak. 58756
Filed Nov. 17, 1967, Ser. No. 684,011
Int. Cl. B65g *11/12, 11/14*
U.S. Cl. 193—4 **3 Claims**



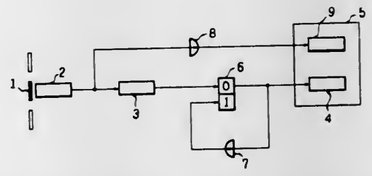
The disclosure relates to chutes for the transfer of grain, fertilizer and the like from a truck to the grain box of a grain drill, for example, and includes an open channel body which is extendable and which is formed at the upper end with an angularly extending lip. At the lip formation the chute includes means pivotally and slidably mounting the chute on the side wall of a truck. The extendable portion of the channel body has a handle thereon for moving the extendable portion.

3,498,436
HYDRAULIC DISLODGER FOR UNBLOCKING FEED CHUTES OF ROCK CRUSHERS
Leonard N. Kint and Albert B. Hanse, Cedar Rapids, Iowa, assignors to Pettibone Corporation, a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,964
Int. Cl. B65g *11/00, 47/26, 25/04*
U.S. Cl. 193—17 **4 Claims**



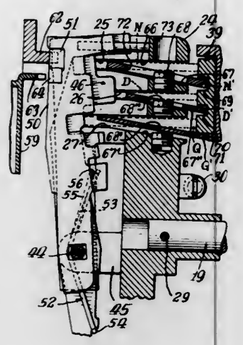
In a rock crusher, a longitudinally extending intermediate section of the feed chute can be hydraulically raised for reliably knocking loose any rocks that have clogged the feed passage by bridging across it against the sides. If the feed chute is a grizzly, the hydraulic unit located below the grizzly is shielded. A skirt on the raisable section prevents entry of flying rock fragments below the section where they might prevent lowering of the section.

3,498,437
COIN DETECTING SYSTEM
Tadao Ukon and Yoshihisa Kumegawa, Kyoto, Japan, assignors to Tateisi Electronics Co., Kyoto, Japan
Filed May 1, 1968, Ser. No. 725,681
Claims priority, application Japan, May 12, 1967, 42/40,160
Int. Cl. G07f *3/02*
U.S. Cl. 194—100 **10 Claims**



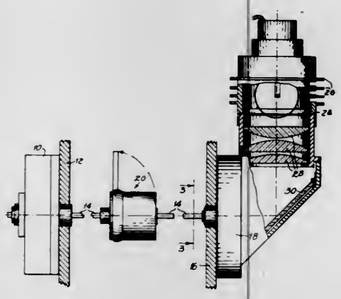
A coin detecting system comprising a coin detecting means, a means to be controlled (for dispensing operation) and a means for identifying a coin detecting signal disposed between the two means. The means to be controlled is controlled by an output signal produced by the detecting means upon detecting a coin. When the detecting means continues producing a coin detecting signal for more than a predetermined time, the identifying means replaces the signal and applies the substantial signal to the means to be controlled.

3,498,438
SPURIOUS COIN DETECTOR
Edward C. Arzig, Mundelein, Ill., assignor to Traffic Equipment Service Company, a corporation of Illinois
Filed Feb. 21, 1968, Ser. No. 707,053
Int. Cl. G07f 3/02
U.S. Cl. 194—102 13 Claims



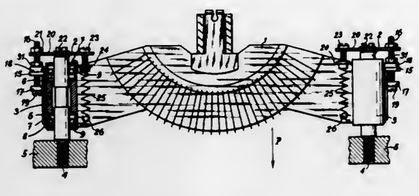
Mechanism for detecting spurious coin-like elements and precluding their operation of a meter such as a parking meter. The mechanism detects a spurious coin-like element by permitting a displacement of the element in a coin slot whereby the element is in an inoperative arrangement relative to an indicating means normally responsive to the movement of a proper coin in the slot along a preselected path.

3,498,439
PHOTO-OPTICAL CODE TRANSLATOR AND SELECTOR
Frederick P. Willcox, 565 Oenoke Ridge, New Canaan, Conn. 06840
Filed July 21, 1967, Ser. No. 655,091
Int. Cl. B41j 23/04; H04l 17/24; B41b 23/00
U.S. Cl. 197—18 18 Claims



A single, unitary and self-contained photo-optical code translating and selecting mechanism especially for a code controlled character printing machine having a rotary character font, said mechanism using binary-positioned apertured code translating shutters controlled by the code bits to define for each code combination a unique light path to a photoelectric sensor assembly. The resulting selection specifies the complete set of control operations associated with character printing (selection of the character, control of font drive including determination of the optimum drive direction, sensing of initial and final approach to printing position, braking of the font, final indexing of font position, printing, selective variation of printing pressure, and incremental spacing feed between font and record medium for spacing, proportional spacing, and justification) as well as those associated with non-printing or stunt-box functions (such as code checking, word spacing, character shifts, line feeding, format tabulating, and auxiliary device controls). Construction of the mechanism on essentially a single axis of symmetry for both the mechanical and optical systems, which axis may also be the axis of the font, facilitates direct coupling to the controlled shaft of the character font in a printer, reduces cost and complexity, and increases compactness.

3,498,440
MOVABLE ASSEMBLIES FOR TYPEWRITERS
Miroslav Bláha, Brno, Czechoslovakia, assignor to Zavody Jana Svermy, narodni Podnik, Brno, Czechoslovakia, a corporation
Filed Feb. 19, 1968, Ser. No. 706,477
Claims priority, application Czechoslovakia, Mar. 15, 1967, 1,867/67
Int. Cl. B41j 7/32
U.S. Cl. 197—74 10 Claims

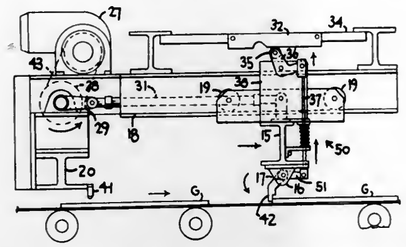


A movable assembly for typewriter or the like. The assembly includes an elongated body such as a body which was constructed to support type-carrying levers, and at opposed endss of this body there are guide assemblies which guide the body for movement. The machine includes a frame and at each end of the body a pair of guide members including a stationary guide member fixed to the frame and a movable guide member movable with respect to the stationary guide member. The pair of guide members at each end of the body includes an elongated rod and a sleeve into which the rod extends, with antifriction elements situated between the sleeve and rod to have rolling contact with the sleeve and rod during movement of the movable guide member with respect to the stationary guide member at each end of the body. A fixing means is provided for adjustably fixing the body to the movable guide members at each end of the body, so that by way of this connection with the movable guide members the body can be shifted along the stationary guide members.

3,498,441
POSITIONING DEVICE FOR CONVEYED ARTICLES
Albert D. Furedy, Pittsburgh, Pa., and Stephen Stevens, Crystal City, Mo., assignors to PPG Industries Inc., a corporation of Pennsylvania
Filed Mar. 28, 1968, Ser. No. 716,837
Int. Cl. B65g 47/22
U.S. Cl. 198—29 6 Claims

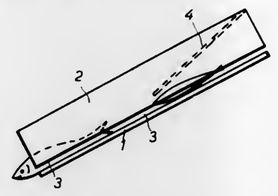
A glass-positioning apparatus having a shaft mounted transversely over a conveyor belt; a plurality of positioning fingers mounted on the shaft; a cam and cam follower and linkage to turn the shaft about its axis and bring the fingers into contact with the glass sheet beneath, all

mounted on a movable bridge over the conveyor; a source of power; a one revolution clutch connected to that source; an eccentric arm and rod connecting the clutch



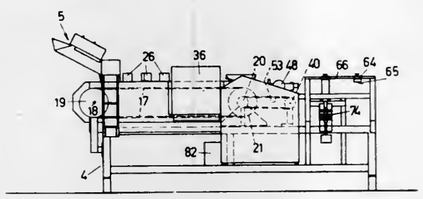
to the bridge so that the bridge reciprocates along the conveyor and the fingers sweep along the belt at a greater speed than the belt and position the glass thereon.

3,498,442
DEVICE FOR TURNING FISH
Jan Bergh Eriksen, Stavanger, Norway, assignor to Trio Fabrikker, A/S de Forenede Norske Laase- og Beslagfabriker, Stavanger, Norway
Filed June 23, 1967, Ser. No. 648,421
Claims priority, application Norway, July 1, 1966, 163,748
Int. Cl. B65g 47/24
U.S. Cl. 198—33 3 Claims



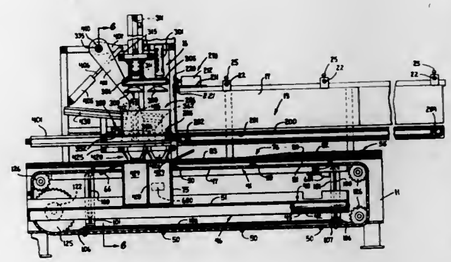
A device for turning fish fed head first through a converging channel, the throat part of the fish slipping into a slot between the bottom and one of the side walls of the channel, thereby forcing the back of the fish uppermost in the narrow end of the channel.

3,498,443
STACKER FOR CONICALLY-SHAPED CONTAINERS
Max Weber, Buchs, Switzerland, assignor to Elcalor AG. Fabrik für Elektrothermische Apparate, Aarau, Switzerland
Filed Apr. 30, 1968, Ser. No. 725,419
Claims priority, application Switzerland, May 8, 1967, 6,487/67
Int. Cl. B65g 47/24, 57/28
U.S. Cl. 198—33 17 Claims



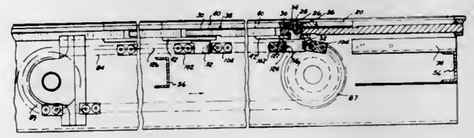
Stacker advances the containers by means of two successive pairs of belts, with means for successively adjusting the position of the containers so that when one container is braked the next container is telescoped into it.

3,498,444
CONVEYOR DRIVING DEVICE
James J. Shuttleworth, 1300 Salamonie Ave., Huntington, Ind. 46750
Original application Dec. 16, 1965, Ser. No. 514,205, now Patent No. 3,386,224. Divided and this application May 31, 1968, Ser. No. 739,918
Int. Cl. B65g 47/22
U.S. Cl. 198—135 5 Claims



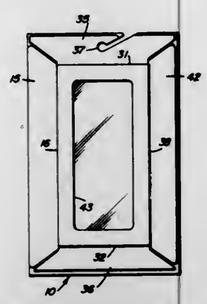
A conveyor for moving boxes to be packed with objects in a case packer. A pair of endless chains are received on suitable sprockets and are coupled together by a one-way clutch. One of the chains is moved back and forth by a hydraulic cylinder for driving the conveyor. The other chain has bars thereon which engage and move the boxes and cantilever springs which hold the flaps down. Means are provided for accurately locating a box to be filled when it is moved into position to be filled.

3,498,445
CONVEYOR DRIVE MEANS
Robert J. Piper, Detroit, Mich., assignor to Stearns Manufacturing Company, Inc., Flat Rock, Mich., a corporation of Michigan
Filed Oct. 30, 1967, Ser. No. 679,081
Int. Cl. B65g 15/00, 17/00
U.S. Cl. 198—181 6 Claims



A drive means for a conveyor of the endless type which is adapted to traverse a closed circuit, the load-bearing pallets of the conveyor being articulated to allow the conveyor to traverse relatively sharp curves and return in a closed loop so as to provide transportation in two directions. Chain drive means are employed so as to provide a control drive at a straight section of the conveyor circuit wherein the driven members extend downwardly from the conveyor pallets to engage driving members within the confines of the drive chains.

3,498,446
FRAME STYLE PACKAGE
Lawrence J. Lafreniere, Newark, N.J., assignor to Westvaco Corporation, a corporation of Delaware
Filed Dec. 11, 1968, Ser. No. 782,978
Int. Cl. B65d 25/54
U.S. Cl. 206—45.34 9 Claims



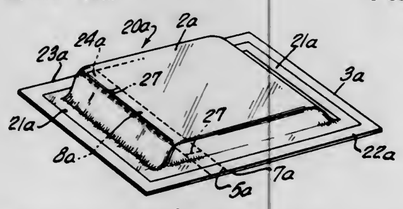
A single or double windowed display container is presented which is formed from an integral blank of paperboard and which includes a tray-like portion and a backing portion secured together to form a product retaining package.

3,498,447
TWIST-OPENING REEL CONTAINER
William H. Edwards, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 28, 1968, Ser. No. 755,926
Int. Cl. B65d 85/67, 39/12; B65h 55/02, 75/16
U.S. Cl. 206—52 4 Claims



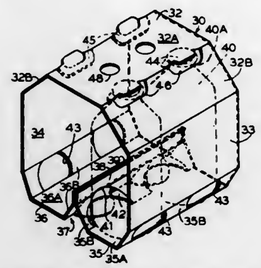
Mechanism for releasably locking a cover to a base wherein an elastic expansion cup is fitted and secured into a socket in the cover to releasably engage the base. The generally cylindrical wall of the expansion cup projects beyond the inside of the cover and may, in its normal condition, be freely inserted into an aperture in the base. A handle disk is rotated within the cup to expandably force the wall of the cup into engagement with the base to thereby lock the cover to the base.

3,498,448
SURGICAL PACKAGE
John J. Kuster, Kendall Park, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Continuation-in-part of application Ser. No. 621,578, Mar. 8, 1967. This application July 3, 1968, Ser. No. 747,042
Int. Cl. A61b 19/02
U.S. Cl. 206—63.2 6 Claims



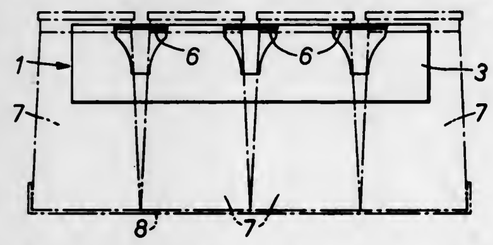
Sterile packages are disclosed in which the outer wrapper has an integral ear strip which when removed provides an opening for access to the sterile product, the tear strip being so positioned and of such a shape that when it is removed, the outward facing surfaces of the outer wrapper adjacent the access opening are sterile surfaces.

3,498,449
CARRIERS FOR CONTAINERS HAVING CHIMELESS BOTTOMS
Joseph C. Spery, 527 Madison Ave., Room 1412, New York, N.Y. 10022
Filed Oct. 20, 1965, Ser. No. 498,766
Int. Cl. B65d 71/00, 5/12
U.S. Cl. 206—65 1 Claim



This invention is directed to a wrapper-type carrier for packaging a plurality of containers having chimeless bottoms which is formed from a single strip of blank material which can be readily folded about a series of transversely extending foldlines so as to define a closed figure having opposed top and bottom panels interconnected by opposed interconnecting side-forming panels. The arrangement is such that the closed figure thus formed is provided with fully open end portions and is free of any intermediate panels interconnecting between the top and bottom panels or the opposed side panels. The top and bottom panels are further provided with blanked out tabs or flaps to positively retain one or more chimeless bottom containers within the carrier between the full open ends thereof. One panel of the carrier is further provided with means for positively retaining the one panel contiguous to one end of the containers adapted to be retained within the wrapper. The opposed panel of the carrier is specifically constructed so as to accommodate or retain the chimeless end of the container within the wrapper in a positive manner.

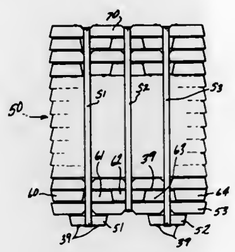
3,498,450
SHRINK-WRAP AND LIKE PACKAGING
Roy A. Stevens, Hythe Road, Thornton Heath, England
Filed Nov. 14, 1967, Ser. No. 682,852
Claims priority, application Great Britain, Nov. 18, 1966, 51,825/66
Int. Cl. B65d 21/02, 71/00, 75/24
U.S. Cl. 206—65 6 Claims



A partition structure for locating an assembly of jars or similar containers on a tray as in a "shrink-wrap" package, consists of a sheet of cardboard slit and creased such

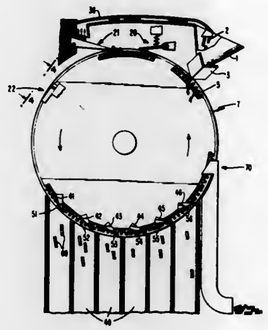
that when folded upon itself there is formed a partition for insertion between two adjacent rows of containers with integral lateral tabs adapted to engage between the containers in the said rows.

3,498,451
PACKAGE FOR TRANSPORTING INGOTS
Alan J. Foley, Athens, and Madison J. Gardner, Rinard Mills, Ohio, assignors to Ormet Corporation, a corporation of Delaware
Filed Apr. 9, 1968, Ser. No. 719,925
Int. Cl. B65d 69/00
U.S. Cl. 206—65 15 Claims



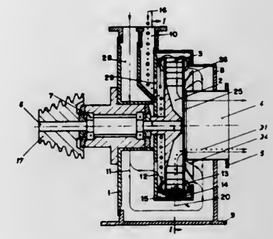
The disclosure teaches an interlocking ingot with a base portion having at least one cavity therein and a plurality of nibs thereon and with a top portion having a concave surface to receive nibs from the ingot thereabove to form a mechanical interlock therewith. The disclosure also teaches a package for transporting ingots, a method of transporting ingots and a mold for forming ingots.

3,498,452
PIN LENGTH SORTER
Jesse Aronstein, Latham, and Richard John Gunthert, Wappingers Falls, N.Y., and Conrad Trollmann, Redwood City, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 16, 1968, Ser. No. 729,798
Int. Cl. B07c 5/06
U.S. Cl. 209—73 18 Claims



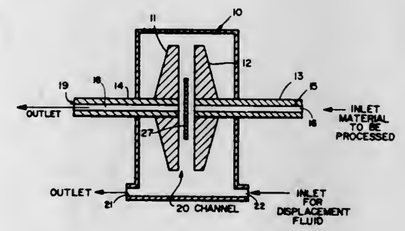
A pin-sorting apparatus for sorting pins of different lengths in a continuous operation comprising feed means for feeding pins into grooves in a grooved surface, holding means for holding the pins in the grooves during movement of the grooved surface, and release means for sensing and releasing pins of a predetermined length from the grooves for collection by collection means. Unreleased pins are then removed, and the cycle repeated.

3,498,453
FLUID FLOW CLASSIFIER
Fritz Kaiser, Hammel, near Augsburg, and Ernst Zielina, Augsburg, Germany, assignors to Alpine Aktiengesellschaft, a corporation of Germany
Filed Oct. 10, 1967, Ser. No. 674,191
Int. Cl. B04b 3/00
U.S. Cl. 209—144 9 Claims



An apparatus for classifying mixtures of fine and coarse materials by the use of a rotatable classifying wheel and an air flow which is caused to stream into a liner surrounding the classifier wheel, a pair of annular gaps at the periphery of the wheel and then in through the classifying wheel. During the rotation of the classifying wheel and the flow of air through the classifier, the mixture of fine and coarse materials is carried from a spot located at the liner surrounding the classifying wheel around and to the periphery of the wheel. The fine material is carried through the wheel and discharged out along its axis, while the coarse material is carried around on the inside of the liner and discharged from the upper part of the liner after being carried nearly around to the point where material enters.

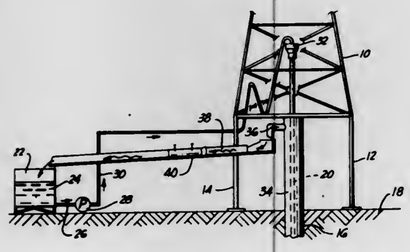
3,498,454
COUNTER-CURRENT CENTRIFUGAL DEVICE AND USE
William J. Timson, Belmont, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 20, 1968, Ser. No. 706,987
Int. Cl. B07b 7/00
U.S. Cl. 209—144 13 Claims



An apparatus which includes a housing defining a chamber therein, at least two rotatable plates in spaced, face-to-face relationship defining a channel therebetween; at least one inlet for feeding fluid material into the

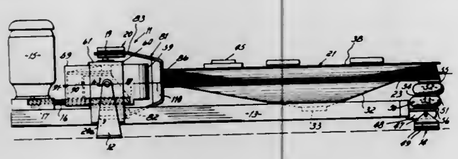
channel; a plurality of spaced outlets for removing the processed material, at least one of which is spaced radially from the center of rotation of the plates. A counter-current flow pattern is provided by introducing a displacement fluid into the channel. Preferably, the plates are mounted on separate rotatable shafts and the inlet for material to be processed is through one shaft and one outlet is in the other shaft. The apparatus can be used as a classifier, concentrator, emulsifier or for washing materials of different density or the same density and different mass.

3,498,455
DITCH MAGNET
John H. Kirby III, Houston, Tex., assignor to Ditch Magnets, Inc., Houston, Tex., a corporation of Texas
Filed Jan. 19, 1968, Ser. No. 699,143
Int. Cl. B03c *1/08*
U.S. Cl. 209—223 **1 Claim**



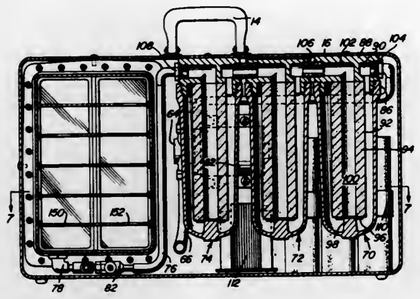
Apparatus for positioning in the mud circulation system during milling or cutting operations in a well bore thereby removing ferrous particles from such mud circulation system after the mud comes from such well bore.

3,498,456
BALANCED GYRATORY SIFTER
Elmer W. Childs, Cincinnati, Ohio, and Robert M. Broomall, Fort Thomas, Ky., assignors to J. H. Day Company, Cincinnati, Ohio, a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,402
Int. Cl. B07b *1/34*
U.S. Cl. 209—325 **16 Claims**



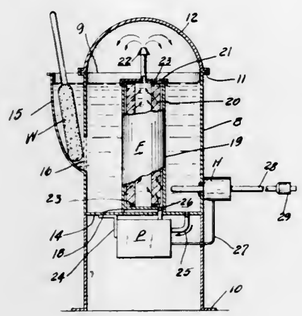
A gyratory sifter including a generally horizontal screen and an eccentric drive mechanism for imparting a gyratory motion to the head end of the screen. The tail end is mounted for reciprocal movement upon a pair of resilient mounts. A pair of weights rotate in opposite directions about the center of gyration of the screen and are so positioned that they counterbalance both the gyratory movement of the head end of the screen and the reciprocal movement of the tail end.

3,498,457
ELECTRONIC WATER PURIFIER
Alfredo A. Gough, El Paso, Tex., assignor to Ruffin Industries, Inc., a corporation of Texas
Filed Oct. 9, 1967, Ser. No. 673,910
Int. Cl. C02b *3/00*
U.S. Cl. 210—85 **21 Claims**



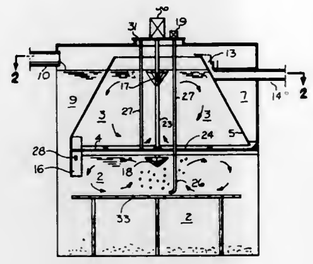
A portable water purifier within which water is passed sequentially through filtering devices for removal of solid impurities and irradiated in a germicidal unit for rendering organic pollutants harmless. The filtering devices and the germicidal unit together with a motor operated pump and electrical power components are housed within a single case having a control panel mounting control switches, malfunction indicators, water and electrical connectors and a drain valve control for operating and servicing the purifier.

3,498,458
WATER HEATING AND FILTERING APPARATUS
William G. Weber, 1404 Park St., Bay City, Mich. 48706
Filed May 23, 1967, Ser. No. 640,732
Int. Cl. B01d *35/18, 27/00*
U.S. Cl. 210—167 **1 Claim**



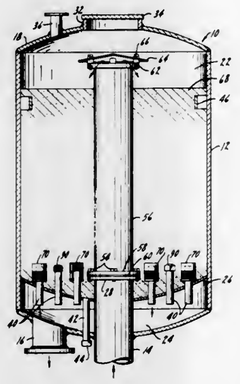
The present invention relates to a cleaning apparatus used by gasoline station attendants for serving customers by washing and wiping automobile windshields, windows and headlights which, in use, become splattered with road dirt, oil and mud; said apparatus including means for continuously filtering, heating and re-circulating the water being used to provide clean water and wipers at all times.

3,498,459
APPARATUS FOR BIOLOGICAL TREATMENT OF RAW WASTE WATER
Botho Böhnke, Aachen, Germany, assignor to Lyco Systems, Inc., Williamsport, Pa., a corporation of Pennsylvania
Filed Mar. 24, 1969, Ser. No. 809,680
Claims priority, application Luxembourg, Mar. 22, 1968, 55,749
Int. Cl. B01d *33/00, 23/00*
U.S. Cl. 210—208 **8 Claims**



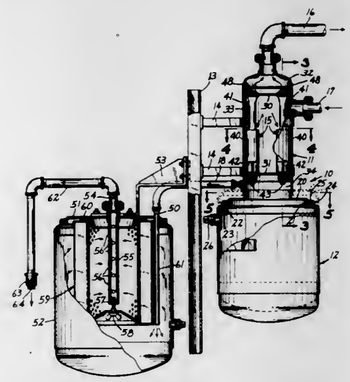
Clarification apparatus for the biological treatment of unclarified waste water, comprising a tank having a lower chamber serving as an anaerobic digestion space and an upper chamber serving as an aerobic activation space, a horizontal bottom wall and a vertical side wall in the tank, the side wall bounding a vertical duct extending upwardly from the lower chamber to the upper zone of the upper chamber, at the upper end of the duct an inflow opening to the upper chamber, and an aeration device arranged in each of the upper chamber and in the upper zone of the lower chamber.

3,498,460
CONVERTIBLE FILTER APPARATUS
Marvin Lane, Cranford, N.J., assignor, by mesne assignments, to Union Tank Car Company, Chicago, Ill., a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,764
Int. Cl. B01d *27/04, 25/06*
U.S. Cl. 210—232 **6 Claims**



Filtration apparatus which is readily convertible from operation with filter cartridges to operation with a bed of granular media, such as ion exchange resin beads. The filter tank is partitioned into influent and effluent zones, and fluid to be filtered enters the tank through a conduit which passes through the effluent zone and the partition and discharges into the influent zone. Mounted in the partition are tubular seat means for holding annular filter cartridges; the seat means also provide a fluid path from the influent zone to the effluent zone. When the apparatrs is used with filter cartridges, the inlet conduit discharges fluid near the partition. However, when it is desired to use a bed of granular media, the filter cartridges are removed and an extension is connected to the inlet conduit so that it discharges fluid near the top of the tank, above the level of the bed. Strainers are placed over the ends of the seat means so that granular media will not pass into the effluent zone.

3,498,461
FLUID FILTER
Harold L. Miller, 3440 Dupont Ave. S., Apt. 103, Minneapolis, Minn. 55408
Continuation of application Ser. No. 496,089, Oct. 14, 1965. This application Oct. 30, 1968, Ser. No. 778,358
Int. Cl. B01d *43/00*
U.S. Cl. 210—253 **10 Claims**

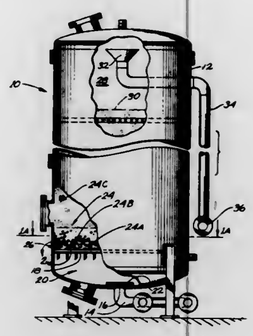


A centrifugal fluid filter with a quickly replaceable particle collection container at the bottom thereof and an underflow having a restriction therein to restrict the fluid flow to a value sufficient to reduce the re-entrainment in the centrifugal filter below an undesirable amount, said underflow passing through a fluid pervious filter element to further remove any foreign particles therein.

3,498,462
FLOW NOZZLE ASSEMBLY FOR UPFLOW FILTERS
Ronald A. Larrowe, Whittier, and Theodore J. Warning, Walnut, Calif., assignors to U.S. Filter Corporation, Whittier, Calif., a corporation of California
Filed May 14, 1969, Ser. No. 824,553
Int. Cl. B01d *35/02, 23/20, 27/02*
U.S. Cl. 210—289 **18 Claims**

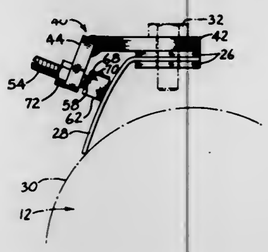
An upflow filter having a filter bed of granular solids, and a plurality of flow nozzles in a bed plate for delivering unfiltered liquid to the filter bed. In a preferred form of the invention each nozzle has an externally threaded

portion engaged with an internally threaded hollow sleeve which is immovably sealed through the bed plate. The threaded sleeve enables the elevation of the nozzles to



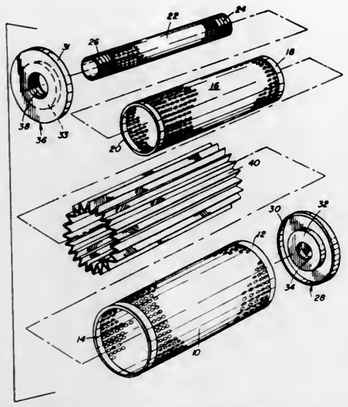
be equalized and provides a permanent seal which substantially eliminates leakage through the bed plate, thereby producing equal flow distribution of liquid up through the filter bed.

3,498,463
FILTER ASSEMBLY
Norman Strotman, Custer City, Pa., assignor to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,082
Int. Cl. B01d *35/16*
U.S. Cl. 210—396 **12 Claims**



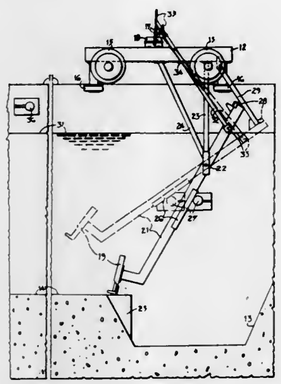
A filter assembly of the type wherein the filter element desirably comprises a rotatable, hollow metal member, particularly a tight coil of metal ribbon, or wire, in cylindrical form, having a plurality of openings therein for selectively permitting the passage of material therethrough. The assembly includes a scraper blade which desirably is stationary or fixed for removing solid matter from the surface of the filter element as it rotates. The assembly further includes a pressure applying unit which is positioned on the filter assembly adjacent to the scraper blade. The pressure applying unit has an adjustable bar for engaging the scraper blade which enables the scraper blade to be selectively moved toward the surface of the filter element in accordance with the degree of contact and pressure between the blade and the surface of the filter element required to remove solid matter from the surface of the filter element thereby to permit substantially continuous flow of material through the openings of the filter element during operation.

3,498,464
KNOCK-DOWN FILTER
Daniel R. Frosolone, 5815 N. Cicero Ave., Chicago, Ill. 60646
Filed Aug. 28, 1968, Ser. No. 755,946
Int. Cl. B01d *25/04, 27/06*
U.S. Cl. 210—457 **1 Claim**



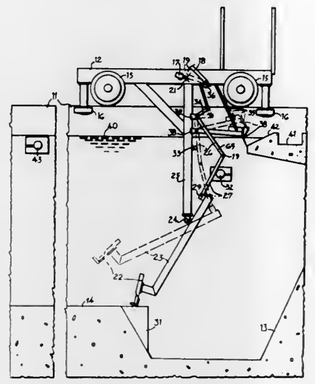
A filter cartridge for filtering out particulate matter in used solvents such as perchloroethylene, used in dry cleaning systems, of knockdown construction for ready replacement and reuse having interfitted perforated tubes, one within the other and having a tubular element of folded accordion pleated filter paper all in a compact unit all anchored together by cover and bottom plates.

3,498,465
SEWAGE CLARIFIER SYSTEM OR THE LIKE
Dieter Klump, Michelbach, Nassau, and Leonhard Emil Fechter, Michelbacherhutte, Germany, assignors to Passavant-Werke Michelbach, Nassau, Germany, a corporation of Germany
Filed Feb. 7, 1968, Ser. No. 703,620
Claims priority, application Germany, Feb. 17, 1967, P 41,440
Int. Cl. B01d *43/00, 12/00*
U.S. Cl. 210—525 **9 Claims**



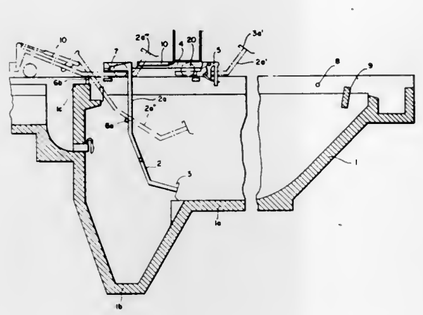
A bridge-type clarification system includes improved means for raising and lowering a sludge collector member supported by a movable bridge structure and control means for positively coordinating the direction of movement of the bridge structure with the vertical position of the collector member.

3,498,466
BLADE SUPPORT STRUCTURE FOR CLARIFIER SYSTEM OR THE LIKE
Leonhard Emil Fechter, Michelbacherhutte, and Dieter Klump, Michelbach, Nassau, Germany, assignors to Passavant-Werke, Michelbach, Nassau, Germany, a corporation of Germany
Filed Feb. 7, 1968, Ser. No. 703,739
Claims priority, application Germany, Feb. 17, 1967, P 41,441
Int. Cl. B01d *43/00, 12/00*
U.S. Cl. 210—525 **8 Claims**



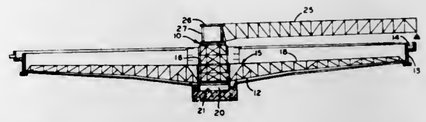
A bridge-type clarification system includes an improved toggle mechanism for raising and lowering a sludge collector member supported by a movable bridge structure.

3,498,467
SLUDGE SCRAPER FOR SEDIMENTATION BASINS
Erhard Hollebrandt, Michelbacherhutte, Germany, assignor to Passavant Werke, Michelbacherhutte, Germany, a corporation of Germany
Filed Jan. 16, 1969, Ser. No. 791,740
Int. Cl. B01d *21/06, 21/04*
U.S. Cl. 210—527 **16 Claims**



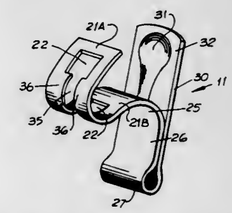
A sludge scraper device for a sedimentation basin. The scraper is pivotally connected to a laterally movable scraper bridge for movement into and out of the basin. The blade is raised to a position above the upper rim of the basin by its engagement with stop members mounted on the basin during part of the lateral movement of the bridge.

3,498,468
SEDIMENTATION TANK
Russell C. Raynor, South Salem, N.Y., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 568,330, July 27, 1966. This application Jan. 14, 1969, Ser. No. 813,776
Int. Cl. B01d *21/06, 21/00*
U.S. Cl. 210—528 **46 Claims**



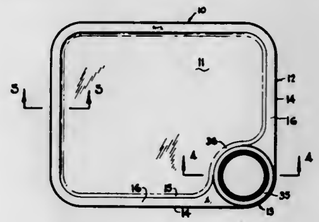
A drive head supporting a rake structure for rotation upon a stationary support structure or column rising from the bottom of the sedimentation tank, whereas an annular bearing member carrying the rake structure is rotatable in an annular casing structure by way of verticle thrust and radial guide bearing means; and wherein a bull gear mounted on the annular bearing member has a separate annular lubricating trough carried by the casing structure.

3,498,469
DISPLAY RACK CLAMP
Karl B. Hummel, Crawfordsville, Ind., assignor to Sommer Metalcraft Corporation, Crawfordsville, Ind., a corporation of Indiana
Filed July 5, 1968, Ser. No. 742,775
Int. Cl. A47b *29/00*
U.S. Cl. 211—71 **3 Claims**



A clamping device for a display rack including a snap-on spring steel gripping portion which resiliently holds an end zone of the device against the bar to grip an object being displayed.

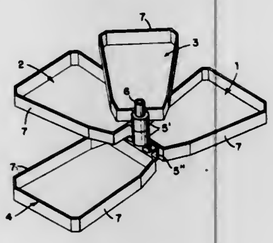
3,498,470
SERVING TRAY WITH INTEGRAL CUP HOLDER
Donald J. Thomas, Town and Country, Mo., assignor to Burger Chef Systems, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Nov. 2, 1967, Ser. No. 680,191
Int. Cl. A47g *19/06, 23/06*
U.S. Cl. 211—74 **6 Claims**



The serving tray includes a flat panel provided with a channel-shaped reinforcing rim. A raised well is provided at one corner of the tray which includes coaxial walls,

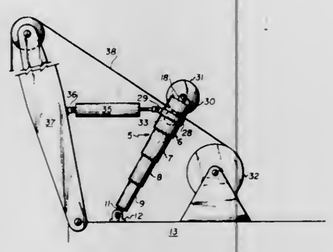
the inner wall being stepped downwardly to form a plurality of vertically adjacent socket portions. The socket portions have side walls tapered relative to tapered cups, each socket portion is made successively smaller than the next superjacent socket portion to accommodate a smaller size of cup. The well walls and the rim are provided with a downwardly divergent configuration enabling identical trays to be nested for storage.

3,498,471
TRAY SET
Chielbertus Johannes Simon Dirkx, Floralaan Oost 114, Eindhoven, Netherlands
Filed Nov. 6, 1967, Ser. No. 680.747
Claims priority, application Germany, Nov. 7, 1966, D 34,447
Int. Cl. A47f *3/14, 3/05*
U.S. Cl. 211—131 **4 Claims**



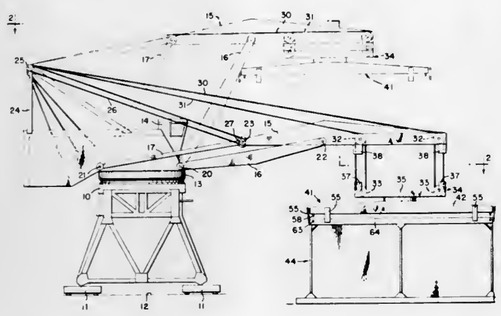
A series of trays are arranged in stacked relation, and each tray has an integral support member projecting outwardly from its edge portion. The support members of adjacent trays have removable cylindrical interfitting portions which provide for relative rotation between adjacent trays and the projecting support member of the cover tray also interfits with the projecting support member of the bottom tray to produce a stable base for the trays.

3,498,472
CABLE SLACK CONTROL DEVICE FOR CLAMSHELL RIGS
William J. Rodgers, 47 Kenwood Lane, and Thomas A. Hughes, 2 Parkway Drive, both of New City, N.Y. 10956
Filed June 6, 1968, Ser. No. 734,983
Int. Cl. B66c *23/00, 23/62, 23/60*
U.S. Cl. 212—8 **8 Claims**



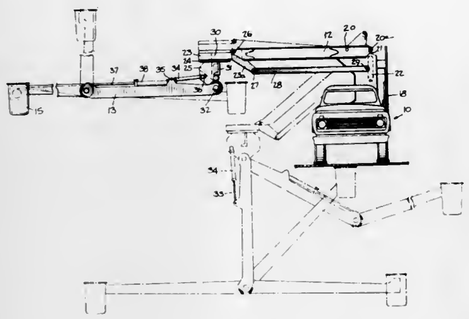
This invention is directed to a slack control device for the hoisting cables of clamshell and other types of boomed rigs and includes a pair of transversely spaced, spring compensated, telescopic units for each hoisting cable. A cable-engaging sheave, which rides over the top of an associated cable, is freely mounted on a shaft extending across the tops of the telescopic units, which are pivotally attached at their bottoms to the deck of the rig at a position intermediate the base of the boom and the winch drums of the rig. The telescopic units pivot toward or away from the winch drums as the angle of the boom is changed.

3,498,473
CONTAINER-HANDLING CRANE
Philip F. Spaulding and Frederic L. Salinger, Seattle, Wash., assignors to Philip F. Spaulding and Associates, Incorporated, Seattle, Wash., a corporation of Washington
Filed Jan. 17, 1968, Ser. No. 698,545
Int. Cl. B66c *1/00, 23/06, 23/62*
U.S. Cl. 212—41 **3 Claims**



A material handling crane providing a spreader bar which is suspended from the crane's jib in a manner permitting the bar to be adjusted rotatively in relation to the jib about a vertical axis.

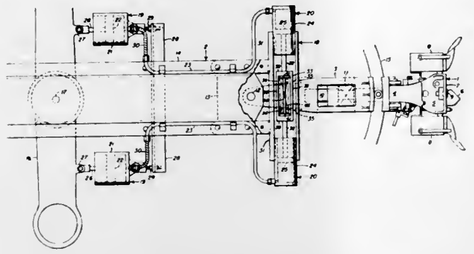
3,498,474
EXTENSIBLE BOOM STRUCTURE
Wayne M. Pierce, Jr., Milford, Conn., assignor to Hunt-Pierce Corporation, Milford, Conn., a corporation of Connecticut
Filed May 27, 1968, Ser. No. 732,399
Int. Cl. B66c *23/06, 23/84, 23/62*
U.S. Cl. 212—59 **2 Claims**



A boom structure capable of reaching into locations above, on a level with or below the support on which the boom is mounted is provided by a support mounted on a base structure, the support capable of being rotated in a horizontal plane. A first arm capable of being raised and

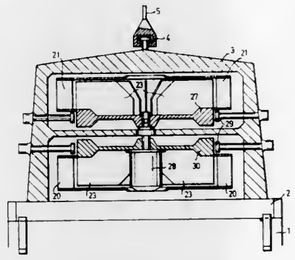
lowered is articulately joined to the support. A second arm is articulately joined to the first arm so as to be capable of being moved vertically or horizontally with respect to the first arm. A third arm is articulately joined to the second arm so as to be capable of being moved vertically with respect to the second arm. A bucket is supported at the end of the third arm to pivot with respect to the third arm.

3,498,475
AUTOMATIC HYDRAULIC CENTERING DEVICE
Geoffrey W. Cope, Williamsville, N.Y., assignor to Dresser Industries, Inc., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,309
Int. Cl. B61g *9/02, 9/04, 9/06*
U.S. Cl. 213—15 **11 Claims**



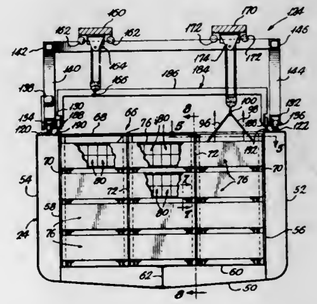
A device for automatically centering a head of an uncoupled horizontally swingable railway coupler on underlying track, having hydraulically connected master and slave hydraulic units respectively connected to an adjoining truck away from the truck's pivot and acting on the coupler forwardly of the pivot about which the coupler swings horizontally for horizontally swinging the coupler when uncoupled in response to horizonizontal angling of the truck and yieldable means disposed between the coupler and truck and operative when the coupler is coupled for enabling the coupler to swing horizontally independently of the horizontal angling of the truck.

3,498,476
DEVICE FOR ADJUSTING THE POSITION OF A ROTATABLY SUSPENDED OBJECT, ESPECIALLY A LOAD SUSPENDED IN A CRANE
Johan Arne Mattson and Lars Jettman, Vasteras, Sweden, assignors to Byggnadsaktiebolaget Paul Anderson, Vasteras, Sweden, a Swedish corporation
Filed June 21, 1967, Ser. No. 647,854
Claims priority, application Sweden, June 21, 1966, 8,453/66; Feb. 22, 1967, 2,437/67; Feb. 28, 1967, 2,746/67
Int. Cl. B66c *13/04*
U.S. Cl. 214—1 **12 Claims**



The invention is concerned with a device for adjusting the position of a rotatably suspended object, e.g. a load suspended in a crane, in order to avoid the risks connected with the turning the load by hand or by special devices necessitating extra staff. On a lifting frame, in which the load is suspended, are mounted rotatable members, driving means for their rotation about a vertical axis, and a device for the production and transmission to the frame of reaction forces derived from the rotation of the rotatable member. Two main embodiments are considered, one in which the rotatable member or members are flywheels, from which reaction forces are derived by acceleration or retardation of the flywheel or wheels, and one in which the rotatable member or members are fan wheels, from which reaction forces are derived by deflecting the air stream produced by the fan wheel or wheels in a direction opposite to the direction of the desired reaction force. The invention also comprises advantageous combinations of these two systems.

3,498,477
APPARATUS FOR HANDLING AND STOWING CARGO ON A CARGO VESSEL
Edmund T. Sommer, 6303 Wynkoop Blvd., Bethesda, Md. 20034
Filed Nov. 21, 1967, Ser. No. 684,738
Int. Cl. B63b *27/10, 9/12, 29/00*
U.S. Cl. 214—15 **9 Claims**

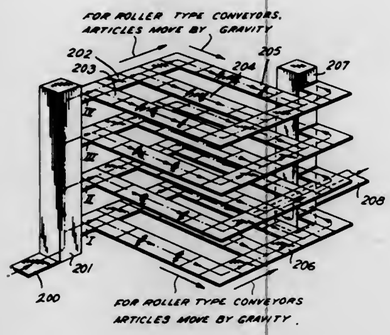


A cargo vessel includes a plurality of spaced guide means defining individual cargo cells each of which has a separate hatch thereover. Crane means movable along the upper portion of the vessel is disposed in spanning relationship to the cargo hold area within which said cargo cells are disposed and includes pick-up hoists for moving cargo into and out of the cells. A bridge deck means is also movable along the upper portion of the vessel and is movable through the crane means. Movable platforms may be supported in certain cells in desired vertical relationship therewithin. Containers having wheel means thereon and means for engaging the crane means may be disposed within certain of the cells. Passenger accommodation means is provided in overlying spaced relation to the cargo cells.

3,498,478
CONVEYING STRUCTURE FOR STORING ARTICLES AT DIFFERENT LEVELS
Gunnar Thure Eliassen, Saffle, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Original application Feb. 28, 1964, Ser. No. 348,213, now Patent No. 3,361,079, dated Jan. 2, 1968. Divided and this application Oct. 30, 1967, Ser. No. 678,835
Claims priority, application Sweden, Feb. 28, 1963, 2,226/63
Int. Cl. B65g *11/06*
U.S. Cl. 214—16.4 **11 Claims**

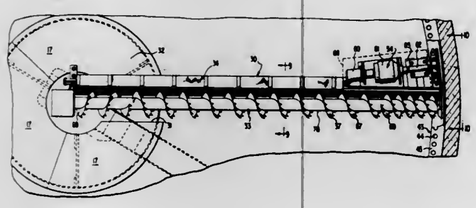
A multi-level conveyor system having a plurality of storage lines at each level to which articles can automatically be supplied by a distributing line and from

which articles can automatically be collected by a collecting line, a first elevator for automatically moving articles from a feed line to the distributing lines, a second elevator for automatically moving articles from the collecting lines to a delivery line, the elevators having vertically movable platforms, a first member movable between a first stop position in the path of articles moving from the feed line to the first elevator and a second clear position, a second member movable between a first stop position in the path



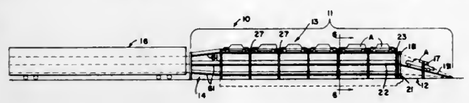
of articles moving from each of the collecting lines to the second elevator and a second clear horizontal position upon which articles from a collecting line can move, the platform of the second elevator receiving articles from each of the second members when it is in its first stop position, first mechanism for moving the first member to its first stop and second clear positions, second mechanism for moving each of the second members to its first and its second positions, and controls for controlling the first and second mechanisms.

3,498,479
AUGER WITH ANGULARLY CUTTING BLADES FOR SILO UNLOADER
Richard L. Weaver, Rte. 1, and Benjamin K. Smoker, Rte. 3, both of Myerstown, Pa. 17067
Original application July 25, 1966, Ser. No. 567,722, now Patent No. 3,391,809. Divided and this application July 8, 1968, Ser. No. 743,082
Int. Cl. B65g *65/46*
U.S. Cl. 214—17 **2 Claims**



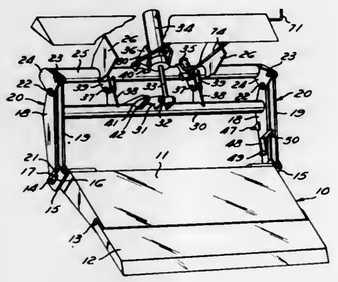
An auger for unloading a silo having angularly cutting blades is provided which is particularly useful in bottom silo unloading operations, the blades extending from the periphery of the spiral rib of the auger, with each blade including an angularly extending outer tip which extends toward an end of the auger to produce annular angular cuts in the silage.

3,498,480
AUTOMOBILE TRANSPORTING SYSTEM
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,779
Int. Cl. B60p *3/08;* **B65j** *1/22*
U.S. Cl. 214—38 **10 Claims**



A system for transporting automobiles by means of freight vehicles including a loading station onto which the automobiles are driven. The loading station includes a plurality of levels, each supporting a plurality of platforms onto which the automobiles are tied and thereafter transported by a conveying means to a freight vehicle. The freight vehicle is constructed to receive the platforms at different levels and is enclosed to minimize damage to the automobile during transit.

3,498,481
POWERED FOLD UNDER LIFT GATE
Harrie Arthur Size, Findlay, Ohio, assignor to Daybrook-Ottawa Corporation, a corporation of Delaware
Filed June 8, 1967, Ser. No. 644,568
Int. Cl. B60p *1/26*
U.S. Cl. 214—77 **9 Claims**

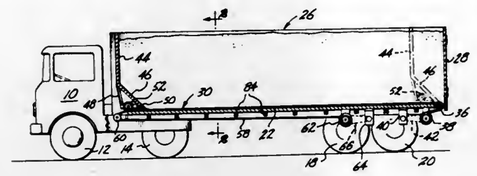


Powered lifting gate for attachment to truck bodies for lifting loads from ground to truck bed height. Replaceable pivot link on lifting linkage permits level or ramping rise. During truck travel, or for loading dock at truck bed height, foldable platform is folded under by same operation of linkage which lifts platform for loading operation. Counterbalancing of platform sections permits manual folding of platform to position where operation of lifting linkage complete folding operation. Operation of lifting linkage to lower platform unfolds the folded under platform to accessible position for manually unfolding the platform. Platform automatically latched at raised or folded-in position of platform, but operation of control to lower automatically unlatches the platform.

3,498,482
TRUCK-BODY UNLOADING APPARATUS
Milburn Lewis, Seattle, Wash., assignor to Western Sawdust Products, Inc., Seattle, Wash., a corporation of Washington
Filed July 30, 1968, Ser. No. 748,723
Int. Cl. B60p *1/00*
U.S. Cl. 214—83.22 **5 Claims**

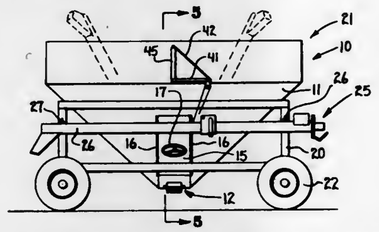
A truck body having sidewalls is provided with a rearwardly movable front wall and a load-carrying belt to discharge cargo at the tailgate. The belt and the movable

front wall of the body are associated together. By means of a lost-motion connection, an initial load-loosening movement of the belt, prior to front wall movement, is



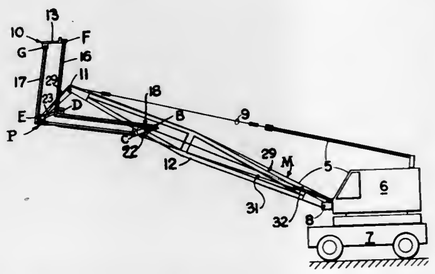
provided. When the cargo is compactable material and has been subjected to vibration during transport, the preliminary loosening of the material relative to the sidewalls of the truck body and discharge facilitates unloading.

3,498,483
COMBINATION AUGER ARRANGEMENT AND GRAVITY BED
James L. Meharry, R.R. 1, Wingate, Ind. 47994
Filed Dec. 26, 1967, Ser. No. 693,527
Int. Cl. B60p *1/40*
U.S. Cl. 214—83.26 **6 Claims**



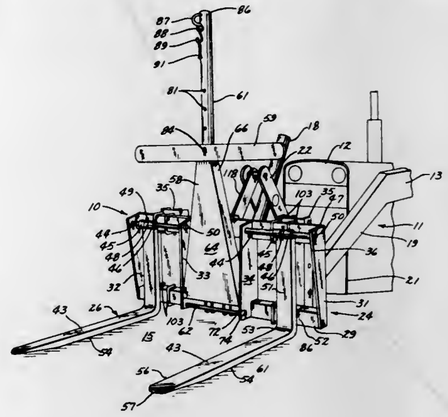
A gravity bed vehicle having an auger arrangement mounted thereon in a swinging hanging manner by means of a horizontally pivotal arm and a line secured to the arm and to the auger arrangement centrally thereof. The vehicle can be discharged by connecting the auger arrangement to the lower end of the vehicle or can be filled by placing the discharged end of the auger arrangement over the vehicle.

3,498,484
OVERHEAD ATTACHMENT FOR THE BOOM POINT OF CRANES
Alfred Tucci, 2510 Fernwood Ave., San Jose, Calif. 95117
Filed Sept. 5, 1968, Ser. No. 757,610
Int. Cl. B66c *23/68;* **E04g** *1/22*
U.S. Cl. 214—130 **3 Claims**



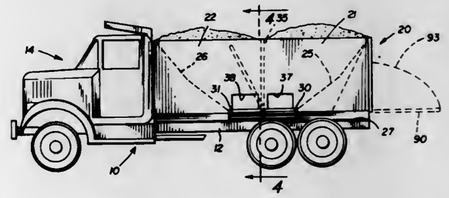
An attachment for the boom of a crane by which the operator thereof can control tools and accomplish work therewith above and beyond the extreme end or point of the boom. A parallelogram carrier for a work supporting platform or table and a compensator for automatically maintaining the table horizontal at all times during up and down movement of the boom.

3,498,485
BOOM AND FORK LIFT APPARATUS
Byron L. Godbersen, Ida Grove, Iowa 51445
Filed Feb. 23, 1968, Ser. No. 707,827
Int. Cl. B66f *9/00*
U.S. Cl. 214—131 **8 Claims**



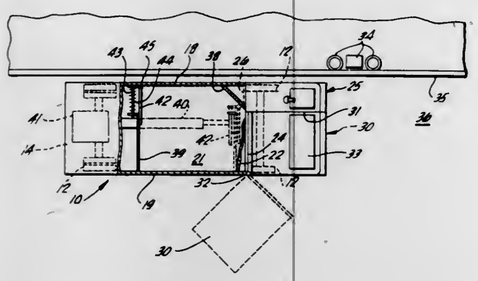
This invention comprises a universal apparatus for converting a conventional front end loader into a combined fork lift and boom arrangement for greatly increasing the usefulness of the loader; the arrangement being a normally vertically disposed frame adapted for attachment to substantially any front end loader, a fork lift pivotally mounted upon the frame and adapted to have the frame serve as a backstop for the fork lift should the frame be tilted out of a vertical plane with a top part of the frame back toward the loader, and an elongated T-shaped boom pivotally mounted at its base to the base of the frame and centrally of the fork lift, with the boom having either a raised position against the frame or a lowered position resting upon the fork lift and using same as a support.

3,498,486
MULTIPLE HOPPER VEHICLE
Jesse H. Freeman, Jr., 2585 Nelson St., Lakewood, Colo. 80215
Filed Feb. 9, 1968, Ser. No. 704,313
Int. Cl. B60p *1/38;* **B65g** *65/42*
U.S. Cl. 214—501 **8 Claims**



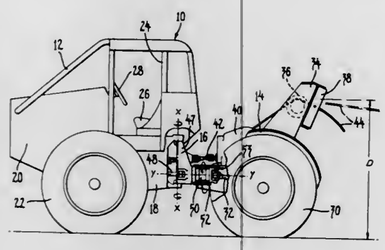
A multiple compartment vehicle has at least two hoppers for granular, construction type materials, each with a bottom mounted, side delivery conveyor, and/or a rear mounted dumping compartment for excavated material and rubble.

3,498,487
REFUSE COLLECTION VEHICLE
Charles H. Barnes, 2766 E. Glenoaks Blvd., Glendale, Calif. 91206
Continuation-in-part of application Ser. No. 501,412, Oct. 22, 1965, which is a continuation-in-part of application Ser. No. 284,958, June 3, 1963. This application July 5, 1968, Ser. No. 742,877
Int. Cl. B60f 3/00; B60p 1/00
U.S. Cl. 214—518 20 Claims



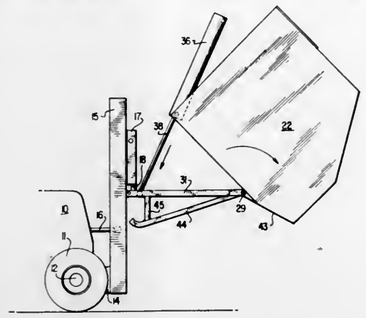
A refuse collection vehicle in which a bin is mounted to a self-propelled wheeled chassis to define essentially the maximum width of the vehicle. A control cab is fixed to the chassis adjacent one end of the bin to partially close the bin. A gate assembly is mounted adjacent the control cab for movement into and out of closure relation with the remainder of the one end of the bin. The gate assembly includes a hopper and means for transferring to the bin refuse introduced into the hopper. Refuse ejection means are provided within the bin for ejecting collected refuse from the bin through the opening provided when the gate assembly is moved out of closure relation to the remainder portion of the bin one end.

3,498,488
SKIDDER WITH REAR PIVOT LIMITING MEANS
Allan J. Wildey, Markham, Ontario, and Colin Taylor, Newmarket, Ontario, Canada, assignors, by mesne assignments, to Massey-Ferguson, Inc., Des Moines, Iowa, a corporation of Maryland
Filed Aug. 27, 1968, Ser. No. 755,532
Int. Cl. B60p 1/00
U.S. Cl. 214—523 5 Claims



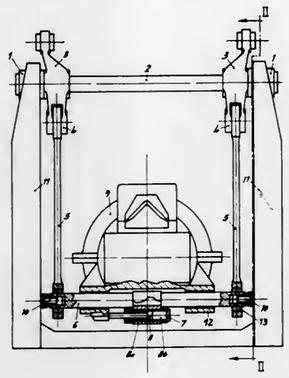
A log skidder includes a front section mounting drive wheels, a power plant and an operator's cab; a center section pivoted to the front section about a substantially vertical axis; a rear section including a winch, an arch, and drive wheels; and means pivoting the center and rear sections together for relative pivotal movement about an axis extending substantially longitudinally of the skidder. A spring unit is connected between the center and rear sections for increasingly resisting the relative pivotal movement of the center and rear sections.

3,498,489
SCOOP ATTACHMENT FOR FORK LIFT TRUCK
Richard R. Love, Box 468, Buhl, Idaho 83316
Continuation of application Ser. No. 555,884, June 7, 1966. This application July 23, 1968, Ser. No. 749,562
Int. Cl. B66f 9/16
U.S. Cl. 214—620 6 Claims



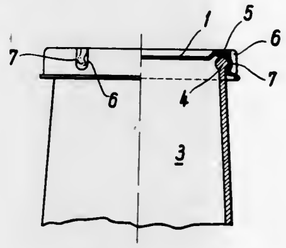
A material handling vehicle of the fork lift truck type having a scoop mounted on the fork members. The scoop is pivotally connected to a pair of housing elements that in turn receive the tines of the fork of the truck and a hydraulic cylinder is carried by the housing elements and pivotally connected to the scoop for pivotally moving the scoop with respect to the housing elements. This abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

3,498,490
MANIPULATORS
Ludwig Schussler, Willich, and Werner Folta, Lintorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company
Filed Apr. 12, 1968, Ser. No. 720,790
Claims priority, application Germany, Apr. 15, 1967, Sch 40,553
Int. Cl. B21j 13/12
U.S. Cl. 214—652 4 Claims



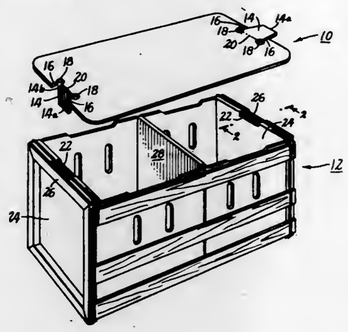
A travelling or stationary manipulator, having a tongs-holder, with tongs, adjustable both in height and laterally, and also rotatable, for gripping and handling billets during forging, straightening and other deformation, the tongs-holder being slidably mounted upon two carrying members mounted parallel to one another in the lower part of a machine frame, and the carrying members being connected by ball-and-socket joints with the lower ends of four tie rods, the upper ends of which are connected by ball-and-socket joints with the lower arms of four bell-crank levers mounted fast upon two transverse carrying shafts, journalled in the machine frame, parallel to the two carrying members. Means such as pistons and cylinders may be provided for displacing the tongs-holder along the two carrying members either jointly or separately.

3,498,491
CAP-SHAPED COVER AND A METHOD FOR PRODUCING A VACUUM CLOSURE ON GLASS CONTAINERS
Heinrich Eberhardt, 9 Gasstrasse, 221 Itzehoe, Holstein, Germany
Filed Feb. 1, 1968, Ser. No. 702,467
Claims priority, application Germany, Feb. 6, 1967, E 33,343
Int. Cl. B65d 41/22
U.S. Cl. 215—41 2 Claims



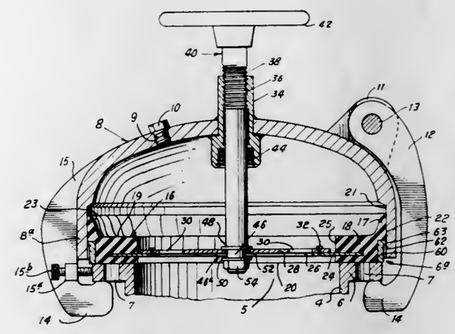
A vacuum closure for a beaker-like container is provided by a cap-shaped cover having a plurality of inwardly directed resilient indentations formed in its side wall surface. The indentations are deflected outwardly in passing over a bead at the mouth of the container and their resilient structure cooperates with the bead in securing the cover on the mouth of the container.

3,498,492
WIREBOUND CONTAINER LID
Joseph McCrea, Rockaway, N.J., assignor to Stapling Machine Co., Rockaway, N.J., a corporation of Delaware
Filed Sept. 5, 1968, Ser. No. 757,555
Int. Cl. B65d 43/00
U.S. Cl. 217—56 4 Claims



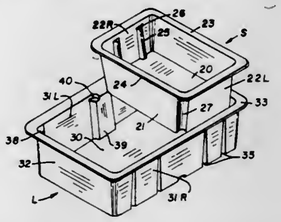
A wirebound container lid formed of a single sheet of foldable material with tabs at each end bent downwardly for insertion through slots in the lining material which is secured to the upper faces of the cleats on the top section of the container and bent downwardly to line the ends of the container, the tabs being received in the spaces between the lining material and the inner faces of the cleats, and being secured either by frictional or interference engagement with the ends of the slots or by ears bent outwardly from the lower corners of the tabs to interlock with the lower faces of the cleats.

3,498,493
CLOSURE FOR PRESSURE VESSELS
Norman H. Kemp, 726 Regal Row, Dallas, Tex. 75247
Continuation-in-part of application Ser. No. 494,061, Oct. 8, 1965. This application May 17, 1968, Ser. No. 729,966
Int. Cl. B65d 45/02, 53/00
U.S. Cl. 220—46 19 Claims



A closure for pressure vessels including a resilient seal ring having an outer lip and an inwardly turned flange angularly disposed to the outer lip whereby the seal ring is actuated by pressure within the vessel to form a positive seal around an opening in the vessel.

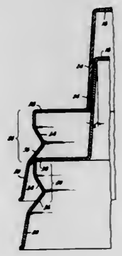
3,498,494
COMPOSITE TOTE BOX GROUP
Anson W. Voorhees, Jr., Denver, Colo., assignor to Best Quality Plastics, Inc., Denver, Colo., a corporation of Colorado
Filed July 5, 1968, Ser. No. 742,811
Int. Cl. B65d 21/02
U.S. Cl. 220—97 8 Claims



A composite tote box group, including larger boxes and smaller boxes. Each box is formed of sheet material, with inclined walls and otherwise tapered components to permit nesting of corresponding boxes. The smaller has a length corresponding to the width of the larger and a width corresponding to a module of the length of the larger to permit a plurality of smaller boxes to nest in a larger box. A desirable group consists of a larger box of a size which accommodates two smaller boxes.

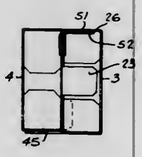
The boxes are arranged with stacking columns formed in opposite endwalls or sidewalls, a pair at each end of the smaller box and corresponding groups at the sides of the larger box. In the preferred arrangement, the stacking columns at one end of the smaller box are at the corners of the box, and the pair at the opposite end are spaced at intermediate positions across the end so that the boxes will nest when corresponding pairs are intermeshed and will stack when one is rotated with respect to the other. The larger box is provided with correspondingly arranged groups of stacking columns along each side wall. Accordingly, groups of larger boxes will nest and stack with each other; the smaller boxes will nest and stack with each other and also will nest and stack with the larger boxes.

3,498,495
RESILIENT LID HAVING NESTING STRUCTURE
Paul Davis, Swampscott, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed July 19, 1968, Ser. No. 746,039
Int. Cl. B65d *41/18*
U.S. Cl. 220—97 **9 Claims**



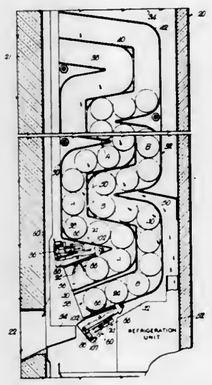
A disposable plastic dome-type lid having a primary nesting facility in the skirt which also serves to retain the lid on a container, and a secondary stacking facility in the frusto-conical wall to provide lateral stablity when several such lids are nested in a stack.

3,498,496
END LOADING CARTON
Vernon A. Edwards, 495 W. Queen's Road, North Vancouver, British Columbia, Canada
Filed Nov. 24, 1967, Ser. No. 685,511
Claims priority, application Canada, Nov. 25, 1966, 976,445
Int. Cl. B65d *75/00*
U.S. Cl. 220—105 **20 Claims**



An end loading carton blank and a carton made from the blank is described consisting of an integral structure comprising a top panel, a pair of side panels connected to the top panel, a base panel integrally attached to a respective one of each of the side panels and a longitudinal partition member integrally attached to at least one of the base panels. A handle is integrally attached to the longitudinal partition member and a reinforcing tab integrally attached to one of the base panels in affixable to the other of the base panels. End flaps may be provided on the ends of each of the top, side, and base panels for closing the ends of the carton, and an end tab may be provided on the partition member for fixing to a selected end flap.

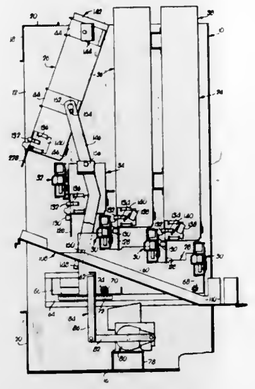
3,498,497
DOUBLE-DEPTH SERPENTINE CAN VENDER
John W. Baxendale, Kansas City, Mo., and Herman R. Craven, Prairie Village, Kans., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 15, 1968, Ser. No. 721,460
Int. Cl. B65h *3/44;* **G07f** *11/10*
U.S. Cl. 221—116 **13 Claims**



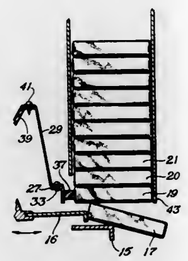
A dispensing or vending machine for canned beverages or other cylindrical articles has double-depth serpentine columns in which the walls of the columns are provided with rails that support the opposed ends of the cans. The columns are open between the rails to facilitate the flow of refrigerated air. Any pair of side-by-side columns may be stocked with the same product, and dispensing from alternate columns is effected by a dispensing unit employing a pair of paddle wheel control devices at respective delivery stations of the two columns. The two paddle wheels rotate out of phase and are controlled by a single actuator, successive operation thereof effecting delivery of the articles from alternate columns. Shiftable stops are disposed in the paths of travel of respective paddle wheels to control the operation thereof, both stops being actuated each time an article is dispensed, but the out-of-phase relationship of the paddle wheels causes an article to be dispensed from only one column at a time. However, when one of the columns is depleted, a lock-out arm operates a latch that locks out the stop controlling the corresponding paddle wheel so that subsequent dispensing operation of the unit will effect successive delivery of articles from the remaining, undepleted column. A delivery unit for a single column is also provided for use in the dispensing of less popular products not requiring multiple columns to satisfy the expected demand.

3,498,498
SPLIT COLUMN PACKAGE STORAGE MECHANISM FOR CIGARETTE VENDING MACHINE
Herman R. Craven, Jr., Prairie Village, Boley A. Andrews, Shawnee Mission, and William J. Van Wye, Overland Park, Kans., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 27, 1968, Ser. No. 716,377
Int. Cl. B65h *3/42;* **G07f** *11/46*
U.S. Cl. 221—129 **12 Claims**

A cigarette vending machine having a plurality of upright, elongated columns arranged in banks and adapted to hold stacks of packages, each column having its corresponding package ejector. The ejectors and columns are relatively movable to permit selective ejection of a package from any desired column by L-shaped pushers during each cycle of operation of the machine. One bank is comprised of a stationary section and a swingable section, the combined lengths of the aligned columns of both sections being no greater than the lengths of the respective columns of the other banks but affording the capability of handling double the number of different brands in that one bank as in the other banks which have full length columns.

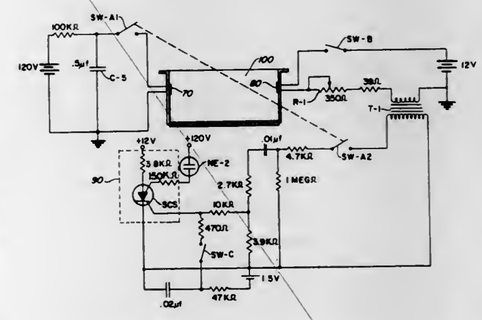


3,498,499
VENDING MACHINE WITH MEANS PREVENTING INADVERTENT MULTIPLE PACKAGE VENDING
Richard A. Pierce, Bob L. Todd, Walton G. Tutt, and Jimmie W. Tutt, Abilene, Tex., assignors to Ab-Tex Distributors, Inc., Abilene, Tex.
Filed Nov. 19, 1968, Ser. No. 776,940
Int. Cl. B65g *59/00;* **G07f** *11/16*
U.S. Cl. 221—251 **10 Claims**



This specification discloses apparatus and method improvements in vending merchandise from a machine including a plurality of vertical racks adapted to contain a column of stacked horizontal rows of packs of merchandise to be vended, a flat member mounted transversely to the longitudinal axis of the packs, and a plurality of reciprocating means operable in conjunction with a main reciprocating member responsive to deposition of coins to vend, selectively, an ultimate pack from a selected rack, characterized by a pack retaining means mounted on a component part of the machine and retained in a neutral position out of contact with any of the packs when said machine is not in a vend cycle and adapted to move into contact with the penultimate horizontal row of packs at the beginning of a vend cycle to exert a compressive force on the penultimate horizontal row of packs against the flat member during the vend cycle, the compressive force being sufficient to retain the penultimate pack in the selected rack position and prevent tiling but not so great as to effect appreciable distortion of the pack; the pack retaining means being moved out of contact with the penultimate row of the packs by a follower member responsive to movement of the main reciprocating member at the end of the vend cycle.

3,498,500
LEVEL SENSOR
Russell C. Hansen, Tilton, N.H., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 13, 1968, Ser. No. 705,152
Int. Cl. B67d *5/38, 5/06;* **H01h** *35/24*
U.S. Cl. 222—23 **8 Claims**

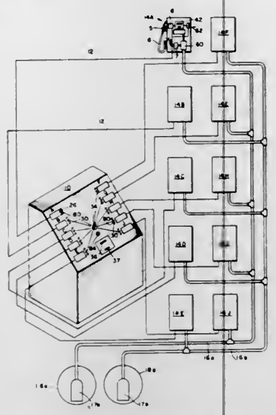


A level sensing controller for determining the quantity of xerographic toner powder in the toner powder dispenser of an automatic xerographic reproducing machine wherein an electro-audio transducer emits an acoustical signal to be received by an audio-electro transducer generating an electrical signal coupled to a threshold detecting circuit for activating a suitable indicator when the quantity of toner powder contained within the dispensing cavity is below a level predetermined for optimum machine operation.

3,498,501
DISPENSING CONTROL SYSTEM
Elmer A. Robbins and Roger C. Bruot, Fort Wayne, Ind., assignors to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana
Filed Mar. 1, 1968, Ser. No. 709,603
Int. Cl. B67d *5/06, 5/24, 5/26*
U.S. Cl. 222—26 **32 Claims**

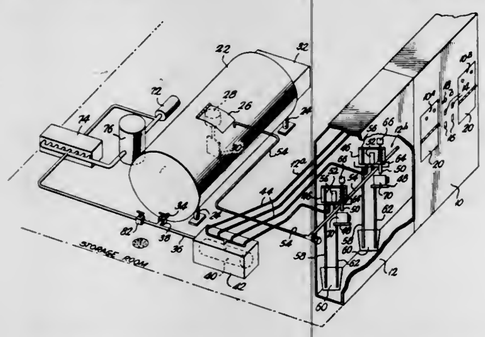
A system including a single console for controlling and recording dispensing operations at a plurality of gasoline or other liquid fuel dispensing outlets. The control is provided by electrical connections between the console and the dispensing outlets, which connections disable the outlets until a console operator selectively activates them. For recording purposes, each dispensing outlet has a device which produces electrical pulses in proportion to the amount of fuel which is dispensed. The electrical pulses are fed to the console where they are applied to a pulse register which counts and records the pulses, thereby recording the amount of fuel dispensed at the outlet. A separate pulse register is coupled with each dispensing outlet, and a single printing device is provided for selective coupling with the several pulse registers. The printing device

has a gallonage register and a card printer with a capacity equal to that of the outlet registers and the pulse registers. The console is operable to correlate the printing register



to the same reading as any selected one of the pulse registers and a card is then printed to record the dispensing operation registered on the selected pulse register. Other dispensing operations can occur meanwhile.

3,498,502
BULK MILK DISPENSER SYSTEM
Charles T. Breitenstein, Elk Grove Village, Donald C. Pearl, Lake Zurich, and Leonard L. Budner, Alsip, Ill., assignors, by mesne assignments, to Rowe International, Inc., Whippany, N.J., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,880
Int. Cl. B67d *5/22, 5/08, 1/08*
U.S. Cl. 222—36 **24 Claims**

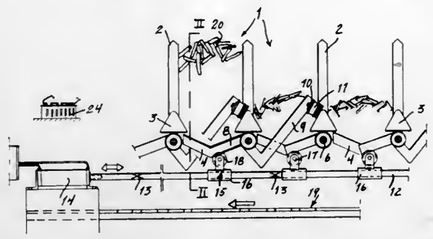


The disclosed system includes a tank for bulk storage of refrigerated liquid suitable for human consumption, such as whole milk or reconstituted milk, and a number of dispensing control stations connected to the tank for dispensing a metered quantity of liquid on demand as controlled by insertion of a coin or token and depression of a button at one of the dispensing stations.

Within the system, the liquid is recirculated constantly to maintain a supply of fresh liquid at each of the dispensing stations.

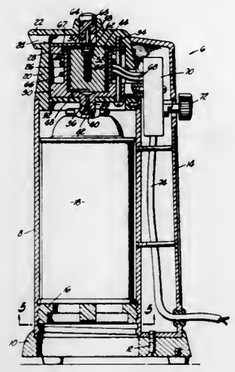
The system includes safety features to prevent dispensing of spoiled milk. The system includes means operative to automatically shut itself down when the milk supply is used and it further includes automatic cleaning and sanitizing sub-systems which operate to clean the system before it is refilled.

3,498,503
WOOD DISPENSING CONTROL MECHANISM
Bo Holmberg and Nils Erik Hellstrom, Nyland, Sweden, assignors to Aktiebolag Hammars Mekaniska Verkstad, Nyland, Sweden
Filed Apr. 22, 1968, Ser. No. 723,173
Claims priority, application Sweden, Feb. 6, 1968, 1,510/68
Int. Cl. A24f *27/14*
U.S. Cl. 222—76 **4 Claims**



Apparatus for the intermediate storage of sawn wood in a plurality of adjacent pockets and for emptying at least one of the pockets onto a conveyor in which a selectively operable control arrangement is associated with a pivotable bottom of each pocket. The bottom, when released, is adapted to swing into an open position via gravity. A reciprocable locking member is arranged substantially perpendicular to the transverse direction of the pocket and has control means cooperable with a control portion on each bottom whereby in a first position any bottom not arrested by the control arrangement swings to an open position via gravity and in a second position the opening of any bottom is prevented regardless of the control arrangement's condition.

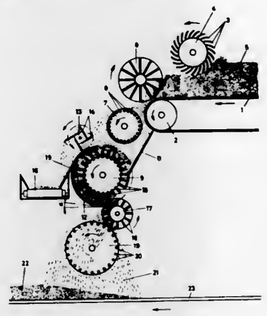
3,498,504
HEATED AEROSOL LATHER DISPENSER
Earle H. Wilkins, 8882 Vestavia Ave., Buena Park, Calif. 90620
Continuation-in-part of application Ser. No. 644,526, June 8, 1967. This application Nov. 15, 1968, Ser. No. 778,003
Int. Cl. B67d *5/62*
U.S. Cl. 222—146 **3 Claims**



This is a dispenser for aerosol lathers such as shaving lathers. It has a support for an aerosol container which is maintained in flow communication with an electrically heated block defining a passage whose size is small compared to its length. The heating element is in

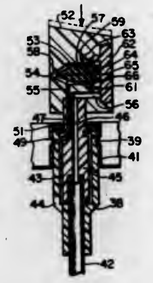
heat transfer relationship to the electrically heated block and is constantly supplied with electrical current to maintain the block and the aerosol lather base in the conduit at a constant temperature at a degree which is warm to the face of the user but insufficient to break down or thin the aerosol lather base. The passage communicates through a valved outlet to a discharge spout. The valved outlet is in close heat exchange relationship to the electrically heated block. Means is provided for varying the constantly applied heat to suit the individual user.

3,498,505
APPARATUS AND PROCESS FOR FORMING MATS FROM POURABLE MATERIAL
Walter Geza Wirz, Thalwil, Switzerland, assignor to Fred Fahrni, Zurich, Switzerland
Filed Apr. 9, 1968, Ser. No. 719,873
Claims priority, application Switzerland, Apr. 20, 1967, 5,659/67
Int. Cl. B65g *37/00*
U.S. Cl. 222—254 **16 Claims**



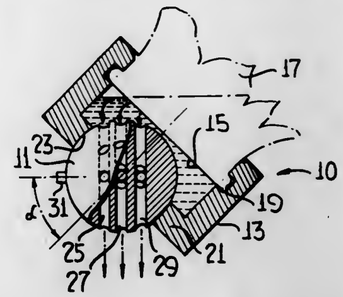
The present invention concerns an apparatus for forming a uniform mat from pourable material on a moving support, using a volumetric fine metering device with a rotating surface provided with sweeps, a guide wall with a guide surface opposite the downwardly moving portion of said surface, and a leveling member disposed in the vicinity of the upper part of the guide surface.

3,498,506
DISPENSING VALVE MECHANISM
George O. Charrier and Finn Clement, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 13, 1968, Ser. No. 728,652
Int. Cl. B67d *47/20*
U.S. Cl. 222—402.12 **10 Claims**



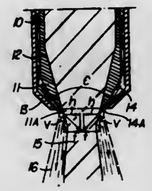
An actuating button for a pressurized spray container is fitted with an internal resilient plunger which is normally seated on a discharge orifice in the button to provide a seal. Depression of the button allows a propellant to act on and move the plunger thereby exposing the discharge orifice and permitting the product to be sprayed from the container. When the button is released, product spray ceases as the plunger is reseated on the discharge orifice. The structure provides an actuating button in which residual product in the internal valve mechanism can neither be contaminated nor otherwise affected by atmospheric conditions.

3,498,507
DISPENSER
William H. Seaver, 1718 Rutgers Ave., Melbourne, Fla. 32901
Filed July 6, 1967, Ser. No. 651,944
Int. Cl. B65d *47/30, 47/32;* **B67d** *3/00*
U.S. Cl. 222—486 **5 Claims**



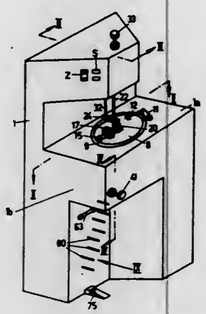
A dispenser for granular, powered, liquid, or gaseous material comprising a spherical gate mounted in an annular retainer-like seat in such manner as to permit universal rotation of the gate. Portion of said seat housing may be either an integral part of, or adapted to be fitted to, a container, pipe, or tube, from, or through which, said material is passed to the dispenser. The gate has at least one passage defined therein for providing selective degrees of communication between the interior and exterior of the container, pipe, or tube.

3,498,508
APPARATUS FOR EXTRUDING A LENGTH OF MATERIAL
Jacques Francisoud and Gilbert Nlogret, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
Filed Apr. 3, 1967, Ser. No. 627,781
Claims priority, application France, Apr. 4, 1966, 56,325
Int. Cl. B65d *25/40, 5/76*
U.S. Cl. 222—571 **5 Claims**



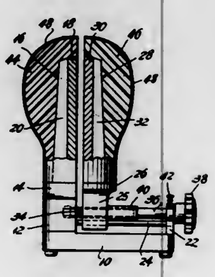
An extrusion apparatus for extruding a length of glutinous viscous material into a receptacle, in which a convergent conical stream of gas is used to cut the stream of extruded material after said length has been extruded. If desired, suction may be applied within the extrusion tube to assist in the cutting of the length.

3,498,509
APPARATUS FOR TYING A RIBBON BOW
Ernst Hagenbuch, Breitenbach, Switzerland, assignor to The Breitenbach Ribbon Manufacturing Co. Ltd., Breitenbach, Switzerland
Filed July 17, 1968, Ser. No. 745,562
Int. Cl. B67d 5/22
U.S. Cl. 223—46 12 Claims



A semi-automatically pneumatically operated machine for tying ribbon bows has a collet for clamping the ribbon end under a base for the bow. A ribbon loop is expanded by a gripper foot between the collet and a ribbon guide on a pusher member which is then shifted into engagement with the collet to secure the loose end of the expanded loop. A thread spool and a thread-lying arm are revolved in a circle about the collet to lay tying thread about the secured loop, whereupon the pusher member and gripper foot are retracted and the collet is indexed for the making of the next loop.

3,498,510
HAIRPIECE SUPPORT BLOCK AND STRETCHER
Robert E. Johnson, 83 Harvest Moon Road, Easton, Conn. 06612
Filed June 5, 1968, Ser. No. 734,672
Int. Cl. D06c 15/00
U.S. Cl. 223—66 7 Claims



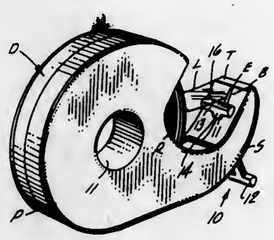
A support block for supporting and/or stretching hairpieces, wigs and the like, which is constituted of a semi-rigid thick-walled formation of foam plastic arranged to receive pins and having a desired bulbous outer configuration. A thin self-healing skin of flexible plastic such as vinyl covers the foam configuration and provides an easily-perforated, easy-to-clean, neat-appearing and finished outer surface which is self-healing so that it does not show pin marks.

3,498,511
GUN BEARER
Charles Morton Marg, 135 Henley Road, Overbrook Hills, Pa. 19151
Filed Aug. 4, 1967, Ser. No. 661,755
Int. Cl. A45f 5/00, 3/00
U.S. Cl. 224—1 4 Claims



The combination of a rigid gun holder incorporating sloping construction for universal accommodation of gun butts of all sizes rotatively secured to an adjustable, shoulder engaging harness in a swivel connection.

3,498,512
TAPE LIFTING DEVICE
Christopher M. Golemon, 112 S. Greenwood Ave., Pasadena, Calif. 91107
Filed Aug. 28, 1967, Ser. No. 663,570
Int. Cl. B26f 3/00; B65h 35/00
U.S. Cl. 225—21 3 Claims

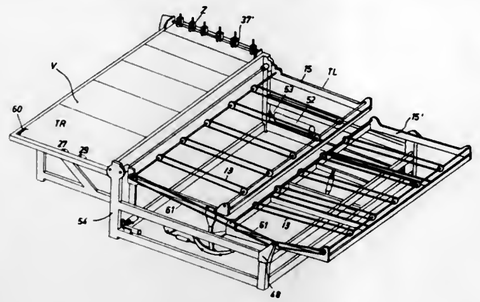


A lifting device adapted for incorporation into pressure sensitive tape dispensing apparatus to enable removal of an end of such tape from support structure associated with a cutting member of the apparatus and presentation of the tape end for ready access.

3,498,513
AUTOMATIC TABLE PERFORMING ALL CUTTING OPERATIONS BY RATIONAL SEQUENCES IN GLASSWORKS PRODUCING A CONTINUOUS GLASS BAND
Pasquale Bottero, Cuneo, Italy, assignor to Corporation S.a.s. Bottero & C., Cuneo, Italy
Filed Feb. 16, 1965, Ser. No. 433,062
Claims priority, application Italy, July 7, 1964, 15,331/64
Int. Cl. B26f 3/00; B65h 35/00
U.S. Cl. 225—96.5 18 Claims

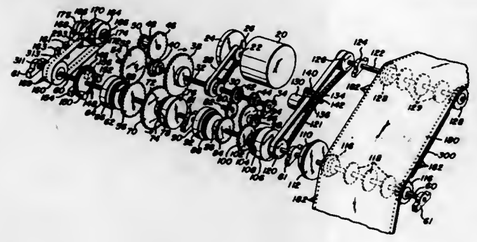
A glass scoring and breaking apparatus in which a sheet of glass supported in a horizontal plane is first scored along a plurality of parallel score lines spaced in transverse direction selected distances from each other and then the sheet is stepwise moved in the direction

transverse to the score lines in such a manner that the score lines are one by one aligned with pressing means pressing the glass sheet against stationary abutment means to stress the glass sheet at the aligned score line while the



glass sheet portion projecting beyond the score line aligned with the pressing means remains unsupported to cause a break of the glass sheet along the aligned score line.

3,498,514
HIGH SPEED WEB FEED APPARATUS
Charles F. Howard, Dayton, and Raymond J. Spieler, Centerville, Ohio, assignors to The Standard Register Company, Dayton, Ohio, a corporation of Ohio
Substituted for abandoned application Ser. No. 601,114, Dec. 12, 1966. This application Sept. 23, 1968, Ser. No. 767,911
Int. Cl. B65h 25/10; 25/32; G03b 1/22
U.S. Cl. 226—9 4 Claims

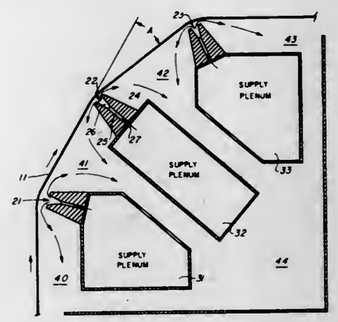


This invention relates to high-speed intermittent web feed apparatus.

The apparatus of this invention moves a portion of a continuous web from a supply position to a work position. The portion of the continuous web is moved at a high rate of speed and is accurately stopped in a desired position with respect to the work position so that that portion of the web can be operated upon. Then the portion of the continuous web which has been operated upon is rapidly moved from the work position toward a received position as a succeeding portion of the continuous web is rapidly moved to the work position.

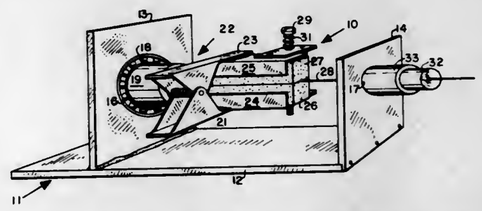
The apparatus of this invention is capable of so moving a portion of a continuous web in either forward or reverse direction. Thus, by means of this apparatus a given portion of a continuous web is located in a work position for operation upon that portion of the web. Then that portion of the web is moved forwardly to a receiver position while a succeeding portion or portions of the continuous web are moved to the work position for operation thereupon. Then, the web may be reversed in movement so that the first portion of the web is returned to the work position and accurately located thereat for further operation thereupon.

3,498,515
FLUID CUSHION TURNING ROLLS FOR SUPPORTING AND GUIDING STRIP MATERIAL
Lloyd W. Johnson, Union Lake, Mich., assignor to Michigan Oven Company, Romulus, Mich., a corporation of Michigan
Filed Oct. 6, 1967, Ser. No. 673,504
Int. Cl. B65h 17/32
U.S. Cl. 226—97 8 Claims



A fluid cushion turning roll for supporting a longitudinally moving web along a given path, through a turn subtending a substantial angle. The turning roll comprises a plurality of rows of nozzles, angularly displaced from each other around the turn with each row of nozzles extending transversely of the path at a short distance therefrom. The nozzles are preferably formed as elongated radial openings in a bar, terminating in a slot having outwardly divergent walls that open toward the path. Air, gas, or other fluid is supplied under pressure to all of the nozzles to support and guide the web; each portion of the path adjacent a row of nozzles changes direction through an angle substantially smaller than the turning angle, whereas the portions of the path intermediate the rows of nozzles are substantially linear. Fluid exhaust passages are located intermediate the nozzle rows. The open ends of the exhaust passages, adjacent the web path, are each much wider than the nozzles. The inlet to each row of nozzles comprises a restricting orifice to limit the flow of fluid through nozzles that are not actually faced by the web.

3,498,516
WIRE TENSIONING APPARATUS
Rolland B. Lange, North Muskegon, and George E. Dake, Jr., Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,869
Int. Cl. B65h 23/08
U.S. Cl. 226—195 3 Claims

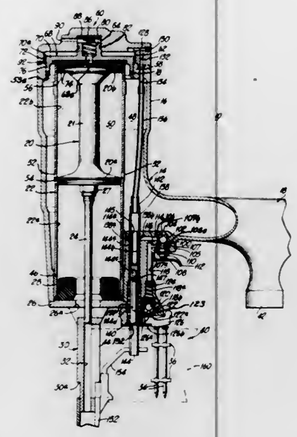


A friction grip for applying tension to strands of magnet wire being paid from a stationary coil is rotatably mounted so that it will turn freely to follow the twisting of the wire.

3,498,517
FASTENER DRIVING TOOL

Edward J. Novak, Franklin Park, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed Apr. 21, 1967, Ser. No. 632,590
Int. Cl. B25c *1/04, 5/02;* B21j *15/28*
U.S. Cl. 227—8 17 Claims

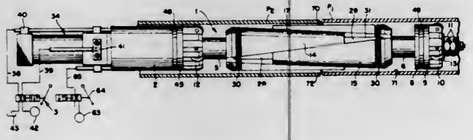


A pneumatically powered fastener driving tool including fluid operated driving means having a poppet valve means and operable to move a driver on successive power strokes in a drive track to drive fasteners positioned therein. Fluid operated feeding means is provided for advancing successive fasteners from a magazine into said drive track during each cycle of operation of said driver. Trigger valve means is in communication through passage means with said poppet valve means for initiating power strokes of said driver, and safety valve means in communication with said passage means is provided for controlling operation of said fluid operated feeding means in synchronism with said driver.

3,498,518
COMBINATION PIPE WELDING AND TESTING MANDREL

Donald Wheeler, Kent, Ohio, and Walker Shaw, Arthur Morton, and Clifford Price, Houston, Tex., assignors to The Guild Metal Joining Equipment Company, Bedford, Ohio, a corporation of Ohio

Filed July 27, 1967, Ser. No. 656,539
Int. Cl. B23k *31/02, 37/04;* G01m *3/28*
U.S. Cl. 228—50 14 Claims

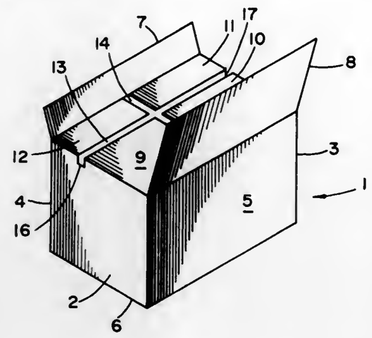


A portable pipe welding and testing mandrel having a plurality of axially and radially movable segments which form a continuous backup ring of various diameters in accordance with the I.D. of the pipes to be welded together. Expandable seals at opposite ends of the segments may be urged into fluid-tight enagement with the I.D. of the pipes to provide an internal test chamber for the weld.

3,498,519
INTEGRAL CREPED WADDING CONTAINER AND EXPANDER

Bernard G. Johnson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed July 12, 1968, Ser. No. 744,376
Int. Cl. B65d *5/72*
U.S. Cl. 229—7 2 Claims

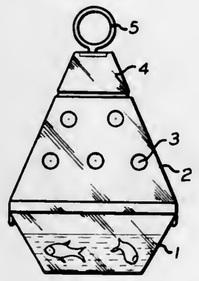


A carton having top, bottom and vertically extending walls forming an enclosure and flap means lying in a plane beneath the top wall and including flaps spaced apart in the front to back direction of the carton to form a dispensing slot. The top wall has a slit co-extensive with the dispensing slot to communicate the interior of the carton to the exterior through the top wall. Sheets or batts of creped wadding compressed endwise, retained within the carton in substantially continuous lengths, may be withdrawn through the dispensing slot to expand the wadding to material of low density from higher density and material of high bulk from a lower bulk.

3,498,520
PACKING CONTAINER FOR BREAKABLE AND SENSITIVE OBJECTS

Willy Zümpel, Scholener Strasse 2, Bremen-Osterholz-Tenever, Germany, and Uwe Gronewold, Goldener Reif 143, Bremen-Huchting, Germany

Filed July 8, 1968, Ser. No. 743,152
Claims priority, application Germany, Dec. 20, 1967, Z 13,222
Int. Cl. B65d *1/38, 25/22*
U.S. Cl. 229—8 9 Claims

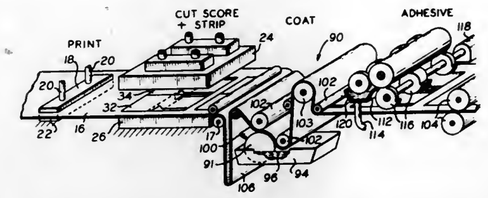


A multi-part packing container for breakable and sensitive objects as live plants, live fancy fish, fruit, or the like, which comprises a pot-shaped lower vessel part of non-penetrable working material and having a first edge portion and an upper hood-like vessel part fittingly mounted on the edge portion and releasably secured thereto and having at its upper end a suspension means, as well as at its lower end a second edge portion.

3,498,521
CARTON WITH PLASTIC SEALING

Lester D. Gill, 302 North Road, Kinnelon, N.J. 07405

Continuation-in-part of application Ser. No. 424,946, Jan. 12, 1965. This application Dec. 11, 1967, Ser. No. 689,669
Int. Cl. B65d *5/08, 5/74*
U.S. Cl. 229—16 4 Claims

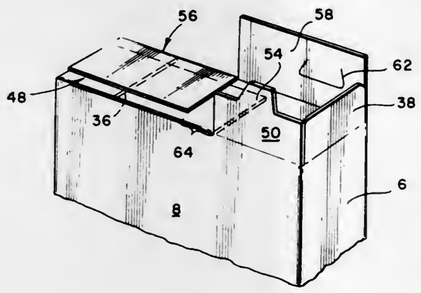


This specification discloses boxes made of paperboard and lined with plastic which makes the boxes suitable for holding liquid. The lining is correlated with the panels of the box in such a way that there is no cut edge of the paperboard exposed to liquid in the container. This prevents "wicking" of the liquid into the paperboard. Some embodiments of the invention are constructed with the additional feature of panels that unfold to produce a pour spout with the plastic lining; and in one modification there is a tab on the pour spout that can be tucked in under the other panels when folded down to hold the spout closed after a reclosing operation. The box blanks are shaped so that they are held in a continuous web having spaces beyond critical cut edges where the plastic lining extends beyond the cut edges and over the cut out spaces.

3,498,522
RECLOSABLE CARTON

Richard C. Peet, 4442 Hawthorne St. NW., Washington, D.C. 20016

Filed May 17, 1968, Ser. No. 730,115
Int. Cl. B65d *5/54, 5/72*
U.S. Cl. 229—17 6 Claims

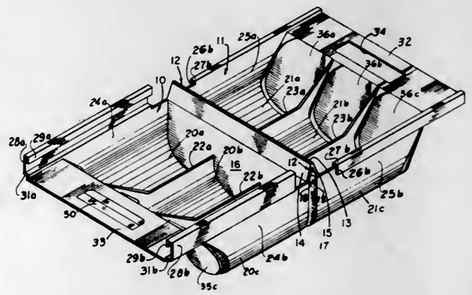


A carton having side and wall panels and extensions on said panels forming top closing flaps for the carton. The top closing flaps include side and end flaps. The outer of the side flaps have a segment defined therein by a first weakened tear line extending across the outer side flap from its free edge to its folded juncture with the side panel. This segment of the outer side flap is provided with a slot opening. The inner of the side flaps has a segment at one end defined by a second weakened tear line extending across the inner side flap from its free edge to its juncture with the side panel. The first weakened tear line is displaced from the second weakened tear line to define an area on the inner side flap between the first and second weakened tear lines for supporting the segment of the outer side flap when the carton is closed. The edge of the segment of the inner side flap is provided with a tab for engagement with the slot opening in the outer side flap. The tab segment of the inner side flap underlies the slotted segment of the outer side flap when the carton is closed and overlies the slotted segment of the outer side flap when the carton is reclosed. Reclosure is accomplished by inserting the tab in the slot.

3,498,523
CONTAINER FOR CARRYING BOTTLES OR THE LIKE

William F. Stembridge, P.O. Box 756, East Point, Ga. 30044; Roger E. Stembridge, 4633 Tucson Trail SW., Atlanta, Ga. 30331; and Carolyn C. Lambert, 2637 Hapeville Road SW., Atlanta, Ga. 30315

Filed Sept. 5, 1967, Ser. No. 665,458
Int. Cl. B65d *5/46, 5/48, 85/30*
U.S. Cl. 229—28 7 Claims

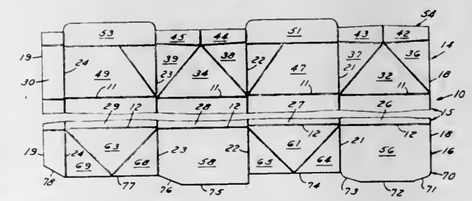


A container for carrying bottles or the like formed from a single thin flat plastic sheet deformed outwardly to provide pockets and folded together along a common inverter V-shaped central portion so that the pockets are on opposite sides of panels which form the carrying handle. The opposed side edges of the pockets are folded together to form locking members and the upper ends of the receiving pockets fold downwardly to form partition flaps which separate the bottles. In one embodiment, the tubular wall portions of the pockets merge to planar parallel surfaces on which advertising is displayed.

3,498,524
CONTAINER BOTTOM CLOSING

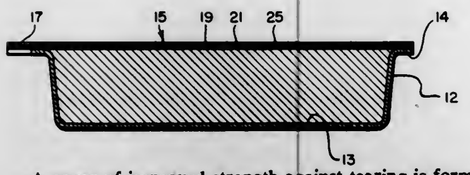
Eric A. Braun, Farmington, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.

Filed Mar. 11, 1968, Ser. No. 712,033
Int. Cl. B65d *5/08*
U.S. Cl. 229—38 7 Claims



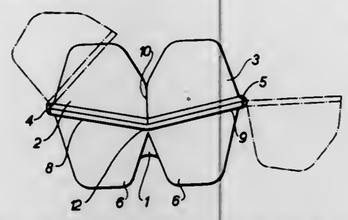
The bottom closure is a thermal plastic coated paperboard container having tuck-in flaps provided with extended cam edges to guide the bottom closure panels into closing position.

3,498,525
PACKAGE AND COVER THEREFOR
Bernhard Zinkgraf, Prospect Heights, Ill., assignor to Kraftco Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,921
Int. Cl. B65d 51/00
U.S. Cl. 229—43 6 Claims



A cover of improved strength against tearing is formed by laminating a cast film of polyvinyl chloride to an aluminum foil with a suitable adhesive. An exterior layer of cellophane may be bonded to the foil by an adhesive. The cast film of polyvinyl chloride provides a uniformly thick layer which can be heat sealed to a flange of a container cup, which is usually formed of polyvinyl chloride. Since the cover is strong, it may be peeled from the cup without tearing into pieces which would result in only a portion of the contents of the cup being exposed.

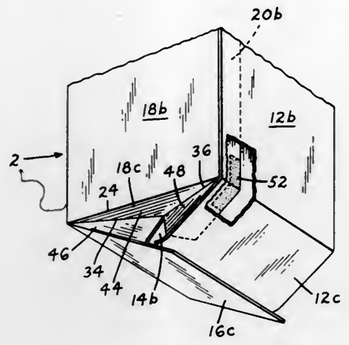
3,498,526
CONTAINERS
Stanley John Edwards, London, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England
Filed July 2, 1968, Ser. No. 742,080
Claims priority, application Great Britain, July 13, 1967, 32,208/67
Int. Cl. B65d 85/32
U.S. Cl. 229—44 6 Claims



An egg box comprises a base section and a cover section, the cover section being in the form of two pieces each of which is hinged to the base section along opposite sides, the two pieces of the cover section being made of a resilient material and so shaped that in the closed position they impinge and slightly compress each other thereby forming a firm closure. The top edges of the sides bearing the hinges are preferably horizontal but the top edges of the other sides preferably slope gently downwards from the sides bearing the hinges to meet in the middle in the form of a flattened V.

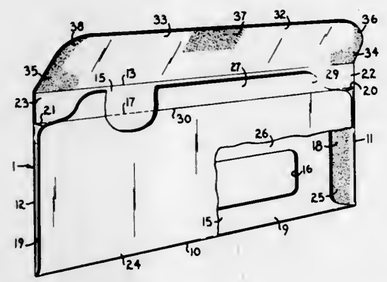
3,498,527
PAPERBOARD CONTAINER FOR LIQUIDS
Harold B. Moors, Richboro, William E. Schwenk, Norristown, William J. Crothers, Jr., Exton, and James N. Ademino, Ambler, Pa., assignors to International Paper Company, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 454,935, May 11, 1965. This application Sept. 28, 1967, Ser. No. 671,410
Int. Cl. B65d 5/72, 5/40
U.S. Cl. 229—48 8 Claims

Paperboard containers, and blanks for assembling such containers, in which the paperboard surface is coated and the portion of the uncoated edge, in a substantially continuous line at the bottom of the side seam and bottom seam, is impregnated with a thermoplastic material, such as wax, so that such impregnated edge is liquid repellent



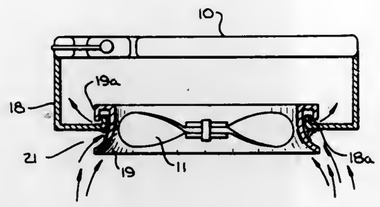
when exposed to the liquid contents of the assembled container and the method for making such containers by heating the edge of the container and contacting such heated edge with the impregnating material.

3,498,528
REMAILABLE ENVELOPE
Bernard Klein, Kansas City, Mo., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed July 26, 1968, Ser. No. 747,852
Int. Cl. B65d 27/04, 27/06
U.S. Cl. 229—73 7 Claims



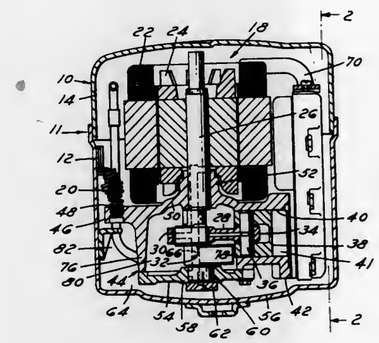
An envelope includes a first panel with a gummed top flap narrower than the width of the envelope leaving exposed side areas on the inside surface of the other panel, the other panel having a sealing flap which folds over said top flap and has adhesive spots thereon for securing the sealing flap to the exposed side areas, the sealing flap and the portion of the other panel containing the exposed areas being removable from the envelope along a tear line leaving the top flap intact for resealing the envelope. The seal connections between the sealing flap and the exposed areas provide barriers preventing an inserted computer card or the like from moving vertically within the pocket prior to removal of the sealing flap.

3,498,529
SAND TRAP INDUSTRIAL ENGINE COOLING FAN
John A. Wooden, Indianapolis, Ind., assignor to Brookside Corporation, McCordsville, Ind., a corporation of Indiana
Filed May 31, 1968, Ser. No. 733,628
Int. Cl. F04d 19/00, 29/52
U.S. Cl. 230—120 3 Claims



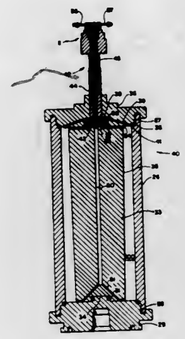
The invention is embodied in an annular flange encircling the air opening in the fan shroud adjacent the cooling fan of an industrial engine radiator, the flange presenting a smoothly curved surface to the fan periphery but forming an annular recess at the flange face remote from the fan periphery for trapping fan blade eroding particles, such as sand, entrained in the air flow induced by the fan.

3,498,530
HERMETIC COMPRESSOR CRANKCASE CONSTRUCTION
Paul B. Hover, Clinton, Mich., assignor to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan
Filed Feb. 21, 1968, Ser. No. 707,071
Int. Cl. F04b 39/02, 39/12
U.S. Cl. 230—232 7 Claims



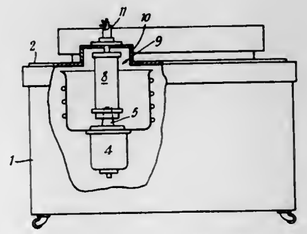
A crankcase construction for a hermetic compressor of the piston type wherein the electric motor compressor unit is spring suspended within the hermetically sealed casing. The crankcase is substantially closed to define a sealed cavity within which the connecting rod and crankshaft travel during transmittal of driving force from the electric motor to the piston of the compressor. The sealed cavity is provided with a venting passage or passages which are particularly oriented to help balance or cancel out reaction forces and thereby, in conjunction with the substantially closed crankcase, significantly reduce the amount of vibration of the motor-compressor unit on its spring mounts in the casing.

3,498,531
CONTINUOUS FLOW ULTRACENTRIFUGE
Charles H. Chervenka, Sunnyvale, and Karen S. Cherry, Los Altos, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Feb. 16, 1968, Ser. No. 706,043
Int. Cl. B04b 11/00, 7/04, 1/02
U.S. Cl. 233—12 5 Claims



A predetermined volume of gas, such as air, is introduced into a rotor assembly of a continuous flow centrifuge immediately prior to the introduction of a high density displacement liquid to prevent mixing between such displacing liquid and the density gradient solution containing the centrifuged particles of interest as the displacing liquid forces the density gradient solution from the rotor cavity. The predetermined air volume lodges in a vertical slot provided in the rotor core which slot communicates by way of a connecting radial slot with the outer surface of the core member disposed in the cavity to prevent the displacing liquid from reaching the rotor cavity through this passageway. As a result, all of the displacing liquid enters the rotor cavity at the outside edge of the cavity, thus preventing mixing of the displac- the liquid and the density gradient solution containing the particles of interest.

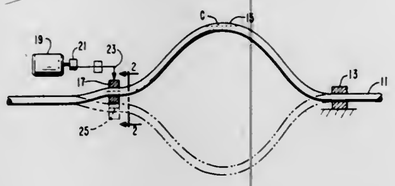
3,498,532
ZONAL CENTRIFUGE ATTACHMENT
Norman Richard Harbott, Sussex, England, assignor to MSE Holdings Limited, Crawley, Sussex, England, a British company
Filed May 13, 1968, Ser. No. 728,432
Claims priority, application Great Britain, June 19, 1967, 28,277/67
Int. Cl. B04b 11/04, 5/10, 7/12
U.S. Cl. 233—16 5 Claims



The zonal centrifuge attachment comprises an elongate zonal rotor to be mounted within a centrifuge but extend-

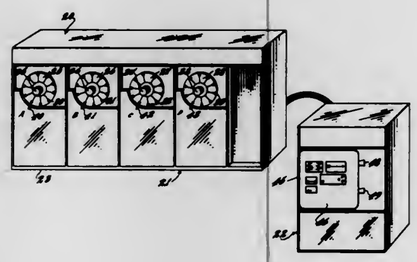
ing through an aperture in the centrifuge cover, an open-ended housing covering the aperture and receiving the upper end of the rotor, which it supports by a bearing, and liquid lines carried by the housing and communicating with the rotor to introduce liquid into and remove it from the rotor during rotor rotation.

3,498,533
TUBULAR CENTRIFUGE
John F. Schomburg, Stony Point, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 19, 1967, Ser. No. 668,766
Int. Cl. B04b 5/00, 5/12, 1/02
U.S. Cl. 233—27 9 Claims



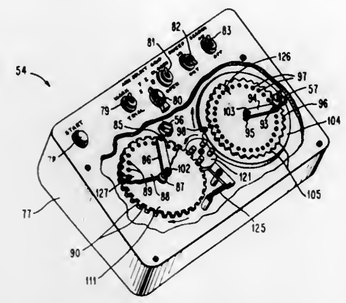
A looped section of an in-line tubing, through or into which a liquid to be centrifuged is passed, is whirled or rotated at moderate or high speed to separate components of different densities contained in a liquid by centrifugal force. The looped section can be made either of flexible tubing or of rigid material, such as metal. It may be integral with non-looped and non-rotating parts or may be separate therefrom and connected through rotary seal joints to non-rotatable end connections. Means may be provided so that separated materials may be withdrawn from the loop during or after centrifuging.

3,498,534
TOY COMPUTER
Willie G. Ford, 155—20 134th Ave., Jamaica, N.Y. 11434
Filed Jan. 22, 1968, Ser. No. 699,539
Int. Cl. G06g 3/00
U.S. Cl. 235—61 7 Claims



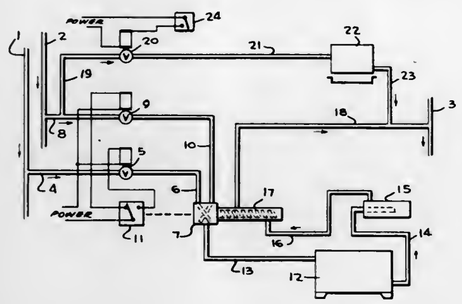
This invention is concerned essentially with a computer device for educational and play purposes wherein at least a pair of separately rotatable number wheels are respectively associated with pawls and ratchet drive means to be driven by an operating member through yieldable connections, being controlled by electromagnetic actuation through selectively connected circuitry.

3,498,535
ENCODER CARRY MECHANISM
Hugo A. Panissidi, Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 694,959
Int. Cl. G06c 7/10, 15/42
U.S. Cl. 235—134 10 Claims



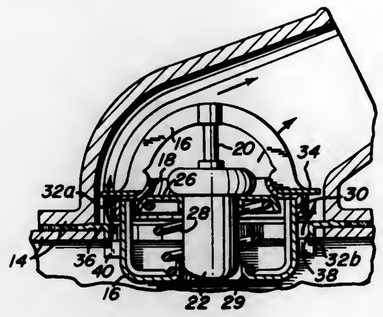
A binary output manual entry encoder for a material handling device and for an input to a paper tape punch includes selector switches and two encoding dials with wheels having commutator segments for decimal to binary conversion. A carry wheel is rocked by the fraction wheel into engagement with the integer wheel to provide fraction to integer carries without integer wheel to fraction wheel engagement otherwise.

3,498,536
CONDITIONING SYSTEM
Richard C. Larson, 4420 Great Oak Road, Rockville, Md. 20853
Filed May 7, 1968, Ser. No. 727,214
Int. Cl. G05d 23/00; F16k 11/00
U.S. Cl. 236—1 10 Claims



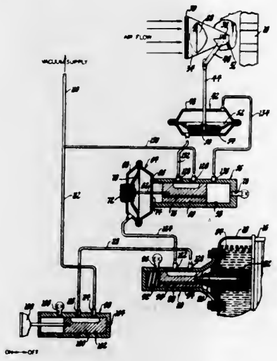
Conditioning system for buildings with three or four pipe mains supplying and returning heated and cooled fluids to all areas, and branch systems in each area admitting heated or cooled fluid in accordance with a predetermined outside temperature level to an automatic valve which modulates the flow of selected fluid to a radiator. The automatic valve is controlled by the temperature of returning spent fluid subjected to area temperature and outside temperature. The automatic valve and a thermostat subject to outside temperatures are set simultaneously. A branch from the cooled fluid line goes to a humidifier controlled automatically by a humidistat.

3,498,537
FAIL-SAFE THERMOSTATIC FLUID VALVE STRUCTURE
Backman Wong, Wayland, Mass., assignor to Standard-Thomson Corporation, Waltham, Mass., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,258
Int. Cl. F01p 7/02; G05d 23/00
U.S. Cl. 236—34 16 Claims



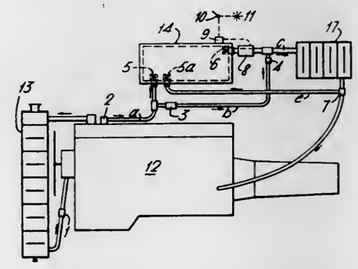
Fail-safe thermostatic fluid valve structure which is particularly adapted for use in the cooling system of an internal combustion engine but which may be used with other systems, machines, or apparatus. The fail-safe thermostatic fluid valve structure includes a thermally responsive operator member which is joined to a movable closure member for control of fluid flow during normal operating conditions. The structure also includes special connection means which attach together elements of the structure. The special connection means permits separation of the elements if the thermostatic valve structure should be subjected to abnormal fluid temperature and/or fluid pressure conditions. Such separation of the elements permits fluid flow.

3,498,538
VEHICLE BODY
William C. Mitchell, Cheshire, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 6, 1967, Ser. No. 673,324
Int. Cl. F01p 7/02
U.S. Cl. 236—35.3 8 Claims



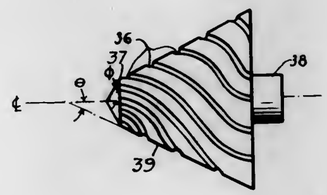
A vehicle body includes a radiator and headlamps located in front of the radiator. The grille has an opening for the radiator and an opening for the headlamps which is opened and closed by a headlamp door. A pellet motor senses the coolant outlet temperature at the radiator and if the temperature is above a predetermined maximum, it actuates a relay valve which in turn controls a motor to open the headlamp door and increase the air flow through the radiator through the headlamp opening in the grille. The system is vacuum actuated and the sensor valve is in series with a manual valve which opens and closes the headlamp doors when the headlamps are turned on and off. If there is a loss of vacuum, the relay valve immediately actuates the motor to open the headlamp doors.

3,498,539
HEATING SYSTEM FOR INTERNAL COMBUSTION ENGINES
Heinz W. Boehmfeld and Walter W. Winkman, both of 179 King St. East, Hamilton, Ontario, Canada
Filed Apr. 22, 1968, Ser. No. 722,994
Int. Cl. B60h 1/02; F01p 11/02
U.S. Cl. 237—12.3 6 Claims



A heating system for an internal combustion engine or car interior characterised by the provision of a heat preserving tank into which is passed a liquid heated by the engine and in which at least a portion of such liquid is retained for subsequent use in warming the engine or the car interior.

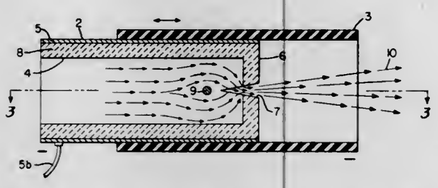
3,498,540
NOZZLE FOR POWDER SPRAYING
Steven T. Adams, Stamford, Conn., assignor to Electrostatic Equipment Corporation, South Norwalk, Conn.
Filed July 3, 1967, Ser. No. 650,670
Int. Cl. B05b 5/02
U.S. Cl. 239—15 5 Claims



A gun for spraying charged powder consists of a hose into which air and powder is introduced and a nozzle assembly at the other end of the hose. The nozzle assembly consists of a funnel diverging outwardly from the hose and engaged by the hose and a conical plug inserted into the funnel and engaging the walls thereof. The cone

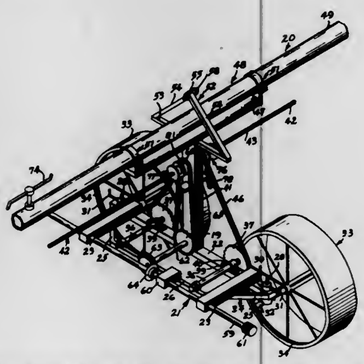
is provided with a plurality of spiral slots in the wall thereof so that the powder traverses the nozzle assembly through the spiral slots wiping the charged wall of the funnel and being charged thereby.

3,498,541
APPARATUS FOR ALTERING THE SHAPE OF AN ELECTROSTATIC SPRAY PATTERN
Charles W. Taylor, Jr., Akron, and Walter F. Johnston and William M. Rogers, Tallmadge, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 25, 1968, Ser. No. 715,808
Int. Cl. B05b *5/00*
U.S. Cl. 239—15 **8 Claims**



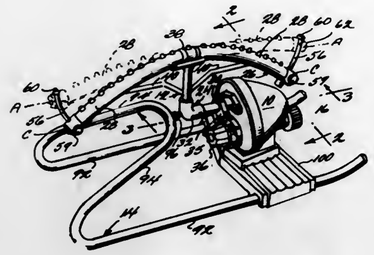
A method and apparatus for selectively altering the contour of a spray pattern from an electrostatic spray nozzle utilizing an axially adjustable nozzle extension sleeve. The sleeve is made from electroconductive material and carries an electrical charge of the same polarity as the electroconductive portion of the nozzle body so that the spray material passing through the nozzle not only receives an electrical charge from the electrostatic field of the nozzle, but from the extension sleeve and its electrostatic field. The contour of the spray pattern may be altered by adjusting the distance which the sleeve extends beyond the outlet opening of the nozzle and by flexing the extending end of the nozzle to flatten it and thereby flatten the stream emitted therefrom.

3,498,542
SELF-PROPELLED SPRINKLER
Delbert M. Hefner, P.O. Box 51, and Albert C. Seay, P.O. Box 314, both of Carrizozo, N. Mex. 88301
Filed Feb. 1, 1968, Ser. No. 702,371
Int. Cl. A01g *25/02*
U.S. Cl. 239—212 **1 Claim**



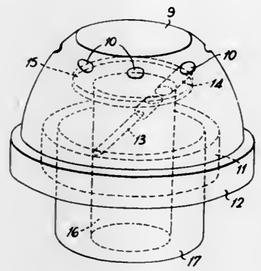
A self-propelled sprinkling system or mobile irrigation system wherein a sprinkler pipe will be moved across agricultural land in a highly efficient manner to use and control the water in the most advantageous manner, and wherein the sprinkler can also be used for liquid soil conditioner, weed killer and the like.

3,498,543
WAVE SPRINKLER
Robert A. Gilmour, % Gilmour Manufacturing Co., Somerset, Pa. 15501
Filed Apr. 23, 1968, Ser. No. 723,505
Int. Cl. B05b *3/14*
U.S. Cl. 239—242 **6 Claims**



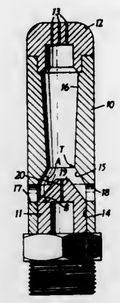
A wave-type sprinkler wherein the oscillated head includes a plurality of flexible tubular portions cantilevered from an inner end of each. The tubular portions include longitudinal rows of outlet ports. The outer end of each tubular portion is individually vertically arcuately adjustable to vary the width of sprinkling pattern, measured in the sense from inner end to outer end, provided by the respective flexible tubular portions.

3,498,544
OIL FUEL BURNING APPARATUS
John Philip Dabbs Hakluytt, Gosport, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Oct. 3, 1967, Ser. No. 672,594
Claims priority, application Great Britain, Oct. 4, 1966, 44,270/66
Int. Cl. B05b *7/10*
U.S. Cl. 239—404 **6 Claims**



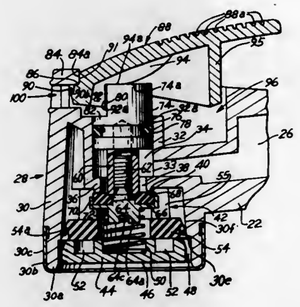
A head for a fuel oil spray burner in which fuel oil is atomised by a second fluid such as steam is arranged with at least one fuel jet fed from a fuel supply passage, the atomising fluid, preferably steam, being introduced to the fuel jet through a passage in the form of an annular chamber formed in the head, the two fluids being mixed before ejection from the head in a mixing chamber at an outer portion of the, or each, jet passage. Where a plurality of jets are provided these are preferably symmetrically arranged around the axis of the head and the annular chamber is common to all the jets which may be arranged to be generally convergent or divergent or to impinge upon one another.

3,498,545
GAS BURNERS
Ronald Victor Short, 105a Wickland Ave., Saltdean, Brighton, Sussex, England
Filed Nov. 8, 1967, Ser. No. 681,497
Claims priority, application Great Britain, Nov. 9, 1966, 50,160/66; Feb. 22, 1967, 8,403/67
Int. Cl. B05b *7/12*
U.S. Cl. 239—417.5 **1 Claim**



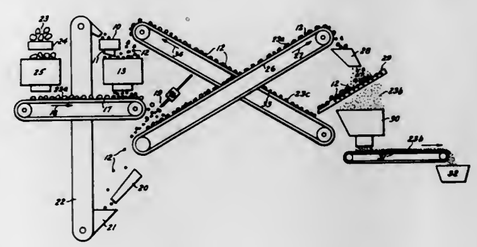
A single-stage gas burner so constructed as to be able to burn "natural gas" which has a calorific value far higher than that of towns' gas or town gas and which is supplied at a far higher mains pressure. The design of the annular space into which air is entrained combined with the number of air ports (or the total area of the air ports) through which the entrained air passes create correct aeration for combustion and velocity such as to prevent "lighting back."

3,498,546
SINK SPRAY
John F. Logan, Bronx, and Harold Shames and Sidney J. Shames, Ardsley, N.Y., assignors to Melard Manufacturing Corp., Bronx, N.Y., a corporation of New York
Filed Mar. 4, 1968, Ser. No. 710,295
Int. Cl. B05b *1/30*
U.S. Cl. 239—583 **10 Claims**



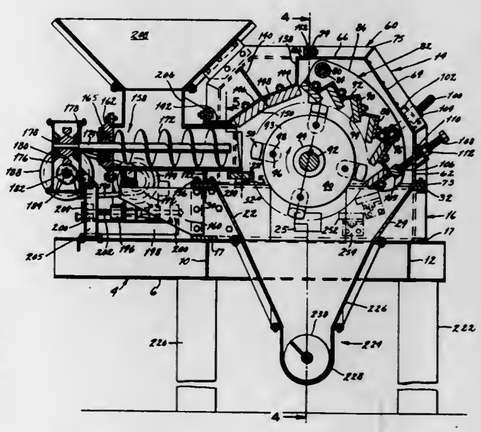
An inexpensive faucet spray is provided with major parts of molded plastic so arranged and interconnected as to avoid the usual pivot pin and most other assembly fasteners. The faucet spray delivers multiple streams, does not drip on shut-off, seals with the pressure and requires only minimum force actuation to an on-spray condition. The major parts are a hollow handle with an integral hollow head shell and a flow port therein; a reciprocable valve member arranged to seal the port with differential pressure of the incoming liquid; a second class lever connected to the head shell only through a pivot connection to a shoulder on the head shell and engaging the valve member to actuate same, and the valve member in turn engaging and keeping the lever assembly on the head shell; a spray defining disc carried on the head shell; and anti-drip means between the disc and the flow port. A spring biases the valve member against the lever when liquid pressure is unavailable.

3,498,547
IMPACT CRUSHER HARDENING METHOD
Harvey Conrad Kern, 728 Stopp Lane, Coopersburg, Pa. 18036
Filed Feb. 29, 1968, Ser. No. 709,411
Int. Cl. B02c *23/00, 13/04;* **B21d** *7/06*
U.S. Cl. 241—25 **8 Claims**



A method for hardening the working surfaces of an impact type crusher while the crusher is in operation. Metal balls are introduced into an operating impact type crusher, impact against the working surfaces of the crusher and thereby harden these surfaces. If material is being crushed in the crusher, the metal balls aid in crushing the material.

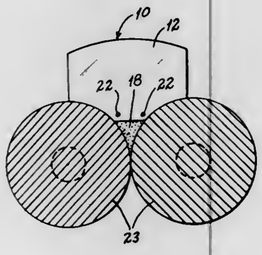
3,498,548
FLUFF MILL
William S. Gruendler, Richmond Heights, and Orly Bob McClure, Ladue, Mo. (both of 2915 N. Market, St. Louis, Mo. 63106)
Filed June 28, 1967, Ser. No. 649,586
Int. Cl. B02c *13/04, 23/02*
U.S. Cl. 241—186 **14 Claims**



A fluff mill of the up-running variety for reducing rock to a finely divided state. The fluff mill includes a cage with a rotor rotatably mounted in it, the rotor having hammers which pass in close proximity to canted

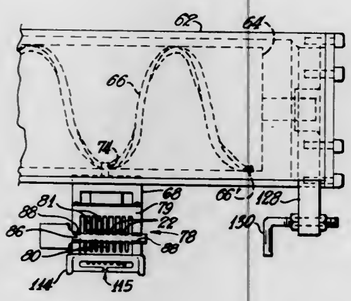
breaker bars located above the rotor. The breaker bars are carried on a breaker bar assembly which is adjusable externally of the cage so that the distance between the hammers and breaker bars can be altered. Screw-type conveyors are provided for forcing rock feed material into the path of the hammers, and still another screw-type conveyor is provided for withdrawing the finely divided end product from the cage.

3,498,549
END PLATE FOR INK MILL
Robert W. Sauer, St. Louis, Mo., assignor to Centenary Central, Inc., St. Louis, Mo., a corporation of Missouri
Filed Aug. 18, 1967, Ser. No. 661,561
Int. Cl. B02c *4/08, 4/28*
U.S. Cl. 241—226 **2 Claims**



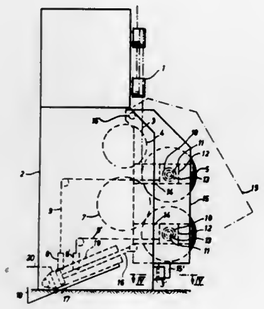
An end plate for roll type grinding mills, as ink mills, and the like, comprising a main metal body to which is secured, preferably removably, a tip of polyurethane, and the like.

3,498,550
APPARATUS FOR FORMING, PROCESSING AND PACKAGING MULTI-STRAND ROVING
Jerome P. Klink, Newark, and James C. Belue, Sylvania, Ohio, and James H. Sears, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application May 14, 1965, Ser. No. 455,866, now Patent No. 3,371,877, dated Mar. 5, 1968. Divided and this application Jan. 19, 1968, Ser. No. 699,209
Int. Cl. B65h *54/28*
U.S. Cl. 242—18 **9 Claims**



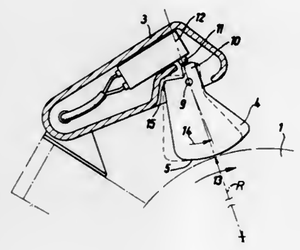
This invention relates to apparatus for forming and attenuating streams of mineral material into fibers, segregating the fibers into strands and winding a multistrand roving comprising the strands into a package having its ends in parallel planes normal to the axis of the package, the apparatus including means for compacting the strands at the package ends whereby the package is of cylindrical shape throughout its length.

3,498,551
YARN REELING MACHINE
Emil Briner, Felix Graf, and Olivier Wuest, Winterthur, Switzerland, assignors to Rieter Machine Works Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Nov. 27, 1967, Ser. No. 685,898
Claims priority, application Switzerland, Nov. 29, 1966, 17,162/66
Int. Cl. B65h *54/42*
U.S. Cl. 242—35.5 **10 Claims**



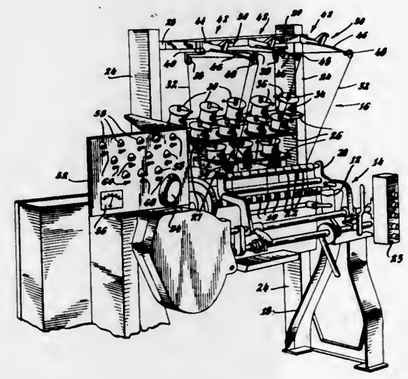
The arm which supports the bobbins is supported in dependent fashion and is pivoted from below in a reversible manner towards or away from the drive roller by the lower piston assembly. The piston assembly on the arm serves to slide the bobbin supports relative to the arm to effect a delayed braking of the rotating bobbins and subsequent unlocking from the tension spindles for replacement.

3,498,552
DEVICE FOR LIMITING THE DIAMETER OF BOBBINS BEING WOUND
Willy Helmes, Krefeld, Germany, assignor to Palitek Project-Company GmbH, Krefeld, Germany
Filed July 27, 1967, Ser. No. 656,385
Claims priority, application Germany, Aug. 1, 1966, P 40,107
Int. Cl. B65h *63/08*
U.S. Cl. 242—39 **3 Claims**



A device for limiting the diameter of bobbins being wound comprising a feeler for engaging the bobbin, the feeler being carried by an adjustable hollow arm in which is provided an electrical contact for actuation by the feeler for operating a circuit with the growth of the bobbin to the desired extent, the feeler being displaceable by the bobbin substantially tangentially at the region of contact of the bobbin periphery therewith so that a quick making of electrical contact follows the initial driving contact of the bobbin periphery with the feeler to stop winding. The feeler may be a lever with an arcuate surface, circular or eccentric, to engage the surface of the bobbin for operation thereby to actuate the switch.

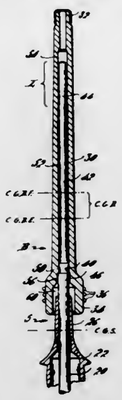
3,498,553
WIRE TENSIONING DEVICE
Donald S. Lee, Brookfield, Conn., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Mar. 15, 1968, Ser. No. 713,336
Int. Cl. B65h *59/02*
U.S. Cl. 242—45 **28 Claims**



A wire tensioning device for maintaining a constant substantially uniform tension on a wire which is being pulled from a supply spool including an electrical motor mounted upon a supporting member and having a rotatable pay-off member mounted thereon. The pay-off member engages wire leaving the supply spool and is rotated by the wire imparting a drag force to the wire proportional to the stall torque of the motor. An adjustable control device is connected to the electric motor for selectively changing the coil excitation and wire tension while the wire is in motion.

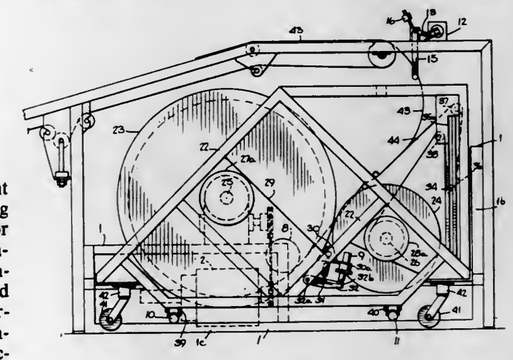
3,498,554
TEXTILE SPINDLE ASSEMBLY
Richard C. Hare, Whitinsville, Mass., assignor to The George E. Clentimack Co., Inc., North Attleboro, Mass., a corporation of Massachusetts
Filed Jan. 29, 1968, Ser. No. 701,249
Int. Cl. B65h *75/30, 79/00*
U.S. Cl. 242—46.2 **10 Claims**

A high-speed textile spindle assembly having a bobbin supported and driven by a rotating spindle of the type having its center of gravity located axially beyond one end of the bobbin. The spindle blade and bobbin are coupled together between the bobbin center of gravity and spindle center of gravity, as at the juncture of the bobbin butt and yarn-receiving portion, the bobbin and spindle blade have two control portions to limit eccentricity, one adjacent the



driving coupling, and one axially displaced therefrom near the end of the spindle blade.

3,498,555
APPARATUS FOR UNWINDING OR WINDING SPOOLS
Jean Leblond and Jean Biet, Compiegne, Oise, France, assignors to Uniroyal Englebert France S.A., Paris, France, a corporation of France
Filed Aug. 7, 1968, Ser. No. 750,994
Claims priority, application France, Aug. 10, 1967, 117,609
Int. Cl. B65h *23/18*
U.S. Cl. 242—55 **5 Claims**



Apparatus for supplying tire fabric having a fabric let-off spool and a liner wind-up spool. Drive motor means are directly coupled to the end portions of the shafts of the spools, preferably by electromagnetic coupling means. The speed of the fabric let-off is controlled relative to a predetermined reference speed, and the speed of the liner wind-up is controlled relative to the speed of the let-off fabric.

3,498,556
WEB TRANSPORT APPARATUS
Deane S. Thomas and Gary C. Graham, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 28, 1967, Ser. No. 626,511
Int. Cl. G11b *15/32*
U.S. Cl. 242—55.01 **4 Claims**

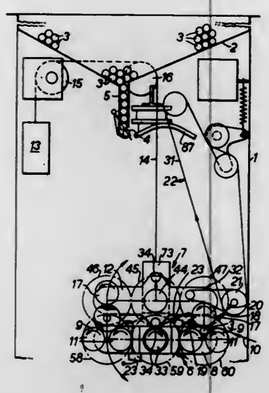
A web transport using a "spring-core" spool as an idler to prevent web hesitation in a demand-drive transport

system. A series of spaced apart film support spools is provided at the upper and lower regions of a film processing tank so as to form a multiplicity of loops as the film is



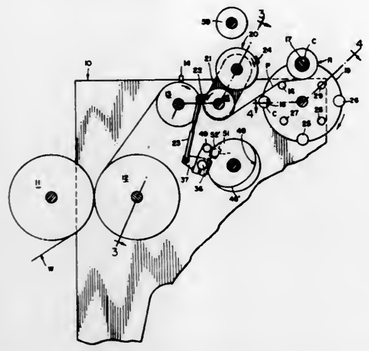
transported through the processing tank. The spools are formed with a resiliently yielding spring-core in order to assure advancement of the film in response to demand of the film driving arrangement.

3,498,557
MACHINE FOR FORMING WOUND ROLLS OF SHEET MATERIAL
Douglas W. H. Ball, Langford, England, assignor to T. H. Dixon & Company Limited, Letchworth, England, a British company
Filed Mar. 1, 1968, Ser. No. 709,707
Int. Cl. B65h *19/20, 17/08*
U.S. Cl. 242—56 **13 Claims**



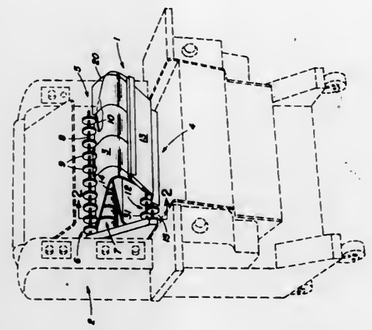
In a machine for rewinding webs of toilet tissue or other material into rolls of predetermined diameter or reeled length, continuous operation is achieved by the provision of a rotatable winding head having a plurality of pairs of winding rollers operable in turn to wind the web upon cores fed thereto in succession from a hopper and means, operable while a roll is being wound, for removing a fresh core from the hopper, rotating it to a speed equal to the speed of the web and depositing it in operative relation to the web and the next operable pair of winding rollers ready for winding a new roll thereon upon severance of the web between it and the preceding completed roll.

3,498,558
CUTOFF AND TRANSFER MECHANISM FOR REWINDER
John J. Bradley, Green Bay, Wis., assignor to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin
Filed July 24, 1968, Ser. No. 747,138
Int. Cl. B65h *19/26*
U.S. Cl. 242—56.8 **4 Claims**



A cutoff and transfer mechanism for a rewinder employed for transversely perforated webs such as toilet tissue. The mechanism is positioned between the perforating head and the multi-mandrel turret, being synchronized with the perforator and includes a snubber roll that oscillates into position at a predetermined time in the mandrel winding cycle to snap the web at a perforation and reversely fold the leading edge of the severed web for winding on a subsequent mandrel.

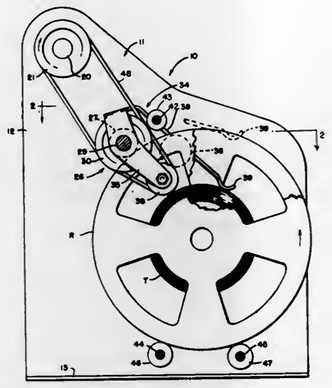
3,498,559
WINDING DEVICE FOR USE WITH REPRODUCTION MACHINES
Delbert W. Sames, Conklin, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 591,885, Nov. 3, 1966. This application Nov. 6, 1967, Ser. No. 680,665
Int. Cl. B65h *17/08*
U.S. Cl. 242—67.2 **7 Claims**



The present invention relates to a winding device for use with reproduction machines, and more particularly, to a device adapted to wind into a roll form an original sheet ejected from a machine in which the original has been reproduced. Specifically, the winding device employs

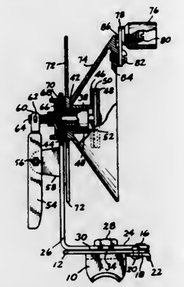
an original sheet receiving hopper having a positively driven friction roller adapted to cooperate with contoured surfaces of the hopper in forming the sheet into a relatively compact roll form.

3,498,560
CONSTANT TENSION WINDING MECHANISM
David F. Roller, Elk Grove Village, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,439
Int. Cl. B65h *77/00*
U.S. Cl. 242—75.1 **5 Claims**



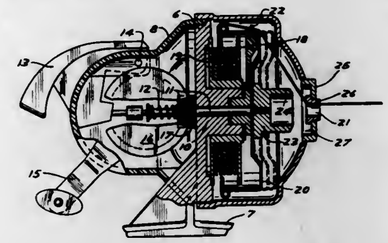
A tape winding mechanism including a tape reel, a drive pulley for rotating the tape reel, a belt for rotating the drive pulley, an idler pulley for controlling the amount of wrap of the belt around the drive pulley and a tape sensing roller connected to the idler pulley for causing the idler pulley to wrap more of the belt around the drive pulley as the diameter of tape on the reel increases thereby varying the amount of torque applied to the reel directly with such diameter.

3,498,561
PIVOTED FISHING REEL WITH BRAKE
Gorman R. Smith, 5931 NE. 10th Ave., Portland, Oreg. 97211
Continuation-in-part of application Ser. No. 455,657, May 13, 1965. This application Feb. 14, 1967, Ser. No. 615,985
Int. Cl. A01k *89/02*
U.S. Cl. 242—84.2 **6 Claims**



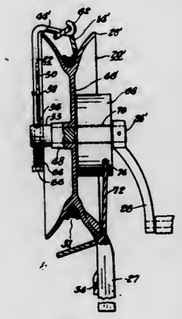
The hollow hub of a fishing line spool is mounted rotatably on a hollow bearing supported on a bracket. A brake disc is secured to a non-rotatable shaft movable longitudinally through the bearing by a finger lever on the bracket for adjustably interengaging the spool hub and brake disc to provide desired spool drag. A turret base member, adapted for attachment to a fishing pole, mounts the bracket rotatably for adjusting the spool between casting position and right or left hand reeling operation.

3,498,562
LINE CONTROL FOR SPIN CASTING REELS
Lloyd E. Johnson, Mankato, Minn., assignor to Denison-Johnson, Inc., Mankato, Minn., a corporation of Minnesota
Filed Nov. 13, 1967, Ser. No. 682,208
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **4 Claims**



A spin casting reel in which a pick-up rotor is mounted for axial movement from a line retrieving position adjacent the line spool to a line snubbing position adjacent a front cover plate, and in which the line is free to be extracted from the reel and out through an opening in the cover plate when the rotor is disposed between said two positions, together with means for controlling the movement of the line during the time it is so being extracted from the reel during normal casting action. Such line control means consists of a first annular member carried by the cover plate immediately adjacent to the line opening therein, and a second annular member extending forwardly from the pick-up rotor to telescopically and progressively overlap the first annular member and thereby create sharp reverse bends or curves in the line for the purpose of applying controlled resistance to the line movement. The second annular member also serves to detachably secure the pick-up rotor to an operating shaft extending therethrough.

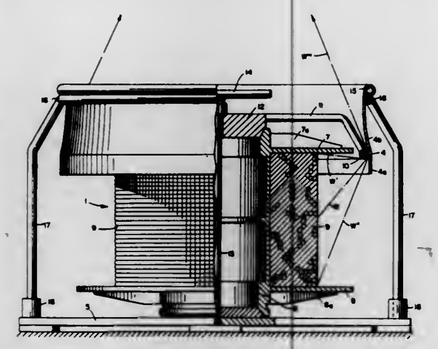
3,498,563
WATER SKI TOW LINE RETRIEVE
John P. Palmieri, P.O. Box 222, West Newton, Pa. 15089
Filed Jan. 24, 1968, Ser. No. 700,115
Int. Cl. B65h *17/46;* **B63b** *21/00*
U.S. Cl. 242—86.5 **10 Claims**



I disclose a tow rope retrieve including a stationary drum mounted with the winding direction transversely of

the boat movement. A crank shaft and crank arm rotatably mounted on the drum are provided with means for engaging and winding the tow rope upon the stationary drum. The crank arm is provided with novel means for its retraction when not in use. The stationary drum can be mounted either on the side or transom of the boat, when provided with my novel mounting bracket. In certain applications, a spring loaded drum is secured to the stationary drum and includes a relatively short length of rope or lead, the outer end of which is secured to the tow rope. The spring tension of the drum is such that release of the tow rope by the skier automatically retrieves the nearer end portion of the ski rope to facilitate grasping and winding the tow rope about the stationary drum.

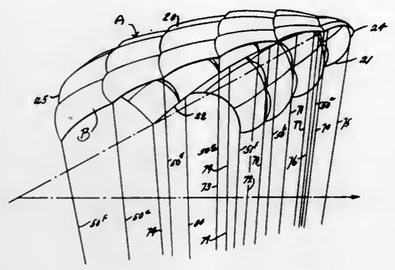
3,498,564
WIRE UNSPOOLING AND BRAKING APPARATUS
Peter Dismon, Porselen, Germany, assignor to Glanzstoff AG, Wuppertal, Germany
Filed May 3, 1968, Ser. No. 726,364
Claims priority, application Germany, May 9, 1967, G 50,039
Int. Cl. B65h *49/30, 59/16*
U.S. Cl. 242—128 **5 Claims**



Apparatus for the overhead withdrawal of wire coiled on a flanged spool for supply to a wire-drawing device in which braking or tensioning elements are provided by a rounded, smooth-surfaced annular guide rail concentrically mounted on the run-off end of the spool and extending radially outwardly of the spool winding below the run-off flange, and an elastomeric, abrasion-resistant collar coaxial with the spool and supported so as to rest on the outer portion of the guide rail such that the wire is pressed or nipped between the collar and the guide rail during its withdrawal outwardly of the spool winding in running and sliding contact around the guide rail and then inwardly over the free run-off end of the spool.

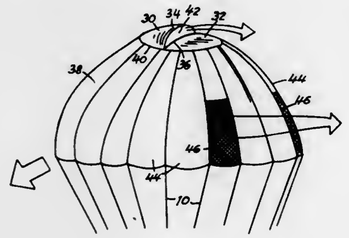
3,498,565
MANEUVERABLE GLIDE PARACHUTE
Stephen S. Nash-Boulden, Northridge, Calif., assignor to Irvin Industries Inc., Lexington, Ky., a corporation of New York
Filed July 15, 1966, Ser. No. 565,560
Int. Cl. B64d *17/18, 17/34*
U.S. Cl. 244—152 **2 Claims**

A parachute generically known as Parawing is a manually maneuverable glide parachute, including completely flexible canopy, shroud lines and a harness or other load supporting means in lieu of a harness. The harness or load supporting means has a control means by which the canopy can be guided during flight. The canopy comprises plural wing sections divided by a central keel assembly, the shroud lines are of such lengths with respect to the harness or load supporting means that the canopy will assume an acute angle to the horizontal during glide



descent with a leading smaller width nose at an appreciable elevation above the trailing wider end. The canopy is provided with air spilling vents and has a truncated shape.

3,498,566
PARACHUTE
Edwin D. Vickery, Tolland, Conn., assignor to Pioneer Parachute Company, Inc., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,741
Int. Cl. B64d *17/18*
U.S. Cl. 244—152 **6 Claims**

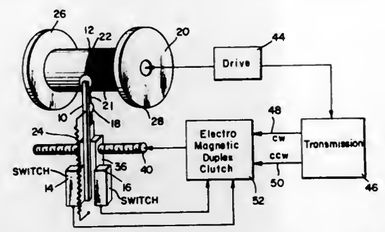


A parachute canopy having a vent in the peak thereof and provided with air flow controlling means for the vent which extend from at least one side of the vent opening toward an opposite side thereof. The cover means thus provided serve to permit relatively free flow of air through the vent in the peak of the canopy during the initial stages of deployment of the parachute and thereafter they advantageously may restrict or direct the air flow, the latter serving as directional means to aid in guiding the parachute during its descent.

3,498,567
HIGH SPEED BOBBIN WINDOW
Herbert Baker, 25134½ Malibu Road, Malibu, Calif. 90265, and David S. Rathje, 10820 Molony Road, Culver City, Calif. 90230
Filed May 20, 1968, Ser. No. 730,395
Int. Cl. B65h *57/28*
U.S. Cl. 242—158.4 **5 Claims**

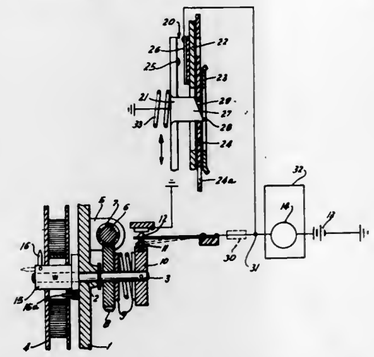
Apparatus is provided which controls the direction of wrap in a high-speed bobbin winder by the proximity of or contact with the rim or flange of a bobbin, reversing the direction of wrap at the end of a "layer." In a preferred embodiment, a sensing arm is carried on an overcenter

trip mechanism which is pretripped into a "lagging" configuration so that contact with the rim actuates a reversing switch. During winding in the opposite direction, the



arm initially in a "leading" configuration, is switched to the "lagging" configuration and actuates a reversing switch when the opposite rim is encountered.

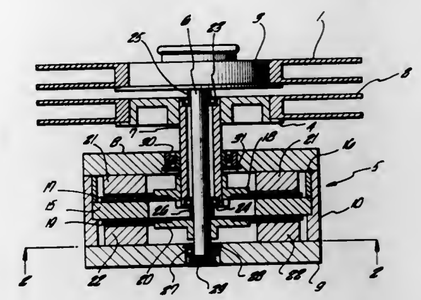
3,498,568
MOTION PICTURE CAMERA WITH SIGNAL GENERATING MEANS
Ludwig Blaschke, Gatzingerplatz 3/I, 8 Munich 25, Germany
Filed June 21, 1968, Ser. No. 738,916
Claims priority, application Germany, June 21, 1967, N 30,751
Int. Cl. G11b *15/32*
U.S. Cl. 242—191 **10 Claims**



A motion picture camera wherein the shaft **3** for the takeup reel **4** is rotated by way of a slip clutch **9** and effects intermittent closing of a first electric switch **12** to complete the circuit of a lamp **14** in the view finder **32** and to thus indicate satisfactory collection of exposed film **24** on the reel. A second electric switch **20** is connected in parallel with the first switch and is closed by the pull-down **21** when the latter's claw **27** detects a damaged portion of the film or when the trailing end of the film advances beyond the claw whereby the lamp produces a continuous signal. A resistor **30** is connected in series with the first switch to weaken the intermittently produced signals and to thus facilitate discrimination between signals which are respectively produced on closing of the first and second switches.

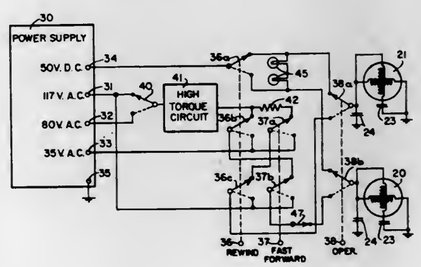
3,498,569
COAXIAL TAPE STORAGE REEL DRIVE MODULE
Magne Jarle Kjos, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 8, 1967, Ser. No. 689,178
Int. Cl. G11b *15/32*
U.S. Cl. 242—193 **7 Claims**

A pair of coaxially arranged relatively rotatable tape storage reels are coupled by coaxial drive shafts to coaxial motors, i.e., motors having coaxial axes of rotation. Most advantageously, the motors each have disc-shaped armatures that are fixed to their respective shafts. The armatures have helical printed-circuit or punch-pressed windings that lie in planes perpendicular to the axes of the drive shaft. The motors are enclosed in a cylindrical housing



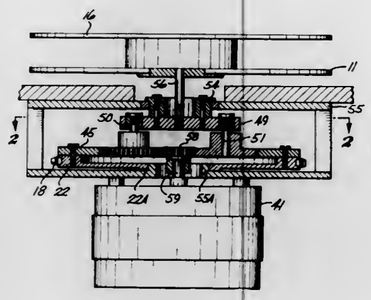
having ends made of magnetic material, and a dividing ring of magnetic material is disposed between the armature of the two motors. Field magnet pairs are arranged within the housing with a pole adjacent to the surface of each armature. The magnets of each pair are side by side and oppositely oriented.

3,498,570
DIFFERENTIAL BRAKING SYSTEM FOR REELING APPARATUS
Max W. Scholfield, Goshen, Ind., assignor to International Radio & Electronics Corporation, Elkhart, Ind., a corporation of Indiana
Filed July 31, 1967, Ser. No. 657,168
Int. Cl. G11b *15/32*
U.S. Cl. 242—203 **5 Claims**



Motor braking system for reeling apparatus, such as used in tape recorders, including first and second induction motors driving first and second reels, respectively, between which strip material is wound. The motors are energized by alternating current of different voltages for providing different speeds, and direct current is applied to the motors for braking the same to stop the reels. A smaller direct current voltage is applied to the motor connected to the take-up reel than to the motor connected to the pay-off reel by applying the braking voltage thereto through a differential resistance having a value which increases as the braking takes place. A self-heating positive temperature coefficient resistor such as an incandescent lamp can be used as the differential resistance.

3,498,571
TAPE REEL DRIVE SYSTEM
Marion R. Dilling and John O. Renn, Seattle, Wash., assignors to Interface Mechanisms, a limited partnership of Washington
Filed Aug. 13, 1968, Ser. No. 752,338
Int. Cl. G11b *15/22*; F16h *21/18*
U.S. Cl. 242—203 **13 Claims**



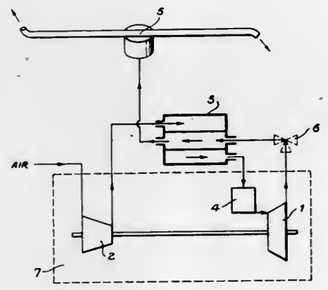
This application discloses a tape drive system including planetary gear arrangements associated with the tape supply and tape take-up reels such as used in perforated or printed tape systems. A differential drive mechanism is disclosed as including a planetary gear cluster associated with the supply reel and the take-up reel with the reels being carried by the planet gears and the ring gears being driven at a substantially constant speed. The sun gear is mounted on the shaft of a shaded pole AC motor which is selectively energized with direct current to provide a brake action and hence a selected proportional torque on the planet gears in response to the ring gear drive. An unbalance in tape tension caused by a tape feed operation results in a smooth take-up of tape at various speeds. Operating details as well as illustrative embodiments of the gear drive systems are provided.

3,498,572
LIGHTNING PROTECTION FOR AIRCRAFT COMPONENTS
John H. Lumn, El Cajon, Calif., assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 652,276, July 10, 1967, which is a continuation-in-part of application Ser. No. 642,492, May 31, 1967. This application Aug. 31, 1967, Ser. No. 664,709
Int. Cl. B64d *45/00*
U.S. Cl. 244—1 **7 Claims**



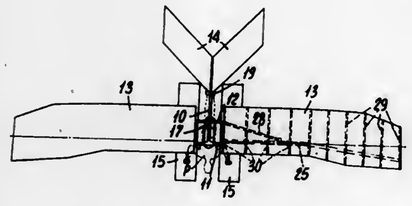
A lightning protection system for aircraft components apt to be struck by lightning such as wings, external fuel tanks, etc. including a thin, heat resistant, insulating reinforced plastic covering the leading portion of the component to be protected and a conductive coating superimposed on the insulating material and electrically connected to a ground or dispersal area together with an improved method for applying the coatings in which a part of the conductive material is applied before the reinforced plastic layer is cured.

3,498,573
HELICOPTER DRIVE SYSTEM
Bruno Herrmann, Bridgeport, Conn., assignor to Motoren- und Turbinen-Union, Munich-Allach, Germany
Filed June 5, 1967, Ser. No. 643,533
Claims priority, application Germany, July 2, 1966, M 70,076
Int. Cl. B64c *27/12*
U.S. Cl. 244—17.11 **2 Claims**



Compressed air flowing from an air compressor to a gas turbine is passed through a heat exchanger for cooling the exhaust gas coming from the gas turbine. The cooled exhaust gases then drive a helicopter rotor by being discharged through the tips of the rotor blades. Cooling the turbine exhaust gases enables rotor blades of less cross-sectional area.

3,498,574
FLUTTERING WING AERIAL PROPELLED APPARATUS SUITABLE FOR CARRYING A MAN
Alfred Ernst, Via del Cairo 37, Varese, Italy
Filed June 29, 1967, Ser. No. 649,961
Claims priority, application Italy, Aug. 5, 1966, 21,154/66
Int. Cl. B64c *33/02*
U.S. Cl. 244—22 **1 Claim**

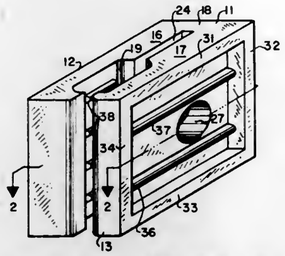


A fluttering wing aerial propelled apparatus characterized by comprising such control means that lift, flutter and partial twisting or warping of the wings are at any instant determined by the operator, as well as a driving apparatus for providing the majority or the whole of the power required for wing movements.

ERRATUM

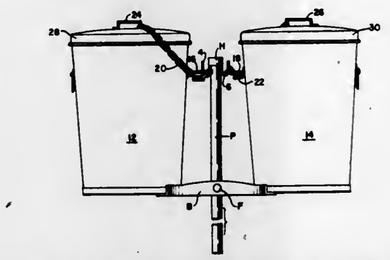
For Class 244—152 see:
Patent Nos. 3,498,565 and 3,498,566

3,498,575
DROP-WIRE SUPPORT
Billy C. Downing, Bowie, Md., assignor to Anaconda Wire and Cable Company, a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,748
Int. Cl. F16l *3/02, 15/00, 3/08*
U.S. Cl. 248—71 **4 Claims**



A molded plastic drop-wire support can be screwed to a wall from either side and will hold the wire in a snap fit before the screw is finally tightened after which integral ridges secure the wire against lengthwise movement.

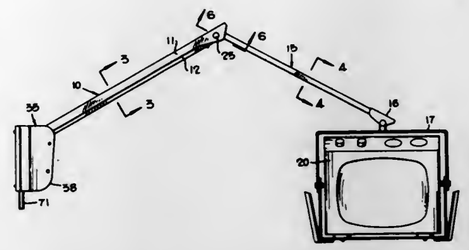
3,498,576
POST TOP CLOSURE BRACKET OR CAP
Taco D. Alissandratos, P.O. Box 606, Tarpon Springs, Fla. 33589
Filed Oct. 19, 1967, Ser. No. 676,400
Int. Cl. F16m *13/02*; A47g *29/00*
U.S. Cl. 248—221 **2 Claims**



A post handle bracket for use with can holders mounted on the post. The bracket comprises a cap for fitting on and enclosing the usual hollow center of a supporting post. The cap as shown is formed with at least one hook having a perforated ear, to which a chain may be secured in order to hold captive therewith the cover for the can as it is supported on the post. In one form of the invention the cap is formed with a pair of hooks, each being provided at one side with a perforated ear. The ears extend in opposite directions to prevent the fouling of the chains.

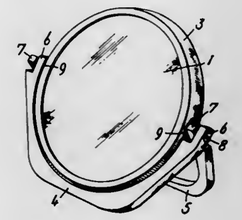
3,498,577
ADJUSTABLE BRACKET STRUCTURE
Jacob A. Mehr, deceased, late of Kirkwood, Mo., by Edna Anne Mehr, administratrix, Kirkwood, Mo., assignor to Dazor Manufacturing Corp., a corporation of Delaware
Filed May 31, 1968, Ser. No. 740,397
Int. Cl. A47f *5/00*; A47g *29/02*
U.S. Cl. 248—280 **20 Claims**

The adjustable bracket includes an elongate inner arm, formd by a parallelogram linkage system, and pivotally attached to a base support at the inner end. An extension load-carrying arm is pivotally connected to the outer end of the elongate arm. A rotatable pulley is pivotally attached to the support, and a flexible link interconnects the inner end of the elongate arm to the pulley. Another



link connects the pulley to a spring. The pulley includes a radial slot which cooperates with a curved slot in the base support to selectively adjust the position of the connection of the last said pulley and link, whereby to maintain a substantially constant balancing moment as the arm is adjusted for any position of the load.

3,498,578
POCKET-MIRROR
Shiroshi Nakazawa, 2–20–21 Chuo, Edogawa-ku, Tokyo-to, Japan
Filed Mar. 31, 1967, Ser. No. 627,502
Claims priority, application Japan, Mar. 31, 1966, 41/29,154
Int. Cl. A47g *1/16*; A47f *7/14*
U.S. Cl. 248—472 **1 Claim**

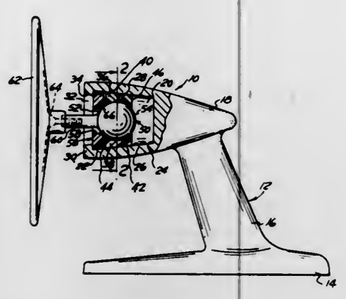


The invention of this application relates to a pocket-mirror of the versatile type which can also be used as a desk-type mirror and which comprises a circular mirror member, and two upper and lower semi-circular frame members forming a framework around said circular mirror member and journalled at their ends to the mirror member at two diametrically opposed points on its periphery, said frame member serving as grip means having a decorative function, one of said semi-circular frame members being pivotally moved to serve as rockable support means thereby enabling the pocket-mirror to be used as a desk-type mirror.

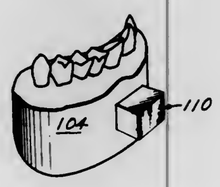
3,498,579
VEHICLE MIRROR
William P. Vicary, St. Clair Shores, Mich., assignor to Jim Robbins, Seat Belt Co., Royal Oak, Mich., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 696,471
Int. Cl. A47g *1/24*; B60r *1/06*
U.S. Cl. 248—483 **7 Claims**

A mirror of the type to be mounted on the exterior side of a vehicle and including a mounting member having

a tapered recess for receiving a bearing assembly. The bearing assembly has a spherical surface for receiving a ball member of the mirror and in one embodiment a locking element snaps into the recess to urge the bearing assembly into wedging engagement with the tapered surface of the recess to thereby retain the mirror in an adjusted position. In another embodiment a spring member is provided to urge the bearing assembly toward the reduced diameter portion of the tapered recess.



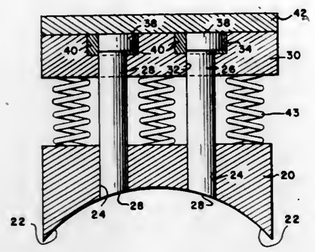
3,498,580
TUNNEL PLUG MEMBER FOR USE IN MAKING DENTAL PROSTHODONTICS
Melvin E. Wilson, 2182 Kebeley Drive, Decatur, Ga. 30032
Filed Oct. 21, 1965, Ser. No. 499,866
Int. Cl. A61c *9/00*
U.S. Cl. 249—54 **1 Claim**



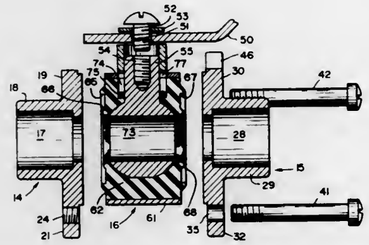
A tunnel plug member of tear-away construction for use with a pin in the model for making dental impressions. The plug is shaped to be withdrawn from the tunnel by tearing away from the pin and in one form this is facilitated by a hole and a partially cut portion. The plug may be made from plastic or rubber.

3,498,581
POSITIONING DEVICE FOR CORE PINS
William Raymond Judson, 242 N. Central Ave., Chicago, Ill. 60604
Filed June 14, 1967, Ser. No. 646,111
Int. Cl. B28b *7/10;* **F16b** *3/00*
U.S. Cl. 249—67 **6 Claims**

A positioning insert for disposition in a counterbored core pin receiving passageway in a core-pin plate. The insert being formed with a relatively thin annular disc-like portion having an outer diameter and an inner diameter corresponding to the diameters of the counterbore and the passageway, respectively. An axially extending projection on the insert having a flat surface thereon providing an abutment surface for cooperation with a like abutment surface formed on a core pin to fix the rotative position of the core pin relative to the core-pin plate. A tool for properly positioning the insert in the counterbored core pin receiving passageway.



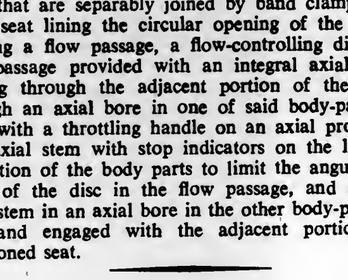
3,498,582
CARTRIDGE BALL VALVE
Harold J. Balhouse, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Sept. 12, 1967, Ser. No. 667,276
Int. Cl. F16k *51/00, 5/00*
U.S. Cl. 251—151 **5 Claims**



A ball valve with a central, removable, integral cartridge section containing the ball member. The ball is rotatably retained and sealed in place within the casing of the cartridge by an elastomer filler or core which is molded in place between the casing and ball. The cartridge has axially extending sealing lips which are compressed in sealing relation as the cartridge is held between opposed spaced flanged socket members by a plurality of parallel body screws axially oriented and passing externally of the cartridge from flange to flange of the spaced socket members.

3,498,583
COMPOUND MOVEMENT BUTTERFLY VALVE
Morley V. Friedell, Wheatridge, Colo., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Oct. 7, 1966, Ser. No. 585,507
Int. Cl. F16k *25/00, 1/22*
U.S. Cl. 251—162 **8 Claims**

The valve comprises a compound movement butterfly-type valve member which is rotated to move between an open position, wherein the disc-shaped valve member is disposed parallel to the flow and a flow-traversing position wherein the disc is disposed transversely to the flow. The valve member also moves from the flow-traversing position to a closed position by translating into engagement with a seat to block flow through the valve. The valve is moved between these positions by a shaft carrying a pair of cooperating plates and cam means. One of the plates is fixed to the shaft and the plates are selectively interconnected by a ball-type clutch to provide for rotation of the valve member. The other plate is connected by the clutch to a stationary member to fix the valve member against rotation during which the cam means can affect translation of the valve member.

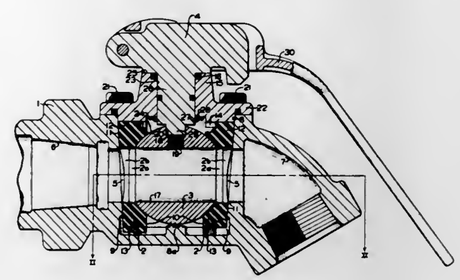


3,498,584
BUTTERFLY VALVE
Rudolph M. Bowers, 4247 W. 88th St., Anchorage, Alaska 99502
Filed Apr. 17, 1968, Ser. No. 722,025
Int. Cl. F16k *1/22, 51/00*
U.S. Cl. 251—305 **8 Claims**

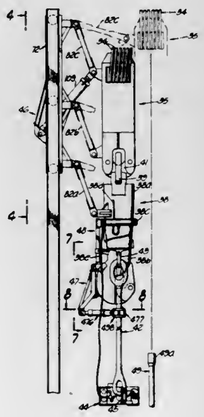
A butterfly valve having a circular body of two semicircular parts having oppositely extending axial projections that are separably joined by band clamps, an annular seat lining the circular opening of the body and defining a flow passage, a flow-controlling disc in said flow passage provided with an integral axial stem extending through the adjacent portion of the seat and through an axial bore in one of said body-part projections with a throttling handle on an axial projection of said axial stem with stop indicators on the latter axial projection of the body parts to limit the angular adjustment of the disc in the flow passage, and a separate axial stem in an axial bore in the other body-part projection and engaged with the adjacent portion of the mentioned seat.

3,498,585
BALL VALVE
Fred Temple, Pittsburgh, and Walter B. Kirk, Pitcairn, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1966, Ser. No. 603,186
Int. Cl. F16k *5/06, 25/00*
U.S. Cl. 251—315 **4 Claims**

A ball valve having a rotatable ball valve element seated between two diametrally related seat members conforming in outer contour to a conical valve chamber in the valve body. An operating stem is separably interlocked with a conforming recess in the ball valve element on installation of the valve stem for rotation of the valve element. Projections on the seat members interlock with the valve body to prevent rotational movement of the seat members within the conical valve chamber. Separation of the ball valve element from the valve stem due to wear of the seat members is prevented by stop means on the valve body normally disengaged from the ball valve element.

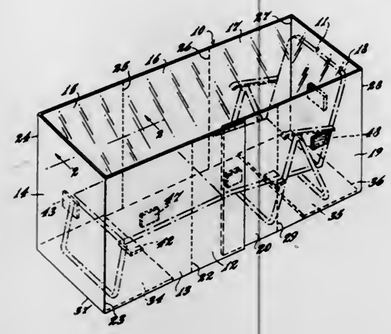


3,498,586
STABILIZED PIPE SUPPORTING STRUCTURE FOR DRILLING RIGS
John W. Turner, Jr., Houston, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,818
Int. Cl. B66c *23/60;* **E21b** *19/00;* **B64d** *17/38*
U.S. Cl. 254—139 **10 Claims**



A stabilized pipe supporting structure for drilling rigs in which the drilling line supported traveling block is guided along a laterally offset track and is movable horizontally to the center of the derrick, the block being restrained against undesired movements, and the drilling hook supported by the block also being guided by said track and shiftable with said block to the center of the derrick while being restrained against undesired movements, and the elevator supporting links depending from the drilling hook being stabilized and restrained against swinging movements to assure engagement of a pipe joint by the elevator.

3,498,587
COLLAPSIBLE PROTECTIVE ENCLOSURE
Samuel Friedberg, Chelsea Towers, Atlantic City, N.J. 08401
Filed Sept. 9, 1968, Ser. No. 758,371
Int. Cl. E04h *17/00*
U.S. Cl. 256—25 **8 Claims**



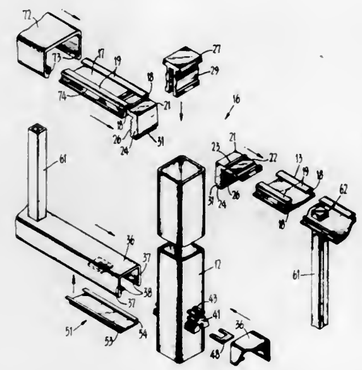
A row of hinged panels for disposition in generally vertical position on a ground surface to define an enclosure.

3,498,588
FENCE POST
Arvin William Turner, Jr., 109 Lindenwood Drive, Fort Worth, Tex. 76107
Filed Dec. 27, 1968, Ser. No. 787,464
Int. Cl. B21f *27/00;* **E04h** *17/02*
U.S. Cl. 256—47 **2 Claims**



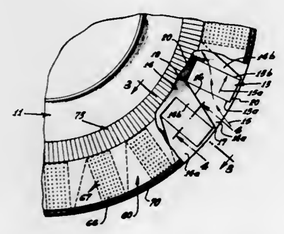
Specific improvements in a tubular post which, in its erected position, is driven in the ground, as distinguished from other posts which are set in concrete. The post has a water hole in one side thereof near its upper end, in the erected position of the post, whereby water may be poured inside the post, as in dry weather, to wet the ground around the post and cause the earth to pack more firmly around the post, and has a pair of mutually aligned longitudinal slots in opposite sides thereof, above the lower end of the post and below the surface of the ground, in the erected position of the post. A stabilizer plate is received in the aligned slots of the pair and extends laterally outwardly beyond opposite sides of the post, in the erected position of the post. The plate has a pair of integral spring clips, made by deforming the material of the plate on one side thereof for abutting engagement with the outside of the post, on opposite sides thereof, to secure the plate against lateral displacement relative to the post, whereby the plate is locked in place in its operative position.

3,498,589
INTERLOCKING RAILING CONSTRUCTION
Robert H. Murdock, Oakland, Calif., assignor to Railtec Corporation, Berkeley, Calif., a corporation of California
Filed Aug. 30, 1967, Ser. No. 664,505
Int. Cl. E04h *17/14, 17/16*
U.S. Cl. 256—70 **4 Claims**



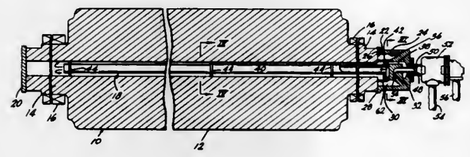
An interlocking construction for metal railings is described which provides a rigid and tamper proof railing construction and yet which is quickly assemblable. The interlocking construction includes a wedge and hanger assembly for rigidly securing locking bars for an upper rail to railing posts. A connector is also provided for securing a bottom rail to the posts by a wedge arrangement which assures tight securance of the bottom rail to the posts. Bars are arranged vertically between the upper and lower rails and are secured thereto by locking studs which rely upon a friction fit to assure tight securance of the bars.

3,498,590
SPIRAL DRAFT WATER COOLING TOWER
Donn B. Furlong, Santa Rosa, Calif., assignor to Fluor Products Company, Inc., Santa Rosa, Calif., a corporation of California
Filed June 13, 1968, Ser. No. 736,833
Int. Cl. F28c *1/00*
U.S. Cl. 261—111 **7 Claims**



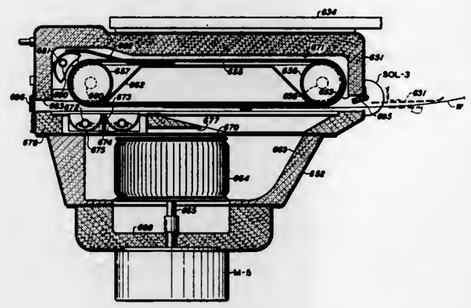
A cooling tower employs packing sections having inlet and outlet sides laterally separated in a direction generally lengthwise of the tower horizontal periphery, for greater efficiency. Other features include a water supply basin along which water flows over the sections and drains thereto, but not to the spaces between the sections; and water may also drain in curtains at the entrances to the spaces between the packing sections, for described purposes.

3,498,591
SMALL BORE ROLL SYPHON
Donald L. Calkins, Three Rivers, Mich., assignor to The Johnson Corporation, Three Rivers, Mich., a corporation of Michigan
Filed May 3, 1968, Ser. No. 726,357
Int. Cl. F27b *9/28*
U.S. Cl. 263—6 **5 Claims**



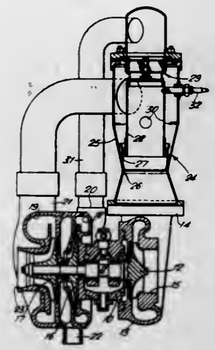
A rotating syphon system particularly suitable with rotary heat exchanging rolls having a relatively small axial bore in which the heat exchanging medium circulates. The syphon apparatus being mounted exteriorly of the roll at one end thereof and permitting the liquified medium to readily flow from the bore into the syphon system to prevent accumulation of the medium within the bore.

3,498,592
HEAT FIXING APPARATUS FOR FUSIBLE MATERIAL
Rabin Moser, Fairport, and Frederick W. Hudson, West Henrietta, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 24, 1968, Ser. No. 731,752
Int. Cl. F27b *9/06, 9/14;* **F27d** *17/00*
U.S. Cl. 263—6 **7 Claims**



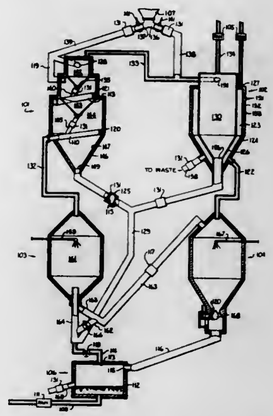
A fixing system for fixing fusible material such as electroscopic material having a heating chamber with at least two heating devices arranged therein. One of the heating devices is adapted to heat support material carrying the fusible material by convection and the other device by radiant energy. Means are included for effecting the recirculation of re-heated air for the support material.

3,498,593
HOT GAS GENERATORS
Eric Kellett, London, and Kenneth Eric Tilsed, Uxbridge, England, assignors to C.A.V. Limited, London, England, a British company
Filed Apr. 12, 1968, Ser. No. 720,850
Claims priority, application Great Britain, Apr. 27, 1967, 19,438/67; June 27, 1967, 29,595/67; Sept. 22, 1967, 43,233/67; Dec. 15, 1967, 57,046/67; Jan. 19, 1968, 2,993/68
Int. Cl. F23l *9/04*
U.S. Cl. 263—19 **6 Claims**



A hot gas generator comprising in combination, a combustion chamber, a turbine driven by heated gases leaving the combustion chamber, first and second compressors respectively driven by the turbine an air/fuel mixture burner disposed within the combustion chamber the first compressors serving to supply the fuel air mixture to the burner and the second compressor serving to supply dilution fluid to the combustion chamber and means for mixing fuel with the air flowing to said first compressor.

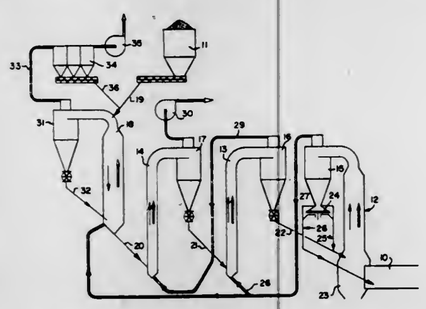
3,498,594
CEMENT BURNING PROCESS AND APPARATUS
Sophus Rikhof, Riverside, Calif. (12405 Copenhaver Terrace, Potomac, Md. 20854)
Filed Oct. 17, 1966, Ser. No. 587,160
Int. Cl. C04b *7/06, 7/44;* **F27d** *27/00*
U.S. Cl. 263—21 **20 Claims**



Cement is produced from pulverized raw materials by preheating, calcining, clinkering, and cooling the raw materials in successive separate units in a counter-current of gases. The gases are used to suspend the pulverized

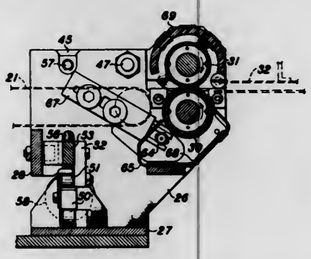
raw materials in the preheater, calciner, and clinkerer, and to distribute the heat liberated in the clinker cooler and clinkerer to the raw material feed. Raw materials containing alkalis and volatiles may be used to produce quality cement products by apportioning the raw material feed between the direct and indirect preheater units and channeling hot gases obtained from the clinkerer exclusively through said indirect preheater. Means for adjusting the flow of raw materials and gases disposed in the raw material and gas lines between successive units provide controls and maximized product quality and heat economy.

3,498,595
PREHEATING APPARATUS USEFUL IN THE MANUFACTURE OF CEMENT AND THE LIKE
Francis Dambrine, Marcq-en-Baroeul, France, assignor to Societe Fives Lille-Call, Paris, France
Filed Apr. 11, 1968, Ser. No. 720,576
Claims priority, application France, Apr. 11, 1967, 102,193
Int. Cl. F27b *9/12*
U.S. Cl. 263—32 **5 Claims**



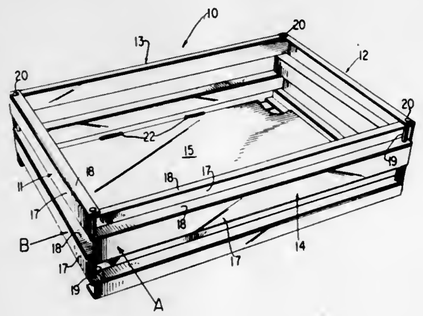
In an installation for the heat treatment of finely divided material, wherein the material is passed through preheating apparatus before entering a furnace, a heat exchange tower is arranged ahead of the preheating apparatus, and hot exhaust gases coming from the furnace are delivered countercurrently to the heat exchange tower to heat the material intensely before it enters the preheating apparatus, and are exhausted from the heat exchange tower at a relatively low temperature.

3,498,596
HEAT FIXING APPARATUS FOR FUSIBLE MATERIAL
Rabin Moser, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 24, 1968, Ser. No. 731,965
Int. Cl. F27b *9/06, 9/14;* **F27d** *3/00*
U.S. Cl. 263—6 **4 Claims**



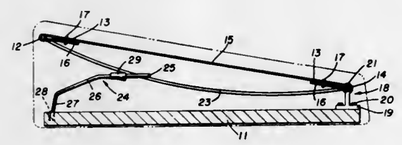
A fixing system for fixing fusible material such as electroscopic particles upon support material embodying the principles of low thermal mass for conserving heat. The system includes two rollers in pressure contact between which the support material is transported. One of the rollers is provided with a heat barrier blanket and is heated from an exterior source so that adjacent portions of the roller that are heated are continuously applied to the side of the support material carrying the particles.

3,498,597
ANNEALING BOX
Frederick W. Roberts, Southport, George W. Wardwell, Trumbull, and Christian E. Fritz, Stratford, Conn., assignors to Rolock Incorporated, Fairfield, Conn., a corporation of Connecticut
Filed Mar. 11, 1968, Ser. No. 711,948
Int. Cl. F27d *15/00;* **B65d** *7/12, 7/42*
U.S. Cl. 263—49 **8 Claims**



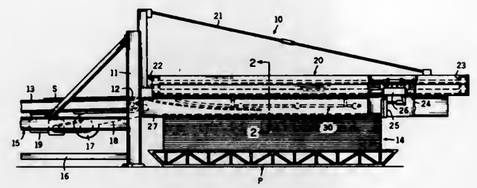
An annealing or heat treating box where the side walls are formed of similarly shaped corrugated strips with the corrugations having flat bottom faces and the ends of the side walls are meshingly engaged at their ends. Pins are passed through the assembled ends of the side walls and a bottom wall is then fastened to the bottom edges of the side walls.

3,498,598
SOFT FRONT SPRING SEAT SUSPENSION
Alan E. Rathbun, 3135 Highland Drive, Cuyahoga Falls, Ohio 44224
Filed Oct. 4, 1968, Ser. No. 765,082
Int. Cl. A47c *23/12, 23/26*
U.S. Cl. 267—103 **9 Claims**



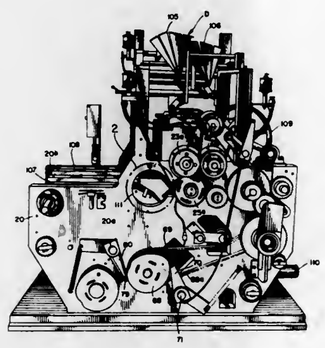
A spring seat suspension having a resilient rod frame hinged to a base at its rear side with strap means extending therefrom to the front side and at least one bowed spring rod extending between and abutting said front and rear sides of the frame, and stirrup means between the front portion of said bowed spring rod and said base resiliently supporting said front side on said base.

3,498,599
WAVE DAMPER FOR SHEET STACKING APPARATUS
Cullen J. Smith, St. Louis, Mo., assignor to L. W. Nash Company, a corporation of Missouri
Filed May 1, 1968, Ser. No. 725,744
Int. Cl. B65h *31/26*
U.S. Cl. 271—68 **8 Claims**



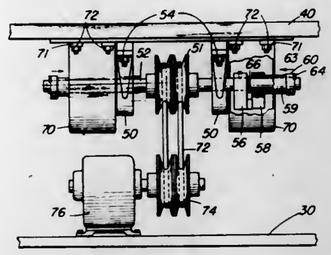
Wave damper means for application to stacking apparatus handling long thin sheet material which is projected outwardly on a stream of air into a stacking zone between side guides, the dampers acting to hold the longitudinal margins of the sheet against vertical movement so as to damp violet vertical oscillations and prevent the sheets from slapping against sheets already in the stack. The wave damper means allows some wave motion of the thin sheets in the transverse direction due to the supporting layer of air injected under the sheet as it is projected into the space between the guides, and the resulting arch-form imparts a desired degree of lateral stiffness such that the sheet material is not created or otherwise damaged during its airborne flight between the side guides.

3,498,600
DELIVERY APPARATUS FOR WEB SEGMENTS TO BE STACKED
Harvey J. Spencer and Ernest Daniel Nystrand, Green Bay, Wis., assignors to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin
Filed Dec. 20, 1967, Ser. No. 692,060
Int. Cl. B65h *31/30, 31/34*
U.S. Cl. 271—69 **6 Claims**



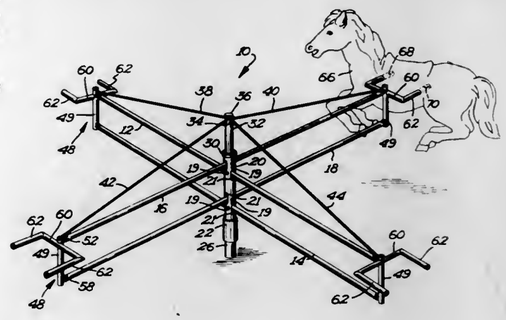
Apparatus for delivering stacks of web segments such as towels, tissues, paper hankerchiefs and the like wherein orbiting fingers provided in pairs beside a delivery pad operate to stabilize a stack of previously delivered web segments so as to present a receiving surface capable of high speed (greater than 500 feet per minute) operation.

3,498,601
ADJUSTMENT MEANS FOR JOGGING MACHINE
Stephen S. Koval, Riverdale, N.Y., assignor to Ilya Schelnker, Inc., New York, N.Y., a corporation of New York
Filed Apr. 29, 1968, Ser. No. 725,121
Int. Cl. B65h *31/34, 1/00*
U.S. Cl. 271—89 **6 Claims**



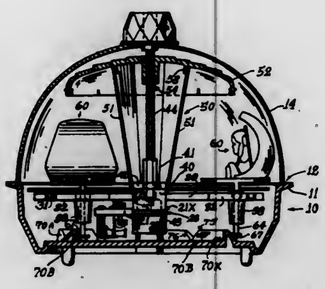
A jogging machine for stacking paper sheets and other sheets in a neat pile; has eccentric weights on a rotating shaft in position accessible for adjustment easily. One weight is axially and rotatively movable with reference to the other, without using tools, by pushing it axially against a spring bias, then turning it and releasing it into its new position, wherein it is maintained by a pin and slot connection during machine operation.

3,498,602
VERTICAL AND HORIZONTAL AXES ROUNDABOUT
William A. Noble, 2191 Como Ave., St. Paul, Minn. 55108
Filed Oct. 9, 1967, Ser. No. 673,610
Int. Cl. A63g *1/20*
U.S. Cl. 272—30 **5 Claims**



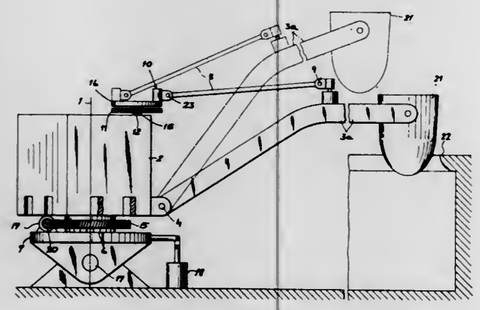
A playground device of the merry-go-round type which consists of a fixed post having a vertical rotatable support member to which a horizontally disposed member is secured at its center for rotation about the vertical axis of the post as well as swinging motion about a horizontal axis. Seats or simulated animals are pivotally secured to the free ends of the horizontal member. Links are connected between the seats and the post to keep the seats in a vertical position as the children riding on the seats revolve about the post and simultaneously swing up and down. Suspension members, to prevent excessive downward flexure, extend from the free ends of the horizontal member to a substantially vertical extension mounted for universal pivoting on the upper end of the support member.

3,498,603
CARROUSEL TYPE MOTION TOY
Willis M. Lakin, Slinger, Wis., assignor to Marlin Toy Products, Inc., Horicon, Wis., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 594,146
Int. Cl. A63h *13/20*
U.S. Cl. 272—31 13 Claims



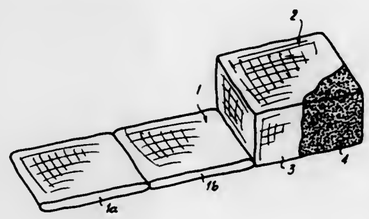
The subject matter relates to carrousel and roundabout toys and the like having a rotating platform with individual motion objects carried thereon and motivated by corresponding spindle means having rollers driven by frictional engagement with stationary arcuate surfaces beneath the platform, the disclosures providing a novel platform or carrier structure molded in one piece to include an integrated central driving gear and platform structure with radially-located, rockable bearings for the shafts, and stationary roller drive formations of ridge-like character formed as an integral part of a support and so situated and constructed as to impart either unidirectional or intermittently reversing action to the individual motion objects.

3,498,604
MERRY-GO-ROUND WITH PLURAL ARMS JOINTLY ROTATABLE ABOUT A VERTICAL AXIS AND INDIVIDUALLY ACTIVATABLE IN AUTOMATIC SEQUENCE FOR RISING AND FALLING MOTION
Anton Schwarzkopf, 76a Haus, 8909 Munsterhausen, Schwaben, Germany
Filed Feb. 14, 1968, Ser. No. 705,383
Claims priority, application Germany, Oct. 7, 1967, Sch 41,401
Int. Cl. A63g *1/00*
U.S. Cl. 272—36 6 Claims



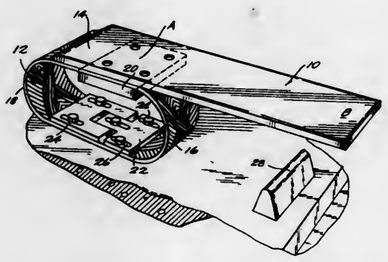
Merry-go-round with car at the ends of radial arms extending outwardly from a common hub which rotates about a generally vertical axis, each car also swinging in an axial plane while revolving with the hub. Separate motors individually control the swing of each arm and are sequentially placed in operation at the beginning of a ride; when rotation stops, they are individually stopped as each arm reaches its bottom position in which the cars can be unloaded.

3,498,605
EXERCISING MAT HAVING A LEG SUPPORTING PORTION
Franz Büttner, Egg, near Zurich, Switzerland
Filed Oct. 14, 1966, Ser. No. 586,741
Claims priority, application Switzerland, Oct. 19, 1965, 14,502/65
Int. Cl. A63b *21/00, 23/00;* A47c *27/00*
U.S. Cl. 272—58 4 Claims



An exercising mat having a leg supporting portion interconnected to a body supporting portion which is formed of two hinged sections. When arranged for use as an exercising mat the support surface of the leg supporting portion is spaced vertically above the support surface of the body supporting portion at a height roughly equal to the average length of the thigh of a person. When not in use the different portions are foldable into a compact cube-like arrangement.

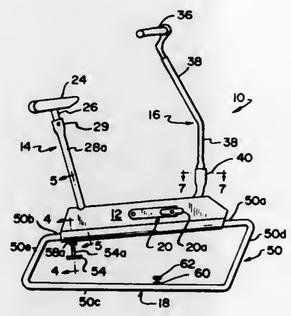
3,498,606
A LOOP SHAPED DIVING BOARD SPRING OF RESIN IMPREGNATED GLASS FIBER
Alan H. Bostrom, Wauwatosa, and Jack Lowrie McLarty, Milwaukee, Wis., assignors, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 22, 1967, Ser. No. 647,984
Int. Cl. A63b *5/08*
U.S. Cl. 272—66 2 Claims



The disclosed diving board utilizes a spring board which may extend over a body of water and which is fixed to a solid support by a loop-shaped spring which is formed of a resin impregnated and cured glass fiber winding.

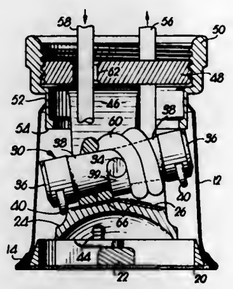
The spring rate of the spring can be varied by changing the width of the area through which the spring is fixed to the support.

3,498,607
COLLAPSIBLE BICYCLE EXERCISE DEVICE
Arthur H. Eichholz, Polo, Ill., assignor to Central Quality Industries, Inc., a corporation of Illinois
Filed Mar. 16, 1967, Ser. No. 623,652
Int. Cl. A63b *69/16, 21/00*
U.S. Cl. 272—73 4 Claims



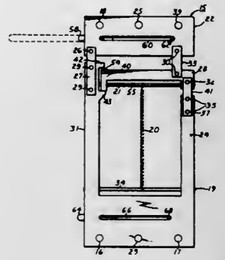
An improved exercising device of the bicycle type wherein the supporting elements such as the leg structure, seat structure and handle-bar structure may be easily and readily dis-assembled from or collapsed relative to the assembly to permit simple storage and easy shipment of the device. The handle bar has a post mating in a sleeve of the bicycle frame, and this post and sleeve have an ovoid cross section so that the handle bar can be assembled in either one of two positions opposite one another. The leg structure may be locked in its supporting position.

3,498,608
PULL ROPE FRICTION TYPE EXERCISING DEVICE
Charles C. Krug, Lee's Summit, Mo., assignor to Pan-Olympian Corporation, Kansas City, Mo., a corporation of Missouri
Filed Aug. 8, 1968, Ser. No. 751,158
Int. Cl. A63b *21/02;* B65h *59/12*
U.S. Cl. 272—79 11 Claims



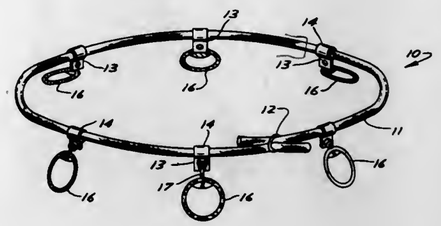
A selectively controllable load is placed on the pull rope of an isometric-isotonic exercising device by pressing segments of the rope within the device against a bearing surface to thereby pinch the rope to a degree dependent upon the load which the user desires to overcome in performing an exercise.

3,498,609
ISOMETRIC EXERCISER HAVING INITIALLY-OPERATIVE RESILIENT RESISTANCE
David R. Lukens, 3081 Larkin Place, San Diego, Calif. 92123
Filed Feb. 23, 1965, Ser. No. 434,404
Int. Cl. A63b *21/02, 21/00;* G01l *5/06*
U.S. Cl. 272—83 8 Claims



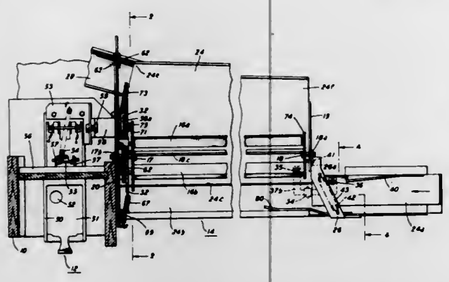
An exercising device for use in isometric exercises in which a pair of spaced apart bars are connected by a device that expands under the pulling force of a user a slight amount against a resilient member and then contacts a positive stop structure, allowing the user to be aware that he has exerted sufficient force on the bars to move the bars against the force of the resilient member and thus consciously perform isometric exercises when the connecting device is in the stop condition.

3,498,610
DISENGAGEABLE LOOP GAME
Charles F. Foley, Minneapolis, and Charles D. McCarthy, Wayzata, Minn., assignors to Milton Bradley Company, Springfield, Mass., a corporation of Massachusetts
Filed Dec. 7, 1967, Ser. No. 688,721
Int. Cl. A63b *67/00*
U.S. Cl. 273—1 4 Claims



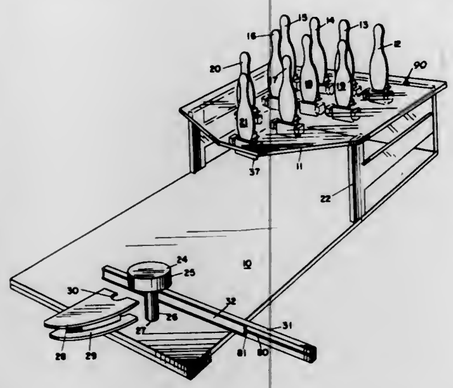
A game played with a plurality of loops or objects mounted onto a belt and which are disengageable from the mounting means and in which a plurality of players wear or have on their body a plurality of loops or objects, each of a different color. All of the players have the same number of loops, each separately identified by color (each player has one of each color). The players are provided with safe areas, and upon signal, leave the safe area and attempt to grab a loop of a designated color from the other players. This is done sequentially until all of the colors have been called. The person getting the most points by grabbing the most number of loops (minus penalties for grabbing an incorrect loop) after all of the colors have been called, wins the game.

3,498,611
BALL HANDLING DEVICE WITH VANES FOR A BILLIARD TABLE
Paul Kotler, Irvington, N.J. 07111
Filed Jan. 15, 1968, Ser. No. 697,856
Int. Cl. A63d 15/00
U.S. Cl. 273—11 10 Claims



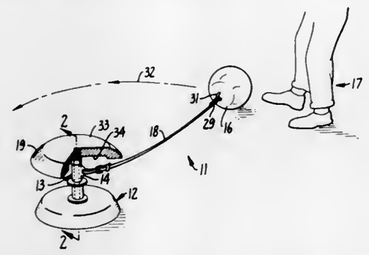
Ball handling apparatus for a coin operated billiard or pool table is disclosed, which upon the initiation of a game, receives and stores each pocketed game ball, returns a pocketed cue ball prior to the end of the game, and retains a cue ball that is pocketed after the pocketing of the last game ball. The aforesaid apparatus includes a plurality of rotatable longitudinal vanes which vanes individually and sequentially receive and store the pocketed game balls. Rotation of the vanes releases the balls for further play and positions another vane to receive subsequently pocketed game balls. The apparatus further includes means for detecting a pocketed cue ball and returning the same prior to the end of a game and means for retaining the cue ball. The latter means cooperates with the pocketed game balls to retain the cue ball at the end of the game.

3,498,612
BOWLING GAME
Carter D. Ellis, R.D. 2, Fairview, Pa. 16415
Filed May 15, 1967, Ser. No. 638,222
Int. Cl. A63d 5/00
U.S. Cl. 273—41 4 Claims



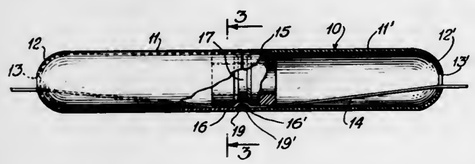
The game disclosed herein has a special interest for the ordinary person interested in bowling since it simulates a bowling game in that it is carried out by a plurality of ten pins supported on a supporting surface above a planar playing surface. A top or spinner and a special saddle fixture and handle for supporting the spinner while actuating it are provided. The spinner can be spun so that in spinning, it travels over the planar surface and it may travel below the support surface, engaging downwardly extending actuating members which, in turn, engage the ten pins and will knock them over or upset them to simulate a bowling game. Considerable skill is necessary and may be developed by the player to spin the spinner in a manner that will result in high scores as by "strikes" and "spares" familiar to bowlers.

3,498,613
ANCHORED BALL GAME DEVICE
Allen F. Dreyer, Richmond, Calif., assignor to Universal Research Company, Berkeley, Calif., a partnership
Filed July 24, 1967, Ser. No. 655,564
Int. Cl. A63b 69/40
U.S. Cl. 273—95 11 Claims



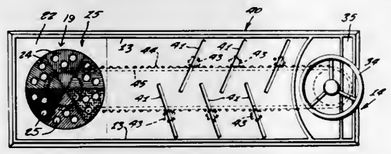
A portable anchored tether ball game device suitable for providing amusement and exercise to the players either indoors or out of doors and constructed for easy movement and positioning for use; the device itself being substantially spool-shaped with the heavy lower flange thereof being adapted to provide a weighted anchored support on the floor or ground and the upper flange portion being constructed of safe impact material and recessed on its normally lower side for easy carrying, the shaft portion of the structure being provided with a rotatable collar-like structure having a tether fastened thereto near one end and a ball fastened to the tether at the other end whereby the ball may be kicked around the anchored support without winding up. A flange having a smooth outer surface is attached to the upper end of the shaft. The flange is generally coextensive with the lower flange and serves to protect the user from injury by engaging the shaft and aids in restraining flying movement of the ball.

3,498,614
ELASTICALLY SUSPENDED AND CONTROLLED GAME DEVICE
John Elton Carter, Jr., Wilmington, Del., assignor, by mesne assignments, to Wham-O Mfg. Co., San Gabriel, Calif., a corporation of California
Filed June 5, 1968, Ser. No. 734,626
Int. Cl. A63b 69/40
U.S. Cl. 273—95 7 Claims



Game device comprising an elongated resilient game piece of a size to be readily clamped between the knees of a player, said game piece being secured centrally of an elongated elastic strand of the order of three yards long, and the elasticity of said strand being such as to permit elongation to at least six times its length, whereby two players standing about three yards apart holding opposed ends of said strand with the game piece suspended between them slightly above the ground can, by skillful manipulation of said strand, cause migrations of the game piece from such midway position to positions of alignment with a player permitting the catching of the game piece between the knees. The game piece comprises two resilient parts each smoothly rounded and apertured at one end with the elastic strand passing therethrough, the other ends of said parts having inwardly extending ribs engaging an annularly grooved center plug for joining the parts together, with said strand frictionally engaged between said assembled parts and plug.

3,498,615
PINBALL GAME WITH PLAYER CONTROLLED SCORING AREA
Thomas Toutoundjis, 3086 47th St., Astoria, N.Y. 11103
Filed Mar. 8, 1968, Ser. No. 711,551
Int. Cl. A63d 3/02; A63f 7/10
U.S. Cl. 273—120 1 Claim



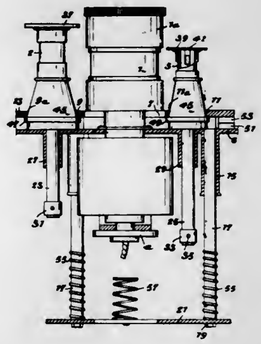
A pinball game board with a player control area that allows changes in a remote scoring area. The scoring area is a selectively rotatable disc with pinball receiving depressions and the player controls its rotation by turning a steering wheel. A control system of pulleys and a belt interconnects the steering wheel and the scoring disc at their lower ends. Gears may be attached to this belt intermediate the scoring area and control area and act to rotate vertical shafts attached to movable ball retarding walls on the playing surface. The pinball rolls down an inclined surface by gravity between the retarding walls until it encounters the movable score area.

3,498,616
GOLF SWING PRACTICE DEVICE
Robert D. Hurst, 4928 Bluebell, North Hollywood, Calif. 91607
Filed Aug. 19, 1968, Ser. No. 753,554
Int. Cl. A63b 69/36
U.S. Cl. 273—186 8 Claims



A golf club attachment of elongated tubular configuration provided with a spaced pair of attachment clips, the tubular member being divided into a pair of axially aligned chambers, one of which contains a ball or the like adapted to move freely and unimpeded in response to centrifugal and gravity forces, the other chamber containing a ball or the like that is normally held at one end of the chamber by magnetic means until sufficient centrifugal force is imparted to the ball by swinging of the club to which the attachment is mounted, the elements of the attachment cooperating to produce audible signals indicative of a proper backswing, stroke and follow through in response to a proper co-ordination of movements by the user. A sound dampening member, made from a material such as cork, is provided on one end of the chamber in which the ball is adapted to move freely and unimpeded. The chamber ends adapted to produce audible signals may include a sound amplifying tube. The device is adapted to be readily disassembled and reassembled to facilitate replacement of the balls with others of different diameters and masses, which others may be stored in a hollow plug secured to an end of the attachment.

3,498,617
RETRACTABLE SOUND REPRODUCTION DEVICE, PARTICULARLY FOR SOUND FILM EDITING AND CUTTING MACHINES
Giuseppe Pesciarelli, Via L.A. Vassallo, 68, Rome, Italy
Filed Feb. 21, 1967, Ser. No. 617,707
Claims priority, application Italy, Feb. 25, 1966, 4,110/66
Int. Cl. G11b 27/06
U.S. Cl. 274—1 5 Claims

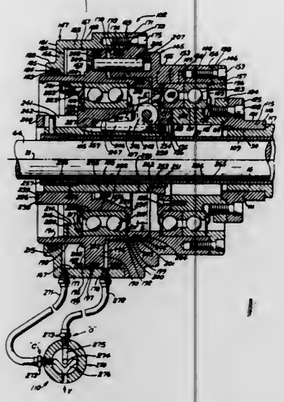


A sound reproduction device, mounted on a vertically movable platform and retractable through appropriate openings in the working plane of a movieola, from its operating position to a position wherein the tops of its components form a continuous plane with said working plane of the movieola.

3,498,618
CHUCK AND COLLET ACTUATOR
Claes L. Hultgren, Clarendon Hills, Ill., assignor to Logan Engineering Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 18, 1967, Ser. No. 676,265
Int. Cl. B23b 31/30
U.S. Cl. 279—4 8 Claims

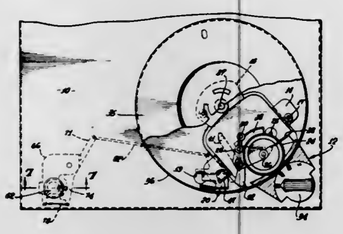
An apparatus mounted on the outer end of the tubular spindle of a lathe for operating a plurality of different work holding means alternatively mountable on the inner end of the spindle, and having a rotationally isolated annular cylinder and piston operated by compressed fluid to produce an axial thrust which is

transmitted directly, or through the interposition of a cam and bell crank thrust translating mechanism, to an associated connecting member extending through the



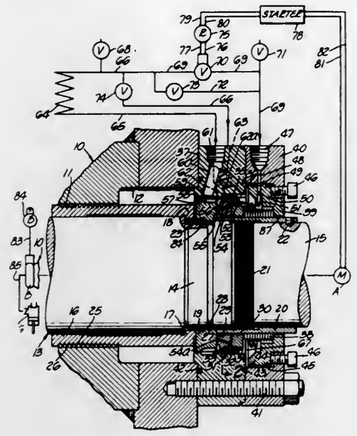
spindle and attached to the work holding means to selectably inpress thereon a thrust corresponding to the produced thrust or a thrust having a substantially greater axial force component.

3,498,619
PHONOGRAPH PAUSE CONTROL
William R. Hawkins, Van Nuys, and William H. Wells, Woodland Hills, Calif., assignors to Newcomb Electronics Corp., Los Angeles, Calif., a corporation of California
Filed Aug. 3, 1964, Ser. No. 386,912
Int. Cl. G11b *3/60*
U.S. Cl. 274—39 **14 Claims**



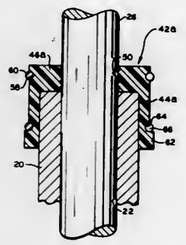
A manual actuator or knob **62** (FIGS. 1 and 7) on the phonograph deck **10** has three positions corresponding to OFF, ON and PAUSE, with the ON position between the OFF and PAUSE positions. A lamp **90** illuminates the actuator **62** when it is in ON or PAUSE position. A standard motor pulley assembly **12** (FIG. 1) incorporates a pulley **24** that simultaneously engages a motor shaft **23** and the rim **36** of the turntable **35** under the influence of a spring **38**. Operation of the speed selector mechanism **34** moves the pulley **24** out of engagement from the shaft **23** by virtue of the cam surfaces **39** (FIG. 2), a pin **40** and a recess **42** in a floating bracket **25** on which the pulley **24** is mounted. A linkage including a lever **44** (FIG. 3) between the knob **62** and the pin **40** retracts the pulley **24** at the PAUSE and OFF positions (FIGS. 6 and 3) of the actuator. At the PAUSE position only, the lever **44** also operates a brake **20**.

3,498,620
MECHANICAL SEAL LUBRICATION MEANS
Winfred J. Wiese, Whittier, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 699,579
Int. Cl. F16j *15/34, 15/40*
U.S. Cl. 277—12 **8 Claims**



A lubricating and cooling system for a mechanical shaft seal for a pump including means and method to vent objectionable air from the system; also including an auxiliary injection circuit operative to lubricate the seal means before starting the pump and automatically operative for a predetermined time to continue lubricating the seal means until the pump has reached normal operating speed, whereby its regular lubricating and cooling means becomes effective; and safety means preventing operation of the pump when its regular seal lubricating and cooling circuit is inoperable.

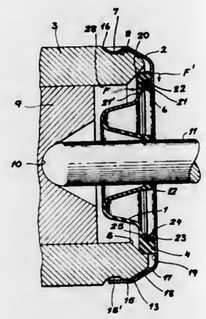
3,498,621
VALVE STEM SEAL
Robert R. Wilson, Hagerstown, Ind., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Continuation of application Ser. No. 463,503, June 14, 1965. This application Apr. 25, 1968, Ser. No. 724,296
Int. Cl. F16j *15/24, 15/56*
U.S. Cl. 277—152 **2 Claims**



A valve stem seal is disclosed wherein an elastomeric ring having an inner, cylindrical sealing surface sealingly engages the stem of a valve mounted for reciprocating movement in a valve guide. A helical groove formed in the cylindrical sealing surface defines, together with the valve stem, a continuous, closed channel for metering oil to the valve stem and valve guide bearing surfaces. A metallic spring ring urges the sealing surface into

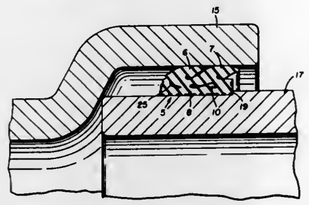
contact with the valve stem. Various means are disclosed for maintaining the elastomeric ring in sealing engagement with the valve guide, including an integral depending skirt and spring-ring, a valve-spring biased cap and a snap-on cap.

3,498,622
DUST CAPS FOR FLUID CYLINDERS
Juan Belart, Walldorf, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany
Filed Aug. 31, 1967, Ser. No. 664,861
Claims priority, application Germany, Sept. 24, 1966, T 32,132
Int. Cl. F16l *15/32;* **F16j** *3/00*
U.S. Cl. 277—170 **4 Claims**



A dust cap for a fluid cylinder (e.g., a wheel-brake or master cylinder of an automotive brake system) wherein the cylinder wall is provided externally with a groove engageable with spaced protuberances on the inner surface of a thin metal sleeve fitted over the opening of the cylinder and having an inwardly turned inner peripheral flange engaging the inner surface of an annular bead of a rubber cuff and retaining this bead against the frustoconical inner surface of the cylinder. The central portion of the elastic cuff is dimensioned to hug a piston rod or a cap connected therewith.

3,498,623
GASKET
Theodore S. Rowe, Kent, Ohio, assignor to Hamilton Kent Manufacturing Co., Kent, Ohio, a corporation of Ohio
Filed Mar. 9, 1967, Ser. No. 621,900
Int. Cl. F16j *15/32*
U.S. Cl. 277—206 **5 Claims**

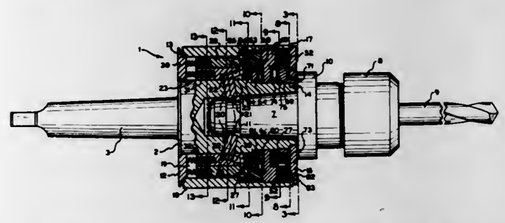


A pipe gasket is composed of a base and two lips which extend lengthwise of the gasket. In coupling two pipe sections, the first lip to enter the union is referred to herein as the leading lip and the other is referred to as the second lip. The base is relatively incompressible along each edge and is hollow or otherwise easily compressible between the two lips. This easily compressible portion extends over the second lip the rear of which is hinged to the relatively in compressible rear edge of the base. When the leading lip is depressed against the easily compressible portion of the base, as the gasket is being squeezed between two pipes, the second lip is tilted forward from its backwardly leaning posture so that it stands erect. The base is preferably hollow under the leading lip to facilitate folding it against the easily compressed portion of the base.

ERRATUM

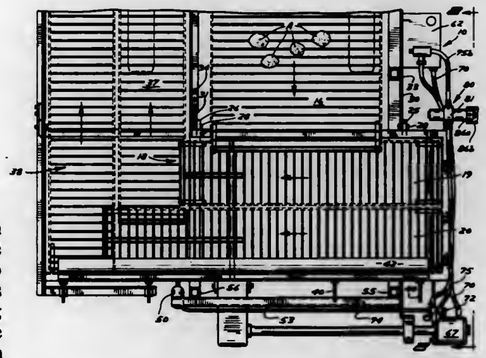
For Class 279—4 see:
Patent No. 3,498,618

3,498,624
CHUCK DEVICE
Earl J. Hammond and Roland G. Koch, Frankenmuth, Mich., assignors to Universal Engineering Company, Frankenmuth, Mich., a corporation of Michigan
Filed Sept. 21, 1967, Ser. No. 669,544
Int. Cl. B23b *31/16, 31/12*
U.S. Cl. 279—81 **20 Claims**



A chuck having locking dogs movable into and out of latching engagement with a removable tool holder and having a freely rotatable, manually operable operating member mounted on the chuck for moving the locking dogs in timed relation out of locking engagement with the tool holder, and including an ejecting member movable by the operating member into engagement with the tool holder to eject the latter from the chuck following movement of the locking dogs to their unlocking position.

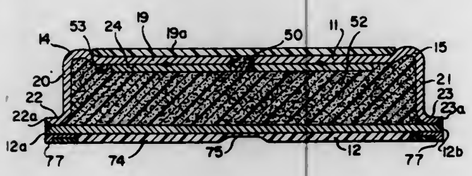
3,498,625
APPARATUS MAINTAINING TILT OF POTATO HARVESTER CONVEYOR
Roger W. Cherrington, Pine City, Minn., assignor to Dahlman Manufacturing & Sales, Inc., Braham, Minn., a corporation of Minnesota
Filed Oct. 5, 1967, Ser. No. 673,186
Int. Cl. B62d *37/00*
U.S. Cl. 280—6.1 **2 Claims**



This invention concerns an apparatus controlling the lateral tilt of a separating apron of a potato harvester and

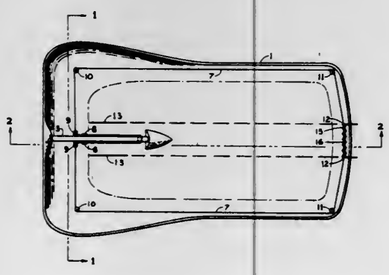
consists of a hydraulic cylinder having its ram pivotally supporting said apron, a valve controlling the pressure of fluid supplied to said cylinder and a gravity responsive member operating said valve to increase or decrease the pressure within said cylinder to raise or lower said apron to compensate for the up grade or down grade travel of said harvester to maintain the tilt of said apron constant to the horizontal.

3,498,626
METAL SKI AND METHOD OF FABRICATION
George C. Sullivan, 4660 Cahuenga Blvd., Apt. 106, North Hollywood, Calif. 91602
Filed Dec. 14, 1967, Ser. No. 690,484
Int. Cl. A63c *5/00, 5/12*
U.S. Cl. 280—11.13 6 Claims



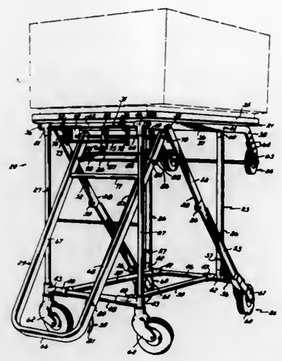
A metal and plastic ski and the method of producing the same, preferably utilizing certain metal bonding or welding processes and foamed-in-place plastic core techniques. A U-shaped member is formed in a die, heat treated if necessary, and trimmed to a net dimension. A sheet member is trimmed to a net dimension and attached to the U-shaped member to form a closed rectangular box section, after which the interior of same is filled with a foamed plastic material using foamed-in-situ procedures. The resulting ski is hard anodized in the case of aluminum and colored if desired; after which steel edges and a sheet or sheets of plastic material may be secured to one or the other or both of the upper and lower surfaces, thus producing a practical, high utility, light weight and low-cost metal and plastic ski.

3,498,627
STEERABLE TOBOGGAN
Hallie C. Pfeifer, 2685 Moana Lane, Reno, Nev. 89502
Filed Nov. 20, 1967, Ser. No. 684,908
Int. Cl. B62b *13/08, 17/00*
U.S. Cl. 280—22 4 Claims



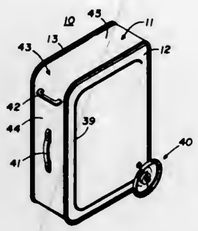
My invention encompasses a unique arrangement of vanes attached to a new toboggan shape with the necessary control apparatus for over-snow tobogganing.

3,498,628
CART FOR CONVEYING AND USING ARTICLES OF MERCHANDISE
Richard H. Fernean and George A. Selig, Washington Court House, Ohio, assignors to Burt Weil, Cincinnati, Ohio
Filed Oct. 4, 1967, Ser. No. 672,898
Int. Cl. B62b *3/02, 3/04*
U.S. Cl. 280—36 8 Claims



A cart for heavy articles, the cart having four vertical legs which are adapted to be swung to a generally horizontal attitude to permit the collapse of the cart, the cart having a horizontal rearwardly projecting handle which is adapted to be swung downwardly to a generally vertical attitude.

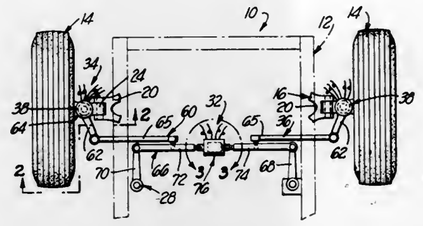
3,498,629
EASILY TRANSPORTABLE LUGGAGE
Fred F. Richards, 6837 Chevy Chase, Dallas, Tex. 75225
Filed Mar. 15, 1968, Ser. No. 713,510
Int. Cl. B62b *1/10*
U.S. Cl. 280—47.13 2 Claims



A suitcase or the like having apertures through the front and back faces thereof proximate a corner of the case for receipt of an axle which upon insertion through the apertures will protrude from both faces to receive first and second wheels. Means are provided for removably retaining the wheels on the protruding ends of the axle thereby permitting easy removal of the wheels and the axle when the suitcase is to be stored or shipped with other suitcases. In a preferred embodiment, the suitcase includes brackets affixed to the frame of the suitcase for supporting a bearing tube through which the axle is passed to thereby transfer any weight imposed upon the axle to the frame of the suitcase and prevent damage to front and back faces of the case. A handle is also provided at the corner of the suitcase diagonally opposite

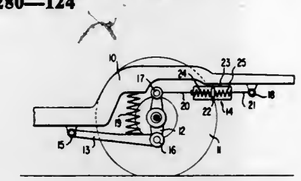
the corner proximate which the wheels are mounted to permit easy manipulation of the suitcase by user. If the suitcase is rectangular in configuration, the handle is attached to the longer of the two sides which form the corner diagonally opposite the corner proximate which the wheels are mounted.

3,498,630
AUTOMATIC WHEEL ALIGNMENT MECHANISM FOR AUTOMOTIVE VEHICLES
Charles A. Crawford, 2226 Batson Ave., Rowland Heights, Calif. 91745
Filed May 6, 1968, Ser. No. 726,808
Int. Cl. B62d *17/00;* B60g *3/26;* B60d *7/06*
U.S. Cl. 280—87 7 Claims



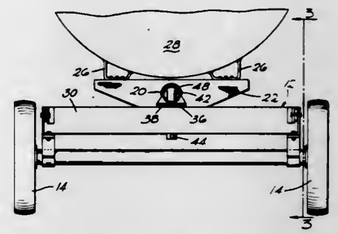
An automatic alignment mechanism for the front wheels of an automotive vehicle is provided. The alignment for generating error signals in response to and related to the direction of misalignment of the wheels, and a wheel alignment correction means controlled by the error signals for realigning the wheels in response to the signals.

3,498,631
WHEEL SUSPENSION FOR THE REAR WHEELS OF MOTOR VEHICLES
Friedrich H. van Winsen, Kirchheim unter Teck, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 9, 1967, Ser. No. 621,989
Claims priority, application Germany, Mar. 16, 1966, D 49,610
Int. Cl. B60g *3/14, 11/16*
U.S. Cl. 280—124 23 Claims



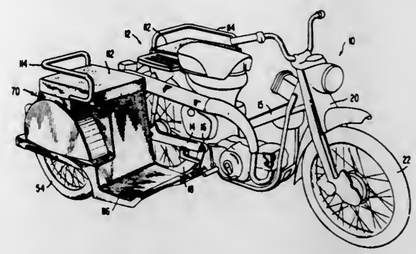
A wheel suspension for the rear axle of motor vehicles in which the wheel carrier is suspended at the vehicle frame or the like by means of two substantially oppositely directed guide members of which one, in particular, the lower guide member is pivotally connected with both the frame and the wheel carrier about a cross axis but in such a manner as to be angle-stiff as viewed in plan view whereas the other guide member, especially the upper guide member, pivotally connects the wheel carrier with the vehicle frame or the like to provide universal pivotal movements in all directions, and in which the other guide member is yieldingly constructed or yieldingly supported primarily in the vehicle longitudinal direction; the other longitudinally yielding guide member also may be constructed in a telescopic manner to provide this yieldingness or may be supported at the vehicle frame or body so as to provide such yieldingness primarily in the longitudinal direction. Though various conventional guide members can be used with the present invention, the upper guide member is constructed in a preferred embodiment as a torsion rod stabilizer interconnecting the oppositely disposed wheels.

3,498,632
REACHPOLE TRAILER CHASSIS WITH ROCKING BOLSTER
Arthur A. Bauers, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Oct. 4, 1967, Ser. No. 672,807
Int. Cl. B60g *9/02*
U.S. Cl. 280—141 8 Claims



A trailer chassis of reachpole type wherein the reachpole is used as a structural load support. A front rocking bolster is pivotally supported directly on the reachpole at a position adjacent the front axle of the chassis.

3,498,633
VEHICLE ATTACHMENT FOR MOTORCYCLES
William C. N. Hopkins, P.O. Box 551, Walnut Creek, Calif. 94597
Filed Jan. 26, 1968, Ser. No. 700,908
Int. Cl. B62k *27/02;* B62h *27/12*
U.S. Cl. 280—204 10 Claims

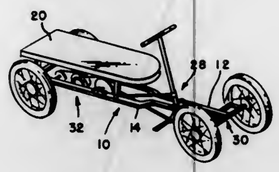


A two-wheeled vehicle attachment for motorcycles and pivotally connected adjacent the rear swing arm pivot of a motorcycle and having a stabilizing snubber engaging the swing arm, the attachment spanning the motorcycle rear wheel and providing a four-wheeled articulated vehicle having a double sidecar effect.

3,498,634
MANUALLY SELF-PROPELLED RIDING VEHICLE
Roy E. Sheldon, P.O. Box 266, Ocean Park, Wash. 98640
Filed Jan. 26, 1968, Ser. No. 700,821
Int. Cl. B62m *1/12*
U.S. Cl. 280—212 8 Claims

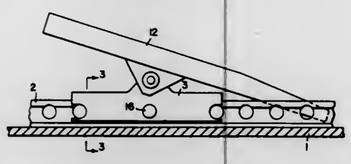
A drawbar-actuated type of vehicle is propelled and steered by a hand-operated drawbar assembly and further

propelled by a foot-operated drawbar assembly. The reciprocatory movement of the two drawbar assemblies actuates



a crank assembly in an additive manner to propel the vehicle.

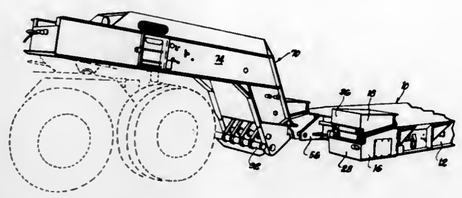
3,498,635
SLIDING FIFTH WHEELS
Ray A. Braunberger, 221 N. La Salle St., Chicago, Ill. 60601
Filed Sept. 3, 1968, Ser. No. 756,991
Int. Cl. B62d *53/10*
U.S. Cl. 280—407 **1 Claim**



A fifth wheel device for tractor-trailers whose position on the chassis of the vehicle is slidably adjustable longitudinally thereof. The device includes two parallel rails mounted on the chassis, two fifth wheel trunnions, each slidable on a respective one of said rails, a platform between the trunnions and flexibly connected thereto, plungers for locking each trunnion to its rails in a selected position, and mechanism supported on the platform to actuate the plungers.

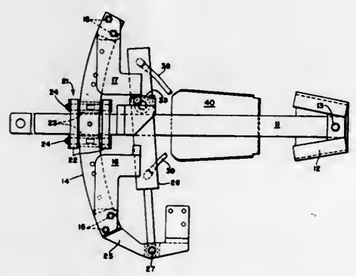
3,498,636
TRACTOR-TRAILER HITCH
Herbert W. Jahn, Cedar Rapids, and John J. Dorwin, Hiawatha, Iowa, assignors to Transport Trailers, Inc., Cedar Rapids, Iowa
Filed July 31, 1967, Ser. No. 657,299
Int. Cl. B62d *53/06;* **B60p** *1/04*
U.S. Cl. 280—425 **20 Claims**

A means for releasably interconnecting the forward end of a heavy duty trailer with the rearward end of a gooseneck or other traction means in which the gooseneck has laterally spaced apart upright members and in which the means for interconnection comprises rocker arms mounted between the uprights for rocking movement about a horizontal axis between raised and lowered positions, power means carried by the gooseneck and operatively connected to the rocker arms for actuation thereof between raised and lowered positions, a lift bar on one end portion of said rocker arms for displacement by said rocker arms between raised and lowered positions and anchoring means on the forward end portion of said uprights spaced rearwardly from the lift bar in position to engage the forward end portion of the trailer to limit relative upward movement of the trailer or relative downward movement of the uprights when in engaged position and in which the forward end portion of the trailer is provided with outer horn members extending forwardly from the trailer in laterally spaced apart relation with downwardly facing hook sections on the forward end portions of the horns in the path of the lift bar when the elements are in their interconnected relation whereby, when the rocker arms are rocked in the



direction to raise the lift bar, the latter comes into engagement with the hook means for effecting a change in the angular relation between the gooseneck and trailer to raise the forward end portion of the trailer, and means for releasably interlocking the trailer and gooseneck in their raised position.

3,498,637
POWER-OPERATED SWINGING DRAWBAR
Norman Frederick Lemmon, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,058
Int. Cl. B60d *1/14, 1/00*
U.S. Cl. 280—468 **4 Claims**

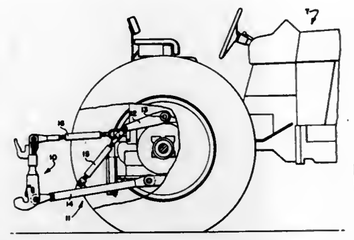


A power-operated swinging drawbar of the type pivotally connected to a tractor for the purpose of pulling draft vehicles. A hydraulic actuator is used as the power source, and has its rod end pivotally connected to an arm of the drawbar supporting structure and its cylinder body pivotally connected to the drawbar. The connection of the cylinder body of the actuator to the drawbar is made at approximately the midpoint of the length of the cylinder body, so that the length of the actuator and the length of the actuator stroke is not limited by the distance between the drawbar and the tractor wheel.

3,498,638
QUICK COUPLER
Michael Keith Magruder, Waterloo, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,711
Int. Cl. B60d *1/04, 1/12*
U.S. Cl. 280—479 **7 Claims**

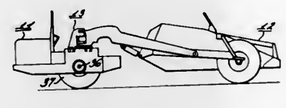
A quick coupler in which the latching mechanism for the lower hooks is operated through the movements of a pin which extends through cooperating slots provided in

the coupler leg and latch plate. The latch plate is pivotally mounted to the coupler leg, the slots extend obliquely with respect to one another, and the slot in the coupler



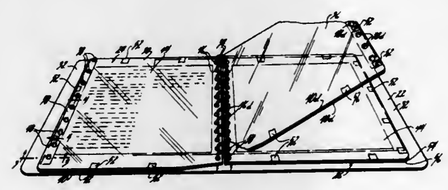
leg is of arcuate shape so that as the pin follows the arcuate slot, the latch plate moves about its pivot between an operative and inoperative position and is positively locked in the operative position.

3,498,639
VEHICLE TILT LIMIT STOP
Dale W. Hawk, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 14, 1967, Ser. No. 690,666
Int. Cl. B62d *53/04*
U.S. Cl. 280—492 **2 Claims**



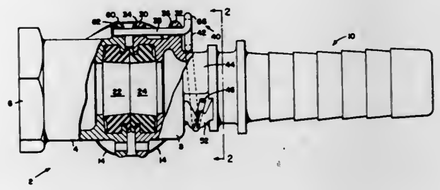
Tilt limit means are provided in an articulated vehicle to limit relative pivotal movement between the tractor unit and hitch member about their longitudinal hitch axis. Less tilting movement of the tractor unit is permitted during short radius turning than in its straight ahead position.

3,498,640
BOOKKEEPING APPARATUS
Thomas H. Russell III, 14 Sulgrave Road, West Hartford, Conn. 06107
Filed Apr. 18, 1967, Ser. No. 631,661
Int. Cl. B41l *3/00*
U.S. Cl. 282—29 **8 Claims**



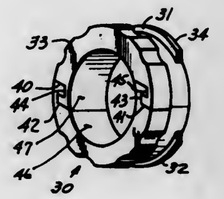
This disclosure is of a bookkeeping apparatus for use in various different record keeping situations providing for storage of a plurality of individual record sheets and for arrangement thereof relative to the apparatus, each sheet to the other and to other associated bookkeeping forms to expediate a variety of bookkeeping entries. One or more master heading sheets supported by the apparatus in cooperative alignment with associated record sheets serve to identify distribution columns on the record sheets and thereby substantially reduce the operations required to prepare the record sheets to receive bookkeeping entries.

3,498,641
SPRING WIRE LOCKING DEVICE FOR A COUPLING
Charles I. Bohlen, Doylestown, Pa., assignor to Hose Accessories Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1969, Ser. No. 807,024
Int. Cl. F16l *55/00, 15/00*
U.S. Cl. 285—84 **2 Claims**



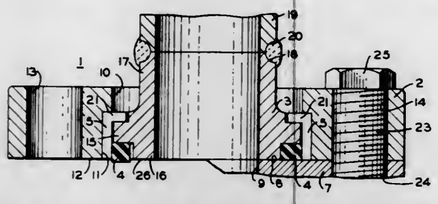
In a coupling having a pair of opposed bodies secured together by relative rotation, a pair of spaced guides for a wire are provided on one body and a third guide is provided on the other body to be coaxial with the first two guides when the coupling is in the interlocked position. A spring wire has a straight portion carried in the aforesaid guides and a coil portion extending from the straight portion and partially about said one body which has means to slidably engage the wire adjacent its free end.

3,498,642
PIPE FITTING
Marlon J. Berger, Sepulveda, Calif., assignor to Schurz Controls Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 6, 1967, Ser. No. 680,640
Int. Cl. F16l *21/06, 47/00*
U.S. Cl. 285—189 **6 Claims**



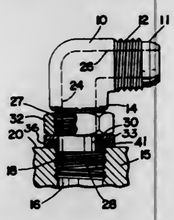
This invention relates to a fitting for connecting a pipe to a body so that the passage in the pipe and a port in the body are in fluid communication with one another, and to the joint formed thereby. The fitting includes a ring which is made up of a plurality of segments which can be joined together by a relative axial motion. This enables a plastic ring to be utilized in connection with a flange on the pipe, which flange must be created by heat or by forces, either of which would be deleterious to the material of which the ring and its segments are made.

3,498,643
SWIVEL FLANGED FITTING
John R. Reiss, East McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1967, Ser. No. 684,720
Int. Cl. F16l *5/00, 27/00*
U.S. Cl. 285—189 **6 Claims**



A two-piece adjustable butt welded fitting in which the flange member is made removable from the swivel member by the use of two semicircular members disposed between an inturned flange on the flange member and an outturned flange on the swivel member, the diameter of the outturned flange being less than that of the inturned flange whereby the swivel member is insertable through the flange member in the absence of the two semi-circular members.

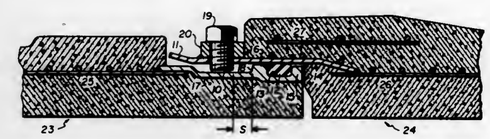
3,498,644
STRAIGHT THREAD BOSS JOINT
Robert H. Davies, Aurora, and Robert W. Cornell, Gates Mills, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 13, 1967, Ser. No. 690,210
Int. Cl. F16l *15/00*
U.S. Cl. 285—212 **10 Claims**



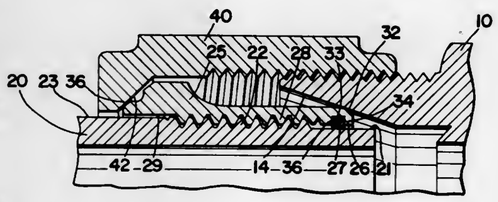
A joint construction in which an elbow fitting having a straight thread is secured and locked to an internally threaded member in any desired angular orientation, the fitting having axially spaced inner and outer externally threaded portions of equal diameter separated by a smooth sealing surface, a resilient gasket deformable into sealing contact with the cylindrical surface and the outer face of the internally threaded member for sealing the joint, rigid means for retaining and deforming the gasket, and a locknut threadedly engaged with the inner threaded portion for advancing the rigid means into deforming contact with the gasket and into tight contact with the boss member to lock the fitting in the desired angular position.

3,498,645
PIPE JOINTS WITH LIMITED EXTENSIBILITY
Casimir K. Kowalewski, Lincoln Park, and Nicholas S. Danko, Livingston, N.J., assignors to Interpace Corporation, Parsippany, N.J., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,479
Int. Cl. F16l *21/00, 25/00*
U.S. Cl. 285—230 **2 Claims**

Extensible bell and spigot pipe joints wherein the axial extensibility of a joint is limited by stop means located to the outboard side of the joint sealing ring of coupled bell and spigot rings and comprises members threaded through the bell ring and positioned to be engaged by an annular abutment on the exterior of the spigot ring to limit the extent of uncoupling movement.

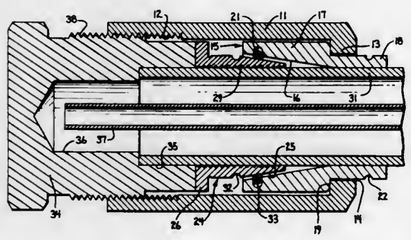


3,498,646
TUBE COUPLING
Leland Q. DePuy, Cleveland, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 29, 1968, Ser. No. 724,702
Int. Cl. F16l *17/00, 19/00, 21/00*
U.S. Cl. 285—339 **2 Claims**



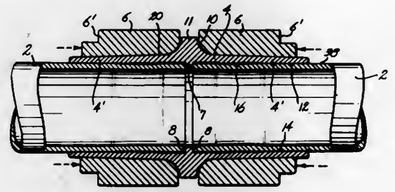
A tube coupling joint in which a ferrule is threaded onto a tube. The tube has a smooth cylindrical surface axially inward of the thread and the ferrule carries a packing on its inside diameter in a position to overlie the smooth surface of the tube. The coupling body has a tapered wall that contracts the inner end of the ferrule to force the packing into tight sealing engagement with the smooth cylindrical surface of the tube.

3,498,647
CONNECTOR FOR COAXIAL TUBES OR CABLES
Karl H. Schroder, San Lorenzo, Calif. (15962 Gramercy Drive, San Leandro, Calif. 94578)
Filed Dec. 1, 1967, Ser. No. 687,375
Int. Cl. F16l *17/02*
U.S. Cl. 285—343 **2 Claims**



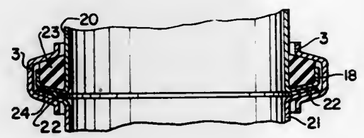
A connector assembly having first and second cylindrical rings with mating tapered surfaces, said rings being disposed with a compression nut which threadedly engages with a mating assembly and having locking means for attaching said rings together after one ring telescopes a predetermined distance inside the other ring.

3,498,648
HIGH TEMPERATURE AND PRESSURE TUBE FITTING
Harold Walter Hallesy, Yakima, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Continuation of application Ser. No. 397,144, Sept. 17, 1964, which is a continuation-in-part of application Ser. No. 82,871, Jan. 16, 1961. This application Aug. 22, 1968, Ser. No. 757,211
Int. Cl. F16l *13/14, 19/08, 19/06, 17/00*
U.S. Cl. 285—343 **3 Claims**



The present invention relates to tube fittings which include an internally serrated sleeve into which tube ends are positioned. The sleeve plastically deforms the material of the tube ends by means of tapered slides which fit over the sleeve.

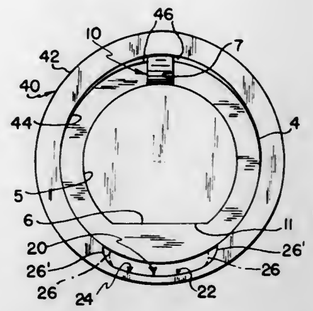
3,498,649
PIPE CLAMPING AND CENTERING DEVICE
Anton Pfeuffer, 301 E. 78th St., New York, N.Y. 10021
Continuation-in-part of application Ser. No. 518,151, Jan. 3, 1966. This application Aug. 16, 1967, Ser. No. 662,844
Int. Cl. F16l *19/00, 17/00*
U.S. Cl. 285—365 **1 Claim**



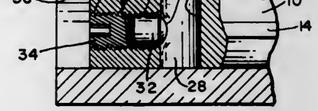
Two pipe sections are joined to form a unitary sealed conduit. The ends of each of the pipe sections are provided with outwardly extending end portions terminating in substantially cylindrical ends. A sealing elastomeric ring is placed between the end portions and a clamp is placed over the outwardly extended ends to achieve a sealed union of the pipe sections.

3,498,650
FASTENING DEVICE
John Strange, Llanishen, Cardiff, Wales, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 6, 1968, Ser. No. 710,898
Int. Cl. F16d *1/06;* **F16b** *3/00*
U.S. Cl. 287—53 **10 Claims**

A fastening device for connecting a rotatable member to a shaft. The device comprises an endless cylindrical collar which is provided with an integral, radially inwardly extending tongue and at least one deformable region for resilient clamping engagement with the rotatable member for securement of the shaft therewith.

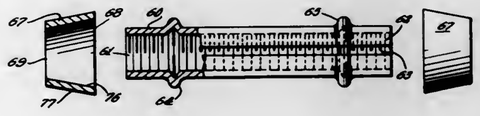


3,498,651
DRIVING CONNECTION
Edwin F. Peterson, 119 Main St., Neponset, Ill. 61345
Filed Feb. 3, 1969, Ser. No. 796,114
Int. Cl. F16d *1/06;* **B60b** *27/06;* **F16b** *7/00*
U.S. Cl. 287—53 **1 Claim**



A driving connection between a shaft and a member keyed thereto for rotation therewith is improved by the provision of shaft-contained snubbing means acting to prevent or restrict relative angular movement between the member and shaft so as to prolong the life of the shaft-to-member key.

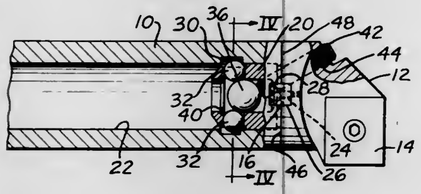
3,498,652
CLAMPING DEVICE
Richard Cass, Birmingham, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 26, 1968, Ser. No. 747,878
Int. Cl. F16b *7/06*
U.S. Cl. 287—60 **13 Claims**



A clamping device for connecting two rod members together. The rod ends are inserted in a hollow split cylinder which has two increased diameter circumferential

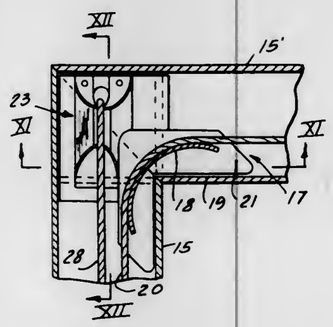
bulges therearound. Tapered collars are forced over the bulges, near the ends of the cylinder. The tapered collars have an inner diameter smaller than the outer diameter of the bulges, thereby constricting the cylinder into tight gripping relationship with the rod ends and deforming the collars so that they remain around the bulges.

3,498,653
CONNECTOR DEVICE
James F. McCreery, Greensburg, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania
Filed Aug. 16, 1968, Ser. No. 753,169
Int. Cl. F16d *1/12*; F16b *2/16*
U.S. Cl. 287—119 **5 Claims**



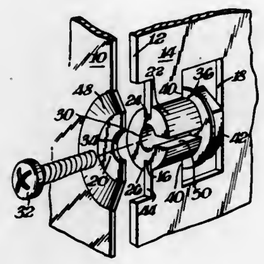
Arrangement for connecting parts, especially parts of tools, together in which one part has a bore to receive a shank formed on the other part. The bore has a groove therein and the shank has radially movable balls therein which can be forced radially outwardly to engage the groove and lock the parts together.

3,498,654
FRAME STRUCTURE ASSEMBLY
Héctor Mario Díaz and Rodolfo Oscar Díaz, both of Pje. Cristobal M. Hicken 2929, and Rodolfo Exequiel Romero, Fonrouge 3089, all of Buenos Aires, Argentina
Filed July 22, 1968, Ser. No. 746,649
Claims priority, application Argentina, Aug. 3, 1967, 208,943
Int. Cl. F16b *1/00*
U.S. Cl. 287—189.36 **14 Claims**



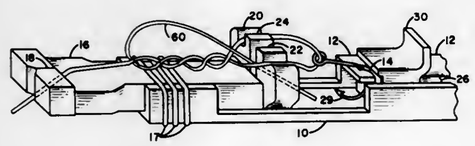
Structures such as furniture bases having hollow girders comprising the frame which are disassembleable and which are retained in their assembled form by joining means invisible from the exterior such as tensioned cables, rods or metal strips interior of the girders which are drawn around guide means in the girder joints and anchored within the frame.

3,498,655
PANEL MOUNT AND FASTENER
Richard A. Arms, Sunnyvale, Calif., and Edmund R. Nichols, Wilmington, Del., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Sept. 18, 1968, Ser. No. 760,657
Int. Cl. F16b *5/02*
U.S. Cl. 287—189.35 **8 Claims**



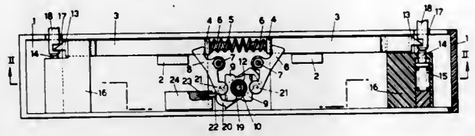
Panels are fastened together using a rod fastener that is longitudinally grooved and has an axial bore. The fastener slips into a slot in one of the panels such that grooves on the fastener engage the opposing edges of the slot. A washer, which also engages the fastener, is slid into a second slot in the panel intersecting the first slot. In this manner the fastener is locked within the one panel. A second panel is secured to the first by a screw inserted into the axial bore in the fastener. The remaining longitudinal grooves in the fastener may be used as tracks to mount the edges of component bearing panels such as printed circuit boards.

3,498,656
LOOP AND KNOT MAKING DEVICE
Louis S. Vargo, 529 Railroad St., Windber, Pa. 15963
Filed Sept. 11, 1968, Ser. No. 759,179
Int. Cl. D03j *3/00*
U.S. Cl. 289—17 **9 Claims**



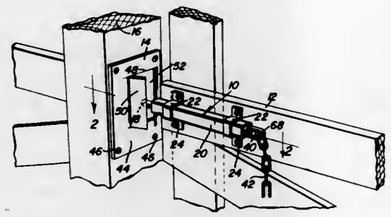
This invention is a multiple purpose device, one end of which is designed to grasp a fishhook or fishing fly in a manner to prevent the barb impaled on the hand or fingers, a line holding member designed to grasp the line to be tied. The other coacting end of the device is comprised of a clamping device by which line may be held in preparation for the tying of loop or knots in a line. More specifically, the device is comprised of an elongated U-shaped support member having a center section bent over so as to form a box, the upper portion of which has slots therein for the reception of varying sizes of fishhooks, a plastic line holding member mounted on the end portion of said support member, a hook clamping slide positioned upon said support member and biased towards said slots, a loop tying slide having a line slot therein, said slot positioned within said support member and having a coacting bias with said hook slide.

3,498,657
LATCH MEANS
Giampiero Fontana, Milan, Italy, assignor to Valextra S.p.A., Milan, Italy, a company of Italy
Filed June 14, 1966, Ser. No. 557,565
Int. Cl. E05c *1/12*; A45c *13/10*; E05b *65/52*
U.S. Cl. 292—34 **11 Claims**



A latch means wherein the latch member may be released through rotation of a hand knob in either direction, and wherein the latch member is self-locking upon release of said knob. The latch means includes a locking means which is actuable by the turning of a key which in turn actuates a locking plate which is coaxially mounted relative to said hand knob.

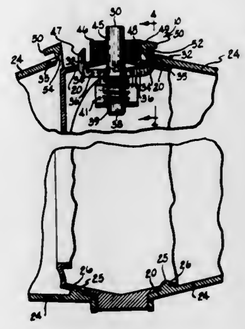
3,498,658
LATCH CONSTRUCTION
Floyd Steenstra and Harold Steenstra, Holland, Minn., assignors of one-third to Peter Sudenga, Magnolia, Minn.
Filed Jan. 31, 1968, Ser. No. 701,998
Int. Cl. E05c *19/02, 1/06*; E05b *15/02*
U.S. Cl. 292—74 **3 Claims**



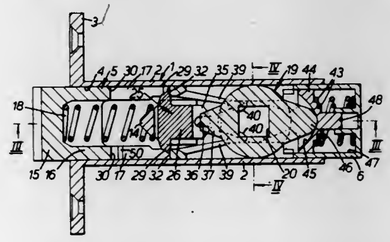
A spring-loaded latch construction adapted for mount- upon a gate or door, the bolt of the latch being retractable within the casing of the latch by means of a chain fixed to the actuating end of the latch. The opposite end of the chain is secured within a pivotable plate member which causes the bolt to retract when the plate is manually rotated. A modification of the bolt actuating end includes an L-shaped bolt end, the outward end of the L-shaped bolt being received within a slot in a door or gate. Upon application of a pulling force on this bolt end, the bolt is retracted within the latch casing. A latch keeper includes a central aperture therein with converging projections appending outwardly from the lateral sides of the aperture. An alternate keeper embodiment includes a generally U-shaped bracket which is recessed within a gate post or door frame. A ring member is fastened to the actuating end of the bolt and aligned with a stationarily fixed hasp thereby providing means for locking the latch.

3,498,659
MULTISECTION CASING AND LATCH MECHANISM THEREFOR
Bruno Ammon and Gary W. Brimm, Decatur, Ill., assignors to General Electric Company, a corporation of New York
Filed Jan. 6, 1967, Ser. No. 607,719
Int. Cl. E05c *1/12*; G11b *1/00*
U.S. Cl. 292—162 **7 Claims**

Multisection casing with a latch mechanism in which a pushbutton is formed on one end of an elongated body having a pair of integral latching tabs and urged by a spring to project the tabs into openings on two casing members to latch them to a central section. Inclined rim walls on the two members are nested on a pair of oppositely inclined rim walls on the central section and the latch tabs project through aligned openings in the nested rim walls to latch the members to the central section.



3,498,660
DOOR LATCHES
Michael Joseph James, Charlton Kings, England, assignor to Micro and Precision Mouldings (Cheltenham), Limited, Cheltenham, England
Filed Mar. 13, 1967, Ser. No. 622,750
Claims priority, application Great Britain, Mar. 14, 1966, 11,000/66
Int. Cl. E05c *1/12*
U.S. Cl. 292—173 **7 Claims**

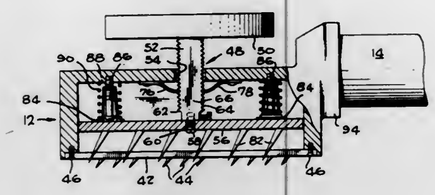


A door latch of the mortice type has a slidable slam bolt mounted in a housing of generally tubular form. A rotary actuating member for coupling to a door handle is disposed within the housing, as is an intermediate follower member which pivots within the housing about an axis parallel to the rotary axis of the actuating member. The following member is engaged and turned by the actuating member to release the latch, with the follower member in turn engaging the bolt to produce axial withdrawal of the latter into the housing. The arrangement is such that the angular movement of the follower member is greater than that of the actuating member.

3,498,661
CARPET STRETCHING APPARATUS
Anthony J. Graziano, Los Angeles, Calif. (23211 Vanowen St., Canoga Park, Calif. 91304)
Filed Feb. 2, 1968, Ser. No. 702,727
Int. Cl. A47g *27/04*; B26f *1/32*; E04f *21/20*; A01b *5/00*
U.S. Cl. 294—8.6 **5 Claims**

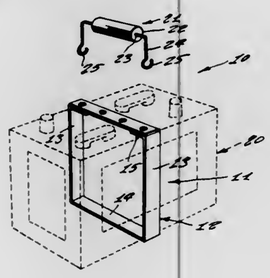
Apparatus for assisting in the installation and laying of carpets, fabrics or the like. The apparatus includes a carpet engaging head which houses an adjustable plunger

having a plurality of teeth affixed thereto. The plunger, upon being depressed into the carpet, causes the teeth to project from the housing a length compatible with the thickness of the carpet. An impacting means for thrusting the device forward for stretching the carpet is disclosed,



and comprises a selectively retractable piston located within the body of the device and automatically releasable upon termination of a manual stroke. Adjustment means is provided in the body of the device for selectively varying the impacting force.

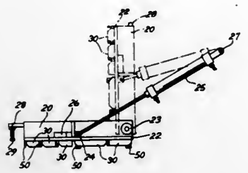
3,498,662
AUTOMOBILE BATTERY CARRYING HANDLE
Louis Rey, 8056 Carpenter Drive, El Paso, Tex. 79907
Filed Nov. 13, 1967, Ser. No. 682,148
Int. Cl. B65g 7/12; B65d 71/00; A47j 45/00
U.S. Cl. 294—26 **4 Claims**



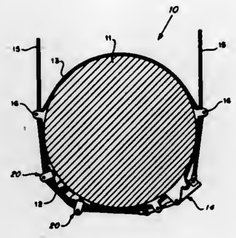
A handle for conveniently carrying an automobile battery in a convenient manner and without having battery acid or dirt from coming into contact with the person, the device comprising a unit which is readily securable around existing batteries or which may be integrally built into future batteries to be produced.

3,498,663
ADJUSTABLE VACUUM PLATEN
Donald E. Cantrill, East Moline, Ill., assignor, by mesne assignments, to Home Comfort Products Co., Princeville, Ill., a corporation of Illinois
Filed Nov. 29, 1967, Ser. No. 686,585
Int. Cl. A47b 97/00; B66c 1/02; B25j 3/00
U.S. Cl. 294—65 **8 Claims**

A vacuum platen pivotable between loading and horizontal dispositions for the application of a skin on a laminated product. An apertured vacuum holding surface is defined by a plurality of elongated segments, each having a pair of separate vacuum supply lines with shut-off valves to vary the vacuum surface area and accommodate various skin sizes. Prior to vacuum application, the skin is held by its longitudinal edges within elongated brackets. Pinions, one on each bracket, engage a pneumatically activated rack to pivot the brackets on longitudinal axes out of the way at the sides of each segment, so that the skin is held solely by vacuum at the horizontal disposition. The pinions may be disengaged as desired, and thus a pair of brackets may be chosen for a particular skin width.



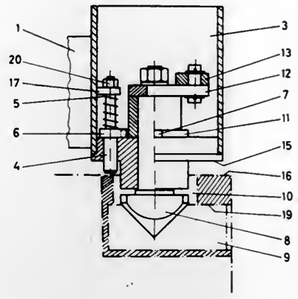
3,498,664
HOISTING SLING WITH BRIDGE FIXTURES
Carl A. Damm, Bucks County, William J. Halpern, Philadelphia, and John R. Hess, Oreland, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1967, Ser. No. 686,440
Int. Cl. B66c 1/12; A62b 35/00; A65j 1/22
U.S. Cl. 294—74 **7 Claims**



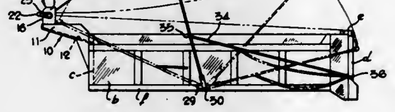
A hoisting sling for hoisting stores having peripherally mounted conduits or objects including an encircling, flexible, perforated strap and a pair of underlying bridge fixtures removably connected to the strap adjacent the store and in positions on opposite sides of a peripheral object to be protected from loading by the strap. Each fixture includes a specially shaped flexible, resilient bridge pad, an anchor fitting, a bifurcated clip and a removable detent pin for connecting the clip, the anchor fitting and the intervening pad to the strap.

3,498,665
SAFETY DEVICE FOR USE ON THE LIFTING FRAMES OF A CONTAINER CRANE
Tauno Karttunen, Jyvaskyla, Finland, assignor to Valmet Oy, Helsinki, Finland, a corporation of Finland
Filed Mar. 21, 1968, Ser. No. 714,885
Claims priority, application Finland, Mar. 22, 1967, 858/67
Int. Cl. B66c 1/00
U.S. Cl. 294—81 **4 Claims**

A safety device is used on lifting frames of a container-hoisting crane. The device prevents the turnable joining dowels from being disengaged while hoisting is in progress. These dowels are located in the corners of the lifting frame and they engage the corner pieces of the container being hoisted. The safety device includes a locking device which permits the turning of the dowels into their engaged position when the lifting frame is lowered upon the container. At the start of the hoisting, a locking element constituting a part of the locking device acts upon a joining dowel and prevents the dowels from being turned into their disengaged positions.



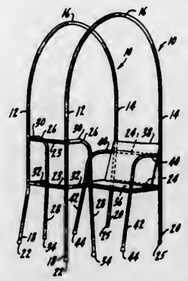
3,498,666
ROLLUP LOAD COVER APPARATUS FOR DUMP BODIES
Edward A. Harrawood, Ballwin, Mo., assignor to Ford Lane Equipment Company, Hazelwood, Mo., a corporation of Missouri
Filed May 14, 1968, Ser. No. 729,039
Int. Cl. B60p 7/04
U.S. Cl. 296—100 **3 Claims**



A load cover for dump trucks has a forward-mounted crank-operated roller rod held in an open-back box frame. To the rod is secured one end of a roll-up load cover; to its other end is secured the lateral mid-portion of a swinging U-shaped frame, whose side arms are mounted on a pivot near the mid-point of the body bed. As the cover is unrolled from the rod, tension springs lift the swinging frame upward and aft overcenter. As the cover is rolled onto the rod, the same springs assure smooth rolling by restraining the frame from dropping forwardly.

3,498,667
COMBINATION CHAIR-WALKER
Samuel Winters, 1801 Randolph Drive, Pocahontas, Ark. 72455
Filed Nov. 21, 1968, Ser. No. 777,672
Int. Cl. A61h 3/00; A63c 3/04
U.S. Cl. 297—5 **7 Claims**

The invention relates to a combination chair-walker for invalids comprising a pair of aligned frame members, each having generally vertical front and rear portions and an upper arch-shaped portion, and having wheels at the ends of the rear vertical portions. Hand grips extend rearwardly from the front portions of the frame members, and a seat is mounted between the rear portions. In the preferred embodiment, grip support members are provided between the hand grips and the ground, and a chair back, arm rests, and arm rest support members are also provided. The arm rest support members also provide support for the seat.

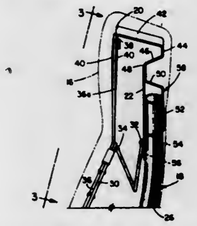


3,498,668
SEAT FOR A CAPTAIN'S CHAIR
Henry J. W. Vanderminden III, Granville, N.Y., assignor to The Telescope Folding Furniture Co., Inc., Granville, N.Y., a corporation of New York
Filed Jan. 29, 1968, Ser. No. 701,387
Int. Cl. A47c 4/32
U.S. Cl. 297—45 **18 Claims**



A strip of seat material has a retaining rod secured directly to the ends of the strip. The ends are received within longitudinal slots and are fixed therein by stitching passing through the walls of the rod forming the slot. The retaining rods are sized so that the primary stitching is received within the grooves of the chair frame.

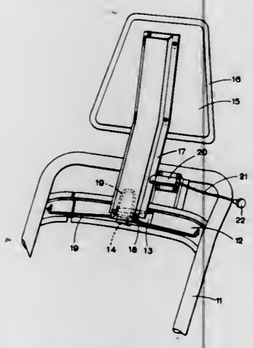
3,498,669
SEAT BACK CONSTRUCTION
Paul C. Tabor, Clawson, Mich., assignor, by mesne assignments, to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 5, 1968, Ser. No. 710,541
Int. Cl. A47c 7/42
U.S. Cl. 297—396 **5 Claims**



A headrest integrally built into a seat back wherein a formed piece of sheet metal serves a dual purpose of

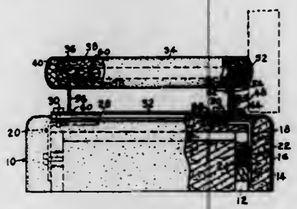
providing a resilient support for the headrest and forming a box section for joining two upright frame members at the top to complete the rigid seat back frame portion of the seat.

3,498,670
VEHICLE SEATS
Peter M. Finch, Oxford, and Henry R. Wall, Woodstock, Oxford, England, assignors to Pressed Steel Fisher Limited, Cowley, Oxford, England, a corporation of Great Britain
Filed May 2, 1968, Ser. No. 726,148
Claims priority, application Great Britain, May 3, 1967, 20,522/67
Int. Cl. A47c 7/38
U.S. Cl. 297—396 **8 Claims**



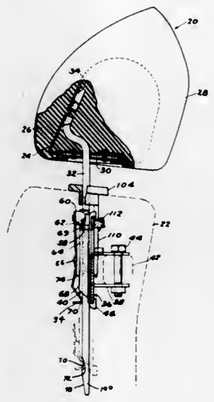
A vehicle seat mounted for forward tipping having a head restraint pivotally mounted on the back-rest for movement between an operative position and a folded position with releasable locking mechanism arranged to hold the head restraint in the operative position. Resilient means may urge the head restraint to the operative position. The head restraint may be yoke shaped with the limbs embracing the sides of the back-rest of the seat. The locking mechanism may be releasable by moving the head restraint sideways, by manual operation of a knob, or automatically when the seat is tipped forwards.

3,498,671
MOVABLE HEADREST FOR VEHICLE SEATS
James A. Coon, 929 Drever St., West Sacramento, Calif. 95691, and Elwin Theobald, 4631 Solano Way, Fair Oaks, Calif. 95628
Filed Feb. 28, 1968, Ser. No. 708,924
Int. Cl. A47c 7/38; B60n 1/02
U.S. Cl. 297—403 **10 Claims**



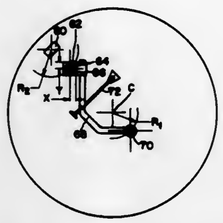
A headrest is arranged above the back of a vehicle seat to provide comfort and protection for the rider, and is pivoted at one end to swing upwardly to a vertical inoperative position to permit the rider, particularly in the front seat, to be able to reach over the back of the seat to pick up articles, attend to children, et cetera. A releasable latch holds the headrest in normal horizontal position and is so arranged beneath the headrest to prevent possible injury to anyone, and particularly children, riding in the back of the vehicle.

3,498,672
VEHICLE HEADREST CONSTRUCTION
Ludwig Leichtl, Emmaus, Pa., assignor to L. F. Grammes and Sons, Incorporated, Allentown, Pa., a corporation of Maryland
Filed Mar. 5, 1968, Ser. No. 710,467
Int. Cl. A47c 7/36
U.S. Cl. 297—410 **24 Claims**



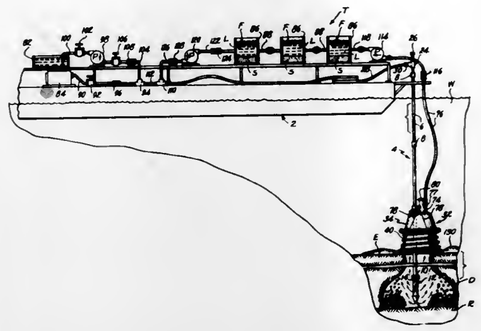
A head rest for a vehicle seat which includes a headrest carrier member having two substantially parallel adjustable support arms, each with a series of spaced detent cavities which slidably engage within two guideways rigidly attached to a base member mounted within a vehicle seat back. Each guideway has a resiliently biased detent which engages the the cavities of the support arms to restrain and control the vertical movement of the headrest relative to the seat back.

3,498,673
MACHINE GUIDANCE SYSTEM AND METHOD
William Ledray, Seattle, and William D. Coski, Mercer Island, Wash., assignors to Lawrence Manufacturing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,284
Int. Cl. E21c 35/00
U.S. Cl. 299—1 **9 Claims**



A tunnel boring machine disposed within a tunnel and provided with a guidance system comprising a laser projection unit fixedly supported by a wall of the tunnel and directing its beam onto a mirror-like reflector mounted on the machine, whereby the reflector provides a reflection of the beam on a target also mounted on the machine. The tunnel boring apparatus is steered to maintain the reflection at a predetermined location on the target.

3,498,674
MINING METHOD AND APPARATUS
Dale M. Matthews, Mountain View, Alaska (Drawer 8869, Anchorage, Alaska 99504)
Filed Aug. 4, 1967, Ser. No. 658,502
Int. Cl. E21c 37/12
U.S. Cl. 299—4 **16 Claims**

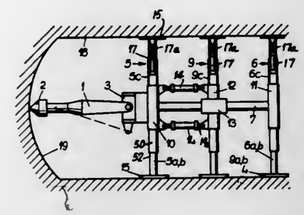


A method for mining or removing a selected mineral from a deposit, including the steps of forcing a probe having an injector head on the lower end thereof into the deposit, pumping through the probe to the injector head fluid containing a reagent suitable for separating the selected mineral from the deposit, removing the fluid carrying the separated mineral from the deposit to a treatment station, and treating the mineral-laden fluid to remove the selected mineral therefrom, after which the fluid can be recycled. In one embodiment of the method the fluid contains air and a selective flotation reagent to gather the selected mineral and carry it to the treatment station, the pulp, mineral-laden liquids and froths resulting in this embodiment being withdrawn from the deposit into an inverted cone around the probe at its place of entry, from which cone the mineral-laden liquid and froths are sucked and transferred to the treatment station. A preliminary step in another embodiment is to isolate the deposit, by establishing a physicial and/or a chemical barrier thereabout.

The apparatus includes a probe comprising an elongated pipe of small diameter fitted with an injector head on its lower end. The upper portion of the probe is connected through a pressure pump with a source of liquid including a suitable reagent, and in one embodiment also to a source of air pressure. The probe is forced downwardly until the injector head is positioned within a deposit, or where desired, and fluid is then pumped through the probe. An inverted suction cone about the probe at its place of entry, or another probe, is utilized to remove mineral-laden fluid from the deposit, the suction cone or the second probe being connected to a treatment station through a suction pump. The treatment station removes the mineral from the fluid, and the latter can then be recycled.

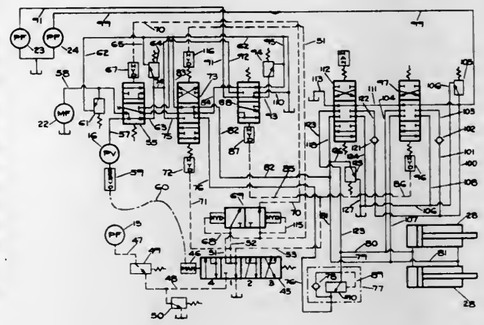
3,498,675
TUNNEL DRIVING MACHINE HAVING SYMMETRICAL BRACES
Gerd Kampf-Emden, Hosel, and Wilhelm Staymann, Rheinhausen-Oestrum, Germany, assignors to Demag A.G., Duisburg, Germany
Filed Mar. 19, 1968, Ser. No. 714,310
Claims priority, application Germany, Apr. 19, 1967, D 52,841
Int. Cl. E21c 1/00, 9/00, 19/00
U.S. Cl. 299—31 **10 Claims**

A tunnel driving device particularly for boring a tunnel into solid rock without a shield includes a cutting arm which carries a rotatable cutting head at its outer end and which is mounted at its inner end for universal pivotal movement. The arm is supported at the inner end of the tunnel by a stepping gear which advantageously includes a plurality of bracing groups. Each bracing group includes preferably two oblique arms which extend outwardly from opposite sides at angles to each other and a vertical arm which includes a telescopic portion which



may be moved outwardly to bear against the roof of the tunnel which is excavated. The inner bracing element supports the cutting arm and it is connected to an outer bracing element through a rigid guide beam extending therebetween. An intermediate bracing element is carried on a sliding sleeve which moves backwardly and forwardly on the guide beam under the control of adjustment cylinders which are connected between the intermediate bracing element and one of the other bracing elements.

3,498,676
MINING MACHINE WITH CONTROL AND OPERATING SYSTEM FOR MINING HEAD AND TRACTION MEANS
Arthur L. Cilles, Worthington, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Mar. 25, 1968, Ser. No. 715,718
Int. Cl. E21c 25/00
U.S. Cl. 299—64 **25 Claims**



A mining machine with a mining head that is positioned at the top of the mine face, and then is advanced into the mine face and traversed downwardly through the mine face to cut and break the material out of the mine face. The mining machine is supported on traction treads by which the machine is propelled forwardly to advance the mining head into the mine face. The mining machine has a system to control and operate the mining head and traction means with a single main or primary control device for the several functions of the mining head and the traction means.

3,498,677

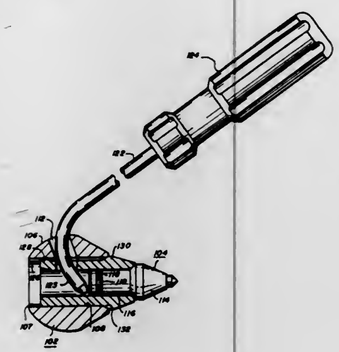
CUTTING APPARATUS

Harry M. Morrow, Navarre, Ohio, assignor to The Bowdil Company, Canton, Ohio

Continuation-in-part of application Ser. No. 670,141, Sept. 25, 1967. This application Oct. 30, 1968, Ser. No. 771,782

Int. Cl. E21c *13/00*

U.S. Cl. 299—86 6 Claims



Cutting apparatus primarily for use in the coal mining industry which includes in combination a bit holder and bit. The bit holder is comprised of a lug suitably secured to the chain link of a mining machine, such as by welding. The lug has an opening which extends thereinto and a bushing is fitted into the opening in the lug and is non-rotatively connected thereto by way of a key and keyway arrangement. A modification of this construction includes a pin secured to the bushing at one end and at the other end of the pin is bent into a slot in the back end of the lug. A transverse opening extends through the wall of the lug and the wall of the bushing to intersect the aforementioned opening in the bushing. The bit comprises a cutting head and a shank at the opposite end which shank resides in the first mentioned opening in the bushing and the length of the shank is such that it leaves a portion of the transverse opening uncovered. Spring and groove means act between the shank and the wall of the bushing to prevent axial removal of the bit and in turn permit rotation of the bit relative to the holder during normal operational use of the same. A variation is disclosed which prevents the aforesaid rotation of the bit when desired. The transverse opening referred to permits the insertion of a curved tool therethrough and into the first mentioned opening and, upon proper manipulation of the tool, the bit may be forcibly ejected from the bushing.

3,498,678

LIGHTWEIGHT, HIGH STRENGTH, STAMPED WHEEL

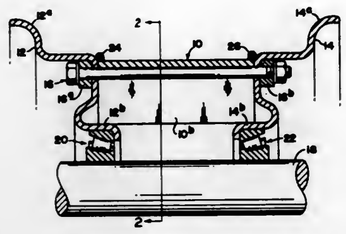
Jesse G. Hawley, Penn Yan, N.Y., and Albert W. Cook, Tallmadge, John W. Runner, Akron, and Charles E. Barrington, Stow, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 503,909, Sept. 23, 1965. This application Mar. 18, 1968, Ser. No. 713,960

Int. Cl. B60b *3/08*

U.S. Cl. 301—63 6 Claims

A wheel formed from substantially identical wheel halves secured together by circumferentially spaced bolt means, each wheel half being formed from a metal stamping and having a radially outer annular tire bead receiving seat and a radially inward annular bearing receiving seat



wherein a hub spacer portion holds the stampings in spaced relationship, and also having radially inwardly projecting fingers which support the bearing receiving seat of each stamping.

3,498,679

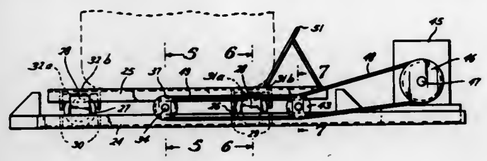
APPARATUS FOR AND METHOD OF REMOVING DRY BALLAST FROM A PNEUMATIC TIRE

August R. Canonico and William B. Brown, Houston, Tex., assignors, by mesne assignments, to Dry Ballast, Inc., Houston, Tex., a corporation of Texas

Filed July 7, 1966, Ser. No. 563,588

Int. Cl. B65g *53/40*

U.S. Cl. 302—56 9 Claims



The invention provides means, including a platform and means to support same for oscillatory, vibratory motion so that a large size vehicle tire containing dry ballast may be disposed on the platform and thus moved and vibrated whereby an eductor tube connected outwardly to a solids removal pump may have its inner end insertable into the tire to follow the descending level of granular ballast therein to substantially the bottom of the tire, as the vibration and oscillation of the platform keeps the upper surface of the ballast continuously substantially level in descent.

3,498,680

MAGNETIC BRAKING SYSTEM FOR RAILWAY VEHICLES

Eugen Rittler, Munich, Germany, assignor to Knorr Bremse G.m.b.H., Munich, Germany, a limited-liability company of Germany

Filed Dec. 26, 1967, Ser. No. 693,493

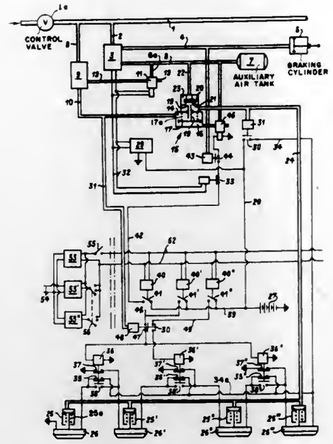
Claims priority, application Germany, Jan. 3, 1967, K 61,080

Int. Cl. B60t *13/74*

U.S. Cl. 303—3 7 Claims

A railway vehicle is provided with both an air braking system and a magnetic rail braking system. The magnetic braking system operates automatically to provide additional braking when the air braking system is operating

near its maximum effectiveness. A control apparatus is provided so that the magnetic braking system can exert



desired levels of braking force independently of the operation of the air braking system.

3,498,681

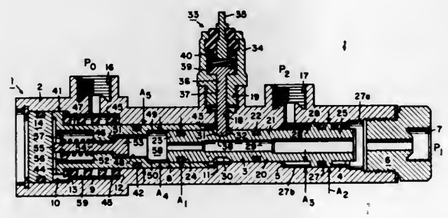
CONTROL VALVE

Richard C. Bueler, Glendale, Mo., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware

Filed May 15, 1967, Ser. No. 638,237

Int. Cl. B60t *8/26, 17/22*

U.S. Cl. 303—6 31 Claims



A control valve including a proportioning portion for effecting a metered application through said control valve of a fluid pressure supplied thereto, and a control portion responsive to a predetermined differential between said supplied fluid pressure and another fluid pressure separately supplied to said control valve to disable said proportioning means and thereby effect an unmetered application of the first named supplied fluid pressure through said control valve.

3,498,682

BRAKING SYSTEM

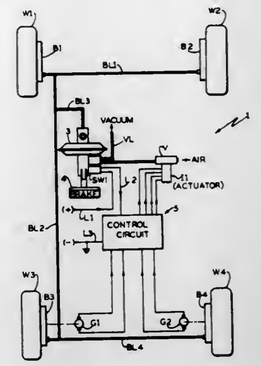
Robert S. Mueller, Southfield, and Thomas A. Penkalski, Auburn, N.Y., assignors to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 5, 1967, Ser. No. 665,609

Int. Cl. B60t *8/06*

U.S. Cl. 303—21 19 Claims

An automobile anti-skid braking system is disclosed in which the braking force is reduced when the wheel speed drops below the vehicle speed. The wheel speed is measured by means of a tachometer and a signal which is an analog of the actual speed of the vehicle is obtained by integrating a deceleration signal obtained from an acceler-



ometer which responds to changes in the vehicle speed. Integration is performed by means of a capacitor which is initially charged to a voltage corresponding to the vehicle speed and is then discharged at a rate which varies as a function of the deceleration of the vehicle.

3,498,683

VEHICLE BRAKE CONTROL SYSTEM FOR PREVENTING WHEEL LOCKING

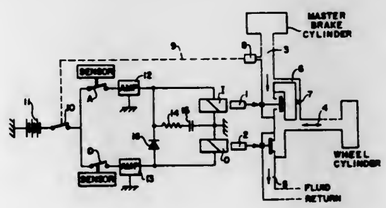
Heinz Leiber, Leimen, Germany, assignor to Teldix Luftfahrt-Ausrustungs G.m.b.H., Wiebtingen, Germany

Filed Nov. 29, 1967, Ser. No. 686,492

Claims priority, application Germany, Dec. 3, 1966, T 326,621

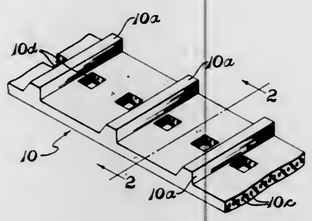
Int. Cl. B60t *8/06, 8/12*

U.S. Cl. 303—21 12 Claims



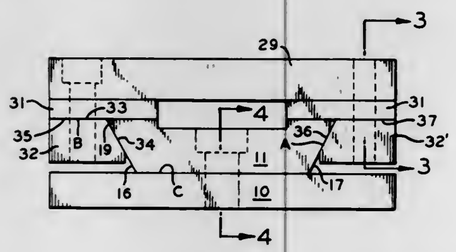
A vehicle brake control system for preventing wheel locking which momentarily retains the braking force applied to a wheel at a reduced level after the braked wheel has exceeded a certain threshold of rotational deceleration. The control system includes a rotational acceleration sensor, in addition to the sensor for detecting excessive deceleration and which produces an output when the braking force is applied and when the value of rotational acceleration exceeds a certain threshold. The control system further includes means for receiving the output of the acceleration sensor and providing that the braking force be at a reduced level during a period of time which is dependent on the time during which the output is present.

3,498,684
TRACTION BELT
Allan D. Hallaman, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed June 28, 1967, Ser. No. 649,673
Int. Cl. B62d *55/08, 55/18;* **B65g** *15/30*
U.S. Cl. 305—38 **5 Claims**



An elastomeric traction belt having lugs on its outer surface and reinforced with tension cords intermediate layers of independently functioning transverse cords of inextensible but flexible wire cord providing increased transverse stiffness.

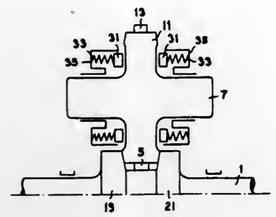
3,498,685
DOVETAIL SLIDE
Charles A. Poplinski, 79—16 Calamus Ave., Elmhurst, N.Y. 11373
Filed Jan. 18, 1968, Ser. No. 698,952
Int. Cl. F16c *5/00, 17/00, 21/00*
U.S. Cl. 308—3 **3 Claims**



A dovetail slide having a base with a male dovetail member and a slide member with separately formed ways, each having a female dovetail face, and a wear plate with parallel upper and lower faces between the way and the slide, and means securing them along each edge of the slide to permit the ways to be disassembled and their surfaces reground to provide a looser fit, and one face of the wear plate to be ground to provide a closer fit between the sliding parts.

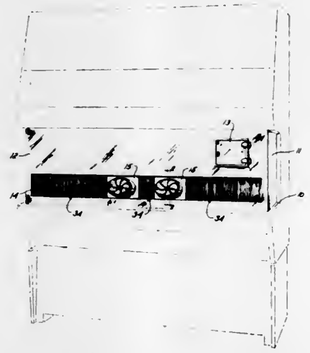
3,498,686
ARRANGEMENT FOR ABSORBING AXIAL THRUST OF A TURBO-MACHINE SHAFT
Hans Baumann, Nussbaumen, and Walter Enz, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Nov. 27, 1967, Ser. No. 685,914
Claims priority, application Switzerland, Dec. 30, 1966, 18,856/66
Int. Cl. F16c *17/04, 17/10, 19/04*
U.S. Cl. 308—135 **6 Claims**

An arrangement for taking up the axial thrust imposed upon the shaft of a turbo-machine comprises at least one auxiliary shaft located parallel with and to one side of the turbo-machine shaft and which is driven by the latter at a reduced speed. Any axial thrust imposed upon the



turbo-machine shaft is transmitted to the auxiliary shaft and is absorbed by axially acting thrust bearings associated with the latter.

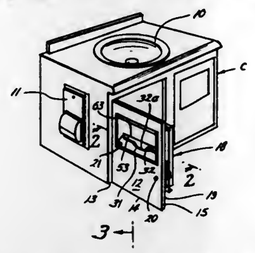
3,498,687
MOVABLE ACCESS PANELING FOR ULTRA CLEAN WORK STATIONS
Anthony M. Diccianni, Norristown, Pa., assignor to Air Control, Inc., Norristown, Pa., a corporation of Pennsylvania
Filed July 18, 1968, Ser. No. 745,855
Int. Cl. A61g *11/00*
U.S. Cl. 312—1 **8 Claims**



An ultra clean work station is disclosed which has an enclosed work area to which access is provided by access paneling mounted for sliding movement lengthwise of the work area. Portage in the paneling provides for access by the arms and hands of the workman. Accordian pleated collapsible panels are secured to the sides of the access paneling and cover the opening not occupied by the paneling.

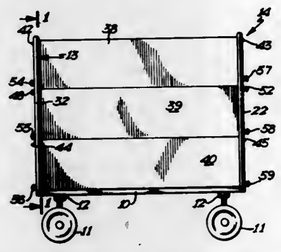
3,498,688
CABINET ARRANGEMENT FOR DISPENSING PAPER TOWELS
Ralph B. Mott, Ralph B. Mott, Jr., Thomas P. Long, and Robert L. Woods, Houston, Tex.; said Long and said Woods assignors to Reserv-A-Roll Co., a partnership composed of Ralph Beach Mott, Sr., and Ralph Beach Mott, Jr.
Filed May 27, 1968, Ser. No. 732,462
Int. Cl. B65h *1/04;* **B65f** *1/06*
U.S. Cl. 312—61 **2 Claims**

A cabinet arrangement for dispensing paper towels, which cabinet is provided with a pivotally mounted door and a housing supported thereon for carrying and dispensing paper towels, the housing including means to support and urge the towels to a position toward an open-



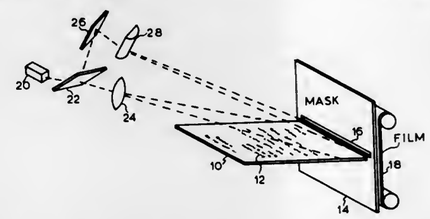
ing in the door for removal as needed, and said means not urging the towels toward the door opening when the housing is opened for replenishing the towel supply therein.

3,498,689
LAUNDRY CART
Roger L. Hansen, 16501 N. Temple Drive, Minnetonka Village, Minn. 55343
Filed June 18, 1968, Ser. No. 738,007
Int. Cl. B62b *3/02*
U.S. Cl. 312—250 **7 Claims**



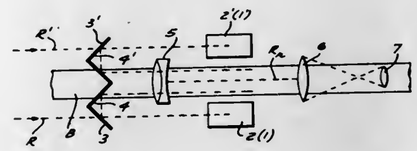
A laundry cart designed for the handling of both soiled and clean laundry in which there are a plurality of side panels each of a width approximately one-half the width of a cart, the side panels being pivotally mounted to the frame of the truck adjacent their upper edges so that pairs of oppositely disposed side panels can be swung to a horizontal positon to form collectively shelves for the reception of clean laundry for transportation to the point of usage. One pair of opposite side panels may be removed for facilitating removal of dirty laundry.

3,498,690
HOLOGRAPHIC STORAGE SYSTEM
George L. Tyler, Jr., Stanford, Calif., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Nov. 21, 1966, Ser. No. 595,813
Int. Cl. G02b *27/00*
U.S. Cl. 350—3.5 **6 Claims**



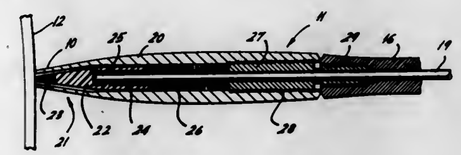
The data on a document may be recorded on film, using holographic techniques in a minimum of space on said film. This is done by using a mask, placed adjacent the film, having a slit therein the length of which is at least on the order of the length of the document to be recorded, and the width is on the order of several microns in order to permit recording only in a single dimension.

3,498,691
PARALLAX-FREE TELESCOPIC SIGHT
Adolph Razdow, Montclair, N.J., assignor to Razdow Laboratories Inc., Newark, N.J.
Filed Dec. 26, 1967, Ser. No. 693,644
Int. Cl. G02b *23/00, 23/02, 17/00*
U.S. Cl. 350—33 **10 Claims**



A telescopic rifle sight has two slanted reflecting surfaces on opposite sides of the rifle barrel which project two bundles of rays coming from the target area without parallax error to a symmetrical mirror system by which the bundles of rays are projected into an objective which forms an image of the target area for observation through an eyepiece, or projects the image onto a screen.

3,498,692
LIGHT PEN
James W. Jewitt, King of Prussia, and Robert A. Wainer, Maple Glen, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 9, 1967, Ser. No. 681,722
Int. Cl. G02b *5/14*
U.S. Cl. 350—96 **3 Claims**

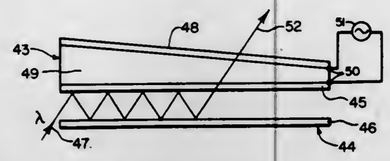


Light pen for conducting light to or from an illuminated spot, for instance a spot on the phosphor screen of a cathode ray tube, through a fiber optics cable, to a photoelectric transducer. The pen has a spring-actuated, normally closed light shutter at its tip, which opens when the pen is brought to bear against the illuminated spot on the screen or other light source.

3,498,693
RADIATION TRANSLATING DEVICES
Michael E. Fein, Champaign, and Joseph Markin and Alan Sobel, Evanston, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,457
Int. Cl. G02f *1/28;* **G02b** *5/08*
U.S. Cl. 350—160 **15 Claims**

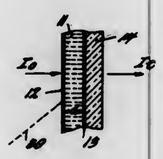
An optical interference filter is contiguous with an optical cavity in which a beam of light is multiply reflected. The filter is caused to be transmissive in a local-

ized area to permit the light to emerge from the cavity through that area, and the filter is arranged so that the



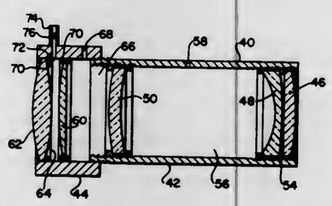
location of the transmissive area may be changed selectively.

3,498,694
OPTICAL INTERFERENCE FILTER MEANS BOMBARDED BY CRT BEAM FOR SELECTIVELY PASSING MONOCHROMATIC LIGHT
Omer F. Hamann, La Jolla, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,641
Int. Cl. G02f *1/28, 1/36;* **G01b** *9/02*
U.S. Cl. 350—160 **5 Claims**



A light valve is disclosed passing a monochromatic light beam in response to excitation from an electron beam of a cathode ray tube by means of an optical interference filter changing from a wavelength bandpass including the monochromatic beam to one excluding the beam.

3,498,695
PRESSURE COMPENSATED OPTICAL DEVICE
Willem Brouwer, Lexington, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,882
Int. Cl. G02b *3/12, 7/02*
U.S. Cl. 350—179 **4 Claims**

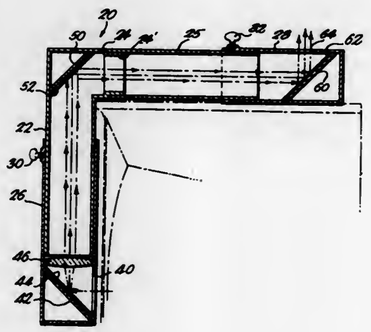


An optical system in which the shift in focal length with changes in ambient atmospheric pressure in minimized by selecting the n optical surfaces of the system according to the criterion that the sum

$$\sum_{1-1}^{n} h_i D_i P_i$$

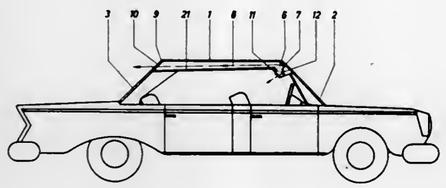
tends to zero where for the ith surface, h is the distance normal to the optical axis of the system from the intersection of a given paraxial ray and the surface D is the angular deviation of the ray due to refraction at the surface, and P_i is $\mu\mu'/\mu'-\mu$, μ and μ' being respectively the indices of refraction of the lens material and air on respective sides of the surface. One variation of the device varies the pressure between selected lens surfaces as a function of some parameter of the ambient atmosphere.

3,498,696
OPTICAL APPARATUS FOR VIEWING THE SCREEN OF A TELEVISION RECEIVER FROM THE REAR THEREOF
Truman Kirby, 1600 W. 10th St., Panama City, Fla. 32401
Filed Nov. 8, 1965, Ser. No. 506,688
Int. Cl. G02b *17/00, 23/08*
U.S. Cl. 350—202 **1 Claim**



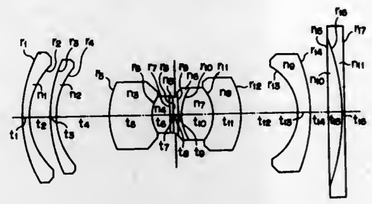
A portable viewing device for use while adjusting television sets comprising a housing including two straight tubular portions arranged in a common plane and joined to provide a right angular relationship. An opening is provided in the wall of each portion adjacent its free end, one facing the right angle area defined by said portions and the other facing opposite said area. A mirror is positioned therein opposite each of said openings and at the angle juncture of the portions. The line of sight defined by the three mirrors is coincident with the axis of the tubular portions wherein a ray of light entering one opening will be reflected from the other opening.

3,498,697
REARVIEW MIRROR FOR VEHICLES
John D. Matteo, Box 53, Harleigh, Pa. 18225
Filed Feb. 24, 1966, Ser. No. 529,719
Int. Cl. G02b *5/08, 7/18*
U.S. Cl. 350—302 **6 Claims**



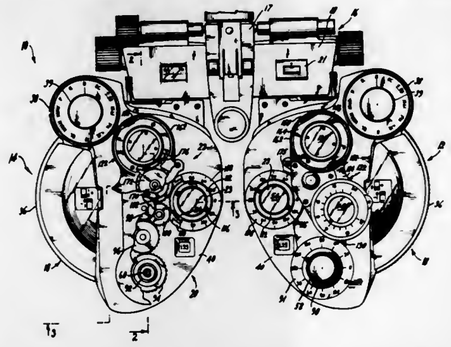
A rearview mirror arrangement is provided inside the roof of a car, or like vehicle, utilizing a plurality of mirrors for observation through a transparent window at the rear of the vehicle, wherein the mirrors are contained within a closed box.

3,498,698
WIDE ANGLE OBJECTIVE
Shuji Koyanagi, Tokyo, Japan, assignor to Canon Camera Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed June 6, 1966, Ser. No. 559,636
Claims priority, application Japan, Aug. 6, 1965, 40/47,809
Int. Cl. G02b *9/62*
U.S. Cl. 350—215 **1 Claim**



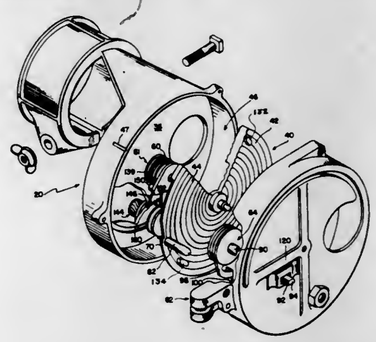
The present invention provides a photographic wide angle objective of six components separated by air spaces. The first component facing the object field and the second component are negative meniscus lenses, the respective outer surfaces of which are convex toward the object field. The third and fourth components are positive complex cemented lenses respectively, each composed of at least three lens elements. The fifth component is a simple or complex cemented lens, the front surface being convex towards the object field, while the last or sixth component is a low powered positive or negative complex cemented lens composed of at least two lens elements. By this arrangement, not only the aberrations of astigmatism, curvature of field and distortion are finely corrected, but also coma is corrected, so that when very small objects are photographed, the contrast in the focused image will not deteriorate.

3,498,699
REFRACTOR
Leonard A. Wilkinson, Snyder, Erie, N.Y., assignor to American Optical Corporation, a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,681
Int. Cl. A61b *3/02*
U.S. Cl. 351—29 **9 Claims**



A refractor having a pair of batteries. Each battery includes a sphere lens assembly and a cylinder lens assembly, each assembly including a set of variously powered lenses which can be successively rotated into alignment with a viewing tube in each battery. The axis of the cylinder lens in the viewing tube is rotated by an external control knob. A cross cylinder carried by a turret can be swung in front of the viewing tube to enable the practitioner to perform the Jackson cross cylinder test. A gear train brings the flip axis of the cross cylinder into coincidence with the preset cylinder axis. As the practitioner resets the cylinder axis, the gear train shifts the cross cylinder to retain it in coincidence with the cylinder axis. A rotatable indexed loupe for the cross cylinder enables the practitioner to perform the power test, as well.

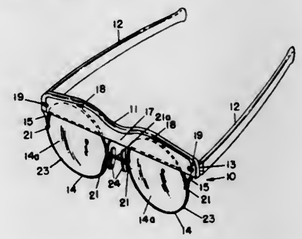
3,498,700
TACHISTOSCOPE
James Keith Macomber, Rockville Centre, N.Y., assignor to Consolidated Educational Publishing, Inc., a corporation of New York
Filed Aug. 30, 1967, Ser. No. 664,517
Int. Cl. A61b *3/02*
U.S. Cl. 351—31 **21 Claims**



This invention relates to tachistoscopes primarily for use as a part of, or an accessory for, a projector adapted to project an image on a projection screen or the like. The tachistoscope of the invention is provided with a scrambler including means to permit passage of the rays of light from the projector to the projection screen with at least one portion of the scrambler having refracting means to refract the rays to scramble the image at the same time permitting the scrambled rays to reach the projection screen to form an unintelligible image, and at least another portion of the scrambler being non-refractive, such as either an open portion or a transparent portion through which an intelligible image is projected on the projection screen.

The tachistoscope has a timing mechanism which may be adjusted to produce a tachistoscopic effect by presenting the unscrambled view on the screen for short intervals of time, let us say between ¼ and 1/25 second.

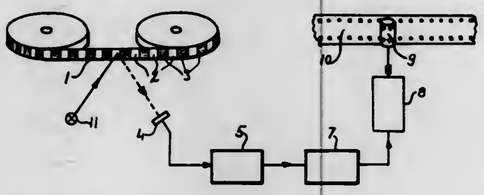
3,498,701
MULTI-FOCAL EYEGLASS ASSEMBLY
Mary Louise Miller, Bellefonte, Pa., assignor to Donald S. Miller, Centre County, Pa.
Filed Jan. 11, 1968, Ser. No. 697,179
Int. Cl. G02c *7/08*
U.S. Cl. 351—57 **4 Claims**



A multi-focal eyeglass construction comprising a frame including a pair of primary generally semi-circular lenses,

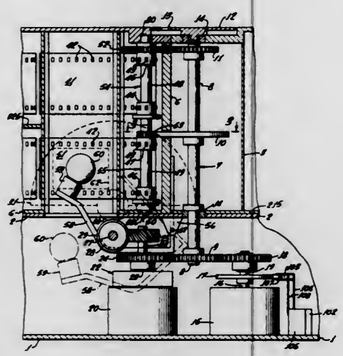
and a pair of segmental secondary lenses pivoted to the rims of the primary lenses, and movable from a position overlying the lower portion of the primary lenses to a position above the primary lenses, a receptacle being provided in the top of the frame for the reception of the secondary lenses when in the upper position.

3,498,702
SYNCHRONOUS DRIVE ARRANGEMENT FOR RECORD CARRIERS
Milan Meninger, Prague, and Miloš Bláha, Mnichovo Hradiste, Czechoslovakia, assignors to Vyzkumny ustav rozhlasu a televise, Prague, Czechoslovakia
Filed June 15, 1967, Ser. No. 646,332
Claims priority, application Czechoslovakia, June 29, 1966, 4,352/66
Int. Cl. G03b *31/00, 31/04*
U.S. Cl. 352—12 **5 Claims**



Alternating reflecting and non-reflecting portions of moving magnetic sound tape intermittently reflect the light of a constant light source to a photoelectric cell. The resulting electric pulses are amplified and used for synchronously driving a motion picture film.

3,498,703
SOUND SYNCHRONIZED CAMERA-PROJECTOR
Martin E. Gerry, 13452 Winthrope St., Santa Ana, Calif. 92705
Filed July 11, 1966, Ser. No. 564,141
Int. Cl. G03b *31/04*
U.S. Cl. 352—31 **17 Claims**



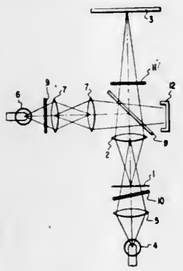
A combination camera-projector with sound is provided having movie or still-image modes of operation. Included are a group of cartridges combining separate film and sound tape for recording and reproducing sound relating to images on the film. The film and sound track tape are transported within the cartridge and are moved by external mechanisms. The external mechanisms provide for moving the film continuously with the sound tape synchronized to the film when in the movie mode, or when in the still-image mode the film is transported one frame at a time with accompanying portions of the sound tape, each portion of sound tape having sound relating to a particular frame of the film. A shutter is provided which is linked to the external mechanism and permits optical communication in accordance with the frame rate of transportation during the movie mode, and is properly positioned in the still-image mode by control mechanism. Other mechanisms for scanning the sound tape are provided so that a magnetic head may record sound on or reproduce sound from the magnetic tape. Control circuits of the electromechanical type are provided for programming lengths of tape and film in sequence or programming single frames of film and accompanying sound track tape in either the camera or projector modes of the apparatus.

3,498,704
FILM SHEET FOR REPRODUCING MOTION PICTURES
James W. Lucas, 1480 N. Doheny Drive, Los Angeles, Calif. 90069
Filed Oct. 22, 1965, Ser. No. 500,768
Int. Cl. G03b *31/02*
U.S. Cl. 352—37 **7 Claims**



A motion picture film in the form of a flat sheet adapted to be wound around a cylinder in a projector for subsequent readout. The individual frames are offset from each other the width of a sound track, and a plurality of sound tracks extend perpendicular to the direction of offset of the frames, each sound track beginning adjacent its corresponding frame.

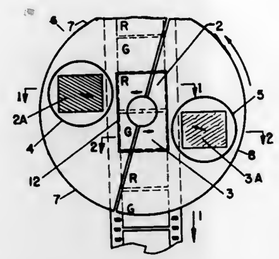
3,498,705
PHOTOGRAPHIC PICTURE IMAGE PROJECTING METHOD AND DEVICE CAPABLE OF CONTRAST VARIATION INCLUDING REVERSAL
Shingo Ooue, Hiroyuki Ueda, and Masakazu Hashiue, Saitama, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed July 5, 1967, Ser. No. 651,228
Claims priority, application Japan, July 5, 1966, 41/43,773
Int. Cl. G03b *21/28*
U.S. Cl. 353—20 **2 Claims**



A photographic picture image projecting method and apparatus utilizing linearly polarized lights is capable of transmitting a picture image of varying contrast. A rotatable analyzer arranged in the projection optical system

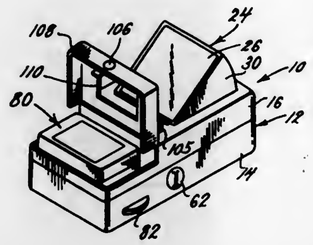
is capable of varying the ratio of transmitted light to reflected light. The resultant image can vary in contrast from a negative to a positive image.

3,498,706
ADDITIVE COLOR PROJECTION
Francis A. Pall, La Jolla, Calif. (2239 E. Cochran St., Simi Valley, Calif. 93065)
Filed May 4, 1966, Ser. No. 548,354
Int. Cl. G03b *21/00*
U.S. Cl. 353—31 **1 Claim**



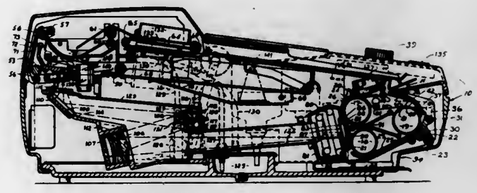
In an additive color projection, the standard size adjacent multiple color separation frames are simultaneously projected with conventional frequency. The appropriate color lights of each frame are synchronzed with the corresponding color separation images, and channeled through individual lenses into one composite color picture on the screen. With a single frame advancement of the film per projection frequency, each image is repeatedly projected from different positions, as many times, as many colors are used in the projection. To diminish the color fringes—due to the time lag between the consecutively exposed images—only one lens projects sharp image, while the other(s) contribute diffused, fill in color(s) only.

3,498,707
FILM READING DEVICE
Horace S. Allen, St. Louis, Mo., assignor, by mesne assignments, to McDonnell Douglas Corporation, St. Louis, Mo., a corporation of Maryland
Filed May 5, 1967, Ser. No. 636,473
Int. Cl. G03b *23/12*
U.S. Cl. 353—26 **7 Claims**



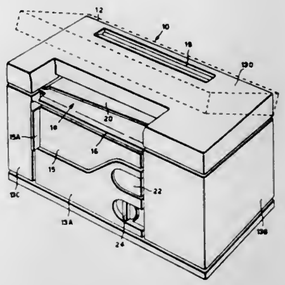
A portable device for viewing images stored on microfilm comprising a housing having two spaced openings in the upper wall thereof. One opening has a cover thereon, which when opened provides access to a first compartment for receiving a microfilm cartridge and the other opening provides access to a second compartment which houses a screen mounted for movement between an operative and inoperative position. A light bulb is mounted within the compartment for the film cartridge and extends into the cartridge so that light from the bulb is directly projected through the film. The microfilm is wound on spaced spools within the cartridge and movement of the film is accomplished through gears and a magnetic clutch member which receives its power from a self-contained power source.

3,498,708
PHOTOCOPYING APPARATUS
James W. Howard, Pompton Lakes, N.J., assignor to Inmont Corporation, New York, N.Y., a corporation of Ohio
Filed Sept. 9, 1965, Ser. No. 486,181
Int. Cl. G03b *15/00, 27/54*
U.S. Cl. 355—3 **10 Claims**



In a photographic printer, compensation is made for the greater transmission of light along and near the optical axis by arranging the lighting source to illuminate the edge areas of the field to be illuminated with greater intensity than the area on and near the optical axis. This is done by concentrating the lamp tubes toward the outer areas of the field.

3,498,709
DESK TOP ELECTROSTATIC COPYING MACHINE
Bernard Kaminstein, Paramus, N.J., Henry G. Joel, New York, N.Y., and Giovanni Ravera, Ivrea, Turin, Italy, assignors of one-third to Ing. C. Olivetti & C., S.p.A., Turin, Italy, a corporation of Italy
Filed Apr. 12, 1967, Ser. No. 630,308
Int. Cl. G03d *3/00*; G03b *27/30, 27/04*
U.S. Cl. 355—10 **12 Claims**



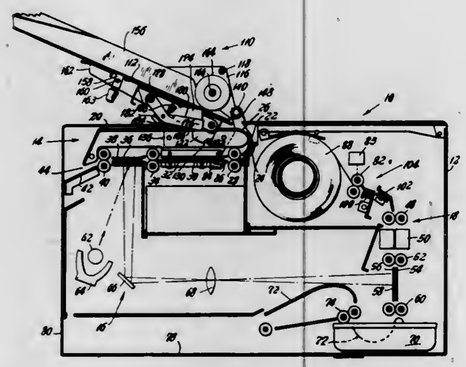
A desk top electrostatic copying machine in which the document to be copied and the copy sheet are in contact during the imaging and exposing steps. The path of the document and copy sheet slopes downwardly from the inlet opening of the machine through the imaging and exposing stations. A removable container holds the toner supply and also forms the developing tray in a portion of its exterior surface. The toner container is sealed when originally inserted into the machine and the seal must be

broken before toner can be delivered to the developing tray. Multisectional pads lie opposite the illuminating means so as to maintain the document and copy sheet in position.

3,498,710
DOCUMENT FEEDING DEVICE FOR COPYING MACHINES

Charles B. Fox, Fairfield, and Fredric E. Zucker, Stamford, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed June 30, 1967, Ser. No. 651,101
Int. Cl. G03b 29/00
U.S. Cl. 355—29 **2 Claims**

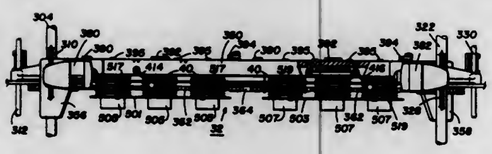


A device for successively feeding original documents to be copied into a copying machine in timed relationship with the rate of movement of the documents through the copying machine and in spaced relationship with preceding documents according to the minimum or greater spacing required between successive documents for proper copying machine operation. The device has a normally operating feeding means for feeding the top most document from a stack and includes means responsive to a document sensing means in the copying machine for disabling operation of the feeding device in order to control the rate at which documents are fed into the copying machines. A device which is readily attachable to a copying machine without operator manipulation and does not affect copying machine operation for single document copying.

3,498,711
STEP AND REPEAT CAMERA

Billy D. Ables, Richardson, and Hans Jaeger, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 680,291
Int. Cl. G03b 27/42
U.S. Cl. 355—53 **19 Claims**

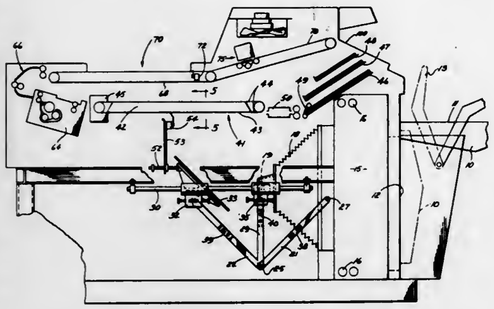


A film support table is movable in the X and Y coordinate directions by X and Y drive systems. A laser interferometer and fringe counter detects movement of the table in the X and Y coordinate directions by fringe counts. A projection system simultaneously projects a plurality of images along parallel optical paths onto the film carried by the table after the table is moved to each of a plurality of predetermined exposure positions. The projection system includes a lens stage and a transparency stage which may be positioned at selected heights above the table. The table and the transparency stage include a common banking system for precisely locating plates at predetermined spatial positions relative to the respective optical paths. A reference detector system detects when the table is at a zero reference position so that the counters can be reset. A digital computer is programmed to compute the coordinate of each exposure position and then, based on the current barometric pressure, compute the distance in fringe counts from the reference position to the first exposure position. The computer then operates the drive system in such a manner as to move the table to the exposure position by continuously computing the position and velocity of the table from the readings of the fringe counters. Then the table is maintained at the exposure position during the exposure period by continuously determining the position of the table from the fringe counters and operating the drive system to produce forces for correcting the positional error.

3,498,712
ELECTROSTATIC IMAGING

James A. Kolibas, Cleveland, Darwin S. Crouser, Mentor, and John S. Copeland, Chagrin Falls, Ohio, assignors to Addressograph Multigraph Corporation, Cleveland, Ohio

Filed Apr. 3, 1967, Ser. No. 627,757
Int. Cl. G03b 27/34, 27/40, 27/70
U.S. Cl. 355—57 **9 Claims**



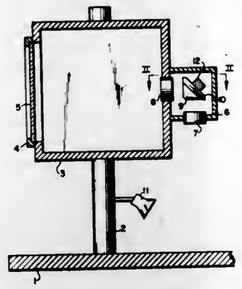
A copyboard for accepting original material is a shuttle which will drop the material downwardly to a vertical plane. An autofocus device having a constant distance factor in one variable enables the optical axis to be deflected upwardly to a conveyor for photosensitive sheets. A variable stop related to the autofocus device establishes an exposure position for photosensitive sheets centered about the image optical center wherever the autofocus device locates that center.

3,498,713
OPTICAL SYSTEM FOR A REPRODUCTION CAMERA

Franz Schlegel and Hans Grumpelt, Munich, Germany, assignors to Optische Werke G. Rodenstock, Munich, Germany

Filed June 21, 1967, Ser. No. 647,725
Claims priority, application Germany, Aug. 9, 1966, O 11,871
Int. Cl. G03b 27/70
U.S. Cl. 355—66 **8 Claims**

A roof-angle or Amici prism is inserted between the front and rear elements of the objective in a reproduction camera, the optical axes of the two elements intersecting each other at right angles at the roof-angle. If the two lens elements are symmetrical relative to a stop, the prism is interposed between the stop and one lens element, and

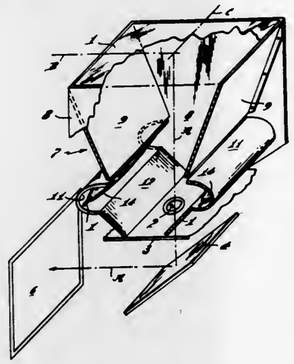


a glass body having plane entrant and exit surfaces is inserted between the stop and the other lens element, the length of the optical path in the prism and the transparent glass body being of equal lengths.

3,498,714
GAS DISCHARGE LAMP

William B. Elmer, Boston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed June 7, 1967, Ser. No. 644,328
Int. Cl. G03b 27/54
U.S. Cl. 355—70 **4 Claims**



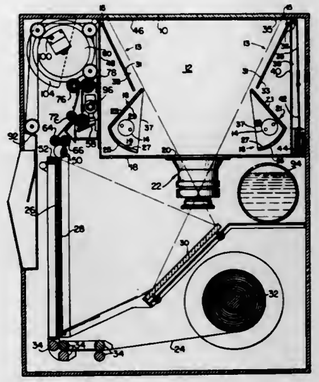
A photographic copy apparatus employing a pair of electric lamps. Each lamp has a gas filled, elongate discharge lamp whose envelope is shaped to produce lower current density and illumination at its center than at its ends for illuminating the ends of a photocopier record window more brightly than the middle.

3,498,715
ILLUMINATION SYSTEM FOR DOCUMENT COPIER

Nicholas Gold, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 720,771, Apr. 12, 1968. This application Apr. 22, 1968, Ser. No. 722,843
Int. Cl. G03b 27/54
U.S. Cl. 355—70 **8 Claims**

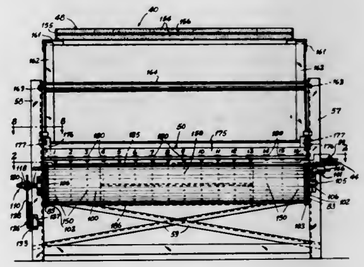
An exposure system including a housing having a support for forming one end of a chamber and for positioning material for exposure and a lens for forming an image of the material on a photosensitive sheet. Positioned within the chamber is a light source for directly illuminating the support, reflectors for reflecting light directly toward the ends of the support, deflectors for deflecting light from the light source onto the support and a second set of reflectors for reflecting light onto the support intermediate the ends thereof. This combination of lighting produces an illumination pattern at the support which has an increasing intensity outwardly from the center of the support.



3,498,716
MECHANISM FOR REPRODUCING LAYOUTS OF MODIFIED DIMENSIONS

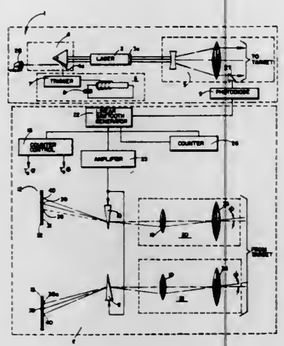
Louis E. Sauer and Orville C. Miller, St. Louis, Mo., assignors to Centenary Central, Inc., St. Louis, Mo., a corporation of Missouri

Filed Jan. 27, 1967, Ser. No. 612,138
Int. Cl. G03b 27/10
U.S. Cl. 355—84 **8 Claims**



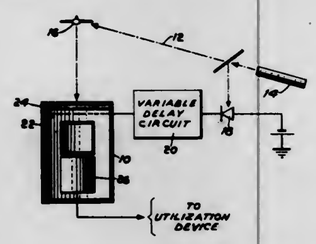
A machine for accurately shortening or lengthening a copy of a drawing layout in one direction. One embodiment of such machine includes a table structure supporting an adjustable compensator, the setting of which determines the speed differential between layout and light sensitive printing paper. Rotatably supported on the front end of the table is a drum assembly to receive the printing paper thereon. The compensator assembly includes lead, middle and trailing transverse tandem bars spaced apart in the direction of movement, the trailing bar being adapted to receive an edge of the layout for moving over and relative to the printing paper.

3,498,717
LASER RANGE DETECTOR SYSTEM
Tom T. Kumagai, Anaheim, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,131
Int. Cl. G01c 3/08
U.S. Cl. 356—5 7 Claims



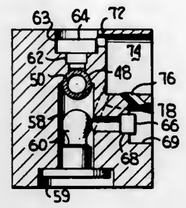
The invention is directed to a laser system for determining the range of an object. A laser transmitter transmits pulses of light to an object. First and second optical means are used to receive and focus portions of the pulses reflected from the object. A first and second deflection means are interposed to receive the focused portions of the light pulses. The deflection means deflect each light pulse through an angle which is proportional to the time elapsed since transmission of the pulse. The direction of deflection of the first deflector is opposite to the direction of deflection of the second deflector. Detector means are provided to receive the deflected pulses of light and to provide an output signal indicative of the amount of deflection of the pulses which in turn will be proportional not only to the range of the object but also to the angle of the object with respect to the position of the system.

3,498,718
OPTICAL SIGNAL CORRELATION DEVICE
Wolfgang K. Berthold, Donald K. Coles, and Thomas E. Sisneros, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Oct. 4, 1966, Ser. No. 584,213
Int. Cl. G01c 3/08
U.S. Cl. 356—5 8 Claims



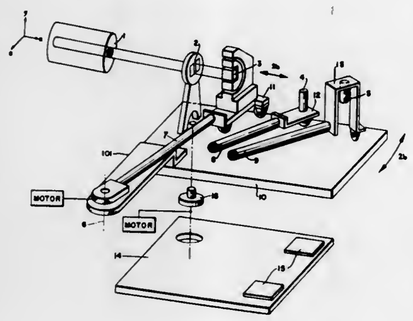
A light beam modulated by a first signal is applied to a photocathode of a photomultiplier tube and an electrical signal having a time related difference with respect to the first signal is applied to an adjacent parallel control grid, with the output signal varying in accordance with the time related difference between the two signals.

3,498,719
PHOTOELECTRIC CONSISTENCY INDICATOR FOR PULP
James H. Wing and Robert N. Bailey, Augusta, Ga., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 18, 1965, Ser. No. 433,667
Int. Cl. G01n 1/00, 21/26
U.S. Cl. 356—36 10 Claims



Methods and apparatus for determining the consistency of a non-homogeneous mixture, such as a pulp slurry, wherein radiant energy is projected through a flowing sample and the amount of energy transmitted through the sample is detected by a photo-detecting device. The sample of mixture is passed through a transparent tube constituting a lens having a given focal length and the photo-detecting device is located at a point removed from the focal length to receive a low-resolution blurred image of the mixture sample in transit. A second photo-detecting device is directly illuminated and provides a reference for comparison with the response of the first-mentioned photo-detecting device. Means for diluting the mixture sample at a controlled rate may be employed to alter the consistency of the sample to within a predetermined and relatively low optimum mixture consistency range of the disclosed apparatus.

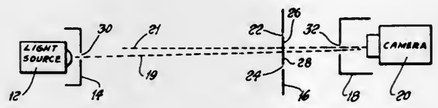
3,498,720
CONCAVE GRATING ULTRAVIOLET VACUUM SPECTROMETER
Wilhelm Kohlhaas, Julich, Germany, and Johannes Conrads, Hampton, Va., assignors to Kernforschungsanlage Julich G.m.b.H., Julich, Germany
Filed Nov. 17, 1967, Ser. No. 685,242
Claims priority, application Germany, Nov. 17, 1966, K 60,731
Int. Cl. G01n 21/34
U.S. Cl. 356—51 7 Claims



Spectrometer apparatus for permitting a complete spectral analysis of radiation from a stationary source to be effectuated in a simple manner, the apparatus including

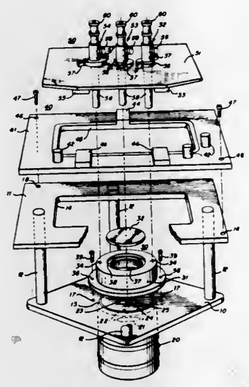
an entrance slit, a concave reflection grating and at least one detector, all arranged along a Rowland circle, a pivot bearing to which the grating and detector are connected for movement along the Rowland circle, and a support element supporting the pivot bearing and arranged for rotation about the longitudinal axis of the entrance slit, the slit axis being normal to the plane containing the Rowland circle and being spaced from the axis of the pivot bearing by a distance equal to the radius of the Rowland circle.

3,498,721
NEPHELOMETER
Edward M. Thorndike, Montrose, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 7, 1966, Ser. No. 577,783
Int. Cl. G01n 15/00, 21/24, 21/25
U.S. Cl. 356—103 5 Claims



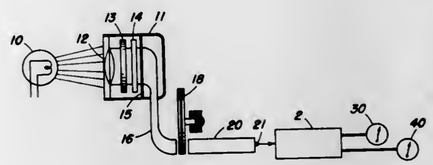
A device for measuring the amount of light-scattering that occurs in a fluid is provided in which light from a light source reaches a camera through a series of baffles. An intermediate baffle permits indirect light and attenuated light to reach the camera for comparison.

3,498,722
OPTICAL ALIGNMENT APPARATUS
Nathan D. Levin, Highland Park, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 583,018
Int. Cl. G01b 11/26; G02b 21/18
U.S. Cl. 356—138 8 Claims



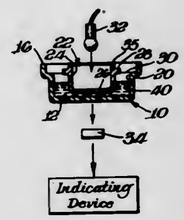
A device for accurately and quickly aligning a color picture tube lighthouse lens assembly including an accurately locatable baseplate carrying a plurality of microscopes vertically oriented with respect to a corresponding plurality of reference marks on the lens assembly. The microscopes are precisely focused on the reference marks of a lens assembly in a lighthouse known to be in proper alignment, whereafter the baseplate with microscopes affixed may be moved to another lighthouse for quickly and accurately aligning the lens assembly thereof.

3,498,723
MOVIE CAMERA EXPOSURE INTEGRATOR
Gordon W. Nichols, Binghamton, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,097
Int. Cl. G01j 1/46, 1/36; G01p 3/40
U.S. Cl. 356—215 12 Claims



The invention relates to apparatus for determining the quantity of light available at the focal plane of a camera for a particular shutter opening. A fibre optics assembly is placed in the film position of a camera and light appearing at each shutter opening is conducted to a photomultiplier. The photomultiplier output is integrated for a predetermined number of shutter openings to determine the total light input to the camera.

3,498,724
SAMPLE CELL
Thomas J. Hayes, Burlington, Derek A. Lucas, Dover, and Robert G. Graves, Marblehead, Mass., and Harold W. Harrower, Greenville, R.I., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 1, 1967, Ser. No. 657,673
Int. Cl. G01n 33/16
U.S. Cl. 356—246 7 Claims



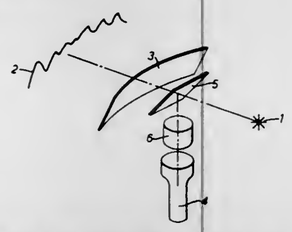
A sample cell for use in studies of coagulation and lysis is formed of two parts, a hollow cylindrical cuvette body and a piston-like cap. The body has hollow protuberances disposed axially along its periphery on opposite sides to provide a filling port and venting port. The volume or depth of the sample is controlled by the magnitude of the projection of the piston-like cap into the cylindrical body. Typically two different sized caps are supplied to provide different sample depths.

3,498,725

REFLEX SIGHTING DEVICE INCLUDING A PARTIAL REFLECTOR AND MEANS BETWEEN THE REFLECTOR AND DISPLAY TO COMPENSATE FOR PARALLAX

Derek R. Burrows and Fritz P. Heller, London, England, assignors to Elliott Brothers (London) Limited, London, England, a British company

Filed Mar. 18, 1965, Ser. No. 440,739
Claims priority, application Great Britain, Mar. 20, 1964, 11,863/64
Int. Cl. G02b 23/10
U.S. Cl. 356—251 2 Claims



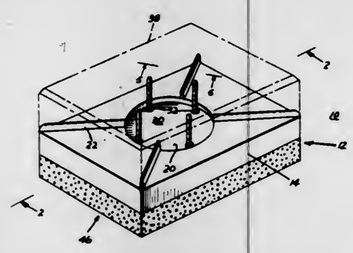
Apparatus for superimposing an image of a display on a distant scene, which scene is viewed by an observer through a window having a component of curvature in one plane, comprising a partial reflector disposed in the path of light from the scene to the observer and operative to reflect light from the display to the observer, and an optical element disposed between the window and the partial reflector, or between the display and the partial reflector which is effective to compensate for parallax distortion introduced by the window.

3,498,726

DEVICE FOR ATTACHING A SOAP CAKE OR THE LIKE TO AN APPLIANCE

Edward H. Schwartz, R.R. 4, Bluffton, Ind. 46714

Filed June 10, 1968, Ser. No. 735,819
Int. Cl. C11d 13/00
U.S. Cl. 401—19 5 Claims



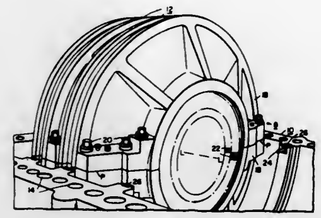
A device for attaching a cake of soap or other material to an appliance which includes a body having spaced top and bottom surfaces. A circular recess is formed in the top surface of the body and a cylindrical projection is formed on the bottom surface with a second circular recess formed in the projection coaxial with the first recess and extending into the body, the second recess being separated from the first recess by a partition. A plurality of apertures are formed in the partition communicating between the two recesses and a plurality of elongated prongs respectively extend through the apertures for movement transversely with respect to the top and bottom surfaces of the body. The prongs have distal ends which project upwardly and may project beyond the upper surface of the body. These ends are adapted to be pressed into a cake of material such as soap. The prongs have proximal ends in the second recess which are connected by a bridge member. A plurality of upwardly extending ribs are formed on the upper surface of the body respectively extending inwardly from the outer periphery thereof to the first aperture, these ribs being adapted to be pressed into the cake. An appliance, for example, a sponge, a brush, or the like is provided and secured to the bottom surface of the body portion and having a central aperture which snugly receives the body projection.

3,498,727

BLADE RING SUPPORT

James A. Martin, Jr., Newtown Square, Herbert A. Hickey, Ridley Park, and George R. Bollinger, Jr., Swarthmore, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennnsylvania

Filed Jan. 24, 1968, Ser. No. 700,252
Int. Cl. F01d 1/00, 9/00
U.S. Cl. 415—136 13 Claims



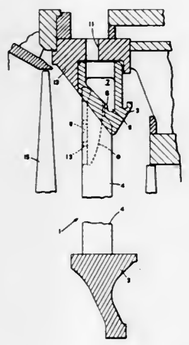
Blade rings of a turbine are adjustably supported in the turbine outer cylinder or casing on dowel pins which rest on liners in the casing in a manner to provide for differential thermal expansion between the blade rings and the casing. The head of each dowel pin has four flat surfaces each machined to a different dimension from the dowel center line to provide adjustable elevation alignment of the blade ring relative to the outer cylinder by rotation of the dowel to the desired head position.

3,498,728

STEAM TURBINES

Michael Roger Wood, Whetstone, England, assignor to The English Electric Company, Limited, London, England, a British company

Filed July 29, 1968, Ser. No. 748,474
Claims priority, application Great Britain, Dec. 8, 1967, 56,040/67
Int. Cl. F01d 1/02, 5/28
U.S. Cl. 415—168 7 Claims



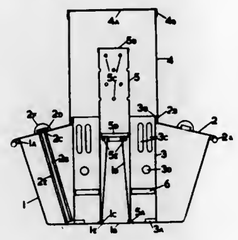
To reduce erosion damage in steam turbines the fixed guide blade ring of at least one stage of one of the turbine cylinders includes a hollow outer annulus, each guide blade of the ring is provided with a slot in its trailing edge or concave surface, which slot communicates with a shaped passage opening into said hollow annulus, said hollow annulus communicating with a region which is at a lower pressure than the pressure of the steam passing over said guide blades, and the arrangement being such that steam flows through said slots in said guide blades into said hollow annulus.

3,498,729

AUTOMATICALLY IGNITED OIL BURNING HEATING DEVICES

Douglas A. Cross, Wolverhampton, England, and Garnet W. Bird, Rhosnelgr, Wales, assignors to Iris May Cross and Stanley Charles Brandon Cross, Wolverhampton, England

Filed Jan. 23, 1968, Ser. No. 699,934
Int. Cl. F23q 7/22
U.S. Cl. 431—18 9 Claims



An oil burner which is automatically ignited when the ambient temperature falls to a pre-determined value and which comprises a container for oil and an ignition device carried by a lid which normally closes the top of the container but which is ejected when the ignition device operates. The ignition device includes a thermostat which operates to close an electric circuit through an inflammable cartridge which is itself acting to keep engaged a lock holding the lid on the container, so that when the temperature drops to a certain value the thermostat operates to cause the cartridge to ignite and thus collapse, resulting in the ignited cartridge dropping into the oil container and the lock being released to allow the lid to drop off.

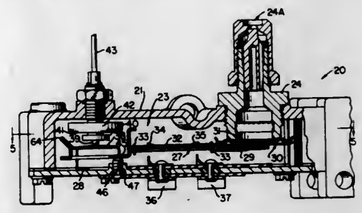
3,498,730

HEAT MOTOR SAFETY VALVE CONSTRUCTION AND PARTS THEREFOR

Denis G. Wolfe, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Dec. 7, 1967, Ser. No. 688,922
Int. Cl. F23q 9/12
U.S. Cl. 431—42 13 Claims

This disclosure relates to a heat motor operated valve means which is only adapted to open the valve means when the heat motor is actuated and a condition responsive means is sensing a certain flame at a pilot burner means that will ignite fuel passing through the subsequently opened valve means to a main burner means, the valve member of the valve means being carried on one end of a bi-metallic lever means that carries the heat motor thereon and against which the condition responsive means is engageable when sensing the certain flame.

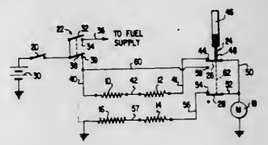


3,498,731

ELECTRICAL IGNITION AND CONTROL SYSTEM FOR FUEL BURNER

Jesse B. Mellett, Zionsville, and Tilford W. Sutterfield, Indianapolis, Ind., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed July 1, 1968, Ser. No. 741,430
Int. Cl. F23n 5/00
U.S. Cl. 431—63 6 Claims



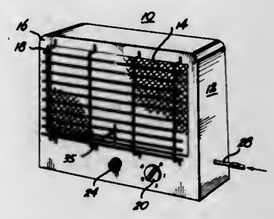
A temperature responsive switching circuit for a fuel burner which employs an assembly of resistances having positive temperature coefficients resistance for insuring a constant low voltage aross the blower motor and the resistance igniter during burner start-up regardless of voltage fluctuation.

3,498,732

HEATER

Robert I. Schantz, 1633 SW. 164th St., Burien, Wash. 98166

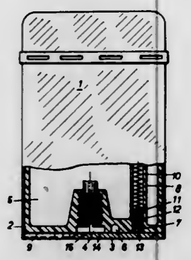
Filed Dec. 18, 1967, Ser. No. 691,456
Int. Cl. F23n 5/00
U.S. Cl. 431—80 6 Claims



A catalytic gaseous space heater has a closed-loop, perforated gas distribution conduit extending between two outlets of a control valve. During initiation of burning, the conduit is oppositely supplied with gas. A pilot flame near one end of the conduit heats a thermo-couple valve control. Upon excitation of the valve control and the re-

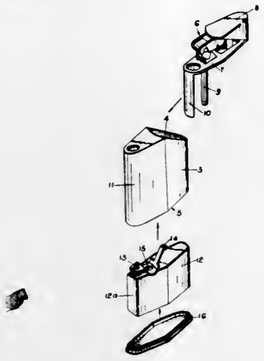
lief of manual pressure, the gas supply to one end of the conduit terminates, the pilot flame is extinguished, and the heater operates on gas from a single outlet.

3,498,733
LIGHTER AND LIGHTER HOUSING
Frank G. Dobbs and Stephan H. Dobbs, both of 568 Broadway, New York, N.Y. 10012
Filed June 21, 1968, Ser. No. 738,896
Int. Cl. F23q *2/38*
U.S. Cl. 431—124 **6 Claims**



The bottom of a lighter housing is formed with at least one opening. A slider is captively mounted and guided on the housing bottom for movement between first and second end positions. The slider is arranged to at least partly cover the opening in the first position and to expose at least a portion of the opening in moving from the first position to the second position.

3,498,734
CIGARETTE LIGHTERS
William Retzler, Woodend, Wickham, England, assignor to Sapphire Molectric Limited, London, England, a British company
Filed June 24, 1968, Ser. No. 739,459
Claims priority, application Great Britain, July 14, 1967, 32,609/67
Int. Cl. F23q *2/00*
U.S. Cl. 431—142 **3 Claims**



A cigarette lighter which is assembled by inserting an integral action assembly into an outer casing through an aperture in one direction, and subsequently inserting a fuel reservoir through a second aperture at right angles to the first direction, the presence of the fuel reservoir locking the action assembly in position.

CHEMICAL

3,498,735
DYEING OF POLYPROPYLENE WITH DYES OF THE BENZENEAZO PYRAZOLONE SERIES
Dieter Leuchs and Reinhold Krallmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,474
Claims priority, application Germany, Oct. 28, 1964, B 79,106
Int. Cl. D06p *1/10, 3/00*
U.S. Cl. 8—42 **9 Claims**

Dyeing and printing of polypropylene textile materials such as textiles and yarns thereof wherein the polypropylene contains a chelating metal and is dyed or printed with a dye of the benzeneazo pyrazolone series.

3,498,736
INHIBITING CELLULOSE FIBER YELLOWING IN ALKALINE PROCESSING AT ELEVATED TEMPERATURES THROUGH UTILIZATION OF BORON SALTS
Harlan B. Freyermuth, Easton, Pa., and Raymond L. Mayhew, Summit, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 12,509, Mar. 3, 1960. This application Mar. 20, 1961, Ser. No. 96,704
Int. Cl. D06p *3/60*
U.S. Cl. 8—54.2 **13 Claims**

1. In a method for improving cellulose fibrous material without destroying its fiber structure comprising:
(1) treating such material with an aqueous treating medium,
(a) rendered alkaline with a member of the group consisting of alkali metal hydroxides, carbonates, bicarbonates, and phosphates, and containing
(b) a fiber-treating agent selected from the group consisting of creaseproofing agents and dyestuffs reactive with the fiber under dry alkaline conditions at temperatures of at least about 250° F., and then
(2) drying, and
(3) heating the treated fibrous material at said temperatures, the improvement comprising including in said treating medium about 0.03 to 5.0% by weight of a boron-containing compound selected from the group consisting of alkali metal and ammonium borates and borohydrides.

3,498,737
PROCESS OF PRODUCING SCULPTURED LACE FROM FLAT LACE
Helen M. Robinson, New Orleans, and Albert S. Cooper, Jr., and Wilson A. Reeves, Metairie, and Milton J. Hoffman, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Apr. 23, 1965, Ser. No. 450,557
Int. Cl. D06q *1/00*
U.S. Cl. 8—114.5 **2 Claims**

Flat lace, containing cellulose fibers (e.g., cotton) or cellulose-synthetic fiber blends (e.g., nylon), is differentially-shrunk by contact with a swelling agent (e.g., sodium hydroxide) and subsequently treated with a crosslinking agent (e.g., dimethylol carbamate) to effect crosslinking of the cellulose molecules, thereby to produce a dimensionally-stable, easy-care, differential-shrunk, tough, durable lace having a sculptured design.

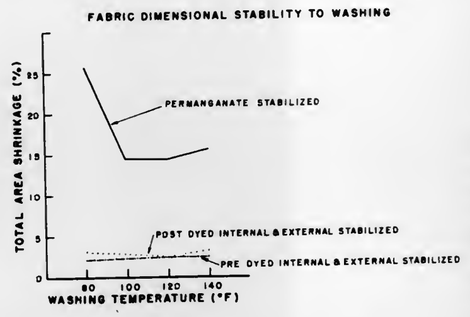
3,498,738
REDUCING AGENT TREATMENT OF CROSS-LINKED CELLULOSIC TEXTILES HAVING A KETONE GROUP IN THE CROSS-LINK
Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,510
Int. Cl. D06m *1/02*
U.S. Cl. 8—116 **10 Claims**

Treatment of cellulosic materials containing carbonyl radicals with a reducing agent to improve the resistance of said material to hydrolysis in either an alkaline or acid medium.

3,498,739
PREPARATION OF CROSSLINKED COTTON TEXTILES
Alton L. Murphy and Clark M. Welch, New Orleans, and Matthew F. Margavio and Albert S. Cooper, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,452
Int. Cl. D06p *1/02*
U.S. Cl. 8—125 **10 Claims**

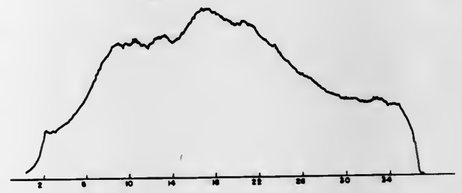
The invention provides a method of preparing crosslinked and wash-wear resin-finished cotton fabrics having a tearing and breaking strength essentially the same as that of untreated native cotton fabrics, and an extensibility higher than that of crosslinked and wash-wear resin-finished native cotton fabrics. These improvements are accomplished by pretreating the yarn prior to weaving the fabric and subsequent wash-wear finishing of said fabric. The yarn pretreatment comprises shrinking the yarn by soaking it without tension in 10–30% by weight aqueous sodium hydroxide at temperatures about from —3 to 30° C., followed by stretching the alkali-wet yarn to about 90–105% of the original length, and removing the alkali in the stretched state and drying without tension. When grey yarn is used in carrying out the pretreatment, the fabric woven from the pretreated yarn can be scoured or kierboiled in the conventional manner prior to resin finishing, without loss of effect subsequent to resin finishing.

3,498,740
IMPARTING PERMANENT DIMENSIONAL STABILITY AND FINISH STABILITY TO FABRICS CONTAINING KERATINOUS FIBERS
James Palmer Cain, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 534,241
Int. Cl. D06m *13/14, 15/52, 3/14*
U.S. Cl. 8—127.6 **10 Claims**



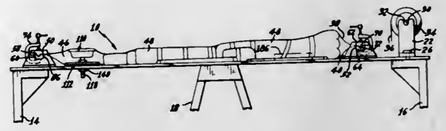
Textile fabrics containing keratinous fibers having laundry durable dimensional and finish stability are prepared by the process comprising treating the fabric with a polymer to externally stabilize the fabric, and treating the fabric with a reducing agent followed by leveling and decating.

3,498,741
SECONDARY CELLULOSE ACETATE WITH HIGH SAFE IRONING TEMPERATURE AND PROCESS THEREFOR
Jesse L. Riley, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,198
Int. Cl. D06m *5/14*
U.S. Cl. 8—131 **19 Claims**



A fabric of secondary cellulose acetate in which the secondary cellulose acetate has an acetyl value of from about 53 to 57.5 percent calculated as combined acetic acid, the filamentary material being crystalline by X-ray diffraction and a process for treating secondary acetate filamentary material comprising subjecting it to a swelling treatment of gradually increasing intensity beginning with a swelling treatment which does not cause coalescence of filaments and then subjecting the filamentary material to a strong swelling treatment which is sufficient to cause coalescence of adjacent filaments of the untreated material, but which does not cause coalescence of filaments of the treated material, the swelling treatments prior to the strong swelling treatment increasing the resistance of the filamentary material to the softening effect of the strong swelling treatment.

3,498,742
GAS STERILIZATION APPARATUS
Edwin T. Long, % Watson Clinic, Lakeland, Fla.
Filed May 16, 1967, Ser. No. 638,847
Int. Cl. A61l *3/00, 5/00, 7/00*
U.S. Cl. 21—91 **16 Claims**



An improved portable apparatus for use in a sterilization process which can be carried out at room or ambient temperatures and at or near atmospheric pressures, and which employs an ethylene oxide gas mixture as the sterilant. The apparatus including a completely flexible, collapsible, foldable, transparent, and easily replaceable sterilization chamber which is impervious to an ethylene oxide sterilizing gas mixture. The sterilization chamber comprises a sleeve, having sealable open ends, which is formed from a low porosity, high density plastic film obtainable from a copolymer of vinylidene chloride and vinylchloride.

3,498,743
METHOD FOR REMOVING NO_2 FROM WASTE GASES

David M. Kyllonen, Villanova, Pa., assignor to Mine Safety Appliances Company, a corporation of Pennsylvania

No Drawing. Filed May 17, 1966, Ser. No. 550,598
Int. Cl. B01d *53/12*; C01b *21/36*
U.S. Cl. 23—2 4 Claims

Nitrogen dioxide is removed from waste gases by maintaining the water vapor content of the waste gas above about 250 p.p.m. and the temperature between about ambient and 200° C. and contacting the waste gas with a bed of finely divided sodium carbonate, calcium carbonate or calcium oxide.

3,498,744
PURIFICATION OF CALCINED CRUDE TRONA BY MONOHYDRATE RECRYSTALLIZATION

William R. Frint and Richard W. Waggener, Green River, Wyo., assignors, by mesne assignments, to Intermountain Research & Development Corporation, Cheyenne, Wyo., a corporation of Wyoming

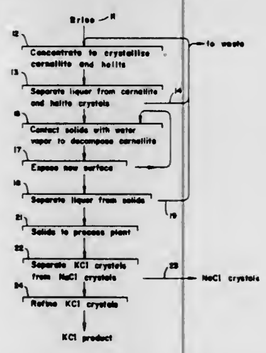
Filed Sept. 18, 1961, Ser. No. 138,792
Int. Cl. C01d *7/00, 11/00*
U.S. Cl. 23—63 18 Claims

13. The process of treating particulate crude trona containing sodium sesquicarbonate and insoluble impurities to separate on the basis of differing particle size solid particles of hydrated sodium carbonate from the insoluble impurities, which comprises calcining said crude trona to form anhydrous sodium carbonate, converting said anhydrous sodium carbonate into hydrated sodium carbonate crystals of size greater than the particle size of said insoluble impurities by introducing the calcined trona into a saturated aqueous solution of sodium carbonate, and separating said hydrated sodium carbonate in crystalline form from said saturated solution and from said insoluble impurities on the basis of their differing particle size.

3,498,745
METHOD OF DECOMPOSING CARNALLITE AND MIXTURES CONTAINING CARNALLITE

Alfred F. Nylander, Redwood City, Calif., assignor to Minera Bayovar, S.A., Palo Alto, Calif., a corporation of Delaware

Filed Apr. 19, 1965, Ser. No. 449,025
Int. Cl. C01c *3/00, 3/14*
U.S. Cl. 23—89 10 Claims

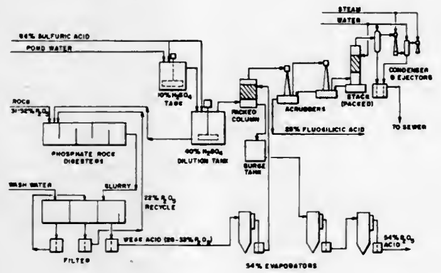


A method of decomposing carnallite gradually by contact with water vapor to produce crystals of potassium chloride of a particle size greater than 65 mesh. Carnallite crystallized from marine brines by solar evaporation is decomposed in situ to large crystals of KCl, reducing the weight of solids to be harvested.

3,498,746
RECOVERY OF FLUOSILICIC ACID AND P_2O_5 FROM RECYCLE STREAMS AND POND WATER

Roy G. Smaltz, Valrico, William A. Satterwhite, Lakeland, and Paul R. Roberts, Plant City, Fla., assignors, by mesne assignments, to United States Steel Corporation, a corporation of Delaware

Filed Nov. 29, 1967, Ser. No. 686,558
Int. Cl. C01b *33/10, 25/26*
U.S. Cl. 23—153 6 Claims

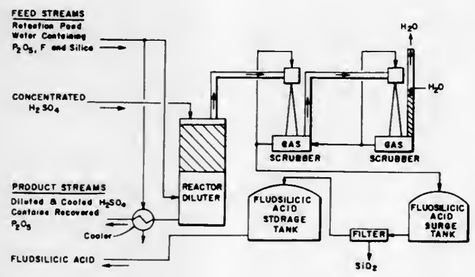


Waste water from the manufacture of wet process phosphoric acid from phosphate rock and containing P_2O_5 fluoride and silica compounds is normally passed into a pond exposed to weather conditions leading to evaporation of water and the concentration of the P_2O_5 and fluoride values, and is utilized together with a recycle stream from the process which also contains P_2O_5 and fluoride values to dilute concentrated sulfuric acid so that the dilute acid containing P_2O_5 may be used in the digestion of phosphate rock for the recovery of the P_2O_5 while under the heat of dilution fluoride and silica compound vapors are evolved and condensed by contact with water and recovered as fluosilicic acid product.

3,498,747
RECOVERY OF P_2O_5 VALUES AND FLUORINE PRODUCTS FROM POND WATER

Roy G. Smaltz, Valrico, and William A. Satterwhite, Lakeland, Fla., assignors, by mesne assignments, to United States Steel Corporation, a corporation of Delaware

Filed July 7, 1967, Ser. No. 651,807
Int. Cl. C01b *33/10, 25/26*
U.S. Cl. 23—153 4 Claims



Water, used to scrub gases and vapors evolved during the various steps in the manufacture of phosphate products, and containing P_2O_5, fluorine and silica is passed into a waste pond. A portion of the water from the waste

pond is used to dilute concentrated sulfuric acid in a reactor, and as a result of the heat generated in dilution, fluoride and silica compounds are vaporized and removed. The P_2O_5 values are recovered in the diluted sulfuric acid which is withdrawn from the reactor and subsequently used in the phosphate rock digestion step or elsewhere. The evolved gases which are now rich in fluoride and silica compounds are scrubbed with water, filtered to remove silica, and concentrated fluosilicic acid recovered as a product.

3,498,748
PREPARATION OF MAGNETIC FERRIC OXIDE

Harry S. Greiner, Bethlehem, Pa., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1967, Ser. No. 639,303
Int. Cl. C01g *49/06*; C04b *35/00*; H01f *1/00*
U.S. Cl. 23—200 8 Claims

Method for manufacturing magnetic gamma iron oxide by coating acicular crystalline particles of nonmagnetic alpha iron oxide with a hydrophobic aliphatic monocarboxylic acid of 8 to 24 carbon atoms; heating the coated particles in air at from 750 to 1200° F. whereby the alpha iron oxide is reduced and oxidized to magnetic gamma iron oxide in one continuous heating step. Gamma iron oxide so produced may be incorporated into magnetic recording members such as tape, drums or magnetic inks and possesses improved magnetic properties.

3,498,749
PRODUCTION OF METAL CARBONYLS AND CARBON BLACK

Clyde L. Aldridge, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,243
Int. Cl. C09c *1/48*; C01g *53/02*; B01j *11/22*
U.S. Cl. 23—203 10 Claims

An improved process for the recovery of metal by contact and treatment of metal contaminated carbonaceous materials with carbon monoxide to which is added a sufficient concentration of hydrogen to catalyze and facilitate the formation of volatile metal carbonyl compounds which can be conveniently separated as a gas from the carbonaceous materials to leave the latter in a state of high purity and suitable for use as carbon black.

3,498,750
PRODUCTION OF CARBON BLACK

Travis S. Whitsel, Jr., Houston, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed July 12, 1965, Ser. No. 470,974
Int. Cl. C01b *31/02, 47/00*; C09c *1/48*
U.S. Cl. 23—209.4 3 Claims

A process and apparatus for the pyrolytic conversion of a reactant material, such as the pyrolytic conversion of a gaseous or liquid hydrocarbon to carbon black, which includes burning a hydrocarbon fuel, such as a hydrocarbon gas or liquid, in the presence of a combustion-supporting gas, such as air, utilizing the flue gases from the burning of the hydrocarbon fuel to compress the combustion-supporting gas and thereby reduce the temperature of the flue gas and thereafter utilizing the flue gas to supply at least a portion of the heat required for the pyrolytic reaction by contacting the reactant material with the flue gas and produce a pyrolytically reduced product of the reaction. A portion of the compressed air may be bypassed around the combustion step to further control the temperature of the flue gas utilized in the reaction chamber and a portion of the flue gas may also be utilized to cool the reaction products and also further control the temperature of the flue gas to the reaction zone.

3,498,751
DETECTOR FOR PRESENCE OF HALOGEN ION IN FUEL

James E. Newhart, R.D. 3, Fell Road, Doylestown, Pa. 18901, and Michael F. Kozempel, 5204 Crestwood Drive, Clifton Heights, Pa. 19018

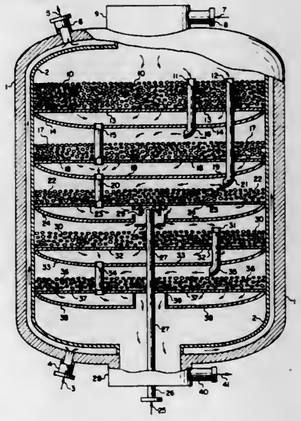
No Drawing. Filed Sept. 29, 1967, Ser. No. 671,893
Int. Cl. G01n *31/22, 33/22*; C09k *1/06*
U.S. Cl. 23—230 6 Claims

A reagent indicator suitable for field use for halogen ions in hydrocarbon oil products which includes an intermixture of Clayton Yellow and silver nitrate on a millipore absorbant pad.

3,498,752
APPARATUS FOR EXOTHERMIC CATALYTIC REACTIONS

Chi Sheng Kuo, Mount Kisco, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1966, Ser. No. 589,563
Int. Cl. B01j *9/04*
U.S. Cl. 23—289 15 Claims



Apparatus is provided for exothermic catalytic reactions, in which the fluid feed stream is divided into a plurality of portions which are passed in parallel through catalyst beds of a first group arranged in vertical series. The resultant hot reacted fluid stream is quenched by direct injection of cold bypass feed fluid, followed by division of the quenched fluid stream into a plurality of portions, each of which is passed in parallel through a catalyst bed of a second group which is arranged in vertical series below the first group, so that the entire first and second catalyst bed groups are arranged in vertical series within a high pressure retention container or shell. An apparatus for collecting reacted gas below a catalyst bed is provided, which features a plurality of radial horizontal passages or channels provided with foraminous upper and side walls, with inert particulate material being disposed in the sectors between passages.

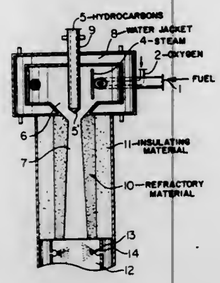
3,498,753
APPARATUS FOR THERMAL CRACKING OF HYDROCARBON

Hiroshi Hokari, Tokyo, Takeo Koide, Takaoka-shi, and Shigemitu Koyama, Yokohama, Japan, assignors to The Japanese Geon Company, Ltd., Tokyo, Japan, a corporation of Japan

Filed June 27, 1967, Ser. No. 649,183
Claims priority, application Japan, July 4, 1966, 41/42,966
Int. Cl. C10g *9/04*; C07c *11/04, 11/24*
U.S. Cl. 23—277 3 Claims

Method and apparatus for thermal cracking of a hydrocarbon which comprises a cylindrical combustion cham-

ber, burners provided inside the combustion chamber, a tubular reaction chamber provided adjacent to the combustion chamber, a quenching device for cooling a cracked gas and nozzle for feeding hydrocarbon into the combustion chamber, characterized in that a connecting portion

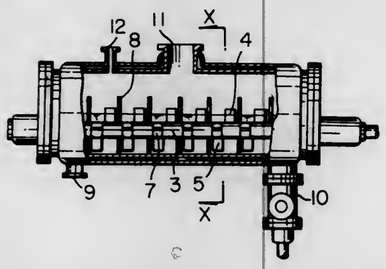


of said combustion chamber to said reaction chamber forms a reverse frustoconical space, and said hydrocarbon feed nozzle is so provided that the opening or slit at the tip thereof is located inside said reverse frustoconical space and is directed to the peripheral wall of said reverse frustoconical space.

3,498,754
CONTINUOUS POLYCONDENSATION APPARATUS

Toyotsugu Yamashita, Seiji Uno, Shozo Suzuki, Itaru Nakamura, and Nobuo Sakaiya, Matsuyama-shi, Ehime-ken, Japan, assignors to Teijin Limited, Umeda, Kita-ku, Osaka, Japan, a corporation of Japan

Filed Dec. 17, 1965, Ser. No. 514,600
Claims priority, application Japan, Dec. 24, 1964, 39/73,163
Int. Cl. C08g *17/003;* **B01d** *19/00;* **B01f** *7/00*
U.S. Cl. 23—285 **1 Claim**



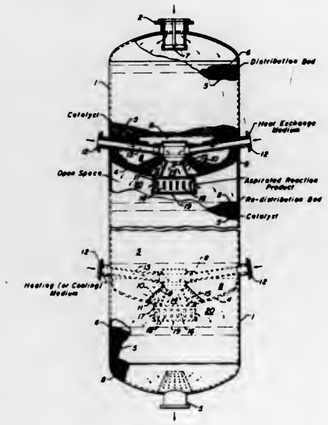
An improved apparatus for continuously preparing highly viscous polymers by continuously effecting a polycondensation reaction, such improvement residing in the following (1) providing radially on at least one shaft within the apparatus agitating vanes which are adapted to impart a forward movement to the molten reactant in the reaction compartments, (2) providing overflow openings in each of the partitions of the apparatus in a position forward of said agitating vanes for causing the overflow and passing of the molten reactant through said openings, (3) the disposition of said openings being such that their lowest level is higher than that of shafts and the highest level attained by the tips of the said agitating vanes is located between the upper level of said partitions and the lowest level of said openings, (4) a major part of each of said several rotative agitating vanes being always located below the level of the reactant.

Such improved apparatus allows for a reduction in the fluctuation of the residence time of the reactants in each of the reactant compartments and provides for an improved flow of the reactant and product through the apparatus.

3,498,755
MEANS FOR EFFECTING A MULTIPLE STAGE CONTACT OF A REACTANT STREAM

Henry C. Borre, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 26, 1966, Ser. No. 553,169
Int. Cl. F28d *15/00;* **B01f** *9/04*
U.S. Cl. 23—288 **9 Claims**

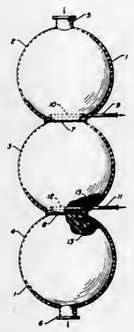


A multiple stage reactor to which a heat exchange fluid is injected between stages through a venturi nozzle discharging in an axial direction whereby there is provided temperature control by direct mixing, as well as eduction and recompression, of the main reactant stream. The design reduces pressure drop across the reactor.

3,498,756
MULTIPLE STAGE REACTOR SUITABLE FOR HIGH PRESSURES

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 26, 1966, Ser. No. 553,172
Int. Cl. B01j *3/00, 9/04*
U.S. Cl. 23—289 **1 Claim**



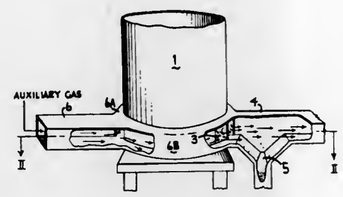
A multiple stage reactor formed by a number of spherical chambers in series alignment connected at junctures between adjacent spheres, each such juncture providing a

restricted cross-sectional area passageway between adjacent chambers. A heat control fluid is injected at each juncture whereby it is admixed with a collected reactant stream from one chamber and introduced to the next.

3,498,757
PROCESS FOR CONVEYING GASES CONTAINING SUSPENDED SOLIDS

Edward M. Allen, Doylestown, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 382,095, July 13, 1964. This application July 27, 1967, Ser. No. 656,521
Int. Cl. B65g *53/04;* **C01g** *23/04*
U.S. Cl. 23—293 **10 Claims**



Metal oxides, e.g., titanium dioxide, are prepared by vapor phase oxidation of the corresponding metal halides, e.g., titanium tetrahalide, in a reaction chamber at elevated temperatures. Gaseous suspensions of the metal oxide are withdrawn from the reaction chamber and introduced into a conduit where, optionally, cooling can be accomplished. Deposition of the metal oxide in the conduit is avoided by utilizing mass velocities of at least 30,000 lbs./hr./ft.^{2} and solids loading of from 0.1 to 0.5 pound of solid per pound of gas.

3,498,758
METHOD OF RECOVERING STRONTIUM CHLORIDE

Remigius A. Gaska, Midland, Robert A. Canute, Mount Pleasant, and Maurice W. Putman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 17, 1968, Ser. No. 737,377
Int. Cl. C01f *11/32;* **B01d** *9/02, 57/00*
U.S. Cl. 23—296 **8 Claims**

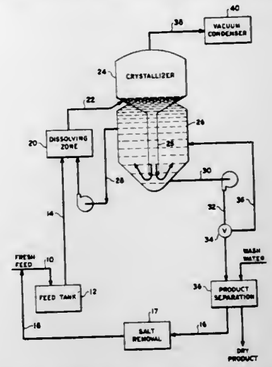
A method of separating and recovering strontium chloride from an aqueous brine solution containing calcium chloride, and optionally other alkaline earth metal and alkali metal halides, which comprises admixing an alcohol with such a brine, cooling the mixture, separating out the resulting precipitate, and purifying the precipitate to remove remaining impurities to obtain highly pure strontium chloride.

3,498,759
PRODUCTION OF ROUNDED AMMONIUM PERCHLORATE CRYSTALS

Richard J. Kralik, Youngstown, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed May 28, 1965, Ser. No. 459,571
Int. Cl. B01d *9/02;* **B01l** *9/02;* **C01b** *11/18*
U.S. Cl. 23—302 **13 Claims**

There is provided a process for producing rounded ammonium perchlorate crystals comprising alternately passing ammonium perchlorate crystals from a crystallization zone to a dissolving zone, in which crystallization zone the crystals are maintained in a supersaturated solution of ammonium perchlorate to induce crystal growth, and in which dissolving zone the crystals are maintained in a solution below saturation with respect to ammonium perchlorate, said crystals being retained in said dissolving zone for a period of time sufficient to partially dissolve



the crystals and wherein said crystal growth in the crystallization zone exceeds the dissolving of the crystals in the dissolving zone, thereby producing rounded crystals of ammonium perchlorate.

3,498,760
PROCESS FOR THE PURIFICATION OF NITROSYL HYDROGEN PYROSULFATE($NOHS_2O_7$)

Giuseppe Ribaldone, Gallarate, and Giampiero Borsotti, Bollate, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,917
Claims priority, application Italy, Feb. 28, 1966, 4,438/66
Int. Cl. C01b *21/54;* **C01c** *1/20*
U.S. Cl. 23—357 **6 Claims**

A method of purifying nitrosyl hydrogen pyrosulfate-$NOHS_2O_7$ (a compound which can be produced by directly reacting nitrosyl hydrogen sulfate, $NOHSO_4$, with a sulfonating agent such as chlorosulfonic acid, $ClSO_3H$, or another substance with available sulfur trioxide, SO_3, and which is particularly suitable for the nitrosation and oximation reactions with organic compounds) wherein the crude nitrosyl hydrogen pyrosulfate (having a melting point in the range of 112° to 117° C.) is dissolved at an elevated temperature in chlorosulfonic acid so that the weight ratio between the crude nitrosyl hydrogen pyrosulfate and the chlorosulfonic acid is between 1 and 5; the resulting solution is cooled to precipitate crystals of nitrosyl hydrogen pyrosulfate from the mother liquor and the crystals are separated from the mother liquor, and washed with liquid sulfur dioxide to obtain a nitrosyl hydrogen pyrosulfate of a high degree of purity and with a melting point substantially between 119° and 120° C.

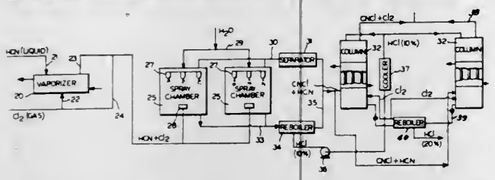
3,498,761
METHOD AND APPARATUS FOR PRODUCING CYANOGEN CHLORIDE BY SPRAY REACTION MEANS

Yelagondahally Subramaniam Suryanarayana and William Sandford Durrell, Mobile, Ala., assignors to Geigy Chemical Corporation, Ardsley, N.Y.

Filed Mar. 10, 1967, Ser. No. 622,332
Int. Cl. C01c *3/00;* **C07c** *119/00*
U.S. Cl. 23—359 **4 Claims**

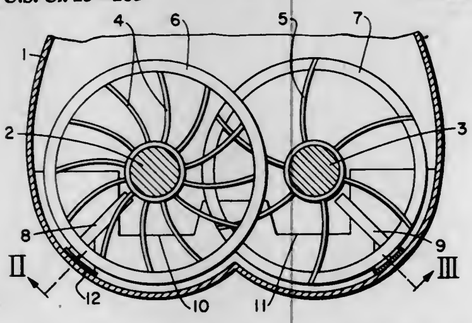
Hydrogen cyanide and chlorine are mixed to produce a gaseous mixture in a vaporizer, and the gaseous mixture is dispersed in a spray chamber and water is sprayed into the spray chamber, the amount of water being controlled so that the resulting hydrochloric acid is at a concentration of about 10%. If necessary to complete the

reaction, the cyanogen chloride, unreacted hydrogen cyanide vapor and chlorine are passed into a cooled reactor partially flooded with hydrochloric acid at a concentra-



tion of about 10–20% and chlorine stripped from the hydrochloric acid produced in the spray chamber is also fed to the reaction column.

3,498,762
APPARATUS FOR EVAPORATING FLUID COMPONENTS FROM VISCOUS LIQUIDS
Bernard L. A. van der Schee, Velp, Netherlands, and Hans Nieuwenhuijsen, Asheville, N.C., assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,310
Claims priority, application Netherlands, Jan. 26, 1966, 6600964
Int. Cl. B01d *3/10*
U.S. Cl. 23—285 **4 Claims**

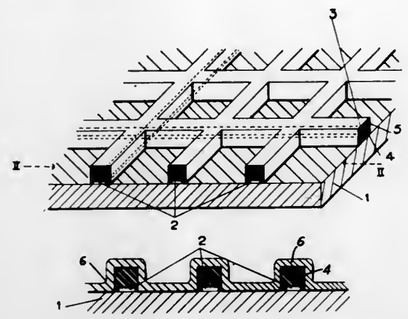


Fluid components are evaporated from viscous liquids by use of apparatus comprising a horizontal vessel under vacuum containing parallel disposed drive shafts with agitators included therein, a plurality of pins fixed to the side wall of said vessel and intermeshing with said agitators, the latter being wheel shaped and having curved spokes on each agitator, the ends of said spokes are connected by at least one rim of smaller width than that of said spokes. Improved intermixing and evaporation of fluid components is achieved.

3,498,763
WORKABLE DUPLEX STRUCTURED RUTHENIUM ALLOYS
Ronald Savage, Kenton, Harrow, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 11, 1969, Ser. No. 806,314
Claims priority, application Great Britain, Mar. 25, 1968, 14,237/68
Int. Cl. B22f *1/00, 5/00*
U.S. Cl. 29—182.1 **4 Claims**

A cold-workable ruthenium alloy capable of being cold drawn to wire containing, by weight, about 60% to about 90% ruthenium, about 5% to about 40% copper, up to about 35% palladium and up to about 10% nickel is produced by liquid-phase sintering, preferably by infiltration of copper or copper alloy into a ruthenium compact, at temperatures between 1083° C. and 1500° C.

3,498,764
FERRITE MEMORIES
Tran van Khai, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie San Fil, a corporation of France
Filed Mar. 28, 1966, Ser. No. 537,746
Int. Cl. H01f *7/06;* **G11b** *5/00*
U.S. Cl. 29—183 **5 Claims**



A ferrite memory comprises: a plane block made of ferrite; a first network of parallel wires deposited on the block; an insulating layer deposited over this network, and a second network of further parallel wires, intersecting the wires of the first network; a ferromagnetic layer covers the block and the first and second network; a further layer of dielectric material insulates this ferromagnetic layer from the conductors of the first and the second network.

3,498,765
CAPACITOR FOIL COMPOSED OF ALLOYS OF ALUMINUM AND CADMIUM OR INDIUM
Matthew Scott Hunter, New Kensington, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 6, 1966, Ser. No. 577,137
Int. Cl. C22c *2/00;* **B22f** *5/00*
U.S. Cl. 29—183 **7 Claims**

Aluminum alloy capacitor foil of improved etching factor containing 0.0002 to 0.015% of indium or cadmium.

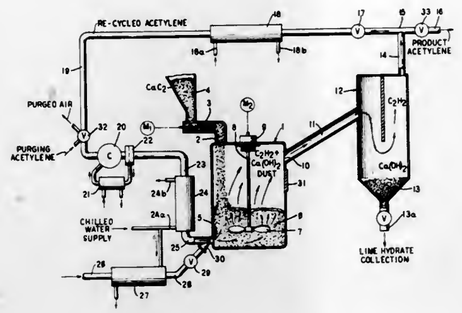
3,498,766
STABILIZED PETROLEUM DISTILLATE COMPOSITIONS
Paul Y. C. Gee, Woodbury, and Harry J. Andress, Jr., Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 18, 1968, Ser. No. 722,153
Int. Cl. C10l *1/22*
U.S. Cl. 44—68 **8 Claims**

Liquid hydrocarbon compositions are provided which contain small amounts, sufficient to impart stabilizing properties, of metal salts of reaction products of alkenyl succinic acid anhydrides with a polyamine and salicylaldehyde, as stabilizers. A method for preparing these stabilizers is also provided.

3,498,767
METHOD OF AND APPARATUS FOR GENERATING ACETYLENE
Kenneth M. Foster, Arlington, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 7, 1967, Ser. No. 658,919
Int. Cl. C10h *15/14, 19/00;* **C07c** *11/24*
U.S. Cl. 48—38 **12 Claims**

Apparatus for "dry" generation of acetylene in limited quantity comprises an enclosed reaction vessel having

an intake feed for calcium carbide at its upper part, and an intake feed for chilled water mist and cooled re-cycled acetylene at its lower part. A motor-driven rotary stirring element for actively mixing the calcium carbide, water mist and re-cycled acetylene, is centrally located at the lower part of the vessel immediately above the level at which the water mist and re-cycled acetylene are admitted under blower pressure. The stirring element promotes reaction between the calcium carbide and water mist, and also separates the lime hydrate as dust, from



the carbide. The blower pressure carries the dustladen acetylene upward in the vessel to a product outlet duct, that in turn leads to a dust collector for removing the lime hydrate. A part of the acetylene after dust separation, is re-cycled through cooling means to a compressor of the water-seal type having its output connected through additional cooling means to the lower intake. The chilled water mist flows into the lower intake together with cooled re-cycled acetylene so that the combined cooling effect limits reaction temperature within the vessel.

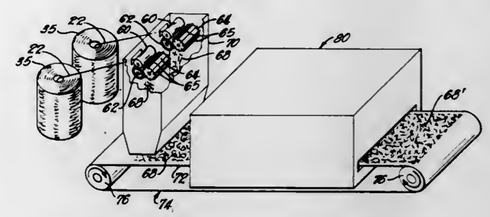
3,498,768
RUST-INHIBITIVE ABRASIVE FOR ABRASIVE BLASTING
Isidore Geld, Flushing, Leo Deutsch, Brooklyn, and Frank D'Oria, Bayside, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Oct. 18, 1967, Ser. No. 676,684
Int. Cl. B24c *11/00*
U.S. Cl. 51—295 **7 Claims**

Method for preparing a rust-inhibitive abrasive material for cleaning metal surfaces by abrasive blasting. An aliphatic acid, such as stearic acid, is mixed with the abrasive material, such as black slag particles, at room temperature. The stearic acid forms about 5% of the mixture. The mixture is heated to a temperature which melts the aliphatic acid and then cooled to room temperature, the mixture being continuously stirred while cooling. The process produces dry, granular abrasive particles which are coated with a film of fatty acid.

3,498,769
FUSED ZIRCONIA-SPINEL ABRASIVES AND ARTICLES MADE THEREWITH
Loring Coes, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed Jan. 16, 1969, Ser. No. 791,804
Int. Cl. C08h *17/12*
U.S. Cl. 51—298 **6 Claims**

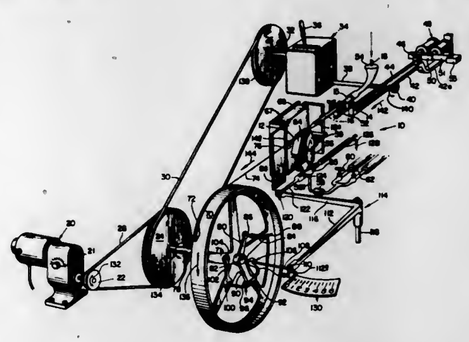
The invention is a series of novel, fused abrasive compositions which are made up essentially of spinel and zirconia, and which possess the ability to remove metal at the high rate of the most superior alumina abrasives but with the wear-resistance of the newer zirconia-alumina abrasives. Mixtures of certain proportions of alumina, magnesia and zirconia are fused to a molten mass, and then cooled, preferably by casting the molten mass into small molds. This produces an intimate frozen mixture of zirconia and spinel crystals which is then comminuted to appropriate grain (granule) sizes, for use in grinding wheels, coated abrasive products and the like.

3,498,770
METHOD FOR TREATING AND PROCESSING NON-SIZED ROVING OF MINERAL FILAMENTS
Thomas E. Philipps, Granville, Ohio, and James C. Belue, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,505
Int. Cl. C03c *25/00*
U.S. Cl. 65—3 **11 Claims**



This invention relates to a method of moisture conditioning roving of glass filaments as the filaments are formed or wound in a package, or moisture conditioning roving prior to processing as by severing the wetted roving into short lengths, and to a package of moisture-saturated roving of unsized filaments of glass.

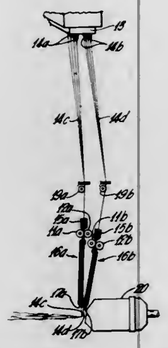
3,498,771
APPARATUS FOR DRAWING FINE FILAMENTS WITH TENSION SENSING MEANS
George R. Bird, Concord, and Maxfield Parrish, Jr., Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Original application Mar. 9, 1964, Ser. No. 350,266. Divided and this application Feb. 12, 1968, Ser. No. 722,508
Int. Cl. C03b *25/04*
U.S. Cl. 65—12 **3 Claims**



The present application discloses an apparatus for producing a light polarizer of acceptable optical properties in the form of a multiplicity of microscopic metallic filaments embedded in glass. The apparatus, in brief, comprises a drive motor with a variable speed control, means for supplying and advancing one or more glass elements

containing, or having introduced thereinto, a metal having a lower melting point then the softening point of the glass and adapted to be converted into the form of the aforesaid filaments, together with means for heating the combination of glass and metal and predeterminedly varying temperatures, a servo or follow-up mechanism for insuring uniformity of cross section of the filaments and various associated components.

3,498,772
FIBER PRODUCING APPARATUS
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,312
Int. Cl. C03b *31/06*
U.S. Cl. 65—16 **8 Claims**



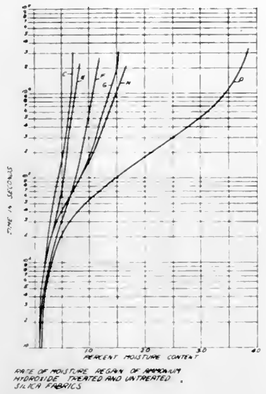
Apparatus for producing fibers of heat-softenable material which forms primary filaments from streams of the material and guides the primary filaments into a high velocity flame to further attenuate the filaments into very fine fibers. The guide apparatus is fabricated from a plurality of tubes shown herein as forming an array of channels.

3,498,773
METHOD OF STRENGTHENING GLASS BY ION EXCHANGE
Everett F. Grubb, Toledo, and Augustus W. La Due, Maumee, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Feb. 23, 1966, Ser. No. 529,215
Int. Cl. C03c *21/00*
U.S. Cl. 65—30 **14 Claims**

Processes for making bottles of container glass and improving the strength thereof by forming a bottle at a forming station, applying to the outer surface of the newly formed bottle an aqueous solution of potassium carbonate or other alkali metal salt having an alkali metal ion for exchange with a smaller alkali metal ion in the glass, transferring the coated bottle to an annealing station to provide an ion exchange of the alkali metal ions, moving the bottles through the annealing station, and cooling the bottle to provide a strengthened bottle.

3,498,774
PROCESS FOR IMPROVED HIGH SILICA FIBERS
Richard R. Saffadi, Ridgefield, N.J., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,044
Int. Cl. C03c *25/00*
U.S. Cl. 65—31 **6 Claims**

This invention pertains to a method for the formation of highly siliceous glass fibers whereby glass fibers are first leached to dissolve the acid soluble oxides, then washed, immersed in an ammonium hydroxide bath, and



finally dried by heating in a furnace at 1650° F. to 2200° F., wherein the improvement comprises the use of a liquid ammonium.

3,498,775
METHOD FOR PRODUCING A GLASS-CERAMIC ARTICLE
George A. Simmons, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 558,238, June 17, 1966. This application Oct. 4, 1967, Ser. No. 672,711
Int. Cl. C03b *31/00*
U.S. Cl. 65—33 **6 Claims**

A glass-ceramic article is made from a glass composition, the glass-ceramic breaking or dicing like thermally tempered glass instead of producing fragments with sharp and pointed edges. One method of making such a glass-ceramic article is by heat treating a thermally crystallizable glass having the following composition:

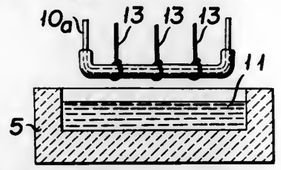
Ingredients:	Percent by weight
SiO_2	70.4
Al_2O_3	15
MgO	4
CaO	3
Li_2O	1.6
TiO_2	2
ZrO_2	1
Na_2O	3
F	0.2

to provide by bulk crystallization a glass-ceramic article, ion exchanging the surface of the article, heating the ion-exchanged glass-ceramic article to provide additional crystallization, and thermally tempering the resultant article.

3,498,776
GLASS SEALED METAL BRIDGE SUPPORT FOR ELECTRIC TUBES OR BULBS AND METHOD FOR MANUFACTURING THE SAME
Eizo Goto, Chigasaki-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 19, 1967, Ser. No. 647,045
Claims priority, application Japan, June 21, 1966, 41/39,791, 41/39,792; Oct. 8, 1966, 41/66,030
Int. Cl. C03c *29/00*
U.S. Cl. 65—59 **7 Claims**

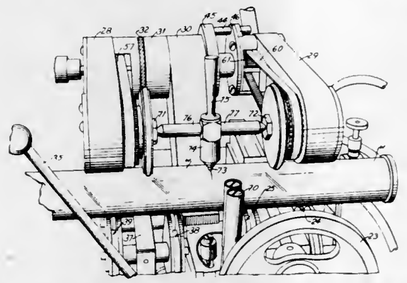
A bridge support consists of at least one supporting wire which has a bent end wrapped around a glass layer-

covered core line. The bent end is fitted into the glass layer by fusion of the glass and is electrically insulated from



the core line by means of a glass mass filled into the space between the core line and its supporting wire.

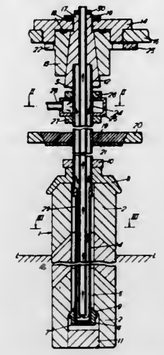
3,498,777
GLASS-WORKING LATHE
Erwin K. Kaucher, Souderton, and Richard H. Weingrad, Ambler, Pa., assignors to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1966, Ser. No. 595,451
Int. Cl. C03b *33/06*
U.S. Cl. 65—176 **6 Claims**



A glass-working lathe in which a carriage, shiftable along ways on a bedplate, is linked to a pivotally-supported arm on whose end a first drive wheel is rotatably mounted. When the arm is brought down from an elevated position, it causes the first drive wheel to engage the surface of a tubular workpiece resting within a V-shaped recess defined by a first set of idler rollers supported by a cantilever beam extending from the carriage, whereby movement of the carriage causes a corresponding shift both in the position of the first drive wheel and the first set of idler rollers. The carriage is movable along the ways with respect to a second pivotally-supported arm on whose end a second drive wheel is rotatably mounted, the two arms being operatively linked for simultaneous pivotal movement, and being provided with means to rotate the two wheels concurrently. When the second arm is brought down, it engages the surface of the workpiece resting within a V-shaped recess defined by a second set of idler rollers mounted at a fixed position above the bedplate, whereby the workpiece is clamped and is caused to rotate between the sets of idler rollers and the two drive wheels.

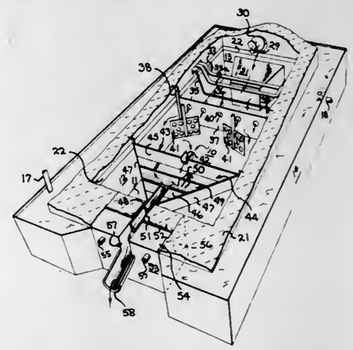
3,498,778
GLASS STIRRER WITH COOLING MEANS
William Christie Hynd, Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Jan. 4, 1967, Ser. No. 607,264
Claims priority, application Great Britain, Jan. 6, 1966, 685/66
Int. Cl. C03b *5/18*
U.S. Cl. 65—178 **3 Claims**

Stirring apparatus for stirring high temperature liquid comprises an elongated hollow refractory body and a fluid cooled axial reinforcement including a driving tube for the stirrer, and the refractory body being held axially on the axial reinforcement by end collars threaded onto the driving tube, the collar adjacent the bottom end of



the refractory body being housed within a recess in said bottom end of the refractory body.

3,498,779
APPARATUS FOR MELTING HIGHLY CORROSIVE GLASS COMPOSITIONS
Harley P. Hathaway, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 678,814
Int. Cl. C03b *5/32*
U.S. Cl. 65—327 **5 Claims**



Method and apparatus wherein glass batch mix of highly corrosive glass components, immediately on entry into a cold-wall metal tank-type furnace, contacts a water-cooled shelf and a water-cooled bridge-wall which function together to retard advance of the batch and create a pile of only partly fluxed batch, such providing both cover protection for the charging screw against the intense furnace heat and retarding flow of batch through the furnace so that complete melting and essential homogeneity of the components prior to discharge is assured. Also a platinum strip covering inner face of refractory wall at melt-line to prevent erosion by glass.

3,498,780
HERBICIDAL METHOD
Quentin F. Soper and Granville B. Kline, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Jan. 7, 1963, Ser. No. 249,580
Int. Cl. A01n *9/14*
U.S. Cl. 71—103 **12 Claims**

This invention relates to herbicidal compositions and methods employing compositions in which an arylsulfonamide is the herbicidally active ingredient.

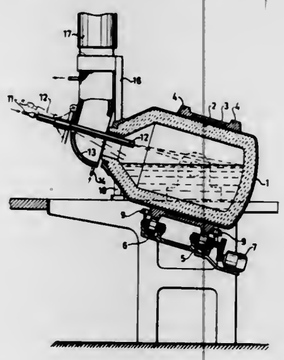
3,498,781
N-(α,α - DIMETHYL BENZYL)α,α-DIMETHYL ALKYLAMIDES AND USE AS SELECTIVE HERBICIDES
George A. Buntin, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 691,941, Dec. 20, 1967. This application July 1, 1968, Ser. No. 741,253
Int. Cl. A01n *9/20*; C07c *103/34*
U.S. Cl. 71—118 9 Claims

Herbicidal compositions containing N-(α,α-dimethylbenzyl)2,2-dimethylpropionamide, N - (α,α-dimethylbenzyl)2,2-dimethylbutyramide, and N-(α,α-dimethylbenzyl) 2,2-dimethylvaleramide, are applied to the soil for controlling weeds in various crops such as tomatoes, lima beans, sunflower, cotton and alfalfa in the form of aqueous emulsions, suspensions of wettable powders, granules or dusts.

3,498,782
COMPACTIBLE FUSED AND ATOMIZED METAL POWDER
Donald R. Spink, East Amherst, and Allen C. Goodrich, East Aurora, N.Y., assignors to Amax Specialty Metals, Inc., a corporation of Delaware
No Drawing. Filed Feb. 18, 1966, Ser. No. 528,390
Int. Cl. B22f *1/00*
U.S. Cl. 75—.5 4 Claims

Metal powders produced by fusing and atomizing metals selected from Groups 4, 5 and 6, the rare earths, and the actinium series of the periodic table and their alloys are made highly compactible by reducing their relatively high energy state in the as-produced condition to a lower energy state accompanied by the discharge of energy in the form of heat. This reduction in energy state is accomplished by controlled annealing or by a plurality of compacting and recrushing steps, or a combination thereof.

3,498,783
METHOD OF REFINING A CARBONACEOUS METAL
Folke Karl Evald Johansson, Borlänge, and Gösta Hugo Cedervall, Falun, Sweden, assignors to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a Swedish company
Filed May 4, 1967, Ser. No. 636,159
Int. Cl. C21c *7/04*
U.S. Cl. 75—60 20 Claims

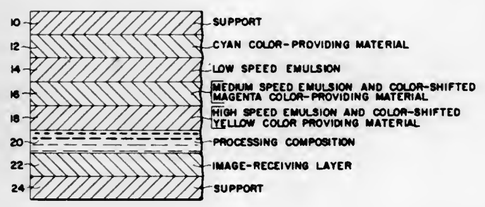


The invention refers to refining pig iron, or another carbon-containing metal by blowing an oxygen-rich gas against a bath of the metal and silicious slag in a furnace having silicious lining and means for moving the bath relative to the lining. Gas and slag content of the produced metal is depressed by passing combustion heat from the gas space above the bath to the lining and from the lining to the pig iron of high temperature and sufficient carbon content to release silicon from the lining, and slag.

3,498,784
PHOTOCONDUCTIVE POLYMERS AND PLATE
David E. Kramm, Laurel, and James F. Light, Clarksville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 29, 1966, Ser. No. 605,630
Int. Cl. G03g *5/06*
U.S. Cl. 96—1.5 10 Claims

A photoconductive plate comprising an electrically conductive sheet having a cover of a photoconductive organic polymer. The photoconductive organic polymer is prepared by making a prepolymer A by reacting a glycol with less than an equivalent amount of a difunctional organic acid. Prepolymer A is then reacted with an octa-carboxylated metal phthalocyanine to give a prepolymer B. The prepolymer B is reacted with a liquid vinyl compound in the presence of an organic peroxide to give the photoconductive organic polymer.

3,498,785
NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES
Stanley M. Bloom, Waban, and Robert K. Stephens, Burlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 655,501, July 24, 1967. This application Jan. 8, 1969, Ser. No. 789,837
Int. Cl. G03c *7/00, 5/54, 1/48*
U.S. Cl. 96—3 25 Claims



This invention relates to novel photographic systems for obtaining color transfer images of varying color depending upon the degree of exposure, e.g., for recording the dosage or amount of exposure to actinic light.

3,498,786
VESICULAR MATERIALS AND METHODS OF USE
Norman T. Notley and Irwin M. Senentz, Jr., New Orleans, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Continuation of application Ser. No. 403,633, Oct. 13, 1964. This application Aug. 12, 1968, Ser. No. 768,943
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 6 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate

resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,498,787
RAPID DYE-BLEACH PHOTOGRAPHIC PROCESS AND ELEMENT COMPRISING DYE-DEVELOPERS
Ransford B. Wilson, Carl J. Williams, Jr., and Robert D. Nicholas, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 20, 1965, Ser. No. 481,406
Int. Cl. G03c *7/02, 7/16, 7/28*
U.S. Cl. 96—53 21 Claims

Silver-dye-bleach photographic elements can be prepared which incorporate at least one photosensitive layer including silver halide and having in association with said silver halide, either in the photosensitive layer or a contiguous hydrophilic colloid layer, either a non-diffusible, bleachable dye and a developing agent free from any dye moiety or a non-diffusible dye developer. These silver halide elements, after a suitable exposure, can be processed to develop silver images by immersion in an alkaline activator solution.

3,498,788
NOVEL LAMINATIONS FOR IDENTIFICATION CARDS
Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,767
Int. Cl. G03c *1/48, 5/54*
U.S. Cl. 96—76 15 Claims

Laminar structures comprising a silver photographic image laminated to a transparent overlayer at least the surface of which comprises a transparent hydroxylated polymer through an intermediate layer consisting essentially of a methyl vinyl ether-maleic acid copolymer or a partial lower alkyl ester thereof, and identification cards and the like including such laminar structures.

3,498,789
PHOTOGRAPHIC ELEMEMNT HAVING A NOVEL FILTER LAYER THEREON
Edward A. Sutherns, Joseph Bailey, and Colin Holsted, Hertfordshire, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,442
Int. Cl. G03c *1/84*
U.S. Cl. 96—84 19 Claims

A light-sensitive, silver halide photographic element comprising a support, at least one silver halide layer and a layer containing a dye precursor which is positioned further from said support than any silver halide layer. In one aspect the dye precursors can be converted to light absorbing dyes upon treatment with a simple acid or base solution. The dye precursor layer permits exposure for print-out or direct-print materials but can be easily converted to a light absorbing layer to minimize further exposure by light of the lower wavelengths.

3,498,790
DIAZOTYPE MATERIAL
Oskar Süs, Wiesbaden-Biebrich, and Heinz Schäfer, Wiesbaden-Sonnenberg, Germany, assignors to Keuffel & Esser Company, Morristown, N.J.
No Drawing. Filed May 5, 1966, Ser. No. 547,799
Claims priority, application Germany, May 8, 1965, K 56,062
Int. Cl. G03c *1/58, 5/22, 5/34*
U.S. Cl. 96—91 14 Claims

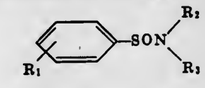
An N-hydroxyalkyl, N-aryloxyalkyl substituted p-phenylene diamine derived diazonium compound is employed in light-sensitive diazotype compositions and is particularly adapted to improve the compatibility of the diazonium compound with other ingredients in one-component diazotype sensitizing solutions and allows greater proportions of stabilizers through the elimination of diazonium compound precipitation.

3,498,791
TWO-COMPONENT DIAZOTYPE MATERIAL
Herbert Rauhut and Roland Moraw, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Morristown, N.J.
No Drawing. Filed Oct. 27, 1966, Ser. No. 589,819
Claims priority, application Germany, Oct. 27, 1965, K 57,503
Int. Cl. G03c *1/58*
U.S. Cl. 96—91 2 Claims

A black-line diazotype material of constant image gradation and improved neutral color shade is provided by a diazotype composition comprising a p-phenylenediamine diazonium compound, a coupler component which is a mixture of blue- and yellow-developing coupling compounds selected from 3-hydroxy-4-alkylphenylamines, and a pyrazoline ultraviolet absorbing compound.

3,498,792
SILVER HALIDE PHOTOGRAPHIC COMPOSITIONS CONTAINING A SULFINAMIDE AS A FOG INHIBITOR
Fumihiko Nishio, Reiichi Ohi, and Mitsunori Sugiyama, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Aug. 5, 1966, Ser. No. 570,423
Claims priority, application Japan, Aug. 7, 1965, 40/47,778
Int. Cl. G03c *1/34, 1/28*
U.S. Cl. 96—109 13 Claims

A silver halide photographic composition in which the formation of fog is substantially inhibited by the addition of a sulfinamide compound having the general formula:



3,498,793
METHOD AND APPARATUS FOR PRODUCING SIMULATED MEAT
John A. Page and Robert C. Dechaine, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,890
Int. Cl. A23j *1/14*
U.S. Cl. 99—17 9 Claims

A process and an apparatus for preparing simulated meat products from isolated vegetable protein such as soy protein. Raw spun protein which is generally white in color and tasteless in flavor is impregnated with flavoring, coloring and nutritive substances to stimulate a particular meat product. The flavored protein is then worked and heated to simulate the texture characteristics of a meat product.

3,498,794
PROCESS FOR THE PREPARATION OF HYDRATABLE PROTEIN FOOD PRODUCTS
Francis E. Calvert, St. Louis, Mo., and William T. Atkinson, Minneapolis, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn, a corporation of Delaware
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,938
Int. Cl. A23j *1/14*
U.S. Cl. 99—17 10 Claims

A hydratable protein food product is obtained by mixing a vegetable protein, having a protein concentration of

at least 70% with releasable water not to exceed a total water content of 50%, based on total composition, and 0.1 to 10%, based on total composition, of a water-soluble salt selected from the class consisting of cysteine salts, hypophosphite salts, sulfite salts and sulfide salts, the pH of the mixture being adjusted to be within the range of 5.0 to 8.0, subjecting the resulting mixture to a plastic flow at temperatures of 120 to 210° F. and a pressure of at least 1000 p.s.i., and thereafter drying the resulting product.

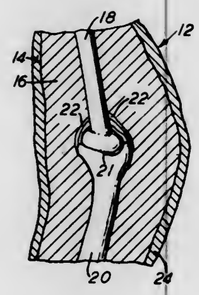
3,498,795
SUPERSEEDING OF KHT IN WINE
Edward G. Walter, 1016 El Terino, Modesto, Calif. 95350
Filed June 29, 1967, Ser. No. 650,033
Int. Cl. C12h *1/10;* **C12g** *1/00*
U.S. Cl. 99—48 **10 Claims**

Wine is stabilized by passing cooled wine through a column containing potassium hydrogen tartrate crystals whereby the potassium hydrogen tartrate dissolved in the wine is deposited on the crystals in the column.

3,498,796
METHOD OF PROCESSING GRAIN SORGHUM
Richard E. Bailey, 1728 N. Fitzhugh, Apt. 105, Dallas, Tex. 75204
Filed Sept. 8, 1966, Ser. No. 577,998
Int. Cl. A23l *1/10;* **B02b** *1/04*
U.S. Cl. 99—80 **11 Claims**

A method for processing grain sorghums to provide products suitable for either human or animal consumption including the steps of moistening the grain for a sufficient period to increase the internal moisture content as well as to add surface moisture and heating the grain to a sufficient temperature and for a sufficient time to convert the starch to a softer form without popping or charring the grain and to volatilize a substantial portion of the oils and acids along with excess moisture. The product is then capable of being milled in conventional flour mill machinery.

3,498,797
METHOD OF PURGING A SOCKET CAVITY OF A MEAT ANIMAL CARCASS
Donald V. Miller, Menononee Falls, Wis., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,430
Int. Cl. A22c; A23b *1/00*
U.S. Cl. 99—107 **8 Claims**

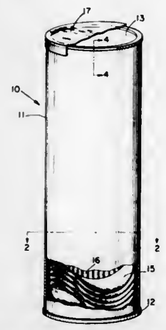


This invention relates to a method of removing undesirable fluids from large joints of meat in which the joints are incised to the socket, allowed to drain for a short period and then purged with carbon dioxide.

ERRATUM

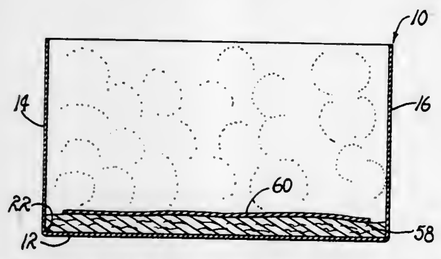
For Class 99—138 see:
Patent No. 3,498,808

3,498,798
PACKAGING OF CHIP-TYPE SNACK FOOD PRODUCTS
Fredric J. Baur, Cincinnati, and Harold Kenneth Hawley, Springfield, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 29, 1966, Ser. No. 568,878
Int. Cl. B65b *23/00*
U.S. Cl. 99—171 **6 Claims**



Chips of uniform size and shape are stacked one upon the other in closely fitting relationship to form a stacked array, and are then placed within a rigid tubular container formed from materials which are substantially impervious to the passage of oxygen and water vapor. The ends are applied to the container to seal the same.

3,498,799
REFRIGERATED POULTRY PACKAGE AND METHOD OF MAKING SAME
Robert L. Geyer, Merced, Calif., assignor to Foster Poultry Farms, a corporation of California
Filed Nov. 18, 1966, Ser. No. 595,531
Int. Cl. A23b *1/00, 1/06*
U.S. Cl. 99—194 **2 Claims**



A poultry packaging container and process for packaging poultry, particularly dressed and eviscerated poultry which is subject to weepage of fluids therefrom, characterized by the utilization of a substantially imperforate container having along the bottom thereof a layer of finely divided particles of dry refrigerant material, a weepage absorbent pad substantially covering the refrigerant and disposed thereon, a selected arrangement of dressed poultry disposed along the surface of the absorbent pad and in direct engagement therewith, and a cover member sealingly covering the package, said refrigerant being adapted to sublimate thereby exhausting atmosphere from the container, while serving to rapidly chill the poultry.

3,498,800
TARNISH PREVENTIVE AGENT
Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 11, 1967, Ser. No. 666,959
Int. Cl. C09d *5/08*
U.S. Cl. 106—14 **7 Claims**

A composition suitable for prevention of tarnish on silver, copper, and other tarnishable metals, comprises at least one compound of the formula:

$$R-\overset{\overset{O}{\|}}{C}-O-R'SH$$

wherein R is an alkyl, cycloalkyl or alkaryl group having from 12 to 25 carbon atoms and R' is an alkylene group having 1 to 5 carbon atoms.

3,498,801
PHOSPHATE OPAL GLASS
Robert Keul, Cormeilles-en-Parisis, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
No Drawing. Filed Aug. 8, 1966, Ser. No. 570,718
Claims priority, application France, Aug. 17, 1965, 28,472
Int. Cl. C03c *3/22, 3/08*
U.S. Cl. 106—39 **6 Claims**

Opal glass and method of preparing it, using as batch ingredients the approximate precentages by weight: SiO_2—66.2; B_2O_3—10; Al_2O_3—4.5; P_2O_5—5; CaO—1.5; MgO—0.8; Na_2O—12. The composition has the weight ratios M_2O/P_2O_5=2 to 3; M_2O/CaO=6 to 11

$$\frac{P_2O_5 \times SiO_2}{M_2O} = 20 \text{ to } 30$$

where M_2O is an alkali oxide principally Na_2O but capable of containing K_2O or Li_2O. The batch is melted at about 1500° C., gobs cut off and molded at 1230° to 1280° C., and the molded articles tempered at 700° to 720° C. The separation of the opalescent phase begins only when the glass is being shaped to final form and has been sufficiently cooled so that the viscosity of the matrix is so high as to prevent the growth of crystalline structure. The result is an opal glass having the appearance of perfect vitrification and greatly increased strength over prior art opal glass.

3,498,802
STEAM TREATMENT PROCESS TO PRODUCE THERMOPLASTIC MATERIALS AND HYDRAULIC CEMENTS
Hugh L. Bickford, Buffalo, and Loris G. Sawchuk and Stanley D. Stookey, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,537
Int. Cl. C04b *7/00;* **C04c** *3/30*
U.S. Cl. 106—39 **8 Claims**

This invention relates to the manufacture of thermoplastic materials and hydraulic cements from certain glass compositions. More particularly, this invention relates to the manufacture of such products through the steam treatment of glass powders in the alkali metal silicate composition field.

3,498,803
GLASS OR GLASS-CERAMIC STEAM TREATMENT METHOD AND ARTICLE
Stanley D. Stookey, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,508
Int. Cl. C03c *17/22, 3/30*
U.S. Cl. 106—39 **7 Claims**

This invention relates to glass and glass-ceramic articles which exhibit plastic or rubbery properties. More particularly, this invention relates to the manufacture of such products through the treatment with steam of glass and glass-ceramic articles in the alkali silicate composition field.

3,498,804
CERAMIC GLAZE
Clarence M. Head, Jr., Decatur, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
No Drawing. Filed Mar. 25, 1963, Ser. No. 267,829
Int. Cl. C03c *5/00, 5/02*
U.S. Cl. 106—49 **1 Claim**

1. A ceramic glaze consisting essentially of PbO in amount of about 19 percent; alkali metal oxide selected from the group consisting of K_2O, Li_2O and mixtures thereof, said alkali metal oxides being present in amount of about 5 percent; Al_2O_3 in amount of about 12 percent; B_2O_3 in amount of about 9 percent; SiO_2 in amount of about 49 percent; and ZrO_2 in amount of about 6 percent; all percentages expressed on a weight basis.

3,498,805
OPALESCENT GLASS FIBERS
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 272,062, Apr. 10, 1963. This application June 5, 1968, Ser. No. 734,647
Int. Cl. C03b *37/00;* **C03c** *3/00*
U.S. Cl. 106—50 **2 Claims**

Opalescent alkaline earth metal borosilicate glass fibers consisting of two immiscible glass phases including a glass matrix, and dispersed throughout said matrix globules varying in diameter from 1–7% of the fiber diameter.

3,498,806
GLASS COMPOSITIONS AND PROCESS
Friedrich W. Hammer, John Jasinski, and Joseph R. Monks, Jr., Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,539
Int. Cl. C03c *1/10, 3/04, 3/24*
U.S. Cl. 106—52 **15 Claims**

Highly colored glasses of generally blue or green coloration including such colors as Dark Maryland Blue, Scotch Green, Champagne Green, Cuttysark Green and the like are produced from molten colorless or amber colored flint glasses by the direct addition to the molten glass in the forehearth region of a glass melting furnace of a powdered colorant composed of about 90 percent or more by weight of powdered cobalt oxide and optionally included powdered zinc oxide, alkali and alkaline earth silicate, borate and phosphate wetting agents.

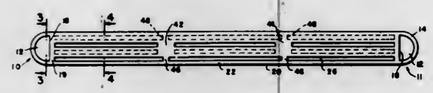
ERRATUM

For Class 106—58 see:
Patent No. 3,498,235

3,498,807
SILICATE BINDER AND PROCESS FOR MAKING THE SAME
Ralph R. Gresham, Houston, Tex., assignor of one-half to Ralph L. Lowe, Houston, Tex.
No Drawing. Filed July 16, 1965, Ser. No. 472,716
Int. Cl. C09j *1/02*
U.S. Cl. 106—74 **3 Claims**

A binder composition and process for making the same, said binder comprising the product formed by reacting boiling sodium silicate with a water solution of boric acid in an amount sufficient to provide 0.02 to 0.09 part boric acid for each part sodium silicate.

3,498,808
CONFECTION STICK
Richard L. Wagner, Georgetown, Conn., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 489,932
Int. Cl. A23g 5/00
U.S. Cl. 99—138 6 Claims



A confection stick of molded, flexible plastic is provided having longitudinally extending bars or ribs with grooves disposed therebetween. On one surface the grooves underlie the bars on the other surface. The bars are wider than the grooves and have rounded corners.

3,498,809
FINISHING MORTAR
Karl Olof Natanael Andersson, Skogsviksvagen 51, Danderyd, Sweden, and Stig Holmgren, Vasbygatan 3a, Sala, Sweden
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,836
Claims priority, application Sweden, Feb. 27, 1965, 2,599/65
Int. Cl. C04b 19/02
U.S. Cl. 106—115 14 Claims

This invention represents an improvement over the known finishing mortars (composed of a filler, a binder, and water) which involves utilizing as the binder a combination of (a) an inorganic gel which is the reaction product of an inorganic base and a metal salt and (b) a water soluble cellulose derivative.

3,498,810
CERTAIN CYCLOALKYLAMINE SUBSTITUTED BIS-TRIAZINYLAMINO STILBENE COMPOUNDS
Christopher Johannes Tacharner, Warwick, R.I., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Original application June 23, 1965, Ser. No. 466,453, now Patent No. 3,428,628, dated Feb. 18, 1969. Divided and this application June 10, 1968, Ser. No. 737,257
Int. Cl. C09k 1/02; C07d 55/24; D06j 3/12
U.S. Cl. 106—124 5 Claims

A composition containing cellulose or wool and a brightening agent comprising a bis-triazinylamine stilbene.

3,498,811
PROCESS FOR MAKING CERTAIN MATERIALS RESISTANT TO COMBUSTION GAS DETERIORATION
Alois Kleemann, Basel, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 459,936, May 28, 1965. This application Mar. 20, 1967, Ser. No. 624,172
Claims priority, application Switzerland, June 2, 1964, 7,188/64; May 3, 1965, 6,130/65
Int. Cl. C08g 41/00; C08b 21/24, 21/02
U.S. Cl. 106—176 7 Claims

Materials of cellulose esters, cellulose ethers, and polyurethane are made resistant to deterioration caused by combustion gases by treating them with certain N^2-substituted 2-amino-1,3,5-triazines. Gas fading of dyeings is greatly inhibited. The triazines may be incorporated during processing of the materials or by dipping the material in about 1% solutions of the triazines.

3,498,812
PROCESS FOR MAKING CELLULOSE TRIESTER SPINNING DOPE
Henry W. Steinmann, Sparta, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 583,415, Sept. 30, 1966. This application Dec. 18, 1968, Ser. No. 786,831
Int. Cl. C08b 3/14
U.S. Cl. 106—176 7 Claims

A process for the conversion of cellulose triester esterification dope containing excess esterification acid to a cellulose triester spinning dope by means of the addition of an amine derivative to the esterification dope, the amine derivative having the ability to precipitate the unreacted esterification acid.

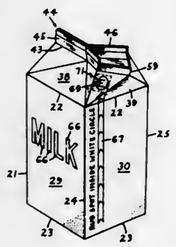
3,498,813
WAX, HYDROGENATED GLYCERIDE, CHLORINATED DIPHENYL COMPOSITION
Cyril S. Treacy, Scarsdale, N.Y., assignor to M. Argueso & Co., Inc., Mamaroneck, N.Y., a corporation of New York
No Drawing. Original application July 1, 1966, Ser. No. 562,114, now Patent No. 3,394,095, dated July 23, 1968. This application May 27, 1968, Ser. No. 732,048
Int. Cl. C08h 9/06
U.S. Cl. 106—268 2 Claims

A water insoluble composition of natural wax such as carnauba, hydrogenated glyceride, chlorinated diphenyl and the remainder of filler material.

3,498,814
DISPERSIBLE CARBON BLACK BRIQUETTES
Andries Voet, Borger, Tex., and Gene William MacDonald, Akron, Ohio, assignors to J. M. Huber Corporation, Borger, Tex., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 350,566, Mar. 9, 1964. This application Aug. 1, 1967, Ser. No. 657,522
Int. Cl. C09c 1/58; C08d 7/00; C08h 17/08
U.S. Cl. 106—307 6 Claims

A compressed, shaped carbon black body suitable for dispersion in elastomers and having a bulk density of at least 38 pounds per cubic foot and a method of forming such a body by compressing carbon black pelleted with an oleaginous material.

3,498,815
METHOD OF APPLICATION AND DETECTION OF INVISIBLE INK ON CONTAINERS
Frederick E. Bichaylo, Marlton, N.J., and Harold B. Moors, Richboro, and Emanuel F. Scariano, Holland, Pa., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Mar. 1, 1967, Ser. No. 619,636
Int. Cl. B44f 1/10; B44d 1/14
U.S. Cl. 117—1.7 3 Claims

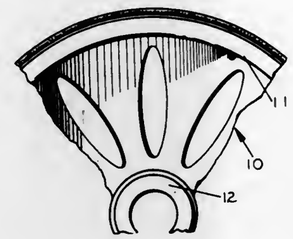


A method for printing invisible marks on a paper or plastic container or bag for merchandising products is provided which comprises a first printing operation using an alkali-sensitive colored ink to cover an area of the container surface followed by a second printing operation using an alkali-resistant transparent ink to form a desired invisible mark. Upon subsequent application of an alkaline solution capable of reacting preferentially with the alkaline-sensitive ink, the invisible mark will become visible.

3,498,816
FLOCK COATING COMPOSITION
Neil Lamar Finch and Balus Jaffar Holleman, Jr., Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 29, 1967, Ser. No. 663,960
Int. Cl. B32b 5/16
U.S. Cl. 117—17 8 Claims

A flock coating composition imparting good conductivity and separability to synthetic flock is exemplified by the composition: (a) a quaternary ammonium compound, e.g., distearyldimethylammonium chloride, (b) urea, (c) a bonding agent, and optionally, (d) a dispersing agent.

3,498,817
CONVEYOR PULLEY
Guthrie B. Stone, Honeoye, N.Y., assignor to Stone Conveyor Company, Inc., Honeoye, N.Y.
Continuation of application Ser. No. 456,142, May 17, 1965. This application Sept. 13, 1968, Ser. No. 761,892
Int. Cl. B44d 1/16
U.S. Cl. 117—26 3 Claims

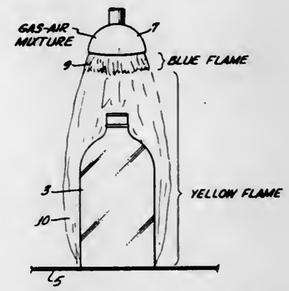


A method for forming a frictional surface on a driving pulley by bonding a sprinkling of grit into a layer of epoxy cement applied to the prepared pulley surface and then coating the gritty surface with epoxy paint.

3,498,818
METHOD OF MAKING HIGHLY REFLECTIVE ALUMINUM FILMS
Edward L. Bahm, Ballston Lake, Irvin C. Peabody, Scotia, and Willem Vedder, Latham, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 23, 1968, Ser. No. 699,839
Int. Cl. C03c 17/00
U.S. Cl. 117—35 7 Claims

Aluminum coatings which are both tenaciously-adherent and highly-reflective are produced on glass bodies by a two-stage vapor deposition process which includes as key steps the deposition of a thin first layer of aluminum or silicon monoxide on glass heated to 300° C. followed by the deposition of a much thicker second aluminum layer on the first layer while the glass is at 150° C.

3,498,819
GLASS CONTAINER COATING
Aaron K. Lyle, 21 Cumberland Road, West Hartford, Conn. 06119, and Rogello F. Madrazo, 920 E. Newmark St., Monterey Park, Calif. 91754
Filed Jan. 9, 1967, Ser. No. 607,982
Int. Cl. C03c 17/10; B05b 7/20
U.S. Cl. 117—46 10 Claims



Impingement of the yellow cone of a hydrocarbon flame having not more than a 0.4 percent molar excess of oxygen on the surface of a glass container coated with the thermal decomposition product of a tin or titanium halide or ester avoids dull fault and streaking and reduces the electric potential of the surface by a factor of at least five minimizing the tendency of the containers to corrode metal caps.

3,498,820
METHOD OF COATING
Frederick E. Hawkins, Ambler, Pa., assignor to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,305
Int. Cl. B05c 7/08; B44d 1/44
U.S. Cl. 117—54 7 Claims

A method is disclosed for applying a heat hardenable liquid coating composition to the interior surface of an asbestos-cement pipe including heating the pipe to a temperature of at least about 220° F., maintaining the temperature of the pipe in excess of about 220° F. for a relatively short period of time, for example one minute to three hundred minutes and cooling the pipe by at least about 15° F. A heat hardenable liquid coating composition is then applied to the interior surface of the pipe as it is rotated about its longitudinal axis, the rotation being continued until the coating composition forms a sag-free lining.

3,498,821
YARN SIZING
Richard C. Hanson, Hopkins, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed Apr. 4, 1967, Ser. No. 628,255
Int. Cl. D06n 15/00
U.S. Cl. 117—62.1 5 Claims

A process for sizing textile yarn comprising, in sequence, the steps of:

(A) applying to the yarn a polyester dispersion comprising:
(1) water and
(2) a nonoxidizing, water dispersible polyester comprising the reaction product of a polycarboxylic acid and a polyhydric alcohol,

and then:

(B) removing the water.

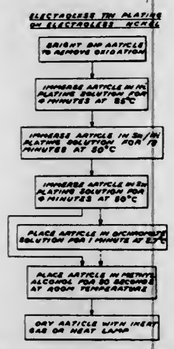
Yarns, sized in accordance with the present invention, can be woven into textile fabrics. The polyester sizing can then be removed from the fabric or can be permanently incorporated therein by the use of cross-linking agents.

Fabrics of yarns sized in accordance with the present invention exhibit a greater receptivity to dye and other textile treating agents than textiles of yarns treated with other sizes.

3,498,822
CRIMP-SEALABLE COMPOSITE SHEET
Edward Barkis, 1231 Springmill Court, Atlanta, Ga. 30319; Albert D. Collevechio, 1701 Hettering Road, Afton, Wilmington, Del. 19803; and Thomas M. Quinn, E. Strasburg Road, R.D. 3, West Chester, Pa. 19380
No Drawing. Filed June 1, 1967, Ser. No. 642,691
Int. Cl. B05c 9/04; C09j 7/00
U.S. Cl. 117—68.5 7 Claims

The present invention provides a coating for oriented films which is operable with crimp-sealing machinery. It consists of (1) from 50 to 80 parts of an acrylic interpolymer, (2) from 50 to 20 parts of an adduct of rosin and an alpha-beta unsaturated dicarboxylic acid or partial esters of such adduct with a polyhydric alcohol, the total parts by weight of (1) and (2) equalling 100, and from 6 to 8 parts by weight of a carnauba wax-stearic acid mixture wherein the weight ratio of wax to acid is from 82:18 to 89:11.

3,498,823
ELECTROLESS TIN PLATING ON ELECTROLESS NICKEL
Handel H. Jones, Sunnyvale, and Kemp Miller, Menlo Park, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed July 11, 1967, Ser. No. 652,537
Int. Cl. B32b 15/20; B44d 1/14
U.S. Cl. 117—71 8 Claims



A process for providing an adherent, humidity resistant, solderable protective coating on a copper substrate. After cleaning to remove any oxidation, the substrate is coated with a layer of electroless nickel. A transition layer is electrolessly deposited on the nickel layer by use of a mixture comprising a relatively large proportion of an electroless tin plating solution and a relatively small proportion of the electroless nickel plating solution. A layer of tin is then electrolessly deposited on the transition layer.

3,498,824
PRIMER FOR SILICONE RUBBER ADHESION
Rajendra Nath Chadha, Ann Arbor, Mich., assignor, by mesne assignments, to Stauffer-Wacker Silicone Corporation, a corporation of Delaware
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,527
Int. Cl. B44d 1/22; B27k 3/34
U.S. Cl. 117—72 11 Claims

Silanes comprising hydrocarbonoxy and acyloxy groups are applied in solution as primers for siicone rubber adhesion.

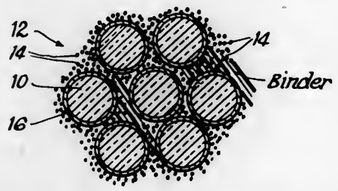
3,498,825
METHOD OF RENDERING GLASS SURFACES ABRASION-RESISTANT AND GLASS ARTICLES PRODUCED THEREBY
Bradley E. Wiens, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation-in-part of abandoned application Ser. No. 423,304, Jan. 4, 1965. This application Feb. 24, 1966, Ser. No. 529,645
Int. Cl. C03c 17/28, 17/22
U.S. Cl. 117—72 5 Claims

A method, and the article of manufacture produced thereby, for increasing the abrasion-resistant properties of a glass surface comprising depositing tin oxide on the hot glass surface by applying in the presence of water a tin compound selected from the group consisting of

SnX_4 and $R_2Sn(OOCR')_2$

wherein X is a halogen and R and R' are alkyls, while the temperature of said surface is at least as high as the pyrolyzing temperature of said tin compound, cooling said coated surface to a temperature of below 350° F., and applying onto said tin treated glass surface a member selected from the group consisting of: (1) a dimethylpolysiloxane-polyoxalkylene ether copolymer and a dimethylpolysiloxane-polyoxyalkylene copolymer; (2) a polyoxyethylene stearate; and (3) an alkylphenoxypoly-(ethyleneoxy) ethanol.

3,498,826
TREATED GLASS FIBERS AND FABRICS FORMED THEREOF
Remus F. Caroselli, Cumberland, and James J. Dillon, Providence, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,744
Int. Cl. C03c 25/02
U.S. Cl. 117—72 5 Claims



A glass fiber fabric in which the glass fibers are present in the form of bundles of glass fibers provided with a surface treatment to improve the abrasion resistance wherein the glass fibers of the bundle have a first coating of an organo silicon compound and an overcoating of polytetrafluoroethylene particles interbonded with a polyacrylate resin.

3,498,827
ABRASION RESISTANT METAL ARTICLES
Byron M. Vanderbilt, Westfield, Stuart M. Kaback, Roselle Park, and Stephen A. Yuhas, Jr., Perth Amboy, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 2, 1966, Ser. No. 524,502
Int. Cl. B44d 1/14, 1/36
U.S. Cl. 117—75 6 Claims

An article of manufacture particularly a pipe is coated with an initial layer of an oxygenated thermosetting resin and a second layer of an oxygenated thermosetting resin plus a silane and finely ground quartz particles. The article, i.e. pipe, is extremely resistant to abrasion and corrosion. Not only can the process be used to form protective coatings but the material containing the hard particles can be used to form abrasive products.

3,498,828
CURING OF AIR-INHIBITED MONOMER LAMINATES
Augustus B. Small, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 30, 1965, Ser. No. 483,839
Int. Cl. B44d 1/09; C09d 3/48
U.S. Cl. 117—126 12 Claims

An improved thermosetting composition and a process for preparing said composition which comprises adhering a layer of thermosetting polyester resin to the surface of a laminate comprising a reinforcing element and a resinifiable mix comprising a monovinyl aromatic compound, a polyolefinic compound, a rubbery polymer and a free radical initiator and curing said adhered layers while in contact with one another.

3,498,829
METHOD FOR PRODUCING A BACTERIOSTATIC FINISH ON SYNTHETIC FABRICS
Leonard Lifland, Wellesley, and Emil Moser-Vincekovic, Watertown, Mass., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts
No Drawing. Filed Oct. 19, 1967, Ser. No. 676,651
Int. Cl. D06n 3/00; B44d 1/22
U.S. Cl. 117—138.5 5 Claims

A phenolic bacteriostatic agent is dispersed in a liquid medium either as a true solution or as an ultra-fine dispersion. Fabrics comprising synthetic fibers are impregnated with the liquid, dried, and cured at at least 120° C. The curing process promotes a thermal diffusion of the bacteriostatic agent into the synthetic fabric substance, whereby a bacteriostatic finish durable to laundering is produced.

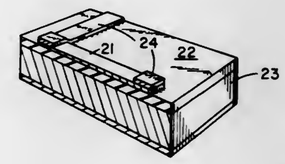
3,498,830
CELLULOSE COATED CHROMATOGRAPHIC SHEETS
Kenneth D. Slining, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 1, 1967, Ser. No. 619,569
Int. Cl. C08d 13/24; C08j 1/40; B01d 15/08
U.S. Cl. 117—138.8 2 Claims

Level-off D.P. cellulose is subjected to grinding in a fluid energy mill, and the resulting cellulose powder is coated onto a support sheet to form a chromatographic sheet. The ground cellulose can be washed with a solvent such as methanol before coating.

3,498,831
COLORING OR PRINTING CELLULOSIC FIBROUS MATERIAL WITH NONMETALLIC PIGMENTS
Reinhold Krallmann, Ludwigshafen (Rhine), Wilhelm Federkiel, Frankenthal, Pfalz, and Gerhard Faulhaber, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Jan. 10, 1966, Ser. No. 519,433
Claims priority, application Germany, Jan. 14, 1965, 1,469,617; July 1, 1965, 1,469,636
Int. Cl. C08j 1/36; C08d 13/16
U.S. Cl. 117—143 7 Claims

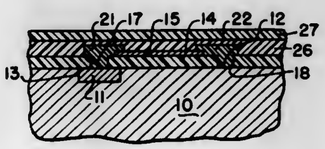
Cellulosic fibrous material is dyed or printed with nonmetallic pigments by applying to said material an aqueous solution of (a) a quaternary homopolymer or copolymer of vinylimidazole and, simultaneously or afterwards, an aqueous dispersion of (b) a nonmetallic pigment which contains (c) as a dispersing agent ethylene oxide adducts or their sulfuric acid hemiesters, and optionally may contain (d) a high molecular weight film-forming polymer free from anionic groups in a nonionic or cationic dispersion, in the absence of strongly anion-active substances, the weight ratio of (a):(b) being from 0.1:1 to 50:1, and the weight ratio of (c):(b) being from 0.1:1 to 2:1, and the substances (d) being employed in amounts up to 40 grams per liter of coloring liquor or up to 40 grams per kilogram where a printing paste is used.

3,498,832
MATERIAL AND METHOD FOR PRODUCING CERMET RESISTORS
Richard W. Wilson, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 16, 1967, Ser. No. 623,623
Int. Cl. H01c 13/00
U.S. Cl. 117—201 3 Claims



A thin film "cermet" resistor prepared by vacuum flash evaporation of a mixture of chromium silicide, tantalum silicide and aluminum oxide to deposit a resistance film on a dielectric substrate. Such films have a sheet resistance ranging from 1000 ohms per square up to 10,000 ohms per square, depending primarily upon the ratio of aluminum oixde to the other two ingredients. The temperature coefficient of resistance for a 5000 ohms per square film, for example, is −100 parts per million per degree centigrade. The resistor is particularly suited for use in integrated circuits and is shown to be compatible with diffused active circuit components of silicon wafer devices.

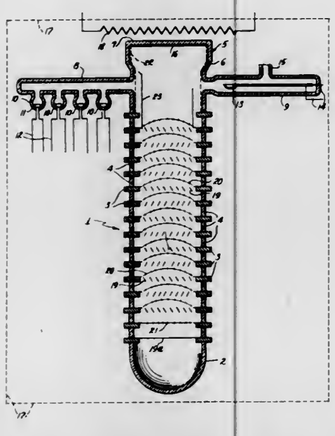
3,498,833
DOUBLE MASKING TECHNIQUE FOR INTEGRATED CIRCUIT
William I. Lehrer, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,740
Int. Cl. B44d 1/18, 1/52
U.S. Cl. 117—212 8 Claims



A deposited pattern is sharply defined on a surface by use of a two-step lifting process. To do this, a first layer of liftable material is deposited on the surface in the shape of the desired pattern. Then a second layer of lifting material is deposited over the exposed surface and the first layer of liftable material. The first layer of liftable material is removed, leaving the second layer of lifting material to sharply define the desired pattern on the exposed surface. Metal, or other permanent material, is then deposited on both the exposed surface and the second layer of lifting material. Removal of this second layer of lifting material leaves on the surface the sharply defined metal pattern. Precise control of the surface temperature as a function of the thickness of the deposited

material controls the depth of the alloy formed between the deposited material and the surface.

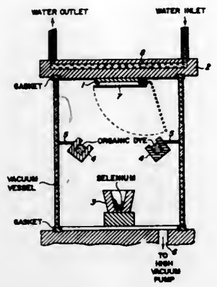
3,498,834
PHOTOELECTRIC SURFACES AND METHODS FOR THEIR PRODUCTION
Martin Rome, Princeton, Robert E. Friebertshauser, Princeton Junction, and Joseph S. Di Benedetto, Jr., Trenton, N.J., assignors, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 613,877
Int. Cl. B44d *1/18;* **C23b** *5/64*
U.S. Cl. 117—217 **13 Claims**



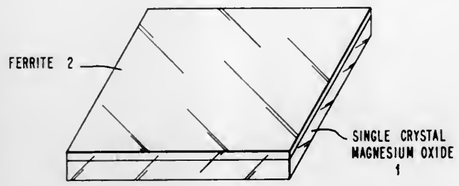
Photosensitive electron-emissive surfaces, especially photocathodes for photomultiplier tubes and the like, are provided which comprise antimony and effective quantities of the alkali metals potassium, sodium, rubidium and cesium. The photoemissive surfaces have improved overall sensitivity and, particularly, a markedly improved response to light in the green-red portion of the spectrum. Such surfaces are produced by first establishing a supported layer of antimony, or of antimony and potassium, and then introducing potassium, sodium, rubidium and cesium into the layer at temperatures promoting reaction of antimony with the alkali metals, with the rubidium being introduced after sodium, or both sodium and potassium, have been introduced and before introduction of cesium. With inclusion of rubidium as well as sodium, potassium and cesium in this manner, photo-emissive sensitivities exceeding 350 microamperes per lumen are attained, and response improvements of 25–300% over conventional trialkali (sodium-potassium-cesium) electrodes are achieved in the long wavelength region of the spectrum.

3,498,835
METHOD FOR MAKING XEROGRAPHIC PLATES
Yuen-Sheng Chiang, Peter L. DePerro, and Samuel Wei-Hsing Ing, Jr., Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 28, 1966, Ser. No. 561,239
Int. Cl. C23c *11/00, 13/02*
U.S. Cl. 117—227 **9 Claims**

This application relates to a process for producing xerographic plates wherein selenium and at least one organic dye sensitizer are co-evaporated and deposited upon an electrically conductive backing member. In one particular embodiment, the selenium and the dye sensitizer material are co-evaporated until a steady state equilibrium condition is established. The subsequent deposit upon the conductive backing member comprises a homogeneous dispersion of vitreous selenium and the organic dye sensitizer material.



3,498,836
METHOD FOR OBTAINING SINGLE CRYSTAL FERRITE FILMS
Richard J. Gambino, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 25, 1966, Ser. No. 544,788
Int. Cl. G03g *19/00;* **H01f** *1/34*
U.S. Cl. 117—237 **14 Claims**

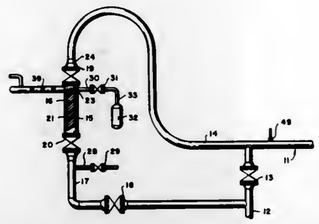


A method for epitaxially depositing a single crystal ferrite film on a single crystal substrate is disclosed. Epitaxial deposition of a ferrite having a spinel structure is accomplished by heating a solution of a polymetallic ferrite and a flux on the surface of a single crystal substrate by heating the solution to a temperature sufficient to volatilize the flux completely thereby leaving a single crystal ferrite film residue.

3,498,837
VACUUM COATING CHROMIUM-CHROMIUM OXIDE ON RECORDING MEMBER
John K. Alstad and Geoffrey Bate, Boulder, Colo., Richard C. Miller, Hyde Park, N.Y., and John R. Morrison and Dennis E. Speliotis, Boulder, Colo., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 11, 1967, Ser. No. 608,539
Int. Cl. C23c *13/02;* **C22c** *39/14*
U.S. Cl. 117—239 **4 Claims**

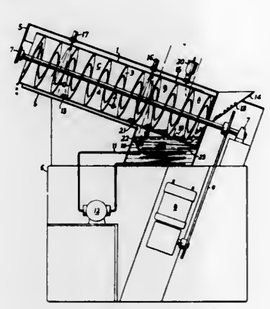
Wear resistant materials and coatings of vacuum deposited chromium-chromium oxides are prepared by heating a chromium source under "soft" vacuum conditions in an oxygen containing atmosphere of 10^{-3} to 10^{-4} mm. of Hg to produce a coating having a controlled oxide content that provides unusual wear characteristics. Chromium-chromium oxide materials and wear resistant members coated with chromium-chromium oxide are also disclosed.

3,498,838
METHOD FOR FORMING AND CIRCULATING PLUGS IN A PIPELINE
Paul R. Scott, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,819
Int. Cl. B08b *9/04*
U.S. Cl. 134—8 **5 Claims**



An improved method for forming and circulating a plug within a pipeline comprising introducing reactable materials within a pipeline adapted to form a thermoplastic resin in situ within the pipeline.

3,498,839
WASHING APPARATUS AND METHOD
Maharaj K. Mehta, Cardiff, Glamorgan, Wales, assignor to P. Leiner & Sons (Encapsulations) Limited, Treforest, Glamorganshire, Wales, a British company
Filed Jan. 31, 1967, Ser. No. 612,891
Claims priority, application Great Britain, May 12, 1966, 21,199/66
Int. Cl. B08b *3/02;* **B67c** *1/04*
U.S. Cl. 134—25 **8 Claims**



A three-stage washing apparatus comprising an inclined cylinder with an internal helix for drawing particles through a bath of liquid, through liquid introduced above the bath and collecting above the turns of the helix, and through a spray of liquid.

3,498,840
SEPARATOR FOR ALKALINE BATTERIES AND METHOD OF MAKING SAME
Howard Eugene Hoyt and Helmuth Louis Pfluger, Huntingdon Valley, Pa., assignors to Borden, Inc., a corporation of New Jersey
No Drawing. Filed Nov. 2, 1967, Ser. No. 679,980
Int. Cl. H01m *3/02;* **C08f** *15/18*
U.S. Cl. 136—6 **10 Claims**

This invention relates to the preparation of membranes suitable for use as separators in concentrated alkaline battery cells by selective solvolysis of copolymers of methacrylate esters with acrylate esters followed by addition of a base and to the resultant products.

3,498,841
PROCESS OF TREATING CELLULOSIC MEMBRANE AND ALKALINE WITH MEMBRANE SEPARATOR
Howard Eugene Hoyt and Helmuth Louis Pfluger, Huntingdon Valley, Pa., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 2, 1967, Ser. No. 680,048
Int. Cl. H01m *35/02, 3/02*
U.S. Cl. 136—6 **10 Claims**

This invention relates to the improvement of water-soluble cellulose ether membrane for use as separators in concentrated alkaline battery cells by contacting said membrane with an aqueous alkali solution of concentration less than that of the alkali solution to be used in the battery but above that at which the membrane is soluble therein.

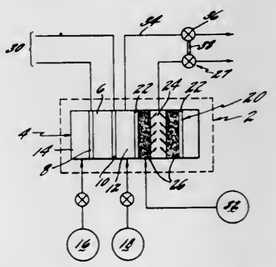
3,498,842
ELECTRODES, ELECTRODE CELLS AND METHOD
John J. Rowlette, Arcadia, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 678,038
Int. Cl. H01m *13/00; 43/04*
U.S. Cl. 136—28 **5 Claims**

Improvement in electrode efficiency and battery electrodes utilizing a gold substrate modified with nickel oxide and a method of treatment eliminating gas buildup, shortening charging period, and reducing battery weight.

3,498,843
ELECTROCHEMICAL CELLS FOR THERMAL BATTERIES HAVING TRANSITION METAL FLUORIDE CATHODE AND AN ALKALI METAL FLUORIDE ELECTROLYTE
John B. Hunt, Hyattsville, and Charles B. Root, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1968, Ser. No. 762,465
Int. Cl. H01m *11/00, 43/06*
U.S. Cl. 136—83 **8 Claims**

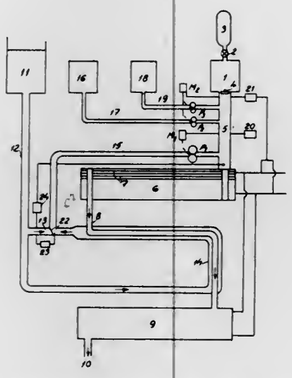
Electrochemical cells for construction of thermal batteries formed of three layers of pressed pellets, the first one of which is composed of a transition metal fluoride material, the second one of which is an alkali metal fluoride electrolyte mixture and the third one of which is an electrochemically active metal.

3,498,844
FUEL CELL WASTE HEAT AND WATER REMOVAL SYSTEM
Robert A. Sanderson, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 661,925
Int. Cl. H01m *27/12*
U.S. Cl. 136—86 **4 Claims**



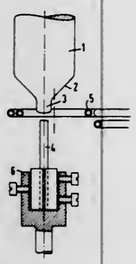
A waste heat removal system for a high power density fuel cell wherein the waste heat is removed from the fuel cell with substantially no ancillary equipment, the weight of the system thereby being minimized.

3,498,845
GALVANIC BATTERY
Esko Ensio Huhta-Koivisto, Helsinki, Finland, assignor to Ministry of Defence, Helsinki, Finland
Filed Sept. 11, 1967, Ser. No. 666,794
Claims priority, application Finland, Sept. 12, 1966, 2,374/66
Int. Cl. H01m *11/00*
U.S. Cl. 136—162 2 Claims



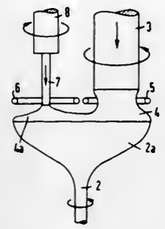
The present invention relates to galvanic batteries of the kind where various electrolyte components are mixed to form an electrolyte which is then passed just once through the cells of the battery and thereafter discarded.

3,498,846
METHOD OF GROWING A ROD-SHAPED MONOCRYSTAL OF SEMICONDUCTOR MATERIAL BY CRUCIBLE-FREE FLOATING ZONE MELTING
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 1, 1968, Ser. No. 709,629
Claims priority, application Germany, Mar. 3, 1967, S 108,625
Int. Cl. H01l *7/00*
U.S. Cl. 148—1.6 5 Claims



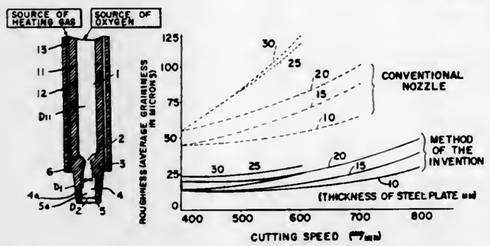
Method of growing a rod-shaped monocrystal of semiconductor material by crucible-free floating zone melting a substantially vertically held rod of the material having a nominal diameter greater than 15 mm. includes fusing a seed crystal of the material having a diameter of less than 10 mm. to an end of the rod after reducing the diameter of that end of the rod so that it is at most three times as large as the diameter of the seed crystal, forming a molten zone in the rod at the fused junction thereof with the seed crystal, and passing the molten zone through the rod.

3,498,847
METHOD AND APPARATUS FOR PRODUCING A MONOCRYSTALLINE ROD, PARTICULARLY OF SEMICONDUCTOR MATERIAL
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 18, 1968, Ser. No. 713,705
Claims priority, application Germany, Mar. 18, 1967, S 108,918
Int. Cl. H01l *7/00*
U.S. Cl. 148—1.6 12 Claims



Method of producing a rod of monocrystalline material includes melting an end of a crystalline supply rod of the material that is brought in contact with one end of a substantially vertically disposed crystalline rod-shaped starting body of the material supported at the other end thereof, rotating the starting body about the axis thereof and thickening the one end thereof with material melted from the supply rod into a platform surmounted by a melt of the material, dipping a monocrystalline seed crystal of the material into the melt and pulling therewith a rod of monocrystalline material crystallizing from the melt substantially vertically out of the melt while gradually melting the supply rod further to replenish the melt on the platform.

3,498,848
METHOD AND APPARATUS FOR HIGH-SPEED CUTTING WITH OXYGEN
Yoshimasa Kidowaki, Matsubara, Japan, assignor to Iwstani and Company Limited, Japan
Filed May 6, 1966, Ser. No. 548,252
Int. Cl. B23k *7/00*
U.S. Cl. 148—9 6 Claims



A method of high speed precision cutting with a workpiece with oxygen comprising the steps of: imparting to oxygen a flow substantially at the speed of sound in a sonic zone; of accelerating the speed of oxygen emanating from said sonic zone to a first supersonic speed in an acceleration zone; of dividing the supersonic flow of oxygen emanating from the acceleration zone into two jet segments of oxygen flow, one being an inner cylindrically shaped jet of a second supersonic flow and the other being an outer jet of subsonic flow, said outer jet cylindrically surrounding said inner jet of oxygen, and of heating said workpiece with a cylindrical envelope of a flame surrounding the two jets at the point of impact with said workpiece.

An apparatus for high speed precision cutting with oxygen comprising a pressurized source of oxygen; a nozzle having a sonic speed oxygen chamber and means to conduit oxygen from said source of oxygen to said chamber at sonic pressure; a constriction at the outlet orifice of said sonic chamber and an acceleration zone means of said oxygen past said constriction for accelerating the flow of said oxygen into a first supersonic flow; a widened double sonic zone past said acceleration zone of two flows of oxygen, said widened zone having an abruptly overall diameter greater than that of the terminal orifice of said acceleration zone; said double sonic zone forming an inner second supersonic zone of flow of oxygen and an adjacent subsonic flow zone of flow of oxygen, surrounding said second supersonic zone; a cutting orifice terminating said double sonic zone; a heating gas source and conduit and means to direct said heating gas under pressure in flame to surround the outflowing two flows of oxygen at said cutting orifice.

3,498,849
METHODS OF MANUFACTURING CLAD ALUMINIUM ALLOYS
John Worthington Munday, Slough, and Jeffrey Ernest Tomlinson, Chalfont, St. Giles, England, assignors to The British Aluminium Company Limited, London, England, a company of Great Britain
No Drawing. Application Mar. 1, 1966, Ser. No. 530,767, now Patent No. 3,342,565, dated Sept. 19, 1967, which is a continuation-in-part of application Ser. No. 244,929, Dec. 17, 1962. Divided and this application May 8, 1967, Ser. No. 636,644
Claims priority, application Great Britain, Dec. 18, 1961, 45,272/61
Int. Cl. C22f *1/04*; C21d *7/14*
U.S. Cl. 148—11.5 11 Claims

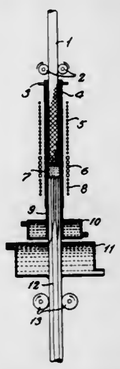
This invention is concerned with the provision of clad aluminium alloys having proof stress, tensile strength and creep resistance characteristics at elevated temperatures of the order 150° C. which make such clad alloys particularly, but not exclusively, suitable for use as aircraft skins.

The clad aluminium alloys produced according to the invention have a coarse grained core of a heat-treatable aluminium having a grain size coarser than 600/750/1000 grains per linear inch in the three mutually perpendicular directions of lengthwise of the sheet, width of the sheet and thickness of the sheet respectively. A cladding is provided for the core, the cladding being aluminium alloyed with 0.4–1.5% magnesium, 0.3–1.3% silicon, 0–1.5% zinc and a total of 0–1% of manganese or chromium or a mixture thereof. The defined coarse grain size of the core is produced by cold rolling the clad aluminium alloy material to produce a reduction thereof and then subjecting the cold rolled material to a heat treatment which is selected in relation to such reduction to produce the desired grain size.

3,498,850
QUENCHING PROCESS
Ronald W. Morton, Didcot, Berkshire, England, assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 6, 1967, Ser. No. 614,035
Int. Cl. C21d *1/58*
U.S. Cl. 148—18 9 Claims

In the quenching of a metal wherein metallurgical changes in the metal are brought about by rapidly cooling the heated metal by immersion in a liquid quenching bath, improved cooling rates and improved metal hardening characteristics are obtained by using as the quenching bath an oil having a flash point of at least 250° C. to which has been added from about 2 to about 15 weight percent, on a total composition basis, of a sulfur-containing derivative of an alkali metal salt or alkaline earth metal salt of an alkyl phenol, an alkyl thiophenol, or an alkyl phenol thioether, wherein the alkyl groups have from 5 to 30 carbon atoms. The sulfur-containing derivative can be obtained by reacting the metal salt with elemental sulfur or by reacting the metal salt with a phosphosulfurized hydrocarbon such as phosphosulfurized polyisobutylene. Additional metal over and above that accounted for by the said metal salt may be present, e.g. in the form of dispersed metal carbonate. The quench oil can also contain from 2 to 15 weight percent of metal organic sulfonate.

3,498,851
METHOD FOR PRODUCING AN ANISOTROPIC PERMANENT MAGNET MATERIAL
Toshimori Shuin and Takeo Sata, Tokyo, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 200,298, June 6, 1962. This application Dec. 17, 1964, Ser. No. 419,178
Int. Cl. H01f *1/04*; C21d *1/04*
U.S. Cl. 148—101 4 Claims



A continuous method for obtaining a permanent magnet material composed of coarse crystal grains of (100) crystal orientation in the axial direction of the bar, by zone melting a bar of magnetic material.

The tarting material having a composition by weight of Al 6–9%, Ni 10–20%, Co 15–40%, Cu 0–8%, Ti 0–10%, and the balance Fe is cast into a bar of magnetic material, which is successively zone melted starting with the lower end. The molten zone is translated at a constant speed (5–30 mm. per minute) and the portions at a predetermined distance (30–100 mm.) below the molten zone is cooled in a way that the temperature gradient along the solidifying zone will be 20–30° C. per millimeter.

The bar of magnetic material thus processed is solution treated at about 1250° C., and then is aged at about 600° C. There is produced a permanent magnet material having a magnetic characteristic of (BH) max.

$7.5\text{–}8.5\times10^6$

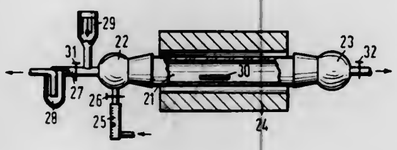
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3,498,852
ACCELERATING LITHIUM DRIFTING IN GERMANIUM
Marco A. Jamini, Mayfield Heights, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 10, 1969, Ser. No. 805,864
Int. Cl. H01l *7/48*
U.S. Cl. 148—186 3 Claims

A method of improving the lithium drift in a germanium crystal detector by exposing the detector during

drift to infra red radiation in which the spectrum below 40μ has been removed. Removal is accomplished by passing the infra red through a germanium window.

3,498,853
METHOD OF FORMING SEMICONDUCTOR JUNCTIONS, BY ETCHING, MASKING, AND DIFFUSION
Joachim Dathe, Munich, Wolfgang Müller, Vaterstetten, and Shib Ghosh-Dastidar, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 7, 1966, Ser. No. 519,237
Claims priority, application Germany, Jan. 13, 1965, S 94,987
Int. Cl. H01l 7/44
U.S. Cl. 148—187 **12 Claims**



Described is the method of producing semiconductor components whereby the removal of material from the surface of a silicon semiconductor body is sequentially followed by indiffusion of doping material. The method comprises placing the silicon semiconductor body to be treated and doping material source at segregated localities within an evacuable reaction vessel, evacuating the reaction vessel, heating said vessel at the locality of the semiconductor body to an elevated temperature sufficiently high to vaporize the impurities contained on the surface of the semiconductor body, maintaining said elevated temperature until a layer from 0.5 to 5.0μ is removed, increasing the temperature of the semiconductor body and passing an oxidizing reaction gas over the semiconductor body, thereafter passing a reducing reaction gas first over the doping material source and then over the semiconductor body to transport the doping material via a gaseous phase onto the surface of the semiconductor body, diffusing the transported doping material into the semiconductor body and abruptly interrupting the flow of the reducing reaction gas to stop the diffusion process.

3,498,854
PRECIPITATION HARDENED TANTALUM BASE ALLOY
Raymond W. Buckman, Jr., Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 520,356, Jan. 13, 1966. This application Apr. 11, 1968, Ser. No. 720,453
Int. Cl. C22c 27/00
U.S. Cl. 148—32.5 **5 Claims**

A precipitation hardened tantalum base alloy having excellent fabricability and consisting of, by weight, at least one of the metals tungsten, molybdenum, and rhenium, the amount of tungsten being at least 5%, the molybdenum not exceeding 2%, and rhenium not exceeding 3%, the total being at least 7% and not exceeding 10%, at least one of the metals zirconium and hafnium, the total zirconium equivalent being from 0.25 to about 0.75%, hafnium being substitutable for zirconium up to a total of from 0.48 to 1.5% hafnium, from about 0.04 to 0.10% nitrogen, to provide an atom ratio of zirconium equivalent to nitrogen of 0.8 to 1.2, the balance being tantalum, and incidental impurities.

3,498,855
AMMONIUM NITRATE PROPELLANT COMPOSITIONS CONTAINING THERMOPLASTIC POLYMERIC RESINS
Samuel W. Harris, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 24, 1967, Ser. No. 655,300
Int. Cl. C06d 1/00
U.S. Cl. 144—19 **5 Claims**

Novel propellant compositions comprising ammonium nitrate as a primary oxidizer and thermoplastic polymeric resins having ionic and covalent bonds, as the binder.

3,498,856
COMBUSTION CATALYST FOR SOLID AMMONIUM NITRATE PROPELLANT GRAIN
Samuel W. Harris, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 24, 1967, Ser. No. 655,328
Int. Cl. C06d 1/00
U.S. Cl. 149—19 **5 Claims**

Propellant grain containing a major amount of ammonium nitrate as the primary oxidizer, polymeric olefin as the primary binder and an effective amount of combustion catalyst comprising a hydrocarbon having a boiling point of between 150° C. and 500° C. and which is capable of forming a peroxide at a temperature in the range of the combustion of the propellant.

3,498,857
ALUMINUM-IRON OXIDE INCENDIARY COMPOSITION CONTAINING A (CYCLOPENTADIENYL) IRON COMPOUND
Urho Albert Lehikoinen, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 6, 1966, Ser. No. 600,006
Int. Cl. C06b 1/00
U.S. Cl. 149—21 **11 Claims**

Bis(cyclopentadienyl)iron and bis(alkylcyclopentadienyl)iron compounds (also known as ferrocene-type compounds) improve the ignition and burning properties of thermites and thermates. Preferred thermites are composed of powdered aluminum and an iron oxide. In addition to these ingredients, the thermates contain materials such as flake aluminum, sulfur, hydrocarbon oils, and oxidizers such as barium nitrate. The improved compositions are useful in incendiary weapons, as munitions or as starters for other pyrotechnic materials.

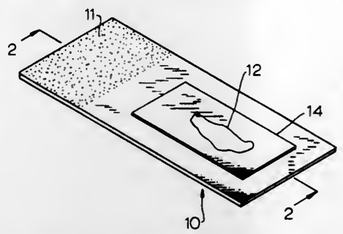
3,498,858
METHOD AND A COMPOSITION COMPRISING SILVER CARBONATE AND AMORPHOUS BORON
James E. Aker, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Oct. 13, 1967, Ser. No. 675,035
Int. Cl. C06c 9/00; C06d 5/00
U.S. Cl. 149—22 **7 Claims**

Ignition of silver carbonate-containing propellant by contacting said propellant with a mixture comprising a major amount of silver carbonate and minor amount of boron and heating said mixture.

3,498,859
HIGH ENERGY PYROPHORIC FUEL COMPOSITIONS
Martin E. Gluckstein, Detroit, and Duane C. Hargis, Southfield, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 22, 1967, Ser. No. 692,642
Int. Cl. C06d 5/00, 5/08
U.S. Cl. 149—22 **11 Claims**

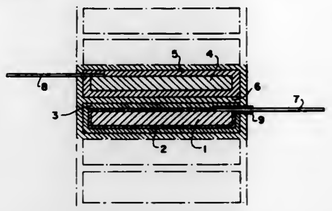
A high energy pyrophoric fuel capable of spontaneous ignition consisting essentially of from about 25 to about 95 weight percent of an organoaluminum compound and from about 5 to about 75 weight percent of a boron hydride. A method of effecting combustion comprises contacting said fuel with air or other oxidizer.

3,498,860
PROCESS OF MOUNTING PRECOATED COVER GLASS FOR MICROSCOPE SLIDES
John E. P. Pickett, 3323 Pinafore Drive, Durham, N.C. 27705
Filed Aug. 29, 1966, Ser. No. 575,574
Int. Cl. B32b 31/00
U.S. Cl. 156—57 **6 Claims**



A cover glass is precoated with an adhesive which, upon being associated with a tissue clearing fluid, is adapted to be mounted on a glass slide and to permanently cover a stained tissue specimen carried by the glass slide.

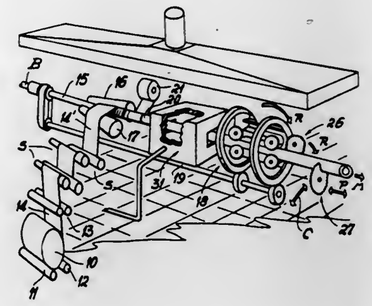
3,498,861
METHOD OF MAKING A WOUND FOIL TYPE SOLID ELECTROLYTIC CONDENSER
Takeshi Namikata, Kawasaki, and Kentaro Hirata, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Apr. 13, 1965, Ser. No. 447,919
Claims priority, application Japan, Apr. 15, 1964, 39/211,157
Int. Cl. B65h 81/00; B32b 31/04; B44d 1/18
U.S. Cl. 156—192 **5 Claims**



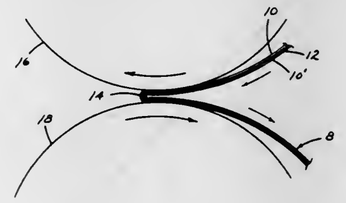
In a method of manufacture of a wound foil type solid electrolytic condenser, a semiconductor layer is applied to a cathode foil. An anode foil and the semiconductor-covered cathode foil are placed in juxtaposition. Both the anode foil and the semiconductor-covered cathode foil are wound together as a unit.

3,498,862
METHOD AND APPARATUS FOR MAKING TUBULAR FIBROUS INSULATING MATERIAL
Mauro Comastri and Valentino Wiquel, Milan, Italy, assignors to Vetreria Italiana Balzaretti Modifiani S.p.A., a corporation of Italy
Filed Sept. 1, 1966, Ser. No. 576,586
Claims priority, application Italy, Sept. 8, 1965, 19,989/65; June 22, 1966, 14,293/66
Int. Cl. B31f 1/00
U.S. Cl. 156—195 **25 Claims**

The continuous production of cylindrical tubing from a strip of mineral fibers of substantially uniform width and thickness by longitudinally stretching the strip differentially across the width thereof, helically winding the distorted strip onto a rotary mandrel to lay up the strip in successive coils with the portion of the strip adjacent to the shorter edge in contact with the mandrel and the portion of the strip adjacent to the longer edge in overlapping relation to the next preceding coil, while axially withdrawing the formed cylindrical tubing from the mandrel. The inclusion of a heat-settable thermoplastic binding agent in the mass of fibers makes possible the activation thereof in the course of the formation of the cylindrical tubing on the mandrel by blowing a heated gas through apertures in the mandrel for passage through the overlapping coils of the tubing. A protective impervious covering may be wound around the outer periphery of the helical turns of the cylindrical tubing as the same is pulled long the forming mandrel, and thereafter suitable cutting mechanisms may be provided for optionally slitting the tubing longitudinally and cutting it transversely into desired lengths.

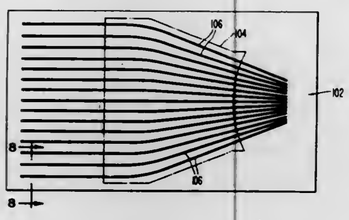


3,498,863
METHOD OF PRODUCING DECORATIVE LINES ON LAMINATED FILMS
Robert C. Koestler, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,400
Int. Cl. B31f 1/12
U.S. Cl. 156—204 **3 Claims**



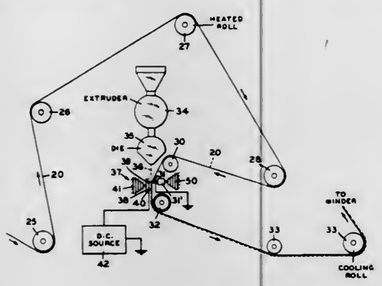
A method of producing uniformly spaced, decorative lines on laminated, non-fibrous sheets wherein the laminated sheet is folded, pressure applied to the fold and the sheet rolled perpendicularly to said fold along the line of pressure, is disclosed herein.

3,498,864
METHOD OF PRODUCING A FIBER OPTICAL ARTICLE BY MOLDING AND LAMINATING
James A. Ogle, Paoli, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Original application Mar. 12, 1964, Ser. No. 351,400, now Patent No. 3,391,969, dated July 9, 1968. Divided and this application Jan. 22, 1968, Ser. No. 725,550
Int. Cl. B29c *17/02*; B32b *31/00*
U.S. Cl. 156—242 6 Claims



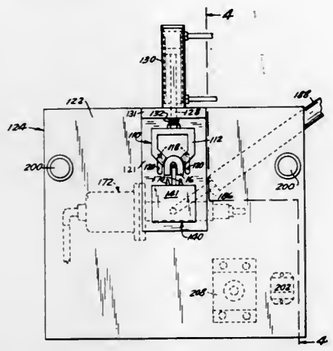
The present invention relates to a method of producing a fiber optical article by molding and laminating techniques employing planar fiber optical sheets which may be stacked together and adhesively bonded so as to provide a unitary magnifying fiber optical assembly.

3,498,865
METHOD OF COATING PAPER
Leon J. Paquin, Glens Falls, N.Y., Owen D. Mosher, Bokeelia, Fla., and Glenn M. Violette, Greenwich, N.Y., assignors to International Paper Company, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 373,993, June 4, 1964, which in turn is a continuation-in-part of application Ser. No. 183,304, Mar. 28, 1962. This application Mar. 27, 1967, Ser. No. 626,031
Int. Cl. B29c *1/00*
U.S. Cl. 156—244 13 Claims



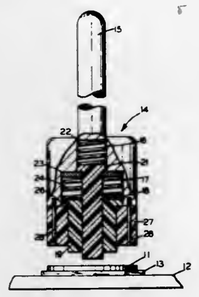
In the coating of a paper or other fiber web with polyethylene or the like, the plastic is hot extruded into a sheet, brought into contact with the web and bonded to it. One way of bonding is to use an electric charging means at the bonding zone, to charge the plastic and force it against the paper, which in turn rides on a conductive backing bar. The backing bar is shorter than the width of the paper web to avoid bonding beyond the edge of the paper. When the coated web leaves the bonded zone it passes over a directing roll which is also intended to start a gradual cooling of the coating and the web. In order to prevent the still hot plastic from sticking to the roll, said roll is coated with a tetrafluoroethylene, e.g., the product sold by Du Pont under the trademark Teflon. This roller is heated sufficiently to only cool the coated web slightly.

3,498,866
APPARATUS AND PROCESS FOR ADHESIVELY BONDING TUBULAR JOINTS
George J. Kilbane, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application July 20, 1965, Ser. No. 473,312. Divided and this application Apr. 7, 1967, Ser. No. 643,772
Int. Cl. B05b *13/06*; B05c *5/02*
U.S. Cl. 156—285 7 Claims



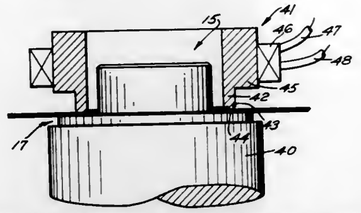
Apparatus for applying a uniform and continuous collar of a heat-curable adhesive material on the end surface of a tubing piece, the adhesive being applied by means of an adhesive applicator nozzle connected to an adhesive dispensing chamber wherein the end of the tubing piece is positioned by a tube holder assembly. Also, a method of making a tubing joint comprising applying an adhesive collar onto the end surface of a tubing piece, inserting the adhesively coated tubing piece into the bell-shaped end of a second tubing piece, applying a vacuum to the connected pieces and heat-curing the adhesive.

3,498,867
METHODS AND APPARATUS FOR SEATING ARTICLES
William W. Stewart, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 6, 1966, Ser. No. 584,844
Int. Cl. B32b *31/12*
U.S. Cl. 156—295 9 Claims



An apparatus and a method for seating an article against a fluid adhesive covered substrate. The apparatus comprises three concentric pressure plungers which apply sequential pressure to the article in a first, second and third concentric areas of the article, radially outward of the central plunger.

3,498,868
METHOD OF JOINING PLASTIC
Robert W. Saumsiegle, Needham, Mass., assignor to G. T. Schjeldahl Company, a corporation of Minnesota
Filed Feb. 24, 1966, Ser. No. 529,701
Int. Cl. C09j *5/00*
U.S. Cl. 156—322 2 Claims

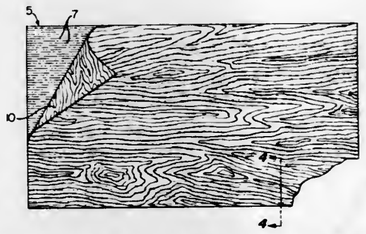


A method of heat sealing one element to thin plastic wherein the surfaces of the plastic and the element are fused together that includes the step of preheating the element and in moving the element into contact with the thin plastic film and applying pressure to the parts. Such a method finds application in joining thin wall plastic bag film to spout flanges of substantial thickness.

3,498,869
METHOD FOR BONDING PAPERBOARDS
Yasufumi Murakami, Nishinomiya-shi, and Kenzo Nakajima, Amagasaki-shi, Japan, assignors to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Aug. 15, 1966, Ser. No. 572,181
Int. Cl. C09j *3/02, 3/18*; B44d *1/44*
U.S. Cl. 156—328 14 Claims

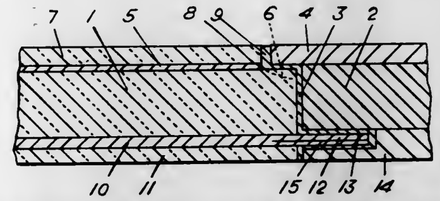
A method for binding sheets of paperboard together by coating one of the sheets with an aqueous suspension of polyvinyl alcohol at a temperature below about 45° C. so that the polyvinyl alcohol remains substantially undissolved and, after applying the second sheet to the coated sheet, baking the coating at a temperature above about 80° C. to solubilize the polyvinyl alcohol to form a secure bond between the sheets. Various modifiers may be added to the aqueous suspension.

3,498,870
PANEL
Meril B. Fritchey, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 1, 1965, Ser. No. 468,709
Int. Cl. B44f *7/00*; B32b *3/02, 31/20*
U.S. Cl. 161—19 4 Claims



A laminated panel is provided which resembles wood-veneered panel. It is composed of (1) a substrate of hardboard having a surface roughly sanded to provide parallel straight-line striations which are relatively short compared to the length of the panel and promiscuously distributed close to one another and (2) a film adhered to the sanded surface which film has wood grain printed thereon. The printed grain of the film and the striations extend in the same direction. The striations cooperate with the printed grain, each emphasizing the other, and together they bring out a grain effect in a novel manner.

3,498,871
LAMINATED TRANSPARENT ASSEMBLIES
Derek Lionel Augustus Hand, Alvechurch, England, assignor to Triplex Safety Glass Company Limited, London, England, a corporation of Great Britain
Filed May 3, 1966, Ser. No. 547,341
Claims priority, application Great Britain, May 5, 1955, 19,210/55
Int. Cl. B32b *1/04, 3/02, 17/06*
U.S. Cl. 161—44 2 Claims



An aircraft glass panel comprises a load-bearing glass pane sandwiched between a pair of glass protecting panes, each protecting pane being bonded to the adjacent surface of the load-bearing pane by a bonding layer of transparent plastics material, the outer bonding layer being not more than 0.1 inch thick and the inner bonding layer comprising an impact resistant layer.

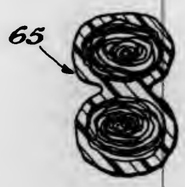
3,498,872
GLASS FIBER REINFORCED POLYAMIDE RESIN ARTICLE AND PROCESS THEREFOR
Samuel Sterman, Williamsville, and James D. Marsden, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 523,862, Feb. 1, 1966. This application Jan. 21, 1969, Ser. No. 797,338
Int. Cl. B32b *17/10, 27/34*
U.S. Cl. 161—93 16 Claims

A thermoformed polyamide resin composite and method for producing the same, the method comprising the steps of providing a fibrous glass substrate, treating the glass substrate with an organofunctional alkyltrialkoxysilane which is a member from the group consisting of an (epoxycycloalkyl) alkyltrialkoxysilane, a glycidoxyalkyltrialkoxysilane, a cyanoalkyltrialkoxysilane, a carbalkoxyalkyltrialkyloxysilane, and an aminoalkyltrialkoxy silane so as to deposit thereon said silane or the corresponding hydrolyzate thereof, intimately contacting the treated glass subtrate with the polyamide resin, and thermoforming the resulting composite at a temperature below the decomposition of the resin and the silane; the amount of silane deposited on the glass fiber being sufficient to enhance the flexural strength of the thermoformed composite.

3,498,873
NET STRUCTURES OF MULTICOMPONENT FILAMENTS
Walter J. Schrenk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 29, 1965, Ser. No. 505,674
Int. Cl. B32b *3/10*
U.S. Cl. 161—109 3 Claims

Thermoplastic net comprising bonded filaments which have at least two different thermoplastic components dis-

posed in generally spirally arranged alternating layers wherein the material of one of the layers is mono-directionally oriented and the remaining material is generally unoriented.



3,498,874
APERTURED TANGLELACED NONWOVEN TEXTILE FABRIC
Franklin James Evans, Wilmington, Del., and Charles Shambelan, Chattanooga, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 486,502, Sept. 10, 1965. This application June 18, 1969, Ser. No. 834,462
Int. Cl. B32b 5/02, 3/10; D04h 1/46
U.S. Cl. 161—109 10 Claims

Apertured nowoven fabric which closely resembles woven fabric is characterized by fibers locked into place by tanglelacing that extends in a zig-zag pattern along parallel bands interconnected laterally by fiber bundles defining rows of apertures between the bands. Preparation of the fabric from a loose layer of fibers, such as a random web, is illustrated by processing fiber layers on screens woven of heavier wires in one direction and 3 to 5 times as many finer wires per inch in the other screen direction. The fiber layer is traversed with fine, essentially columnar liquid streams from a manifold supplied with high pressure liquid to entangle the fibers.

3,498,875
BONDED NONWOVEN FABRICS
Martin K. Lindemann, Somerville, and Rocco P. Volpe, Newark, N.J., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,401
Int. Cl. D04h 1/64; B32b 5/02
U.S. Cl. 161—170 3 Claims

A latex composition comprising an aqueous medium having colloidally suspended in it an emulsion-polymerized interpolymer of vinyl acetate, ethylene and glycidyl acrylate, the interpolymer containing 5 to 40% ethylene and at least about 0.5% glycidyl acrylate, is used to make non-woven fabrics from a loosely assembled mass of fibers, the interpolymer deposited from the latex being effective as a binder for the fibers.

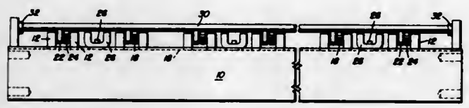
3,498,876
LOW EXPANSION COPPER-ZINC-ALUMINOSILICATE GLASS COMPOSITIONS, COMPOSITE ARTICLE AND MIRROR
Nils Tryggve E. A. Baak, Ridgefield, Conn., and Charles F. Rapp, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Dec. 29, 1966, Ser. No. 605,585
Int. Cl. B32b 17/06
U.S. Cl. 161—193 14 Claims

Copper-zinc aluminosilicate glasses and/or glass compositions are disclosed which consist essentially of from 50–94 mole percent SiO_2, 0.5–30 mole percent Al_2O_3, 1.5–35 total mole percent of Cu_2O and CuO, and 0.5–20 mole percent ZnO. Such glasses and/or glass compositions generally exhibit coefficients of thermal expansion which are not greater than 15×10^{-7} ° C. over the temperature range of 0° C.–300° C. and are especially suitable as sealing glass compositions for sealing with low thermal expansion materials such as fused quartz and fused silica as well as being extremely useful for forming shaped low expansion bodies such as astronomical mirrors and the like.

3,498,877
METHODS OF PRODUCING FIRE RESISTING WOODEN ARTICLES
Christen Christoffersen and Karl-Otto Sörensen, Nestved, Denmark, assignors to Vedex Dansk Skovindustrie A/S, Nestved, Denmark, a company of Denmark
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,355
Claims priority, application Denmark, Mar. 4, 1964, 1,069/64; Sept. 28, 1964, 4,762/64
Int. Cl. B32b 13/10, 27/42; C09j 5/02
U.S. Cl. 161—209 18 Claims

Fire resisting wooden building articles are prepared by adhering thin pieces of wood under heat and compression with an adhesive comprising synthetic resin, kaolin and diammonium phosphate, the pieces of wood having been previously impregnated with diammonium phosphate. The building articles may be in a variety of forms, such as boards or panels, the latter being based on veneers prepared from single pieces of wood or from plural pieces of wood, e.g. chips or shavings.

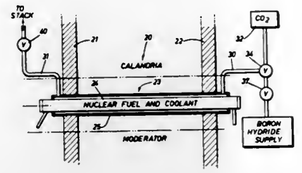
3,498,878
MAGNETIC CURL BREAKER
David Noel Obenshain, Luke, Md., assignor to Westvaco Corporation, a corporation of Delaware
Filed May 29, 1968, Ser. No. 733,001
Int. Cl. D21h 1/00
U.S. Cl. 162—271 13 Claims



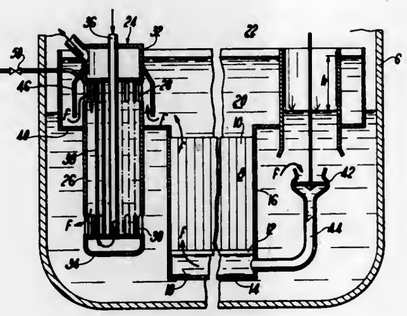
An apparatus is presented for decurling a web of paper or the like which includes a rotatable rod cradled throughout its length on anti-friction bearings and held in position by a plurality of spaced apart magnetic devices.

3,498,879
NUCLEAR REACTOR CONTROL USING NEUTRON ABSORPTION FLUID
Ardeshir Rustom Dastur, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed May 5, 1967, Ser. No. 636,472
Claims priority, application Canada, May 6, 1966, 959,698
Int. Cl. G21c 5/02; G22c 7/00
U.S. Cl. 176—52 5 Claims

A nuclear reactor having a plurality of separate fuel channels, each having coolant conduits connected thereto for the passage of coolant through the channels, and a tube surrounding each individual channel for the admission of insulant gas as a thermal isolating annulus to minimize the passage of heat from the channels to the liquid moderator surrounding them, is provided with a second gas supply connected with a plurality of the insulant anuli to provide neutron absorption gas consisting of boron hydride, helium 3, xenon 135 or krypton, to control the rate of power generation of the reactor, and purge control means connected with the insulant gas system for the ready purging of neutron absorption gas from the system.



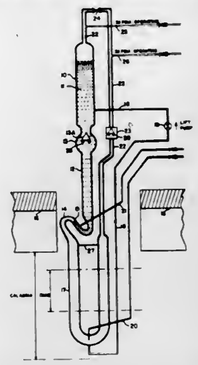
3,498,880
LIQUID COOLED NUCLEAR REACTOR WITH MEANS FOR ISOLATING HEAT EXCHANGER
Henri-Jacques Gollion, Aix-en-Provence, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 16, 1967, Ser. No. 683,544
Claims priority, application France, Dec. 23, 1966, 88,712
Int. Cl. G21c 19/28
U.S. Cl. 176—52 5 Claims



The nuclear reactor is cooled by circulating a liquid through a single vessel containing both the reactor core and a plurality of heat exchangers disposed in parallel. Each individual circuit for supplying coolant to each heat exchanger comprises a top point and a gas which is inert with respect to the coolant is injected at the said top point at a sufficient pressure to force the liquid downwards from the top point and to prevent it from flowing towards the corresponding heat exchanger when necessary.

3,498,881
APPARATUS FOR NUCLEAR REACTOR CONTROL
Ernest Siddall, Weston, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 29, 1967, Ser. No. 642,101
Claims priority, application Canada, July 8, 1966, 964,966
Int. Cl. G21c 7/22, 7/06, 9/02
U.S. Cl. 176—86 2 Claims

Almost instantaneous reactor shut down is achieved by reducing the gas pressure within a hollow duct disposed within the core of a nuclear reactor such that a neutron absorbing liquid "ink" is quickly released into the duct. Slow controlled start-up is achieved by slowly pumping the ink from the hollow duct back into a reservoir located above the duct but not within the reactor core.



3,498,882
METHOD OF MAKING A ZINC LIPASE COMPLEX
Saul Rogols, Circleville, and Robert L. High, Canal Winchester, Ohio, assignors to The Keever Company, Columbus, Ohio
No Drawing. Filed Oct 10, 1966, Ser. No. 585,245
Int. Cl. C12b 1/00
U.S. Cl. 195—7 12 Claims

A process in which a lipase enzyme preparation is starch or starch hydrolysate and the treated starch can be containing complex. The complex can be used in treating starch or starch hydrolyzate and the treated starch can be further treated with an amylase.

3,498,883
PROCESS FOR THE PRODUCTION OF L-GLUTAMIC ACID
Takashi Iguchi, 528 Aza, Kamiyama, Kurume-machi, Kitatama-gun, Shiro Hayakawa and Isao Takeda, 27–63 Nakadai 3-chome, Itabashi-ku, and Saburo Senoh, 27–70 Nakadai 3-chome, Itabashi-ku, all of Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 474,967, July 26, 1965. This application Sept. 27, 1968, Ser. No. 763,353
Claims priority, application Japan, July 29, 1964, 39/42,632; Sept. 9, 1964, 39/51,844
Int. Cl. C12b 1/02; C12d 13/06
U.S. Cl. 195—28 8 Claims

A process for producing L-glutamic acid by inoculating hydrocarbon-utilizing microbes of the species *Corynebacterium petrophilum* into a medium comprising hydrocarbon as a resin source of raw material and a compound selected from the group consisting of antibiotics and surface active agents under aerobic conditions.

3,498,884
PROCESS FOR PRODUCING PRIMYCIN
Tibor Vályi-Nagy and Gábor Kulcsar, Debrecen, Imre Szilágyi, Budapest, Gabriella Valu, Debrecen, and Károly Magyar, Géza Hegyaljai Kiss, and Istvan Horvath, Budapest, Hungary, assignors to Chinoin Gyogyszere es Vegyeszeti Termekek Gyara Rt., Budapest, Hungary
No Drawing. Filed Oct. 18, 1966, Ser. No. 587,428
Claims priority, application Hungary, Oct. 20, 1965, CI–577
Int. Cl. C12b 1/00
U.S. Cl. 195—80 5 Claims

A process for the production of primycin wherein *Thermopolyspora galeriensis* is fermented in suitable nu-

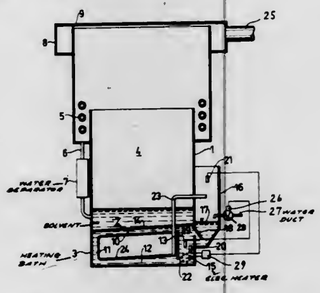
trient medium. The primycin is recovered from the fermentation broth by precipitation, extraction and removal of primycin from the extracting solvent.

3,498,885

APPARATUS FOR THE DEGREASING OF ARTICLES BY MEANS OF A CHLORINATED HYDROCARBON SOLVENT

Kurt Anders Holm and Sven Erik Leonard Nord, Skoghall, and Bengt Gunnar Berglund, Hammaro, Sweden, assignors to Uddeholms Aktiebolag, Uddeholm, Sweden, a company of Sweden

Filed Nov. 3, 1967, Ser. No. 680,585
Claims priority, application Sweden, Nov. 14, 1966, 15,568/66
Int. Cl. B08b *3/00*
U.S. Cl. 202—160 **6 Claims**



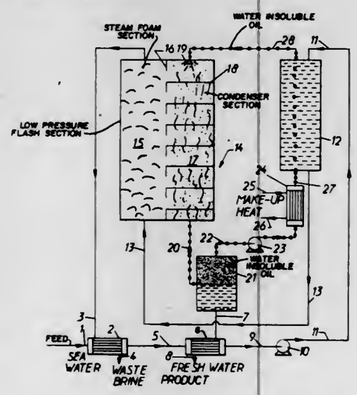
The invention is concerned with the degreasing of articles by means of a chlorinated hydrocarbon solvent. A heating chamber containing an aqueous solution having an increased boiling temperature is used for heating the solvent. The heating chamber is so designed that a superheating results in a steam layer which reduces the heat transfer from the heating chamber to the solvent.

3,498,886

FLASH DISTILLATION PARTITIONED TOWER

Peter Thomas Walker, Reading, and Ivan Henry Newson, Chilton, England, assignors to Weir Westgarth Limited, Glasgow, England, a British company

Filed Apr. 5, 1966, Ser. No. 545,197
Claims priority, application Great Britain, Apr. 5, 1965, 14,447/65
Int. Cl. B01d *3/06*
U.S. Cl. 202—167 **3 Claims**



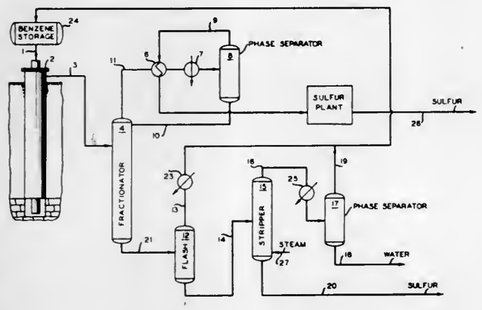
A flash distillation process comprising the steps of heating raw feed liquid, passing the same into the lower portion of a first undivided vertical section of a tower maintained at such pressure that a mixture of vapour and liquid is formed in that section of the tower, withdrawing liquid from the upper part of that section of such tower, effecting condensation of the vapour in a second vertical section of such tower alongside the first section and to which second section access by the unvapourised liquid in the first section is prevented, and removing a liquid condensate from the lower part of such second section.

3,498,887

RECOVERY OF SULFUR AND HYDROGEN SULFIDE FROM ADMIXTURE WITH SOLVENT FROM GAS WELL BY PLURAL STAGE DISTILLATION OF SOLVENT

William A. McClintock and Leo L. Politte, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 18, 1967, Ser. No. 691,493
Int. Cl. B01d *3/38, 11/00*
U.S. Cl. 203—21 **4 Claims**



A gas well producing principally hydrogen sulfide, carbon dioxide and free sulfur is produced by pumping a solvent, e.g., benzene, into the well to dissolve free sulfur and the solvent is recovered for recycle by fractionation and steam distillation, the fractionating yielding substantially benzene-free hydrogen sulfide and carbon dioxide overhead which are passed to a sulfur producing plant and bottoms which are flashed and steam distilled recovering in an embodiment benzene overhead which is reused and molten sulfur as bottoms.

3,498,888

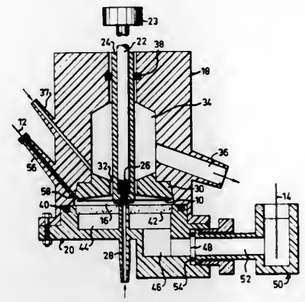
METHOD OF PERFORMING COULOMETRIC ANALYSES AND AN APPARATUS THEREFOR

Gillis Rune Johansson, Lund, Sweden, assignor, by mesne assignments, to Jungner Instrument AB, Stockholm, Sweden, a joint-stock company of Sweden

Filed Oct. 18, 1965, Ser. No. 496,937
Claims priority, application Sweden, Nov. 10, 1964, 13,520/64
Int. Cl. G01n *27/42, 27/44*
U.S. Cl. 204—1 **4 Claims**

A method and apparatus of performing controlled-potential coulometry, wherein a solution to be analyzed is continuously fed through a confined region in which it is contacted with a three-electrode system comprising a working electrode, a reference electrode and an auxiliary electrode. The working electrode is moved to effect a vigorous agitation of the solution flowing through the confined region and the potential difference between the reference electrode and the working electrode is held constant. The amount of Coulombs flowing between the auxiliary electrode and the working electrode is measured. The solution is fed through the confined region at

such a rate that substantially all reducible and oxidizable material in the solution is reacted at (i.e. precipitated on, or reduced and oxidized at) the working electrode before the solution leaves the confined region so that the measured amount of Coulombs comprises an accurate measure of the amount or concentration of reducible and oxidizable material in the solution analyzed.

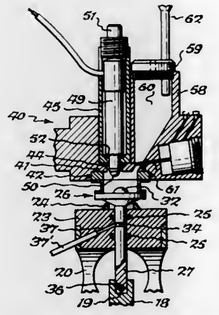


3,498,889

OXYGEN SENSING CELL AND METHOD OF USING SAME

Denis S. Imredy, Lyme, N.H., and Fred P. Schleipman, Norwich, Vt., assignors to United States Catheter & Instrument Corporation, Glens Falls, N.Y., a corporation of Delaware

Filed Apr. 19, 1966, Ser. No. 543,590
Int. Cl. B01k *3/00*
U.S. Cl. 204—1 **11 Claims**



This invention concerns an oxygen polarograph designed to accurately measure the oxygen tension of biological fluids, e.g. blood under in vitro conditions by moving the fluid past an electrode-membrane unit so as to obtain results similar to in vivo results.

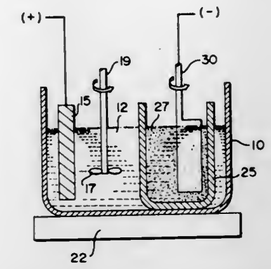
3,498,890

PREPARATION OF FIBER-METAL COMPOSITES BY ELECTRODEPOSITION

Amarnath P. Divecha, Falls Church, Va., Paul J. Lare, Bowie, Md., and Henry Hahn, Fairfax, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Mar. 27, 1967, Ser. No. 626,156
Int. Cl. C23b *7/00, 5/48*
U.S. Cl. 204—3 **11 Claims**

Preparation of fiber-metal composites by electrodepositing the desired metal matrix on a cathode support, while maintaining the fibers within the electrolytic bath such that they are entrapped in the depositing metal, resulting in consolidated structures that are non-porous and of substantially theoretical density.

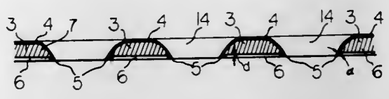


3,498,891

METHOD OF MAKING SHEARING FOILS FOR DRY SHAVERS

Bodo Futterer, Sarnen, Switzerland, assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Original application Dec. 17, 1965, Ser. No. 524,661, now Patent No. 3,409,984. Divided and this application July 31, 1968, Ser. No. 749,082
Int. Cl. C23b *7/00, 5/50*
U.S. Cl. 204—11 **10 Claims**



A method of making a shearing foil for dry shavers including the steps of galvanically depositing a layer of a relatively soft metal on the surface of a conductive matrix provided with an array of non-conductive portions, the latter defining the locations of perforations left in the soft metal layer, and depositing a substantially thinner coating of relatively hard material on the exposed surface of said layer including the walls of the perforations, the coating extending to the bottoms of said perforations.

3,498,892

ELECTRODEPOSITION OF CHROMIUM UPON A CONTINUOUS METAL STRIP

Edgar J. Seyb, Jr., Oak Park, and Richard E. Woehrle and John G. Neitzel, Livonia, Mich., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

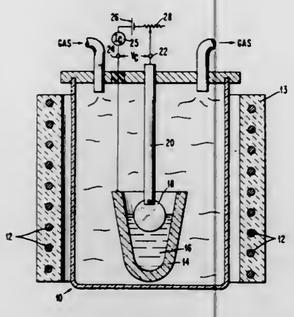
No Drawing. Filed May 4, 1966, Ser. No. 547,421
Int. Cl. C23b *5/58, 5/46, 5/06*
U.S. Cl. 204—28 **2 Claims**

In accordance with certain of its aspects, this invention relates to a process for electroplating a bright, protective chromium plate which comprises maintaining an aqueous chromium plating bath containing chromic acid and catalyst, including fluoride and sulfate; maintaining an anode in said bath; passing through said bath a continuous strip of a thin-gauge metal cathode at a high velocity of at least about 30 meters per minute; maintaining said continuous strip as cathode in said bath; passing an electric current through said anode, said bath, and said cathode thereby electroplating a bright protective chromium plate on said cathode.

3,498,893
ANODIZATION OF A NICKEL BODY WHICH HAS A COATING OF PARTIALLY ELECTRONICALLY INSULATING MATERIAL
Ian H. S. Henderson, 661 Golden Ave., Ottawa 13, Ontario, Canada; Stephan G. Ladan, 6–10849 80th Ave., Edmonton, Alberta, Canada; and Pierre L. Bourgault, 197 Cassandra Blvd., Don Mills, Ontario, Canada
No Drawing. Filed Mar. 27, 1967, Ser. No. 625,938
Int. Cl. C23b *9/00, 3/02*
U.S. Cl. 204—32 **16 Claims**

Positive plates for alkaline storage batteries are produced by subjecting nickel bodies covered with a thin film of partially insulating materils, to anodization in an alkali metal hydroxide and halide containing electrolyte.

3,498,894
PREPARATION OF COMPOUND SEMICONDUCTORS BY FUSED SALT ELECTROLYSIS
Jerome J. Cuomo, Bronx, and Richard J. Gambino, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,084
Int. Cl. B01k *1/00;* **B01j** *17/04*
U.S. Cl. 204—61 **24 Claims**



Techniques are presented for both synthesis and epitaxial crystal growth of compound semiconductors. Zinc blende structure III–V and II–VI compounds and II–V compounds are synthesized and epitaxially deposited by fused salt electrolysis. Illustratively, a fused salt solution for the synthesis of gallium phosphide (GaP) is

$$2NaPO_3+0.5NaF+0.25Ga_2O_3$$

a single crystal layer of GaP was produced epitaxially on the <111> face of a silicon single crystal using this composition. Electroluminescent diodes have been produced by selectively doping the GaP layer during deposition.

Illustratively, when the electrolytic cell was operated at a temperature of 800° C. with a cathode current density of 50 milliamperes/cm.², a 100 micron thick layer was produced in 20 hours.

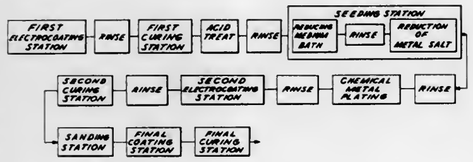
3,498,895
METHOD OF PREPARING CYCLOALKANONE-OXIME HYDROCHLORIDES
Antonina Alexandrovna Streltsova, Daev per., 31 kv. 12, Moscow, U.S.S.R.
Filed Feb. 14, 1967, Ser. No. 616,095
Int. Cl. C07c *3/24;* **B01j** *1/10*
U.S. Cl. 204—162 **2 Claims**

A method of preparing cycloalkanoneoxime hydrochlorides, in which cycloalkanes containing 4 or more carbon atoms are subjected to photochemical nitrosation with nitrosyl chloride in the presence of hydrogen chloride while irradiating with visible light of which substantially all the light energy is concentrated in the thallium spectrum line of 535 mμ, the irradiation being effected with the light produced by a mercury-thallium lamp, in which the pressure of the thallium iodide vapor is 10 to 200 mm. Hg and the pressure of the mercury vapor is 1000 to 20,000 mm. Hg.

3,498,896
PROCESS FOR THE PREPARATION OF OXETANES AND DERIVATIVES THEREOF
Donald R. Arnold, Lincolndale, N.Y., and Anthony A. Sousa, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Mar. 23, 1966, Ser. No. 536,645, now Patent No. 3,418,330, dated Dec. 24, 1968. Divided and this application Aug. 7, 1968, Ser. No. 750,769
Int. Cl. C07c *3/24;* **B01j** *1/10*
U.S. Cl. 204—162 **3 Claims**

Oxetanes, such as 2-(meta-pyridyl)-2-phenyl-3,3-dimethyloxetane, are prepared by the photocatalyzed reaction of a ketone with an olefinic compound. The reaction is carried out by bringing the ketone and the olefinic compound into admixture in a suitable reactor and irradiating the mixture with light energy.

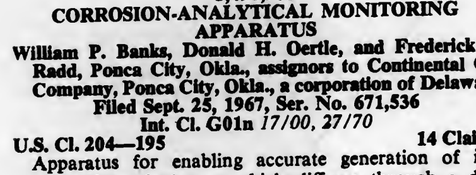
3,498,897
METHOD FOR MANUFACTURING MULTILAYERED PRODUCT
Harold N. Bogart, Detroit, George E. F. Brewer, Novi, and Gilbert L. Burnside, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,912
Int. Cl. C23b *13/00, 5/78;* **B01k** *5/02*
U.S. Cl. 204—181 **8 Claims**



The method of manufacturing a multilayered product which comprises painting an electrically-conductive substrate, polymerizing said paint upon said substrate, applying a continuous, adherent, electrically-conductive layer of metal upon the polymerized paint, and anodically depositing a continuous coating of paint upon said layer of metal without interrupting the continuity of its coverage. Also, the multilayered product of this method.

3,498,898
METHOD FOR PROVIDING CORROSION PROTECTION FOR AUTOMOBILE BODIES
Harold N. Bogart, Detroit, George E. F. Brewer, Novi, and Gilbert L. Burnside, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 25, 1967, Ser. No. 657,467
Int. Cl. B01k *5/02;* **C23b** *13/00;* **C23f** *13/00*
U.S. Cl. 204—181 **6 Claims**

A method of protecting a metallic automobile body from electrolyte or galvanic corrosion which comprises electrodepositing a first continuous coating of paint upon said body, polymerizing said first coating thereon to an average electrical resistance in excess of about 1 million ohm-cm., applying a continuous, adherent, electrically-conductive layer of metal upon the polymerized paint by chemical plating, anodically depositing a second, continuous coating of paint upon said layer of metal, providing electrical connection between said body and a direct current electrical power source, providing electrical connection between said layer of metal and said power



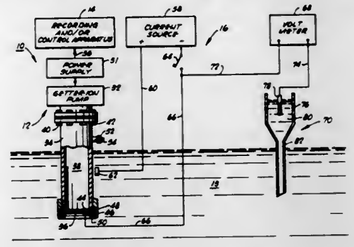
source, and maintaining a difference of electrical potential between said body and said layer of metal that is quantitatively and directionally sufficient to reduce or prevent corrosion of said body when said body is exposed to an electrolyte through a break in the continuity of coating thereon.

3,498,899
ELECTROCHEMICAL ELECTRODE ASSEMBLY
John A. R. Kater, Diamond Bar, and John E. Leonard, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 18, 1965, Ser. No. 465,128
Int. Cl. B01k *3/10*
U.S. Cl. 204—195 **2 Claims**

An electrochemical reference electrode for use in ion potential measurements of solutions. The liquid junction of the electrode is provided by a semipermeable membrane, such as cellophane or other hydrophilic membrane material whose permeability to liquid and ions is based upon diffusion. The salt bridge solution of the electrode is a strong, equitransferent salt solution so that when the electrode contacts a test solution the liquid junction is formed within the semipermeable membrane.

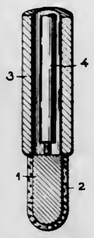
3,498,900
CORROSION-ANALYTICAL MONITORING APPARATUS
William P. Banks, Donald H. Oertle, and Frederick J. Radd, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 671,536
Int. Cl. G01n *17/00, 27/70*
U.S. Cl. 204—195 **14 Claims**

Apparatus for enabling accurate generation of ion currents from hydrogen which diffuses through a diaphragm in contact with a corrosive fluid; the apparatus consisting of a specific design of hydrogen diffusible plate which is retained within a probe member and electrically connected to allow control of the corrosive activity such that realistic corrosion readings in either the active or passive state may be obtained. The apparatus capability is further extended to provide the accurate corrosion rates as read from metals while undergoing anodic passivation,



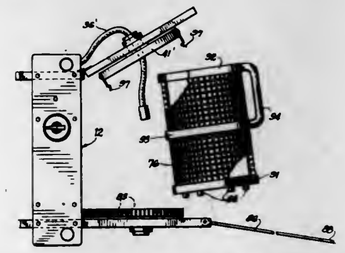
cathodic protection or whatever the corrosion safeguard process.

3,498,901
GLASS ELECTRODE
Leendert Theodor Metz, Herkenbosch, and Jan Van Houwelingen and Hendrik De Jong, Hoevelaken, Netherlands, assignors to Maatschappij voor Electronische Bedrijfsautomatisering Electrofact N.V., Radiumweg, Amersfoort, Netherlands
Continuation-in-part of application Ser. No. 374,032, June 10, 1964. This application July 5, 1968, Ser. No. 747,418
Int. Cl. G01n *27/36*
U.S. Cl. 204—195 **2 Claims**



A glass electrode for pH measurements comprising a copper connection electrode carrying a layer of copper oxide, the thickness of said layer being in excess of that which would occur due to exposure to the atmosphere of the connection electrode, and preferably in the order of 20μ, and a layer of glass superimposed on said oxide layer.

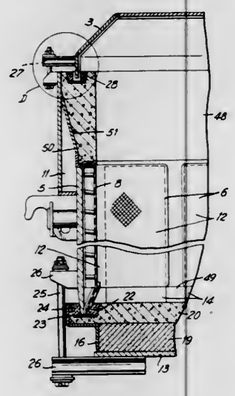
3,498,902
PORTABLE UNITARY ELECTROPLATING ASSEMBLY
Steve W. Wojtanek, Lake Forest, Ill., assignor to Sterling Systems, Ltd., Chicago, Ill., a corporation of Illinois
Filed Mar. 27, 1967, Ser. No. 632,493
Int. Cl. C23b *5/78;* **B08b** *3/06*
U.S. Cl. 204—213 **5 Claims**



A portable unitary assembly for use with an electroplating tank, said assembly including a frame for rotatably

supporting a plating barrel and having means for driving the barrel. The assembly is adapted for ready positioning on the tank for operation and is readily removable therefrom for loading or unloading of articles to be plated, or other treatment of said articles. This permits substantially continuous use of all available positions on the tank resulting in maximum efficiency in the use of the plating equipment.

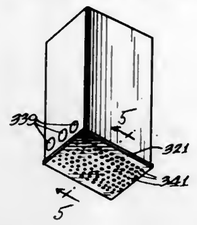
3,498,903
ELECTROLYTIC DIAPHRAGM CELL FOR PRODUCTION OF CHLORINE, HYDROGEN AND ALKALIES
Georgy Mikirtiechevich Kamarjan, Ulitsa Vorontsovskaja 30b, Apt. 18, Moscow, U.S.S.R.
Filed Mar. 4, 1964, Ser. No. 349,357
Int. Cl. B01k *3/10;* **C22d** *1/06*
U.S. Cl. 204—266 **8 Claims**



An electrolytic cell having a metal frame and a metal bottom electrically insulated from the frame and defining therewith a zone of electrolysis, at least one vertical metal partition being disposed parallel to the side wall of the frame and affixed to the frame so that a clearance is formed between the partition and said bottom, while said partition divides the zone of electrolysis into compartments. A plurality of rows of vertically disposed hollow cathodic elements in the form of a framework with a metal screen stretched thereover are affixed to the partition and to those side walls of the frame which are parallel to said partition to form a free passage between the rows of cathodic elements; anodes are disposed between the cathodic elements and are secured to the bottom by metal clamps. The frame is surmounted by a cover and liquid discharge means are mounted on the frame.

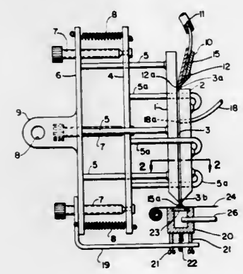
3,498,904
ELECTRODE FOR ELECTROLYTIC SHAPING
Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois
Application Feb. 14, 1966, Ser. No. 552,652, now Patent No. 3,421,997, which is a continuation of application Ser. No. 165,569, Jan. 11, 1962, which in turn is a division of application Ser. No. 772,960, Nov. 10, 1958, now Patent No. 3,058,895, dated Oct. 16, 1962. Divided and this application Jan. 2, 1969, Ser. No. 788,482
Int. Cl. B23p *1/02;* **B01k** *3/04*
U.S. Cl. 204—284 **10 Claims**

This invention relates to an electrode for use in electrolytic shaping apparatus which electrode is formed with a tip or working face of porous metallic material. The porous metallic material may be formed of sintered metal. Preferably, a ceramic coating is applied to the exterior of the electrode and a laterally extending lip is provided on the porous element. For forming larger cavities the porous



tip may be formed with one or more transverse holes which are connected to the working face of the electrode by a plurality of smaller holes for the removal of electrolyte.

3,498,905
CONTINUOUS FLOW ELECTROPHORESIS APPARATUS
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Continuation-in-part of application Ser. No. 465,020, June 18, 1965. This application Feb. 21, 1966, Ser. No. 538,501
Int. Cl. B01k *5/00*
U.S. Cl. 204—299 **26 Claims**

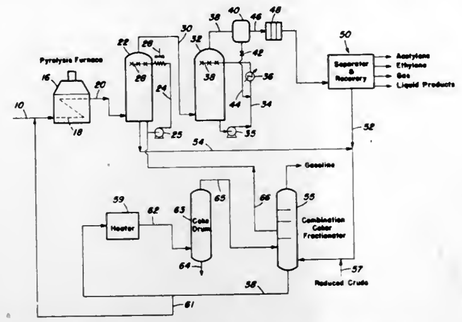


A continuous particle electrophoresis apparatus including a pair of substantially flat plates supported in spaced apart, parallel, face-to-face relationship to define an interspace through which an electrolyte freely flows and means for feeding the electrolyte from a single point into the interspace as a stable flowing electrolyte sheet.

3,498,906
QUENCH OIL RECOVERY SYSTEM
Marcel J. P. Bogart, Los Angeles, Calif., and Hyman R. Davis, Glen Ridge, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,828
Int. Cl. C10g *39/00*
U.S. Cl. 208—50 **8 Claims**

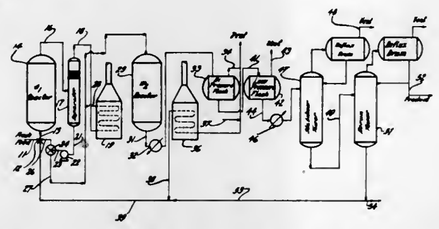
A process for regenerating a dirty hydrocarbon quench oil, containing high boilers, tars, pitch, carbon fines and the like, wherein the quench oil is heated to a temperature between about 900° F. and about 1000° F., at a pressure between about 10 and about 30 p.s.i.g. to effect coking thereof. A fraction, having cut points falling somewhere within the range between about 500° F. and about 1000° F. is recovered and employed as the quench oil.

The regeneration of the quench oil may be effected in a coking system simultaneously with the coking of a



reduced crude and/or heavier products recovered from a hydrocarbon pyrolysis process.

3,498,907
PYROLYSIS GASOLINE HYDROGENATION
Louis C. Doelp, Jr., Glen Mills, Eugene R. Kreider, Brookhaven, and David P. Marcarus, Wallingford, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
Filed June 13, 1968, Ser. No. 736,646
Int. Cl. C10g *37/10*
U.S. Cl. 208—57 **8 Claims**

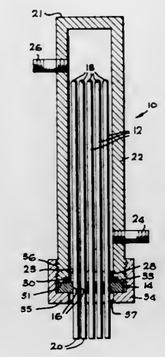


An improved process is described for the continuous hydrogenation of hydrocarbon charge stocks containing high concentrations of polymerizable materials, particularly those stocks typified in full range pyrolysis naphthas. The improvements are obtained through the use of selected methods and conditions conducive to the hydrogenation of polymerizable components before they form polymers. These improvements include up-flow flooded liquid phase operation in a first reaction zone with high dilution of fresh feed and rapid temperature adjustment of the incoming charge through the expedient of abnormally high liquid recycle around the first reaction zone.

3,498,908
SILICONE PRESSURE-DROP ADDITIVE FOR HYDROCRACKING PROCESS
John H. Frankovich, Chicago, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 25, 1966, Ser. No. 567,349
Int. Cl. C10g *13/02;* **B01d** *37/02*
U.S. Cl. 208—112 **14 Claims**

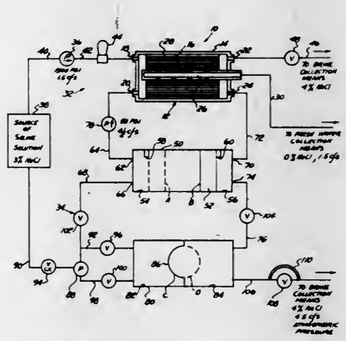
The provision of from 1 to 10 parts per million of an oil soluble silicone polymer in the feedstock to a hydrocarbon conversion process employing a reactor containing a fixed bed of microsize catalyst has been found to decrease pressure drop across the reactor by as much as 50%. It is preferred to use a dimethyl silicone polymer having a viscosity of about 75 to 1500 cs. at 210° F.

3,498,909
DESALINATION APPARATUS AND PROCESS
Fred E. Littman, Santa Ana, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Dec. 29, 1966, Ser. No. 605,703
Int. Cl. B01d *31/00, 13/00*
U.S. Cl. 210—23 **11 Claims**



Desalination apparatus employing a plurality of porous glass elongate capillary membranes disposed in a fluid tight pressure chamber having an inlet and outlet, said membranes being preferably in the form of porous glass capillary tubes arranged in closely spaced substantially parallel relation. The adjacent ends at one end of the capillary membranes are closed with respect to the interior of the pressure chamber, and the adjacent opposite ends are open and extend out of the pressure chamber, according to one embodiment.

3,498,910
APPARATUS AND PROCESS FOR THE CONTROLLED OSMOTIC SEPARATION OF WATER FROM SEA WATER
Morris Mendelson, 16156 Oxley, Southfield, Mich. 48075
Continuation-in-part of application Ser. No. 698,667, Jan. 17, 1968. This application Sept. 3, 1968, Ser. No. 756,842
Int. Cl. B01d *13/00*
U.S. Cl. 210—23 **10 Claims**



A system for recovering fresh water from sea water in a reverse-osmosis permeability cell connected with pri-

mary and secondary feed circuits. The primary feed circuit continuously supplies the cell with sea water and includes a constant delivery pump for delivering sea water from a source, and a secondary pump for delivering sea water from a temporary storage chamber at a rate to compensate for the reduction in the separability characteristics of the permeability membrane as it accumulates minerals and salts. The secondary feed circuit, normally fluidly isolated from the primary circuit, is periodically connected with the primary circuit to replenish the temporary storage chamber and to wash the permeability membrane of accumulated salts.

3,498,911
PROCESS FOR REGENERATING MANGANESE ZEOLITE

Yoshio Kikuchi, Matsudo-shi, and Yukuo Naitoh, Tokyo, Japan, assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 5, 1968, Ser. No. 734,569
Int. Cl. B01d *15/06*
U.S. Cl. 210—30 **5 Claims**

A process for regenerating manganese zeolite filter agents, which have been or are to be employed to remove iron and manganese from aqueous media, which consists of treating the filter agents with an aqueous solution of potassium permanganate and with an aqueous solution of manganese salts so as to form and deposit on the filter agents an oxide of manganese.

3,498,912
PROCESS FOR THE CLARIFICATION OF WASTE EFFLUENTS

David L. Kieper and Stephen S. Treichel, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed July 10, 1967, Ser. No. 651,990
Int. Cl. C02b *1/20*
U.S. Cl. 210—49 **5 Claims**

A process for the removal of suspended solids and the reduction of the biological oxygen demand of waste effluents such as raw sewage or industrial effluents by treatment of the sewage with a cationic derivative of a polygalactomannan gum in combination with a polyvalent metal cation.

3,498,913
USE OF CATIONIC RESINS IN COAGULATING POLYMERIC MATERIALS

Lucien Sellet, Saddle River, N.J., assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 619,573, Mar. 1, 1967. This application Apr. 1, 1968, Ser. No. 718,000
Int. Cl. C02b *1/20*
U.S. Cl. 210—54 **8 Claims**

Stable cationic resins which are condensation products of (a) formaldehyde with (b) reaction products of (1) amino bases and (2) methylolated amine salts are useful in processes for coagulating polymeric materials from an aqueous dispersion. These resins can be dried from aqueous solutions without materially affecting their water solubility and molecular structure. A typical resin used in coagulating polymeric materials from an aqueous dispersion is the condensation product of formaldehyde with the reaction product of dicyandiamide and methylolated ammonium sulfate.

3,498,914
MULTIPHASE COMPOSITIONS OF MATTER

Franklin D. Lemkey, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 637,002, May 8, 1967, which is a continuation of application Ser. No. 350,509, May 9, 1964. This application June 27, 1968, Ser. No. 747,415
Int. Cl. C09k *3/00;* **G02b** *1/00;* **B01l** *17/00*
U.S. Cl. 252—1 **14 Claims**

A solid polyphase composition of matter comprising a eutectic mixture of organic compounds is provided, in which the composition of the mixture is such that the components thereof are reciprocally soluble in the liquid state, but freeze simultaneously at a constant temperature into at least two different solid phases upon cooling from the liquid state, the composition having a microstructure of eutectic composition containing at least two solid phases, at least one of said phases being in the form of aligned, three-dimensional crystallites which are substantially parallel to a common direction. Additional compositions of eutectic mixtures comprising an organic compound and a member selected from the group consisting of water, an element and mixtures thereof are also provided. Such compositions, depending on the orientation relationships between the phases are useful as components in optical devices.

Furthermore, an improved method of forming a solid, polyphase composition of matter comprising a eutectic mixture of the above-identified components is provided, in which the improvement resides in employing said components.

3,498,915
SULFURIZED DIELS-ALDER ADDUCTS AND LUBRICANTS CONTAINING THE SAME

Lester E. Coleman, Willoughby Hills, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 657,520, Aug. 1, 1967. This application Dec. 16, 1968, Ser. No. 784,172
Int. Cl. C10m *1/38;* **C07g** *17/00*
U.S. Cl. 252—47.5 **10 Claims**

Sulfur-containing compositions characterized by the presence of at least one cycloaliphatic group with at least two nuclear carbon atoms of one cycloaliphatic group or two nuclear carbon atoms of different cycloaliphatic groups joined through a divalent sulfur linkage. The sulfur linkage contains at least two sulfur atoms. Sulfurized Diels-Alder adducts are illustrative of the compositions disclosed. These sulfur-containing compositions are particularly useful as extreme pressure and antiwear additives in various lubricating oils.

3,498,916
LUBRICATING OIL COMPOSITIONS

Keith Coupland, Hornsea, and John Pennington, Hull, England, assignors to BP Chemicals (U.K.) Limited, London, England, a British company

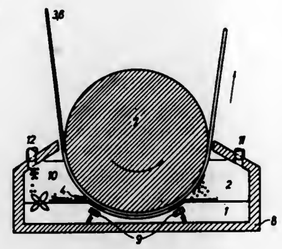
No Drawing. Continuation-in-part of application Ser. No. 412,854, Nov. 20, 1964. This application July 11, 1967, Ser. No. 652,419
Claims priority, application Great Britain, Dec. 7, 1963, 48,402/63; Apr. 1, 1964, 13,511/64; Apr. 9, 1964, 14,827/64
Int. Cl. C10m *1/32*
U.S. Cl. 252—51.5 **2 Claims**

The invention is lubricant compositions containing certain substituted 2-hydroxyphenylamine compounds as antioxidants. The compositions also show surprising thermal stability.

3,498,917
LIQUID DEVELOPER FOR ELECTROSTATIC IMAGES

Klaus Witter, Hamburg-Lokstadt, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 21, 1966, Ser. No. 588,576
Claims priority, application Germany, Oct. 23, 1965, P 37,944
Int. Cl. G03g *9/04;* **C09c** *3/02*
U.S. Cl. 252—62.1 **3 Claims**



A liquid developer for developing latent, electrostatic images on solid carriers containing a mixture of mercury and an organic electrically insulating liquid, immiscible with the mercury, for example turpentine and a solid toner for example metal sulfide dispersed in the insulating liquid.

3,498,918
METHOD OF MANUFACTURE AND COMPOSITION FOR MAGNETIC CORES

Albert N. Copp, State College, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,421
Int. Cl. H01f *1/24, 3/08*
U.S. Cl. 252—62.55 **12 Claims**

A method of and a new composition of matter for use in manufacturing magnetic powder cores, particularly of the "Permalloy" type. Finally divided metal particles of magnetic material are insulated in a slurry consisting essentially of sodium silicate, magnesium hydroxide, aluminum silicate, magnesium silicate and a viscosity modifying agent selected from the group consisting of polyvinyl alcohol and carboxymethyl-cellulose. A peculiar percentage relationship, by weight, between the aluminum silicate and magnesium silicate is primarily responsible for magnetic cores made from the composition exhibiting consistently high, linear positive temperature coefficients and relatively high permeabilities. The particular types of viscosity modifying agents selectively employed make possible a "one-coat" application of the insulating materials on the magnetic particles, and effect a substantial reduction in the total losses normally experienced in cores having aluminum silicate as an insulating material.

3,498,919
PRESSURIZED FOAMING COMPOSITIONS

Irving Reich, Highland Park, and Earl H. Tiffany, Jr., Short Hills, N.J., assignors to Carter-Wallace, Inc., a corporation of Maryland

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,135
Int. Cl. C11d *9/00, 9/26, 17/04*
U.S. Cl. 252—90 **4 Claims**

Pressurized compositions which, upon release from the pressure container, form stable foams suitable for shaving. In addition to the propellant, the compositions comprise water, ethyl alcohol and one or more triethanolamine soaps of higher fatty acids.

3,498,920
COMPOSITIONS OF LIQUID PARAFFINS CONTAINING MIXTURES OF ALKYL-SUBSTITUTED POLYNUCLEAR AROMATIC HYDROCARBONS AS SWELLING AGENTS

Clayton W. Nichols, Jr., Huntington, and Melvin I. Smith, Rockville Centre, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 385,799, July 28, 1964. This application Oct. 16, 1968, Ser. No. 768,174
Int. Cl. C09k *3/00, 3/02;* **C10m** *1/16*
U.S. Cl. 252—72 **2 Claims**

Compositions comprising liquid paraffins containing a small amount, sufficient to act as a swelling agent, of a mixture of alkyl-substituted polynuclear aromatic hydrocarbons comprising alkyl naphthalenes, acenaphthylenes, phenanthrenes and pyrenes.

3,498,921
HYDRAULIC BRAKE FLUID SOLVENT

Gayle D. Edwards, Austin, Tex., and Orvis V. Larsen, Richmond, Calif., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,963
Int. Cl. C09k *3/02*
U.S. Cl. 252—73 **2 Claims**

An improved brake fluid base containing a solvent of glycol ethers of the formula:

$$CH_3—CH_2—CH_2—CH_2—O(C_2H_4O)_x(C_3H_6O)_y—H$$

or

$$CH_3—\underset{\displaystyle CH_3}{\underset{|}{CH}}—CH_2—O(C_2H_4O)_x(C_3H_6O)_y—H$$

3,498,922
METHOD OF DISPLACING LIQUID ORGANIC FILMS FROM SOLID SURFACES

William A. Zisman, Silver Spring, Md., and Marianne K. Bernett, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 18, 1966, Ser. No. 588,256
Int. Cl. C11d *7/26, 7/48*
U.S. Cl. 252—171 **4 Claims**

A method of displacing liquid organic films from solid surfaces by the application thereto of a nonaqueous liquid surface-active composition. The composition is a solution of a small amount of a high molecular weight linear dimethyl silicone (molecular weight 1200 to 15,000) in a low molecular weight silicone from the dimer through the octamer.

3,498,923
SURFACE-ACTIVE COMPOSITIONS AND METHOD FOR DISPLACING LIQUID ORGANIC FILMS FROM SOLID SURFACES

William A. Zisman, Silver Spring, Md., and Marianne K. Bernett, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 18, 1966, Ser. No. 588,260
Int. Cl. C11d *1/04, 3/18, 3/20*
U.S. Cl. 252—171 **9 Claims**

A nonaqueous liquid surface-active composition for displacing liquid organic films from solid surfaces. The composition is a solution of a small amount of a partially fluorinated long-chain alkyl monocarboxylic acid in a solvent which may be an aliphatic naphtha of minimum flash point from about 108 to 140° F. or a low molecular weight dimethyl silicone.

3,498,924
PROCESS FOR PREPARING STABLE SODIUM HYPOCHLORITES

Robert H. Walsh, Akron, and Albert Dietz, Wadsworth, Ohio, assignors to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,247
Int. Cl. C01b *11/06;* **A61b** *13/00;* **D06l** *3/08*
U.S. Cl. 252—187 **2 Claims**

Solid, dry, stable sodium hypochlorite compositions are prepared by reacting sodium hydroxide with hypochlorous acid which is substantially free of chloride ion. Liquid water of solution is removed to produce a dry, hydrated, solid sodium hypochlorite which can be further dehydrated by vacuum drying, or may be admixed with sodium hydroxide to replace the released water of hydration which when removed provides stable, dry, basic sodium hypochlorites.

3,498,925
SMOKE GENERATING COMPOSITIONS

Martin E. Gluckstein, Detroit, Ellis B. Rifkin, Southfield, and Harold A. Beatty, Grosse Point Farms, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 473,224, July 19, 1965. This application June 29, 1966, Ser. No. 561,364
The portion of the term of the patent subsequent to Sept. 3, 1985, has been disclaimed
Int. Cl. C09k *3/30;* **C06d** *3/00*
U.S. Cl. 252—305 **8 Claims**

A smoke agent consisting essentially of (a) a mixture of organometallic and organometallic hydride compounds such as triethylaluminum and diethylaluminum hydride, (b) an aromatic substance having up to three carbocyclic aromatic, six-membered rings and from six to 20 carbon atoms, said aromatic substance being composed solely of carbon and hydrogen, e.g., α-methylnaphthalene, and (c) a component selected from petroleum oil and mixtures of petroleum oil and fluorocarbons. Smoke is produced by exposing the smoke agent to the atmosphere.

3,498,926
DICHROMATE VAPOR PHASE CORROSION INHIBITOR

Wilburn A. Boggs, Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

No Drawing. Continuation of application Ser. No. 455,959, May 14, 1965. This application Aug. 19, 1968, Ser. No. 755,501
Int. Cl. C23f *11/00;* **C09k** *3/00*
U.S. Cl. 252—387 **4 Claims**

A solution for inhibiting corrosion and for neutralizing alkaline corrosion by-products, especially as occurring in structural joints or other relatively confined regions. Corrosion inhibiting characteristics are obtained with a mixture of metallic chromate, a vapor phase inhibitor, and a surface active agent to adjust the surface tension of the solution for the desired penetration into the region being treated. An excess of acid chromate ions is supplied to the solution to neutralize alkaline corrosion by-products and to neutralize alkaline substances produced by the inhibiting action of the metallic chromate.

3,498,927
PROCESS FOR APPLYING POROUS COATINGS ON CATALYST SUPPORTS

Alvin B. Stiles, Welshire, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,881
Int. Cl. B01j *11/48, 11/36, 11/38*
U.S. Cl. 252—451 **5 Claims**

A method of applying porous coatings to catalyst supports, particularly supports having smooth surfaces, by slurrying a finely divided form of a refractory oxide in a solution of a salt of the oxide, adding sufficient volatile base to the slurry to cause it to gel, and applying the gel to the support. After the gel has been applied, the desired catalytic material is then coated or impregnated in the gel coating by conventional techniques and the resulting structure is dried and calcined.

In another aspect, the slurry can contain the desired catalytic material, and this slurry is gelled, applied, dried and calcined to produce a catalytic structure.

3,498,928
METHOD OF PREPARING GRANULAR OXIDIZING CATALYST FOR PREVENTING AIR CONTAMINATION BY CARBON MONOXIDE

Tsurahide Cho, Tokyo, and Tsutomu Kato, Hamamatsu-shi, Japan, assignors to Kachita Co., Ltd., Hamamatsu-shi, Japan, a corporation of Japan

No Drawing. Filed Jan. 5, 1968, Ser. No. 695,880
Claims priority, application Japan, Feb. 14, 1967, 42/8,957
Int. Cl. B01j *11/22, 11/06;* **B01d** *53/34*
U.S. Cl. 252—454 **5 Claims**

A method of preparing oxidizing granular catalyst for preventing air contamination caused mainly by the exhaust gas of motorcars which comprises the steps of mingling fine powder of activated natural zeolite ore with mixed fine powders of pure manganese oxide and copper oxide, lightly press-moulding the mingled substances into granules, causing a solution of aluminic ester in an organic solvent to be absorbed in said granules and making the ester bring about natural hydroylsis to vapourise off by-produced volatile matters, resulting in forming network binding structure of aluminum oxide in the granules.

3,498,929
REINFORCED CARBONACEOUS BODIES

Oliver E. Accountius, Tarzana, Calif., assignor to North American Rockwell Corporation

No Drawing. Filed July 6, 1967, Ser. No. 651,373
Int. Cl. H01b *1/04, 1/02, 5/00*
U.S. Cl. 252—503 **6 Claims**

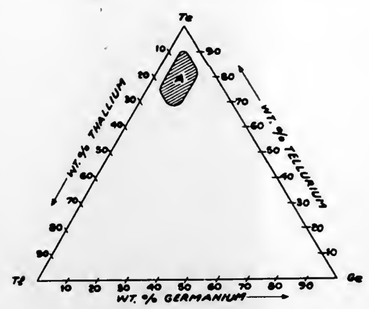
Process for making reinforced carbonaceous bodies comprising mixing parapolyphenylene and carbon diffusion resistant metal coated, or uncoated fibers of tantalum, boron, titanium, tungsten, or molybdenum, pressing the mixture and pyrolyzing the pressed mixture.

3,498,930
BISTABLE SEMICONDUCTIVE GLASS COMPOSITION

Daniel J. Shanefield, New York, N.Y., and Emery W. Currier, Bloomfield, and Paul E. Lighty, Lafayette, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Dec. 20, 1966, Ser. No. 603,214
Int. Cl. H01c *7/00;* **C04b** *35/00;* **C03c** *3/30*
U.S. Cl. 252—512 **2 Claims**

A semiconducting glass having compositions within the ternary group thallium-tellurium-germanium, consisting essentially of approximately 3 to 21% by weight of thallium, 68 to 90% by weight of tellurium and 3 to 16% by weight of germanium. These compositions have two stable physical states, one characterized by a relatively high electrical resistance and the other characterized by a relatively low electrical resistance. The compositions are



capable of being electrically switched between these two resistance states.

3,498,931
ELECTRICALLY CONDUCTIVE OXIDES CONTAINING PALLADIUM AND THEIR PREPARATION

Donald B. Rogers and Robert D. Shannon, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 625,318, Mar. 23, 1967. This application Apr. 2, 1968, Ser. No. 718,046
Int. Cl. H07b *1/08;* **C01g** *55/00, 37/00*
U.S. Cl. 252—518 **6 Claims**

Described and claimed are novel electrically conductive oxides of the formula $PdMO_2$, M being Co, Cr, Rh, or Cr/Rh, but which may vary slightly in stoichiometry from the formula, the preparation of the oxides, e.g., by the reaction of a palladium dihalide optionally mixed with palladium and an appropriate oxidic reagent containing the element M, and electric elements, e.g., resistors, containing the oxides.

4,498,932
TERPOLYMERS OF A C-SUBSTITUTED AZIRIDINE, AN N-SUBSTITUTED AZIRIDINE, AND AN ORGANIC DIHALIDE

Henry J. Dishburger and William P. Coker, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 537,009
Int. Cl. C08g *33/08*
U.S. Cl. 260—2 **3 Claims**

Novel terpolymers comprising reaction products of a C-substituted aziridine, a N-substituted aziridine and an organic dihalide are excellent flocculating agents. The novel terpolymers are prepared from the above-mentioned monomers in the presence of an inert solvent.

3,498,933
PROCESS FOR SEPARATING AND PURIFYING POLYEPOXIDES FROM THEIR SOLUTIONS IN HYDROCARBONS

Claude Fey, Villepreux, Jean Gaillard, Carrieres, Seine, and Jean-Pierre Wauquier, Le Vesinet, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Malmaison, Hauts-de-Seine, France

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,841
Claims priority, application France, Mar. 4, 1966, 52,201; Dec. 22, 1966, 88,582
Int. Cl. C08g *23/04, 23/06*
U.S. Cl. 260—2 **14 Claims**

This process for isolating polyepoxides from their solutions in hydrocarbon solvents also containing catalyst residues consists essentially of contacting these solutions with aqueous methanol of 40–90% by volume concentration to precipitate out the polyepoxides. Preferably a complexing agent is also used and the isolated polyepoxide is washed with a low molecular weight alcohol.

3,498,934
CHLORINATED POLYETHYLENE FOAM

William C. Kraemer, Jr., Cranford, Carl R. Eckardt, Morris Plains, N.J., assignors, by mesne assignments, The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,618
The portion of the term of the patent subsequent to Aug. 8, 1984, has been disclaimed
Int. Cl. C08f *47/10, 27/03*
U.S. Cl. 260—2.5 **1 Claim**

A resilient, semi-rigid, nonflammable foam having an ultimate elongation of at least 40% and a density ranging from about 1 to about 20 lbs./cu. ft., comprises chlorinated polyethylene having an intrinsic viscosity ranging from about 0.2 to about 5.0 deciliters/gram in o-dichlorobenzene at 100° C., and a chlorine content of 60% to 65% by weight.

3,498,935
METHOD OF PRODUCING POROUS STRANDS FROM A COAGULATED RUBBER LATEX

Theo Noble, Gottfried Scriba, Theodor Konig, and Hermann Holzrichter, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 196,595, May 22, 1962. This application Feb. 21, 1967, Ser. No. 617,505
Claims priority, application Germany, June 8, 1961, F 34,111
Int. Cl. C08d *13/08, 7/00*
U.S. Cl. 260—2.5 **5 Claims**

Production of porous strands of a coagulate from an emulsified rubber latex by adding an inorganic salt electrolyte solution to the latex and, prior to any substantial coagulation, passing resulting mixture through a flow pipe under laminar flow conditions for a specified residence time.

3,498,936
HYDROXYALKYLATED PHENOL-SULFUR HALIDE RESINS AND POLYURETHANES CONTAINING SAME

Bruce N. Wilson, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 370,705, May 27, 1964. This application Nov. 27, 1967, Ser. No. 685,978
Int. Cl. C08g *22/16*
U.S. Cl. 260—2.5 **11 Claims**

Condensation products are comprised of phenyleneoxyalkanol radicals joined by sulfur-bearing radicals, which can be one or more connected sulfur atoms or sulfur oxide radicals such as sulfoxide or sulfone radicals. The condensation products generally contain an average of 2 to 10 phenyleneoxyalkanol radicals, more usually an average of 2.5 to 4 phenyleneoxyalkanol radicals. The products have a hydroxyl number of about 30 to 500 and a viscosity in the range of 20 Gardner seconds at 50 degrees centigrade to 500 Gardner seconds at 120 degrees centigrade. The condensation products are useful in the preparation of polyurethane compositions by reaction with organic polyisocyanates. They are also useful in the preparation of unsaturated polyester resins, modified and unmodified alkyd resins, epoxy resins, and other poly-

condensation and polyaddition products. These products are useful in the preparation of foamed plastics, adhesives, binders, laminates, coatings, and potting compounds.

3,498,937

NOVEL COMPOSITIONS OF POLYURETHANES AND CARBAMOYL PHOSPHONATES

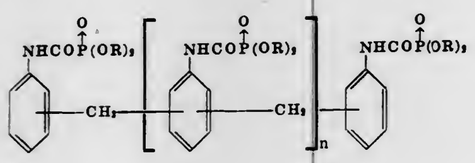
Adnan A. R. Sayigh, North Haven, and James N. Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 571,192, Aug. 9, 1966. This application Mar. 10, 1969, Ser. No. 805,881

Int. Cl. C08g *51/00*; C09k *3/28*

U.S. Cl. 260—2.5 2 Claims

Fire retardant polyurethanes are obtained by incorporating into polyurethane forming reaction mixtures a carbamoylphosphonate of the formula:



where R=hydrocarbyl (C_1–C_{12}) or halohydrocarbyl (C_1–C_{12}) and n=0.19 to 1.0.

3,498,938

MULTISTAGE, SEMICONTINUOUS PROCESS FOR THE EMULSION POLYMERIZATION OF VINYL ESTERS OF ALPHA-BRANCHED MONOCARBOXYLIC ACIDS

Einte P. Grommers, Fritz T. J. Oeverhaus, and Jacobus J. Tjepkema, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 8, 1967, Ser. No. 666,500

Int. Cl. C08f *1/06, 1/13*

U.S. Cl. 260—17 8 Claims

Copolymer latices of vinyl esters of alpha-branched monocarboxylic acids having excellent stability to hydrolysis and saponification as well as improved storage stability, free-thaw stability and salt(ion) resistance are prepared by a multistage process wherein the monomers are added to a reactor which is partially filled with a previously formed latex until the reactor is full, whereupon a portion of the latex is transferred to a second reactor for completion of the copolymerization.

3,498,939

COATING COMPOSITIONS

Leon C. Schier, Milwaukee, Harold G. Bittle, Brookfield, and Arthur F. Rylander, Milwaukee, Wis., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 506,583, Nov. 5, 1965. This application Jan. 16, 1969, Ser. No. 791,791

Int. Cl. C08f *29/20*; C08g *37/20*

U.S. Cl. 260—19 12 Claims

Coating compositions comprising a heat-reactive phenolic resin and a vinylidene fluoride polymer provide coatings of improved properties, including a high degree of resistance to various chemicals and resistance to thermal degradation. An epoxidized oil is preferably included in some compositions. The compositions described are particularly useful for coating articles having both a ceramic surface and a metal portion.

3,498,940

DIMER FATTY ACID MODIFIED POLYESTER-URETHANE COMPOSITIONS

Deno Laganis, Schenectady, N.Y., assignor to Schenectady Chemical, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Feb. 13, 1968, Ser. No. 704,993

Int. Cl. C08g *22/10*; C09d *3/72*

U.S. Cl. 260—20 11 Claims

Polyester-urethanes are prepared by reacting an aromatic diisocyanate with a polyester made from (1) a mixture of a dimerized long chain fatty acid and isophthalic acid, terephthalic acid and benzophenone dicarboxylic acid with optionally a saturated alkanedioic acid having 5 to 10 carbon atoms and (2) a mixture of a diol and a polyhydric alcohol having at least 3 hydroxyl groups. The polyester has an acid number not over 2.

3,498,941

POLYMERIC DISPERSIONS OF A POLYOLEFIN WITH AN INCOMPATIBLE POLYMER AND A POLYAMIDE DISPERSING AGENT

Martin Richard Hofton, Worthing, Clifton Douglas Cowell, Panteg, near Ponty-Pool, and Eric John Page, Gilwern, near Abergavenny, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 22, 1966, Ser. No. 578,948

Int. Cl. C08f *15/00, 19/00, 25/00*

U.S. Cl. 260—22 2 Claims

A process for producing the dispersion of a polyhydrocarbon such as polyethylene or polypropylene in an incompatible polymer such as nylon in which the polymer in the disperse phase has an average particle size not exceeding 25 microns. The process consists of mixing the two polymers together in the presence of a polymeric dispersing agent composed of large molecules formed by the union of groups of small molecules and having a molecular weight of at least 1000. The polymeric dispersing agent is exemplified by a copolymer of di-linoleic acid, adipic acid and hexamethylene diamine; polyaminoundecanoic acid; polyhexamethylene sebacamide; a copolyamide of 11 N-hexadecylaminoundecanoic acid and e-caprolactam; copolyamide of di-linoleic acid, e-caprolactam and hexamethylene diamine; copolyamide of N-monosubstituted diamine, sebacic acid, and e-caprolactam; and copolyamide of 11 N-(2-tridecyl)aminoundecanoic acid with e-caprolactam.

3,498,942

EMULSION POLYMERIZATION OF UNSATURATED MONOMERS UTILIZING ALKYL SULFIDE TERMINATED OLIGOMERS AS EMULSIFIERS AND RESULTING PRODUCT

Leland E. Dannals, Waterbury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed July 1, 1966, Ser. No. 562,098

Int. Cl. C08f *1/13*; C08d *1/09*

U.S. Cl. 260—29.6 55 Claims

This invention relates to emulsion, addition polymerization of rubber and plastic latexes and solid polymers produced therefrom. More specifically, the instant invention teaches the use of an alkyl sulfide terminated oligomer having appendant cyano and carboxyl groups on the oligomeric portion, as an emulsifier in said emulsion polymerizations.

3,498,943

EMULSION POLYMERIZATION OF ETHYLENICALLY UNSATURATED MONOMERS UTILIZING ALKYL SULFIDE TERMINATED OLIGOMERS AS EMULSIFIERS AND RESULTING PRODUCT

Leland E. Dannals, Waterbury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed July 1, 1966, Ser. No. 562,097

Int. Cl. C08f *1/13*; C08d *1/09*

U.S. Cl. 260—29.6 43 Claims

This invention relates to emulsion, addition polymerization of rubber and plastic latexes and solid polymers produced therefrom. More spectifically, the instant invention teaches the use of an alkyl sulfide terminated oligomer, having on the oligomeric portion appendant amido and carboxyl groups, as an emulsifier in said emulsion polymerizations.

3,498,944

SOLVENTS FOR SPINNING SOLUTION OF POLYESTER URETHANES

Michael Dunay, Fanwood, and Basil S. Sprague, Berkeley Heights, N.J., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,361

Int. Cl. C08g *51/34*

U.S. Cl. 260—33.4 2 Claims

A spinning composition and method for forming said composition which is particularly useful in dry spinning of substantially linear, segmented, elastomeric copolymers. The segmented copolymer used comprises a soft, low-melting polymer, chemically linked to a hard, high-melting polymer. The copolymer is dissolved in a halogenated, lower hydrocarbon or a mixture of a major proportion of a halogenated, lower hydrocarbon and a minor proportion of a lower, aliphatic alcohol to produce the spinning composition. The addition of the lower, aliphatic alcohol results in an increase in the proportion of copolymer which can be dissolved in the solvent mixture.

3,498,945

LINEAR ORGANOPOLYSILOXANES THEIR PREPARATION AND THEIR USE

Marcel Lefort, Caluire, Rhone, and Parasko Nicou, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed Aug. 7, 1967, Ser. No. 658,591

Claims priority, application France, Aug. 16, 1966, 73,149

Int. Cl. C08g *31/22, 47/06*

U.S. Cl. 260—37 10 Claims

The invention provides novel linear organopolysiloxanes having a viscosity of 1 to 25 million centipoises at 25° C. and containing vinyl groups, which can be converted into vulcanised elastomers by heating with an organopolysiloxane containing Si-H bonds and a platinum catalyst.

3,498,946

PIGMENTED POLYCARBONATE STABILIZED WITH PHOSPHITES AND ION EPOXIDIZED CARBOXYLATE

Thornton R. Calkins, Evansville, Ind., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,018

Int. Cl. C08g *51/58, 51/04*

U.S. Cl. 260—37 11 Claims

A pigmented polycarbonate composition which is stable to heat, light and discoloration wherein the polycarbonate has in admixture therewith a metal oxide pigment which can withstand in excess of 200° F., an organic phosphite or mixtures of organic phosphites and an epoxidized dicycloalkyl carboxylate. The combination of epoxidized dicycloalkyl aliphatic carboxylate and organic phosphite cannot exceed 0.40% based on the total weight of the composition.

3,498,947

RESINS STABILIZED WITH ORGANOTIN COMPOUNDS CONTAINING THE BENZOPHENONE MOIETY

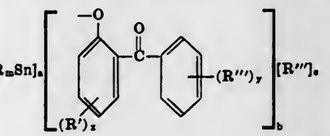
Toshio Seki, Osaka-shi, Kozaburo Suzuki, Kobe-shi, and Takashi Matsuzaki, Osaka-shi, Japan, assignors to Nitto Kasei Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 26, 1966, Ser. No. 567,823

Int. Cl. C08g *51/62*; C08f *45/62*

U.S. Cl. 260—45.75 3 Claims

A method is provided for the stabilization of a variety of synthetic resins particularly against decomposition by ultraviolet light and heat, and compositions of the said resins stabilized by the introduction therein in the amount of between about 0.001–5% by weight of novel compounds characterized generally as organotin compounds containing the benzophenone moiety and more specifically being compounds of the formula:



wherein R is alkyl of 1–18 carbon atoms, cycloalkyl, aryl, or benzyl, R′ and R″ are alkyl of 1–12 carbon atoms, alkoxy, hydrogen, hydroxyl, halogen, carboxyl, or benzoyl wherein said hydroxyl or carboxyl radical may be attached to the organotin radicals, R‴ is hydroxyl or the residue of carboxylic acid of 1–18 carbon atoms, mercaptan, mercapto acid ester, or monoester maleate, provided that when c is 1 or 2, R‴ also represents an oxygen atom, a is an integer from 1 to 3, b is an integer from 1 to 3, c is 0 or an integer from 1 to 2, m is an integer from 1 to 3, and x and y are 0 or integers from 1 to 3.

3,498,948

REACTION PRODUCTS OF TETRACARBOXYLIC ACID DIANHYDRIDES WITH TRIAMINES AND MIXTURES OF TRIAMINES AND DIAMINES

Muneyoshi Minami, Haruki Maekawa, Takashi Kubota, Yoshizo Tsuda and Kazuo Kitamura, Ohtsu-shi, Yoshitaka Tatsuno, Amagasaki-shi, and Masamoto Watanabe and Yasuro Kawabata, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

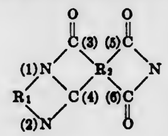
No Drawing. Filed Sept. 13, 1966, Ser. No. 579,007

Claims priority, application Japan, Sept. 13, 1965, 40/55,663, 40/55,664; Oct. 13, 1965, 40/62,417; Jan. 28, 1966, 41/4,568; Feb. 25, 1966, 41/11,036; May 11, 1966, 41/29,384

Int. Cl. C08g *20/32*

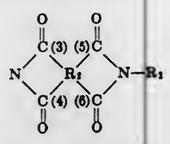
U.S. Cl. 260—47 14 Claims

Thermally stable polymers consisting essentially of: (a) The recurring structural unit of the formula



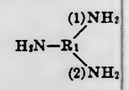
wherein R_1 is a trivalent aromatic radical, R_2 is a tetravalent organic radical, bonds (1) and (2) are bonded to adjacent carbon atoms in radical R_1, and bonds (3) and (4), as well as bonds (5) and (6), are bonded to adjacent carbon atoms in radical R_2; or

(b) The above recurring structural unit and the recurring structure unit of the formula



wherein R_2 and bonds (3), (4), (5), and (6) have the same meanings as defined above, and R_3 is a divalent organic radical.

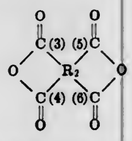
Such polymers are prepared, for example, by mixing at least one triamine of the formula



or a mixture of at least one triamine and at least one diamine of the formula

$$H_2N—R_3—NH_2$$

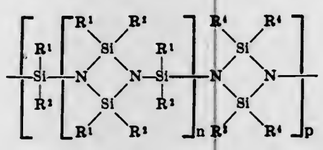
with at least one tetracarboxylic acid dianhydride of the formula



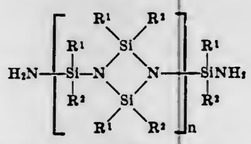
in an organic solvent at a temperature below 80° C. with subsequent dehydration of the obtained polyamide acid amine at a temperature above 50° C., said polymers being useful as films, wire coatings, and in the form of shaped articles.

3,498,949
HIGH-TEMPERATURE RESISTANT POLYMERS WHICH CONTAIN SILICON AND NITROGEN AND METHOD OF MAKING
Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 25, 1966, Ser. No. 596,824
Claims priority, application Switzerland, Dec. 1, 1965, 16,649
Int. Cl. C08g *31/30*
U.S. Cl. 260—46.5 **8 Claims**

Cyclodisilazane polymers of the formula



method of making by heating a compound of the formula



and a compound of the formula $R^3R^4SiH_2$ in the presence of a catalyst which is an alkali or alkaline earth metal or metal hydride, and pyrolyzed polymers of the first formula above.

3,498,950
PROCESS FOR PREPARATION OF A POLYESTER POLYMER
Malcolm H. Shatz, Tonawanda, Raymond R. Hindersinn, Lewiston, and William F. Zimmer, Jr., Elnora, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Apr. 24, 1964, Ser. No. 362,467
Int. Cl. C08g *17/08*
U.S. Cl. 260—47 **9 Claims**

A method is provided for producing a high molecular weight polymer by reacting a difunctional aliphatic modifier and an excess of an organic diacid halide to produce a prepolymer, and thereafter reacting said prepolymer anhydrously at an elevated temperature with a bisphenol. Optionally, the latter portion of the process can be conducted in a vented extruder at elevated temperature under vacuum. The polymers resulting from the process of the invention have melt viscosities suitable for molding applications, and are produced more simply and in greater yields than by previous processes for preparing these polymers.

3,498,951
MANUFACTURE OF FORMALDEHYDE AND ITS POLYMERS
Claude Thibault, Saint-Mande, France, assignor to Produits Chimiques Pechiney Saint-Gobain, Neuilly-sur-Seine, France
Filed June 19, 1964, Ser. No. 376,463
Claims priority, application France, June 21, 1963, 938,966
Int. Cl. C07c *45/24, 47/04*
U.S. Cl. 260—67 **10 Claims**

This invention relates to the formation of a formaldehyde product which contains less than 300 p.p.m. of water and is free from CO and H and is stable against polymerization at —80° C. for a long period of time by non-catalytic pyrolytically decomposing trioxane at atmospheric pressure and at a temperature of between 350° C. to 500° C., preferably at a temperature between 380° and 420° C., and apparatus for performing this process.

3,498,952
POLYESTER RESINS FROM 2-METHYL-2-PHENYL-1,3-PROPANEDIOL
Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 397,653, Sept. 18, 1964. This application Oct. 3, 1968, Ser. No. 764,948
Int. Cl. C08g *17/04*
U.S. Cl. 260—75 **6 Claims**

Polyesters of terephthalic acid and isophthalic acid with 2-methyl-2-phenyl-1,3-propanediol and a glycol of the formula $HOCH_2(CX_2)_nCH_2OH$ which contain up to 70 mol percent of the aliphatic glycol. The polyesters have high softening points and good thermal stability and are particularly useful in laminate and coating applications.

3,498,953
TREATMENT OF POLYAMIDES, POLYURETHANES, POLYUREAS AND POLYURETHANE-UREAS WITH POLYHALOGENOUS ALKYLENE OXIDES
Gunther Elfers, Grosse Ile, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,683
Int. Cl. C08g *20/38*
U.S. Cl. 260—77.5 **3 Claims**

Solvent resistant properties and flame resistance of polyamides, polyurethanes, polyureas, and polyurethane-ureas are substantially improved by treating said polymers with a polyhalogenous alkylene oxide.

3,498,954
POLYMERS CONTAINING UREA AND/OR BIURET LINKAGES AND PROCESSES FOR THEIR PRODUCTION
Perry A. Argabright, Vernon J. Sinkey, and Brian L. Phillips, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 21, 1966, Ser. No. 588,292
Int. Cl. C08g *22/02*
U.S. Cl. 260—77.5 **20 Claims**

Polymers containing biuret and urea functional groups are prepared by reacting a metal cyanate with an organic polyhalide and water in an aprotic solvent.

3,498,955
NEUTRALIZATION OF POLYMERIZATION SOLUTIONS OF AROMATIC POLYAMIDES
Herbert S. Morgan, Apex, and James O. Weiss, Raleigh, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 6, 1967, Ser. No. 651,361
Int. Cl. C08g *20/38*
U.S. Cl. 260—78 **4 Claims**

Neutralization of aromatic polyamide polymerization solutions is improved by the addition of anhydrous calcium or magnesium carbonate to the aromatic diamine solution prior to the addition of the aromatic diacid chloride and then neutralizing the solution by heating after polymerization is complete. The clear stable polymerization solution thus formed can be used for spinning immediately without the need of special filtration techniques.

3,498,956
STABLE SOLID POLYMERIZABLE LACTAM-CATALYST-COCATALYST MIXTURES AND METHODS OF PREPARING THE SAME
Helmut Birkner, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany
No Drawing. Filed Oct. 14, 1966, Ser. No. 586,620
Claims priority, application Germany, Nov. 17 1965, C 37,422
Int. Cl. C08g *20/18, 20/10*
U.S. Cl. 260—78 **9 Claims**

This invention relates generally to stable mixtures and methods of preparing solid polymerizable lactam-catalyst-cocatalyst compositions and relates particularly to particulate mixtures and methods of preparing solid polymerizable lactam-catalyst-cocatalyst compositions which are sufficiently stable to storage and transportation at temperatures below 50° C. and polymerize at higher temperatures.

In a specific embodiment of the present invention, the polymerizable composition is stable under 50° C. and comprises a particulate mixture of:

(a) A lactam;

(b) A latent catalyst or a mixture thereof with a lactam; and

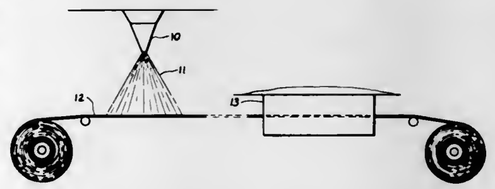
(c) A cocatalyst or a mixture thereof with a lactam; wherein the concentration of (b) and (c) amounts to 0.01 to 5 mole percent and preferably 0.1 to 2 mole percent of the total mixture, and the latent catalyst comprises neutral or slightly basic salts which react at polymerization temperature, e.g. at 200° C., with lactams to form metal lactamates with the separation of protons.

In preparing the particulate mixture the individual components of lactam, catalyst and cocatalyst are pulverized and mixed at a temperature below 50° C., preferably with the exclusion of moisture.

3,498,957
POLYMERIZATION OF CYCLIC CARBOXYLIC ESTERS IN THE PRESENSE OF A NONPOLYMERIZABLE ESTER PLASTICIZER
Henning W. Jacobson, Wilmington, Del., assignor, by mesne assignments, to Ethicon, Inc., a corporation of New Jersey
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,295
Int. Cl. C08g *17/017*
U.S. Cl. 260—78.3 **10 Claims**

Cyclic carboxylic esters are polymerized under anhydrous conditions in an inert atmosphere in the presence of a catalyst and a nonpolymerizable ester having a boiling point above the melting point of the polymer produced. The polymers so prepared may be spun at a lower temperature to give improved filaments of superior tensile strength.

3,498,958
WATER- AND OIL REPELLENCY AGENTS
Dilip K. Ray-Chaudhuri, Somerset, and Carmine P. Iovine, North Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1968, Ser. No. 740,633
Int. Cl. C08f *29/38, 37/00*
U.S. Cl. 260—78.5 **12 Claims**



Fluoroalkyl amidoalkyl acrylates and methacrylates comprising the reaction product of a fluoro carboxylic acid, an alkanol amine and an acrylic or methacrylic acid reagent. The resulting monomers may, thereafter, by homo- or copolymerized with a wide variety of conventional ethylenically unsaturated, i.e. vinyl, monomers, said polymeric materials imparting both water and oil repellency to a wide variety of substrates.

3,498,959
METHOD OF POLYMERIZING 3,3-DIMETHYL THIACYCLOBUTANE AND RESULTING POLYMER
George L. Brode, New Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 392,037, Aug. 25, 1964. This application Sept. 11, 1968, Ser. No. 759,826
Int. Cl. C08g *23/00*
U.S. Cl. 260—79 **6 Claims**

Linear, normally solid alkyl polysulfides have been prepared by contacting a thiacyclobutane with a polymerizing amount of an acidic Friedel Crafts catalyst. These polymers are water-white elastomeric polymers with glass transition temperatures of about 50° C.

3,498,960
PRODUCTION OF RANDOM COPOLYMERS IN ORGANOLITHIUM POLYMERIZATION SYSTEMS
Clinton F. Wofford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 28, 1967, Ser. No. 671,241
Int. Cl. C08d *1/20, 3/04*
U.S. Cl. 260—84.7 **9 Claims**

Random copolymers of at least one conjugated diene and at least one monovinyl-substituted aromatic com-

pound are produced in an organolithium polymerization system by polymerizing the monomers in the presence of a hexahydro-1,3,5 - trisubstituted-s-triazine randomizing agent.

3,498,961

POLYMERIZATION OF 1,3-CYCLOPENTADIENE

James J. Tazuma, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 10, 1967, Ser. No. 637,330
Int. Cl. C08d *1/14*
U.S. Cl. 260—93.1 4 Claims

A process for the polymerization of 1,3-cyclopentadiene to form a solid polymer containing no appreciable gel content is disclosed. The catalyst employed is a two-component system comprising a mixture of an alkyl aluminum halide such as dialkyl aluminum halides or alkyl aluminum dihalides or mixtures thereof in mixture with a transition metal halide of tungsten.

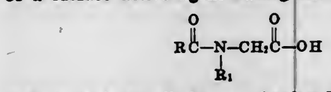
3,498,962

NON-FOGGING POLYOLEFIN FILM

Michael Francis Bruno, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 221,317, Sept. 4, 1962. This application Oct. 26, 1965, Ser. No. 505,242
Int. Cl. C08f *45/06, 29/04*
U.S. Cl. 260—93.7 2 Claims

A process for producing non-fogging polyolefin films by mixing a polyolefin or a copolymer of ethylene and a vinyl monomer with between 0.05% and 2% by weight of a surface active agent having the formula:



wherein R is an alkyl group having 7–17 carbon atoms and R_1 is an alkyl group containing from 1 to 4 carbon atoms, and thereafter melt extruding the polymeric resin into the shape of a film. The product of the above process useful for the packaging of various articles and materials, especially foodstuffs.

3,498,963

PROCESS FOR THE CATALYTIC PREPARATION OF 1,2-POLYBUTADIENE HAVING A HIGH PERCENTAGE OF VINYL CONFIGURATION

Mitsuo Ichikawa, Yasumasa Takeuchi, and Akira Kogure, Yokkaichi-shi, and Hisami Kurita, Mie-gun, Mie, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan

No Drawing. Filed Sept. 22, 1967, Ser. No. 669,713
Claims priority, application Japan, Sept. 26, 1966, 41/63,159, 41/63,160; July 15, 1967, 42/45,368
Int. Cl. C08f *3/16, 1/44, 3/04*
U.S. Cl. 260—94.3 16 Claims

Process for preparation of unsaturated hydrocarbon polymer having high percentage vinyl configuration by polymerizing an unsaturated hydrocarbon monomer of 4–10 carbon atoms and having the general formula $CH_2{=}CH{-}CR'{=}CR^2R^3$ in the presence of a catalyst prepared by mixing the following in a hydrocarbon or halogenated hydrocarbon solvent: (A) a cobalt compound, (B) a phosphine represented by the general formula $PR^4R^5R^6$, (C) an organo aluminum compound represented by the general formula $AlR^7R^8R^9$, and (D) water in an amount of 0.25–1.5 mols per mol of said organo aluminum compound.

3,498,964

PERIPHERAL VASODILATOR PEPTIDE OBTAINED FROM THE ANIMALS OF THE FAMILY OTARIIDAE AND METHOD OF PREPARING THE SAME

Takashi Hayashi, 5–2537 Kamimeguro, Meguro-ku; Taneko Suzuki, 1–119 Kashiwagi, Shinjuku-ku; and Shoji Nishiwaki, 17 Ichigaya Kawada-cho, Shinjuku-ku, all of Tokyo, Japan; and Tosiro Otsuka, Danchi 2–25–203, 7–17 Tokiwadaira, Matsudo-shi, Chiba-ken, Japan

Filed Aug. 29, 1966, Ser. No. 575,812
Claims priority, application Japan, Aug. 30, 1965, 40/52,500; Mar. 30, 1966, 41/19,214; Aug. 8, 1966, 41/51,670; Aug. 10, 1966, 41/52,073; Aug. 16, 1966, 41/53,422; Aug. 17, 1966, 41/53,673; Aug. 18, 1966, 41/53,913, 41/53,914, 41/53,915
Int. Cl. C07g *7/00;* A61k *9/02, 27/00*
U.S. Cl. 260—112 12 Claims

A process for preparing a peptide type peripheral vasodilatation substance comprising subjecting the skeletal muscles or viscera of an animal of the Otariidae family to hydrolysis and thereafter extracting the liquor resulting from such hydrolysis with a water-containing organic solvent or salting out the liquor with ammonium sulfate. Such hydrolysis is conducted in the presence of at least one substance selected from proteases, autolytic enzymes, and hydrolytic acids and alkali. The peptic type substance produced shows a positive biuret reaction and demonstrates an activity of enhancing the evoked potential of the cerebral cortex when administered into the blood stream by intravenous injection.

3,498,965

PREPARATION OF PROTEIN CONCENTRATES FROM A WHEAT FLOUR SLURRY BY USING A GLUTEN-MODIFYING AGENT CONSISTING OF LECITHIN OR CEPHALIN

David A. Fellers, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application June 8, 1966, Ser. No. 556,823, now Patent No. 3,463,770. Divided and this application Dec. 20, 1968, Ser. No. 798,554
Int. Cl. A23j *7/00, 1/12*
U.S. Cl. 260—112 2 Claims

Protein concentrates are prepared from wheat flour by the following technique: The flour is slurried with water and an edible gluten-modifying agent such as lecithin. The slurry is then centrifuged, yielding a supernatant liquid which contains essentially all the protein from the flour. This liquid may be dried and used as a protein supplement in bread and other foods.

3,498,966

MONOAZO PIGMENTS CONTAINING A BENZTRIAZOLE RADICAL

Willy Mueller, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Mar. 14, 1967, Ser. No. 624,972
Claims priority, application Switzerland, May 11, 1966, 6,881/66
Int. Cl. C09b *29/22;* C08g *51/66;* C09d *7/12*
U.S. Cl. 260—157 9 Claims

Monoazo pigments which are obtained by coupling the diazo compound of an aromatic amine, especially an amino-benzene, with a 2,3-hydroxy naphthoic acid arylide, the arylide radical of which contains a benztriazole radical. The azo pigments are useful for dyeing for example plastics, lacquers and spinning solutions in orange to red tints which are fast to light and migration.

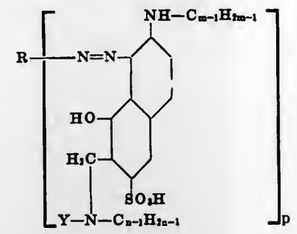
3,498,967

FIBER REACTIVE AZO-DYESTUFFS

René De Montmollin, Riehen, and Arthur Buehler, Rheinfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,555
Claims priority, application Switzerland, Nov. 16, 1965, 15,760/65
Int. Cl. C09b *62/82, 35/08;* D06p *3/12*
U.S. Cl. 260—181 8 Claims

Fibre-reactive azo dyestuffs of the formula



in which R represents the residue of a diazo component of the benzene series which may contain an azo group and which contains negative substituents or, when *p* stands for 2, it represents the residue of a tetrazo compound, Y represents an aliphatic fibre-reactive acyl residue, *m* and *n* each represents a positive integer not greater than 2 and *p* represents 1 or 2, are suitable for dyeing nitrogenous fibres, for example, leather, silk, polyamides, polyurethanes and especially wool producing level dyeings of very good fastness to washing, milling and to light.

3,498,968

p-CHLOROAZO COMPOUNDS

Peter Dimroth and Kurt Mayer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 8, 1965, Ser. No. 462,406
Claims priority, application Germany, June 16, 1964, B 77,270
Int. Cl. C09b *43/00;* C07c *107/04*
U.S. Cl. 260—205 2 Claims

Production of a p-chloroazo compound by reacting an aromatic azo compound bearing a hydroxy group in p-position to the azo group with phosgene in an inert organic solvent and in the presence of an N,N-disubstituted carboxylic amide. The resulting compounds are useful as pesticides or as a source of typical azo dyes.

3,498,969

PHOSPHONATE AMINE POLYOL COMPOUNDS AND A PROCESS FOR PREPARING SAME

Morton Lewis, Elmhurst, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 11, 1967, Ser. No. 674,667
Int. Cl. C08f *9/38*
U.S. Cl. 260—211 10 Claims

Condensation products are formed by reacting a carbonyl containing polyol with a primary or secondary amine and an aliphatic acid phosphite. A wide range of amines and phosphites are set forth along with a large variety of polyols. The resulting compositions can be used as surfactants, flame retardants, etc.

3,498,970

METHOD OF PREPARING 6-SUBSTITUTED-8-MERCAPTOPURINE DERIVATIVES

Yoshitaka Yamada and Moritaro Sakurai, Kawasaki-shi, and Izumi Kumashiro, Yokohama-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Feb. 8, 1968, Ser. No. 703,881
Claims priority, application Japan, Feb. 18, 1967, 42/10,304
Int. Cl. C07d *57/62*
U.S. Cl. 260—211.5 8 Claims

Adenine, hypoxanthine, 6-chloropurine, 6-N-benzyladenine, 6-methoxypurine, 2-N-9(or 7)-N-diacetylguanine, the 2′, 3′, 5′-tri-O-acetyl-derivatives of adenosine, inosine, and guanosine, and the corresponding 2′,3′-isopropylidene derivatives are readily converted to the corresponding 8-mercapto-derivatives by refluxing in acetamide or N-mono- or di-lower alkyl-acetamides with an excess of elementary sulfur.

3,498,971

PROCESS FOR THE PREPARATION OF SODIUM CARBOXYMETHYLCELLULOSE

Aurel Biaga, Ottawa, Ontario, Canada, and Colin R. McArthur, Camillus, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Feb. 13, 1967, Ser. No. 615,566
Int. Cl. C08b *11/00*
U.S. Cl. 260—231 9 Claims

A process for the preparation of sodium carboxymethylcellulose of desired viscosity by conducting any or all of the different stages of alkalization or etherification employed in a slurry process preparation of carboxymethylcellulose in an atmosphere containing predetermined proportions of oxygen. Purging gas mixtures containing from 0 to 100% oxygen are added during the alkalization, etherification or throughout the duration of a slurry process for the preparatin of sodium carboxymethylcellulose involving the known reaction of cellulose, alkali and etherifying agent.

3,498,972

PROCESS OF MANUFACTURING DEXTRAN SULFATE

Kinzo Nagasawa, 20, 2-chome, Kohinata-daimachi, Bunkyo-ku, Tokyo, Japan

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,839
Claims priority, application Japan, Mar. 1, 1966, 41/12,505
Int. Cl. C07c *139/10, 139/00*
U.S. Cl. 260—234 6 Claims

Depolymerization and sulfation of dextran by sulfuric acid. Dextran is dissolved at a temperature of from −30° C. to +50° C. in a concentrated sulfuric acid having a concentration of at least 85% by weight. The temperature is kept until the desired product is formed. A sufficient amount of an aliphatic ether such as diethyl ether or tetrahydrofuran is then added to the reaction mixture to precipitate the product, which is dextran monosulfate, disulfate, or trisulfate having homogeneous characteristic concerning molecular weight and sulfate group distribution.

3,498,973

2,3-DIHYDRO-5-PHENYL-1H-1,4-BENZODIAZEPIN-3-OL DERIVATIVES

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 25, 1963, Ser. No. 267,908. Divided and this application June 19, 1967, Ser. No. 647,226
Int. Cl. C07d *53/06*
U.S. Cl. 260—239 3 Claims

1,4-benzodiazepines having either an ether group on the 3-position or a hydroxyl group on the 3- or 4-position

which are useful as anticonvulsants and 2,3,4,9-tetrahydro-9-phenyl-oxazirino [2,3-d] [1,4] benzodiazepines which are intermediates in the production of 1,4-benzodiazepines 4-oxides useful as anticonvulsants.

3,498,974

1,1-ALKYLENE HYDRAZINE DERIVATIVES

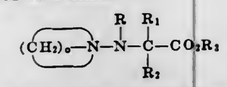
Ernest Magnien, Flushing, and Wing Tom, Riverdale, N.Y., assignors to U.S. Vitamin & Pharmaceutical Corporation, a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,874

Int. Cl. C07d *41/04, 29/28;* A61k *27/00*

U.S. Cl. 260—239 5 Claims

Compounds of the formula



wherein R, R_1, R_2, and R_3 are hydrogen or lower alkyl and *n* is an integer from 5–7 have potent hypoglycemic activity. The compounds wherein R_3 is lower alkyl are obtained by treatment of the corresponding nitrile with the desired alkanol in the presence of an equivalent quantity of water.

3,498,975

HALOETHISTERONE COMPOUNDS

Arthur E. Oberster, Canton, Ohio, Roger E. Beyler, Carbondale, Ill., and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of applications Ser. Nos. 23,392, 23,393, 23,394, 23,395, 23,396, and 23,397, all Apr. 20, 1960. This application Sept. 30, 1960, Ser. No. 59,479

Int. Cl. C07c *167/00, 169/22;* A61k *17/08*

U.S. Cl. 260—239.55 16 Claims

The invention disclosed herein is concerned generally with novel steroids and processes of preparing the same. More particularly, it relates to novel 21-halo-ethisterones, 21-halonorethisterones, and closely related compounds, which possess useful therapeutic properties as orally and parenterally active progestational agents, and which are prepared by reacting the corresponding ethisterone or 19-nor-ethisterone compound in which the 3- and 17-oxygen functions are protected, with a halogenating agent. This invention also relates to pharmaceutical compositions containing these novel steroid compounds.

3,498,976

N-CARBAMYL AND THIOCARBAMYL-1,2-DIPHENYL-2-PROPIONOXY-4-METHYLAMINOBUTANES

Frank H. Clarke, Jr., Armonk, and Fred B. Block, Hartsdale, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,385

Int. Cl. C07d *87/46, 29/36;* C07c *47/07*

U.S. Cl. 260—247.2 9 Claims

N-carbamyl- and N-thiocarbamyl - 1,2-dipenyl - 2-propionoxy-3-methyl-4-methylaminobutanes are neutral analgesics and are obtained from the corresponding 4-(N-monomethyl) butanes through the action of carbamyl chloride, thiocarbamyl chloride, isocyanate or thioisocyanate or from the corresponding 4-(N-cayno-N-methyl)-butanes through the action of hydrogen peroxide or hydrogen peroxide or hydrogen sulfide.

3,498,977

N-CARBAMYL AND THIOCARBAMYL-4-CARBETHOXY-4-PHENYLPIPERIDINES

Frank H. Clarke, Jr., Armonk, and Fred B. Block, Hartsdale, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,386

Int. Cl. C07d *29/36, 87/46;* A61k *27/00*

U.S. Cl. 260—247.2 9 Claims

N-carbamyl- and N-thiocarbamyl-4-carbethoxy-4-phenylpiperidines are neutral analgesics and are obtained from the corresponding N-unsubstituted piperidine through the action of a carbamyl chloride, thiocarbamyl chloride, isocyanate or isothiocyanate.

3,498,978

3-PIPECOLINE DERIVATIVES

Frank H. Clarke, Jr., Armonk, and Fred B. Block, Hartsdale, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,387

Int. Cl. C07d *87/46, 29/36;* A61k *27/00*

U.S. Cl. 260—247.2 9 Claims

N-carbamyl- and N - thiocarbamyl - 4 - propionoxy-4-phenyl-3-pipecolines are neutral analgesics and are obtained from the corresponding N-unsubstituted pipecolines through the action of a carbamyl chloride, thiocarbamyl chloride, isocyanate or thioisocyanate, or from the corresponding N-cyanopipecoline through the action of hydrogen peroxide or hydrogen sulfide.

3,498,979

RECOVERY OF N-(7-2'-THIENYLACETAMIDO-CEPH-3-EM-3-YLMETHYL) PYRIDINIUM - 4-CARBOXYLATE FROM AN ACID ADDITION SALT THEREOF

Harold A. Crisp, Harrow Weald, John Francis Oughton, Gerrards Cross, Christopher John Sharp, Northolt, and Peter Alfred Wilkinson, South Croydon, England, assignors to Glaxo Laboratories Limited, Greenford, Middlesex, England, a British company

Continuation-in-part of application Ser. No. 605,474, Dec. 28, 1966. This application Apr. 3, 1967, Ser. No. 627,933

Int. Cl. C07d *99/24*

U.S. Cl. 260—243 18 Claims

The betaine, N-(7-2'-thienylacetamidoceph - 3 - em-3-ylmethyl) pyridinium - 4-carboxylate, a broad spectrum antibiotic, is regenerated and recovered from an acid addition salt thereof with an acid having a pKa of not greater than 4 by contacting an organic solution of the salt with an organic base to form an organic solution of an acid addition salt of the base and recovering the betaine from the organic medium. Depending on the organic solvent selected, there may be obtained particular crystalline forms of the betaine which are relatively non-hygroscopic compared with the hydrogscopic forms previously prepared.

3,498,980

OXAZINOISOQUINOLINE DERIVATIVES

Frank H. Clarke, Jr., Armonk, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 634,856, May 1, 1967. This application Dec. 9, 1968, Ser. No. 782,443

Int. Cl. C07d *87/32, 87/30, 87/44*

U.S. Cl. 260—244 9 Claims

3-carboxy and 3-cyano derivatives of 9-alkoxy-, 9,10-dialkoxy-, 9,10,11-trialkoxy-, and 9,10-methylenedioxy-1, 3,4,6,7,11b-hexahydro - [1,4]oxazino[3,4a]isoquinolines and their salts, are intermediates for the preparation of the corresponding 3-carboxamido compounds which possess tranquilizing and muscle relaxant properties. Typical embodiments are 3-carbomethoxy-9,10-dimethoxy-1,3,4,6,

7,11b-hexahydro-[1,4]oxazino[3,4a]isoquinoline and 9, 10 - dimethoxy - 1,3,4,6,7,11b-hexahydro-[1,4]oxazino[3, 4a]isoquinoline-3-carboxylic acid.

3,498,981

SUBSTITUTED as-TRIAZINES

Billy M. Culbertson, Burnsville, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,743

Int. Cl. C07d *55/10, 91/30;* A01n *9/22*

U.S. Cl. 260—248 7 Claims

Novel substituted monomeric and polymeric as-triazines have been prepared by the reaction of a mono or difunctional hydrazidine with a mono or a difunctional substituted glyoxal. The compositions are thermally stable and can be employed as corrosion inhibitors for lube oils, as coatings and further to provide a sensitive test for the presence of ferrous ions.

3,498,982

PROTECTING THE INNER WALLS OF A REACTOR FOR THE SYNTHESIS OF MELAMINE

Matthias Schwarzmann, Limburgerhof, Pfalz, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Apr. 26, 1968, Ser. No. 724,477

Int. Cl. C07d *55/28, 55/30*

U.S. Cl. 260—249.7 3 Claims

Melamine is prepared from urea in the presence of catalysts at temperatures of 220° to 500° C. at atmospheric pressure. The walls of the reactor in which the reaction is carried out are kept at a temperature which is lower than that which prevails in the reaction zone. In this way a coherent coating is produced along the inner walls which protects the walls from the corrosive gas present in the reaction zone.

3,498,983

7,8-DIHYDROXYBENZO[g]PTERIDINE-6,9-DIONES AND DERIVATIVES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1968, Ser. No. 721,074

Int. Cl. C07d *57/28*

U.S. Cl. 260—251.5 2 Claims

7,8 - dihydroxybenzo[g]pteridine-6,9-diones, optionally substituted in the 2-position with hydroxyl, aryl, halo, alkoxy, alkylthio, alkylamino, dialkylamino, cycloalkylamino or halophenylamino and in the 4-position with hydroxyl, halo or alkyl (I) and their salts are prepared by condensing a 4,5-diaminopyrimidine (II) with rhodizonic acid (III) and, if desired, forming a salt of the product. Compounds (I) are pharmacologically active, especially as anti-inflammatory agents.

3,498,984

4-AMINO-2-PHENYL-6-THIOPYRIMIDINES

Arthur A. Santilli, Havertown, and Dong H. Kim, Strafford, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,198

Int. Cl. C07d *51/42, 51/44*

U.S. Cl. 260—256.5 9 Claims

4-amino-2-phenyl-6-thiopyrimidines have been snythesized and have been found to possess anti-viral, anticonvulsant, antibacterial, hypotensive and anti-inflammatory activity.

3,498,985

ADDUCTS OF BIS-(2-PYRIDYL - 1-OXIDE) DISULFIDE WITH ALKYL-SUBSTITUTED TIN SALTS

Charles W. Kaufman, Hamden, and Guenter K. Weisse, Northford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,578

Int. Cl. C07f *7/20;* A01m *9/22*

U.S. Cl. 260—270 3 Claims

Adducts of bis-(2-pyridyl-1-oxide) disulfide are prepared by adding an organo-substituted tin salt, such as dimethyl tin dichloride, in acidified aqueous solution to an approximately equimolar amount of an acidified aqueous solution of the bis-(2-pyridyl-1-oxide) disulfide. The reaction can be conducted utilizing bis-2(pyridyl-1-oxide) disulfide which has been substituted in the pyridine rings other than in the 1 and 2 positions with any innocuous group such as lower alkyl or halo groups.

3,498,986

10-(ARYLAMINOALKYL)-9,9-DIMETHYLACRIDANS

Alex Meisels, Basel, and Angelo Storni, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 21, 1966, Ser. No. 535,684, now Patent No. 3,452,021. Divided and this application July 17, 1968, Ser. No. 761,370

Int. Cl. C07d *37/06,* A61k *27/00*

U.S. Cl. 260—279 8 Claims

10 - (arylaminoalkyl)-9,9-dimethylacridans having antiviral activity.

3,498,987

9,9-DIMETHYL-10-AMINO-ALKYLACRIDANS

Alex Meisels, Basel, and Angelo Storni, Basel Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 21, 1966, Ser. No. 535,684, now Patent No. 3,452,021. Divided and this application July 17, 1968, Ser. No. 761,371

Int. Cl. C07c *47/18*

U.S. Cl. 260—279 3 Claims

10 - {3 - [5 - chloro - 2 - (p-chlorophenoxy)anilino] propyl}-9,9-dimethylacridan and the corresponding N-lower alkyl compounds having pharmacological activity; e.g., analgesic activity.

3,498,988

DIBENZ[c,f]AZONINES

William J. Houlihan, Mountain Lakes, and Robert E. Manning, Parsippany, N.J., assignors to Sandoz-Wander, Inc., Hanover N.J., a corporation of Delaware

No Drawing. Filed Mar. 15, 1967, Ser. No. 623,239

Int. Cl. C07d *35/28, 57/04;* A61k *27/00*

U.S. Cl. 260—289 1 Claim

The compounds and certain intermediates are useful as central nervous system stimulants and anti-inflammatories. They are prepared by converting an isoindolo[1,2-a]isoquinoline to its quaternary ammonium salt by treatment with a lower alkyl halide, e.g. methyl iodide, and reducing the salt by sodium in liquid ammonia to cleave the bond common to the five membered ring of the isoindolo moiety and six membered ring to the isoquinolino moiety, thus forming the nine membered N-heterocyclic ring of dibenz[c,f]azonine. For example, 2,3-dimethoxy - 7 - methyl - 5,6,7,8 - tetrahydrodibenz[c,f] azonine can thus be prepared from 2,3-dimethoxy-5,6,8,12b-tetrahydroisoindolo[1,2-a]isoquinoline.

3,498,989

CERTAIN 8-SUBSTITUTED-2-ALKYL-3-BENZOYL ESTERS OF ECGONINE AND DERIVATIVES THEREOF

Stephen I. Sallay, Montgomery, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 594,391, Nov. 15, 1966. This application Apr. 16, 1969, Ser. No. 816,799

Int. Cl. A61k 27/00; C07d 43/04, 43/14

U.S. Cl. 260—292 9 Claims

The disclosure is directed to cocaine derivatives and more particularly to 8-substituted norecgonine benzoate esters and their acid addition salts. The compounds are useful as anticonvulsants.

3,498,990

7α-CYANOINDOLOMORPHANS

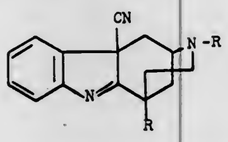
John Shavel, Jr., Mendham, and Glenn C. Morrison, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 25, 1967, Ser. No. 663,233

Int. Cl. C07d 52/00, 33/06

U.S. Cl. 260—293 3 Claims

This invention describes a new class of cyanoindolomorphans of the formula:



wherein R is lower alkyl. These compounds are useful as hypotensive agents.

3,498,991

CERTAIN QUATERNARY AMMONIUM AND PYRIDINIUM SALICYLATES, ACETYLSALICYLATES, PARA-AMINOSALICYLATES AND UNDECYLENATES

Alfred Halpern, Great Neck, Mortimer D. Sackler, New York, and Raymond R. Sackler, Roslyn, N.Y., assignors to Synergistics, Inc., Yonkers, N.Y., a corporation of New York

No Drawing. Filed Mar. 15, 1966, Ser. No. 534,412

Int. Cl. C07d 31/34, 29/24

U.S. Cl. 260—295 8 Claims

Quaternary nitrogen compounds having germicidal properties in which the acid moiety is selected from the group consisting of salicylic acid, acetylsalicylic acid, para-amino salicylic acid and undecylenic acid.

3,498,992

SUBSTITUTED 1,2,3,6-TETRAHYDRO-4-PYRIDINE ACETIC ACID AMIDES

Hans Herbert Kuhnis, Hugo Ryf, and Rolf Denss, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 520,093, Jan. 12, 1966. This application Sept. 29, 1967, Ser. No. 671,592

Claims priority, application Switzerland, Jan. 15, 1965, 603/65

Int. Cl. C07d 29/38; A61k 27/00

U.S. Cl. 260—295 4 Claims

The compounds are of the class of 1,2,3,6-tetrahydropyridine derivatives substituted in 4-position by an amidoalkyl group useful as analgesic and antitussive agents. An illustrative embodiment is 1-methyl-1,2,3,6-tetrahydro-4-pyridine acetic acid ethylamide.

3,498,993

CERTAIN 3-PYRIDYL CARBAMATE AND 3-PYRIDYL-UREA DERIVATIVES OF DODECAHYDRO-5,9-METHANOBENZOCYCLOOCTENES

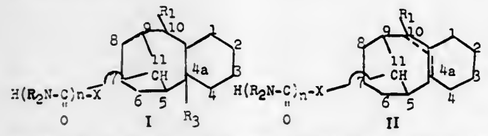
Edward J. Merrill, Whippany, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 401,978, Oct. 6, 1964. This application Oct. 24, 1967, Ser. No. 678,162

Int. Cl. C07d 31/40

U.S. Cl. 260—295.5 2 Claims

Substituted dodecahydro-5,9-methanobenzocyclooctenes of the Formula I



wherein R_1, R_2, R_3 and X are as defined below. These compounds are useful as anti-arrhythmic agents.

3,498,994

CERTAIN 1,2,3,6-TETRAHYDRO-4-PYRIDYL KETONES

Hans Herbert Kuhnis, Hugo Ryf, and Rolf Denss, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 520,093, Jan. 12, 1966, which is a continuation-in-part of application Ser. No. 382,955, July 15, 1964. This application Sept. 29, 1967, Ser. No. 671,549

Claims priority, application Switzerland, July 26, 1963, 9,053/63

Int. Cl. C07d 29/34

U.S. Cl. 260—297 8 Claims

The compounds are of the class of 1,2,3,6-tetrahydropyridine derivatives substituted in 4-position by a keto alkyl group useful as analgesic and antitussive agents. An illustrative embodiment is 1-(1'-methyl-1',2',3',6'-tetrahydro-4'-pyridyl)-2-propanone.

3,498,995

ISOTHIAZOLE SYNTHESIS

Donald Neil McGregor and Lee Cannon Cheney, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1966, Ser. No. 567,378

Int. Cl. C07d 91/12

U.S. Cl. 260—302 15 Claims

Isothiazoles, particularly 3,4,5-substituted isothiazoles, are of value as chemical intermediates in the synthesis of biologically active medicinal agents. As such a new and commercially feasible synthesis has been developed which entails reacting, for example, 1-amino-2-carbomethoxy-1-(2,6-dichlorophenyl)-1-buten-3-one with phosphorous pentasulfide, followed by mild oxidation, to produce methyl-3-(2,6-dichlorophenyl)-5-methyl-4-isothiazolecarboxylate.

3,498,996

PROCESS FOR MANUFACTURE OF 5-ESTERIFIED HYDROXY-THIAZOLIDINE-4-CARBOXYLIC ACIDS

Robert Burns Woodward, 12 Oxford St., Cambridge, Mass. 02138

No Drawing. Filed Jan. 26, 1967, Ser. No. 611,808

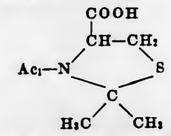
Claims priority, application Switzerland, Feb. 3, 1966, 1,531/66; Feb. 22, 1966, 2,509/66; June 17, 1966, 8,831/66

Int. Cl. C07d 91/16, 99/24

U.S. Cl. 260—306.7 5 Claims

The invention concerns a process for the introduction of a halogen atom into the 5-position of a 5-unsubstituted

2,2-disubstituted 3-acyl-thiazolidine-4-carboxylic acid derivative by treatment with an alkoxy radical-forming peroxide in the presence of a reagent capable of furnishing halogen by homolytic cleavage, more especially the introduction of halogen atom, especially a bromine atom into the 5-position of an ester, particularly the methyl ester of an acid of the formula



in which Ac_1 is an acyl radical, primarily the tert.-btuyloxycarbonyl group, by treatment with a tetrahalogenomethane particularly bromotrichloromethane, in the presence of a lower alkyl peroxalate, particularly tert.-butylperoxalate. The product obtained are valuable intermediates, primarily useful for the synthesis of 7-amino-cephalosporanic acid and derivatives thereof.

3,498,997

4-THIAZOLINE-Δ2,4-ACETIC ACID ESTERS

Real Laliberte, Laval, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1968, Ser. No. 721,069

Int. Cl. C07d 91/24, 91/16

U.S. Cl. 260—306.7 7 Claims

There are disclosed herein α-cyano-4-methyl-4-thiazoline-Δ2,4-acetic acid methyl and ethyl esters which are further substituted in position 3 with methyl, ethyl, or propyl groups, as well as the corresponding 4-hydroxy- and 4-methylene—thiazolidine derivatives used as intermediates in the preparation of the above compounds. The compounds possess anti-inflammatory activities, and methods for their preparation and use are also disclosed.

3,498,998

QUATERNARY AMMONIUM COMPOUNDS OF 1,2,4-OXADIAZOLES

Graham K. Hughes and Leonard A. Tushaus, Minneapolis, Minn., assignors to Ashland Oil Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Feb. 10, 1967, Ser. No. 615,082

Int. Cl. C07d 85/52

U.S. Cl. 260—307 2 Claims

This invention relates to novel quaternary ammonium compounds of 1,2,4-oxadiazoles, and to methods for their preparation and use.

3,498,999

1-PHENOXY AND SUBSTITUTED PHENOXY-3-(5-TETRAZOLYL) PROPANES

Ronald Leslie Buchanan, Fayetteville, and Richard Anthony Partyka, Liverpool, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1966, Ser. No. 543,812

The portion of the term of the patent subsequent to Aug. 22, 1984, has been disclaimed

Int. Cl. C07d 55/56

U.S. Cl. 260—308 10 Claims

1-phenoxy and substituted phenoxy-3-(5-tetrazolyl)-propanes possess hypocholesterolemic activity and are useful for lowering blood cholesterol level.

3,499,000

1,3-DISUBSTITUTED-Δ2-1,2,4-TRIAZOLIN-5-ONE-4-ACETIC ACIDS

Andre L. Langis, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 4, 1967, Ser. No. 658,326

Int. Cl. C07d 55/06; A61k 27/00

U.S. Cl. 260—308 9 Claims

There are disclosed herein 1,3-diphenyl-, 3-(4'-chlorophenyl) - 1 - phenyl-, 3-(1'-naphthyl)-1-phenyl-, and 3-benzhydryl-1-phenyl-Δ2-1,2,4-triazolin-5-one - 4 - acetic acids and, as intermediates, their corresponding ethyl esters and 1,3-diphenyl-, 3-(4'-chlorophenyl)-1-phenyl-, 3-(1'-naphthyl)-1-phenyl-, and 3-benzhydryl-1-phenyl-Δ2-1,2,4-triazolin-5-ones. The above acids have anti-inflammatory activities and methods for their preparation and use are also disclosed.

3,499,001

SUBSTITUTED ALKYLSULFONYLIMIDAZOLES

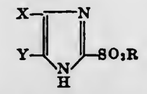
Albert William Lutz, Montgomery Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 21, 1967, Ser. No. 654,968

Int. Cl. C07d 49/36; A01n 9/22

U.S. Cl. 260—309 10 Claims

Substituted alkylsulfonylimidazole compounds of the formula:



wherein R is a member selected from the group consisting of lower alkyl, alkenyl and aralkyl and X and Y are hydrogen, nitro, or halogen, at least one of X and Y being halogen. The compounds where one of X and Y is hydrogen or nitro are formed from the corresponding 2-alkylthioimidazole intermediates by oxidation of the intermediates with m-chloroperbenzoic acid or monoperphthalic acid, followed by halogenation. The compounds are highly active pre-emergence and post-emergence herbicides.

3,499,002

1-CARBAMOYL-3-AROYLPYRROLIDINES

Grover Cleveland Helsley, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 570,722, Aug. 8, 1966. This application June 20, 1968, Ser. No. 738,425

Int. Cl. C07d 27/06; A61k 27/00

U.S. Cl. 260—326.3 8 Claims

The invention relates to 1-carbamoyl-3-aroylpyrrolidines. The compounds are anticonvulsants. The compounds are prepared by reacting 3-aroylpyrrolidines with alkyl isocyanates, aryl isocyanates and N,N-diaryl carbamoyl halides.

3,499,003

3-[2-(3-AMINOPYRROLIDINYL)-ETHYL]-INDOLES

William J. Welstead, Jr., Richmond, Va., assignor to A. H. Robins Company, Incorporated, a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 504,088, Oct. 23, 1965. This application Mar. 7, 1968, Ser. No. 711,227

Int. Cl. C07d 27/56

U.S. Cl. 260—326.14 10 Claims

Novel 3-[2-(3-aminopyrrolidinyl)-ethyl]-indoles are disclosed which have anti-Parkinsonism activity. The indole compounds can be further substituted on the indole moiety. The amino group in the 3-position of the pyrrol-

idine ring is secondary or tertiary amino group. The novel compounds are prepared from appropriately substituted indoles and glyoxyl chloride. Reaction of the indole-3-glyoxyloyl chloride and 3-aminopyrrolidines to give the corresponding 3-indoleglyoxamide followed by reduction of the latter compound using lithium aluminum hydride gives the novel compounds.

3,499,004
THIOPHENE-2-ALDEHYDE-THIO-SEMICARBAZONE

Erhardt Winkelmann and Heinrich Rolly, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 8, 1967, Ser. No. 636,663
Claims priority, application Germany, May 25, 1966, F 49,285
Int. Cl. C07d *63/12*; A61k *27/00*
U.S. Cl. 260—329 **4 Claims**

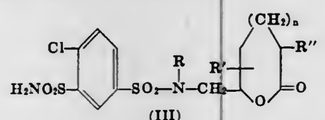
Thio-semicarbazones active against smallpox which are obtained by reacting a thiophene-aldehyde with thiosemicarbazide or a thiocyanate.

3,499,005
CERTAIN HETEROCYCLYL DISULPHONAMIDES

Harald Horstmann, Wuppertal-Vohwinkel, and Hartmund Wollweber and Karl Meng, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 6, 1967, Ser. No. 643,822
Claims priority, application Germany, June 16, 1966, F 49,487
Int. Cl. C07d *5/04*; A01n *9/16*
U.S. Cl. 260—343.5 **7 Claims**

Disulphonamides of the formula:



(III)

wherein R is hydrogen or methyl, R′ is hydrogen or lower alkyl, R″ is hydrogen or lower alkyl and *n* is 0 or 1, and their pharmaceutically acceptable non-toxic salts have been found to be particularly effective saluretics both in the form of their racemates and their dextro-rotatory and levo-rotatary isomers. The Na^+/K^+ quotient has been found to be particularly advantageous and the common contra-indication of hypopotassemia is avoided by administration of the disulphonamides (III).

3,499,006
DIOLS FROM RESIN ACIDS

Bernard A. Parkin, Jr., Lake City, Fla., Hugh B. Summers, Jr., Savannah, Ga., and Glen W. Hedrick, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application June 30, 1966, Ser. No. 562,951. Divided and this application Apr. 11, 1968, Ser. No. 738,750
Int. Cl. C07c *173/00*
U.S. Cl. 260—345.2 **3 Claims**

This invention relates to a method for preparing diols from pine gum resin acids via a Diels-Alder type formaldehyde-resin acid adduct and to the diols so prepared. The unsaturated product diols are useful for preparing protective coatings. The saturated product diols are useful in the preparation of polyurethane foams and rubbers.

3,499,007
ADDITION PRODUCTS OF MALEIC ANHYDRIDE TO POLYALKYLENE ETHERS

Hanswilli von Brachel, Offenbach am Main, and Karl Hintermeier, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a company of Germany

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,328
Claims priority, application Germany, Dec. 5, 1964, C 34,568
Int. Cl. C07c *57/14*; C08g *51/80*
U.S. Cl. 260—346.8 **2 Claims**

Addition products of maleic anhydride and a polyalkylene ether which is free of hydroxyl groups and of a molecular weight of over 400 and the utility thereof as surface active agents, for the production of polyester resins, as anhydride components, for epoxide resins and as raw materials for lacquers and textile auxiliaries.

3,499,008
BUTYL ESTER OF BIS(GLYCIDYLOXY-4-PHENYL) ACETIC ACID

Pierre Talet, Alfortville, and Robert Behar, Paris, France, assignors to Nobel-Bozel, Paris, France, a joint-stock company of France

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,340
Claims priority, application France, Apr. 29, 1964, 972,884
Int. Cl. C07d *1/18*
U.S. Cl. 260—348 **1 Claim**

The present disclosure relates to a new group of derivatives of bis (hydroxy-4-phenyl) acetic acid, a method of forming such derivatives, and the uses of such derivatives. Among the new compounds are chlorinated derivatives, esters, salts, bis-acetylated derivatives, and epoxies. The new compounds are useful as herbicides, fungicides, bactericides, as ingredients in thermosetting acrylic paints, and as starting materials for the preparation of epoxy resins.

3,499,009
POLYOLS OF METHYLENEDIANILINES

Alec Odinak, New Haven, Harold E. Reymore, Jr., Wallingford, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 334,600, Dec. 30, 1963. This application Sept. 27, 1965, Ser. No. 490,632
Int. Cl. C07c *91/16*, *91/28*
U.S. Cl. 260—570 **8 Claims**

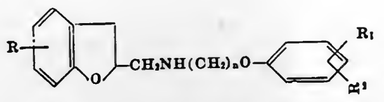
Polyols, useful in preparing polyurethanes, are obtained by sequential alkoxylation of a polyamine firstly with 2 to 20 molar equivalents of ethylene oxide and secondly with 2 to 20 molar equivalents of a C_{3-5} vicinal alkylene oxide. The starting polyamine is obtained by acid condensation of aniline and formaldehyde and preferably contains from 35 to 90 parts of methylenedianilines, the remainder being triamines and polyamines of higher functionality.

3,499,010
α-(PHENOXYALKYLAMINOMETHYL) 2,3-DIHYDROBENZOFURANS

Peter Nicholl Green, Pinner, and Maurice Shapero, Edgware, England, assignors to Ward Blenkinsop & Company Limited, Wembley, England, a British company

No Drawing. Filed Dec. 12, 1967, Ser. No. 689,776
Claims priority, application Great Britain, Dec. 15, 1966, 56,316/66
Int. Cl. C07d *5/34*
U.S. Cl. 260—396.2 **10 Claims**

Secondary amines are provided which are selected from the group of 2-substituted 2,3-dihydrobenzofurans having the formula



in which each of R, R^1 and R^2 is a hydrogen or halogen

This invention relates to the production of pharmaatom or an alkyl or alkoxy group having one to six carbon atoms and n is an integer from two to six. The compounds bring about a fall in blood pressure and possess adrenolytic and adrenergic blocking properties.

3,499,011
PRODUCTION OF QUINONE AND HYDROQUINONE

Clifton P. Idyll, Huntington Station, N.Y., assignor to Trans American Chemical Co., Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 245,693, Dec. 19, 1962. This application July 18, 1966, Ser. No. 568,696
Int. Cl. C07c *49/64*, *45/00*, *39/08*
U.S. Cl. 260—396 **8 Claims**

A process for producing quinone, in which pyruvic aldehyde or an addition product thereof is passed through a zone containing an agent effecting dehydration of the aldehyde and bringing about the cyclization of two molecules of pyruvic aldehyde or the addition product to form the quinone. The quinone may be converted to hydroquinone by treatment with a reducing agent.

3,499,012
$\Delta^{13(17)}$-FUSIDENE-21-OIC ACID DERIVATIVES AND INTERMEDIATES OBTAINED IN THE PRODUCTION THEREOF

Wagn Ole Godtfredsen, Vaerlose, and Welf von Daehne, Copenhagen, Denmark, assignors to Lovens Kemiske Fabrik Produktionsaktieselskab

No Drawing. Filed Sept. 27, 1967, Ser. No. 671,146
Claims priority, application Great Britain, Sept. 28, 1966, 43,429/66
Int. Cl. C07c *169/52*
U.S. Cl. 260—397.1 **13 Claims**

The invention relates to novel antibiotics, which are derivatives of $\Delta^{13(17)}$-fusidene-21-oic acid and $\Delta^{13(17),20(22)}$-fusidadiene-21-oic acid, to methods of producing the said antibiotics from known antibiotics of the fusidic acid series, and to intermediates in the said production.

3,499,013
3-OXYGENATED 21β-HYDROCARBONSULFONYL-PREGNA-17(20),20-DIENES, DEHYDRO AND 19-NOR DERIVATIVES THEREOF AND INTERMEDIATES THERETO

Walter R. Benn, Deerfield, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 666,481, Sept. 8, 1967. This application Nov. 4, 1968, Ser. No. 773,273
Int. Cl. C07c *169/34*; A61k *17/06*
U.S. Cl. 260—397.3 **15 Claims**

The reaction of a 17α-ethynyl-17β-hydroxy steroid with a hydrocarbonsulfinyl halide affords the corresponding 17-hydrocarbonsulfinate ester which, upon heating, rearranges to yield a 21-hydrocarbonsulfonyl-17(20),20-allene. The latter compounds are useful pharmacological agents as is evidenced by their anti-inflammatory and antifungal properties.

3,499,014
17-HYDROXYALKYNYLATION PROCESS

Francisco Alvarez, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,202
Int. Cl. C07c *167/20*, *169/08*
U.S. Cl. 260—397.4 **11 Claims**

17β-hydroxy-17α-alk-1′-ynyl steroids are prepared from 17-keto steroids and an alkynylating complex consisting of a 1-alkyne, an alkali metal hydride, and an aprotic organic solvent with a high dielectric constant.

3,499,015
13-ETHYL-6-OXYGENATED STEROIDS

George H. Douglas, Paoli, Charles R. Walk, King of Prussia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 553,636, May 31, 1966. This application July 11, 1968, Ser. No. 743,980
Int. Cl. C07c *169/00*
U.S. Cl. 260—397.4 **7 Claims**

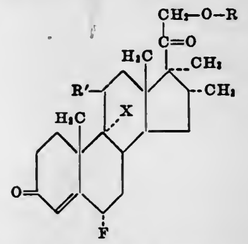
13β-polycarbonalkyl-17β-hydroxy-17α-alkyl- or alkynyl-3,6-dioxygenated gonane derivatives are prepared having hormonal activity.

3,499,016
6α-FLUORO-16α-METHYL DERIVATIVES OF THE PREGNANE SERIES

Frank H. Lincoln, William P. Schneider, George B. Spero, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Aug. 4, 1958, Ser. No. 753,157
Int. Cl. C07c *169/30*, *169/34*; A61k *17/06*
U.S. Cl. 260—397.45 **30 Claims**

1. 6α-fluoro-16α-methyl steroid compounds of the formula:



wherein R is a member of the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from one to twelve carbon atoms, inclusive; R′ is a member of the group consisting of β-hydroxy and keto; and X is a member of the group consisting of hydrogen, fluorine, and chlorine.

3,499,017
ALKALINE HYDROLYZED PHOSPHATIDES

Paul F. Davis, Addison, Ill., assignor to The Central Soya Company, Inc., Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 4, 1968, Ser. No. 734,241
Int. Cl. C11c *3/00*
U.S. Cl. 260—403 **9 Claims**

Soybean phosphatides in emulsion form are treated with aqueous base or basic salt and selectively hydrolyzed giving lyso phosphatides, fatty acids, and possibly amides and other modified phosphatides. The products formed have improved properties for the formation of oil-in-water emulsions in the presence of calcium and magnesium ions. Further, the alkaline hydrolysate can be treated with inorganic or organic acids to give fluid products which retain their emulsification properties. Alter-

natively, the alkaline hydrolysate is treated with organic acid anhydrides giving fluid, water dispersible products having good wetting and stabilizing properties for the dispersion of fat-containing powders in aqueous media, while retaining the oil-in-water emulsification activity. Acid and organic acid anhydride-treated alkaline hydrolysates are bleached using normal oxidative bleaching agents and the bleached products have dough conditioning and crub softening activity in commercial white bread formulations.

3,499,018

ETHYLENE BIS DITHIOCARBAMATE COMPLEXES CONTAINING FOUR DIFFERENT METALS

Arthur Stevenson, West Bromwich, England, assignor to Robinson Brothers Limited, Birmingham, England, a British company

No Drawing. Filed July 5, 1967, Ser. No. 651,115
Int. Cl. C07g *15/00;* **C07c** *155/08;* **A01n** *9/12*
U.S. Cl. 260—429 **8 Claims**

New chemical products have been prepared which are coreacted mixed-metals ethylene bis dithiocarbamates in which the mixed metals include manganese, zinc and copper, and preferably also iron. Products of the invention have valuable fungicidial and miticidal properties and may be formulated into fungicidial and miticidal compositions. The products containing iron are of particular value in the treatment of citrus fruit while it is growing.

3,499,019

PROCESS FOR THE PRODUCTION OF WATER INSOLUBLE ZINC MERCAPTIDES

Henryk Szulc, Wroclaw, and Zdzislaw Michalski and Marian Piotrowski, Zarow, and Zygmunt Kosmala and Wladyslaw Jedrzejewski, Swidnica, Poland

No Drawing. Filed July 10, 1967, Ser. No. 652,011
Claims priority, application Poland, July 11, 1966, P 115,546
Int. Cl. C07f *3/06*
U.S. Cl. 260—429.9 **7 Claims**

A process for producing accelerators for the vulcanization of rubber which uses as a starting material, a resinous byproduct which is formed in the production of 2-mercaptobenzothiazole.

The resinous material is treated with aqueous alkali hydroxide to convert the resinous matter into water soluble alkali mercaptides which are separated from the resinous matter and precipitated out as an insoluble heavy metal salt such as the zinc salt by means of a heavy metal salt such as zinc sulfate.

3,499,020

REDUCTION OF SUBSTITUTED SILANES

Robert E. Robinson, Adrian, Mich., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,688
Int. Cl. C07f *7/12;* **C01b** *33/08*
U.S. Cl. 260—448.2 **8 Claims**

A method of reducing Si—Cl to Si—H in alkyl-halosilanes and tetrahalosilanes employing as a reducing agent a dialkylaluminum hydride in the presence of a complex of an ether and a dialkylaluminum halide.

3,499,021

TOLUENE DIISOCYANATE PROCESS

Ehrenfried H. Kober, Hamden, and Wilhelm J. Schnabel, Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Oct. 19, 1966, Ser. No. 587,697
Int. Cl. C07c *119/04, 127/12, 127/24*
U.S. Cl. 260—453 **4 Claims**

A process for preparing toluene diisocyanate which comprises phosgenating the distillation residue obtained by phosgenating toluene diamine in the presence of an inert organic solvent.

3,499,022

BENZYL PROPYNYLTHIOLCARBAMATES

John Joseph D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 1, 1967, Ser. No. 687,141
Int. Cl. C07c *155/02;* **A01n** *9/20*
U.S. Cl. 260—455 **6 Claims**

Benzyl N-alkyl-N-propynylthiolcarbamates wherein alkyl contains 1 to 4 carbon atoms. The compounds destroy undesired vegetation.

3,499,023

NOVEL CHLORO AND BROMOALKYL CARBONATES OF SALICYLIC ACID

Joseph V. Swintosky, Perkiomenville, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,059
Int. Cl. C07c *63/00, 63/14*
U.S. Cl. 260—463 **3 Claims**

Trichloro and tribromoalkyl carbonates of salicylic acid having analgetic activity. Method of preparation comprises reacting salicylic acid with a chloroformate of the particular chlorinated or brominated lower alkanol in any suitable organic solvent with the desired product separating spontaneously.

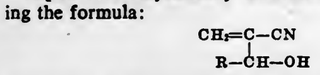
3,499,024

2-HYDROXY-HYDROCARBYL ACRYLONITRILES AND PREPARATION THEREOF BY CONDENSATION OF ACRYLONITRILE AND ALDEHYDES

Ken-Ichi Morita, Zennosuke Suzuki, and Hiromitsu Hirose, Kamakura-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,495
Claims priority, application Japan, Dec. 24, 1965, 40/79,319; Dec. 25, 1965, 40/79,595; Mar. 29, 1966, 41/18,933
Int. Cl. C07c *121/02, 121/36*
U.S. Cl. 260—465 **6 Claims**

Alpha beta ethylenically unsaturated compounds, having the formula:



wherein R is selected from the group consisting of alkyl radicals having from 1–12 carbon atoms, cycloalkyl radicals, aralkyl radicals and aryl radicals and substituted aryl and aralkyl radicals, and the process for the preparation thereof which comprises reacting an alpha, beta-ethylenically unsaturated compounds with an aldehyde containing between about 2–13 carbon atoms in the presence of an amount of tertiary phosphine.

3,499,025

METHOD FOR PRODUCING ACRYLONITRILE AND METHACRYLONITRILE

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 6, 1967, Ser. No. 665,723
Int. Cl. C07c *121/32, 121/04, 45/02*
U.S. Cl. 260—465.3 **4 Claims**

Acrylonitrile and methacrylonitrile are prepared by reacting propylene and isobutylene respectively with air or oxygen in the presence of a slight excess of ammonia over a platinum catalyst in the form of a metallic gauze at temperatures of from 750°–1000° C. for contact times of less than 0.1 second.

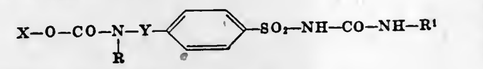
3,499,026

BENZENESULFONYL UREAS

Helmut Weber, Frankfurt am Main, Walter Aumüller, Kelkheim (Taunus), Rudi Weyer, Frankfurt am Main, Karl Muth, Kelkheim (Taunus), and Felix Helmut Schmidt, Mannheim-Neuostheim, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,669
Claims priority, application Germany, Nov. 21, 1964, F 44,490
Int. Cl. C07c *149/40, 127/12;* **A61k** *27/00*
U.S. Cl. 260—470 **15 Claims**

New benzenesulfonyl-ureas with hypoglycemic properties having the formula:



wherein R is hydrogen or lower alkyl, R^1 is:

(a) Alkyl or alkenyl having 2 to 8 carbon atoms,
(b) Phenyl-lower alkyl,
(c) Cyclohexyl-lower alkyl,
(d) Endoalkylenecyclohexyl, endoalkylenecyclohexenyl, endoalkylenecyclohexylmethyl or endoalkylenecyclohexenylmethyl having 1 or 2 carbon atoms in the endoalkylene part,
(e) Lower alkylcyclohexyl, lower alkoxycyclohexyl,
(f) Cycloalkyl of 5 to 8 carbon atoms,
(g) Cyclohexenyl or cyclohexenylmethyl;

X is:

(a) Alkyl, alkenyl or haloalkyl containing 1 to 8 carbon atoms,
(b) Phenylalkyl having 1 to 6 alkyl carbon atoms, the phenyl group of which may be substituted and the alkylene chain of which may contain one or several double bonds,
(c) Cycloalkyl containing 3 to 8 carbon atoms and corresponding lower cycloalkyl-alkyls,
(d) Endoalkylenecyclohexyl, endoalkylenecyclohexenyl, endoalkylene-cyclohexylmethyl or endoalkylene-cyclohexenylmethyl containing 1 to 2 endoalkylene carbon atoms,
(e) Lower alkylcyclohexyl, lower alkoxycyclohexyl,
(f) Cyclohexenyl, cyclohexenylmethyl;

Y represents a saturated hydrocarbon chain containing 1 to 4 carbon atoms; and physiologically tolerable salts thereof.

3,499,027

INTERMEDIATES FOR PREPARING CERTAIN 1,4-BENZODIAZEPIN-2-(1H)-ONES

Gabriel Saucy, Essex Fells, N.J., Franklin Artell Smith, Troy, N.Y., and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Application Nov. 4, 1963, Ser. No. 321,284, now Patent No. 3,329,701, July 4, 1967, which is a division of application Ser. No. 202,401, June 14, 1962, now Patent No. 3,117,965, dated Jan. 14, 1964. Divided and this application Feb. 21, 1967, Ser. No. 617,458
Claims priority, application Switzerland, Mar. 9, 1962, 2,884/62
Int. Cl. C07c *101/60, 101/54*
U.S. Cl. 260—471 **9 Claims**

5-phenyl-3H-1,4-benzodiazepines substituted in the benzo and/or phenyl ring by a radical selected from the group consisting of carbamyl, carbo-lower alkoxy, cyano and carboxy. These benzodiazepines have valuable medicinal properties as sedatives, tranquilizers, muscle relaxants and anticonvulsants.

3,499,028

DI(1-ACYLOXYALIPHATIC) ETHERS AND DERIVATIVES THEREOF

Lucian W. McTeer, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application May 25, 1965, Ser. No. 458,757, now Patent No. 3,326,969, dated June 20, 1967. Divided and this application Aug. 1, 1966, Ser. No. 569,017
Int. Cl. C07c *41/00, 69/66, 69/76*
U.S. Cl. 260—476 **13 Claims**

Symmetrical di(1-acyloxyaliphatic) ethers are produced by reacting an aliphatic aldehyde with a monocarboxylic acid anhydride in the presence of an acidic catalyst.

3,499,029

PROCESS FOR THE MANUFACTURE OF SORBIC ACID

Hans Fernholz, Bad Soden, Taunus, and Hermann Neu, Neu-Isenburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,865
Claims priority, application Germany, Feb. 1, 1964, F 41,903
Int. Cl. C07c *57/10*
U.S. Cl. 260—526 **3 Claims**

A process for preparing sorbic acid by reacting ketene with crotonaldehyde in an inert solvent and in the presence of a catalyst to form a polyester, thermally splitting the polyester at a temperature within the range 150° to 300° C., distilling the thus formed sorbic acid together with at least a portion of the solvent and separating sorbic acid from the distillate by crystallization, the process being characterized by the fact that the mother liquor from the sorbic acid crystallization is used as the solvent in the first step of the process.

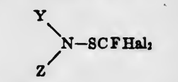
3,499,030

FUNGICIDAL COMPOUNDS CONTAINING THE NSCFClBr-GROUP

Engelbert Kuhle, Erich Klauke, Ferdinand Grewe, and Helmut Kaspers, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

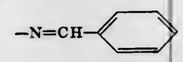
No Drawing. Continuation of application Ser. No. 554,207, May 31, 1966, which is a continuation of application Ser. No. 186,360, Apr. 10, 1962. This application Mar. 5, 1968, Ser. No. 716,682
Claims priority, application Germany, Apr. 19, 1961, F 32,468
Int. Cl. C07d *27/52;* **C07c** *145/00*
U.S. Cl. 260—551 **2 Claims**

Fungicidally active sulphenic acid derivatives of the general formula

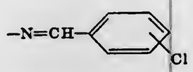


wherein Y is defined as a member selected from the group consisting of N,N-dialkylamino, having an alkyl moiety of 1–2 carbon atoms, phenyl, chlorophenyl, dichlorophenyl, nitrophenyl, nitro chlorophenyl, tolyl and chloromethyl, Y being attached to the nitrogen atom with a bridging —SO_2— group; Z is a member selected from the group consisting of phenyl, fluorophenyl, lower alkyl

phenyl, chlorophenyl, lower alkyl, alkyl carbonyl having an alkyl moiety of 1–2 carbon atoms



and



and Y and Z in combination with the nitrogen atom are defined as heterocyclic rings.

3,499,031

DIAMINE PROCESS

Ralph W. Smith, Gulf Breeze, and Charles R. Campbell and Marion J. Mathews III, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,551
Int. Cl. C07c *103/02*
U.S. Cl. 260—558 **9 Claims**

This disclosure relates to a process for the preparation of aromatic diamines containing internal amide connecting linkages from simple phenylene diamines and nitroaroyl chlorides.

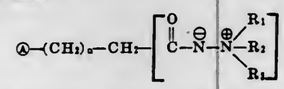
3,499,032

HYDROXYL-, MERCAPTO-, AND AMINO-SUBSTITUTED AMINIMIDES

Lawrence M. Clemens and William J. McKillip, Minneapolis, and Edward A. Sedor, Bloomington, Minn., assignors to Ashland Oil & Refining Company, Houston, Tex.

No Drawing. Filed Apr. 25, 1967, Ser. No. 642,276
Int. Cl. C07c *103/44*
U.S. Cl. 260—561 **6 Claims**

Aminimides are prepared from cyclic derivatives, such as lactones, lactams or sulfams. The aminimides have the general formula:



wherein Ⓐ is hydroxyl, amino, or mercapto; R_1 to R_3 are aliphatic, except allylic, or aryl, except benzylic, hydrocarbon radicals having from 1–10 carbon atoms or radicals in which R_1 and R_2 are combined to form heterocyclic rings with the nitrogen; and n is an integer of 1–3.

3,499,033

ETHERS OF α-PHENYL-2-AMINOCYCLOALKANEMETHANOLS

Jacob Szmuszkovicz Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 6, 1967, Ser. No. 607,627
Int. Cl. C07c *91/00, 87/32, 103/10*
U.S. Cl. 260—570.5 **9 Claims**

α-Phenyl-2-aminocycloalkanemethanols, ethers, esters thereof and acid addition salts, N-oxides and quaternary ammonium salts thereof, which can be additionally substituted in the phenyl group with lower alkyl, lower alkoxy, halogen and $—CF_3$ and in the amino group with alkyl, cycloalkyl, hydroxyalkyl, alkoxyalkyl, phenyl, substituted phenyl, benzyl and acyl are prepared by reacting (1) a 2-oxocycloalkyl phenyl ketone with a primary or secondary amine in the presence of a benzenesulfonic acid, (2) hydrogenating the products of (1) in the presence of noble metal catalyst; and if desired, esterifying or etherifying the product of step (2). The novel compounds are stimulants for the central nervous system of mammals and birds, and intermediates, e.g., for diuretics.

3,499,034

HYDROGENATION OF AROMATIC NITRO COMPOUNDS

Raul A. Gonzalez, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,103
Int. Cl. C07c *85/10*
U.S. Cl. 260—580 **7 Claims**

This invention relates to the hydrogenation of aromatic nitro compounds, and more particularly to a continuous, one-stage process for the hydrogenation of aromatic nitro compounds to produce a yield of the order of about 99% of theory of substantially pure aromatic amine.

3,499,035

TOLUENE DIAMINE RECOVERY PROCESS

Ehrenfried H. Kober, Hamden, Philip D. Hammond, North Haven, and Wilhelm J. Schnabel, Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Oct. 2, 1967, Ser. No. 671,991
Int. Cl. C07c *85/16, 119/04*
U.S. Cl. 260—582 **2 Claims**

A process for recovering toluene diamine from toluene diisocyanate distillation residues which comprises partially hydrolyzing the residue, adding toluene diamine and heating the mixture of partially hydrolyzed residue and toluene diamine at a temperature between about 130° and 280° C. in the presence of water.

3,499,036

IMINO END-GROUP POLYMERS

Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 298,434, July 29, 1963. This application May 25, 1966, Ser. No. 552,719
Int. Cl. C07c *87/20, 87/36*; C08g *33/00*
U.S. Cl. 260—583 **5 Claims**

Low molecular weight polymers having terminal imino groups are described. The imino-ended polymers are prepared by cleaving high molecular weight polymers of N-substituted cyclic imines with an organo-alkali metal compound such as butyl lithium. By the use of appropriate isolation procedures, unsaturated end groups can be hydrolyzed to give polymeric products with imino groups on both ends of the polymer chain. The imino-ended polymers are particularly useful in chain extension reactions with diisocyanates, diepoxides, polyamines, etc., and for the preparation of cross-linked foamed articles of good mechanical properties.

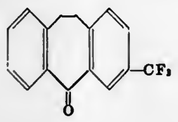
3,499,037

PREPARATION OF TRIFLUOROMETHYL SUBSTITUTED DIBENZOCYCLOHEPTENES

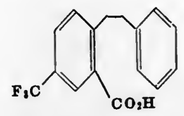
Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 31, 1966, Ser. No. 553,656
Int. Cl. C07c *49/80, 45/18*
U.S. Cl. 200—590 **1 Claim**

1. A process for the preparation of the compound of structural formula



which comprises ring closing the compound of structural formula



in trifluoroacetic acid with boron trifluoride as catalyst.

3,499,038

OXIDATION OF ETHYLENICALLY UNSATURATED HYDROCARBONS

Edgar L. McDaniel and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 311,989, Sept. 27, 1963. This application Aug. 22, 1966, Ser. No. 574,252
Int. Cl. C07c *45/04*; B01j *11/82*
U.S. Cl. 260—604 **4 Claims**

Unsaturated aldehydes, e.g., acrolein or methacrolein, are manufactured by oxidizing an olefin having at least 3 carbon atoms, e.g., propylene or isobutylene, in the presence of a solid catalyst comprising bismuth oxide and hexamolybdochromic acid. Reaction temperatures of 300° C. to 600° C. are disclosed.

3,499,039

PREPARATION OF TERTIARY PHOSPHINES

Hans Joachim Lorenz, Bensheim-Auerbach, Bergstrasse, Alfons Robert Zinti, Kelheim (Danube), and Volker Franzen, Heidelberg, Germany, assignors to Deutsche Advance Produktion GmbH, Lautern, Odenwald, Germany

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,266
Int. Cl. C07f *9/28*
U.S. Cl. 260—606.5 **5 Claims**

In accordance with certain of its aspects, the process of this invention for preparing trihydrocarbyl phosphines comprise reacting at a temperature of −70 to +80° C. in an organic solution, a phosphorus halide selected from the group consisting of PX_3, RPX_2 and R_2PX, wherein R is hydrocarbon and X is halogen, with a Grignard compound in a proportion of 1 mole of said Grignard compound per 0.8 to 1.1 moles of said X, dissolving the magnesium halide precipitated in said reaction to an aqueous acidic phase having a pH below 6, the acidity of said phase being produced by an excess of ions of said X, adding a base selected from the group consisting of ammonia and organic amines so as to adjust the pH of said phase to at least 6.0, separating said aqueous phase from the organic solvent phase, and recovering the phosphine from the phase containing the same.

3,499,040

COPOLYMERIC ETHER GLYCOL AND PROCESS FOR ITS MANUFACTURE

Theodore E. Stanin, William H. Seaton, and Robert E. Gee, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 14, 1964, Ser. No. 417,856
Int. Cl. C07c *43/18*
U.S. Cl. 260—611 **7 Claims**

Copolymers of tetramethylene glycol and 8-oxabicyclo (4.3.0)nonane or 3-methyl-8-oxabicyclo(4.3.0)nonane having a percent deviation of molecular weight of less than 30 percent are prepared by terminating the polymerization reaction after a time period of from 2 to 60 minutes and before the reaction has reached a state of equilibrium.

3,499,041

PERFLUOROALKARYL-, -ARARYL AND -PHENOXYARYL PHOSPHINES

Christ Tamborski, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Feb. 13, 1968, Ser. No. 705,032
Int. Cl. C07c *43/20*; C07f *9/28*
U.S. Cl. 260—612 **9 Claims**

This invention comprises a series of new compounds having the formula $(RC_6F_4)_3P$ wherein R is a group highly substituted with fluorine such as polyfluoroalkyl, polyfluoroaryl and polyfluorophenoxy. These compounds are particularly useful as antioxidation and anticorrosion additives for certain fluids capable of withstanding high temperatures.

3,499,042

ETHER PRODUCTION

Edgar J. Smutny, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 456,000, May 14, 1965. This application Aug. 28, 1967, Ser. No. 663,559
Int. Cl. C07c *43/14*
U.S. Cl. 260—614 **6 Claims**

Aliphatic 2,7-alkadienyl ethers, produced by reaction of certain α,ω-conjugated alkadienes and aliphatic primary or secondary alcohols, in the presence of a platinum, palladium or ruthenium compound as catalyst and an alkoxide anion catalyst promoter.

3,499,043

RECOVERY OF THE MONOALKYL ETHERS OF POLY(OXYETHYLENE) GLYCOLS FROM SOLUTIONS OF TARRY ACETYLENIC POLYMERS IN SAID ETHERS

Eugene Marvin Kling, Montague, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 641,041, May 24, 1967. This application Jan. 2, 1969, Ser. No. 796,940
Int. Cl. C07c *43/04, 43/10, 11/30*
U.S. Cl. 260—615 **9 Claims**

A process for recovering monoalkyl ethers of poly(oxyethylene) glycols in high yields from solutions of tarry acetylenic polymers formed during the preparation of monovinylacetylene in said ethers in which the ether-tar solution is mixed at 11–14° C. with a 2–5% hydrochloric acid solution at proportions of at least 4 volumes of hydrochloric acid per volume of ether-tar solution. The tar precipitates from the ether solution in such a form that it can be readily removed in a subsequent step.

3,499,044

METHOD OF PREPARING MIXED ISOMERS OF VITAMIN A

Walter C. Stugis, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 7, 1967, Ser. No. 681,082
Int. Cl. C07c *29/00, 33/00, 35/00*
U.S. Cl. 260—617 **10 Claims**

The preparation of vitamin A by borohydride reduction of retinene-phenolic adducts is modified by effecting the reduction in the presence of a sulfur compound, such as sodium sulfide, which acts as an isomerization catalyst. The resulting product is a mixture of all-trans and trans-

cis isomers of vitamin A which exhibits enhanced isomeric stability as compared to the individual isomers.

3,499,045

PURIFICATION OF 2,4,5-TRICHLOROPHENOL

Thomas F. Cleary, Summit, N.J., assignor to Centerchem, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 20, 1966, Ser. No. 587,991
Int. Cl. C07c 39/32
U.S. Cl. 260—623 1 Claim

This invention is directed to a method for purifying crude 2,4,5-trichlorophenol by treating it with an aqueous alkali hydroxide to form an alkali salt of the crude product, adding an additional quantity of the alkali hydroxide, then crystallizing and separating the alkali salt of 2,4,5-trichlorophenol and recovering essentially pure 2,4,5-trichlorophenol from the separated alkali salt by treating the salt with an acid.

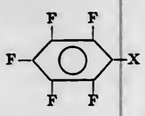
3,499,046

HIGH TEMPERATURE REACTIONS OF HEXAFLUOROBENZENE TO PREPARE IODO- AND BROMO-PENTAFLUOROBENZENE

Leo A. Wall, Washington, D.C., and Joseph M. Antonucci, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Original application Aug. 31, 1964, Ser. No. 393,447, now Patent No. 3,429,935, dated Feb. 25, 1969. Divided and this application June 25, 1968, Ser. No. 766,342
Int. Cl. C07c 25/04, 17/20; C07b 9/00
U.S. Cl. 260—650 5 Claims

A process for producing derivatives of hexafluorobenzene of the formula



wherein X is iodine or bromine by direct reaction of hexafluorobenzene with solid salts selected from the group consisting of lithium iodide, potassium iodide and potassium bromide.

3,499,047

STABILIZED COMPOSITIONS

Charles L. Cormany, Wadsworth, William R. Dial, Akron, and Blaine O. Pray, Wadsworth, Ohio, assignors, by mesne assignments, to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed Feb. 3, 1958, Ser. No. 712,693
Int. Cl. C07c 17/40
U.S. Cl. 260—652.5 1 Claim

1. Methylchloroform containing from 0.05 to 5 percent acrylonitrile by weight.

3,499,048

1,1-DICHLORO-2,3,3-TRIFLUOROPROPENE AND METHOD OF PREPARATION

Bernard M. Regan, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed Jan. 18, 1968, Ser. No. 698,703
Int. Cl. C07c 21/18
U.S. Cl. 260—653.3 2 Claims

1,1-dichloro-2,3,3-trifluoropropene, useful as a general anesthetic.

3,499,049

ACCELERATED PRODUCTION OF CIS,TRANS, TRANS-CYCLODODECATRIENE-(1,5,9)

Udo Hochmuth, Wolfhard Ring, and Hanns Strache, Marl, Germany, assignors to Chemische Werke Huels A.G., Marl, Germany

No Drawing. Filed Apr. 30, 1968, Ser. No. 725,527
Claims priority, application Germany, June 3, 1967, C 42,534
Int. Cl. C07c 13/02
U.S. Cl. 260—666 2 Claims

In a process for the production of cis, trans, trans-cyclododecatriene-(1,5,9) by reacting butadiene at 20–80° C. in the presence of titanium tetrachloride in concentrations of 0.25–5.7 millimols and alkyl-aluminum sesquichloride in concentrations of 67–143 millimols per kilogram of inert diluent, the improvement comprising utilizing an unaged catalyst and employing water in the inert diluent in concentrations of 50–200 p.p.m., based on the inert diluent, thereby substantially increasing the rate of reaction.

3,499,050

HYDROGENATION OF CYCLODODECATRIENE TO CYCLODODECENE

Lawrence Wayne Gosser, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 12, 1968, Ser. No. 751,754
Int. Cl. C07c 5/16, 5/14
U.S. Cl. 260—666 5 Claims

1,5,9-cyclododecatriene can be hydrogenated to cyclododecene in high yield with a catalyst of a nickel halide complexed with a trihydrocarbyl phosphine.

3,499,051

METHOD FOR THE CATALYTIC DEHYDROGENATION OF ALKYLATED AROMATIC HYDROCARBONS

Ichiro Tokumitsu, Kiyoshi Watanabe, Harufusa Sue, and Mitito Hamanaka, Tokuyama-shi, Japan, assignors to Idemitsu Petrochemical Co., Ltd., and Idemitsu Kosan Co., Ltd.

No Drawing. Filed July 23, 1968, Ser. No. 746,744
Claims priority, application Japan, Aug. 3, 1967, 42/49,536
Int. Cl. C07c 15/10
U.S. Cl. 260—669 1 Claim

The method comprises the step of catalytically dehydrogenating alkyl aromatic hydrocarbon in the presence of steam. Said dehydrogenation is carried out in multistage reactor zones connected in series wherein the reaction mixtures from each individual zone is combined with fresh alkyl aromatic hydrocarbon and steam prior to entering the next reaction stage.

3,499,052

STYRENE AND/OR INDENE AND NORMAL ALPHA-OLEFIN COPOLYMER

David W. Young, Homewood, and Thomas J. Clough, Glenwood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 22, 1966, Ser. No. 574,253. Divided and this application Aug. 30, 1968, Ser. No. 801,877
Int. Cl. C07f 19/04, 17/00; C10l 1/10
U.S. Cl. 260—669 2 Claims

Oil soluble polymers of styrene or indene and a normal alpha-olefin of 10–24 carbon atoms, useful as a pour point depressants in mineral oils, are disclosed.

3,499,053

SEPARATION PROCESS

William J. Asher, Cranford, David S. Hirshfeld, Union, and Eli Cutler, Somerville, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 10, 1965, Ser. No. 507,640
Int. Cl. B01j 9/02; C07c 7/12
U.S. Cl. 260—674 12 Claims

Feed to an adsorption separation zone is introduced in accordance with a ramp function; i.e., the rate of feed is varied with time until a desired steady state value is obtained. In a preferred embodiment, the feed is introduced at a very decreased rate, initially, and then increased until the desired steady state value is obtained. By operating in accordance with the disclosure hereof, the problems of "bedlifting" and premature feed breakthrough are avoided.

3,499,054

PURIFICATION OF DETERGENT ALKYLATES

Kyle W. Resh, Rosedale, Md., and Le Roi R. Yaffey, Mahwah, N.J., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Aug. 19, 1968, Ser. No. 753,762
Int. Cl. C07c 7/00, 3/56
U.S. Cl. 260—674 8 Claims

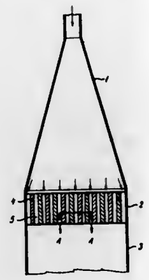
Suspended aluminum halide catalyst sludge is removed from crude detergent alkylate by introducing a sufficient amount of anhydrous ammonia to the detergent alkylate in order to coagulate the suspended sludge. The coagulated sludge can then be separated from the detergent alkylate.

3,499,055

METHOD FOR THERMALLY DECOMPOSING SATURATED HYDROCARBONS TO PRODUCE UNSATURATED HYDROCARBONS EMPLOYING OXYGEN ALONG WITH A FUEL GAS

Mihaly Freund, Zoltan Nagy, and Laszlo Szepesy, Budapest, Hungary, assignors to Magyar Asvanyolaj es Foldgaz Kiserleti Intezet, Veszprem, Hungary, a firm

Original application June 2, 1965, Ser. No. 460,718, now Patent No. 3,415,628. Divided and this application Aug. 15, 1968, Ser. No. 753,010
Claims priority, application Hungary, June 4, 1964, MA 1,350, MA 1,351
Int. Cl. C07c 3/30
U.S. Cl. 260—679 6 Claims



Saturated hydrocarbons, containing at most five carbon atoms, are thermally decomposed in a one-step flame-reaction to produce unsaturated hydrocarbons. A gaseous mixture of the saturated hydrocarbons, fuel gases having a higher burning speed and a higher upper burning limit than the saturated hydrocarbons, and oxidizing gases is burned in a flame reactor to attain a reaction temperature of from 1,000–1,600° C. with at least 30 percent but preferably more than 80 percent of the heat quantity required for the reaction being provided by partial or total burning of the fuel gases. The decomposition reaction is immediately quenched when the unsaturated hydrocarbons have been formed.

3,499,056

PREPARATION OF POLYENES BY PYROLYSIS OF ADDUCT OVER MOLECULAR SIEVE

George M. Bailey, Findlay, Ohio, and Danford H. Olson, Edwardsville, Ill., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 27, 1968, Ser. No. 755,739
Int. Cl. C07c 1/30, 29/14, 29/22
U.S. Cl. 260—681 11 Claims

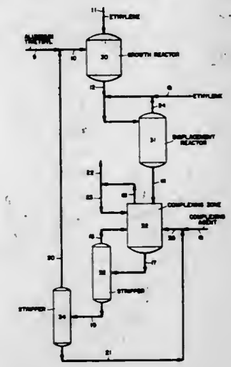
The invention is a process for the production of polyenes by the pyrolysis of halo-substituted ethers wherein the pyrolysis is carried out in the vapor phase over a molecular sieve. The reaction products of the pyrolysis step are the desired polyene product, hydrogen halide and an alcohol.

3,499,057

PREPARATION OF OLEFINS BY ALKYL METAL TECHNIQUE

Joseph Serratore, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 14, 1965, Ser. No. 513,736
Int. Cl. C07c 3/10, 7/00; C08f 1/30
U.S. Cl. 260—683.15 2 Claims



Linear Lewis base polymers are employed to separate alpha olefins formed by ethylene growth reactions from aluminum trialkyls by complexing with the trialkyls to form a separate liquid phase which may be easily recovered.

3,499,058

MIXTURE OF TWO POLYESTERS WITH PYROMELLITIC DIANHYDRIDE

Martin H. Kaufman, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Apr. 22, 1966, Ser. No. 545,802
Int. Cl. C08g 17/04
U.S. Cl. 260—860 1 Claim

Novel polymeric resins prepared from polyesters, polyesteramide and cyclic anhydrides which can be com-

pounded to form products having predetermined physical properties varying from soft and flexible to hard and tough.

3,499,059

METHOD OF MAKING TOUGHENED POLYMERS FROM EMULSIONS OF IMMISCIBLE SOLUTIONS OF ELASTOMERS, THERMOPLASTIC POLYMERS AND ETHYLENICALLY UNSATURATED MONOMERS STABILIZED BY THE ADDITION OF BLOCK OR GRAFT COPOLYMERS

Gunther E. Molau and Henno Keskkula, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,948

Int. Cl. C08f *1/13, 19/08*

U.S. Cl. 260—876 **7 Claims**

Stable emulsions of immiscible solutions of an elastomer and a resinous thermoplastic polymer are obtained by mixing with the immiscible solutions from 0.1 to 10 parts by weight of a graft or block copolymer containing moieties of said elastomer units and moieties of said thermoplastic resin units.

3,499,060

METHOD OF MANUFACTURING BLOCK COPOLYMERS

Kazuo Suzuki, Amagasaki, and Okiyasu Yoshioka, Hyogoku, Kobe, Japan, assignors to Kanegafuchi Chemical Industry Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 11, 1966, Ser. No. 519,956

Claims priority, application Japan, Jan. 29, 1965, 40/4,971; Sept. 27, 1965, 40/59,326

Int. Cl. B01j *11/00;* **C08f** *15/04*

U.S. Cl. 260—878 **11 Claims**

A method of manufacturing single block copolymers containing at least 50 percent by mole ethylene component, consisting of a total of two blocks, wherein one of the blocks is a polymer of ethylene and another of the blocks is a copolymer of α-olefine and ethylene, using a catalyst system which was prepared by the following steps: (a) adding titanium tetrachloride to a medium of indifferent hydrocarbon at a temperature of −30° C. or less, (b) adding an organoaluminum compound having at least 4 carbon atoms in a proportion of about 0.5 to 1.2 moles to 1 mole of titanium tetrachloride to a medium of indifferent hydrocarbon at a temperature of −30° C. or less, (c) contacting the two preceding preparations at a temperature of −30° C. or less, and (d) adding ethylene corresponding to an amount under 2000 as molecular weight to 1 mole of titanium tetrachloride, into said contacted system while maintaining the temperature of −30° C. or less.

3,499,061

N-VINYL IMIDE MODIFIED POLYPROPYLENE

Harold Jabloner, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 7, 1967, Ser. No. 629,084

Int. Cl. C08f *27/08, 19/00*

U.S. Cl. 260—878 **2 Claims**

A graft copolymer of polypropylene and N-vinyl phthalimide. Such copolymers are found to be more readily dyeable with disperse dyes than is unmodified polypropylene.

3,499,062

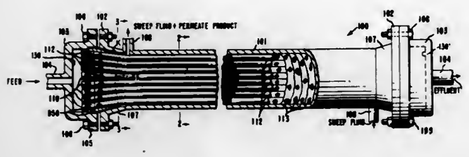
METHOD OF REPAIRING LEAKS IN FLUID SEPARATION APPARATUS

James Edward Geary, Jr., Claymont, Del., William Edward Harsch, Staunton, Va., John Murdock Maxwell, Glen Farms, Md., and Richard Donald Rego, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application Dec. 22, 1965, Ser. No. 515,535, now Patent No. 3,442,002, dated May 6, 1969. Divided and this application Apr. 29, 1968, Ser. No. 739,982

Int. Cl. B29h *5/16, 5/06*

U.S. Cl. 264—36 **2 Claims**



A method is provided for repairing leaks in a fluid separation apparatus comprising a fluid-tight tubular casing closed at either end by cast wall members and having a plurality of hollow filaments extending between the members. A solidifiable liquid is placed above one wall member such that the liquid communicates with the interior of the filaments and a pressure differential is created between the inside and outside of the filaments and between the inside of the filaments and the liquid above the filaments such that the liquid will be drawn into any filaments having leaks therein and will be drawn through the leaks in the filaments and through any leaks in the wall member. The liquid is then removed from the wall member and the liquid in the tubes having leaks therein and in the leaks is solidified. The process may then be carried out with the liquid above the other wall member to repair leaks therein.

3,499,063

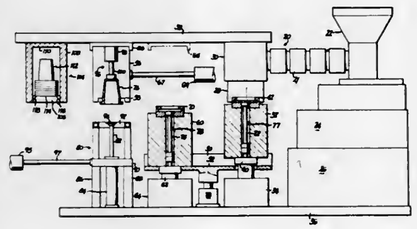
APPARATUS AND METHOD FOR COLLECTING MOLDED ARTICLES

Lawrence D. Ninneman and Casimir W. Nowicki, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 27, 1966, Ser. No. 604,987

Int. Cl. B65g *57/00*

U.S. Cl. 264—40 **10 Claims**



This invention relates to methods of and apparatus for collecting finished plastic articles from a molding machine, and more particularly to the collecting of such articles and arranging them in a stack so that each article which is ejected from the molding machine is automatically inserted into the stack in nested relation with the other articles in the stack.

3,499,064

PROCESS AND APPARATUS FOR PRODUCING BIAXIALLY ORIENTED THERMOPLASTIC TUBULAR FILMS

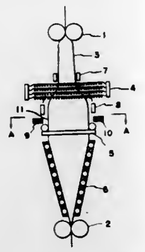
Kazuhiko Tsuboshima, Tomiyuki Matsugu, Teruchika Kanoh, and Kunio Nakamura, Shizuoka-ken, Japan, assignors to Kohjin Company Limited, Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 541,193, Apr. 8, 1966. This application Feb. 16, 1968, Ser. No. 706,172

Claims priority, application Japan, May 19, 1965, 40/29,468; June 4, 1965, 40/33,096

Int. Cl. B29d *23/04;* **B29c** *17/06, 17/07*

U.S. Cl. 264—40 **8 Claims**



Process for the continuous and stable production of biaxially oriented thermoplastic tubular film having uniform stretching ratios, in which the tubular film is supplied to the apparatus continuously, heated to a suitable temperature, and stretched simultaneously in biaxial directions by expansion, while two air-rings, one surrounding the unstretched region and the other surrounding the region after stretching is completed of the film, provide two positive currents of air, and automatically controlling the pressure of gas inside the tubular film so as to maintain the diameter thereof at a substantially constant value Apparatus for carrying out the method is provided.

3,499,065

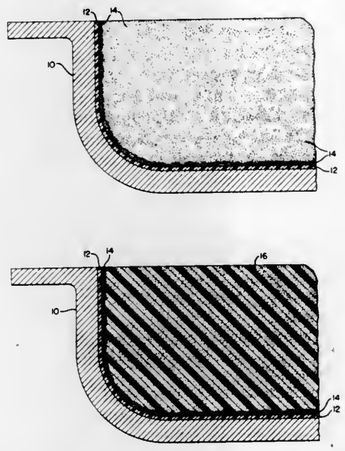
METHOD OF MAKING LAMINATED ARTICLES

John D. Hoskinson, Lancaster, and Euclid L. Hitchcock, Logan, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 2, 1967, Ser. N. 672,205

Int. Cl. B29d *9/00*

U.S. Cl. 264—45 **1 Claim**



This invention relates to a method of making laminated articles by securing a bond between a thermoplastic sheet and a pore forming resin which has expanded to form a foam by placing a powdered resin in contact with the thermoplastic sheet while the sheet is at a temperature sufficient to adhere the dry powder applied thereon and then pouring an uncured pore forming resin into contact with the thermoplastic sheet effecting foaming of the pore forming resin to obtain a laminate, the preferred thermoplastic resin being a vinyl plastic and the preferred port forming resin being a polyurethane.

3,499,066

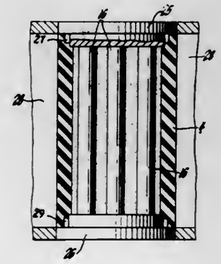
METHOD FOR MANUFACTURING ISOSTATICALLY PRESSED ARTICLES HAVING OPENINGS OR INSERTS THEREIN

Ronald C. Murray, Crescent Village, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado

Continuation-in-part of application Ser. No. 434,380, Feb. 23, 1965. This application July 17, 1967, Ser. No. 660,550

Int. Cl. B28b *7/06, 21/56, 21/92*

U.S. Cl. 264—56 **10 Claims**



A method for manufacturing an article by compacting a compactable material comprising placing one or more arbors within a generally tubular-shaped resilient collapsible mold, filling the mold with a compactable material after which the arbor or arbors are supported within the mold only by the compactable material such that the arbors or arbors are free to shift within the mold during compaction of the material, and thereafter applying pressure to the mold to compact the material. After compaction the arbor or arbors can be removed to provide a bored article or they can be left in place to provide an article with one or more inserts therein.

3,499,067

METHOD FOR MAKING BRANCHED CONDUITS

John F. Rogers, Morehead, Ky., assignor to Lee Clay Products Company, Clearfield, Ky., a corporation of Kentucky

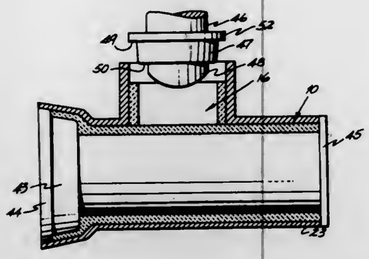
Filed Nov. 28, 1967, Ser. No. 686,156

Int. Cl. B28b *11/02, 7/14, 21/74*

U.S. Cl. 264—60 **10 Claims**

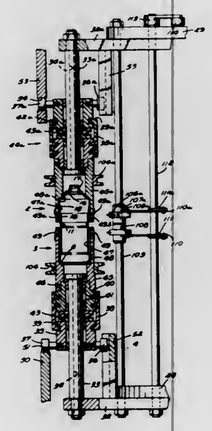
A method of manufacturing a branched tubular conduit having connecting passageways from a plurality of tubular sections of plastic material which includes pressure welding an end of one tubular section to a side of a second tubular section and simultaneously forming an opening in the side between the section hollows. A length of uncured clay pipe is extruded, an end of the length is cut off to form a main section and a spur section and the spur end is configurated to the main section side. The sections are then aligned in a supporting mold having an inner wall defining a tubular surface which is laterally intersected by another tubular surface for supporting the

configurated spur end adjacent the main section side. A first mandrel is introduced into the hollow of the main section and a second mandrel having a cutting edge is



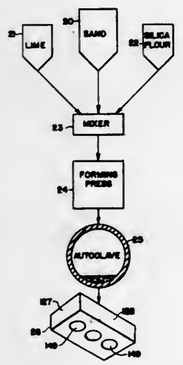
then forced into the spur section to weld the spur section to the main section side while simultaneously forming an opening in the side provide the branched conduit.

3,499,068
METHODS AND APPARATUS FOR MAKING CONTAINERS
Gaylord W. Brown, Beaverton, Mich., assignor to Brown Machine Company of Michigan, Inc., a corporation of Michigan
Filed Apr. 20, 1966, Ser. No. 543,846
Int. Cl. B29c *27/08*
U.S. Cl. 264—68 **16 Claims**



A method and apparatus for axially joining differential pressure formed, thermoplastic container sections with diametrally enlarged ends, and like hollow members, wherein the container sections are thermoformed and initially cut from the web in which they are thermoformed in a manner to leave a flange of a diameter corresponding to the diametral enlargement; wherein the severed container sections are then supported by holders in coaxial, spaced relation with the ends to be joined confronting one another; wherein a rotary driving force is applied at least to one of the container section supporting members to effect relative rotation of the container sections and the confronting end of at least one of the container section is trimmed of its flange during the application of the driving force to enable the container sections to be relatively telescoped with an interference fit; and wherein the container sections are relatively moved axially into telescoping relation during their relative rotation to generate heat by friction and weld the container sections together.

3,499,069
METHOD OF MAKING BRICKS
Herald Denton Seigle, Riverdale, N.Y., assignor to Struthers Scientific and International Corporation, a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,323
Int. Cl. B28b *3/02, 13/02, 15/00*
U.S. Cl. 264—71 **1 Claim**



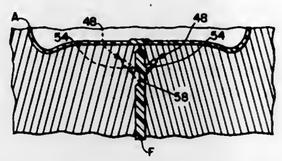
In the process of making brick, graded sand with a moisture content of between 3 and 10 percent and lime are fed to elevated storage hoppers from which these materials pass into a lower weighing hopper to cumulatively weigh a charge of sand and lime which is mixed in a mixer disposed therebelow, passing the mixed charge into an open bottom bin, moving a charging box below the bin and over apertures in a forming press bed to charge the forming press, exerting a forming pressure in the press of at least 1500 pounds per square inch while pounding a platen of the press with an air hammer for at least two seconds, removing formed brick from the press; stacking the formed brick on rail cars, autoclaving the stacked brick on the rail cars with steam for at least seven hours at a temperature of over 390° F., at a pressure of over 225 pounds per square inch, and passing the stacked brick on rail cars through an unloading station with progressively aranged unloading positions and unloading a longitudinal portion of the rail cars at each unloading position.

3,499,070
CASE HARDENING OF CONCRETE WITH FINE VERMICULITE
William R. Jackson, Greenville, S.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,805
Int. Cl. C04b *41/30*
U.S. Cl. 264—79 **1 Claim**

Cement-concrete with improved surface hardness is secured by covering the freshly deposited cement-concrete with a ¼–6-inch blanketing layer of exfoliated vermiculite in particle size passing 8–40 mesh U.S. screen size and maintaining the layer in contact with the concrete until the concrete has cured.

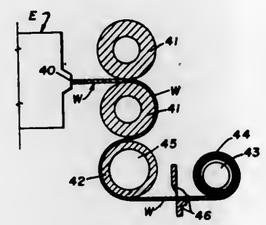
3,499,071
APPARATUS FOR IN-MOLD REMOVAL OF FLASH
Charles W. Hurst, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 19, 1967, Ser. No. 646,900
Int. Cl. B29c *17/07, 17/12*
U.S. Cl. 264—94 **21 Claims**

In a partible mold for producing an article from a plastic substance and with which excess material is formed as flash attached to the article along a frangible connecting web, the provision of flash interlocking means associated with the mold members and adapted to act on op-



positely disposed, spaced portions of the flash to twist the same relative to the article during the commencement of mold separation, thereby severing the flash from the article.

3,499,072
METHOD FOR FORMING CYLINDRICAL SLEEVES FROM THERMOPLASTIC RESIN SHEETS
Robert W. Helling, Greeley, and Herbert R. Erickson, Denver, Colo., assignors to Lundvall and Associates, Greeley, Colo., a partnership
Filed May 3, 1967, Ser. No. 635,743
Int. Cl. B29d *23/12;* **B29c** *17/14*
U.S. Cl. 264—151 **2 Claims**



A method for curling a rectangular sheet of thermoplastic synthetic resin to form a cylindrical sleeve which may be wrapped about a pipe or the like. The plastic sheet is heated to a temperature above the set temperature of the material, curled as upon a mandrel and held in the curled position until it is cooled to a temperature below the set temperature to form the sleeve. As a continuous operation, a web of plastic may be heated above the set temperature, rolled upon a mandrel, cooled below the set temperature and sleeves cut from this rolled web.

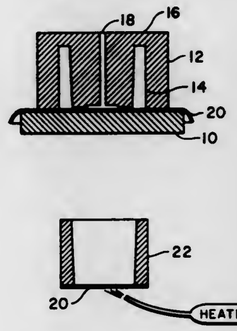
3,499,073
MELT SPINNING OF ACRYLONITRILE POLYMERS
Shih-ming Sun, 420 Normandy St., Cary, N.C. 27511, and Robert Chiang, 2945 Welcome Drive, Durham, N.C. 27705
No Drawing. Filed June 5, 1967, Ser. No. 643,390
Int. Cl. B28b *3/20*
U.S. Cl. 264—176 **7 Claims**

Synthetic fibers from acrylonitrile polymers are produced by a melt spinning process. Melt spinning is accomplished without degradation by rapidly extruding a special type of acrylonitrile polymer, having a heat of reaction at the fusion temperature of less than 15 calories per gram, through a heated orifice into the desired shape, stretching and cooling. When compared with wet or dry spinning the melt spinning process permits increasing spinning rate and eliminates solvents handling and recovery without adversely affecting fiber properties.

3,499,074
METHOD OF MAKING AMYLOSTIC FILAMENTS AND FIBERS
John W. Barger, Kansas City, Mo., and Charles E. Mumma, Prairie Village, Kans., assignors to Department of Agriculture and Economic Development of Nebraska
No Drawing. Filed Sept. 7, 1966, Ser. No. 577,590
Int. Cl. D01f *9/00*
U.S. Cl. 264—204 **9 Claims**

Amylosic filaments and fibers are made by forming a mixture of amylosic solids and up to 50% by weight of water, converting the mixture at elevated temperatures and pressures into a homogenous plastic mass, extruding the mass at a temperature not over about 205° F. through an orifice to form a filament and heating the filament at a temperature above 212° F. until sufficient moisture has been eliminated to render the filament non-adherent to itself.

3,499,075
METHOD OF MAKING A POLAROGRAPHIC CHAMBER
Allan P. Sherman, Waltham, Mass., assignor to Hewlett-Packard Company, a corporation of California
Filed Mar. 4, 1966, Ser. No. 531,860
Int. Cl. B29f *1/10;* **B32b** *31/04*
U.S. Cl. 264—230 **4 Claims**

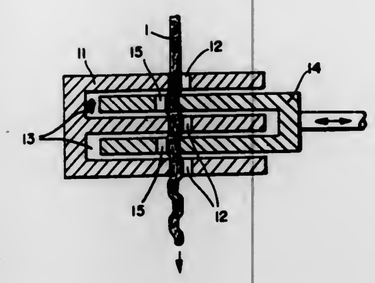


A method of forming a polarographic chamber includes fusing a thermoplastic, heat shrinkable film to a thermoplastic chamber and subsequently heating the film to remove wrinkles.

3,499,076
PRODUCTION OF SHAPED CONTINUOUS STRUCTURES
Wolfgang Martin, Edelfried Hahn, Hans Schmid, and Friedrich Wenger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland-Palatinate, Germany
Filed June 7, 1967, Ser. No. 644,169
Claims priority, application Germany, June 8, 1966, B 87,463
Int. Cl. D02g *1/00*
U.S. Cl. 264—282 **3 Claims**

Production of shaped continuous structures by passing the structure through a heating zone and subjecting them

to mechanical impulses in a direction transverse to the direction of conveyance and if desired additionally bending them about shaping means. Apparatus for carrying out the process are also described.



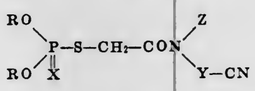
3,499,077

METHODS OF CONTROLLING NEMATODES BY THE APPLICATION OF N-(ALPHA-CYANO)-ALIPHATICAMIDES OF O,O - DIALKYLTHIOPHOSPHORYLACETIC ACID

Lindley S. De Atley, Shawnee Mission, and Charles Allan Shadbolt, Prairie Village, Kans., assignors to Thompson Hayward Chemical Co., Kansas City, Kans., a corporation of Delaware

No Drawing. Filed Feb. 16, 1968, Ser. No. 705,931
Int. Cl. A01n *9/36, 9/12*
U.S. Cl. 424—210 3 Claims

The invention relates to a method of controlling pestiferous organisms, particularly nematodes, which comprises causing said organisms to be contacted with a small but effective amount of a compound of the formula



wherein each R is alkyl; X is sulfur or oxygen; Z is hydrogen or alkyl; and Y is an aliphatic hydrocarbon radical.

3,499,078

EVERNINOMICIN ANTIBIOTICS AND METHOD FOR THE MANUFACTURE THEREOF

George M. Luedemann, Glen Ridge, and Marvin J. Weinstein, East Brunswick, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

Continuation-in-part of applications Ser. No. 184,484, Apr. 2, 1962, Ser. No. 211,154, July 16, 1962, and Ser. No. 567,811, June 13, 1966. This application Sept. 25, 1968, Ser. No. 762,504
Int. Cl. A61k *21/00;* C07g *11/00;* C21d *9/00*
U.S. Cl. 424—118 9 Claims

Micromonospora carbonacea var. *carbonacea* and a variant thereof, *Micromonospora carbonacea* var. *aurantiaca,* when subjected to submerged aerobic fermentation under controlled conditions produce a mixture of at least six antibiotics; said antibiotics beng designated everninomicin A, everninomicin B, everninomicin C, everninomicin D, everninomicin E and everninomicin F, respectively.

3,499,079

SYNERGISTIC INSECTICIDE

Takemasa Takakusu, Hiratsuka, Shigemichi Aida, Yokohama, and Masaru Kado, Shimizu, Japan, assignors to Kumiai Chemical Industry Co., Ltd., Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 554,656, June 1, 1966. This application May 6, 1968, Ser. No. 727,038
Claims priority, application Japan, July 20, 1965, 40/43,506
Int. Cl. A01n *9/36*
U.S. Cl. 424—200 5 Claims

Synergistic insecticides consisting of O,O-diethyl-S-benzyl-thiolophosphate and at least one compound selected from the group consisting of O,O-dimethyl-O-3-methyl-4-nitrophenylthionophosphate, 2,2,2-trichloro - 1-hydroxyethyldimethylphosphonate, and O,O-diethyl-O-(2-isopropyl-4-methyl-6-pyrimidyl) thionophosphate as active ingredient, and an inert carrier; and a method for combating insects by using such synergistic insecticides.

3,499,080

ANTIBACTERIAL METHODS AND COMPOSITIONS UTILIZING N' - (4 - PYRIMIDINYL)-SULFANILAMIDES

Markus Zimmermann, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 622,900, Mar. 14, 1967. This application Jan. 22, 1969, Ser. No. 793,192
Claims priority, application Switzerland, Oct. 15, 1964, 13,410/64; Sept. 15, 1965, 12,816/65; Mar. 17, 1966, 3,990/66
Int. Cl. A61k *27/00*
U.S. Cl. 424—229 10 Claims

Antibacterial method and compositions utilizing an N^1-(4-pyrimidinyl)-sulfanilamide having a cyclopropyl group in the 2-, 5- or 6-position of the pyrimidine ring.

3,499,081

9-CHLOROPROGESTATIONAL AGENTS

Gerald W. Krakower, Elizabeth, and Patrick A. Diassi, Westfield, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,423
Int. Cl. C07c *173/00, 169/34*
U.S. Cl. 424—241 8 Claims

The invention disclosed herein relates to 9α-chloro-pregnanes which are highly active as progestational agents.

3,499,082

HYPOTENSIVE COMPOSITIONS CONTAINING A 3,4 - DIHYDRO - 1,2,4 - BENZOTHIADIAZINE-1,1-DIOXIDE, A HYDRAZINO-PHTHALAZINE AND AN INDOLE ALKALOID OF THE APOCYNACEAE FAMILY

George De Stevens and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 586,390, Oct. 13, 1966. This application Jan. 4, 1967, Ser. No. 607,157
The portion of the term of the patent subsequent to Nov. 29, 1983, has been disclaimed
Int. Cl. A61k *27/00*
U.S. Cl. 424—246 9 Claims

Pharmaceutical compositions comprising essentially:

(1) A 3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide,
(2) A 1-hydrazino-phthalazine, and
(3) An indole alkaloid of the Apocynaceae family

particularly the composition of 6-chloro-7-sulfamyl-3,4-dihydro-2H - 1,2,4 - benzothiadiazine-1,1-dioxide, 1-hydrazino-phthalazine and reserpine, are useful in the treatment of hypertension.

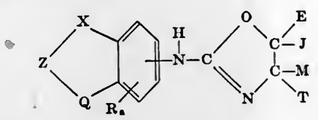
3,499,083

SUBSTITUTED OXAZOLINES, USEFUL AS PHARMACEUTICALS

George Levitt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 479,054
Int. Cl. A61k *27/00*
U.S. Cl. 424—246 18 Claims

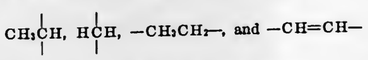
1. A compound of the formula



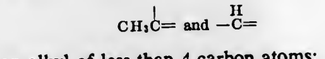
wherein

X and Q are each separately selected from the group consisting of oxygen, sulfur, nitrogen and —NCH_3;

Z is selected from the group consisting of



and when either X and Q are nitrogen Z can also be selected from the group consisting of



R is an alkyl of less than 4 carbon atoms;

E, J, M and T are each separately selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms with the limitation that the total number of carbon atoms in E, J, M and T is less than 9; and

a is selected from the group consisting of 0, 1 and 2.

17. Method of effecting central nervous system depression comprising administering a pharmacologically effective amount of a compound according to claim 1 to a warm-blooded animal.

18. A pharmaceutical composition containing a pharmacologically effective amount of a compound according to claim 1 and a major amount of a pharmacologically acceptable diluent.

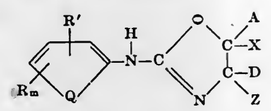
3,499,084

SUBSTITUTED OXAZOLINES, USEFUL AS PHARMACEUTICALS

George Levitt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 479,055
Int. Cl. A01n *9/22*
U.S. Cl. 424—272 18 Claims

1. A compound of the formula



wherein

R and R′ are each separately selected from the group consisting of hydrogen, chlorine and alkyl of 1 through 3 carbon atoms;

Q is selected from the group consisting of oxygen and sulfur;

m is a whole integer less than 3;

A, X, D and Z are each separately selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms with the limitation that the total number of carbon atoms in A, X, D and Z is less than 9; and R and R′ can be joined to form a bicyclic ring system.

18. A pharmaceutical composition containing a pharmacologically effective amount of a compound according to claim 1 and a major amount of a pharmacologically acceptable diluent.

3,499,085

FUNGICIDAL 1-ACYL-BENZIMIDAZOLINE COMPOSITIONS AND METHODS OF USE

Klaus Sasse, Cologne-Stammheim, and Ferdinand Grewe, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 27, 1967, Ser. No. 671,112
Claims priority, application Germany, Oct. 4, 1966, F 50,354
Int. Cl. A01n *9/22;* C07d *49/38*
U.S. Cl. 424—273 30 Claims

Fungicidal compositions of and methods of combatting fungi using certain 1-acyl-benzimidazolines, some of which are known, which possess fungicidal properties and which may be produced by conventional methods.

3,499,086

METHODS AND COMPOSITIONS FOR CONTROLLING FUNGAL AND BACTERIAL INFESTATION OF PLANTS UTILIZING ORGANIC TETRAVALENT TIN COMPOUNDS

Hans Brueckner and Kurt Haertel, Burgkirchen an der Alz, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a company of Germany

No Drawing. Continuation-in-part of application Ser. No. 440,868, July 1, 1954. This application Jan. 10, 1956, Ser. No. 558,185
Claims priority, application Germany, July 3, 1953, A 18,340
Int. Cl. A01n *9/00, 21/00*
U.S. Cl. 424—286 18 Claims

A process for controlling fungus and bacteria infestation of plants by applying thereto a composition consisting essentially of an emulsifying agent and an organic tetravalent tin compound of the fomula:



in which R_1, R_2 and R_3 are lower alkyl, phenyl, benzyl or naphthyl and R_4 is lower alkyl, phenyl, benzyl, naphthyl chloro, lower saturated aliphatic carbonyloxy, benzoyloxy, anthranyloxy, salicycloxy, phenoxy, phenylmercapto or chlorophenoxy.

3,499,087

METHOD FOR TREATING ULCERS WITH BENZOYL ESTERS OF 2-TERTIARY AMINO-1-PHENYL ETHANOLS

Jerome M. Glassman, Briarcliff Manor, N.Y., assignor to U.S.V. Pharmaceutical Corporation, a corporation of Delaware

No Drawing. Filed May 2, 1967, Ser. No. 635,340
Int. Cl. A01n *9/24*
U.S. Cl. 424—308 2 Claims

Compositions containing benzoyl esters of 2-tertiary-amino-1-phenyl ethanols as either the free base or acid addition salts are valuable for the treatment of ulcers. 2-diethylamino-1-phenylethyl benzoate is the preferred compound.

3,499,088

STABLE AQUEOUS SOLUTIONS OF COENZYME Q WITH A POLYOXYETHYLENE HYDROGENATED CASTOR OIL AND PROPYLENE GLYCOL AND PROCESS FOR THE MANUFACTURE THEREOF

Hiroyuki Shinkai, Mitsunori Washitake, and Toshio Anmo, Tokyo, Japan, assignors to Taisho Pharmaceutical Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 8, 1966, Ser. No. 563,671
Claims priority, application Japan, July 15, 1965, 40/42,346
Int. Cl. A61k *19/02*
U.S. Cl. 424—331 10 Claims

Stable aqueous solutions containing coenzyme Q solubilized in water with a polyoxyethylene-hydrogenated castor oil and propylene glycol.

3,499,089

METHOD OF INDUCING ANESTHESIA WITH 2-HALO-1,1,1,3,3-PENTAFLUOROPROPANES

Bernard M. Regan, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed Aug. 29, 1967, Ser. No. 663,952
The portion of the term of the patent subsequent to Jan. 9, 1985, has been disclaimed
Int. Cl. A61k *13/00, 27/00*
U.S. Cl. 424—350 2 Claims

2-chloro-1,1,1,3,3-pentafluoropropane and 2-bromo-1,1,1,3,3-pentafluoropropane, useful as nonflammable inhalation anesthetics, and the intermediate 1,1,1,3,3-pentafluoropropan-2-ol and p-toluenesulfonate ester of said alcohol used in preparing the inhalation anesthetics.

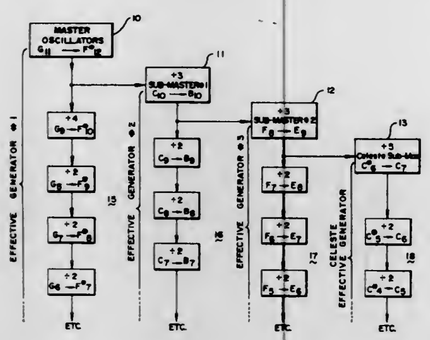
ELECTRICAL

3,499,090

ELECTRONIC ORGAN FREQUENCY DIVIDING SYSTEM EMPLOYING DIVISION BY ODD NUMBERS

Albert Meyer, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 28, 1967, Ser. No. 619,323
Int. Cl. G10h *5/06*
U.S. Cl. 84—1.01 17 Claims



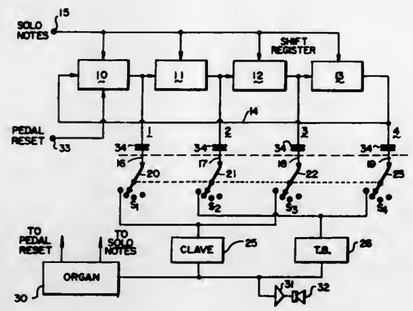
Twelve master oscillators, producing square wave forms or sawtooth wave forms, are connected each in a divide by two frequency divider chain, to provide one tone generator of conventional character in electronic organs. The master oscillator frequencies are also divided by three for sub-master oscillators, from which new octavely related tones may be derived each by means of a divide by two frequency divider chain. The frequencies obtained by division by three are further divided by three for further sub-master oscillators, each of which again controls a divide by two frequency divider chain, to provide a third set of tones. The last mentioned sub-master oscillator frequencies, obtained by division by three, are further divided by five and the still further sub-master oscillator frequencies provided by that division again control divide by two frequency dividers to produce further octavely related tones. Thereby four relatively detuned tone generators are provided, all of which derive from twelve master oscillators by means of frequency division, so that only twelve tuning controls are required for an organ which includes four tone generators.

3,499,091

STEPPING RHYTHMIC INTERPOLATER

David A. Bunger, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 10, 1967, Ser. No. 615,217
Int. Cl. G10f *1/08*
U.S. Cl. 84—1.03 11 Claims



A register is stepped in response to each note sounded by a manual of an electronic organ. Each position of the register controls a percussive sound or sounds, the percussive sound or sounds being selected by switches from a group of available sounds, for each position of the register. One or more such sounds may be called forth at each register position.

To compensate for the possibility that a note may be inadvertently added or omitted by the player, the register may be reset in response to either each pedal note played or each second pedal note played.

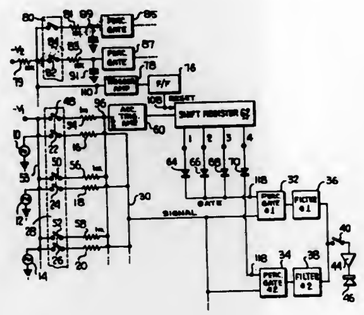
3,499,092

ACCOMPANIMENT CHORD RHYTHM SYSTEM

David A. Bunger, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 615,217, Feb. 10, 1967. This application Aug. 12, 1968, Ser. No. 751,871
Int. Cl. G10f *1/08*
U.S. Cl. 84—1.03 18 Claims

The playing of chords on an accompaniment manual keyboard of an electronic organ is facilitated by use of a shift register which can be stepped along by the mere repetition of one note of a chord and which can be reset by a flip-flop triggered by alternate keyings of a pedal keyboard. The shift register output may be programmed to actuate normally-off gates to pass signals through tone-color filters of diverse character to obtain desired rhythm patterns comprised of different voices. A resistive network is provided which advances the shift register for each actuation, whether or not keys are then already actuated.

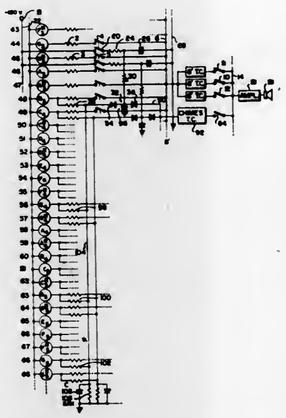


3,499,093

CHIME SYSTEMS AND THE LIKE FOR ELECTRONIC ORGANS

Walter Munch, Jr., Covington, Ky., and Dale M. Uetrecht, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 21, 1966, Ser. No. 588,523
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.24 17 Claims



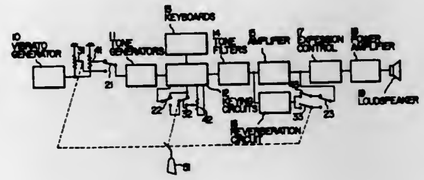
Tone sources corresponding with chime tone components are connected via current weighting resistances in parallel with one another, and all in series with a common diode gate. The latter consists of back-to-back diodes arranged to provide a linear response, thereby to avoid even-order harmonics or first order heterodyne products. The diodes are separated by a capacitor and supplied with bias current separately from a common source via large resistances, to maintain bias current to the diodes equal and small.

3,499,094

MANUAL OR KNEE OPERABLE EFFECT SELECTOR SYSTEM IN ELECTRONIC MUSICAL INSTRUMENT

Katsutoshi Hoshino, Toyohashi-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan, a joint-stock company of Japan

Filed Apr. 11, 1967, Ser. No. 630,070
Claims priority, application Japan, Apr. 19, 1966, 41/24,747
Int. Cl. G10h *1/02, 1/04*
U.S. Cl. 84—1.25 5 Claims



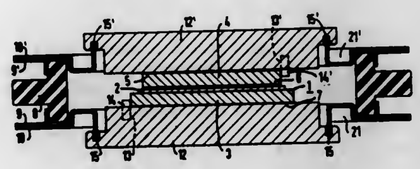
An electronic musical instrument includes several effect circuits for generating respective musical effects, knob-operated control devices for respectively rendering effect circuits operative when actuated, a knee-operated control device for rendering effect circuits operative when actuated, and selector switches associated with respective effect circuits and each selecting either a semi-permanent control of the effect circuit by the knob-operated device or a momentary control of the same by the knee-operated device.

3,499,095

HOUSING FOR DISC-SHAPED SEMICONDUCTOR DEVICE

Joachim Haus, Ebermannstadt, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Continuation-in-part of application Ser. No. 499,198, Oct. 21, 1965. This application Apr. 11, 1968, Ser. No. 729,862
Claims priority, application Germany, Jan. 30, 1965, S 95,262
Int. Cl. H05k *5/02*
U.S. Cl. 174—52 8 Claims

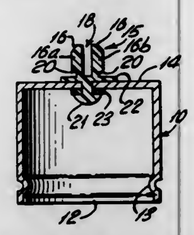


A housing structure for a disc-shaped semiconductor device comprises a hollow cylindrical section of insulation material in which the semiconductor device is mounted. A first end member is affixed to one open end of the cylindrical section and closes it and a second end member is affixed to the other open end of the cylindrical section and closes it. Each of the first and second end members comprises a central portion and an outer portion of annular configuration having an inner rim affixed to the central portion. Each central portion comprises a metal of good thermal and electrical conductivity, such as copper or silver, and each outer position has a thickness considerably less than that of the central portion as well as a fluted annular section formed in the outer portion at its inner rim.

3,499,096
CONTAINER FOR ELECTRICAL COMPONENT

Joel K. Beecher, Morristown, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware

Filed Sept. 9, 1968, Ser. No. 758,518
Int. Cl. H05k 5/04
U.S. Cl. 174—52 11 Claims

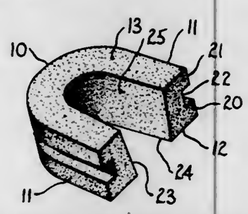


A container of conductive metal encloses an electrical component such as a flasher switch. A mounting device, molded of flexible plastic, is secured to a portion of the container for locking the assembly into an aperture in a supporting wall. The conductive metal container shields the component from stray electrical fields and provides a substantial protective envelope against dirt and humidity. The mounting device includes a bifurcated plastic lug which may be inserted into an aperture in a supporting wall and then turned to engage the aperture so as to hold the container in place.

3,499,097
STRAIN RELIEF FOR POWER CORD OF ELECTRICAL MACHINE

John C. Widstrand, Wausau, Wis., assignor to Marathon Electric Manufacturing Corporation, Wausau, Wis., a corporation of Wisconsin

Filed Jan. 18, 1968, Ser. No. 698,837
Int. Cl. H01b 17/26; H01r 13/58
U.S. Cl. 174—65 4 Claims



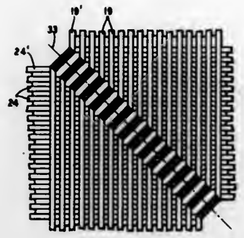
A U-shaped bushing of plastic is interlocked with part of a housing of a motor or similar electrical machine and has its legs compressively straddling the power cord. The laterally inner surfaces of the legs are formed with sharp edged ridges that extend lengthwise along the legs and nonpenetratingly bite into the insulation sheath of the power cord to resist lengthwise movement thereof. In assembly the power cord is laterally forced into the gap between the bushing legs, thereby establishing the length of the internal power cord stretch.

3,499,098
INTERCONNECTED MATRIX CONDUCTORS AND METHOD OF MAKING THE SAME

Bruce H. McGahey, South Plainfield, and Earl M. Woodruff, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Oct. 8, 1968, Ser. No. 765,855
Int. Cl. H05k 1/04
U.S. Cl. 174—68.5 11 Claims

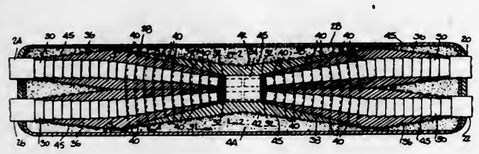
Each of the conductors of a vertical array and a horizontal array contain a 45 degree segment. By overlapping the vertical array with the horizontal array such that the angular segments of the overlapping conductors are coextensive, each of the horizontal conductors can be connected to one of the vertical conductors by a single thermocompression bonding step.



3,499,099
CABLE JOINT HAVING CONDUCTIVE RINGS FOR ESTABLISHING LINEAR LONGITUDINAL VOLTAGE STRESSES

Carlton T. Nicholson, Orchard Park, N.Y., assignor to Niagara Mohawk Power Corporation, Buffalo, N.Y., a corporation of New York

Filed Mar. 21, 1968, Ser. No. 714,951
Int. Cl. H02g 15/08, 3/04
U.S. Cl. 174—73 8 Claims

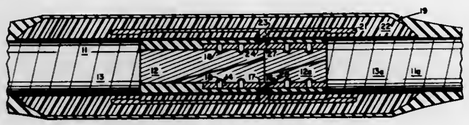


An insulated cable joint wherein electrically conductive rings are strategically positioned to linearize longitudinal voltage gradients and thus reduce insulation surface currents to prevent burning.

3,499,100
ELECTRIC CABLE CONNECTORS

Joseph B. O'Mara, Hastings-on-Hudson, N.Y., assignor to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Oct. 3, 1968, Ser. No. 764,681
Int. Cl. H02g 3/06
U.S. Cl. 174—73 3 Claims

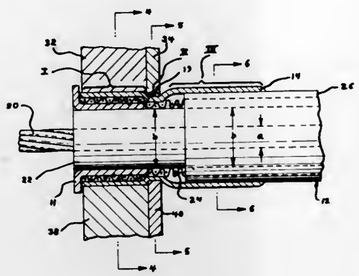


In high-voltage cable connections of the type where the conductor splice is shielded by means of a conducting cylinder embedded in a dielectric the shield is connected to the splice sleeve by means of a bridging member that threads onto the sleeve and has a wiping fit to the shield.

3,499,101
OUTER CONDUCTOR CRIMP FOR COAXIAL DEVICES

Edgar Wilmot Forney, Jr., Harrisburg, and Richard Shure Hogendobler, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 23, 1968, Ser. No. 754,866
Int. Cl. H02g 15/08
U.S. Cl. 174—75 10 Claims

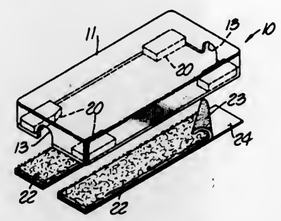


A coaxial cable termination technique and structure is disclosed which features a malleable ferrule crimped inwardly in a region overlying the rear of the coaxial device to force the cable outer conductor against the outer surface of the rear of the connector. At the end of the rear of the coaxial device the ferrule is crimped inwardly to an even greater extent to hold the cable outer conductor down against the cable dielectric sheath and prevent any slight air gap from occurring due to the transition of the cable outer conductor from its nominal inner diameter dimension to the expanded dimension to fit over the rear of the connector device. The ferrule is not crimped at all in its rear portion, which is made to extend over the cable outer conductive sheath to provide cable support and stabilize the crimped areas.

3,499,102
PROTECTIVE COVER AND METHOD OF ANCHORING SAME TO A SUPPORTING SURFACE

George W. Gillemot, Venice, Calif. (2331 20th St. Santa Monica, Calif. 90405), and John T. Thompson, Tarzana, Calif. (244 Loring St., Los Angeles, Calif. 90024)

Filed Sept. 9, 1968, Ser. No. 758,419
Int. Cl. H01b 17/00; H02g 3/04; H05k 5/03
U.S. Cl. 174—138 4 Claims

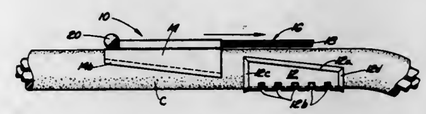


A protective cover and method of detachably anchoring the same to a supporting surface, as furniture, without defacing the surface or need to penetrate the surface with fastener devices. Typically, the technique is usable to conceal and anchor separable cable couplings for communication equipment to furnishings easily, expeditiously and without need for tools or defacement of walls, flooring, furniture or the like used as a support. Anchorage of the cover means is achieved by interlocking pairs of strips each having a layer of adhesive for anchoring the one on the supporting surface and the other on the underside of the cover, the facing surfaces of the strips being held detachably together by a multiplicity of barbs engageable with a mat of intertwined fibers. Desirably, the adhesive is of the pressure-sensitive type.

3,499,103
STRAIN RELIEF DEVICE

Roger G. Pearce, Dallas, Tex., assignor of ten percent to Carol L. Oden, Fontana, Calif.

Filed June 1, 1967, Ser. No. 642,920
Int. Cl. H01b 7/28
U.S. Cl. 174—135 5 Claims

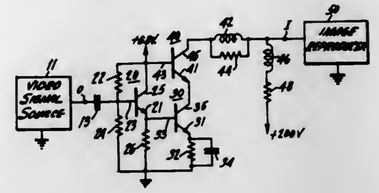


A strain relief device comprising a pair of semicylindrical clamp members with slanting, beaded side edges which slide into engagement to lock the members around an electrical conductor cord, and a pull cable associable with one of the clamp members which has a hook on one end by means of which it can be made fast to an anchor point. The parts of the strain relief device are so arranged that the anchored cable can hold the clamp members in tight engagement when they are positioned for use on a conductor cord.

3,499,104
VIDEO OUTPUT STAGE EMPLOYING STACKED HIGH VOLTAGE AND LOW VOLTAGE TRANSISTORS

Wayne Miller Austin, Hanover, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed June 13, 1966, Ser. No. 557,283
Int. Cl. H04n 9/18
U.S. Cl. 178—5.4 10 Claims



Video output stage comprises a high voltage (high dissipation, high breakdown voltage rating) transistor with its emitter-collector path in series with the emitter-collector path of a low voltage, high gain-bandwidth product rating transistor. The low voltage transistor operates as a common emitter amplifier, driving the emitter of the high voltage transistor, with the base of the latter maintained at a fixed low potential. In color receiver embodiment, matrixing of luminance and color difference signals is achieved in output stage by additionally driving high voltage transistor emitter with a second low voltage

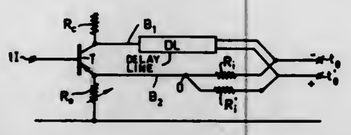
transistor in common emitter configuration. Common brightness control, operating via a plurality of such output stages with respective output clamping circuits, involves superposition of adjustable amplitude pulse on common luminance signal input.

3,499,105

DELAY LINE CIRCUIT FOR PROCESSING A PAL COLOR TELEVISION SIGNAL

Donald Sydney Hobbs, Reigate, Surrey, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,269
Claims priority, application Great Britain, Apr. 29, 1966, 18,865/66
Int. Cl. H04n 9/50, H03d 3/06
U.S. Cl. 178—5.4 **7 Claims**



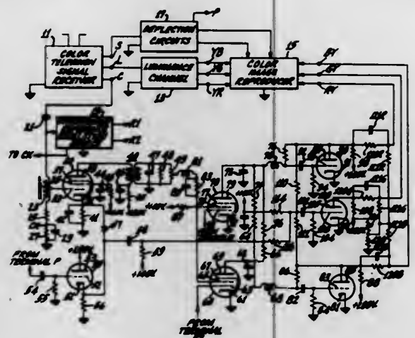
A signal translating circuit has two branches between a common input and output. One of the branches includes a delay line. Variations of attenuation in the delay line, e.g., due to manufacturing tolerances, can be compensated by a single control by feeding the delay branch from the collector and the other branch from the emitter of a transistor amplifier having a variable emitter resistor. The delay line can have two outputs 180° out of phase connected to two output terminals. This arrangement is particularly useful in the modification of PAL color television signals.

3,499,106

COLOR SIGNAL PROCESSING CIRCUITS INCLUDING AN ARRAY OF GRID-PULSED, GROUNDED-CATHODE COLOR-DIFFERENCE AMPLIFIERS

Gerard Lester Kagan, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware

Filed May 23, 1966, Ser. No. 574,839
Int. Cl. H04n 9/52
U.S. Cl. 178—5.4 **8 Claims**



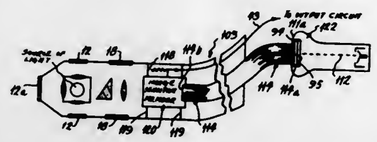
A trio of matrix amplifier tubes are operated with grounded cathodes; respective demodulator outputs are applied to control grids of two of the matrix trio, while control grid of third receives combination of plate outputs of the two. Low impedance blanking pulse source (illustratively, a cathode follower pulse amplifier) supplies positive pulses to control grids for purpose of establishing stable bias; source also applies blanking pulse to cathode of chrominance amplifier for burst suppression purposes via coupling diode (serving isolation purpose during line intervals). Circuit arrangement permits matching bias establishment without introducing disturbing cross-coupling of color difference signals.

3,499,107

LIGHT TRANSFER DEVICES USING LIGHT CONDUCTING MEMBERS OF MULTILAYERED CONSTRUCTION AND PHOTOELECTRIC MEANS

Edward Emanuel Sheldon, 30 E. 40th St., New York, N.Y. 10016

Application Dec. 4, 1961, Ser. No. 158,638, now Patent No. 3,279,460, which is a division of application Ser. No. 624,829, Nov. 28, 1956. Divided and this application Apr. 15, 1966, Ser. No. 542,918
Int. Cl. H04n 3/16
U.S. Cl. 178—6.8 **11 Claims**



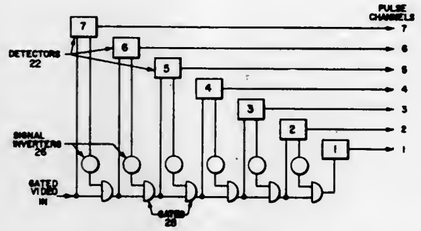
The invention relates to novel light conducting devices and systems using a source of light and one or a plurality of light guiding members which are characterized by the construction in which each of said members has a core part of material of a high index of refraction and a peripheral part of material of a lower index of refraction than said core. In addition the above system comprised photosensitive means for receiving said conducted light. In some embodiments phototubes or photosensors of solid-state type are used. In other embodiments a vacuum tube such as image reproducing tube or a television pick-up tube are preferred.

3,499,108

COMMUNICATION SYSTEM

Lewis B. Simon, Oxnard, Calif., assignor to The United States of America as represented by the Secretary of the Navy

Filed Aug. 25, 1965, Ser. No. 482,641
Int. Cl. H04n 3/16
U.S. Cl. 178—7.1 **1 Claim**



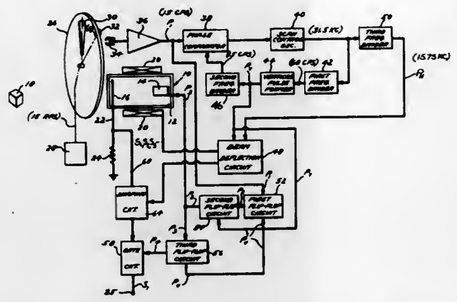
A communication system in which analog video signal is divided into discrete amplitude levels for transmission as pulse code modulation and with a separate frequency being assigned to each level. In a preferred embodiment, the analog signal is quantized into individual pulses, each pulse being representative of an instantaneous amplitude level of the input wave. A plurality of detectors are designed so that each passes only those signal components which exceed a predetermined amplitude level which is different from the respective levels of all of the remaining detectors. Each detector acts upon the reception thereby of an input signal to preclude the application of such signal to those remaining detectors which are designed to pass energy having a lower amplitude level.

3,499,109

AVOIDANCE OF RESOLUTION DEGRADATION DUE TO RESIDUAL IMAGE PHENOMENA IN TELEVISION CAMERAS

Nobutoshi Kihara, Shinagawa-ku, Tokyo, and Takao Aoki, Kawasaki-shi, Kanagawa-ken, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed July 25, 1966, Ser. No. 571,954
Claims priority, application Japan, July 28, 1965, 40/46,091
Int. Cl. H04n 5/38
U.S. Cl. 178—7.2 **14 Claims**



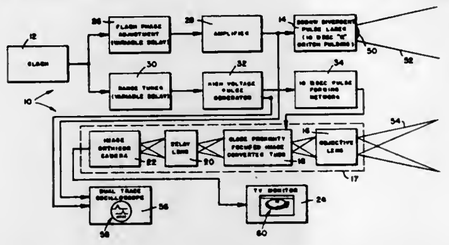
The photoelectrically sensitive screen of a television camera is intermittently exposed to light images of the objects to be reproduced and the screen is shielded from the light images during the intervals between successive exposures, the screen is electronically scanned a plurality of times during each of the intervals between successive exposures, and the electrical signals thus produced are gated to remove therefrom all signals except those produced during the first electronic scan after each exposure.

3,499,110

TELEVISION MONITORING SYSTEM FOR PENETRATING A LIGHT BACKSCATTERING MEDIUM

Paul J. Heckman, Jr., Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 14, 1967, Ser. No. 646,126
Int. Cl. H04n 5/38
U.S. Cl. 178—7.2 **5 Claims**



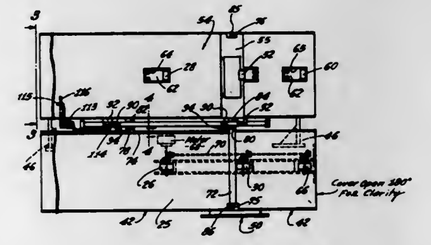
The invention is a television monitoring system for penetrating a medium which tends to backscatter light, and therefore has special utility in connection with underwater operations. The system includes a periodically pulsed laser light source which emits extremely short bursts of illumination having a duration of the order of 10 nanoseconds. The system video signal is produced by an image orthicon television camera tube of the type in which combined magnetic and electrical potential fields focus electrons emitted from the photocathode onto a charge storage surface called the "target." The camera tube is operated with the combined magnetic and electrical potential field continuously energized. An image converter tube is disposed in optical series between the object scene and the photocathode of the image orthicon tube. Associated objective and relay lens systems are disposed ahead of the image converter tube and intermediate the image converter tube and the camera tube, respectively. The 20 kv. operating potential which is needed to enable the image converter tube to transmit an image is applied to the image converter tube as a periodic pulse signal, also of a 10 nanosecond order of duration. The image converter operating potential pulse is in adjustably delayed phase relationship to the illumination pulse, with a capability of adjustment resolution in the order of nanoseconds.

3,499,111

FACSIMILE TRANSCEIVER CONSTRUCTION

Glenn A. Reese, San Pedro, Calif., assignor to The Magnavox Company, a corporation of Delaware

Filed Mar. 24, 1966, Ser. No. 537,178
Int. Cl. H04n 3/02
U.S. Cl. 178—7.6 **38 Claims**



This invention relates to facsimile apparatus which includes a platen disposed at the front of the apparatus and movable between open and closed positions. The platen is provided with a configuration corresponding to a section of a cylinder and is constructed to support a sheet in a configuration corresponding to a section of a cylinder when the platen is in the open and closed positions and is being moved between the open and closed positions.

The platen defines a cylinder with a housing in the closed position. First means are provided for moving the platen to the closed position and second means are provided for disengaging the first means with the platen near the closed position and for accurately guiding the platen to the closed position. Third means are provided for locking the platen to the housing in the closed position.

A fixed structure forming a forwardly facing convex guide is provided with an axis corresponding to the axis of the platen in the closed position of the platen. First roller means are provided on the guide and second roller means are provided on the platen. When the platen is in the closed position, the first and second roller means cooperate to drive the sheet of paper in the axial direction.

3,499,112

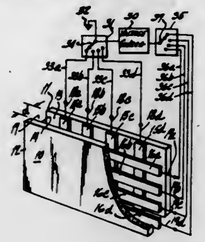
ELECTRO-OPTICAL DEVICE

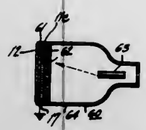
George H. Heilmeier, Philadelphia, Pa., and Louis A. Zanoni, Trenton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Mar. 31, 1967, Ser. No. 627,515
Int. Cl. H04n 3/16; G02f 1/28
U.S. Cl. 178—7.7 **14 Claims**

An electro-optical display device having a layer of a nematic liquid crystal composition of a type that scatters

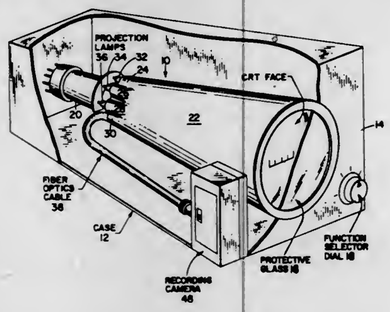
light due to turbulence in the layer created by the application of a voltage across the layer, which voltage is accompanied by a current in the layer, means for support-





ing the layer, and means for applying a voltage across the layer of a magnitude sufficient to cause turbulence of the layer in the region of the applied voltage.

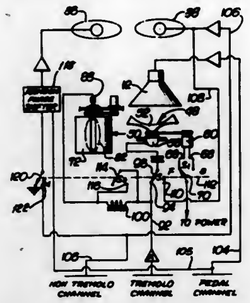
3,499,113
CATHODE-RAY TUBE SCALE MARKER
William H. Rymes, 2415 N. Florida St., Arlington, Va. 22207
Filed Nov. 21, 1966, Ser. No. 596,015
Int. Cl. H01j *29/34*
U.S. Cl. 178—7.83 **2 Claims**



A means for presenting a desired scale or indicia on the face of a cathode-ray tube. This is accomplished by providing various scale or indicia markers as part of the neck of the cathode ray tube and includes electronic means for activating the desired scale or indicia. In addition apparatus is provided for making a permanent record of the data presented on the cathode ray tube including said scale or indicia.

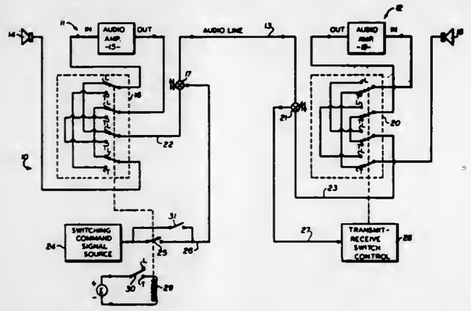
3,499,114
SPEAKER SYSTEM FOR PULSATO AND CELESTE EFFECTS
Donald J. Leslie, Altadena, Calif. (Leslie Research Co., 267 S. Fair Oaks Ave., Pasadena, Calif. 91105)
Filed July 28, 1967, Ser. No. 656,827
Int. Cl. G10k *11/10, 1/04*
U.S. Cl. 179—1 **14 Claims**

The cabinet **10** houses a speaker **12** for pedal range tones. For the other frequency ranges, fixed speakers **36** and **38** and rotary speaker assemblies **48** and **50** are provided. The speaker assemblies **48** and **50** in one operational mode handle the impulses in the tremolo channel and the speaker **38** handles the impulses in the non-tremolo channel. In an alternate mode speakers **36, 38** and the speaker assembly **48** comprise separate elements of a chorus group while speaker assembly **50** sustains



the entire burden of the tremolo channel. A random phase shifter **118** produces an electrical phase shift between speakers **36** and **38** while speaker assembly **52** operated at a reduced speed provides acoustic phase shifts.

3,499,115
INTERCOM SYSTEM IN WHICH MASTER STATION CONTROLS OPERATION OF STAFF STATIONS
Howard M. Sontag, Roslyn, N.Y., assignor to Executone Inc., Long Island City, N.Y.
Filed Feb. 18, 1966, Ser. No. 528,529
Int. Cl. H04m *1/00, 9/00*
U.S. Cl. 179—1 **4 Claims**

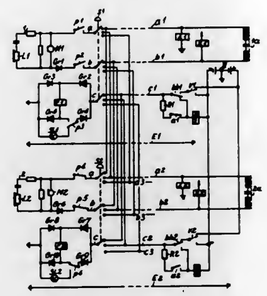


An audio communication system disposed for operational control by one station and adapted for a 2-way communication between remotely located stations and other networks of similar design, the control by one station in the same network providing the same control between remote stations and remote networks. D.C. voltages are used to provide talk-listen, busy and priority signals.

3,499,116
CIRCUIT ARRANGEMENTS FOR REMOTELY CONTROLLED DICTATING INSTALLATIONS HAVING MULTIPLE SUBSCRIBER AND DICTATING MACHINE STATIONS TO PREVENT ENGAGEMENT OF A PREVIOUSLY ENGAGED DICTATING MACHINE STATION
Carl-Heinz Jeske, 36 Kurnbergstrasse, Munich, Germany
Filed June 25, 1964, Ser. No. 377,801
Claims priority, application Germany, June 27, 1963, S 85,878
Int. Cl. H04m *11/10*
U.S. Cl. 179—6 **4 Claims**

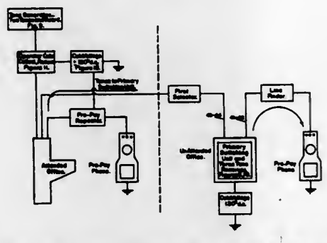
A remotely controlled dictating machine installation has a number of subscriber stations that may select any one of a number of remote dictating machine stations

except one that has been previously engaged by another subscriber station. There is a common positive and negative potential source. Each dictating machine station includes a holding relay that provides a positive potential to the third pole of a selecting switch at a subscriber station that has selected that particular dictating machine station when the dictating machine is free and a negative potential when the dictating machine station is busy. Each subscriber station includes a dictating machine station selection switch having at least two poles for exchanging audio signals with the selected dictating machine station and the third pole for receiving information on whether the selected dictating machine station is busy or free



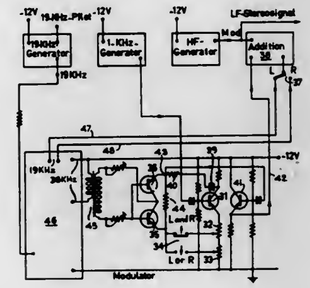
Each subscriber station also includes a connection relay having its winding connected across opposed junctions of a bridge rectifier circuit whose other opposed junctions are connected between ground and the third pole so that the connection relay winding is energized only when the third pole bears a positive potential to then connect subscriber station transducing means to the two poles of the selection switch that exchange audio signals with a dictating machine station. The connection relay means also includes contacts for connecting one of the rectifiers in series with the third pole and indicating means connected to ground to provide an indication that the selected dictating machine station is busy.

3,499,117
REMOTE OPERATOR COIN CONTROL USING MULTI-FREQUENCY TONES
Robert A. Clark, Jr., Fort Lauderdale, Fla. (% Communication Equipment & Engineering Co., 5646 W. Race Ave., Chicago, Ill. 60644)
Filed May 19, 1967, Ser. No. 639,790
Int. Cl. H04m *17/02*
U.S. Cl. 179—6.3 **17 Claims**



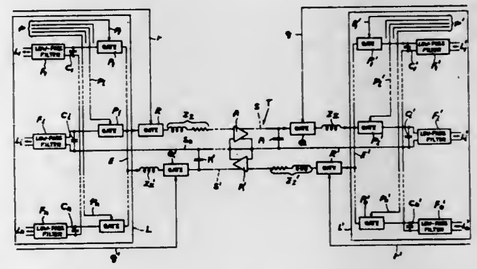
A telephone system serving a central area by attended office; and serving satellite areas by unattended offices: Pre-pay telephones connected to each unattended office; generation of code frequency coin return and coin collect signals at the attended office; delivery of such signals under attended office operator control over telephone lines, to the unattended offices; delivery of coin return and collect D.C. signals from the unattended offices to the pre-pay telephone coin return or coin collect units over short metallic lines of maximum conductivity, under frequency signal control at the unattended offices; with provision at the unattended offices to automatically handle various colateral and related operations.

3,499,118
DEVICE FOR SWITCHING STEREOPHONIC SIGNALS
Helmut Kaden, Hamburg-Rahlstedt, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 577,012
Claims priority, application Germany, Sept. 3, 1965, P 37,592
Int. Cl. H04j *1/02*
U.S. Cl. 179—15 **6 Claims**



A modulating or demodulating switch for stereo signals. The electronic switch is switched at a frequency of 38 kHz. Because of the forward internal resistance of the switch; a residual signal will be present. Therefore a signal in phase opposition is added to cancel out this residual signal. The cancelling signal is obtained from a variable resistor in the emitter circuit of a transistor amplifier to permit adjustment.

3,499,119
TWO-WAY TIME-SHARING RESONANT-TRANSFER COMMUNICATION SYSTEM
Ferdinando Formenti and Giuseppe Valbonesi, Milan, Italy, assignors to Societa Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy, a corporation of Italy
Filed June 13, 1967, Ser. No. 645,685
Claims priority, application Italy, July 15, 1966, 16,470/66
Int. Cl. H04j *3/00*
U.S. Cl. 179—15 **4 Claims**



Communication—especially telephone—system with a plurality of local lines sequentially connectable to a com-

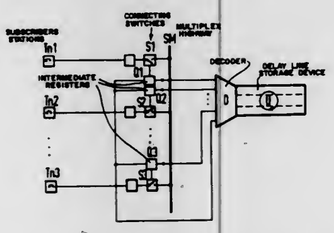
mon terminal on each side of a two-way trunk divided into two parallel branches, each branch including a repeater for a respective direction of transmission. A message sample stored on a condenser at the trunk end of any local line is transmitted to a corresponding condenser of the opposite line in two immediately consecutive stages, the first stage involving the charging of an intermediate capacitor of the outgoing trunk branch whereas the second one results in the transfer of that charge to the storage condenser at the remote terminal. At least one of these charge transfers takes place through an amplifier stage of the corresponding repeater by way of impedances designed to provide critical damping for an aperiodic discharge; the other transfer may proceed under resonance conditions and without amplification. Thus, during a sampling interval, the storage condensers of two confronting lines can be concurrently discharged into their respective outgoing trunk branches and thereafter receive amplified message samples from their respective incoming branches.

3,499,120

TIME MULTIPLEX COMMUNICATION EXCHANGE WITH STORAGE DEVICE OF INCREASED CAPACITY

Kurt Fischer and Hans Höschler, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Oct. 29, 1965, Ser. No. 505,608
Claims priority, application Germany, Jan. 14, 1965, S 95,003
Int. Cl. H04j *3/02*
U.S. Cl. 179—18 **12 Claims**



A time multiplex exchange wherein the time spacing of the slots cycling in the circulation storage device is shorter than the spacing of the connection slots which control the connection switches of the exchange. To each connection slot there are assigned several adjacent cycling slots, and one control pulse in a connection slot is assigned to each connection. Consequently, there is more room in the circulation storage device for information than previously available, yet sufficient time is provided between control pulses for reaction of the distribution network and for the switches to achieve their settings.

This invention concerns electronic exchanges, such as telephone exchanges, operating in accordance with the time multiplex principle.

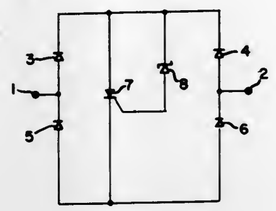
3,499,121

COMMUNICATION SYSTEM EXCLUSION CIRCUIT

Alex C. McIntosh, Everett, and Darryl Frederic Proctor, Bellevue, Wash., assignors to Proctor and Associates Company, Redmond, Wash, a corporation of Washington

Filed Mar. 3, 1966, Ser. No. 531,465
Int. Cl. H04m *3/16*
U.S. Cl. 179—17 **8 Claims**

A telephone exclusion system comprising a diode circuit having an input point and an output point, and having diodes with their polarities arranged in a bridge such that the exclusion circuit can function regardless of the input polarity and such that the current cannot pass from the input point to the output point through the output circuit alone. A Zener diode gates an electrical self-latching semi-conductor above a predetermined voltage



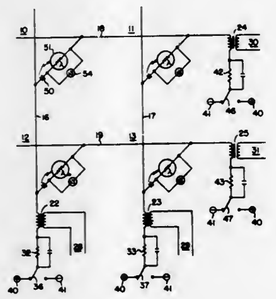
level across the input and output points such that the electrical self-latching semi-conductor is actuated and permits passage of current from the input point to the output point but does not become activated below a predetermined voltage level between the input and output points.

3,499,122

TELEPHONE SWITCHING MATRIX WITH PHOTO-RESPONSIVE SWITCHING ELEMENTS

Barrie Brightman, Webster, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 6, 1967, Ser. No. 651,567
Int. Cl. H04m *3/22*
U.S. Cl. 179—18 **2 Claims**



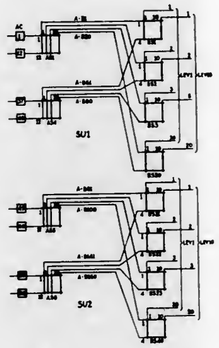
A coordinate matrix defining switching crosspoints including a light emitting diode electrically in series with and optically coupled to a photoconductor at each crosspoint. A threshold type conductive element such as a neon tube shunts the photoconductor to initiate conduction through the diode. Once the diode starts conducting, the resulting reduction in resistance of the photoconductor lowers the voltage drop across it and extinguishes the neon tube. The crosspoint remains self-holding so long as current is continued through it. The column and row leads that are connected at an ON crosspoint are held at a potential mid-way between the potentials of the two battery terminals so that only half of the battery voltage can be applied at other crosspoints along the two leads, and only one connection can be made at a time to any one lead.

3,499,123

GROUP SELECTING ARRANGEMENT FOR AUTOMATIC TELEPHONE SYSTEMS USING CROSSPOINT RELAY MATRIX SWITCHES

John Arthur Gee, Donald Frank Rigby, and Donald Kelson, London, and William Archibald Charles Hemmings and Peter Samuel Hampson, Liverpool, England, assignors to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company, and Her Majesty's Postmaster General of Great Britain, London, England

Filed Nov. 15, 1966, Ser. No. 594,514
Claims priority, application Great Britain, Nov. 18, 1965, 48,962/65
Int. Cl. H04m *3/00*
U.S. Cl. 179—18 **14 Claims**



A group selector arrangement for a telephone system consists of at least one switching network comprising a plurality of primary and secondary matrix switches using electromagnetic crosspoint relays. The primary and secondary switches are link-connected so that each primary switch is connected to each secondary switch and the outlets of the secondary switches are formed into levels each consisting of corresponding outlets of the secondary switches. Control equipment can be operatively associated exclusively with any one inlet to the primary switches and includes a call isolator for determining the primary switch inlet and for defining all the links extending from such primary switch; a register to which digital signals are applied; an interrogator and trunk marker for interrogating, as to their idle or busy conditions, the outlets of the level defined by the digital signals; a path selector for nominating for use one of the available outlets in the required level and its associated link and for operating a crosspoint relay in the primary switch to connect the calling inlet to the nominated link, the operation of a crosspoint relay in the secondary switch to connect the nominated link to the nominated outlet being effected by the interrogator and trunk marker. The control unit also includes a variable availability device which enables two levels to be combined to form one group.

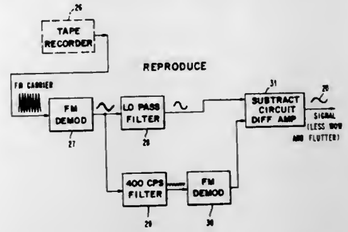
3,499,124

FM RECORDING AND REPRODUCING ARRANGEMENT WITH SINGLE CARRIER AND PROPORTIONAL COMPENSATION

Donald Wortzman, Mahopac, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 7, 1966, Ser. No. 592,395
Int. Cl. G11b *5/04*
U.S. Cl. 179—100.2 **8 Claims**

An arrangement is provided for correcting distortion in recording an information signal. A monitor tone signal is added to an information signal and the composite of the two signals is frequency modulated prior to recording. Upon reproduction, the composite signal is demodulated and the monitor tone signal is retrieved and demodulated to produce a correction signal indicative of the



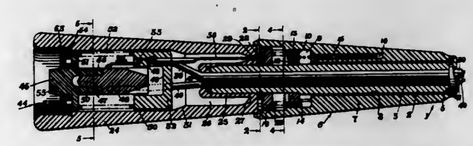
amount of distortion. The correction signal is proportioned in accordance with the deviation of the frequency modulated information signal from center frequency prior to being subtracted from the demodulated information signal.

3,499,125

ELECTRIC SWITCH HAVING FIXED CONTACTS ENGAGEABLE BY ROTATABLE AND LINEARLY MOVABLE BRIDGING MEMBERS

Walter T. Stoi, Warren, Mich., assignor, by mesne assignments, to Essex International, Inc., a corporation of Michigan

Filed Jan. 3, 1967, Ser. No. 606,820
Int. Cl. H01h *9/02*
U.S. Cl. 200—4 **15 Claims**



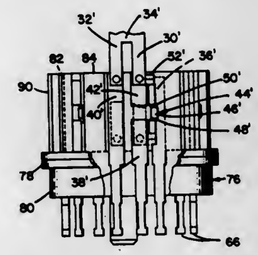
An electrical switch having a support on which is mounted a rotatable bridging conductor and an axially movable bridging conductor, the bridging conductors being selectively engageable with common fixed contacts.

3,499,126

ELECTRICAL CONTACT ASSEMBLY WITH RAMP GUIDE

Edward A. Jones, Sylmar, Calif., Vincent H. Scopack, Colorado Springs, Colo., and James A. Kruse, Woodland Hills, Calif., assignors to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware

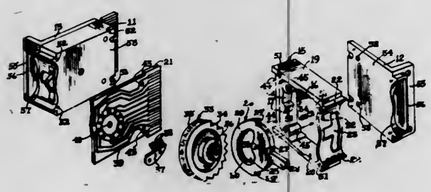
Filed July 24, 1968, Ser. No. 747,280
Int. Cl. H01h *15/00*
U.S. Cl. 200—16 **9 Claims**



An improved electrical contact assembly is disclosed. The assembly comprises three fixed contact elements positioned in two grooves; two of the fixed contact elements

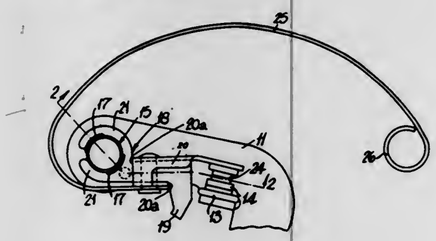
have portions aligned with one of the grooves while the third fixed contact is positioned within the other groove. Two slidable contact elements move within the grooves, one in each groove for making and breaking electrical contact with the fixed contact elements. A guide ramp is provided adjacent the groove containing the two fixed contact elements for supporting that groove's slidable contact element between electrical contact with either fixed contact element and for providing positive disengagement of the slidable contact element from the fixed contact elements.

3,499,127
THUMBWHEEL TYPE SWITCH
Walter L. Cherry and Eric L. Long, Highland Park, Ill., assignors to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois
Filed Dec. 26, 1968, Ser. No. 813,409
Int. Cl. H01h *3/00;* **F16h** *53/00*
U.S. Cl. 200—17 **9 Claims**



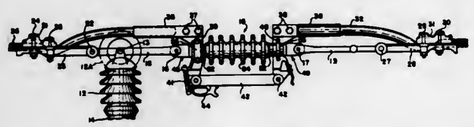
A thumbwheel type switch having a sectioned casing providing an interior cavity housing the switch components including a printed circuit board, a rotatable drum having a switch wiper blade affixed thereto and rotatable therewith, an actuator having rotating means comprising a geared arrangement between the actuator and the rotatable drum for selectively rotating the drum and its wiper blade over said circuit board and into selected circuit making positions when said actuator is moved through a prescribed path.

3,499,128
CONTACT BREAKER ASSEMBLIES
William Lawrence Fry, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed May 13, 1968, Ser. No. 728,399
Claims priority, application Great Britain, June 12, 1967, 26,975/67
Int. Cl. H01h *19/00*
U.S. Cl. 200—19 **1 Claim**



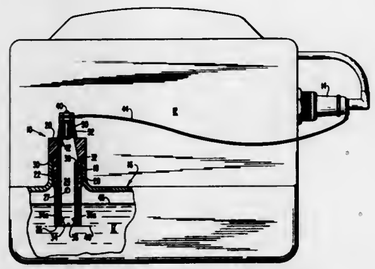
A contact breaker assembly for use in an ignition distributor is in the form of a self contained unit and includes a contact plate adapted to be mounted for pivotal movement within the distributor. A fixed contact is supported on a tag upstanding from the contact plate, and a sleeve is secured to the contact plate and pivotally supports an insulating heel member. The heel member carries the movable contact of the contact breaker assembly, the movable contact being engageable with the fixed contact. One end of a leaf spring is secured to the insulating heel member, and the other end of the leaf spring is anchored to the contact plate the spring urging the heel member to pivot in a direction to bring the movable contact into engagement with the fixed contact.

3,499,129
LINE TENSION HIGH VOLTAGE CIRCUIT INTERRUPTER
Leonard A. Hulteen and William H. Gilliland, Birmingham, Ala., assignors to USCO Power Equipment Corporation, Birmingham, Ala., a corporation of Alabama
Original application Oct. 17, 1966, Ser. No. 587,071. Divided and this application Nov. 13, 1967, Ser. No. 705,249
Int. Cl. H01h *31/00, 85/02;* **H01b** *17/16*
U.S. Cl. 200—48 **6 Claims**



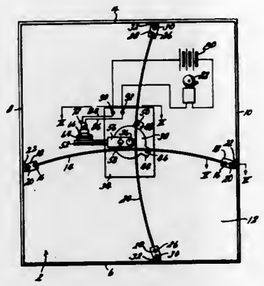
An in the line circuit interrupter and insulator assembly for high voltage electric lines including a tension insulator having metal end terminal line connectors axially and nonrotatably fixed to the opposite rod-like ends of a skirted insulator and being shaped to provide mounting surfaces inwardly from their line connections and a switch or fuse interrupter assembly having respective mounting fittings designed to grippingly encompass the insulator mounting surfaces so the interrupter can be selectively angularly fixedly related to the insulator axis and its aligned connected transmission line or lines for ready service usage from a predetermined angle of approach or to avoid inadvertent contact adjacently related power lines, switching structure, and/or poles.

3,499,130
SAFETY DEVICE AND METHOD
Glenn E. Norred, 425 Fairfax Drive, Pensacola, Fla. 32503
Filed Apr. 4, 1968, Ser. No. 718,699
Int. Cl. H01h *29/00;* **G01f** *23/00*
U.S. Cl. 200—61.04 **7 Claims**



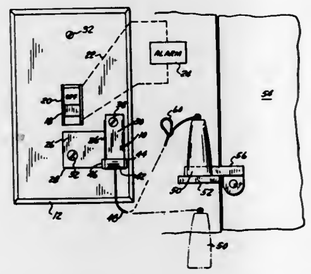
In an engine having an oil case for lubricating the engine parts, a method for stopping the engine when the oil in the case falls below a predetermined level; the method employing a plug having a pair of electrodes extending into the oil case to be insulated from each other by the oil when at a satisfactory level in the case. One of the electrodes is connected to the spark plug of the engine while the other is connected to ground so that when the level of the oil falls out of contact with the electrodes, an arc will be passed across the electrodes shunting the spark plug and thereby stopping operation of the engine.

3,499,131
DEVICE FOR DETECTING AND INDICATING RELATIVE MOVEMENT OF ELEMENTS
Robert D. Gutting, 1717 W. 33rd St., Topeka, Kans. 66611
Filed May 10, 1967, Ser. No. 637,525
Int. Cl. H01h *3/16*
U.S. Cl. 200—61.81 **5 Claims**



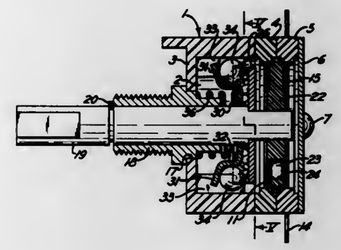
This application discloses a device for detecting and indicating relative movement between two elements, whether these elements are separate elements or different portions of a unitary structure, in which latter case the device is operable to indicate distortion of said unitary structure. The device comprises a flexible strand extending between and attached at its ends to said elements with its mid-portion laterally offset from a straight line interconnecting its ends, and a signal device engaged by the mid-portion of said strand and operable by lateral movement thereof to give any desired type of warning signal, either locally or remotely.

3,499,132
SWITCH ACTUATOR
Farron Lowe Stevens, 4105 Parkway, Royal Oak, Mich. 48072
Filed May 23, 1967, Ser. No. 640,633
Int. Cl. H01h *3/02*
U.S. Cl. 200—61.93 **4 Claims**



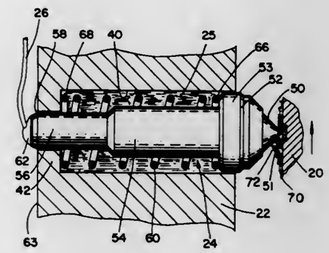
A pre-set spring loaded striker member mounted on the cover plate of a wall-mounted electrical switch is movable in a path wherein it engages the actuating member of the switch. The striker member is retained in a set position by a retainer until released by a falling weight or other means responding to a predetermined condition such as a door being opened by an unauthorized person. The switch is connected in circuit-closing relationship with a suitable audible or visual device.

3,499,133
ROTARY SWITCH WITH INDEXING MECHANISM
Robert H. Tillack, Raleigh, and Allan J. Sykora, Cary, N.C., assignors to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1968, Ser. No. 720,601
Int. Cl. H01h *3/00, 9/00*
U.S. Cl. 200—166 **6 Claims**



An index plate rigidly mounted on the shaft of a rotary switch is provided with circumferentially spaced indexing recesses. A pressure plate, slidably mounted on the shaft, has at least one ear projecting laterally into a radial slot in the side of the switch housing. A ball is disposed in the slot between the ear therein and the index plate. A coil spring urges the pressure plate toward the index plate to cause the ear to press the ball into an adjoining indexing recess.

3,499,134
ENCODER HAVING PIN SHAPED CONTACT ELEMENTS
Clarence J. Klosterman, Newhall, Calif., assignor to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed June 13, 1968, Ser. No. 736,612
Int. Cl. H01h *1/50;* **H04l** *3/00*
U.S. Cl. 200—166 **14 Claims**

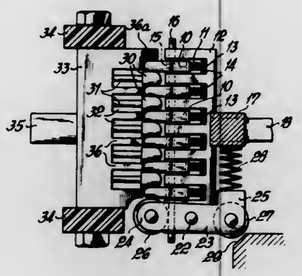


An encoder having an improved pin shaped contact element and mounting block structure is disclosed. The mounting block is a unitary moldable body having a number of cylindrical openings therein with a number of pin contacts moveably mounted within the openings. The new structure allows easy contact element removal, eliminates contact element entrapment and provides for extended contact element life at high rotational speeds.

3,499,135
SWITCHING DEVICE FOR OPENING NON-CURRENT CARRYING CIRCUITS

Alexander Bleibtreu, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany

Filed Feb. 14, 1968, Ser. No. 705,359
Claims priority, application Germany, Mar. 7, 1967, M 73,066
Int. Cl. H01h *1/50, 9/00*
U.S. Cl. 200—170 11 Claims

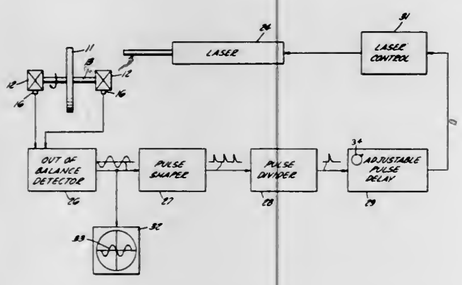


The device includes stacks of interleaving contacts each contact of each stack being arranged in a separate chamber formed by a pair of relatively movable contact supports. Transverse contact pressure is applied and released by spring biased cam controlled levers pivotally supported by one of the aforementioned contact supports.

3,499,136
BALANCING MACHINE

Joe D. Nunnikhoven, Laguna Beach, and Wilton E. Parker, Rolling Hills, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Nov. 25, 1966, Ser. No. 597,099
Int. Cl. B23k *9/16, 9/00*
U.S. Cl. 219—69 2 Claims

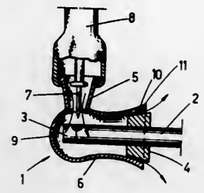


In a balancing machine, means for detecting the resultant unbalanced force produced by a rotating body and for removing material from the body while the body is rotating. The removal means is actuated by the unbalanced force through a control circuit that includes a display screen showing the phase and amplitude of the unbalanced force. An adjustable delay is incorporated in the control circuit so that the operator can adjust the delay time by observing on the display screen the phase shift or amplitude changes in the unbalanced force. The operator adjusts the timing so that he only observes a decrease in amplitude without a phase shift.

3,499,137
PROTECTIVE ARRANGEMENT FOR THE WELDING FIELD IN THE CASE OF ARC WELDING

Marcel Hendrik Meulemans, Mol-Donk, Belgium, assignor to Centre d'Etude de l'Energie Nucleaire, C.E.N., Brussels, Belgium

Filed Mar. 17, 1967, Ser. No. 624,076
Claims priority, application Luxembourg, Mar. 18, 1966, 50,701
Int. Cl. B23k *9/16, 35/38*
U.S. Cl. 219—72 7 Claims

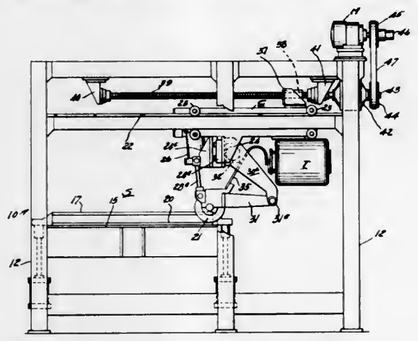


The invention relates to a protective arrangement for the welding field in the case of arc welding elements comprising a metal reactive at high temperatures in the presence of air. This arrangement is of particular interest when arc welding plugs on to tubes which normally cannot be welded in free air. The arrangement comprises a casing so as to surround the welding field, provided with an inlet port for an inert gas and an exhaust port for the said gas, a substantially laminar flow of the gas taking place inbetween the said two ports, thus preventing the blow-out of the arc built up between an electrode and the components to be welded.

3,499,138
TWO-PASS INDIRECT SEAM WELDER

Leonard Nichols, 1367 Lone Pine Road, Bloomfield Hills, Mich. 48013

Continuation of application Ser. No. 340,608, Jan. 28, 1964. This application Aug. 24, 1967, Ser. No. 663,179
Int. Cl. B23k *11/06*
U.S. Cl. 219—82 3 Claims



A two pass welding apparatus for use in joining the leading and trailing ends of metal strips to form a continuous roll.

3,499,139
SPOT WELDING ELECTRODE DESIGNED FOR FINE ELEMENTS

Jan Chmiel, Ul. Sienkiewicza 9m8, Krakow, Poland

Filed Dec. 12, 1966, Ser. No. 601,118
Int. Cl. B23k *9/28*
U.S. Cl. 219—144 4 Claims

A working tip of a spot welding electrode is adjustably clamped in jaws of an inner sleeve which is axially displaceable with respect to an outer sleeve by means of an externally engageable rotatable body which is threadably engaged with the inner sleeve and is held in axial position on the outer body. The jaws are radially resilient and the degree of clamping pressure on the working tip is

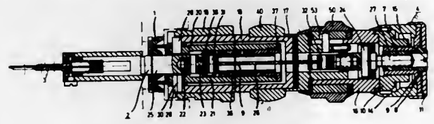


regulated by rotation of the externally engageable body, a stem being threadably engaged in the latter body and in contact with the working tip to axially displace the working tip as it becomes worn.

3,499,140
STRUCTURE FOR MOVING AN ARTICLE IN THE EVACUATED INTERIOR OF A CORPUSCULAR RAY DEVICE

Franz Stocklein, Berlin, Germany, assignor to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V. Gottingen, Germany, a corporation of Germany

Filed July 27, 1967, Ser. No. 656,465
Claims priority, application Germany, Feb. 24, 1967, M 72,883
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 15 Claims

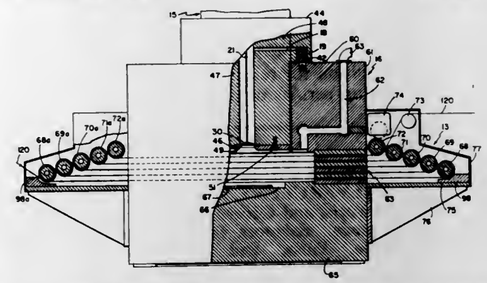


A corpuscular ray device with a hollow evacuated interior in which is situated an article which must be moved. An elongated rod means has an inner end which carries this article and which is situated within the evacuated interior of the device, this rod means having an outer end situated outwardly beyond the evacuated interior of the device, and the elongated rod means has a predetermined axis. A support means supports the rod means for movement not only axially along its predetermined axis but also for turning movement about a second axis which is perpendicular to the predetermined axis. Between this second axis and the outer end there is an elastically deformable means which forms part of the rod means and which lends to the latter the capability of resiliently yielding in a direction perpendicularly to its predetermined axis. A first adjusting means is operatively connected with the outer end of the rod means to adjust the latter axially along its predetermined axis, and a second adjusting means coacts with the rod means for turning the latter about the second axis, so that in this way an article carried by the inner end of the rod means can be moved in the interior of the corpuscular ray device in a pair of essentially mutually perpendicular directions.

3,499,141
SELF-SHIELDED FESTOON FOR ELECTRON IRRADIATION APPARATUS EMPLOYING OVERLAPPING ROLLERS HAVING RADIATION BLOCKING MEANS

Gordon F. Kingsley, Wellesley, and Robert D. Cram, Ipswich, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Filed Nov. 13, 1967, Ser. No. 682,317
Int. Cl. G21f *7/00*
U.S. Cl. 250—49.5 2 Claims

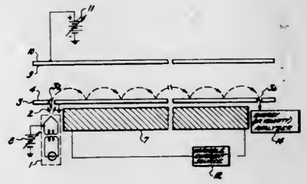


A self shielded flexible material irradiation apparatus using a flexible material apparatus which is positioned outside of the irradiation chamber so that adjustments may be made thereto for varying parameters, such as the material speed or tension without exposing the operator to potentially hazardous radiation.

3,499,142
APPARATUS FOR DETERMINING THE ELECTRON REFLECTION COEFFICIENT OF A SURFACE

William W. Hunt, Jr., Chelmsford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 10, 1968, Ser. No. 720,253
Int. Cl. H01j *37/00*
U.S. Cl. 250—49.5 5 Claims



Apparatus for determining the energies (velocities) at which the electron coefficient of a surface exhibits maxima and minima by forcing an electron beam initially having a broad energy (velocity) distribution to undergo a number of successive reflections at the surface to be studied and then energy (velocity) analyzing the emerging beam. The energy (velocity) distribution will have sharp maxima and minima at those energies where the reflection coefficient exhibits corresponding maxima and minima.

3,499,143
ELECTROSTATIC CHARGER WITH RESUPPLIABLE CORONA WIRE

Samuel W. Martin, Weston, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed May 21, 1968, Ser. No. 730,809
Int. Cl. H01j *37/00*
U.S. Cl. 250—49.5 9 Claims

A charger for use with electrostatic copying machines in which the corona wire is renewable or resuppliable

when it becomes sufficiently defective by reason of dirt or other foreign matter on the wire to cause unacceptably poor quality copy. There is a supply of corona wire of



indefinite length mounted on the charger for which one or more runs of fresh wire can be periodically withdrawn with provision for releasably holding the wire under tension during periods of use.

3,499,144

APPARATUS FOR SAMPLING AND ANALYZING PULVERULENT MATERIAL

Jacques Juillet, Paris, and Gérard Charbonnier, Bretigny-sur-Orge, France, assignors to Compagnie Generale d'Automatisme, Paris, and Compagnie Generale d'Enterprises Electriques, Perret, France, and Metallgesellschaft A.G., Frankfurt am Main, Germany

Filed Mar. 11, 1966, Ser. No. 533,618
Claims priority, application France, Mar. 25, 1965, 10,714
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **26 Claims**

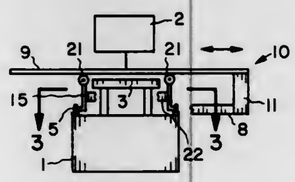
An installation for taking samples from a mixture of pulverulent or granular substances obtained in a continuous process for the formation of tablets from said mixture with a view toward analyzing the same, the installation including a first sampler and a second sampler disposed in series with a first mill accommodated between said first sampler and said second sampler, the installation further including a filter and a particle size selector disposed downstream of the second mill and upstream of a final mixer, automatic means for supplying the product issuing from the final mixer to a press which forms the tablets, and means for transferring automatically and successively each of the tablets thus formed into an analyzing apparatus for effecting fluorescent examination of the material subjected to X-ray radiation.

3,499,145

FLOATING TOP X-RAY TABLE PERMITTING CLOSE PROXIMITY BETWEEN A PATIENT SUPPORTED THEREON AND A DIAPHRAGM PLACED THEREBENEATH

Pieter W. Kok, New Milford, N.J., and William M. Angus, New York, N.Y., assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 23, 1966, Ser. No. 596,484
Int. Cl. G01n *23/08;* **H01j** *37/22*
U.S. Cl. 250—58 **5 Claims**



The apparatus disclosed is an improved floating top X-ray table. The apparatus includes a table top which is freely movable in the transverse and longitudinal directions, over a Potter-Bucky diaphragm, called a Bucky. The Bucky is rigidly mounted in spaced relation with a table base. The primary structure and mechanism enabling the motion of the table top is located between the undersurface of the Bucky and the top surface of the said table base.

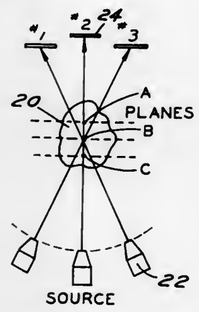
Rotatable support means are attached to a transversely movable frame mechanism and provide a support for the table top at points on either side of the Potter-Bucky diaphragm. These support means permit the use of a thin sheet of material for a table top and also permit the positioning of the X-ray film in close proximity to the object to be X-rayed.

3,499,146

VARIABLE DEPTH LAMINAGRAPHY WITH MEANS FOR HIGHLIGHTING THE DETAIL OF SELECTED LAMINA

Albert G. Richards, 395 Rock Creek Drive, Ann Arbor, Mich. 48104

Filed Oct. 10, 1966, Ser. No. 585,582
Int. Cl. G01n *23/02*
U.S. Cl. 250—61.5 **15 Claims**



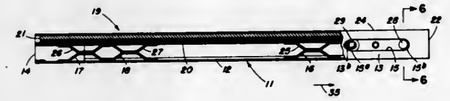
A method of obtaining laminal detail within a three-dimensional subject using the results of radiological exposures of the subject comprising the taking of radiological information by exposing the subject at various spaced positions on one side and recording the resultant ray transmission at a plurality of similarly spaced positions on the other side of the subject, then utilizing the resultant multiple records in superimposition and various positions of planar shift to cause registry of the exposures of detail in any one plane and thus highlight the detail of that selected plane, the recording to include film or electronic recording, the latter type recording permitting reconstruction of laminal planes in X, Y, or Z directions of the subject.

3,499,147

CASSETTE FOR RADIOGRAPHIC FILM MATERIAL

Robert C. Goodman, Binghamton, and Robert L. Boston, Vestal, N.Y., assignors to GAF Corporation, a corporation of Delaware

Filed Mar. 14, 1967, Ser. No. 622,957
Int. Cl. G01n *23/04*
U.S. Cl. 250—68 **2 Claims**



This invention relates to photographic film cassettes. The cassette utilizes a sandwich-type film holder in combination with a cassette main frame, wherein the film

holder and main frame include cooperating spacer pad members adapted to compress the film holder into a light-tight structure when assembled with the main frame. The invention also contemplates an improved cassette employing a simple locking or latching device when assembled with the film holder.

3,499,148

FERROMAGNETIC FLAW DETECTING MEDIUM WITH FLUORESCENT MATERIALS

Karl-Georg Nestler, Karl-Marx-Stadt, Peter Schultheiss, Wustenbrand, and Gunther Aurich, Karl-Marx-Stadt, Germany, assignors to Ingenieurschule fur Werksloff-technik, Karl-Marx-Stadt, Germany

Filed Jan. 20, 1967, Ser. No. 622,843
Int. Cl. G01n *21/16*
U.S. Cl. 250—71 **2 Claims**

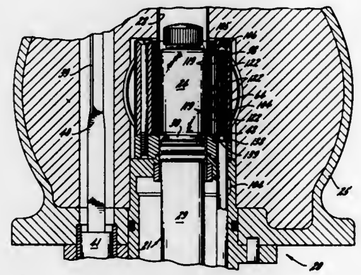
A ferromagnetic testing medium to be used for magnetically testing materials for the presence of cracks and the like including ferromagnetic constituents which are surrounded by a binder in which fluorescent materials are situated of which at least one under the influence of an examining light develops an emission which excites another of the fluorescent materials wherein the first mentioned fluorescent material provides an emission in an invisible ultra-violet range, the other material provides an emission in the spectral region of yellow to orange, preferably in the region of international orange.

3,499,149

STANDARDIZATION IN LIQUID SCINTILLATION SPECTROMETRY MAKING USE OF MULTIPLE EXTERNAL STANDARDS TO INSURE VOLUME INDEPENDENCE

Robert E. Cavanaugh, Jr., La Grange Park, Ill., assignor to Packard Instrument Company, Inc., Downers Grove, Ill., a corporation of Illinois

Filed Apr. 11, 1966, Ser. No. 541,721
Int. Cl. G01t *1/20;* **H01j** *39/18;* **G21h** *5/00*
U.S. Cl. 250—71.5 **34 Claims**



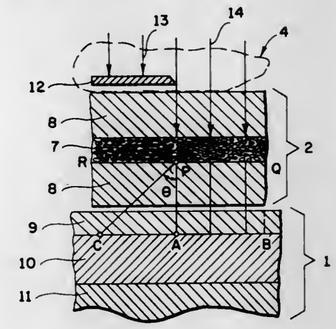
A method for improving spectral analysis techniques in liquid scintillation counting procedures and for correctively compensating for quenching and similar phenomena with a high degree of accuracy and reliability, yet wherein errors resulting from differing sample volumes are substantially eliminated. More specifically, a method of the foregoing character wherein two or more external standards are positioned adjacent each sample during a portion only of its counting cycle; one of the standards being an emitter of penetrating radiations having both relatively high and relatively low energies, and the other of the standards being an emitter of penetrating radiations having relatively low energies only; whereby the emitter of penetrating radiations having relatively low energies only serves to produce an increasingly greater number of low energy light scintillations in test samples with increases in liquid volume therein so as to maintain the ratio of low energy and high energy. "Compton interactions" substantially constant irrespective of sample volume.

3,499,150

APPARATUS FOR RECORDING A RADIOGRAPHIC IMAGE

Mataichi Tajima and Shigenobu Watanabe, both of 210 Nakanuma, Minami Ashigara-machi, Ashigara-Kami-gun, Kanagawa, Japan, and Yoshihiro Sunaga, 6–13 7-chome, Minami Azabu, Minato-ku, Tokyo, Japan

Filed Feb. 28, 1967, Ser. No. 624,644
Claims priority, application Japan, Feb. 28, 1966, 41/12,152
Int. Cl. H01j *1/62;* **G02f** *1/00*
U.S. Cl. 250—80 **2 Claims**



A method of recording radiographic images passing through an object by placing a fluorescent image and a mesh screen between an object and a light-sensitive photographic film and irradiating said assembly with X-ray or gamma-ray to record the radiographic image formed on the fluorescent layer as a dot image of the photographic film.

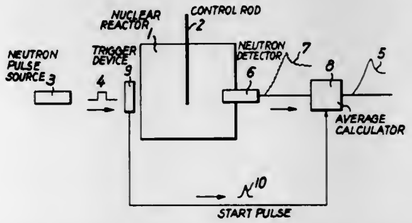
A light-sensitive photographic film for recording radiographic image having a mesh screen on the emulsion layer thereof.

3,499,151

APPARATUS FOR ELIMINATING THE EFFECTS OF NOISE IN THE DETERMINATION OF NEUTRON REACTIVITY

Walter Mayer, Neu Isenburg, Germany, assignor to Licentia Patentverwaltungs G.m.b.H., Frankfurt am Main, Germany

Filed Dec. 19, 1966, Ser. No. 602,958
Claims priority, application Germany, Dec. 18, 1965, L 52,412
Int. Cl. G01t *3/00;* **H01j** *39/32*
U.S. Cl. 250—83.1 **9 Claims**



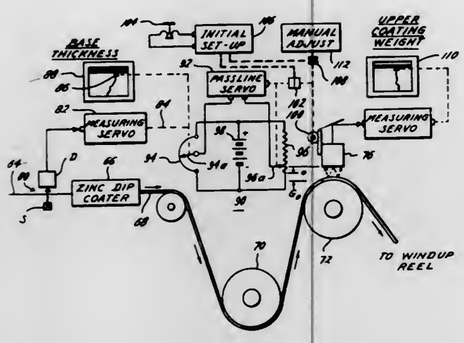
Apparatus for determining the reactivity of a material in an environment having a high noise level by detecting neutrons after they have passed through the material and by processing the detector output in an average calculator which eliminates the noise components from the detector output.

3,499,152

METHOD AND APPARATUS FOR IMPROVING BACKSCATTER GAUGE RESPONSE

Leland S. Hetenhouser, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Mar. 18, 1966, Ser. No. 535,497
Int. Cl. H01j *39/00, 37/00;* **G01t** *1/16*
U.S. Cl. 250—83.3 **18 Claims**



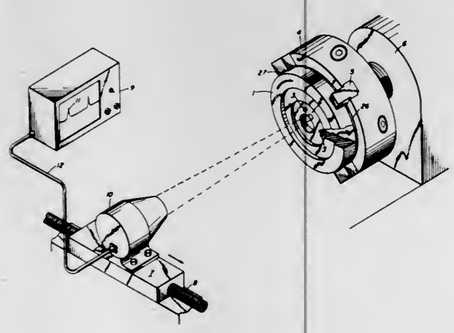
The air gap of a radiation backscatter gauge used to measure the weight of coating on a base material is maintained at an optimum value. A base material thickness gauge provides a signal for automatically adjusting the vertical position of the backscatter gauge when the base thickness changes. A comparison bridge circuit comprising a base material thickness slide wire and a potentiometer, mechanically coupled to the backscatter gauge, is used to provide a passline error signal. The backscatter gauge is also automatically withdrawn when a weld or other excessive thickness of base material is detected.

3,499,153

NONDESTRUCTIVE TESTING OF MATERIALS BY INFRARED RADIATION

Daniel F. Stanfill III, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 608,075
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **15 Claims**



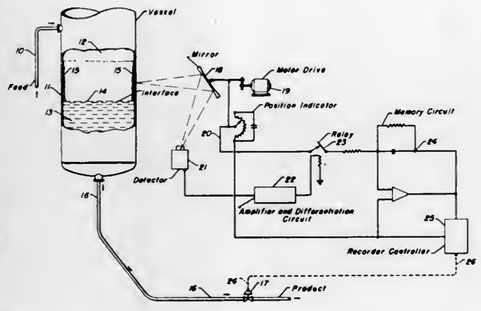
Method and apparatus for determining flaws in the surface of articles such as metals and metal alloys by measuring the infrared radiance of objects maintained at a substantially constant temperature above ambient, or by measuring the reflectance of infrared radiation from the surface of a material to be tested which is at a temperature sufficiently below that of the source of infrared radiation that its emission is negligible by comparison. Defects or changes in composition change the emissivity of the surface of the material tested, and this in turn changes its self-emission when maintained at an elevated temperature, or its reflectance when maintained at a lower temperature and irradiated with infrared radiation. Measurement of the emitted or reflected radiation may be by an infrared radiometer which chops the received infrared beam but is preferably a radiometer which does not chop the beam. In the latter case the radiometer has a radiation detector and amplifying circuits with differentiating inputs of suitable time constant so that D.C. level of radiation or very slow changes are not amplified. Usually, the surface of the material to be tested is moved with respect to the field of view of the radiometer to scan the surface. Defects or composition changes record as sharp peaks or valleys on a suitable strip recorder.

3,499,154

APPARATUS FOR LOCATING THE INTERFACE BETWEEN TWO SUPERIMPOSED FLUIDS WITHIN A VESSEL UTILIZING INFRARED DETECTOR MEANS

David M. Boyd, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 28, 1967, Ser. No. 671,288
Int. Cl. G01t *1/00*
U.S. Cl. 250—83.3 **8 Claims**



Method and apparatus for determining the interface or level in a vessel holding at least two superimposed fluids using an infrared imaging technique. Specifically, the invention is applicable for the system having hot or boiling liquid as one fluid and vapor as the other fluid such as determining the liquid level in the bottom of a distillation column.

3,499,155

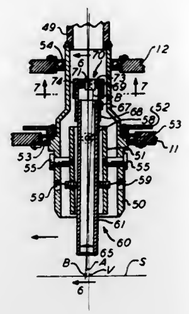
PHOTOELECTRIC KERF AND LEAD COMPENSATOR HAVING TWO CONCENTRIC PIVOTABLY MOUNTED HOUSINGS FOR COMPENSATION IN TWO DIRECTIONS

George R. Turbett, Chatham Township, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 343,327, Feb. 7, 1964. This application Aug. 29, 1968, Ser. No. 756,331
Int. Cl. G05b *1/00*
U.S. Cl. 250—202 **6 Claims**

A kerf and lead compensator for a line-following device in which a lens and photocell are mounted in an

elongated housing which in turn is pivotably mounted in an intermediate support member for pivoting in a first plane. The intermediate support member is pivotably



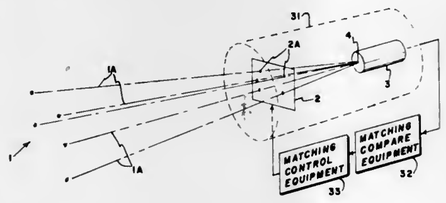
mounted in a main support member for pivoting in a second plane, thus permitting compensation in two directions.

3,499,156

CELESTIAL MATCHING SYSTEM FOR ATTITUDE STABILIZATION AND POSITION DETERMINATION

Donald C. Evans, Cuyahoga Falls, and Wilford L. Steiner, Akron, Ohio, and Robert H. Bushnell, Boulder, Colo., assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed Feb. 16, 1966, Ser. No. 527,825
Int. Cl. G01j *1/24, 1/20*
U.S. Cl. 250—203 **2 Claims**



A celestial matching system which matches a reference star field with an actual star field in the universe to determine celestial position. The reference star field is represented at holes positioned at specific locations in a plate with the holes adapted to pass light from the stars through the plate whereby when the plate is aligned with the celestial star field represented by the holes thereon the light of the stars passes through the holes and comes to a focal point at the geometric center of the plate. Photocell sensing means are operatively positioned at the geometric center of the plate to determine when the plate containing the reference star field is in matched alignment with the celestial star field. Sun seeker means in combination with gyrostabilization means can be used to maintain the initial reference as required. Means to provide systematic search with the star field matcher from the initial reference to locate matched reference star field to the celestial star field may be provided.

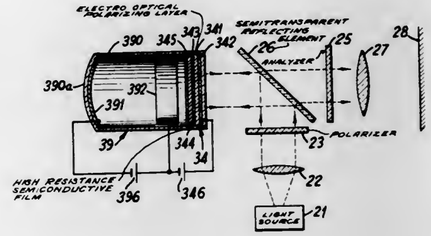
3,499,157

LIGHT INTENSITY AMPLIFYING DEVICE UTILIZING A SEMICONDUCTOR ELECTRON-SENSITIVE VARIABLE RESISTANCE LAYER

Kimihiko Satake, Hiromitsu Shiraki, and Masayoshi Ozawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 12, 1965, Ser. No. 479,215
Claims priority, application Japan, Aug. 18, 1964, 39/47,317, 39/47,318, 39/47,319; Oct. 2, 1964, 39/56,366
Int. Cl. H01j *31/50, 39/12;* **G02f** *1/18*
U.S. Cl. 250—213 **2 Claims**

A light amplifying device is described wherein a multilayer light polarizing structure is used comprising a variable resistance layer and a light polarizing layer and wherein a voltage is applied to electrodes sandwiching these layers so that light from a linearly polarized beam directed at the polarizing layer will be reflected back through the polarizing layer with its polarization altered. The change in polarization is detected so that an intensity-amplified image may be produced. In one embodiment, the resistance of the variable resistance layer is changed in response to photons, and in an alternate embodiment, electrons produce the change in resistance.

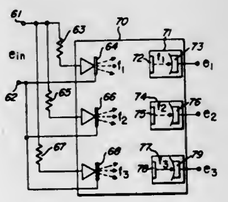


3,499,158

CIRCUITS UTILIZING THE THRESHOLD PROPERTIES OF RECOMBINATION RADIATION SEMICONDUCTOR DEVICES

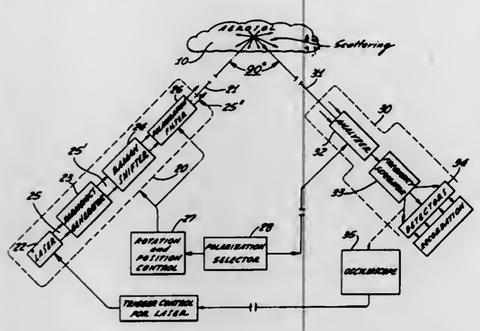
Jerome M. Lavine, Lincoln, and Philip W. Cheney, Acton, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 24, 1964, Ser. No. 362,399
Int. Cl. H01j *39/12*
U.S. Cl. 250—217 **2 Claims**



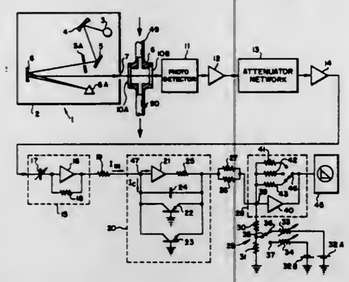
Circuits utilizing the threshold properties of recombination-radiation semiconductor devices for logic functions and circuits utilizing the difference in threshold in such devices made from different semi-conductor materials as well as the difference in radiation wavelength to provide quantizing functions.

3,499,159
POLYCHROMATIC LASER AEROSOL SIZING AND RANGING (PLASAR) TECHNIQUE
Lee William Carrier, Temple City, Calif., and Leonard James Nugent, Oak Ridge, Tenn., assignors, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed Jan. 23, 1967, Ser. No. 611,079
Int. Cl. H02f 1/28
U.S. Cl. 250—217 9 Claims



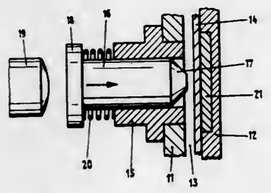
A polychromatic laser beam is directed towards a cloud for different polarizations. The scattering radiation is detected for the individual frequencies and polarizations, preferably in a right angle plane.

3,499,160
APPARATUS FOR DETERMINING REACTION TIME CONSTANT WITH PHOTOCELL LOGARITHMIC TRANSFER CIRCUIT
Ernest S. Gordon, Saratoga, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Nov. 1, 1967, Ser. No. 679,921
Int. Cl. G01n 21/26
U.S. Cl. 250—218 7 Claims



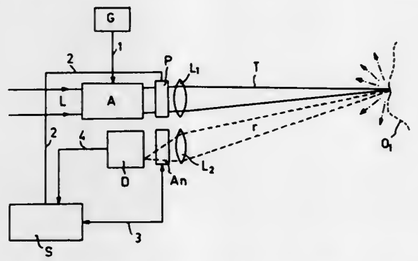
A system for automatically ascertaining the reaction time constant of a chemical reaction with a reaction vessel in which the samples to be reacted are rapidly injected, and radiated with light of a selective wavelength range. A photocell associated with the reaction cell is employed for converting the light rays passing through the reaction vessel into an electrical signal having an amplitude which varies as a function of the absorption of light by the kinetic reaction in the cell. A network including a differentiator circuit and a logarithmic transfer circuit is provided for processing the electrical signal to provide an output signal whose amplitude versus time characteristic is a straight line function with the slope of the line being inversely proportional to the reaction time constant. A temperature compensating network in the form of a parallel resistive network characterized by an appropriate temperature coefficient is associated with the logarithmic transfer circuit to substantially compensate for signal drift due to unpredictable changes in the ambient temperature.

3,499,161
METHOD AND APPARATUS FOR APPLYING AND SCANNING MARKINGS ON FORM SHEETS IN TYPEWRITERS, CALCULATING MACHINES AND BOOKKEEPING MACHINES
Robert Locher, Ernst Boegli, and Kurt Herzig, Bern, Switzerland, assignors to Hasler A.G., Bern, Switzerland, a Swiss corporation
Filed Aug. 1, 1967, Ser. No. 657,594
Claims priority, application Switzerland, Aug. 4, 1966, 11,236/66
Int. Cl. G01n 21/30; G06k 7/00
U.S. Cl. 250—219 6 Claims



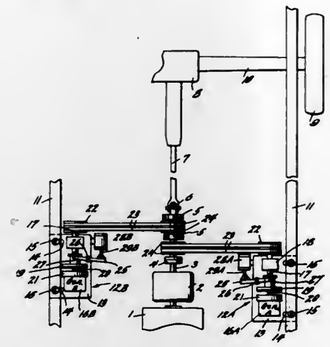
A method and apparatus for processing sheet-material forms, particularly for use in office machines and the like. A sheet-material form of predetermined thickness is advanced in a given path and selected portions of the form are compressed so that their thickness is reduced and their permeability to light increased. Subsequently the form is scanned with a light beam and a detector detects fluctuations in the intensity of the light beam passing through the form, which fluctuations occur as a result of the impingement of the light beam on the compressed portions. Upon such detection the detector generates a signal.

3,499,162
DEVICE FOR MEASURING AND RECORDING RESPECTIVELY THE LIGHT RADIATION REFLECTED FROM INDIVIDUAL POINTS OF AN OBJECT
Uwe Schmidt, Hamburg-Wandsbek, and Karl Joachim Schmidt-Tiedeman, Rellingen, Germany, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,200
Claims priority, application Germany, Oct. 22, 1965, P 37,942
Int. Cl. H01j 39/12; G02f 1/28
U.S. Cl. 250—225 3 Claims



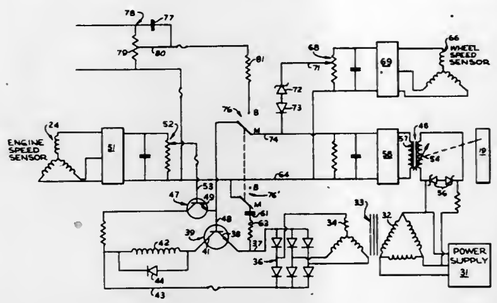
A device for optically scanning an object wherein a laser light beam is digitally deflected in a point-by-point manner across the object by means of an electrically controllable digital light beam deflector and a photosensitive element upon which light reflected from the object is incident.

3,499,163
ACCELERATOR RELEASE CONTROL FOR BATTERY CHARGING SYSTEMS
Joseph W. Verreault, 167 Morningside Drive, W., Bristol, Conn. 06011
Filed May 31, 1967, Ser. No. 642,411
Int. Cl. B60l 11/12
U.S. Cl. 290—16 10 Claims



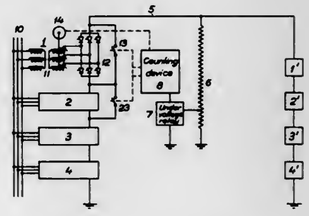
A battery charging system for an electric motor driven vehicle, wherein a charging generator is connected to the power train between the motor and the vehicle driving means by a normally disengaged clutch. Upon the release of the accelerator, or the motor control means, to its release position, clutch actuating means is activated to clutch the charging generator to the power train to be driven thereby and thus the momentum of the vehicle under coasting conditions is used to drive the charging generator and recharge the battery.

3,499,164
EXCITATION CONTROL SYSTEM FOR PRIME MOVER DRIVEN GENERATOR
Glenn E. Ferre, James T. Huxtable, and Darrell E. Stafford, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation-in-part of application Ser. No. 344,618, Feb. 13, 1964. This application May 5, 1967, Ser. No. 641,732
Int. Cl. B60l 11/02
U.S. Cl. 290—17 5 Claims



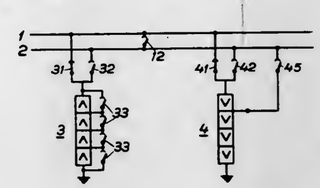
To maintain a constant load on a diesel engine for a particular engine throttle setting or to change this load as determined by a new throttle setting, a control unit having a control transistor acts in response to a feedback signal representative of the actual engine speed to produce a control signal which, together with a reference signal representative of a desired engine speed, controls the output of a power transistor thus determining the magnitude of the excitation of the control field of a DC generator driven by the engine. In this manner the excitation of the generator is automatically varied to maintain a constant engine speed and output power for a given throttle setting or the excitation is automatically varied to allow the engine speed and output power to establish a new constant level in response to a new throttle setting.

3,499,165
TRANSMISSION SYSTEM FOR HIGH VOLTAGE DIRECT CURRENT
Vjekoslav Madzarevic, Ludvika, Sweden, and Hans Witt, Pinneberg, Germany, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Continuation-in-part of application Ser. No. 358,382, Apr. 8, 1964. This application June 22, 1967, Ser. No. 648,124
Int. Cl. H02j 1/00
U.S. Cl. 307—82 4 Claims



The necessary insulation for a high voltage direct current (HDV) line is reduced by providing means for immediately decreasing the line voltage when disturbances caused by decreased insulator resistance appear on the line.

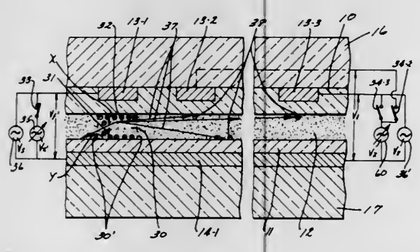
3,499,166
DIRECT CURRENT TRANSMISSION WITH PARALLEL TRANSMISSION LINES
Gunnar Engström and Hans Stackegard, Ludvika, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget Vasteras, Sweden, a Swedish corporation
Filed Apr. 5, 1965, Ser. No. 445,424
Claims priority, application Sweden, Apr. 20, 1964, 4,817/64
Int. Cl. H02j 1/00
U.S. Cl. 307—24 1 Claim



1. D.C. transmission system, comprising at least first and second parallel-working converter stations and at least two parallel transmission lines, each having a return connection, at least the first converter station comprising a plurality of converters connected in series on their D.C. sides and each provided with a by-pass connecting means; normally closed switch means parallel-connecting said parallel transmission lines; connecting means between each of said converter stations and each of said transmission lines including means connecting all said stations to a first of said transmission lines in normal operation;

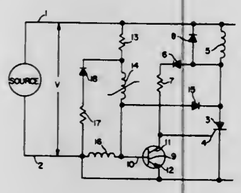
means operatively connecting the by-pass connecting means in the first station to the connecting means between said first station and each of the transmission lines and to said switch means between said transmission lines, and means responsive to closing of a by-pass connecting means to open the connecting means between said first transmission line and said first station, to close the connecting means between the second transmission line and said first station and to open said switch means between said two transmission lines.

3,499,167
GAS DISCHARGE DISPLAY MEMORY DEVICE AND METHOD OF OPERATING
Theodore C. Baker, Wayne, Wolfgang W. Bode, Sylvania, Richard G. Mathias, Toledo, James F. Nolan, Sylvania, and Lawrence V. Pfaender, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 24, 1967, Ser. No. 686,384
Int. Cl. H01j *17/48, 61/33;* **H05b** *41/44*
U.S. Cl. 315—169 **11 Claims**



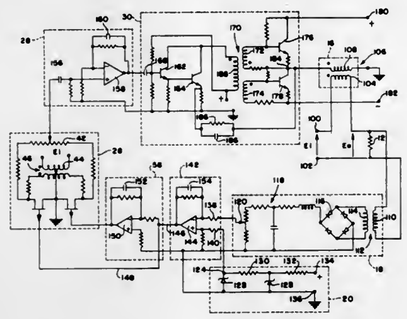
A simplified high resolution display and/or memory device having rugged nonconductive support members carrying matrix forming conductor arrays, inorganic dielectric adherent coating or film on the conductor arrays forming a plurality of discrete, but not physically isolated or localized, charge storage surfaces for gaseous discharge generated charges in an ionizable gas at a pressure sufficient to laterally confine charges to selected charge storage areas.

3,499,168
VOLTAGE REGULATING CIRCUIT WITH REACTOR SENSING MEANS
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 557,522, June 14, 1966. This application July 31, 1968, Ser. No. 755,760
Int. Cl. H02p *9/30, 11/06*
U.S. Cl. 322—28 **30 Claims**



There is described a control circuit in which a pair of inductive reactors are used to establish the reference voltage level of the device being controlled and obtain a measure of the deviation of the voltage level. The periodic voltage being controlled is applied to both reactors to cause the first of these to be driven from a first known energy level to saturation, the transition establishing a reference voltage level. The first reactor will saturate at a phase angle in the half cycle of the periodic voltage depending upon the amplitude of the periodic voltage. Commencing with the phase angle at which the first reactor saturates, the second reactor receives exciting current from the periodic voltage for the remainder of the half cycle to obtain a measure of the deviation of the periodic voltage from the reference level. The error energy stored by the second reactor is applied during each second half cycle of the periodic voltage to a constant voltage load, the value of which determines the error amplification factor of the control circuit.

3,499,169
VARIABLE FREQUENCY AC REGULATOR
Eugene S. McVey, Charlottesville, and Ramon E. Warren III, Bon Air, Va., assignors to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 14, 1967, Ser. No. 615,946
Int. Cl. H02p *13/06, 13/10;* **H02m** *5/12*
U.S. Cl. 323—45 **4 Claims**

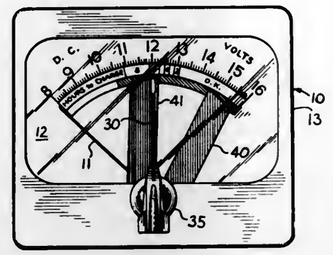


An AC voltage regulator of solid state components, characterized by a suppressed carrier modulator stage employing a pair of field effect transistors in a bridge circuit arrangement to eliminate feedthrough components in the output voltage and make variable frequency performance possible. Transformer coupled buck-boost of line voltage is employed, the compensating voltage being received, via power amplification, from the modulator stage which is energized in turn by line voltage and a DC error voltage generated from a comparison of a DC analog of output voltage with a DC reference voltage. An alternative form for the modulator stage consists of a single field effect transistor connected in bridge circuit with resistance elements, requiring only a single-ended error voltage input.

3,499,170
METER DEVICE FOR TESTING STORAGE BATTERIES BY DIFFERENTIAL OPEN-CIRCUIT VOLTAGE ANALYSIS
Vernon C. Westberg, Hampshire, Ill. (% Auto Meter Products, Inc., 22 S. State St., Elgin, Ill. 60121)
Filed Nov. 14, 1967, Ser. No. 682,921
Int. Cl. G01r *11/44*
U.S. Cl. 324—29.5 **4 Claims**

An electrical meter for testing storage batteries by a previously known method of open-circuit voltage analysis. The meter has the conventional face plate and indicator adapted to move across a scale on the face plate in response to an input voltage. A manually settable pointer is mounted for movement across the same scale on the face plate as the indicator, for storing a first meter reading

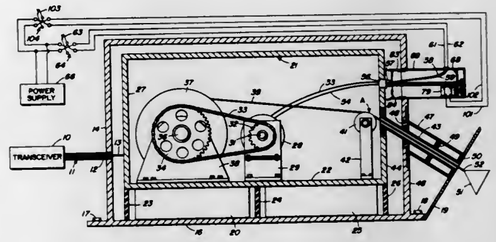
on the face plate. A pair of limit flags are operatively connected to the pointer for movement relative to the pointer, and relative to each other, in response to movement of



the pointer so as to set the "good battery" limits for a subsequent meter reading in response to the first meter reading stored by the manual setting of the pointer.

3,499,171
INSULATED REEL MECHANISM FOR HIGH-POWER AIRCRAFT TRAILING ANTENNA
Robert L. Carrel, Richard C. Fenwick, and Robert A. Fowler, Richardson, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed May 28, 1964, Ser. No. 370,901
Int. Cl. H01q *1/14*
U.S. Cl. 343—877 **10 Claims**

1. A variable length airborne trailing wire antenna device for mounting in an aircraft having conductive skin comprising: an electrically conductive outer enclosure having an opening therein; an opening formed in the conductive skin of the aircraft in alignment with the opening in the outer enclosure, a hollow conductive cylinder connecting the skin of the aircraft to the outer enclosure with the openings in the skin and outer enclosure aligned with the center opening of the hollow cylinder, an electrically conductive inner enclosure within and insulated from said outer enclosure and the conductive skin of the aircraft, said inner enclosure having an opening therein in substantial alignment with the openings in said outer enclosure and conductive skin, radio frequency means con-



nected to said inner and outer enclosures, an electrical feed means within and connected to said inner enclosure adjacent the opening in the inner enclosure, said feed means also serving as a guide means for said antenna, a length of electrically conductive antenna wire, a portion of which is within said inner enclosure and engages said feed means and another portion of which extends through said openings and is outside said enclosures and the aircraft, and means for controlling the length of the portion of said antenna wire extending outside said enclosures.

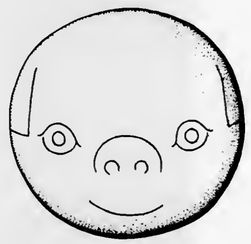
DESIGNS

MARCH 3, 1970

216,660
HAMBURGER BUN
Theodore A. Corn, 1000 North Point, San Francisco, Calif. 94109, and Robert M. Harlick, 2330 Wexford, South San Francisco, Calif. 94080
Filed Apr. 10, 1969, Ser. No. 16,676
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—24



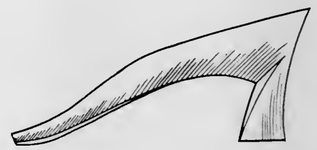
216,661
HAMBURGER BUN
Theodore A. Corn, 1000 North Point, San Francisco, Calif. 94109, and Robert M. Harlick, 2330 Wexford, South San Francisco, Calif. 94080
Filed Apr. 14, 1969, Ser. No. 16,732
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—24



216,662
HEEL FOR LADY'S SHOE
Ivo Barbaresi, Florence, Italy, assignor to Salvatore Ferragamo S.p.A., Florence, Italy
Filed Dec. 27, 1968, Ser. No. 15,133
Claims priority, application Italy July 9, 1968
Term of patent 7 years
Int. Cl. D2—*04*
U.S. Cl. D2—324



216,663
HEEL FOR LADY'S SHOE
Ivo Barbaresi, Florence, Italy, assignor to Salvatore Ferragamo S.p.A., Florence, Italy
Filed Dec. 31, 1968, Ser. No. 15,163
Claims priority, application Italy July 9, 1968
Term of patent 7 years
Int. Cl. D2—*04*
U.S. Cl. D2—325



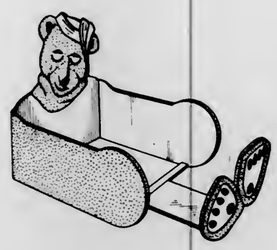
216,664
HEEL FOR LADY'S SHOE
Ivo Barbaresi, Florence, Italy, assignor to Salvatore Ferragamo S.p.A., Florence, Italy
Filed Feb. 12, 1969, Ser. No. 15,742
Claims priority, application Italy Aug. 22, 1968
Term of patent 7 years
Int. Cl. D2—*04*
U.S. Cl. D2—325



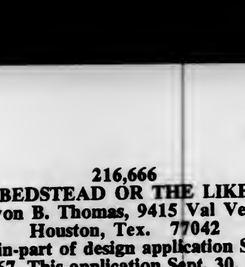
216,665
HEEL FOR LADY'S SHOE
Ivo Barbaresi, Florence, Italy, assignor to Salvatore Ferragamo S.p.A., Florence, Italy
Filed Feb. 12, 1969, Ser. No. 15,748
Claims priority, application Italy Oct. 1, 1968
Term of patent 7 years
Int. Cl. D2—*04*
U.S. Cl. D2—325



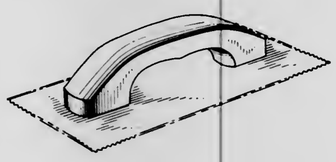
216,666
BEDSTEAD OR THE LIKE
Lavon B. Thomas, 9415 Val Verde, Houston, Tex. 77042
Continuation-in-part of design application Ser. No. 8,979, Oct. 12, 1967. This application Sept. 30, 1968, Ser. No. 13,771
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D5—4



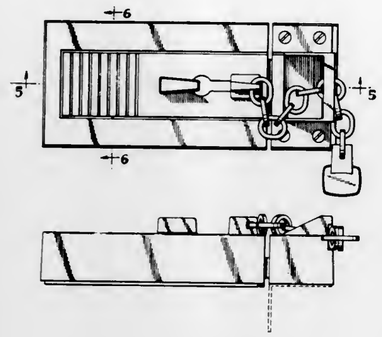
216,667
BED HEADBOARD OR THE LIKE
Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee
Filed Oct. 14, 1968, Ser. No. 13,973
Term of patent 3½ years
Int. Cl. D6—*01*
U.S. Cl. D5—4



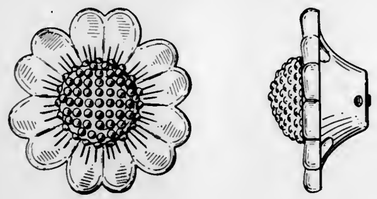
216,668
HAND TROWEL
Fred W. Tims, Jr., Stratford, Conn., assignor to The Camson Manufacturing Company, West Haven, Conn., a corporation of Connecticut
Filed Sept. 4, 1968, Ser. No. 13,399
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—45



216,669
ALARM LATCH
Logan W. Johnson, Minnetonka, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 9, 1968, Ser. No. 13,905
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—131



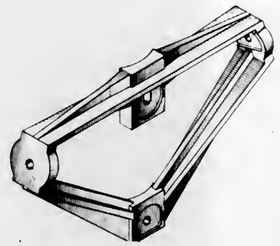
216,670
KNOB
Jerome J. Fox, New City, N.Y., assignor to Maxwell Mfg. Co., Inc., Bellmore, N.Y.
Filed Nov. 26, 1968, Ser. No. 14,666
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—146



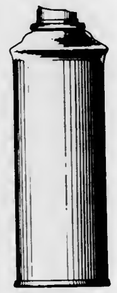
216,671
HOSE CLAMP
George L. Turner, Hickory Corners, Mich., assignor to American Stamping Co., Battle Creek, Mich., a corporation of Michigan
Filed Apr. 7, 1969, Ser. No. 16,590
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—229



216,672
SUPPORT BRACKET FOR ELECTRICAL COMPONENTS
Jocelyn T. Barnes, Charlevoix, Mich., assignor to Lexalite Corporation, Charlevoix, Mich., a corporation of Michigan
Filed Sept. 25, 1968, Ser. No. 13,714
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—234



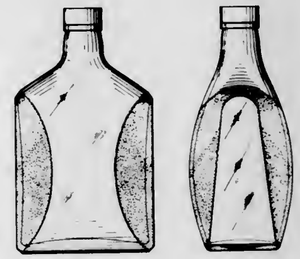
216,673
AEROSOL CAN OR SIMILAR ARTICLE
Edward W. Sexton, Jr., Boston, Mass., assignor to Sexton Can Company, Inc., Everett, Mass., a corporation of Massachusetts
Filed Aug. 26, 1968, Ser. No. 13,257
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—9



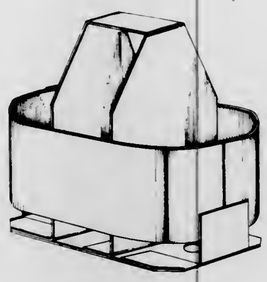
216,674
COMBINED BOTTLE AND CAP THEREFOR
Keizo Saji, Kawanishi, Japan, assignor to Suntory Kabushiki Kaisha, Osaka, Japan
Filed Jan. 27, 1969, Ser. No. 15,518
Claims priority, application Japan Sept. 24, 1968
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—33



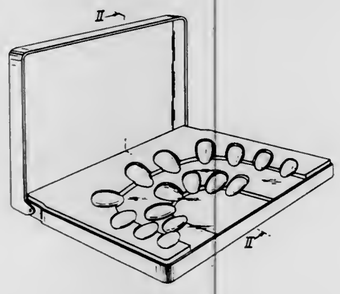
216,675
BOTTLE
Keizo Saji, Kawanishi, Japan, assignor to Suntory Kabushiki Kaisha, Osaka, Japan
Filed Jan. 24, 1969, Ser. No. 15,488
Claims priority, application Japan Sept. 24, 1968
Term of patent 14 years
D9—*01*
U.S. Cl. D9—56



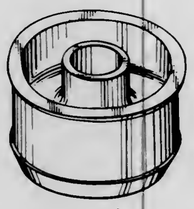
216,676
BOTTLE CARRIER
Grover C. Currie, 4 Richard Square, Euclid, Ohio 44143
Filed June 27, 1968, Ser. No. 12,521
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—176



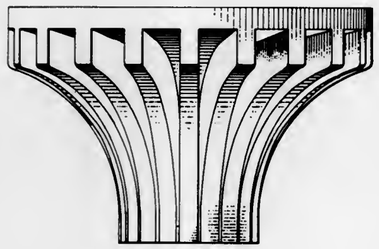
216,677
COMBINED CONTAINER AND ARTIFICIAL FINGERNAILS
Eric V. Aylott, 58–60 Bridge Road E., Welwyn Garden City, England
Filed Sept. 11, 1968, Ser. No. 13,495
Claims priority, application Great Britain July 16, 1968
Term of patent 7 years
Int. Cl. D9—*04*
U.S. Cl. D9—187



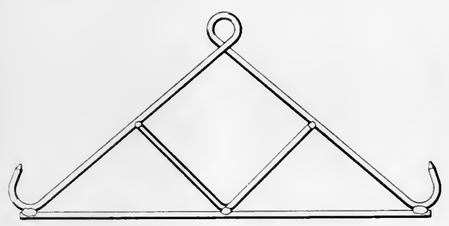
216,678
BUNG FOR A BARREL
Henry O. Wilcox, Denver, Colo., assignor to Denver Plastics, Inc., Lakewood, Colo., a corporation of Colorado
Filed Dec. 10, 1968, Ser. No. 14,860
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—254



216,679
CAPTIVE CAP FOR COLLAPSIBLE TUBES OR THE LIKE
Albert H. Torongo, Jr., Yardley, Pa., and Paul R. Campbell, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 4, 1968, Ser. No. 14,290
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—275



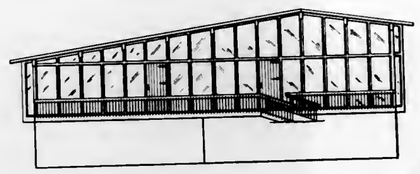
216,680
HANGER FOR DEAD ANIMALS
Larry L. Hulsey, Rte. 2, Box 1460, Madras, Oreg. 97741
Filed Oct. 7, 1968, Ser. No. 13,872
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D11—1



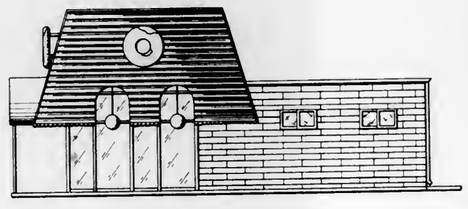
216,681
BUILDING
Kenneth C. Johnson, Covina, Calif., assignor to Amigos Restaurants, Inc., Glendale, Calif., a corporation of California
Filed Mar. 24, 1969, Ser. No. 16,392
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



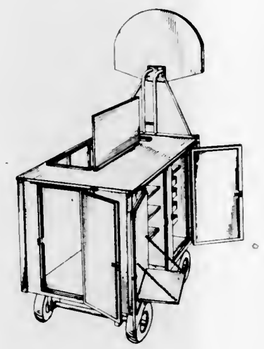
216,682
DENTAL CLINIC
William Lewis Knudson, 105 E. Skyline Drive, Brigham City, Utah 84302
Filed Apr. 9, 1969, Ser. No. 16,652
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



216,683
BUILDING
Thomas J. Gilbert, Arabi, La., assignor to Gilbert Copeland, Jefferson Parish, La.
Filed Apr. 30, 1969, Ser. No. 16,957
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1

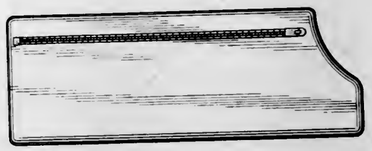


216,684
COMBINED BASKETBALL GOAL AND RECREATIONAL EQUIPMENT TRAILER OR THE LIKE
Harold W. Haubert, Mifflintown, Pa., assignor, by mesne assignments, to Zenith Laboratories, Inc., Englewood, N.J., a corporation of New Jersey
Filed Nov. 15, 1968, Ser. No. 14,485
Term of patent 14 years
Int. Cl. D12—*10*
U.S. Cl. D14—3

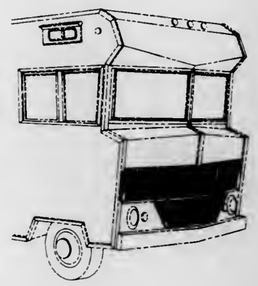


216,685
COMBINATION AUTOMOBILE SUN VISOR AND SHADE
Mary I. Anderson, 14206 N. 95th St., Longmont, Colo. 80501
Filed Apr. 14, 1969, Ser. No. 16,735
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6

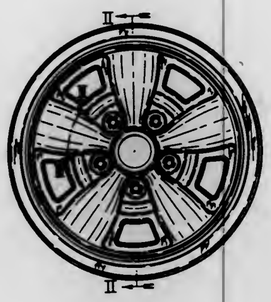




216,686
MOTOR HOME GRILL
Marvin E. Nerem, Minneapolis, Minn., assignor to Winnebago Industries, Inc., Forest City, Iowa, a corporation of Iowa
Filed Nov. 8, 1968, Ser. No. 14,356
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—18



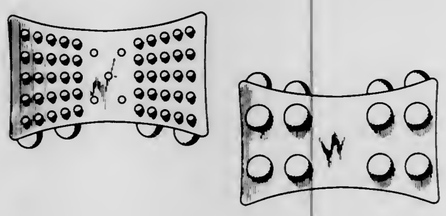
216,687
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed June 4, 1969, Ser. No. 17,508
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—30



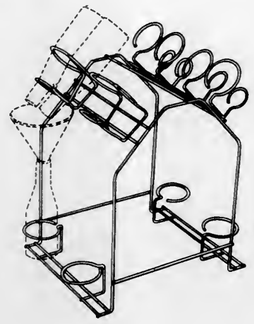
216,688
COLLAPSIBLE BABY WALKER
Akira Seki, Tokyo, Japan, assignor to Shawa Matsuko Kabushiki Kaisha, Motoichi Tsukui, and Hoshimago Industry Co. Ltd., all of Tokyo, Japan, and Stuart L. Whitehouse, Vancouver, British Columbia, Canada
Filed Nov. 25, 1968, Ser. No. 14,650
Term of patent 14 years
Int. Cl. D12—*12*
U.S. Cl. D15—1

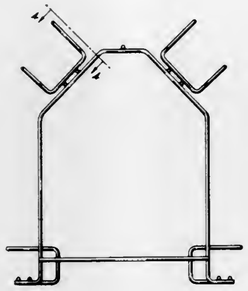


216,689
HEADREST
Kimiyoshi Isogai, 1830 Sugamo 7-chome, Toshima-ku, Tokyo, Japan
Filed Nov. 14, 1968, Ser. No. 14,459
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—8

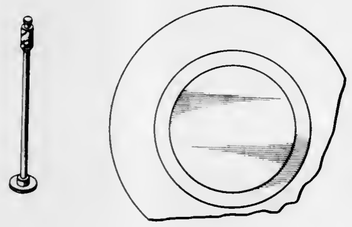


216,690
RACK FOR BOTTLES
Edward C. Robak, 11345 Briarcliff Road, Warren, Mich. 48090
Filed Jan. 14, 1969, Ser. No. 15,339
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D16—1

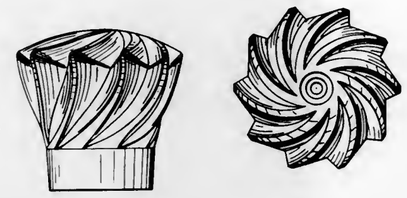




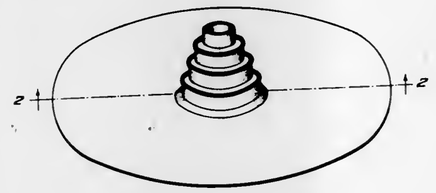
216,691
PEDESTAL CHLORINATOR UNIT FOR SWIMMING POOLS OR THE LIKE
Wesley V. Bates and Bobby L. Bates, San Dimas, Calif., assignors to Jacketing Specialty, a corporation of California
Filed Aug. 1, 1968, Ser. No. 12,994
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—3



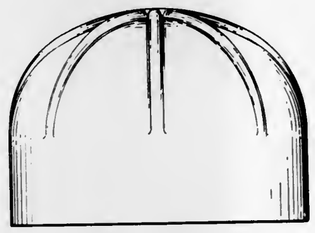
216,692
PLUMBING FITTING HANDLE OR THE LIKE
Stephen A. Young, Monticello, Ind. (Flora, Ind. 46929)
Filed Jan. 22, 1969, Ser. No. 15,437
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—28



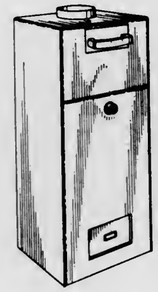
216,693
PIPE FLASHING
Robert H. Dammer, Manchester, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Mar. 26, 1968, Ser. No. 11,146
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—42



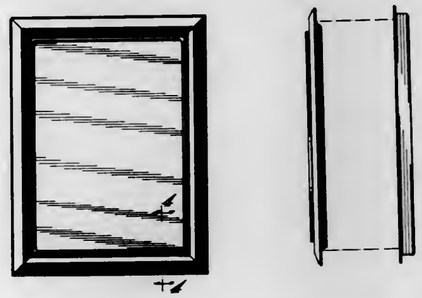
216,694
TILE DRAIN PLUG
Edward J. Lause, Milton Road, Custar, Ohio 43511
Filed Apr. 29, 1969, Ser. No. 16,934
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—42



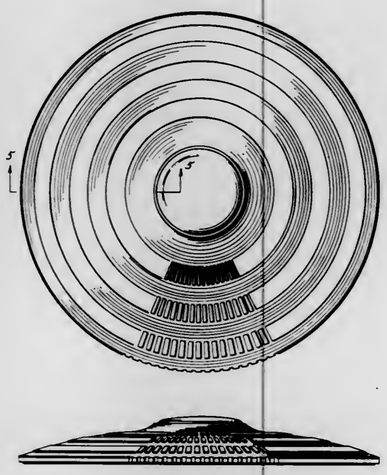
216,695
ELECTRIC INCINERATOR
Graeme Mason Hogarth, Harrow, England, assignor to The General Electric Company Limited, London, England
Filed Oct. 24, 1968, Ser. No. 14,155
Term of patent 7 years
Int. Cl. D23—*03*
U.S. Cl. D23—85



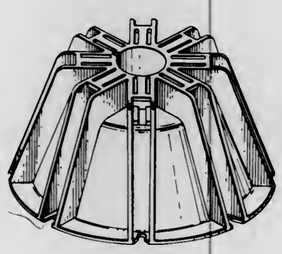
216,696
HOUSING FOR A WALL MOUNTED VENTILATOR FAN
Robert W. Blee, Terrace Park, Ohio, assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Nov. 13, 1968, Ser. No. 14,432
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—151



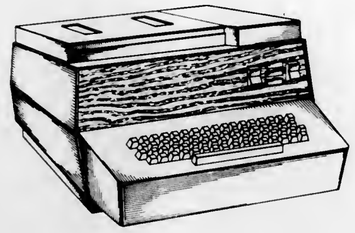
216,697
FOOT CONTROL FOR DENTAL EQUIPMENT
Gregory W. Brooks, Havertown, Pa., assignor to Star Dental Manufacturing Co., Inc. (also known as Star Dental Manufacturing Company, Inc., and Star Dental Mfg. Co., Inc.), Philadelphia, Pa., a corporation of Delaware
Original design application Aug. 30, 1968, Ser. No. 13,327. Divided and this application Jan. 24, 1969, Ser. No. 15,499
Term of patent 14 years
Int. Cl. D24—*02*; D13—*03*
U.S. Cl. D24—1



216,698
CATHODE RAY TUBE CONNECTOR
Kenneth John Startin, Leverstock Green, Herts, England, assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
Filed July 23, 1968, Ser. No. 12,857
Claims priority, application Great Britain Feb. 2, 1968
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—1



216,699
DATA PRINTING MACHINE
Harold H. Kawaguchi, Seattle, Wash., assignor to Interface Mechanisms, Mountlake Terrace, Wash.
Filed Aug. 22, 1968, Ser. No. 13,240
Term of patent 14 years
Int. Cl. D14—*02*; D18—*01*
U.S. Cl. D26—5



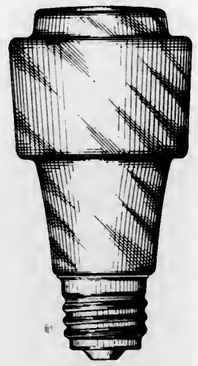
216,700
MANUALLY OPERATED GENERATOR
Takaichi Mabuchi, Tokyo, Japan, assignor to Tokyo Kagaku Kabushiki Kaisha, Tokyo, Japan
Filed Oct. 30, 1968, Ser. No. 14,236
Claims priority, application Japan May 30, 1968
Term of patent 14 years
Int. Cl. D13—*01*
U.S. Cl. D26—5



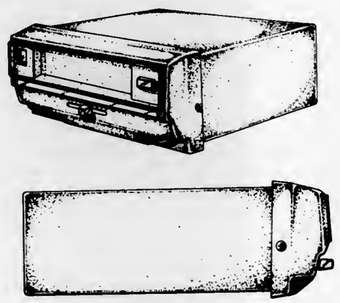
216,701
DATA PROCESSING CONSOLE UNIT
James Jordan, Townsend, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.
Filed Dec. 23, 1968, Ser. No. 15,091
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



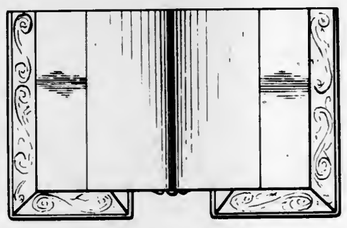
216,702
ELECTRIC LAMP BULB
Roy W. Clough, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Feb. 17, 1969, Ser. No. 15,820
Term of patent 14 years
Int. Cl. D26—*01*
U.S. Cl. D26—8



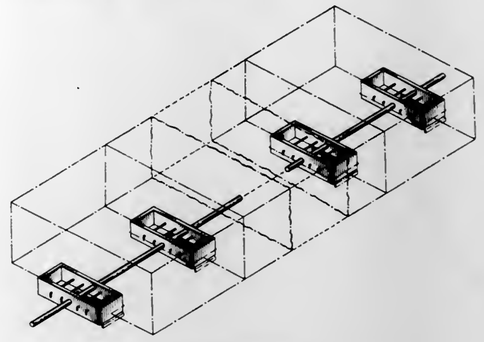
216,703
TAPE PLAYER FOR AN AUTOMOBILE
Masaaki Furukawa and Yoshihiko Ohyama, Tokyo, Japan, assignors to Hitachi, Ltd., Manufacturers, Tokyo, Japan, a corporation of Japan
Filed May 15, 1969, Ser. No. 17,160
Claims priority, application Japan Nov. 22, 1968
Term of patent 7 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



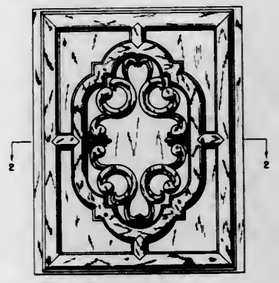
216,704
SHRINE
Ralph Mallory, 94—31 212th Place, Queens Village, N.Y. 11428
Filed Aug. 21, 1968, Ser. No. 13,213
Term of patent 14 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



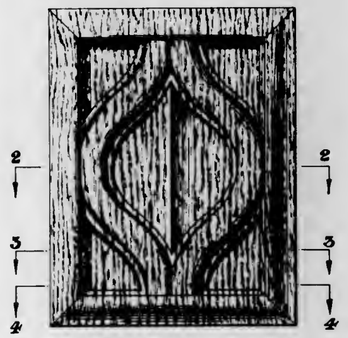
216,705
MECHANICAL FEEDER FOR CAGED POULTRY
Gerald L. Kitson, 9709 Belding Road, Rockford, Mich. 49341
Filed July 15, 1968, Ser. No. 12,743
Term of patent 14 years
Int. Cl. D30—*02*
U.S. Cl. D30—13



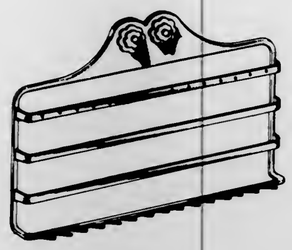
216,706
PANEL FOR A FURNITURE DOOR
Herman W. Bernard, High Point, N.C., assignor to Casard Furniture Manufacturing Corporation, High Point, N.C., a corporation of North Carolina
Filed Oct. 16, 1968, Ser. No. 14,015
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—1



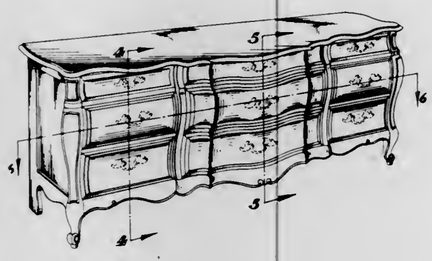
216,707
FURNITURE PANEL OR THE LIKE
Richard M. Chapin, Charlotte, N.C., assignor to Dolly Madison Industries, Louisville, Ky., a corporation
Filed Jan. 6, 1969, Ser. No. 15,210
Term of patent 3½ years
Int. Cl. D6—*01*
U.S. Cl. D33—1



216,708
WALL RACK FOR JEWELRY
Betty R. Mann, 719 E. Monterey St., Pomona, Calif. 91766
Filed Sept. 18, 1968, Ser. No. 13,602
Term of patent 3½ years
Int. Cl. D6—01
U.S. Cl. D33—3



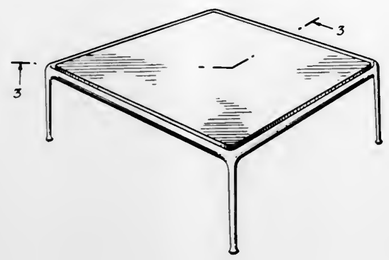
216,709
DRESSER OR THE LIKE
Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee
Filed Oct. 14, 1968, Ser. No. 13,991
Term of patent 3½ years
Int. Cl. D6—01
U.S. Cl. D33—6



216,710
SCHOOL DESK
Gordon C. Lambert, Dick E. Shoemaker, and Robert C. Gann, North Manchester, Ind., assignors to American Standard Inc., a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 14,473
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—11

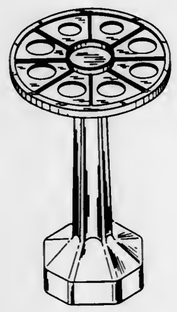


216,711
TABLE
Moses Richard Schultz, Barto, Pa., assignor to Art Metal-Knoll Corporation, a corporation of Delaware
Original design application Nov. 8, 1965, Ser. No. 88,044, now Patent No. 211,334, dated June 11, 1968. Divided and this application Oct. 4, 1967, Ser. No. 9,348
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—14

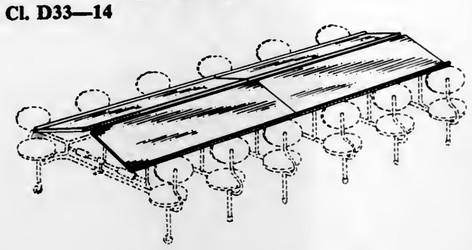


216,712
TEACHING TABLE
James W. Cooper, 611 S. N St., Indianola, Iowa 50125
Original design application May 11, 1966, Ser. No. 2,251, now Patent No. 209,911, dated Jan. 16, 1968. Divided and this application Jan. 15, 1968, Ser. No. 10,927
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—14

216,713
SNACK TABLE
Saul Bob Buchwach, Pittsburgh, Pa., assignor to Action Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1968, Ser. No. 11,047
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—14



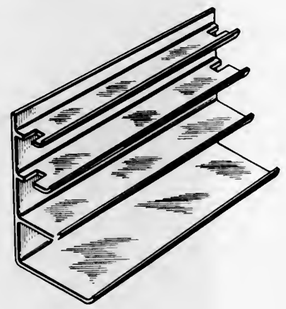
216,714
COMBINED ADJUSTABLE TABLE AND MULTIPLE SEAT UNIT
James W. Cooper, 905 Ruth Drive, Elgin, Ill. 60120
Continuation-in-part of design application Ser. No. 8,393, Aug. 25, 1967. This application Sept. 18, 1968, Ser. No. 13,582
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—14



216,715
LEG UNIT
Robert J. Dottinger, Hawthorne, N.J., assignor to The Lehigh-Leopold Furniture Company, Burlington, Iowa, a corporation of Delaware
Continuation-in-part of design application Ser. No. 4,017, Sept. 26, 1966. This application Feb. 4, 1969, Ser. No. 15,615
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—14



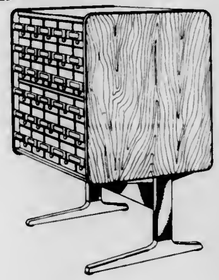
216,716
TUBE RACK FOR A MEDICINE CABINET
Margaret Ann Krikker, 164 Colonial Ave., Albany, N.Y. 12208
Filed Sept. 9, 1968, Ser. No. 13,454
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—16



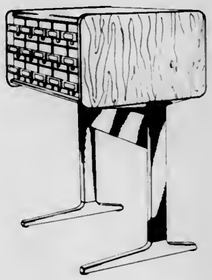
216,717
DOUBLE LOCKER
Joop M. Van Ryn, Whitby, Ontario, Canada, assignor to The Pedlar People Limited, Oshawa, Ontario, Canada, a corporation of Canada
Filed May 28, 1968, Ser. No. 12,109
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—19



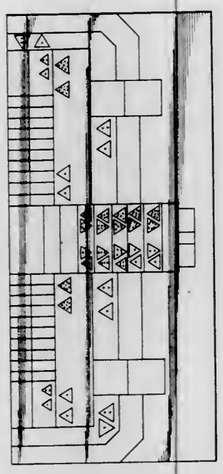
216,718
CARD FILE CABINET
Peter J. Protzmann, Grand Rapids, Mich., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Oct. 18, 1968, Ser. No. 14,059
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—19



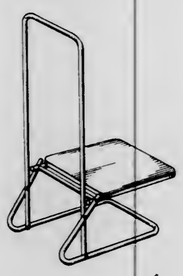
216,719
CARD FILE CABINET
Peter J. Protzmann, Grand Rapids, Mich., assignor to Herman Miller Inc., Zeeland, Mich., a corporation of Michigan
Filed Oct. 18, 1968, Ser. No. 14,066
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D33—19



216,720
GAME LAYOUT CHART
William N. Mitchell, P.O. Box 1183, Visalia, Calif. 93277
Filed July 10, 1968, Ser. No. 12,677
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



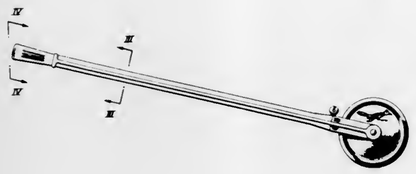
216,721
JUMPING EXERCISER
Richard Sassenberg, Larchmont, N.Y. (180 E. Prospect Ave., Mamaroneck, N.Y. 10543)
Filed Sept. 11, 1968, Ser. No. 13,492
Term of patent 14 years
Int. Cl. D21—*04*
U.S. Cl. D34—5



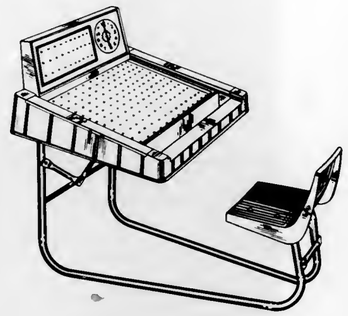
216,722
BASKETBALL GOAL
John F. Minnette, Newburgh, Ind., assignor to Chem-Farm Inc., Evansville, Ind., a corporation of Indiana
Filed Dec. 16, 1968, Ser. No. 14,980
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



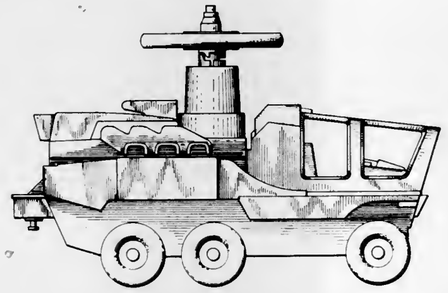
216,723
TRUNDLE TOY
Alphonsus F. Navickas, 31 Lanesboro Road, Worcester, Mass. 01606
Filed July 15, 1968, Ser. No. 12,759
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



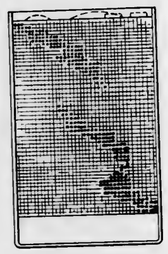
216,724
TOY DESK OR SIMILAR ARTICLE
Alan Sherman, Maryland Heights, Mo., assignor to Turco Manufacturing Company, DuQuoin, Ill., a corporation of Missouri
Filed Dec. 6, 1968, Ser. No. 14,833
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D34—15



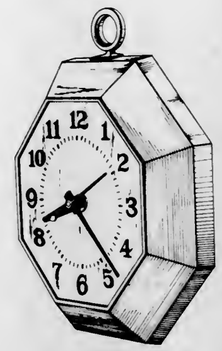
216,725
TOY TOWING VEHICLE
Charles Fulcher, Bloomfield, N.J., assignor to Remco Industries, Inc., Harrison, N.J., a corporation of New Jersey
Filed Jan. 14, 1969, Ser. No. 15,345
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



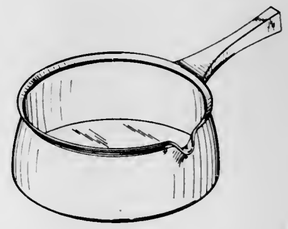
216,726
ELECTRICAL METRONOME
Robert D. Veech, 11 Yates Ave., Commack, N.Y. 11725
Filed Apr. 22, 1968, Ser. No. 11,565
Term of patent 14 years
Int. Cl. D10—*05*
U.S. Cl. D42—7



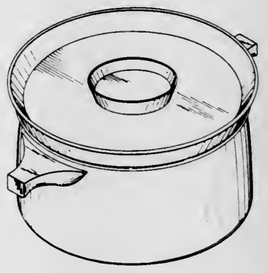
216,727
CLOCK OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed Aug. 5, 1968, Ser. No. 13,033
Term of patent 3½ years
Int. Cl. D10—*01*
U.S. Cl. D42—7



216,728
SAUCEPAN
Richard S. Latham, Chicago, Ill., assignor to Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany, a corporation of Germany
Filed Apr. 30, 1968, Ser. No. 11,709
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



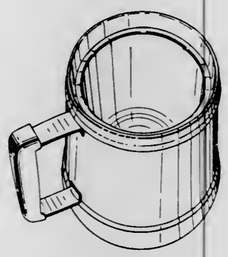
216,729
COMBINED SAUCEPAN AND COVER THEREFOR
Richard S. Latham, Chicago, Ill., assignor to Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany, a corporation of Germany
Filed Apr. 30, 1968, Ser. No. 11,710
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



216,730
INFANT DRINKING CUP
John H. Carslaw, Northumberland, England, assignor, by mesne assignments, to Westland Plastics, Inc., Newbury Park, Calif., a corporation of California
Filed Nov. 1, 1968, Ser. No. 14,282
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—9



216,731
VACUUM MUG
Leung Tsoo-Hing and Leung Chai-Wan, both of 2–20 Palm St., Kowloon, Hong Kong
Filed Mar. 25, 1969, Ser. No. 16,433
Claims priority, application Great Britain Sept. 27, 1968
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—9



216,732
COMBINED BEVERAGE SERVER AND COVER THEREFOR
Richard S. Latham, Chicago, Ill., assignor to Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany, a corporation of Germany
Filed Apr. 30, 1968, Ser. No. 11,711
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—21



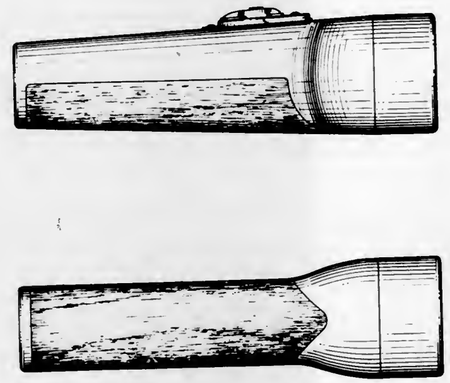
216,733
COCKTAIL FORK
David R. Levinson, Tampa, Fla., assignor to Ocean Products, Inc., Tampa, Fla., a corporation of Florida
Filed Sept. 25, 1968, Ser. No. 13,709
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D44—29



216,734
JEWELRY FINDING
John J. Zajac, 2704 W. 24th Place, and Larry Kwiatek, 2647 W. 24th Place, both of Chicago, Ill. 60608
Filed Dec. 4, 1968, Ser. No. 14,792
Term of Patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—1



216,735
FLASHLIGHT
Robert E. Brindley, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed July 22, 1968, Ser. No. 12,836
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



216,736
MINER'S LANTERN
Sylvia Zedlar, G.P.O. Box 2925, New York, N.Y. 10001
Filed Apr. 21, 1969, Ser. No. 16,830
Term of patent 7 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



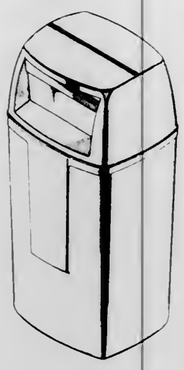
216,737
SHEET AND SPREAD FOLDER
Norman F. Schloesser, Shawnee Mission, Kans., assignor to S & S Products, Inc., Kansas City, Mo., a corporation of Missouri
Filed Mar. 21, 1969, Ser. No. 16,358
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—1



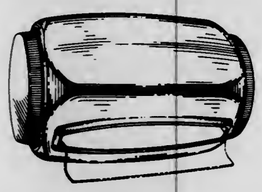
216,738
VACUUM CLEANER NOZZLE
Johan Arne Domstedt, Hagersten, and Kurt Lennart Ohlson, Bromma, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 2, 1969, Ser. No. 15,178
Claims priority, application Sweden July 5, 1968
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—18



216,739
TRASH CONTAINER
William Jackson Marsh, Garden Grove, Calif., assignor to Plasworld, Inc., a corporation of California
Filed Apr. 21, 1969, Ser. No. 16,828
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D49—35



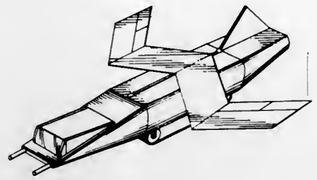
216,740
TOWEL DISPENSER
Stanley J. Bye, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Feb. 25, 1969, Ser. No. 15,894
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D52—2



216,741
ADJUSTABLE COLUMN MAGNIFIER
George O. Bosma, Denver, Colo., assignor to LRI Corporation, Denver, Colo., a corporation of Colorado
Filed Dec. 4, 1968, Ser. No. 14,784
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



216,742
AIRCRAFT
Frank A. Petry, 2551 S. Westgate Ave., West Los Angeles, Calif. 90064
Filed Nov. 18, 1968, Ser. No. 14,502
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



216,743
CANDLE
Wilfred L. Reiher, Sun City, Ariz., assignor to Candle World, a corporation of Arizona
Filed Sept. 23, 1968, Ser. No. 13,652
Term of patent 14 years
Int. Cl. D26—*05*
U.S. Cl. D73—1



216,744
CANDLE
Wilfred L. Reiher, Sun City, Ariz., assignor to Candle World, a corporation of Arizona
Filed Sept. 23, 1968, Ser. No. 13,671
Term of patent 14 years
Int. Cl. D26—*05*
U.S. Cl. D73—1



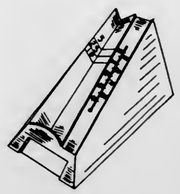
216,745
CANDLE
Wilfred L. Reiher, Sun City, Ariz., assignor to Candle World, a corporation of Arizona
Filed Sept. 23, 1968, Ser. No. 13,672
Term of patent 14 years
Int. Cl. D26—*05*
U.S. Cl. D73—1



216,746
CANDLE
Wilfred L. Reiher, Sun City, Ariz., assignor to Candle World, a corporation of Arizona
Filed Sept. 23, 1968, Ser. No. 13,673
Term of patent 14 years
Int. Cl. D26—*05*
U.S. Cl. D73—1



216,747
DESK STAND
William E. Yothers, 244 W. Osceola Ave., Stuart, Fla. 33494
Filed Aug. 26, 1968, Ser. No. 13,276
Term of patent 3½ years
Int. Cl. D19—*02*
U.S. Cl. D74—5



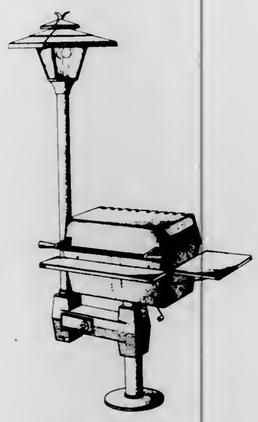
216,748
HEAD FOR MANNIKIN
John W. Rigsby, Evansville, Ind., assignor to Merit Clothing Company, Inc., Mayfield, Ky., a corporation of Kentucky
Filed Feb. 7, 1968, Ser. No. 10,481
Term of patent 14 years
Int. Cl. D20—*02*
U.S. Cl. D80—8



216,749
COMBINED MERCHANDISE DISPLAY AND DISPENSING STAND
Norman R. Welch, 905 Bailey Park Drive NE., Grand Rapids, Mich. 49505
Filed Dec. 19, 1968, Ser. No. 15,068
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—9

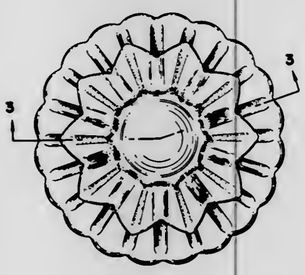


216,750
COMBINED GRILL AND LIGHTING FIXTURE
Edward Klein, Wilmette, Ill., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Apr. 3, 1969, Ser. No. 16,563
Term of patent 14 years
Int. Cl. D7—*04;* D26—*02, 03*
U.S. Cl. D81—10

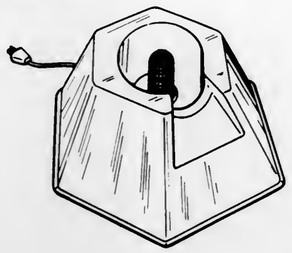


216,751
ASH TRAY
Ralph F. Lynch, 616 Vincente Ave., Berkeley, Calif. 94707
Continuation-in-part of design application Ser. No. 6,282, Mar. 20, 1967. This application July 1, 1968, Ser. No. 12,587
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2

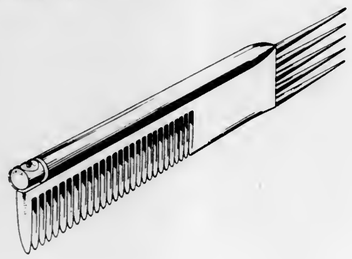




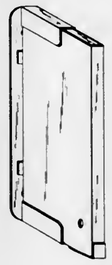
216,752
PIPE DRIER
David J. Perkins, 3015 Benjamin, Royal Oak, Mich. 48073
Filed Jan. 31,1969, Ser. No. 15,584
Term of patent 3½ years
Int. Cl. D27—*99*
U.S. Cl. D85—7



216,753
COMB
Berkley H. Long, Jr., 664 Inglewood Drive, Smyrna, Ga. 30080
Filed May 1, 1968, Ser. No. 11,732
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—8



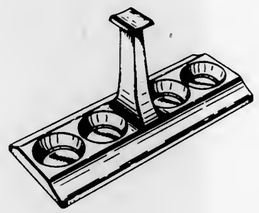
216,754
DISPENSER FOR DISPOSABLE NAIL CLEANERS
Jack Marks Granowitz, Danbury, Frank James Marocco, Woodberry, and Gaetano Salvatore Buccino, Bethel, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Apr. 2, 1968, Ser. No. 11,262
Term of patent 14 years
Int. Cl. D28—*99*
U.S. Cl. D86—10



216,755
COMBINED COSMETICS BLENDER, INGREDIENT HOLDERS AND STAND THEREFOR
Monte L. Levin, New York, N.Y., and Samuel Bernstein, West Hartford, Conn., assignors to Dynamics Corporation of America, Waring Products Division, New Hartford, Conn., a corporation of New York
Filed Dec. 2, 1968, Ser. No. 14,736
Term of patent 14 years
Int. Cl. D28—*99*
U.S. Cl. D86—10



216,756
MANICURE TRAY
Donald E. Everburg, Southbridge, Mass., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 15,058
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D86—10



216,757
STORAGE UNIT
Michael A. Di Pierro, Michael J. Di Pierro, and Donald P. Mastrovito, Shrewsbury, Mass., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 13, 1968, Ser. No. 14,952
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



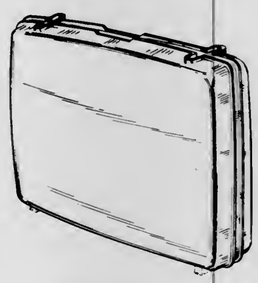
216,758
STORAGE UNIT
Michael A. Di Pierro, Michael J. Di Pierro, and Donald P. Mastrovito, Shrewsbury, Mass., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 13, 1968, Ser. No. 14,953
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



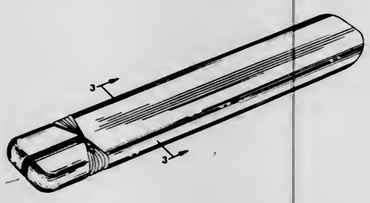
216,759
STORAGE UNIT
Michael A. Di Pierro, Michael J. Di Pierro, and Donald P. Mastrovito, Shrewsbury, Mass., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Dec. 13, 1968, Ser. No. 14,959
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



216,760
LUGGAGE CASE
Clair A. Samhammer, Orange, Calif., assignor to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Original design application May 22, 1967, Ser. No. 7,201. Divided and this application Oct. 24, 1968, Ser. No. 14,166
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—5



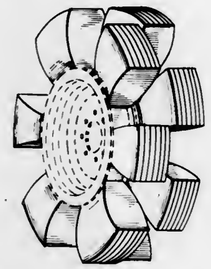
216,761
UMBRELLA SHEATH
Manfred Bremshey, 350 Simcoe Ave., Mount Royal, Quebec, Canada
Filed Nov. 13, 1968, Ser. No. 14,433
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—5



216,762
VELOCIPEDE NOISEMAKING ATTACHMENT
Carol M. Eberhardt, 1697 York Ave., St. Paul, Minn. 55106
Filed Jan. 23, 1969, Ser. No. 15,474
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—1



216,763
MULTIPLE-SEGMENTED PNEUMATIC TIRE
Samuel C. Pellegrino, 220 St. Lawrence Ave., Buffalo, N.Y. 14216
Filed Jan. 28, 1969, Ser. No. 15,540
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



216,764
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Edward C. Taiman, Tarrytown, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Feb. 10, 1969, Ser. No. 15,696
Term of patent 14 years
Int. Cl. D6—*08*
U.S. Cl. D92—2



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3D DAY OF MARCH, 1970

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Argabright, Perry A., Sinkey, Vernon J., and Phillips, Brian L., to Marathon Oil Company. Polymers containing urea and/or biuret linkages and processes for their production. 3,498,954, Cl. 260-077.5

Argereu, William. Grommet for roving machine. 3,498,040, Cl. 057-115.

Argueso, M., & Co., Inc.: *See—*
Treacy, Cyril S., 3,498,813.

Arms, Richard A., and Nichols, Edmund R., to Hewlett-Packard Company. Panel mount and fastener. 3,498,655, Cl. 287-189.35

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Aronstein, Jesse, Gunthert, Richard John, and Trollmann, Conrad, to International Business Machines Corporation. Pin length sorter. 3,498,452, Cl. 209-073.

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Belart, Juan, to Teves, Alfred, G.m.b.H. Adjusting device for disk brake. 3,498,423, Cl. 188-196.

Belart, Juan, to Teves, Alfred, Maschinen- und Armaturenfabrik KG. Dust caps for fluid cylinders. 3,498,622, Cl. 277-170.

Belcan Corporation: *See—*
Johnston, Robert D., 3,498,053.

Belich, Daniel E. Beer keg tap. 3,498,313, Cl. 137-322.

Bell Telephone Laboratories, Incorporated: *See—*
McGahey, Bruce H., and Woodruff, Earl M., 3,499,098.

Bellows, Alfred H., to Polaroid Corporation. Camera exposure apparatus. 3,498,194, Cl. 095-010.

Belue, James C.: *See—*
Klink, Jerome P., Belue, James C., and Sears, James H. 3,498,550.
Philipps, Thomas E., and Belue, James C. 3,498,770.

Beneke, Jene A., and Flanagan, John C., to Verson Manufacturing Company. Multiple speed mechanical transmission system. 3,498,424, Cl. 192-004.

Benesh, Edgar O., to McQuay, Inc. Auger ice maker. 3,498,081, Cl. 062-320.

Benn, Walter R., to Searle, G. D., & Co.3-Oxygenated 21β-hydrocarbonsulfonylpregnan- 17(20),20 dienes, dehydro and 19-nor derivatives thereof and intermediates thereto. 3,499,013, Cl. 260-397.3

Benner, Charles E., to Air Reduction Company, Incorporated. Two-level suspension in a safety hat. 3,497,873, Cl. 002-003.

Bennett, Edward L.: *See—*
Lockwood, Raymond M., Bennett, Edward L., Graber, David A., and Sargent, Elbert R. 3,498,063.

Berger, Marion J., to Schurz Controls Corporation. Pipe fitting. 3,498,642, Cl. 285-189.

Berglund, Bengt Gunnar: *See—*
Holm, Kurt Anders, Nord, Sven Erik Leonard, and Berglund, Bengt Gunnar 3,498,885.

Bergman, Johan E. H., to Forsvarets Fabriksverk. Parachute shell with divisible case. 3,498,220, Cl. 102-035.6

Bernardini, Frank F.: *See—*
Brockway, James H., and Bernardini, Frank F. 3,498,160.

Bernett, Marianne K.: *See—*
Zisman, William A., and Bernett, Marianne K. 3,498,922.
Zisman, William A., and Bernett, Marianne K. 3,498,923.

Berry, Thomas, and Peacock, Frank R., to Rome Machine & Foundry Company. Textile goods dyeing apparatus with vapor cover. 3,498,092, Cl. 068-210.

Berthold, Wolfgang K., Coles, Donald K., and Sisneros, Thomas E., to International Telephone and Telegraph Corporation. Optical signal correlation device. 3,498,718, Cl. 356-005.

Best, John H., & Sons, Inc.: *See—*
Best, Leon H., 3,498,412.

Best, Leon H., to Best, John H., & Sons, Inc. Portable carriage. 3,498,412, Cl. 182-152.

Best Quality Plastics, Inc.: *See—*
Voorhees, Anson W., Jr., 3,498,494.

Bethlehem Steel Corporation: *See—*
Wise, Warren J., 3,497,940.

Beyler, Roger E.: *See—*
Oberster, Arthur E., Beyler, Roger E., and Sarett, Lewis H. 3,498,975.

Bianco, Romolo Peter. Fishing lure. 3,497,986, Cl. 043-042.5

Bichaylo, Frederick E., Moors, Harold B., and Scariano, Emanuel F., to International Paper Company. Method of application and detection of invisible ink on containers. 3,498,815, Cl. 117-001.7

Bickford, Hugh L., Sawchuk, Loris G., and Stookey, Stanley D., to Corning Glass Works. Steam treatment process to produce thermoplastic materials and hydraulic cements. 3,498,802, Cl. 106-039.

Biet, Jean: *See—*
Leblond, Jean, and Biet, Jean 3,498,555.

Biley, Richard E. Method of processing grain sorghum. 3,498,796, Cl. 099-080.

Billco: *See—*
Wehr, Robert L., 3,497,897.

Billingslea, Eugene E.: *See—*
Joyce, Ronald W., Billingslea, Eugene E., Sage, Leopold C., and Marshall, Robert K. 3,497,984.

Bingley, George W., to Massey-Ferguson Inc. Clutch released by simultaneous engagement of separate brakes. 3,498,427, Cl. 192-013.

Bird, Garnet W.: *See—*
Cross, Douglas A., and Bird, Garnet W. 3,498,729.

Bird, George R., and Parrish Maxfield, Jr. Apparatus for drawing fine filaments with tension sensing means. 3,498,771, Cl. 065-012.

Birge, Richard P.: *See—*
Cordle, Paul E., and Birge, Richard P. 3,498,224.

Birkigt, Louis, to Brevets Aero-Mecaniques S.A. Ammunition having a subcalibre shell comprising a front cap and means for destroying this cap in flight. 3,498,222, Cl. 102-052.

Birkner, Helmut, to Chemische Werke Huls Aktiengesellschaft. Stable solid polymerizable lactam-catalyst-cocatalyst mixture and methods of preparing the same. 3,498,956, Cl. 260-078.

Bittle, Harold G.: *See—*
Schier, Leon C., Bittle, Harold G., and Rylander, Arthur F. 3,498,939.

Blackwell, Robert J.: *See—*
Stone, Herbert L., Graham, John W., and Blackwell, Robert J. 3,498,378.

Blaga, Aurel, and Mc Arthur, Colin R., to Allied Chemical Corporation. Process for the preparation of sodium carboxymethylcellulose. 3,498,971, Cl. 260-231.

Blaha, Milos: *See—*
Meninger, Milan, and Blaha, Milos 3,498,702.

Blaha, Miroslav, to Zavody Jana Svermy, narodni Podnik. Movable assemblies for typewriters. 3,498,440, Cl. 197-074.

Blanchette, Jean Paul, to Consolidated Paper (Bahamas) Limited. Bag handling applicator. 3,498,244, Cl. 112-262.

Blaschke, Ludwig. Motion picture camera with signal generating means. 3,498,568, Cl. 242-191.

Bleibtreu, Alexander, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Switching device for opening non-current carrying circuits. 3,499,135, Cl. 200-170.

Blenkinsop, Ward, & Company Limited: *See—*
Green, Peter Nicholl, and Shapero, Maurice, 3,499,010.

BLH Electronics, Inc.: *See—*
Ruge, Arthur C., 3,498,118.

Bliss, E. W., Company: *See—*
Warstler, Clarence Leroy, 3,498,102.

Block, Fred B.: *See—*
Clarke, Frank H., Jr., and Block, Fred B. 3,498,976.
Clarke, Frank H., Jr., and Block, Fred B. 3,498,977.
Clarke, Frank H., Jr., and Block, Fred B. 3,498,978.

Bloom, Stanley M., and Stephens, Robert K., to Polaroid Corporation. Novel photographic products and processes. 3,498,785, Cl. 096-003.

Blumle, Charles A., and Blumle, Leo J. Portable infusion pump. 3,498,228, Cl. 103-025.

Blumle, Leo J.: *See—*
Blumle, Charles A., and Blumle, Leo J. 3,498,228.

Bode, Wolfgang W.: *See—*
Baker, Theodore C., Bode, Wolfgang W., Mathias, Richard G., Nolan, James F., and Pfaender, Lawrence V. 3,499,167.

Bodge, Philip K. Fluid mass flowmeter. 3,498,129, Cl. 073-231.

Boegli, Ernst: *See—*
Locher, Robert, Boegli, Ernst, and Herzig, Kurt 3,499,161.

Boehm, Walter G., to Webb, Jervis B., Company. Coil compacting and banding apparatus. 3,498,212, Cl. 100-007.

Boehmfeld, Heinz W., and Winkman, Walter W. Heating system for internal combustion engines. 3,498,539, Cl. 237-012.3

Boeing Company, The: *See—*
Antle, William K., 3,497,944.
Hallesy, Harold Walter, 3,498,648.

Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L., to Ford Motor Company. Method for manufacturing multilayered product. 3,498,897, Cl. 204-181.

Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L., to Ford Motor Company. Method for providing corrosion protection for automobile bodies. 3,498,898, Cl. 204-181.

Bogart, Marcel J. P., and Davis, Hyman R., to Lummus Company, The. Quench oil recovery system. 3,498,906, Cl. 208-050.

Boggs, Wilburn A., to Lockheed Aircraft Corporation. Dichromate vapor phase corrosion inhibitor. 3,498,926, Cl. 252-387.

Bogosian, Sarkis H. Vignetting attachment for portrait camera. 3,498,201, Cl. 095-065.

Bohlen, Charles I., to Hose Accessories Co. Spring wire locking device for a coupling. 3,498,641, Cl. 285-084.

Bohn and Jensen, Inc.: *See—*
Bohn, Donald I., 3,498,367.

Bohn, Donald I., to Bohn and Jensen, Inc. Cyclically operative temperature control means. 3,498,367, Cl. 337-305.

Bohnke, Botho, to Lyco Systems, Inc. Apparatus for biological treatment of raw waste water. 3,498,459, Cl. 210-208.

Boileau, Jacques, to Compagnie General des Etablissements Michelin, raison Sociale Michel & Cie. Radial tire. 3,498,354, Cl. 152-209.

Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Pfister, Franz, Maus, Eicke, Durner, Josef, and Schipf, Anton, 3,498,416.

Bollinger, George R., Jr.: *See—*
Martin, James A., Jr., Hickey, Herbert A., and Bollinger, George R., Jr. 3,498,727.

Bon, George L.: *See—*
Campbell, Robert E., and Bon, George L. 3,498,080.

Bond, William C.: *See—*
Sparlin, Derry D., and Bond, William C. 3,498,380.

Borden, Inc.: *See—*
Hoyt, Howard Eugene, and Pfluger, Helmuth Louis, 3,498,840.
Hoyt, Howard Eugene, and Pfluger, Helmuth Louis, 3,498,841.

Borg-Warner Corporation: *See—*
Briski, Michael, 3,498,430.
Donaldson, Desmond M., 3,497,936.
Wiese, Winfred J., 3,498,620.

Borre, Henry C., to Universal Oil Products Company. Means for effecting a multiple stage contact of a reactant stream. 3,498,755, Cl. 023-288.

Borsboom, Albertus C.H.: *See—*
Van Kerkvoort, Willem J., Borsboom, Albertus C.H., and Van Noesel, Henricus G.J. 3,498,104.

Borsotti, Giampiero: *See—*
Ribaldone, Giuseppe, and Borsotti, Giampiero 3,498,760.

Bose, Wesley C.: *See—*
White, Ernest W., 3,498,299.

Boston, Robert L.: *See—*
Goodman, Robert C., and Boston, Robert L. 3,499,147.

Bostrom, Alan H., and McLarty, Jack Lowrie, to Universal Oil Products Company, mesne. Loop shaped diving board spring of resin impregnated glass fiber. 3,498,606, Cl. 272-066.

Bottero, Pasquale, to Corporation S.a.s. Bottero & C. Automatic table performing all cutting operations by rational sequences in glassworks producing a continuous glass band. 3,498,513, Cl. 225-096.5

Bourgault, Pierre L.: *See—*
Henderson, Ian H. S., Ladan, Stephan G., and Bourgault, Pierre L. 3,498,893.

Bournez, Lucien R., and Fabre, Robert, to Societe Nouvelle Spidem. Apparatus for varying the forces exerted on work roll chocks in multiroll rolling mills. 3,498,098, Cl. 072-237.

Bowdil Company, The: *See—*
Morrow, Harry M., 3,498,677.

Bowers, Rudolph M. Butterfly valve. 3,498,584, Cl. 251-305.

Bowers, Thomas S. Clippers. 3,497,956, Cl. 030-028.

Bowling, Carlton L., to C. & L. Machine Shop, Inc. Cut-off tool assembly. 3,497,935, Cl. 029-096.

Boyd, David M., to Universal Oil Products Company. Apparatus for locating the interface between two superimposed fluids within a vessel utilizing infrared detector means. 3,499,154, Cl. 250-083.3

BP Chemicals (U.K.) Limited: *See—*
Coupland, Keith, and Pennington, John, 3,498,916.

BP Tanker Company Limited: *See—*
Ross, John William, and Hopkins, Kenneth William, 3,497,888.

Bradford, Gene R. Interchangeable advertising means for lunch counters and menu support. 3,497,977, Cl. 040-010.

Bradley, John J., to Paper Converting Machine Company, Inc. Cutoff and transfer mechanism for rewinder. 3,498,558, Cl. 242-056.

Bradley, Milton, Company: *See—*
Foley, Charles F., and McCarthy, Charles D., 3,498,610.

Braguier, Michel A. Apparatus for continuous metallization of dielectric strips. 3,498,259, Cl. 118-049.

Brandt, Milo O., to American Optical Corporation. Adjustable pattern shoe for lens edging machine. 3,498,005, Cl. 051-101.

Braun, Eric A., to Ex-Cell-O Corporation. Container bottom closing. 3,498,524, Cl. 229-038.

Braunberger, Ray A. Sliding fifth wheels. 3,498,635, Cl. 280-407.

Brawand, Franklin M. Safety draft hooks. 3,498,051, Cl. 059-093.

Breed, Arie Eugene: *See—*
Burrough, Donald E., and Breed, Arie Eugene 3,498,398.

Breitenbach Ribbon Manufacturing Co., Ltd., The: *See—*
Hagenbuch, Ernst, 3,498,509.

Breitenstein, Charles T., Pearl, Donald C., and Budner, Leonard L., to Rowe International, Inc., mesne. Bulk milk dispenser system. 3,498,502, Cl. 222-036.

Breuning, Erich E., to Snap-Tite, Inc. Quick connect high pressure coupling. 3,498,324, Cl. 137-614.04

Brevets Aero-Mecaniques S.A.: *See—*
Birkigt, Louis, 3,498,222.

Brewer, Forrest A.: *See—*
Kautz, Franz A., Brewer, Forrest A., and Vanderneut, Paul P. 3,498,205.

Brewer, George E. F.: *See—*
Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L. 3,498,897.
Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L. 3,498,898.

Brickson, William L., and Tamagni, Henry. Cartridge for use in multiple injection device. 3,498,295, Cl. 128-272.

Briggs & Stratton Corporation: *See—*
Harkness, Joseph R., 3,498,281.

Brightman, Barrie, to Stromberg-Carlson Corporation. Telephone switching matrix with photo-responsive switching elements. 3,499,122, Cl. 179-018.

Brimm, Gary W.: *See—*
Ammon, Bruno, and Brimm, Gary W. 3,498,659.

Briner, Emil, Graf, Felix, and Wuest, Olivier, to Rieter Machine Works Ltd. Yarn reeling machine. 3,498,551, Cl. 242-035.5

Brinkman, Lloyd D., to Royal Industries, mesne. Laminating device. 3,498,215, Cl. 100-155.

Briski, Michael, to Borg-Warner Corporation. Shifting control for a power shifted transmission. 3,498,430, Cl. 192-051.

Bristol-Myers Company: *See—*
Buchanan, Ronald Leslie, and Partyka, Richard Anthony, 3,498,999.
McGregor, Donald Neil, and Cheney, Lee Cannon, 3,498,995.

British Aircraft Corporation Limited: *See—*
Squire, Allan Maurice, and MacLachlan, Donald Fulton Alexander, 3,497,950.

British Aluminum Company Limited, The: *See—*
Munday, John Worthington, and Tomlinson, Jeffrey Ernest, 3,498,849.

British Petroleum Company Limited, The: *See—*
Edwards, Stanley John, 3,498,526.

Brochetti, Raymond E. Mold lock-up mechanism for injection molding machines. 3,497,919, Cl. 018-043.

Brockway, James H., and Bernardini, Frank F., to Textron, Inc. Flange tightener. 3,498,160, Cl. 081-090.

Brode, George L., to Union Carbide Corporation. Method of polymerizing 3,3-dimethyl thiacyclobutane and resulting polymer. 3,498,959, Cl. 260-079.

Brookside Corporation: *See—*
Wooden, John A., 3,498,529.

Broomall, Robert M.: *See—*
Childs, Elmer W., and Broomall, Robert M. 3,498,456.

Brouwer, Willem, to Sanders Associates, Inc. Pressure compensated optical device. 3,498,695, Cl. 350-179.

Brown, Gaylord W., to Brown Machine Company of Michigan, Inc. Methods and apparatus for making containers. 3,499,068, Cl. 264-068.

Brown Machine Company of Michigan, Inc.: *See—*
Brown, Gaylord W., 3,499,068.

Brown, Robert L., and Wall, Edward W. Portable emergency sign. 3,497,980, Cl. 040-129.

Brown, William B.: *See—*
Canonico, August R., and Brown, William B. 3,498,679.

Brown, William R., to Control Data Corporation, mesne. Pressure operated transducer-controller. 3,498,130, Cl. 073-301.

Browne, James V. Deburring machine. 3,498,179, Cl. 090-001.4

Brownell, John R., to Turbo Machine Company. Apparatus and method for de-registering tow. 3,497,920, Cl. 019-065.

Brownfield, Charles L.: *See—*
Meyer, Elwyn A., and Brownfield, Charles L. 3,498,178.

Bruder, Alfred: *See—*
Schwake, Paul, and Bruder, Alfred 3,498,344.

Brueckner, Hans, and Haertel, Kurt, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Methods and compositions for controlling fungal and bacterial infestation of plants utilizing organic tetravalent tin compounds. 3,499,086, Cl. 424-286.

Brumlik, George C. Self-gripping fastening assembly. 3,497,925, Cl. 024-204.

Brun, Hans, to Sentralinstitutt for industriell forskning. Method and apparatus for measuring the gas and vapor permeability of films. 3,498,110, Cl. 073-038.

Bruning, William E., 1/2 to International Paper Company, and 1/2 to Stanley Works, The. Freight vehicle closure. 3,498,358, Cl. 160-368.

Brunner, Arthur: *See—*
Heidenhain, Johannes, and Brunner, Arthur 3,498,254.

Bruno, Michael Francis, to Du Pont de Nemours, E. I., and Company. Non-fogging polyolefin film. 3,498,962, Cl. 260-093.7

Bruot, Roger C.: *See—*
Robbins, Elmer A., and Bruot, Roger C. 3,498,501.

Buchanan, Ronald Leslie, and Partyka, Richard Anthony, to Bristol-Myers Company. 1-Phenoxy and substituted phenoxy-(5-tetrazolyl) propanes. 3,498,999, Cl. 260-308.

Buchtel, Forrest L., Jr., to Varian Associates. Stream splitter for gas chromatography. 3,498,027, Cl. 055-197.

Buckman, Raymond W., Jr., to Westinghouse Electric Corporation. Precipitation hardened tantalum base alloy. 3,498,854, Cl. 148-032.5

Budd Company, The: *See—*
Tabor, Paul C., 3,498,669.

Budner, Leonard L.: *See—*
Breitenstein, Charles T., Pearl, Donald C., and Budner, Leonard L. 3,498,502.

Buehler, Arthur: *See—*
de Montmollin, Rene, and Buehler, Arthur 3,498,967.

Bueler, Richard C., to Wagner Electric Corporation, mesne. Control valve. 3,498,681, Cl. 303-006.

Buell Engineering Company, Inc.: *See—*
Mylting, Lauritz E., 3,498,328.

Buitkus, Thomas J. Animated display device. 3,497,979, Cl. 040-106.53

Bulanzhe, Jury Dmitrievich, Romanjuk, Valentin Antonovich, and Poddubny, Sergei Alexeevich. Gravimeter. 3,498,134, Cl. 073-382.

Bullard Company, The: *See—*
Miko, Steven I., and McCue, Harry R., 3,498,164.

Bunch, John K.: *See—*
Oldham, Dale R., and Bunch, John K. 3,497,895.

Bunger, David A., to Baldwin, D. H., Company. Stepping rhythmic interpolater. 3,499,091, Cl. 084-001.03

Bunger, David A., to Baldwin, D. H., Company. Accompaniment chord rhythm system. 3,499,092, Cl. 084-001.03

Bunn, John P., to Lockheed Aircraft Corporation. Body signal sensing electrode apparatus. 3,498,291, Cl. 128-002.06

Buntin, George A.N-(α-Dimethyl benzyl)α,α-dimethyl alkylamides and use as selective herbicides. 3,498,781, Cl. 071-118.

Bureau, Raymond E., Jr. Lightweight unsinkable boat. 3,497,887, Cl. 009-006.

Burger Chef Systems, Inc.: *See—*
Thomas, Donald J., 3,498,470.

Burndy Corporation: *See—*
King, Julius, and Hood, George E., 3,497,952.

Burnett, Thomas Clarence, and Chang, Martin Ming Yang. Mold hull structure and device of making same. 3,497,886, Cl. 009-006.

Burns Investment Corporation: *See—*
Trott, David H., 3,498,240.

Burnside, Gilbert L.: *See—*
Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L. 3,498,897.
Bogart, Harold N., Brewer, George E. F., and Burnside, Gilbert L. 3,498,898.

Burrough Corporation: *See—*
Liles, George N., 3,498,428.

Burrough, Donald E., and Breed, Arie Eugene, to Deere & Company. Windrower drive and control therefor. 3,498,398, Cl. 180-006.66

Burroughs Corporation: *See—*
Kjos, Magne Jarle, 3,498,569.
Ogle, James A., 3,498,864.
Paige, Walter Giffin, 3,498,330.

Burrows, Derek R., and Heller, Fritz P., to Elliott Brothers (London) Limited. Reflex sighting device including a partial reflector and means between the reflector and display to compensate or parallax. 3,498,725, Cl. 356-251.

Bushnell, Robert H.: *See—*
Evans, Donald C., Steiner, Wilford L., and Bushnell, Robert H. 3,499,156.

Buttner, Franz. Exercising mat having a leg supporting portion. 3,498,605, Cl. 272-058.

Byganadsaktiebolaget Paul Anderson: *See—*
Mattson, Johan Arne, and Jettman, Lars, 3,498,476.

Byron Jackson Inc.: *See—*
Turner, John W., Jr., 3,498,586.

C.A.V. Limited: *See—*
Kellett, Eric, and Tilsed, Kenneth Eric, 3,498,593.
Mowbray, Dorian Farrar, 3,498,226.

C. & D. Power Tool Co., Inc.: *See—*
Wilmeth, Claude H., 3,498,159.

C. & L. Machine Shop, Inc.: *See—*
Bowling, Carlton L., 3,497,935.

Cain, James Palmer, to Deering Milliken Research Corporation. Imparting permanent dimensional stability and finish stability to fabrics containing keratinous fibers. 3,498,740, Cl. 008-127.6

Caldwell Manufacturing Company, The: *See—*
Nobes, William Douglas, 3,498,000.

Calkins, Donald L., to Johnson Corporation, The. Small bore roll syphon. 3,498,591, Cl. 263-006.

Calkins, Thornton R., to General Electric Company. Pigmented polycarbonate stabilized with phosphites and ion epoxidized carboxylate. 3,498,946, Cl. 260-037.

Calvert, Francis E., and Atkinson, William T., to Archer-Daniels-Midland Company. Process for the preparation of hydratable protein food products. 3,498,794, Cl. 099-017.

Calvert, Willard R., Sr. Method and apparatus for gas decontamination. 3,498,024, Cl. 055-033.

Calvet, Pierre Jean Felix. Apparatus for measuring a physical quantity by the use of pulsed energy. 3,498,128, Cl. 073-204.

Cameron, James H., and Tygard, Charles M., to Spectrol Electronics Corporation. Dual components adjustable separately, or in unison, by a front shaft. 3,498,147, Cl. 074-010.45

Campbell, Charles R.: *See—*
Smith, Ralph W., Campbell, Charles R., and Mathews, Marion J., III 3,499,031.

Campbell, Robert E., and Bon, George L., to Carrier Corporation. Apertured slidable member for air conditioners. 3,498,080, Cl. 062-285.

Campbell, Trevor G., to Caterpillar Tractor Company. Compact high strength replaceable cutting edge. 3,497,973, Cl. 037-141.

Canadian General Electric Company Limited: *See—*
Dastur, Ardeshir Rustom, 3,498,879.

Canon Camera Kabushiki Kaisha: *See—*
Ito, Tadashi, Sorimachi, Kanehiro, and Matsuda, Mutsuhide, 3,498,192.
Koyanagi, Shuji, 3,498,698.

Canonico, August R., and Brown, William B., to Dry Ballast, Inc., mesne. Apparatus for and method of removing dry ballast from a pneumatic tire. 3,498,679, Cl. 302-056.

Cantrill, Donald E., to Home Comfort Products Co. Adjustable vacuum platen. 3,498,663, Cl. 294-065.

Canute, Robert A.: *See—*
Gaska, Remigius A., Canute, Robert A., and Putman, Maurice W. 3,498,758.

Caperton, Charles B. Manhole brace for sewer rod guide tube. 3,497,899, Cl. 015-104.3

Carborundum Company, The: *See—*
Hensley, James L., 3,498,004.

Cardinal of Adrian, Inc.: *See—*
MacDonald, Robert D., 3,498,001.

Caroselli, Remus F., and Dillon, James J., to Owens-Corning Fiberglas Corporation. Treated glass fibers and fabrics formed thereof. 3,498,826, Cl. 117-072.

Carrel, Robert L., Fenwick, Richard C., and Fowler, Robert A., to Collins Radio Company. Insulated reel mechanism for high-power aircraft trailing antenna. 3,499,171, Cl. 343-877.

Carrier Corporation: *See—*
Campbell, Robert E., and Bon, George L., 3,498,080.

Carrier, Lee William, and Nugent, Leonard James, to Xerox Corporation, mesne. Polychromatic laser aerosol sizing and ranging (plasar) technique. 3,499,159, Cl. 250-217.

Carson, Don B., to Universal Oil Products Company. Multiple stage reactor suitable for high pressures. 3,498,756, Cl. 023-289.

Carter, John Elton, Jr., to Wham-O Mfg., Co. Elastically suspended and controlled game device. 3,498,614, Cl. 273-095.

Carter-Wallace, Inc.: *See—*
Reich, Irving, and Tiffany, Earl H., Jr., 3,498,919.

Casella Farbwerke Mainkur Aktiengesellschaft: *See—*
Von Brachel, Hanswilli, and Hintermeier, Karl, 3,499,007.

Cass, Richard, to TRW Inc. Clamping device. 3,498,652, Cl. 287-060.

Caterpillar Tractor Company: *See—*
Campbell, Trevor G., 3,497,973.
Ferre, Glenn E., Huxtable, James T., and Stafford, Darrell E., 3,499,164.
Weiss, Carl D., 3,497,942.

Cavaliere, Louis P.: *See—*
St. Jean, David J., Donaghy, Francis P., Sr., and Cavaliere, Louis P. 3,498,119.

Cavanaugh, Robert E., Jr., to Packard Instrument Company, Inc. External standardization in liquid scintillation spectrometry making use of multiple external standards to insure volume independence. 3,499,149, Cl. 250-071.5

Cedervall, Gosta Hugo: *See—*
Johansson, Folke Karl Evald, and Cedervall, Gosta Hugo 3,498,783.

Celanese Corporation: *See—*
Dunay, Michael, and Sprague, Basil S., 3,498,944.
Moffett, Robert T., Jr., and Parker, Robert C., 3,498,043.
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Duffey, Donn W., to Duriron Company, Inc., The. Plug valves having relieved high pressure seal areas. 3,498,318, Cl. 137-375.
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Hallaman, Allan D., to Goodrich, B. F., Company, The. Traction belt. 3,498,684, Cl. 305-038.

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Hardenberg, Horst, to Daimler-Benz Aktiengesellschaft. Injection-type internal combustion engine. 3,498,276, Cl. 123-032.

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Johnson & Johnson: *See—*
Kuster, John J., 3,498,448.
Johnson, Lloyd E., to Denison-Johnson, Inc. Line control for spin casting reels. 3,498,562, Cl. 242-084.2
Johnson, Lloyd W., to Michigan Oven Company. Fluid cushion turning rolls for supporting and guiding strip material. 3,498,515, Cl. 226-097.
Johnson Products, Inc.: *See—*
Humphreys, John W., 3,498,273.
Johnson, Robert E. Hairpiece support block and stretcher. 3,498,510, Cl. 223-066.
Johnston, Robert D., to Belcan Corporation. Compound engine. 3,498,053, Cl. 060-013.
Johnston, Walter F.: *See—*
Taylor, Charles W., Jr., Johnston, Walter F., and Rogers, William M. 3,498,541.
Johnston, William F., Stencel, Thomas J., and Fixari, Fred, to Rex Chainbelt Inc. Weigh feeder. 3,498,396, Cl. 177-016.
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Jones, Clevoe D.: *See—*
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Jones, Edward A., Scopack, Vincent H., and Kruse, James A., to Litton Precision Products, Inc. Electrical contact assembly with ramp guide. 3,499,126, Cl. 200-016.
Jones, Frank W. Pipe plug. 3,498,333, Cl. 138-093.
Jones, Handel H., and Miller, Kemp, to International Telephone and Telegraph Corporation. Electroless tin plating on electroless nickel. 3,498,823, Cl. 117-071.
Jones, Terrell M., to Esso Research and Engineering Company. Tanker vessel. 3,498,249, Cl. 114-074.
Jonsson, Kurt Alvar, to Aktiebolaget Electrolux. Self-adjusting multipurpose nozzle. 3,497,903, Cl. 015-319.
Jorgensen, Clinton O., Glassner, Harvey F., and Baessler, Lee R., to Humetrics Corporation, mesne. Heart sound sequence indicator. 3,498,292, Cl. 128-002.06
Jorgensen, Pierre. Method and apparatus for measuring and marking lengths of moving material. 3,497,957, Cl. 033-129.
Jovis, Arthur. Pile driving system. 3,498,388, Cl. 173-002.
Joyce, Patrick H., and Ohrmund, Everett R., to Display Corporation. Testing apparatus. 3,497,960, Cl. 033-172.
Joyce, Ronald W., Billingslea, Eugene E., Sage, Leopold C., and Marshall, Robert K., to Victor Comptometer Corporation. Air operated projectile firing apparatus. 3,497,984, Cl. 042-039.5
Judson, William Raymond. Positioning device for core pins. 3,498,581, Cl. 249-067.
Juillet, Jacques, and Charbonnier, Gerard, to Compagnie Generale d'Automatisme, and Compagnie Generale d'Entreprises Electriques, and Metallgesellschaft A.G. Apparatus for sampling and analyzing pulverulent material. 3,499,144, Cl. 250-051.5
Julian, Ben G.: *See—*
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Jureit, John C., to Automated Building Components, Inc. Connector. 3,498,171, Cl. 085-013.
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Kachita Co., Ltd.: *See—*
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Kaden, Helmut, to U.S. Philips Corporation, mesne. Device for switching stereophonic signals. 3,499,118, Cl. 179-015.
Kado, Masaru: *See—*
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Kagan, Gerard Lester, to RCA Corporation. Color signal processing circuits including in array of grid-pulsed, grounded-cathode color-difference amplifiers. 3,499,106, Cl. 178-005.4
Kageura, Takashi: *See—*
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Kaiser Aluminum & Chemical Corporation: *See—*
Martinet, Jacques R., 3,498,235.
Kaiser, Fritz, and Zielina, Ernst, to Alpine Aktiengesellschaft. Fluid flow classifier. 3,498,453, Cl. 209-144.
Kaiser, Wolfgang, and Cramer, Bernhard, to International Standard Electric Corporation. Print hammer interposer means for high speed printers. 3,498,216, Cl. 101-093.
Kalvar Corporation: *See—*
Notley, Norman T., and Senentz, Irwin M., Jr., 3,498,786.
Kamarjan, Georgy Mikirtiechevich. Electrolytic diaphragm cell for production of chlorine, hydrogen and alkalies. 3,498,903, Cl. 204-266.
Kaminstein, Bernard, Joel, Henry G., and Ravera, Giovanni, 1/3 to Olivetti, Ing. C., & C., S.p.A. Desk top electrostatic copying machine. 3,498,709, Cl. 355-010.
Kampf-Emden, Gerd, and Staymann, Wilhelm, to Demag A.G. Tunnel driving machine having symmetrical braces. 3,498,675, Cl. 299-031.
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Kanoh, Teruchika: *See—*
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Karttunen, Tauno, to Valmet Oy, Helsinki. Safety device for use on the lifting frames of a container crane. 3,498,665, Cl. 294-081.
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Kater, John A. R., and Leonard, John E., to Beckman Instruments, Inc. Electrochemical electrode assembly. 3,498,899, Cl. 204-195.
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Kaufman, Martin H., to United States of America, Navy. Mixture of two polyesters with pyromellitic dianhydride. 3,499,058, Cl. 260-860.
Kautz, Franz A., Brewer, Forrest A., and Vanderneut, Paul P., to International Telephone and Telegraph Corporation. Rooftop air intake unit louver. 3,498,205, Cl. 098-037.
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Keller, James L., to Union Oil Company of California. Apparatus for measuring vapor-liquid ratio. 3,498,111, Cl. 073-053.
Keller, Wolfgang, to Siemens Aktiengesellschaft. Method of growing a rod-shaped monocrystal of semiconductor material by crucible-free floating zone melting. 3,498,846, Cl. 148-001.6
Keller, Wolfgang, to Siemens Aktiengesellschaft. Method and apparatus for producing a monocrystalline rod, particularly of semiconductor material. 3,498,847, Cl. 148-001.6
Kellett, Eric, and Tilsed, Kenneth Eric, to C.A.V. Limited. Hot gas generators. 3,498,593, Cl. 263-019.
Kelsey-Hayes Company: *See—*
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Kemenczky, Miklos V., and Guilden, Paul. Speed reducer mechanism especially as embodied in clockwork. 3,498,045, Cl. 058-007.
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Kennametal Inc.: *See—*
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Rowe, Theodore S., 3,498,623.
Kern, Georg, to Duckerhoff & Widmann Kommanditgesellschaft. Apparatus for anchoring prestressing members in prestressed concrete. 3,498,013, Cl. 052-225.
Kern, Harvey Conrad. Impact crusher hardening method. 3,498,547, Cl. 241-025.

Kernforschungsanlage Julich G.m.b.H.: *See—*
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Keskkula, Henno: *See—*
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Sus, Oskar, and Schafer, Heinz, 3,498,790.
Keul, Robert, to Compagnie de Saint-Gobain. Phosphate opal glass. 3,498,801, Cl. 106-039.
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Kidowaki, Yoshimasa, to Iwstani and Company Limited. Method and apparatus for high-speed cutting with oxygen. 3,498,848, Cl. 148-009.
Kiefer, Adolph G., to Mc Neil Corporation, mesne. Turbulence-reducing device for swimming pools. 3,498,246, Cl. 114-000.5
Kieper, David L., and Treichel, Stephan S., to General Mills, Inc. Process for the clarification of waste effluents. 3,498,912, Cl. 210-049.
Kihara, Nobutoshi, and Aoki, Takao, to Sony Corporation. Avoidance of resolution degradation due to residual image phenomena in television cameras. 3,499,109, Cl. 178-007.2
Kikuchi, Yoshio, and Naitoh, Yukuo, to Rohm and Haas Company. Process for regenerating manganese zeolite. 3,498,911, Cl. 210-030.
Kilbane, George J., to Minnesota Mining and Manufacturing Company. Apparatus and process for adhesively bonding tubular joints. 3,498,866, Cl. 156-285.
Kilgore, Lawrence H.: *See—*
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Kim, Bernard S., Fetterman, Charles P., and Walker, John Q., to Research Assistants Corporation. Automatic sample introduction system for gas analytical chromatographs. 3,498,107, Cl. 073-023.1
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King, Julius, and Hood, George E., to Burndy Corporation. Method of assembling plastic and metal parts. 3,497,952, Cl. 029-629.
King, Robert W., to Massey-Ferguson Inc. Transmission clutch control apparatus. 3,498,151, Cl. 074-356.
Kingsley, Gordon F., and Cram, Robert D., to High Voltage Engineering Corporation. Self shielded festoon for electron irradiation apparatus employing overlapping rollers having radiation blocking means. 3,499,141, Cl. 250-049.5
Kint, Leonard N., and Hanse, Albert B., to Pettibone Corporation. Hydraulic dislodger for unblocking feed chutes of rock crushers. 3,498,436, Cl. 193-017.
Kirby, John H., III, to Ditch Magnets, Inc. Ditch magnet. 3,498,455, Cl. 209-223.
Kirby, Truman. Optical apparatus for viewing the screen of a television receiver from the rear thereof. 3,498,696, Cl. 350-202.
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Kiss, Geza Hegyaljai: *See—*
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Kita, Yasuo. Axial plunger pump. 3,498,227, Cl. 103-005.
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Minami, Muneyoshi, Maekawa, Haruki, Kubota, Takashi, Tsuda, Yoshizo, Kitamura, Kazuo, Tatsuno, Yoshitaka, Watanabe, Masamoto, and Kawabata, Yasuro 3,498,948.
Kjos, Magne Jarle, to Burroughs Corporation. Coaxial tape storage reel drive module. 3,498,569, Cl. 242-193.
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Kleemann, Alois, to Geigy Chemical Corporation. Process for making certain materials resistant to combustion gas deterioration. 3,498,811, Cl. 106-176.
Klein, Bernard, to Tension Envelope Corporation. Remailable envelope. 3,498,528, Cl. 229-073.
Kletti, Paul F., to Heidelberger Druckmaschinen Aktiengesellschaft. Safety device for machines having oppositely rotating cylinders. 3,498,217, Cl. 101-216.
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Kling, Eugene Marvin, to Du Pont de Nemours, E. I., and Company. Recovery of the monoalkyl ethers of poly (oxyethylene) glycols from solutions of tarry acetylenic polymers in said ethers. 3,499,043, Cl. 260-615.
Klink, Jerome P., Belue, James C., and Sears, James H., to Owens-Corning Fiberglas Corporation. Apparatus for forming, processing and packaging multi-strand roving. 3,498,550, Cl. 242-018.
Klosterman, Clarence J., to Litton Precision Products, Inc. Encoder having pin shaped contact elements. 3,499,134, Cl. 200-166.
Klump, Dieter: *See—*
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Klump, Dieter, and Fechter, Leonhard Emil, to Passavant-Werke. Sewage clarifier system or the like. 3,498,465, Cl. 210-525.
Knorr-Bremse G.m.b.H.: *See—*
Rittler, Eugen, 3,498,680.
Knorr, Gordon Dayton, to Global Marine Inc. Drilling rig floor structure. 3,498,392, Cl. 175-005.
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Kobe Steel Ltd.: *See—*
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Kober, Ehrenfried H., Hammond, Philip D., and Schnabel, Wilhelm J., to Clin Mathieson Chemical Corporation. Toluene diamine recovery process. 3,499,035, Cl. 260-582.
Kober, Ehrenfried H., and Schnabel, Wilhelm J., to Olin Mathieson Chemical Corporation. Toluene diisocyanate process. 3,499,021, Cl. 260-453.
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Koestler, Robert C., to FMC Corporation. Method of producing decorative lines on laminated films. 3,498,863, Cl. 156-204.
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Kohjin Company Limited: *See—*
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Kohlhaas, Wilhelm, and Conrads, Johannes, to Kernforschungsanlage Julich G.m.b.H. Concave grating ultraviolet vacuum spectrometer. 3,498,720, Cl. 356-051.
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Koide, Takeo: *See—*
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Kok, Pieter W., and Angus, William M., to U.S. Philips Corporation, mesne. Floating top X-ray table permitting close proximity between a patient supported thereon and a diaphragm placed therebeneath. 3,499,145, Cl. 250-058.
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Kolibas, James A., Crouser, Darwin S., and Copeland, John S., to Addressograph Multigraph Corporation. Electrostatic imaging. 3,498,712, Cl. 355-057.
Koller, Ernst. Frame profile. 3,498,017, Cl. 052-720.
Konig, Theodor: *See—*
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Kopp, Alfred J.: *See—*
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Kotler, Paul. Ball handling device with vanes for a billiard table. 3,498,611, Cl. 273-011.
Kougel, Jack I., to GTI Corporation. Steel embossing die and methods of making the same. 3,498,158, Cl. 076-107.
Koval, Stephen S., to Ilya Scheinker, Inc. Adjustment means for jogging machine. 3,498,601, Cl. 271-089.
Kowalewski, Casimir K., and Danko, Nicholas S., to Interpace Corporation. Pipe joints with limited extensibility. 3,498,645, Cl. 285-230.
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Kozempel, Michael F.: *See—*
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Kraemer, William C., Jr., and Eckardt, Carl R., to Dow Chemical Company, The, mesne. Chlorinated polyethylene foam. 3,498,934, Cl. 260-002.5
Krafft, Albet: *See—*
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Kraftco Corporation: *See—*
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Krakower, Gerald W., and Diassi, Patrick A., to Squibb, E. R., & Sons, Inc. 9-Chloroprogestational agents. 3,499,081, Cl. 424-241.
Kralik, Richard J., to Hooker Chemical Corporation. Production of rounded ammonium perchlorate crystals. 3,498,759, Cl. 023-302.
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Krallmann, Reinhold, Federkiel, Wilhelm, and Faulhaber, Gerhard, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Coloring or printing cellulosic fibrous material with nonmetallic pigments. 3,498,831, Cl. 117-143.
Kramer, Daniel E., to Kramer Trenton Co. Refrigeration of air conditioning system for installation partly without and partly within an existing building. 3,498,079, Cl. 062-263.
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Kramer, Daniel E., 3,498,079.
Kramm, David E., and Light, James F., to Grace, W. R., & Co. Photoconductive polymers and plate. 3,498,784, Cl. 096-001.5

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Kronogard, Sven-Olof, and Kronogard, Clas-Olof, to Turbokonsult AB. Gas turbine power plant. 3,498,057, Cl. 060-039.16
Krug, Charles C., to Pan-Olympian Corporation. Pull rope friction type exercising device. 3,498,608, Cl. 272-079.
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Kuhle, Engelbert, Klauke, Erich, Grewe, Ferdinand, and Kaspers, Helmut, to Farbenfabriken Bayer Aktiengesellschaft. Fungicidal compounds containing the NSCFCLBr-group. 3,499,030, Cl. 260-551.
Kuhnis, Hans Herbert, Ryf, Hugo, and Denss, Rolf, to Geigy Chemical Corporation. Substituted 1,2,3,6-tetrahydro-4-pyridine acetic acid amides. 3,498,992, Cl. 260-295.
Kuhnis, Hans Herbert, Ryf, Hugo, and Denss, Rolf, to Geigy Chemical Corporation. Certain 1,,3,6-tetrahydro-4- pyridyl ketones. 3,498,994, Cl. 260-297.
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Kulick, Robert A., to Du Kane Corporation. Remote clock system. 3,498,049, Cl. 058-024.
Kumagai, Tom T., to North American Rockwell Corporation. Laser range detector system. 3,498,717, Cl. 356-005.
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Kump, Fred John. Multiple purpose machine tool attachment. 3,498,161, Cl. 082-012.
Kundrach, Steven W., to Warner & Swasey Company, The. Textile apparatus and changeable gear transmission therein. 3,498,149, Cl. 074-325.
Kuo, Chi Sheng, to Chemical Construction Corporation. Apparatus for exothermic catalytic reactions. 3,498,752, Cl. 023-289.
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Kuster, John J., to Johnson & Johnson. Surgical package. 3,498,448, Cl. 206-063.2
Kusuda, Zenji, and Kobashi, Takeji, to Matsushita Electronics Corporation. Defrosting controller for electric refrigerator. 3,498,073, Cl. 062-155.
Kutik, Louis F., and Gronemeyer, Erich W. Applicator. 3,497,900, Cl. 015-104.93
Kyllonen, David M., to Mine Safety Appliances Company. Method for removing NO_2 from waste gases. 3,498,743, Cl. 023-002.
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Laganis, Deno, to Schenectady Chemical, Inc. Dimer fatty acid modified polyester-urethane compositions. 3,498,940, Cl. 260-020.
Lakin, Willis M., to Marlin Toy Products, Inc. Carrousel type motion toy. 3,498,603, Cl. 272-031.
Laliberte, Real, to American Home Products Corporation. 4-Thiazoline-Δ^2,α-acetic acid esters. 3,498,997, Cl. 260-306.7
Lambert, Carolyn C.: *See—*
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Lang, Rene. Process of fabrication of a toy and toy obtained by this process. 3,497,993, Cl. 046-158.
Lang, Walter, Rehbein, Wendelin, and Appel, Hans, to Gebrueder Honsberg. Machine tool for simultaneously treating several workpieces. 3,498,006, Cl. 051-105.
Lange, Gerhard, to Wafios Maschinenfabrik Wagner, Ficker & Schmid G.m.b.H. Method and apparatus for producing a round-link chain. 3,498,050, Cl. 059-029.
Lange, Rolland B., and Dake, George E., Jr., to Anaconda Wire and Cable Company. Wire tensioning apparatus. 3,498,516, Cl. 226-195.
Langevin, George E.: *See—*
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Langis, Andre L., to American Home Products Corporation. 1,3-Disubstituted-Δ^2,1,2,4-triazolin-5-one-4- acetic acids. 3,499,000, Cl. 260-308.
Lapointe, Joseph Andrew, to Domtar Limited. Knife grinder. 3,498,002, Cl. 051-003.
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Larrowe, Ronald A., and Warning, Theodore J., to U.S. Filter Corporation. Flow nozzle assembly for upflow filters. 3,498,462, Cl. 210-289.
Larsen, Orvis V.: *See—*
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Metz, Leendert Theodor, Van Houwelingen, Jan, and De Jong, Hendrik, to Maatschappij voor Electronische Bedrijifsautomatisering Electrofact N.V. Glass electrode. 3,498,901, Cl. 204-195.
Meulemans, Marcel Hendrik, to Centre d'Etude de l'Energie nucleaire, C.E.N. Protective arrangement for the welding field in the case of arc welding. 3,499,137, Cl. 219-072.
Meyer, Albert, to Baldwin, D. H., Company. Electronic organ frequency dividing system employing division by odd numbers. 3,499,090, Cl. 084-001.01
Meyer, Elwyn A., and Brownfield, Charles L., to Emerson Electric Co. Cylindrical ammunition magazine for storing and discharging linked ammunition. 3,498,178, Cl. 089-034.
Meyer, Leonard S. Portable climbing step for climbing trees or poles. 3,498,409, Cl. 182-092.
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Miller, Harold L. Fluid filter. 3,498,461, Cl. 210-253.
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Murakami, Yasufumi, and Nakajima, Kenzo, to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha. Method for bonding paperboards. 3,498,869, Cl. 156-328.

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Nicholson, Carlton T., to Niagara Mohawk Power Corporation. Cable joint having conductive rings for establishing linear longitudinal voltage stresses. 3,499,099, Cl. 174-073.

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Wilson, Bruce N., to Hooker Chemical Corporation. Hydroxyalkylated phenol-sulfur halide resins and polyurethanes containing same. 3,498,936, Cl. 260-002.5

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Wojtanek, Steve W., to Sterling Systems, Ltd. Portable unitary electroplating assembly. 3,498,902, Cl. 204-213.

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Zimmerman, Joyce H. Curler pad. 3,498,301, Cl. 132-043.

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Zisman, William A., and Bernett, Marianne K., to United States of America, Navy. Method of displacing liquid organic films from solid surfaces. 3,498,922, Cl. 252-171.

Zisman, William A., and Bernett, Marianne K., to United States of America, Navy. Surface-active compositions and method for displacing liquid organic films from solid surfaces. 3,498,923, Cl. 252-171.

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Zygiel, Alfred E. Heat transfer device. 3,498,371, Cl. 165-164.

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Bell Aerospace Corp.: *See*—
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Cohen, Jerome M., to The Lubrizol Corp. Basic, sulfurized phenates and salicylates and method for their preparation. Re. 26,811, 3–3–70, Cl. 252—37.2.
Corey, Dwight O., to Pace Corp. Method and apparatus for mixing and blending an explosive from diverse comminuted materials. Re. 26,806, 3–3–70, Cl. 86—1.
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Hagfors, Norman R., to Medtronics, Inc. Implantable electrode. Re. 26,809, 3–3–70, Cl. 128—418.
Lubrizol Corp., The: *See*—
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West, Paul B., and R. J. Savageau, to Maremont Corp. Collers. Re. 26,807, 3–3–70, Cl. 19—.2.
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Barbaresi, Ivo, to Salvatore Ferragamo S.p.A. Heel for lady's shoe. 216,663, 3–3–70, Cl. D2—325.
Barbaresi, Ivo, to Salvatore Ferragamo S.p.A. Heel for lady's shoe. 216,664, 3–3–70, Cl. D2—325.
Barbaresi, Ivo, to Salvatore Ferragamo S.p.A. Heel for lady's shoe. 216,665, 3–3–70, Cl. D2—325.
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Bernstein, Samuel: *See*—
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Brindley, Robert E., to Union Carbide Corp. Flashlight. 216,735, 3–3–70, Cl. D48—24.
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Corn, Theodore A., and R. M. Harlick. Hamburger bun. 216,661, 3–3–70, Cl. D1—24.
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CLASSIFICATION OF PATENTS

ISSUED MARCH 3, 1970

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2	3,497,872	29– 95	3,497,933	52–638	3,498,016	72– 38	3,498,094	86– 1	3,498,176	106–176	3,498,811
3	3,497,873	96	3,497,934	720	3,498,017	87	3,498,095	89– 1	3,498,177		3,498,812
	3,497,874		3,497,935	53– 22	3,498,018	97	3,498,096	34	3,498,178	268	3,498,813
239	3,497,875	157.3	3,497,936	28	3,498,019	234	3,498,097	90– 1.4	3,498,179	307	3,498,814
4–100	3,497,876	159.01	3,497,937	55	3,498,020	237	3,498,098	11.4	3,498,180	108–110	3,498,239
172	3,497,877	182.1	3,498,763	112	3,498,021	238	3,498,099	13	3,498,181	110– 18	3,498,240
206	3,497,878	183	3,498,764	149	3,498,022	335	3,498,100	91– 44	3,498,182	111– 77	3,498,241
5–110	3,497,879		3,498,765	182	3,498,023	470	3,498,102	48	3,498,183	112–224	3,498,242
247	3,497,880	203	3,497,938	55– 33	3,498,024	479	3,498,101	87	3,498,184	252	3,498,243
310	3,497,881		3,497,939		3,498,025	73– 1	3,498,103	121	3,498,185	262	3,498,244
332	3,497,882	208	3,497,940	73	3,498,026	17	3,498,104	129	3,498,186	113–120	3,498,245
354	3,497,883	470.1	3,497,941	197	3,498,027	19	3,498,105	92– 24	3,498,187	114– .5	3,498,246
8– 42	3,498,735	.3	3,497,942	237	3,498,028	23.1	3,498,106	29	3,498,188	66.5	3,498,247
54.2	3,498,736	477	3,497,943	257	3,498,029		3,498,107	98	3,498,189		3,498,248
114.5	3,498,737	494	3,497,944	302	3,498,030	29	3,498,108	155	3,498,190	74	3,498,249
116	3,498,738		3,497,945	368	3,498,031	37.7	3,498,109	95– 1	3,498,191	183	3,498,250
125	3,498,739	512	3,497,946	471	3,498,032	38	3,498,110	10	3,498,192	219	3,498,251
127.6	3,498,740	577	3,497,947	56– 9	3,498,033	53	3,498,111		3,498,193		3,498,252
131	3,498,741	583	3,497,948	19	3,498,034	61.1	3,498,112		3,498,194	115– 18	3,498,253
158	3,497,884	609	3,497,949	23	3,498,035	64.3	3,498,113		3,498,195	116–129	3,498,254
9– 2	3,497,885	622	3,497,950	25.4	3,498,036	67.2	3,498,114	13	3,498,196	132	3,498,255
6	3,497,886	628	3,497,951	210	3,498,037	71.2	3,498,115		3,498,197		3,498,256
	3,497,887	629	3,497,952	57– 7	3,498,038	73	3,498,116	42	3,498,198	117– 1.7	3,498,815
8	3,497,888	30– 28	3,497,956	34	3,498,039	79	3,498,117	58	3,498,199	17	3,498,816
340	3,497,889	32– 10	3,497,953	115	3,498,040	88.5	3,498,118	64	3,498,200	26	3,498,817
10– 86	3,497,890	14	3,497,954	125	3,498,041	100	3,498,119	65	3,498,201	35	3,498,818
12–120.5	3,497,891	22	3,497,955	140	3,498,042	102	3,498,120	85	3,498,202	46	3,498,819
133	3,497,892	33–129	3,497,957		3,498,043	103	3,498,121	89	3,498,203	54	3,498,820
14– 71	3,497,893	133	3,497,958	157	3,498,044	117	3,498,122	90.5	3,498,204	62.1	3,498,821
15– 21	3,497,894	142	3,497,959	58– 7	3,498,045	120	3,498,123	96– 1.5	3,498,784	68.5	3,498,822
	3,497,895	172	3,497,960	16	3,498,046	143	3,498,124	3	3,498,785	71	3,498,823
32	3,497,896	174	3,497,961	21.15	3,498,047	146	3,498,125	48	3,498,786	72	3,498,824
77	3,497,897	220	3,497,962		3,498,048	190	3,498,126	53	3,498,787		3,498,825
98	3,497,898	223	3,497,963	24	3,498,049	204	3,498,127	76	3,498,788		3,498,826
104.3	3,497,899	34– 45	3,497,964	59– 29	3,498,050		3,498,128	84	3,498,789	75	3,498,827
.93	3,497,900	216	3,497,965	93	3,498,051	231	3,498,129	91	3,498,790	126	3,498,828
119	3,497,901	35– 9	3,497,966	60– 13	3,498,052	301	3,498,130		3,498,791	138.5	3,498,829
302	3,497,902	35	3,497,967		3,498,053	304	3,498,131	109	3,498,792	.8	3,498,830
319	3,497,903	48	3,497,968	30	3,498,054	319	3,498,141	98– 37	3,498,205	143	3,498,831
16– 52	3,497,904	66	3,497,969	39.06	3,498,055	355	3,498,132	40	3,498,206	201	3,498,832
87.2	3,497,905		3,497,970	.09	3,498,056	362.3	3,498,133	86	3,498,207	212	3,498,833
169	3,497,906	36– 9	3,497,971	.16	3,498,057	382	3,498,134	99– 17	3,498,793	217	3,498,834
171	3,497,907	72	3,497,972	.28	3,498,058	398	3,498,142		3,498,794	227	3,498,835
	3,497,908	37–141	3,497,973	.74	3,498,059	425.6	3,498,135	48	3,498,795	237	3,498,836
193	3,497,909	38– 77.5	3,497,974	52	3,498,060	426	3,498,136	80	3,498,796	239	3,498,837
18– 1	3,497,910	.82	3,497,975		3,498,061	517	3,498,137	107	3,498,797	118– 6	3,498,257
	3,497,911	.83	3,497,976	64	3,498,062		3,498,138	138	3,498,808	49	3,498,259
2	3,497,912	40– 10	3,497,977	225	3,498,063	519	3,498,139	171	3,498,798	50	3,498,258
.6	3,497,918	32	3,497,978	61– 25	3,498,064	535	3,498,140	194	3,498,799	70	3,498,260
6	3,497,913	106.53	3,497,979	46.5	3,498,065	74– 1	3,498,143	234	3,498,208	234	3,498,262
12	3,497,914	129	3,497,980	63	3,498,066	5	3,498,144	246	3,498,209		3,498,263
14	3,497,915	130	3,497,981	62– 17	3,498,067	.43	3,498,145	357	3,498,210	637	3,498,261
19	3,497,916	312	3,497,982	40	3,498,068	.44	3,498,146	443	3,498,211	119– 4	3,498,264
	3,497,917	42– 25	3,497,983	63	3,498,069	10.45	3,498,147	100– 7	3,498,212	17	3,498,265
43	3,497,919	39.5	3,497,984	64	3,498,070	229	3,498,148	19	3,498,213	29	3,498,266
19– .2	RE.26,807	43– 35	3,497,985	66	3,498,071	325	3,498,149	34	3,498,214	61	3,498,267
65	3,497,920	42.28	3,497,987	118	3,498,072	331	3,498,150	155	3,498,215		3,498,268
129	3,497,921	.5	3,497,986	155	3,498,073	356	3,498,151	101– 93	3,498,216	75	3,498,269
21– 91	3,498,742	43.4	3,497,988	197	3,498,074	409	3,498,152	216	3,498,217	122–406	3,498,270
23– 2	3,498,743	100	3,497,989	209	3,498,075	499	3,498,153	102– 6	3,498,218	123– 13	3,498,271
63	3,498,744	131	3,497,990	244	3,498,076	710.5	3,498,154	8	3,498,219	32	3,498,275
89	3,498,745	44– 68	3,498,766	260	3,498,077	745	3,498,155	35.6	3,498,220		3,498,276
153	3,498,746	46– 2	3,497,991	262	3,498,078	879	3,498,156	43	3,498,221	41.1	3,498,277
	3,498,747	11	3,497,992	263	3,498,079	75– .5	3,498,782	52	3,498,222	.12	3,498,272
200	3,498,748	158	3,497,993	285	3,498,080	60	3,498,783	64	3,498,223	.51	3,498,278
203	3,498,749	233	3,497,994	320	3,498,081	76– 80	3,498,157	67	3,498,224	90	3,498,273
209.4	3,498,750	48– 38	3,498,767	64– 32	3,498,082	107	3,498,158	70.2	3,498,225	119	3,498,274
230	3,498,751	49– 25	3,497,995	65– 3	3,498,770	81– 57	3,498,159	103– 2	3,498,226	122	3,498,279
277	3,498,753	30	3,497,996	12	3,498,771	90	3,498,160	5	3,498,227		3,498,280
285	3,498,754	43	3,497,997	16	3,498,772	82– 12	3,498,161	25	3,498,228	149	3,498,281
	3,498,762	70	3,497,998	30	3,498,773	34	3,498,162	37	3,498,229	198	3,498,282
288	3,498,755	149	3,497,999	31	3,498,774	36	3,498,163	126	3,498,230	125– 15	3,498,283
289	3,498,752	446	3,498,000	33	3,498,775	37	3,498,164		3,498,231	126– 41	3,498,284
	3,498,756	501	3,498,001	59	3,498,776	83– 18	3,498,165		3,498,232	197	3,498,285
293	3,498,757	51– 3	3,498,002	176	3,498,777	23	3,498,166	146	3,498,233	128– 2	3,498,286
296	3,498,758	12	3,498,003	178	3,498,778	71	3,498,167	104– 23	3,498,234	.05	3,498,290
302	3,498,759	99	3,498,004	327	3,498,779	84– 1.01	3,499,090	105– 30	3,498,236	.06	3,498,291
357	3,498,760	101	3,498,005	66– 50	3,498,083	.03	3,499,091	355	3,498,237		3,498,292
359	3,498,761	105	3,498,006	70	3,498,084		3,499,092	366	3,498,238	.1	3,498,287
24– 67.7	3,497,922	109	3,498,007	68– 12	3,498,085	.24	3,499,093	106– 14	3,498,800		3,498,288
81	3,497,923	170	3,498,008	13	3,498,086	.25	3,499,094	39	3,498,801		3,498,289
204	3,497,924	295	3,498,768	18	3,498,087	345	3,498,168		3,498,802	76.5	3,498,293
	3,497,925	298	3,498,769	22	3,498,088	484	3,498,169		3,498,803	185	3,498,294
205.15	3,497,926	393	3,498,009	139	3,498,089	85– 13	3,498,170	49	3,498,804	272	3,498,295
28– 32	3,497,927	395	3,498,010	207	3,498,090		3,498,171	50	3,498,805	284	3,498,296
29– 6.1	3,497,928	52– 31	3,498,011		3,498,091	28	3,498,172	52	3,498,806	418	RE.26,809
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NOTICES

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CLARENCE A. KALK,
Acting Assistant Commissioner for Administration.

Feb. 9, 1970.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 268,217 (AO), American Optical Company, Ophthalmic mountings and parts therefor adapted to support and hold lenses before the eye; eye protectors for protecting the eye from glare, dust, and flying particles; ophthalmic lenses and blanks therefor, magnifying lenses, lenses for testing the errors of the eye, condensing lenses, spherical lenses, cylindrical lenses, toric lenses, compound lenses, instruments for measuring the refractive errors of the eye, instruments for measuring the powers of lenses, instruments for observing the refractive conditions of the eye, instruments for testing the refractive conditions of the eye, instruments for testing the refractive conditions of lenses, magnifiers, instruments provided with lenses for testing and examining the eye and other objects, instruments for measuring the physical dimensions and location of the eye, instruments for measuring the physical dimensions of lenses, instruments for reflecting a beam of light into the eye or on an object being examined, and parts for the aforesaid instruments; **Reg. No. 268,220**, same; **Reg. No. 435,140**, same, Cases for spectacles manufactured from metals, principally steel and aluminum, animal and vegetable fabrics, hides, skins and leathers, wood and plastics, sold empty in the trade; **Reg. No. 439,793**, same, Optical lens machine tools—namely, lens drills, lens cutters, edging machines, surfacing machines, lap truing machines, and parts for the aforesaid machines; **Reg. No. 440,893** (AO DESIGN), same, **Natural and** manufactured corundum and glass polishing compounds; **Reg. No. 441,000** (AO), same, Protective clothing—namely, men's and women's one-piece suits, coats, pants, leggings, spats, overalls, aprons, sleeves, gloves, mittins, handpads and finger guards of leather, asbestos and treated fabrics; **Reg. No. 443,356**, same, Diagnostic instruments, consisting of adaptometers, laryngoscopes, ophthalmoscopes, otoscopes, retinoscopes, tongue depressors and transilluminators used in the practice of ophthalmology, op-

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] ---------- 16,963
Date of oldest new application ---------- January 28, 1969
Date of oldest amended application (filing date) ---------- September 8, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-22-69	9-8-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-25-69	10-20-66
(III) C. R. FOWLER, Classes 19, 21, 23, 26, 31, 34, 35, 36	6-26-69	2-17-67
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1-28-69	10-24-66
Renewals (All Classes)	12-2-69	----------
Sec. 12(c) Publications (All Classes)	12-10-69	----------

Applications filed during the month of January 1970—2,633

Registrations Issued ---------- 360—No. 886,954 to No. 887,313
Renewals Issued ---------- 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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tometry and medicine and surgery, generally; for tonometers (measurement of intraocular pressure) color perception, malingering (detection of simulated blindness) and muscle tests; for cataract and ophthalmic lamps used in the practice of ophthalmology and optometery; for artificial eyes and respirators; **Reg. No. 444,749,** same, Group A: Ballistic scientific and ballistic laboratory apparatus; bibliofilm projectors, slide, film, and opaque projectors; optical instruments for examining and counting particles in blood, urine, milk, and mold; camera lucidas; colorimeter; optical projection profile comparators; microscope illuminators; finger print magnifiers; goniometers; haemacytometers; hemoglobinometers; mechanical hardness testers; mechanical and optical micrometers; microscope, telescope, condensing, photographic, and projection lenses; microtomes; microtome knives; spectrometers; refractometers; microscopes; photomicrographic apparatus and lenses; light polarizing apparatus; roof, porro, amici, head, constant deviation, and special bore sighting optical prisms; spectrometers; laboratory tissue freezers; Group B: Ophthalmic absorptive lenses; ophthalmic aphakic lenses; lenses for use in determining size errors of the eyes and for the correction of such size errors; hardened ophthalmic lenses; lenses for protecting the eyes; lenses and transparent plates for welding helmets and shields; lens centering instruments; and Group C: Instruments for photographing eye movement; **Reg. No. 631,105** (AO AND DESIGN), same, Abrasive and polishing materials including wax for polishers and pitch blocking materials used for blocking lenses during polishing; **Reg. No. 631,417,** same, Refracting chairs; stools; instrument stands; tables; cabinets; artificial eyes and orbital implants; sterile fluid pumps; centrifuges; instruments for exercising and/or treating the eyes, accessories and parts therefor; diagnostic instruments including laryngoscopes, pharyngoscopes, ophthalmoscopes, otoscopes, retinoscopes, tongue depressors, specula, illuminators, transilluminators and the like used in the practice of ophthalmology, optometry and medicine and surgery generally, the lamps, accessories and parts therefor; tonometers (measurement of intraocular pressure); malingering (detection of simulated blindness) and muscle tests; color perception test; test charts; television trainers; bar separators; tissue freezers; respirators and parts therefor; **Reg. No. 631,699,** same, Optical lens machinery—namely, lens drills, broaching machines, lens chillers, lens markers, lens blockers, lens edgers, lens surfacers, lens polishers, lens cutters, lap truing machines, soldering machines, accessories and parts for the aforesaid machines and devices; small hand tools generally used in the optical and ophthalmic trades, such as pliers, screw drivers, mandrels, frame stretchers; auxiliary heaters for frame stretchers, protractors, and the like; benches generally used with or for such machines; **Reg. No. 631,820,** same, Protective clothing such as men's and women's one-piece suits, coats, pants, leggings, spats, sweatbands, hats, hoods, overalls, aprons, sleeves, gloves, mittens, hand pads, and finger guards; **Reg. No. 632,197,** same, Ophthalmic mountings, spectacle frames, accessories and parts therefor; ophthalmic and optical lenses of all kinds generally and the blanks therefor; objectives; lens systems; corrector plates; occluders; prisms; mirrors, reflectors, and filters associated with or forming a part of optical devices; magnifiers; sunglasses and parts therefor; head and eye protective devices including helmets, shields, goggles, and eye protectors, and plates, lenses, and parts for said helmets, shields, goggles and eye protectors; projectors, parts and accessories therefor; cameras, parts and accessories therefor; equipment and devices for editing motion picture film, accessories and parts therefor; cases for spectacles, lenses and various instruments; drop ball testers; gauges; face and spectacle frame measuring devices and like devices used in prescribing and/or fitting spectacle frames to the facial requirements of wearers, such as nose gauges, face measures, temple measures and the like; eye testing, measuring and observing devices, accessories and parts therefor; lens testing, lens centering, lens inspecting and lens measuring devices, accessories and parts therefor; trial lens sets, the cases and lenses therefor; instruments provided with lenses for testing and examining the eye and other objects; ballistic scientific and ballistic laboratory apparatus, accessories and parts therefor; refracting instruments and parts therefor; tangent screens; refractometers and parts therefor; microfilm readers, accessories and parts therefor; illuminators, instruments for measuring optical properties, accessories and parts therefor; microscopes, accessories and parts therefor; devices such as periscopes; stereoscopes; loupes, colony counters; camera lucidas; colorimeters; profile comparators; microscope illuminators; fingerprint magnifiers; goniometers; haemacytometers; hemaglobinometers; hardness testers; micrometers; microtomes; microtome knives; photomicrographic apparatus; light polarizing apparatus and devices; spectrometers; optical instruments for examining and counting particles in blood, urine, milk and mold; perimeters; polariscopes; microscopic and drawing apparatus; microscope object slides; microscope cover glasses; microscope slide receptacles and holders; laboratory incubators; balances; helixometers; nephelometers; range finding apparatus; spectrographs; spectroscopes; spectrophotometers; surveying levels; telescopes; orthoptic devices; metallographs; and accessories and parts for such devices; **Reg. No. 633,645,** same, Lens hardening and heat treating furnaces; **Reg. No. 855,168,** same, Apparatus for diagnostic and treating purposes and components thereof—namely, cardiac monitors; defibrillators; heart-beat pacing apparatuses; alarm and recorder logic units; data storage systems; oscilloscopes; chart recorders; heart rate meters; electrodes; cardiac resuscitation instruments; diagnostic and monitoring systems; oximeters; fluid pumps, fluid pump drive modules; depolarization instruments; heart-lung machines, including components thereof and accessories therefor; oxygen exchange equipment, and accessories therefor, including size conversion kits, discs and spacers, leveling devices, catheters, filters, stopcocks, and clamps; heat exchangers; filter and bubble traps; reservoirs, crank handles; pressure gauges, hypothermia apparatuses; valves; bag masks; autoclaving boxes; cannulae and cannula sets; connectors, and tubing, **filed** Nov. 5, 1969, D.C., S.D.N.Y., Doc. 69–C–4828, *American Optical Corporation* v. *Alcebiades M. de Oliverira, doing business as A.O. International Co.*

Reg. No. 268,220. (See Reg. No. 268,217.)

Reg. No. 435,140. (See Reg. No. 268,217.)

Reg. No. 439,793. (See Reg. No. 268,217.)

Reg. No. 440,893. (See Reg. No. 268,217.)

Reg. No. 441,000. (See Reg. No. 268,217.)

Reg. No. 443,356. (See Reg. No. 268,217.)

Reg. No. 444,749. (See Reg. No. 268,217.)

Reg. No. 631,105. (See Reg. No. 268,217.)

Reg. No. 631,417. (See Reg. No. 268,217.)

Reg. No. 631,699. (See Reg. No. 268,217.)

Reg. No. 631,820. (See Reg. No. 268,217.)

Reg. No. 632,197. (See Reg. No. 268,217.)

Reg. No. 633,645. (See Reg. No. 268,217.)

Reg. No. 855,168. (See Reg. No. 268,217.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 275,709. Tissmetal Lionel-Dupont, Lyon (Rhone), France. Filed July 10, 1967.

SYNERAVIA

Owner of French Reg. No. 34,769, dated Mar. 11, 1965 (Lyon); Natl. Inst. No. 244,276.

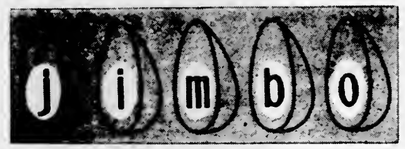
Class 19—Vehicles

For Electric Window Screen Wipers; Register Boxes for Window Screen Wipers; Torque Converters for Window Screen Wipers; Flexible Wiper Transmissions; and Window Screen Wiper Motors (Int. Cl. 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Precision Electro-Mechanisms Used in the Aerospace Industry, Nuclear Industry, Marine and Astronomy Fields—Namely, Electrical Jacks, Rotary Actuators, Reducer Motors, Projector Lights for Aircraft, Namely, Landing Lights, Landing and Search Lights, Air Refueling Lights, Fixed Lights, and Attached Lights Adjustable on the Ground and During Flight; and De-Icing Timers (Int. Cls. 7, 9, and 11).

SN 281,413. Compagnie des Restaurants Jacques Borel, Societe Anonyme, Paris, France. Filed Sept. 29, 1967.



Owner of French Reg. No. 721,650, dated Jan. 6, 1967.

Class 46—Foods and Ingredients of Foods

For Fresh, Canned and Frozen Meat, Fish, Poultry and Game; Fresh Eggs; Fresh, Canned, and Powdered Milk; Butter, Cheese, Sour Milk, Yogurt, Breakfast and Cooked Cereals, Candies, and Meatless Food Sauces (Int. Cls. 29 and 30).

Class 100—Miscellaneous

For Cafe and Restaurant Services, Food Catering Services, Hotel and Motel Services, and Camping Services (Int. Cl. 42).

SN 295,060. Sorensen-Christian Industries, Inc., Angier, N.C. Filed Apr. 5, 1968



Class 21—Electrical Apparatus, Machines, and Supplies

For Electrically Operated Basketball Foul Marker Indicators and Electrically Operated Athletic Contest Scoreboards (Int. Cl. 9).

First use at least as early as October 1965.

Class 22—Games, Toys, and Sporting Goods

For Basketball Rebounding Practice Equipment and Ball Striking Practice Equipment of the Tethered Ball Type (Int. Cl. 28).

First use at least as early as February 1966.

SN 298,720. Florida Cypress Gardens, Inc., Cypress Gardens, Fla. Filed May 21, 1968.



Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Entertainment and Recreation Services—Namely, Providing Botanical Garden Displays, Skiing Exhibitions, and Boat Rides (Int. Cl. 41).

First use Apr. 5, 1968; 1936 in another form.

SN 303,343. Recorded Sales Visual Presentation, Inc., d.b.a. RSVP Inc., Indianapolis, Ind. Filed July 22, 1968.

SURROUND SALES SYSTEM

Applicant disclaims the words "Sales System" apart from the mark as shown.

Class 26—Measuring and Scientific Appliances

For Audio-Visual Systems and Parts Thereof—Namely, Photographic Projection Apparatus, Screens, and Controls (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorder-Reproducer Units (Int. Cl. 9).

First use Mar. 18, 1968.

SN 303,665. Eastern Pacific, Inc., Kamuela, Hawaii. Filed July 26, 1968.,



MAUNA KEA

The drawing is lined for the color orange, but color is not claimed as an integral feature of the mark. "Mauna Kea" is the Hawaiian name of one of the major mountains on the island of Hawaii and means "white mountain."

Class 100—Miscellaneous

For Hotel and Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Providing Recreational Facilities for Others (Int. Cl. 41).

First use September 1964.

SN 307,436. Dover Corporation, Elk Grove Village, Ill. Filed Sept. 16, 1968.

GROEN

Class 2—Receptacles

For Tanks for Processing Food Service, Industrial and Chemical Materials (Int. Cl. 6).
First use in 1915.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Mixing Kettles and Kettle Basket Inserts for Processing Food Service, Industrial and Chemical Materials, Kettle Drain Valves, Flush Dump Valves, Kettle Cover Actuators for Opening and Closing Covers (Int. Cl. 6).
First use 1948.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sanitary-Type Agitators for Mixing Kettles (Int. Cl. 7).
First use 1947.

Class 31—Filters and Refrigerators

For Fluid Filters for Food Service Materials (Int. Cl. 11).
First use 1953.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Heat Exchanger Jacketed Stationary, Rotatable or Tiltable Kettles, Pans, Tanks, Urns, Brewers, Cookers, Mixers, Blenders, Evaporators and Concentrators for Processing Food Service, Industrial and Chemical Materials; Electrically Heated Braising Pans for Commercial and Institutional Use (Int. Cl. 11).
First use in 1915.

SN 308,801. National Forge Company, Irvine, Pa. Filed Oct. 3, 1968.

NF

Owner of Reg. Nos. 410,471 and 793,291.

Class 14—Metals and Metal Castings and Forgings

For Steel and Alloy Steel Products Made With Vacuum Degassed Steel—Namely, Flat Die Hammered, and Pressed, Steel Forgings; Heavy Duty Steel Forgings, Carbon Forgings, and Alloy Forgings; Smooth Forgings, Hollow Bored Forgings, Rough Forgings, and Partly Finished Machined Forgings; Crankshaft Forgings, and Drop Forgings; Iron and Steel Ingots and Billets; Castings and Partly Machine Finished Castings (Int. Cl. 6).
First use on or about Mar. 3, 1963.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Finish Machined and Assembled Components—Namely, Compressor Spindles; Crankshafts; Steel Mill Rolls; Fluid End Pump Forgings; Herringbone Shaft Pinions, and Cylinder Forgings (Int. Cl. 7).
First use on or about June 7, 1962.

SN 309,415. Albertson's, Inc., Boise, Idaho. Filed Oct. 11, 1968.

ALBERTSONS

Class 6—Chemicals and Chemical Compositions

For Household Ammonia, Bleach, and Fabric Softener (Int. Cl. 3).
First use Feb. 1, 1967.

Class 46—Foods and Ingredients of Foods

For Bread, Peanut Butter, Canned Fruits, Canned Vegetables, Coffee, Tea, Flour, Biscuit Mix, Pancake Mix, Waffle Mix, Potato Chips, Sandwich Spread, Margarine, Vegetable Oil Shortening, Pepper, Butter, Cheese, Fresh Eggs, Whipped Cream Topping, Ice Cream, Pancake Syrup, Canned Tuna Fish, Bacon, Lunch Meat, and Fresh and Frozen Poultry (Int. Cls. 29 and 30).
First use Aug. 23, 1960.

Class 52—Detergents and Soaps

For Laundry Detergent and Toilet Bar Soap (Int. Cl. 3).
First use Dec. 16, 1957.

SN 309,440. Cut & Curl International, Inc., Great Neck, N.Y. Filed Oct. 11, 1968.

Sugar AND Spice

Owner of Reg. No. 395,614.

Class 51—Cosmetics and Toilet Preparations

For Permanent Wave Lotion, Instant Neutralizer, Hair Conditioner and Hair Cutting Lotion (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use June 28, 1968.

SN 310,273. Concord Electronics Corporation, Los Angeles, Calif. Filed Oct. 23, 1968.

CONCORD

Owner of Reg. No. 740,536.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Transmitters and Transceivers, Microphones, Electrical Facsimile Machines, Closed Circuit Television Systems, Public Address Systems, Wireless Intercommunication Systems, Components for Said Systems, and Video Tape Recorders (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

First use on or about Aug. 26, 1960.

SN 310,815. National Union Electric Corporation, Bloomington, Ill. Filed Oct. 30, 1968.

Σ

Class 2—Receptacles

For Vacuum Cleaner Dust Bags of the Disposable Type (Int. Cl. 21).
First use August 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Vacuum Cleaners and Parts Thereof (Int. Cl. 9).
First use July 1958.

SN 311,232. Bristol-Myers Company, New York, N.Y. Filed Nov. 4, 1968.

MOISTURUX

Owner of Reg. No. 877,914.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Cream for the Treatment of Acne, Dandruff, and Itchy Scaling Skin (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Lotion for Hands and Face (Int. Cl. 3).

First use Sept. 6, 1968.

SN 311,713. Bristol-Myers Company, New York, N.Y. Filed Nov. 4, 1968.

MOISTURIS

Owner of Reg. No. 877,915.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Cream for the Treatment of Acne, Dandruff, and Itchy Scaling Skin (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Lotion for Hands and Face (Int. Cl. 3).

First use Sept. 6, 1968.

SN 312,017. Bristol-Myers Company, New York, N.Y. Filed Nov. 13, 1968.

MOISTURY

Owner of Reg. No. 877,540.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Cream for the Treatment of Acne, Dandruff, and Itchy Scaling Skin (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Lotion for Hands and Face (Int. Cl. 3).

First use Sept. 6, 1968.

SN 314,382. Information Technology, Inc., Pennsauken, N.J. Filed Dec. 13, 1968.

ITI

Class 21—Electrical Apparatus, Machines, and Supplies

For High Voltage Power Supplies, and Audio Amplifiers (Int. Cl. 9).
First use Nov. 18, 1966.

Class 26—Measuring and Scientific Appliances

For Analog Computers, Computer Input Devices, Digital Read Out Systems for Product Test and Analysis Equipment, Fluidic Logic Control Systems, and Optical Scanners (Int. Cl. 9).
First use Nov. 18, 1966.

SN 315,176. Zale Corporation, Dallas, Tex. Filed Dec. 26, 1968.

Sierra

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Billfolds and Purses (Int. Cl. 18).

Class 28—Jewelry and Precious-Metal Ware

For Identification Bracelets and Charm Bracelets (Int. Cl. 14).

First use Apr. 2, 1967.

SN 315,482. Hydraulic Products Company, Inc., Lubbock, Tex. Filed Dec. 31, 1968.

HPC

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Steel Pipes (Int. Cl. 6).

Class 14—Metals and Metal Castings and Forgings

For Castings for Submersible Pumps (Int. Cl. 6).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Switches for Submersible Pumps (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Submersible Pumps and Turbine Pumps (Int. Cl. 7).

First use on or about Apr. 1, 1956.

SN 316,162. Rex Asbestwerke, Graf von Rex KG., Schwaebisch Hall, Germany. Filed Jan. 13, 1969.

TILON

Owner of German Reg. No. 772,411, dated Oct. 19, 1957.

Class 7—Cordage

For Asbestos Cards, Twisted and Braided Ropes of Asbestos (Int. Cl. 17).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Asbestos Fabrics (Int. Cl. 17).

SN 316,838. Simonsen Metal Products Corporation, Chicago, Ill. Filed Jan. 16, 1969.

SIMONSEN

Class 2—Receptacles

For Tool Boxes, Tote Boxes, and Parts Bins (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Tote Trays (Int. Cl. 6).

Class 22—Games, Toys, and Sporting Goods

For Tackle Boxes (Int. Cl. 28).

Class 32—Furniture and Upholstery

For Mechanics' Chests, Machinists' Chests, Parts Cabinets, Mobile Tool Cabinets, and Stands for Chests (Int. Cl. 20).

First use Aug. 12, 1968.

SN 318,280. Adidas-Sportschuhfabriken Adi Dassler K.G., Herzogenaurach, near Nuremberg, Germany. Filed Feb. 4, 1969.

adidas

Owner of U.S. Reg. Nos. 631,812, 738,673, and others.

Class 22—Games, Toys, and Sporting Goods

For Sport Shoes—Namely, Track and Field Shoes, Bowling, Baseball, Boxing, Football, Skating, Golf, and Soccer Shoes (Int. Cl. 25).

Class 39—Clothing

For Sportswear—Namely, Suits, Shorts, Pants, Tights, Shirts, Gloves, and the Like; Jerseys; Socks; Sport Shoes—Namely, Track and Field Training Shoes, Basketball Shoes, and Tennis Shoes (Int. Cl. 25).

First use February 1967; in commerce Aug. 3, 1967.

SN 318,622. Block China Company, New York, N.Y. Filed Feb. 7, 1969.

HEARTHSTONE

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cast Iron Cookware (Int. Cl. 21).

Class 30—Crockery, Earthenware, and Porcelain

For China Dinnerware (Int. Cl. 21).

Class 33—Glassware

For Table Glassware (Int. Cl. 21).

First use Dec. 30, 1968.

SN 318,689. Viviane Woodard Corporation, d.b.a. Woodard for Men, Panorama City, Calif. Filed Feb. 7, 1969.

DOMINO

Owner of Reg. No. 871,448.

Class 51—Cosmetics and Toilet Preparations

For Cosmetics for Men—Namely, Skin Conditioner, After Shave Lotion, Cologne, and Talcum Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap and Shower Gel (Int. Cl. 3).

First use June 10, 1968.

SN 318,942. Art Metal-Knoll Corporation, New York, N.Y. Filed Feb. 12, 1969.



Owner of Reg. Nos. 845,444 and 856,633.

Class 100—Miscellaneous

For Architectural and Engineering Planning and Design of Building Interiors and Adjacent Areas (Int. Cl. 42).

Class 103—Construction and Repair

For Interior Decorating (Int. Cl. 37).

First use July 8, 1968.

SN 321,431. Booth, Inc., Carrollton, Tex. Filed Mar. 12, 1969.

SATIN ICE

Class 31—Filters and Refrigerators

For Refrigerated Carbonated Beverage Dispensing Machines (Int. Cl. 11).

Class 45—Soft Drinks and Carbonated Waters

For Syrup for Use in Such Machines (Int. Cl. 32).

First use Feb. 20, 1969.

SN 323,221. American Hospital Supply Corporation, Evanston, Ill. Filed Apr. 1, 1969.

OLYMPIA

Class 2—Receptacles

For Plastic Dinnerware—Namely, Plats, Cups, Saucers, and Trays (Int. Cl. 21).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Plastic Flatware—Namely, Knives, Forks, and Spoons (Int. Cl. 8).

First use on or before Nov. 12, 1968.

SN 323,506. Proctor-Silex Incorporated, Philadelphia, Pa. Filed Apr. 3, 1969.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Irons, Toasters, Coffeemakers, Juicers, Drink Mixers, Ice Crushers, and Blenders (Int. Cls. 7 and 11).

Class 24—Laundry Appliances and Machines

For Ironing Tables (Int. Cl. 21).

First use in or about May 1963.

SN 329,028. Gem, Incorporated, Byhalia, Miss. Filed June 4, 1969.

COTTON MAID

Owner of Reg. No. 607,160.

Class 4—Abrasives and Polishing Materials

For Combination Metal Cleaner and Polish (Int. Cl. 3).

Class 6—Chemicals and Chemical Compositions

For Disinfectant-Deodorant, Room Deodorant, Residual Insecticide, Combination Fly and Mosquito Spray, Crawling Insect Killer, and Chemical Dust Mop Treatment To Increase Dust Absorbing Properties (Int. Cls. 1 and 5).

Class 52—Detergents and Soaps

For Glass Cleaner and Chalkboard Cleaner (Int. Cl. 3).

First use May 19, 1969.

SN 329,029. Gem, Incorporated, Byhalia, Miss. Filed June 4, 1969.

AEROCOS

Class 4—Abrasives and Polishing Materials

For Combination Metal Cleaners and Polishers, and Spray Wax for Furniture, Appliances, and Automobiles (Int. Cl. 3).
First use July 30, 1954.

Class 6—Chemicals and Chemical Compositions

For Room Deodorant, Disinfectant Deodorant, Residual Insecticides, and Chemical Treatment for Dust Mops and Dust Cloths Which Increases Dust Absorbing Properties (Int. Cls. 1 and 4).
First use July 30, 1954.

Class 15—Oils and Greases

For Silicone Lubricants (Int. Cl. 4).
First use Dec. 15, 1961.

Class 52—Detergents and Soaps

For Chalk Board Cleaner, Glass Cleaner, Utility Cleaner, and Degreasers for Household Use and Industrial Use (Int. Cl. 3).
First use July 30, 1954.

SN 330,232. Burwood Products Company, Chicago, Ill. Filed June 17, 1969.

TRIESTE

Class 27—Horological Instruments

For Wall Clocks (Int. Cl. 14).

Class 32—Furniture and Upholstery

For Wall Mirrors, Console Tables, Room Dividers, Wall Lavabos, and Decorative Urns (Int. Cl. 20).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Decorative Candlesticks (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Wall Plaques and Sconces (Int. Cls. 20 and 21).

First use prior to Feb. 12, 1962.

SN 330,987. Purex Corporation, Ltd., Lakewood, Calif. Filed June 26, 1969.

PUREX

Owner of Reg. Nos. 211,650, 855,083, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Differential Current Actuated Circuit Breakers and Underwater Electric Lights (Int. Cls. 9 and 11).
First use March 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electric Motor Driven Fluid Pumps (Int. Cl. 7).
First use March 1968.

Class 31—Filters and Refrigerators

For Swimming Pool Equipment—Namely, Filters and Separation Tanks (Int. Cl. 11).
First use March 1968.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hot Water Boilers (Int. Cl. 11).
First use March 1968.

Class 50—Merchandise Not Otherwise Classified

For Swimming Pool Maintenance Kits, Containing Chlorine Concentrate, Dry Acid, Water Testing Preparations, Thermometers, Rakes, Wall Brushes, Pole Adapters, Hose and Pole Hangers, Maintenance Booklets, and Water Balance Calculators (Int. Cl. 20).
First use December 1968.

SN 331,096. G. C. Murphy Company, McKeesport, Pa. Filed June 27, 1969.

CAROLE JOANNE

Owner of Reg. Nos. 713,902, 763,174, and 781,177.

Class 39—Clothing

For Women's and Misses' Millinery—Namely, Veil Hats, Headwear Scarves, Gloves, Slacks, Knee Pants, Capris, and Shorts (Int. Cl. 25).
First use July 10, 1957.

Class 51—Cosmetics and Toilet Preparations

For Bath Oil, Hand Creams, Hair Spray, Dusting Powder, Facial Powder and Make-Up, Eye Shadow, Mascara, Eyebrow Pencil, Lipstick, Nail Polish and Polish Remover, Liquid Eyeliner, and Cosmetic Eyelash Adhesive (Int. Cl. 3).
First use Aug. 1, 1966.

SN 331,264. Clairol Incorporated, New York, N.Y. Filed June 30, 1969.

DOG GONE EASY

Class 51—Cosmetics and Toilet Preparations

For Preparations for Animal Grooming—Namely, Fur Conditioner, Creme Rinse, and Bubble Bath (Int. Cl. 3).

Class 52—Detergents and Soaps

For Dry Hair Shampoo, Liquid Hair Shampoo and Soap (Int. Cl. 3).

First use Mar. 17, 1969.

SN 331,265. Clairol Incorporated, New York, N.Y. Filed June 30, 1969.

DOG ON EASY

Class 51—Cosmetics and Toilet Preparations

For Preparations for Animal Grooming—Namely Fur Conditioner, Creme Rinse, and Bubble Bath (Int. Cl. 3).

Class 52—Detergents and Soaps

For Dry Hair Shampoo, Liquid Hair Shampoo and Soap (Int. Cl. 3).

First use Mar. 17, 1969.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 303,447. The Richardson Company, Melrose Park, Ill. Filed July 23, 1968.

NAS

For Synthetic Resins (Int. Cl. 1).
First use Feb. 21, 1967.

SN 318,790. J. H. Lambright, d.b.a. Lambright Seed Farm, Slaton, Tex. Filed Feb. 10, 1969.



The drawing is lined for the color green.
For Cotton Seed for Planting (Int. Cl. 31).
First use Jan. 17, 1969.

SN 320,787. Ashland Oil & Refining Company, Ashland, Ky. Filed Mar. 5, 1969.

WYO-JEL

For Bentonite for Suspension and Bonding of Minerals in Aqueous Solution and for Water Impedance Work (Int. Cl. 1).
First use 1930.

SN 324,848. Sullivan's Pet Supply Co., Inc., d.b.a. Pet Dealers Supply Co., City of Commerce, Calif. Filed Apr. 17, 1969.

SANISORB

For Absorbent Toilet Material for Cats and Other Pets (Int. Cl. 31).
First use Jan. 1, 1950.

SN 335,726. Morton International, Inc., Chicago, Ill. Filed Aug. 20, 1969.

MOR-FLO

For Polymer Latex (Int. Cl. 17).
First use on or about July 30, 1969.

Class 2—Receptades

SN 321,962. Mobile Metal Products Inc., Gardena, Calif. Filed Mar. 17, 1969.

MOBILAIRE

For Insulated Container for Ice (Int. Cl. 21).
First use June 20, 1960.

SN 337,398. Bennie L. Berg, Madison, Wis. Filed Sept. 9, 1969.

LITTER-CHEET

For Trash Containers for Automobiles (Int. Cl. 20).
First use Oct. 11, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 300,849. Superior Pet Products, Inc., Curwensville, Pa. Filed June 19, 1968.



The drawing is lined for the color grey, but no claim is made as to color.
For Flavored Beefhide Dog Chews (Int. Cl. 18).
First use Nov. 8, 1965.

SN 306,677. Michael C. Moore, Evergreen, Colo. Filed Sept. 6, 1968.



For Back Pack Type Infant Carrier (Int. Cl. 18).
First use Aug. 19, 1968.

SN 323,141. Sternco Industries, Inc., Harrison, N.J. Filed Mar. 28, 1969.

PERMALIFE

For Wooden Chewing Sticks for Animal Pets (Int. Cl. 18).
First use Dec. 18, 1968.

SN 325,880. Lark Luggage Corp., New York, N.Y. Filed Apr. 29, 1969.

THE VALMATIC

For Luggage (Int. Cl. 18).
First use Apr. 12, 1969.

SN 326,385. Lark Luggage Corp., New York, N.Y. Filed May 5, 1969.

THE CHARGER

For Luggage (Int. Cl. 18).
First use Apr. 12, 1969.

SN 326,906. Reliable Luggage, Inc., West Pittsburg, Pa. Filed May 9, 1969.

EXPEDITORI

For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).
First use Mar. 12, 1969.

SN 329,891. Reliable Luggage, Inc., West Pittsburg, Pa. Filed June 12, 1969.

MONTEGO

For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).
First use Apr. 2, 1969.

Class 4—Abrasives and Polishing Materials

SN 333,603. James H. Rhodes & Company, Chicago, Ill. Filed July 25, 1969.

GLASSITE

For Glass Polishing Powder (Int. Cl. 3).
First use at least as early as Oct. 29, 1941.

Class 5—Adhesives

SN 323,745. Utilities Research Corporation, Conshohocken, Pa. Filed Apr. 4, 1969.

ADTAR

For Adhesive for Plastic and Metal Surfaces (Int. Cl. 1).
First use Mar. 3, 1969.

SN 328,523. Atlantic Gummed Paper Corporation, Brooklyn, N.Y. Filed May 28, 1969.

SNA-3

For Reinforced Sealing Tapes (Int. Cl. 17).
First use April 1966.

Class 6—Chemicals and Chemical Compositions

SN 298,244. The Promaco Corporation, Miami, Fla. Filed May 15, 1968.



For Air-Entrained Agent for Concrete, Curing and Hardening Compounds for Concrete, Pigments, Accelerators, Plasticizers, and Waterproofing Compositions (Int. Cls. 1 and 2).
First use in or about February 1967.

SN 303,634. Transene Company, Incorporated, Rowley, Mass. Filed July 25, 1968.

RTM

For Chemical Liquid Solution Used in the Room Temperature Nickel Metallizing Process for Alumina Ceramics and Other Polymeric Materials (Int. Cl. 1).
First use Dec. 5, 1967.

SN 304,313. Desert Minerals, Inc., Los Angeles, Calif. Filed Aug. 5, 1968.

CYCLO-SORB

For Processed Powdered Non-Metallic Mineral Used as a Filler, Pigment or Adsorbent for Industrial Applications Such as in Paper, Rubber, Plastics, Paint, Printing Ink, Ceramics, Cosmetics, Pharmaceuticals, and Adhesives (Int. Cl. 1).
First use July 6, 1968.

SN 307,964. Ashburn Chemical Company, Inc., Bellaire, Tex. Filed Sept. 23, 1968.

WRINKLES AWAY

For Household Liquid Chemical Preparation for Imparting Wrinkle-Free Characteristics to Clothing and Garments (Int. Cl. 3).
First use January 1968.

SN 312,428. Candle-Lite, Inc., Cincinnati, Ohio. Filed Nov. 18, 1968.

BUG-A-BOO

For Citronella Candles (Int. Cl. 5).
First use Oct. 17, 1968.

SN 313,570. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 4, 1968.

ASTRAGAL

Owner of German Reg. No. 712,362, dated Feb. 15, 1958.
For Leveling Agents for Use in Dyeing of Acrylic Fibers (Int. Cl. 2).

SN 316,739. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING Z-6040

Owner of Reg. Nos. 576,946 and 577,889.
For Glycidoxy-Propyl Trimethoxy Silane (Int. Cl. 1).
First use Mar. 12, 1962.

SN 316,740. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING Z6030

Owner of Reg. Nos. 576,946 and 577,889.
For Methacrylate-Functional Silane Monomer (Int. Cl. 1).
First use Dec. 12, 1961.

SN 316,741. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING Z-6020

Owner of Reg. Nos. 576,946 and 577,889.
For Water Soluble Amino-Functional Silane (Int. Cl. 1).
First use Aug. 25, 1958.

SN 320,262. Gulf Oil Corporation, Pittsburgh, Pa. Filed Feb. 27, 1969.

Gulf

The drawing is lined for the colors orange and blue. Owner of Reg. Nos. 614,687, 833,540, and others.
For Herbicides and Emulsifiable Oils Used as Herbicidal Spray Additives (Int. Cl. 5).
First use at least as early as Apr. 10, 1967.

SN 323,978. Western Litho Plate & Supply Co., St. Louis, Mo. Filed Apr. 8, 1969.

A.G.E.

For Composition for Use as a Preservative for Developed Lithographic Plates (Int. Cl. 1).
First use Aug. 1, 1960.

SN 323,979. Western Litho Plate & Supply Co., St. Louis, Mo. Filed Apr. 8, 1969.

PN

For Composition for Developing Lishographic Plates (Int. Cl. 1).
First use Oct. 2, 1967.

SN 324,924. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 18, 1969.

KOBAN

For Turf Fungicides (Int. Cl. 5).
First use Jan. 20, 1969.

SN 326,352. Ciba Limited, Basel, Switzerland. Filed May 5, 1969.

NUVANOL

Owner of Swiss Reg. No. 210,024, dated Apr. 22, 1965.
For Chemical Preparations for Killing Weeds and Destroying Vermin, Preparations for Combating Plant Pests (Int. Cl. 5).

SN 326,368. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 5, 1969.

TINOREX

Owner of Reg. Nos. 401,597, 652,584, and others.
For Chemical Agent for Imparting Soil Resistance to Fabrics (Int. Cl. 1).
First use Apr. 17, 1969.

SN 335,299. Kimberly-Clark Corporation, Neenah, Wis. Filed Aug. 14, 1969.

KOTEX

Owner of Reg. Nos. 134,900, 847,673, and others.
For Preparation To Be Applied to Clothing, To Retard Spread or Penetration of Menstrual Stain (Int. Cl. 3).
First use May 21, 1969.

SN 335,300. Kimberly-Clark Corporation, Neenah, Wis. Filed Aug. 14, 1969.

KOTEX STAINGARD

Owner of Reg. Nos. 134,900 847,673, and others.
For Preparation To Be Applied to Clothing, To Retard Spread or Penetration of Menstrual Stain (Int. Cl. 3).
First use May 21, 1969.

SN 335,402. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Aug. 15, 1969.

KINSTARCH

Owner of Reg. Nos. 844,359 and 851,269.
For Laundry Starch (Int. Cl. 3).
First use July 25, 1969.

SN 336,292. Kimberly-Clark Corporation, Neenah, Wis. Filed July 24, 1969.

KOTIQUE

For Preparation To Be Applied to Clothing, To Retard Spread or Penetration of Menstrual Stain (Int. Cl. 3).
First use July 3, 1969.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 326,438. Rosen Enterprises, Inc., New York, N.Y. Filed May 5, 1969.

NESOR

For Cigarette Lighters (Int. Cl. 34).
First use May 1959.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 316,225. Michaels of Oregon Co., Portland, Oreg. Filed Jan. 9, 1969.

McKinzie MICHAELS

For Swivels for Guns (Int. Cl. 13).
First use Sept. 11, 1950.

SN 317,530. Commercial Solvents Corporation, New York, N.Y. Filed Jan. 27, 1969.

SEIS-MO-JET

For Non-Destructible Cartridges Used for Generating Seismic Waves in Connection With Seismic Exploration, and Components and Parts Thereof, Including Shells, Charging Heads, Discharge Heads, and Charge Releasing Devices (Int. Cl. 13).
First use Dec. 20, 1968.

SN 318,892. Commercial Solvents Corporation, New York, N.Y. Filed Feb. 11, 1969.

HYDRALIN

For Explosives — Namely, Nitro-Carbonitrates, Boosters, Primers, and the Like (Int. Cl. 13).
First use Feb. 4, 1965.

SN 329,313. Sharps Arms Company, Salt Lake City, Utah. Filed June 6, 1969.

SHARPS

For Rifles and Small Arms Ammunition (Int. Cl. 13).
First use Jan. 3, 1969.

SN 330,824. Colt's Inc., Hartford, Conn. Filed June 24, 1969.

METROPOLITAN

For Pistols and Revolvers (Int. Cl. 13).
First use June 4, 1969.

Class 11 — Inks and Inking Materials

SN 301,446. Precision Colors, Inc., Dayton, Ohio. Filed June 26, 1968.

P PRECISION
C COLORS
I INK

Applicant disclaims, for the purposes of registration, the right to exclusive use of the words "Ink" and "Colors" apart from the mark as shown and without prejudice to any rights of common law.
For Printing Ink (Int. Cl. 2).
First use Dec. 17, 1965.

Class 12 — Construction Materials

SN 294,343. Forest Interiors Corporation, Seattle, Wash. Filed Mar. 28, 1968.

FIX

For Rigid Crayon of Waxy Material Prepared in a Variety of Colors To Fill Nail-Holes and Like Cavities in Prefinished Surfaces, and a Plastic Putty for Filling and Surfacing Wood-Like Materials (Int. Cl. 17).
First use Mar. 1, 1968.

SN 330,159. Lloyd A. Fry Roofing Company, Summit, Ill. Filed June 16, 1969.

CRESTWOOD

For Composition Roofing Shingles (Int. Cl. 19).
First use on or about May 9, 1969.

SN 330,598. Julian L. Gregory, Atlanta, Ga. Filed June 20, 1969.

PS
PERMA-SASH

For Aluminum Replacement Windows (Int. Cl. 6).
First use on or about Nov. 7, 1967.

SN 331,073. Sekisui Products Inc., Linden, N.J. Filed June 26, 1969.

ESLITE

For Wood Panels and Wood and Plastic Moldings (Int. Cl. 19).
First use May 26, 1967.

SN 331,253. URB Products Corporation, Farmingdale, N.Y. Filed June 27, 1969.

OLYMPIA OCEANIC

For Swimming Pools (Int. Cl. 19).
First use on or about Jan. 1, 1965.

SN 338,313. Los Angeles Tile Jobbers, Inc., Los Angeles, Calif. Filed Sept. 19, 1969.

VALENCIA

For Ceramic Tile (Int. Cl. 19).
First use Nov. 1, 1966.

SN 338,862. Simpson Timber Company, Seattle, Wash. Filed Sept. 25, 1969.

MOONBURST

For Ceiling Tile (Int. Cl. 19).
First use Sept. 10, 1969.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 315,607. Societes des Clapets TJ, Chalon-sur-Saone, France. Filed Jan. 2, 1969.



For Valves and Valve Parts (Int. Cl. 7).
First use November 1926; in commerce January 1963.

SN 318,147. Aluminum Specialty Company, Manitowoc, Wis. Filed Feb. 3, 1969.

CAMEO

For Aluminum Cookware (Int. Cl. 21).
First use Dec. 1, 1968.

SN 324,471. Marvin Katz and Donald C. Green (joint owners), d.b.a. Doorjam Products, Northville, Mich. Filed Apr. 14, 1969.

SAFE T BAR LOCK

For Sliding Door Holders, Particularly Bar Members Adapted To Be Installed in the Track of a Sliding Door To Prevent Its Opening (Int. Cl. 6).
First use Mar. 3, 1969.

SN 332,354. Lloyd E. Kirkland, d.b.a. Kirky Manufacturing Company, West Columbia, S.C. Filed July 11, 1969.

Kirky

For Manual Egg Separator (Int. Cl. 21).
First use June 26, 1969.

SN 335,911. Bliss & Laughlin Industries Incorporated, Oak Brook, Ill. Filed Aug. 22, 1969.

WINDOW-PAKS

For Casters (Int. Cl. 6).
First use Aug. 1, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 316,550. Societe des Acieries de Lorraine "Sacilor," Paris, France. Filed Jan. 14, 1969.

SACILOR

Priority claimed under Sec. 44(d) on French Reg. No. 745,889, dated July 16, 1968.
For Unwrought and Partly Wrought Common Metals and Alloys Thereof, Anchors, Anvils, Rails for Railway Tracks, Wires, and Steel Balls (Int. Cl. 6).

SN 334,635. Stelchrome Manufacturing, Inc., Odessa, Tex. Filed Aug. 6, 1969.

K-7

For High Carbon-High Tungsten Alloy (Int. Cl. 6).
First use May 25, 1959.

Class 15—Oils and Greases

SN 318,037. Economics Laboratory, Inc., St. Paul, Minn. Filed Jan. 31, 1969.

CHLOROLUBE

For Lubricants and Oils for Use in Drawing, Forming, Cutting, Stamping, Shearing, or Machining of Metals (Int. Cl. 4).
First use Nov. 10, 1958.

Class 16—Protective and Decorative Coatings

SN 290,828. Continental Oil Company, Ponca City, Okla. Filed Feb. 12, 1968.

SACI

For Rustproofing Coating Compound, a Liquid Hydrocarbon Base Material Used for Coating Metal Surfaces To Protect Them from Atmospheric Corrosion (Int. Cl. 2).
First use Oct. 20, 1967.

SN 292,637. Union Tank Car Company (Delaware corporation), Chicago, Ill., by assignment and change of name from Union Tank Car Company (New Jersey corporation), Chicago, Ill. Filed Mar. 6, 1968.

VERSAPOX

For Epoxy Resin Coatings (Int. Cl. 2).
First use at least as early as November 1956.

SN 323,334. Chemtrust Industries Corp., Maywood, Ill. Filed Apr. 1, 1969.

LOGIC 52

For Protective Coating for Machinery and Equipment, Used Primarily for the Prevention of Rust, Corrosion, Discoloration or Staining on Wood, and Painted and Metal Surfaces (Int. Cl. 2).
First use July 7, 1963.

SN 331,818. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 7, 1969.

RALLY

For Protective Coating for Use on Automobile Vinyl Tops (Int. Cl. 2).
First use May 19, 1969.

SN 337,497. Montgomery Ward & Co., Incorporated, Chicago, Ill. Filed Sept. 10, 1969.

GALLERY OF COLORS

Applicant disclaims the word "Colors" apart from the mark as shown.
For Paints and Enamels (Int. Cl. 2).
First use Oct. 30, 1967.

Class 17—Tobacco Products

SN 306,687. Philip Morris Incorporated, New York, N.Y. Filed Sept. 5, 1968.

POLYVENT

For Cigarettes, and Filters Incorporated in Cigarettes (Int. Cl. 34).
First use Aug. 19, 1968.

SN 330,865. Webb's City, Inc., St. Petersburg, Fla. Filed June 24, 1969.

WEBB'S

Owner of Reg. No. 539,866.
For Cigars (Int. Cl. 34).
First use 1932.

SN 335,416. American Brands, Inc., Flemington, N.J. Filed Aug. 15, 1969.

HOUSE OF ORANGE

For Smoking Tobacco (Int. Cl. 34).
First use Aug. 6, 1969.

Class 18—Medicines and Pharmaceutical Preparations

SN 308,630. Ralph D. Phillips, d.b.a. Black Creek Pharmaceutical Co., Fort Morgan, Colo. Filed Oct. 1, 1968.

BUD'S

For Veterinary Preparations — Namely, Leg Salve, Leg Paint, and Nose Salve (Int. Cl. 5).
First use on or about Sept. 3, 1968.

SN 309,992. Schering Corporation, Bloomfield, N.J. Filed Oct. 18, 1968.

BETAVET

For Veterinary Hormone Preparation (Int. Cl. 5).
First use June 26, 1968.

SN 312,313. Magna, Inc., Bensenville, Ill. Filed Nov. 15, 1968.

BRONCHI-TROL

For Cough Medicine (Int. Cl. 5).
First use Sept. 30, 1968.

SN 326,868. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 9, 1969.

TANDRISONE

Owner of Reg. Nos. 694,148, 866,157, and others
For Anti-Pyretic, Anti-Rheumatic, and Anti-Inflammatory Preparation (Int. Cl. 5).
First use May 1, 1969.

SN 337,237. Parke, Davis & Company, Detroit, Mich. Filed Sept. 8, 1969.

PAREST

For Sedative-Hypnotic Preparation (Int. Cl. 5).
First use on or before July 31, 1969.

SN 338,017. Ralston Purina Company, St. Louis, Mo. Filed Sept. 16, 1969.

STREPTO-PEN

Owner of Reg. No. 720,260.
For Antibiotic for Livestock (Int. Cl. 5).
First use July 28, 1969.

Class 19—Vehicles

SN 325,338. Cobalt Marine, Incorporated, Chanute, Kans. Filed Apr. 23, 1969.

COBALT

For Boats and Parts Thereof (Int. Cl. 12).
First use on or about Feb. 15, 1969.

SN 335,387. Trail-A-Sled, Inc., Crosby, Minn. Filed Aug. 14, 1969.

STINGER

For Snowmobiles (Int. Cl. 12).
First use June 6, 1969.

SN 335,388. Trail-A-Sled, Inc., Crosby, Minn. Filed Aug. 14, 1969.

SUPER STINGER

For Snowmobiles (Int. Cl. 12).
First use June 6, 1969.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 301,984. Edward Craven Walker, Poole, Dorset, England. Filed July 3, 1968.

LIVING JEWEL

Priority claimed under Sec. 44(d) on British Reg. No. B920,290, dated Jan. 29, 1968.
For Electric Lamps (Int. Cl. 11).

SN 315,258. N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Filed Dec. 26, 1968.

PHILIPS

Owner of U.S. Reg. Nos. 681,200, 837,968, and others.
For X-Ray Diffraction and X-Ray Spectrometer Tubes for Commercial Use (Int. Cl. 10).
First use at least as early as September 1953; in commerce as early as September 1953.

SN 317,288. Admiral Corporation, Chicago, Ill. Filed Jan. 23, 1969.

MAGNABEAM

For Television Picture Tubes (Int. Cl. 9).
First use July 3, 1968.

SN 323,362. Proctor-Silex Incorporated, Philadelphia, Pa. Filed Apr. 1, 1969.

BON VIVANT

For Coffeemaker With Electric Trivet (Int. Cl. 11).
First use in or about October 1968.

SN 326,862. Dolby Laboratories Inc., New York, N.Y. Filed May 9, 1969.

DOLBY SYSTEM

The word "System" is disclaimed apart from the mark as shown.
For Noise Suppressor Which Combats Noise in Transmission or Recording Systems (Int. Cl. 9).
First use Oct. 30, 1966.

SN 328,187. Mil-Air Electronics Corporation, Elk Grove Village, Ill. Filed May 23, 1969.

MIL-AIR

For Electronic Air Cleaners (Int. Cl. 11).
First use Mar. 19, 1969; February 1967 in a different form.

SN 330,155. Lectro-Print, Inc., Levittown, Pa. Filed June 16, 1969.

LECTRO-PRINT

For Printed Circuits (Int. Cl. 9).
First use on or about May 9, 1969.

SN 331,006. Arrow-Hart, Inc., Hartford, Conn. Filed June 26, 1969.

Arrow Hart

Owner of Reg. Nos. 51,743, 82,555, and 628,170.
For Electric Switches, Circuit Makers and Breakers, Receptacles, Caps, Connectors, Motor Starters and Enclosures Therefor, and Parts Thereof (Int. Cl. 9).
First use Mar. 19, 1969; 1891, as to "Hart"; Apr. 2, 1906, as to "Arrow"; Sept. 11, 1944, as to "Arrow-Hart" in another form.

SN 331,594. Defiance International, Ltd., Jamaica, N.Y. Filed July 2, 1969.

DEFIANCE

For Toasters (Int. Cl. 11).
First use on or about Nov. 21, 1966.

SN 332,429. Vorta Systems, Inc., Wauconda, Ill. Filed July 14, 1969.

Vorta

For Antennas (Int. Cl. 9).
First use no later than Aug. 15, 1968.

SN 333,052. Jubilee Manufacturing Co., Omaha, Nebr. Filed July 22, 1969.

Jubilee

Owner of Reg. Nos. 361,476, 433,093, and 438,798.
For Electric Horns and Sirens (Int. Cl. 9).
First use on or about May 1, 1914.

Class 22 — Games, Toys, and Sporting Goods

SN 279,114. Gym-I-Nee Associates, Pinole, Calif. Filed Aug. 25, 1967.

Gym-i-nee

For Ball Game Apparatus (Int. Cl. 28).
First use Dec. 1, 1966.

SN 308,730. Wells Manufacturing Co., Inc., New Vienna, Ohio. Filed Oct. 2, 1968.

KIK-BAK

For Paddle Balls (Toys), Being a Wooden Paddle With a Rubber String and Ball Attached Thereto (Int. Cl. 28).
First use May 17, 1968.

SN 308,770. Chemtoy Corporation, Chicago, Ill., by change of name from Chemical Sundries Co., Inc., Chicago, Ill. Filed Oct. 3, 1968.

K-Kids HAVE MORE FUN

For General Line of Children's Play Toys and Play Sets (Int. Cl. 28).
First use Sept. 3, 1968.

SN 316,879. Bilo v. G. K. Kristiansen, Kolding, Denmark. Filed Jan. 17, 1969.

earlyplay

For Toys, Specifically Constructional Toys (Int. Cl. 28).
First use Feb. 24, 1967; in commerce Feb. 24, 1967.

SN 319,021. Athol Plastics Corp., New York, N.Y. Filed Feb. 13, 1969.

MiNi MiSS

For Toys—Namely, Mirror and Comb Sets Comprising Plastic Mirrors, Combs, Brushes, Nail Files, Jewelry, Jewelry Boxes, Make-Believe Lipsticks, Cosmetic Boxes, Compacts, and Handbags, Sold as a Unit (Int. Cl. 28).
First use July 15, 1968.

SN 323,458. Kohner Bros., Inc., Paterson, N.J. Filed Apr. 2, 1969.

BUSY BATH

The word "Bath" is disclaimed apart from the mark as shown.
For Bathroom Toy (Int. Cl. 28).
First use Feb. 27, 1969.

SN 325,131. Kodiak Corporation, Ironwood, Mich. Filed Apr. 22, 1969.

KODIAK

For Fishing Rods and Pool Cues (Int. Cl. 28).
First use Aug. 1, 1965.

SN 325,705. Eddie Bauer, Inc., Seattle, Wash. Filed Apr. 28, 1969.

EB

The mark comprises the letters "EB" in a fish design format. Owner of Reg. No. 782,760.
For Fishing Rods (Int. Cl. 28).
First use Mar. 15, 1969.

SN 326,896. Metal Racquets, Inc., Paterson, N.J. Filed May 9, 1969.

FLEXDRIVE

For Tennis Racquets (Int. Cl. 28).
First use Apr. 1, 1969.

SN 329,465. George Frost Company, Shirley, Mass. Filed June 9, 1969.

JAUNTY

Owner of Reg. No. 616,627.
For Water Ski Belts (Int. Cl. 9).
First use Apr. 28, 1969.

SN 329,472. The Hardy Company, Oxford, Ohio. Filed June 9, 1969.

HARDY

For Archery Targets (Int. Cl. 28).
First use on or about Oct. 24, 1968.

SN 331,270. Bar Zim Toy Mfg. Co., Inc., Jersey City, N.J. Filed June 30, 1969.

BOUNCE BOWL

For Apparatus Sold as a Unit for Playing a Table Top Game of Skill (Int. Cl. 28).
First use Mar. 20, 1969.

SN 333,628. Buddy L Corporation, Neosho, Mo. Filed July 28, 1969.

Turtledove

For Children's Toys (Int. Cl. 28).
First use May 5, 1969.

SN 334,931. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

FLOSSY GLOSSY

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use June 16, 1969.

SN 334,932. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

ELEWETER

For Toy Vehicle (Int. Cl. 28).
First use June 16, 1969.

SN 334,933. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

MISS INFORMATION

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use June 16, 1969.

SN 334,934. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

DOWNY DILLY

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use June 17, 1969.

SN 334,935. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

PIGGYTOTER

For Toy Vehicle (Int. Cl. 28).
First use June 17, 1969.

SN 338,314. Mattel, Inc., Hawthorne, Calif. Filed Sept. 19, 1969.

POCUS-HOCUS

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use July 30, 1969.

SN 338,315. Mattey, Inc., Hawthorne, Calif. Filed Sept. 19, 1969.

FORETELL

For Fortune Telling Kit (Int. Cl. 28).
First use Aug. 8, 1969.

SN 338,319. Mattel, Inc., Hawthorne, Calif. Filed Sept. 19, 1969.

BABYTOUCH

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use July 31, 1969.

SN 338,718. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

CHATTY CHUMS

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Aug. 14, 1969.

SN 338,719. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

FROSTY-FRED

For Musical Jack in the Box on Wheels (Int. Cl. 28).
First use Aug. 14, 1969.

SN 338,721. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

SNUGGLESKINS

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use July 31, 1969.

SN 338,722. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

SKETCHY

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use July 31, 1969.

SN 338,725. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

STORY-MAKER

For Educational Toy Comprising a Phonograph and Pictures With Indexing Means To Cause Sound Reproduction Relevant to a Picture Indexed (Int. Cl. 28).
First use Aug. 5, 1969.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 296,037. Paul Ferd. Peddinghaus, Gevelsberg, Germany. Filed Apr. 19, 1968.

ORIGINAL PEDDINGHAUS

The term "Original" is disclaimed.
For Pipe Vises and Pipe Clamping Fixtures (Int. Cl. 6).
First use Dec. 1, 1967; in commerce Dec. 1, 1967.

SN 297,757. Birdsboro Corporation, Birdsboro, Pa. Filed May 9, 1968.

B

For Steel Mill Machinery—Namely, Bar Mill Equipment; Bar, Shape and Structural Straighteners; Blooming Mill Equipment; Continuous Casting Equipment; Cooling Beds; Flanging Machines; Flying Shears; Furnace Pushers and Bumpers; Hot and Cold Saws; Hot and Cold Shears; Hot and Cold Plate Levellers; Ingot Strippers; Ingot Handling Equipment; Plate Mill Equipment; Strip and Sheet Mill Equipment; Structural Mills; Auxiliary Steel Mill Equipment; and Crushing Machinery for Crushing Material, Such as Iron Ore, Stone, or the Like, Including Large and Intermediate Jaw Crushers and Spare Parts (Int. Cl. 7).
First use Mar. 12, 1968.

SN 300,140. Tru-Forge Products, Inc., Skokie, Ill. Filed June 10, 1968.

TRU FORGE

For Cutting, Working, Forming and Shaping Tools for Metal, Wood, Glass and Plastics—Namely, Drills, Counter Sinks, Reamers, Valve Seat Cutters, End and Hollow Mills, Milling Cutters, Key Slot and T-Slot Cutters, Saws, Saw Blades, Band Saws, Counterbore Cutters, Hobs, Broaches, Taps, Extruding Dies, Screw Extractors, Tool Bits, Files, Rasps, Burrs, Drawing Dies, Dressing Tools and Wheels, Glass Cutters, Etching Tools; Attachments for Machine Tools—Namely, Index Centers and Parts Thereof, Rack Milling Heads, Slot Milling Heads and Converting Heads for Adapting Horizontal Milling Machines for Vertical Milling, Angle Plates, Circular Tables, Tap and Die Holders, Roller Turners, Tool Holders, Centers, Work Driving Dogs, Angle Plates, Chucks, Face Plates, Adapter Flanges, Tapping Attachment, Boring Heads, Arbors; Valve Lifters, Gear Wheel and Bearing Pullers, Bushing Inserters and Removers, Vises, Piston Ring Compressors and Tools, Air Guns and Nozzles, Lining Riveters, Wrenches, Pliers, Punches, Shears, Cutters, Clippers, Screw Drivers, Clamps, Chisels, Hammers, Knurling Tools and Knurls, Forging Tools, Tongs, Scrapers, Plate Work Tools, Hacksaw Frames, Oil and Grease Guns, Tools for Bending, Flaring and Expanding Tubing and Pipe, Claw Bars, Nail Pullers, Grinders, Drills, Hatchets and Axes, Planes, Trowels, Staple and Nail Drivers (Int. Cls. 7 and 8).
First use April 1967.

SN 302,602. Gerald Di Trapani, d.b.a. Shear-Vac Company, Grand Rapids, Mich. Filed July 12, 1968.

SHEAR-VAC

For Vacuum Attachments for Barbers' Shears for Gathering Cut Hair (Int. Cl. 8).
First use June 24, 1968.

SN 310,049. Applied Power Industries, Inc., Milwaukee, Wis. Filed Oct. 21, 1968.

KOREK

For Apparatus, Parts and Accessories for Repair of Damaged Vehicle Bodies and Frames Comprising Frame and Body Straighteners, Forming and Repair Units, Parts Thereof and Tools for Use Therewith, and Actuators Including Pneumatic, Hydraulic, Mechanical and Manual Units (Int. Cl. 7).
First use Sept. 18, 1968.

SN 316,647. William G. Hill, d.b.a. Photographic Instruments Company, Franklin Park, Ill. Filed Jan. 15, 1969.

SQUIRTMASTER

For Pumping Apparatus for Applying Cutting Fluids to Automatic Tool Machines (Int. Cl. 7).
First use Oct. 11, 1968.

SN 327,477. Dynair Limited, Woodchester, Stroud, England. Filed May 16, 1969.

DYNAIR

Owner of British Reg. No. 884,597, dated Sept. 23, 1965.
For Parts and Fittings for Internal Combustion Engines—Namely, Cooling Fans, Cooling Fan Clutches, Thermostatic Valves for Use in Controlling Such Clutches, and Auxiliary Shaft Transmissions With Clutches (Int. Cl. 7).

SN 329,979. Head & Guild Equipment Co., Inc., Houston, Tex. Filed June 13, 1969.

GIBRALTAR

For Repair or Replacement Parts for Cranes, Shovels, and Drag Lines (Int. Cl. 7).
First use at least as early as Nov. 15, 1967.

Class 24 — Laundry Appliances and Machines

SN 320,577. Franzus Industries, Inc., Shamokin, Pa. Filed Mar. 3, 1969.



The term "Ban The Wrinkle" is disclaimed apart from the mark as shown.
For Hand Steamer Used To Remove Wrinkles From Clothing (Int. Cl. 7).
First use Jan. 10, 1969.

SN 338,280. National Industries for the Blind, New York, N.Y. Filed Sept. 18, 1969.

NiBee

For Ironing Board Covers (Int. Cl. 21).
First use Mar. 8, 1969.

Class 25 — Locks and Safes

SN 331,608. Franchise Growth Corporation, Rock Island, Ill. Filed July 2, 1969.

SAF T KIT

For Lock Box for Medicines and the Like (Int. Cl. 6).
First use June 19, 1969.

Class 26 — Measuring and Scientific Appliances

SN 283,667. Kabushiki Kaisha Uchida Yoko, d.b.a. Uchida Yoko Co., Ltd., Chuo-ku, Tokyo-to, Japan. Filed Oct. 30, 1967.

USAC

Priority claimed under Sec. 44(d) on Japanese application filed July 27, 1967; Reg. No. 819,883, dated June 5, 1969.
For Electronic Calculating Machines (Desk Type); Electronic Computer (Compact Type), and Parts for the Above Goods (Int. Cl. 9).

SN 289,426. Rozin Optical Export Corp., New York, N.Y. Filed Jan. 23, 1968.

KOREKTOR

For Lenses for Eyeglasses (Int. Cl. 9).
First use 1953.

SN 297,171. Cooper Industries, Inc., d.b.a. Lufkin Division of Cooper Industries, Inc., Houston, Tex. Filed May 2, 1968.

MAGIC YARDSTICK

Applicant disclaims the term "Yardstick" apart from the mark shown, but does not disclaim any common-law rights therein.
For Measuring Rules (Int. Cl. 9).
First use Jan. 5, 1967.

SN 312,662. Dresser Industries, Inc., Dallas, Tex. Filed Nov. 20, 1968.

ADAPT-O-FLEX

For Torque Wrenches (Int. Cl. 8).
First use July 28, 1968.

SN 313,784. Kimco Laboratories, Inc., Brooklyn, N.Y. Filed Dec. 6, 1968.

PORT-O-THERM

For Portable Electrical Wireless Thermostat Control Devices (Int. Cl. 9).
First use Oct. 1, 1968.

SN 319,198. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed Feb. 14, 1969.

ROTO MAGIC

Applicant disclaims the word "Roto" apart from the mark as shown. Owner of Reg. No. 844,547.
For Photographic Process Printing Plate Maker for Letterpresses and Offset Presses, and Parts Thereof (Int. Cl. 9).
First use Jan. 24, 1969.

Class 27 — Horological Instruments

SN 333,561. R. Gsell & Company, Inc., New York, N.Y. Filed July 25, 1969.

ASTROTIME

For Watches and Parts Thereof, Watch Cases, and Watch Movements (Int. Cl. 14).
First use June 3, 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 336,054. Robert B. Evans, d.b.a. M-B Company, New Holstein, Wis. Filed Aug. 25, 1969.

WAFERFILL

For Brush Segments for Rotary Brushes of Pavement Sweepers (Int. Cl. 21).
First use July 1, 1968.

Class 31 — Filters and Refrigerators

SN 309,679. Ionics, Incorporated, Watertown, Mass. Filed Oct. 15, 1968.

Electropure

For Portable Water Refresher and Desalination Treatment Plant for Removing Sediment, Dissolved Minerals and Undesirable Taste and Odor, Having a Multi-Chamber Ion-Permeable Membrane Electrodialysis Cell, Solution Tanks, Power Supply, Pumps, Filters, Piping, Control and Indicator Devices (Int. Cl. 11).
First use Oct. 2, 1968.

Class 32 — Furniture and Upholstery

SN 330,919. Eclipse Sleep Products Inc., Brooklyn, N.Y. Filed June 25, 1969.

springwall

Owner of Reg. Nos. 605,273, 805,186, and others.
For Mattresses, Box Springs, Studios, Convertible Chairs, and Beds (Int. Cl. 20).
First use Apr. 10, 1969.

SN 332,046. Robert John Company, King of Prussia, Pa. Filed July 8, 1969.

ULTRA FIVE

For Office Furniture—Namely, Desks, Chairs, Tables, Credenzas, and Filing Cabinets (Int. Cl. 20).
First use at least as early as 1960.

SN 332,048. Robert John Company, King of Prussia, Pa. Filed July 8, 1969.

ULTRA TWO

For Office Furniture—Namely, Desks, Chairs, Tables, Credenzas, and Filing Cabinets (Int. Cl. 20).
First use at least as early as 1960.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 332,042. Prefco Products Inc., Buckingham, Pa. Filed July 8, 1969.

AIR/LOK

For Louvers (Int. Cl. 11).
First use June 18, 1969.

SN 333,092. Carrier Corporation, Syracuse, N.Y. Filed July 22, 1969.

DUAL MODULINE

Owner of Reg. No. 739,370.
For Air Terminals for Use in Air Conditioning, Heating, Ventilating, and Cooling Systems (Int. Cl. 11).
First use May 29, 1969.

SN 333,216. Vernco Corporation, Columbus, Ind. Filed July 22, 1969.

Vernco

The drawing is lined for the color gold, but no claim is made to color. Owner of Reg. No. 753,323.
For Portable Fans, Window Fans, Expander Panels for Window Fans, and Roll-Away Stands for Fans (Int. Cl. 11).
First use January 1962.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 339,503. Deering Milliken Research Corporation, Spartanburg, S.C. Filed Oct. 2, 1969.

TREDLOC

For Tire Belts (Int. Cl. 17).
First use Sept. 9, 1969.

Class 36 — Musical Instruments and Supplies

SN 301,182. BSR (USA) Ltd., Blauvelt, N.Y. Filed June 24, 1968.

BSR McDONALD

Owner of Reg. No. 798,406.
For Phonograph Record Changers as Units for Record Players, and Complete Assemblies of Record Changer With Fitted Cartridge and Mounted on a Base (Int. Cl. 9).
First use at least the early part of November 1966.

SN 319,931. Musical Instrument Corporation of America, Syosset, N.Y. Filed Feb. 24, 1969.

MICA-TONE

Owner of Reg. No. 863,536.
For Sound Equipment Used in Conjunction With Musical Instruments Consisting of Electronic Sound Amplifiers, Microphones, Microphones for Use With Amplifiers, Amplifiers for Guitars, Electronic Sound Guitar Pickups, Contact Microphones for Musical Instruments, Reverberation Units for Amplifiers, Cable Assembly for Assembling Electronic Components for Interfunctioning and Control Assemblies for Controlling Sound Volume Tone and Boosting (Int. Cl. 9).
First use May 1, 1968.

SN 322,662. Avant Garde Records, Inc., New York, N.Y. Filed Mar. 24, 1969.



Applicant disclaims the representation of a phonograph record apart from the mark as shown.
For Phonograph Records and Prerecorded Magnetic Tape (Int. Cl. 9).
First use Apr. 14, 1966.

SN 325,424. Armada & Rodriguez of Florida, Inc., Miami, Fla. Filed Mar. 7, 1969.

SUAVE

For Phonograph Records (Int. Cl. 9).
First use January 1968.

SN 332,780. KEF Music, Inc., New York, N.Y. Filed July 17, 1969.

KEF RECORDS

Applicant disclaims any exclusive rights in the word "Records" apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use May 28, 1969.

SN 334,200. Bizarre Records, Inc., Los Angeles, Calif. Filed Aug. 1, 1969.

BIZARRE

For Phonograph Records (Int. Cl. 9).
First use Oct. 5, 1968.

SN 337,807. Invictus Records, Inc., Detroit, Mich. Filed Sept. 12, 1969.

INVICTUS

For Phonograph Records and Albums (Int. Cl. 9).
First use on or about Aug. 20, 1969.

SN 339,496. Arete Productions, Inc., New York, N.Y. Filed Oct. 2, 1969.

CELEBRATION G

For Phonograph Records (Int. Cl. 9).
First use Aug. 4, 1969.

Class 37—Paper and Stationery

SN 308,863. David M. Berger, d.b.a. Pic Letter Company, Webster Groves, Mo. Filed Oct. 4, 1968.



For Personalized Stationery Comprising Paper for Writing Personal Letters (Int. Cl. 16).
First use Sept. 1, 1968.

SN 309,572. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

STRATHMORE

For Writing Papers (Int. Cl. 16).
First use Dec. 1, 1895.

SN 309,574. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

STRATHLUCENT

For Writing and Printing Paper (Int. Cl. 16).
First use in or about November 1931.

SN 309,575. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

GRANDEE

For All Kinds of Writing, Drawing, and Printing Papers (Int. Cl. 16).
First use Nov. 27, 1925.

SN 309,578. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

STRATHMORE WRITING

The word "Writing" is disclaimed.
For Writing and Printing Paper (Int. Cl. 16).
First use Dec. 5, 1945.

SN 309,580. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

SAXON BRISTOL

The word "Bristol" is disclaimed.
For Bristol Board (Int. Cl. 16).
First use in or about April 1923.

SN 316,194. Eaton Allen Corp., Brooklyn, N.Y. Filed Jan. 9, 1969.

SWEETHEART

For Dispenser for Correction Tape With Correction Tape Therein (Int. Cl. 16).
First use Nov. 18, 1968.

SN 317,040. Hasbro Industries, Inc., Pawtucket, R.I. Filed Jan. 21, 1969.

CHOICE

For Pencils (Int. Cl. 16).
First use on or about Apr. 29, 1920.

SN 325,882. Lew Mfg. Co., Coventry, R.I. Filed Apr. 29, 1969.

GOLD CROWN

For Pens and Pencils (Int. Cl. 16).
First use on or about Apr. 11, 1969.

SN 327,566. Villager Industries, Inc., Philadelphia, Pa. Filed May 19, 1969.

LADYBUG

Owner of Reg. Nos. 542,327, 859,824, and others.
For Writing Paper (Int. Cl. 16).
First use Jan. 2, 1968.

SN 339,085. Kimberly-Clark Corporation, Neenah, Wis. Filed Sept. 29, 1969.

KLEENEX CIRCUS

Owner of Reg. Nos. 191,941, 873,822, and others.
For Facial Tissue (Int. Cl. 16).
First use Sept. 24, 1969.

SN 339,086. Kimberly-Clark Corporation, Neenah, Wis. Filed Sept. 29, 1969.

KLEENEX CARNIVAL

Owner of Reg. Nos. 191,941, 873,822, and others.
For Facial Tissue (Int. Cl. 16).
First use Sept. 24, 1969.

Class 38—Prints and Publications

SN 278,711. Magazine Management Co., Inc., New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, New York, N.Y. Filed Aug. 21, 1967.

FOR MEN ONLY

For Magazine Published Periodically (Int. Cl. 16).
First use on or about Feb. 2, 1954.

SN 278,716. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 21, 1967.

DAREDEVIL

For Publications, Particularly Comic Magazines and Stories in Illustrated Form (Int. Cl. 16).
First use on or about Dec. 27, 1963.

SN 280,504. Yale Arts Association, New Haven, Conn. Filed Sept. 15, 1967.

EYE

For Magazine Concerned With the Arts, Architecture and the Environment (Int. Cl. 16).
First use June 10, 1967.

SN 300,953. Verlag Aenne Burda, Offenburg-Badem, Germany, by change of name from Modenverlag Aenne Burda, Offenburg-Badem, Germany. Filed June 20, 1968.

BURDA

For Fashion Magazine (Int. Cl. 16).
First use February 1950; in commerce February 1950.

SN 308,521. Magazine Management Co., Inc., New York, N.Y., assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y. Filed Sept. 30, 1968.

CARTOON LAUGHS

For the purposes of registration, the applicant disclaims the terminology "Cartoon" apart from the mark as shown, but the applicant does not waive any common law or other right in the mark as shown or in any part thereof.
For Magazine (Int. Cl. 16).
First use on or about May 1, 1962.

SN 312,548. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Nov. 19, 1968.

QUICK-PICK

For Catalogs Dealing With Gas and Electric Equipment (Int. Cl. 16).
First use Mar. 25, 1968.

SN 318,533. The Druggist Supply Company, Denton, Tex. Filed Feb. 6, 1969.

PHARMA CODE

For Color Coded Labels Having Refill Instructions for Prescription Drugs Printed Thereon (Int. Cl. 16).
First use Dec. 9, 1968.

SN 321,267. Powers and Company, Inc., Detroit, Mich. Filed Mar. 10, 1969.

WARD'S AutoWorld

Applicant disclaims the word "Auto" apart from the mark as shown. Owner of Reg. Nos. 542,113 and 542,114.
For Magazine Directed to Facts and Events Relating to Automotive Production (Int. Cl. 16).
First use Jan. 31, 1965.

SN 322,614. Peace Publishers and Company, Phoenix, Ariz. Filed Mar. 24, 1969.

SONS OF PEACE B'NAI SHALOM

The translation of the terminology "B'nai Shalom" is "sons of peace."
For Magazine (Int. Cl. 16).
First use April 1959.

SN 322,657. World Research Corporation, Chicago, Ill. Filed Mar. 24, 1969.

CHECKMATE

For Magazine (Int. Cl. 16).
First use Mar. 7, 1969.

SN 327,826. Litton Educational Publishing, Inc., New York, N.Y. Filed May 21, 1969.

VAN NOSTRAND

For Books (Int. Cl. 16).
First use not later than 1848.

SN 328,549. Lee E. Horn, Delta, Colo. Filed May 28, 1969.

SNO-'FARI

For Monthly Newspaper, Relating to Snowmobile Information (Int. Cl. 16).
First use June 14, 1968.

SN 331,432. W. R. C. Smith Publishing Company, Atlanta, Ga. Filed June 30, 1969.

ELECTRICAL CONSULTANT

For Magazine (Int. Cl. 16).
First use Jan. 23, 1969.

SN 331,738. David W. Evans & Associates, Salt Lake City, Utah. Filed July 3, 1969.

ad-libs

For House Organ (Int. Cl. 16).
First use January 1967.

SN 337,607. Yankee, Inc., Dublin, N.H. Filed Sept. 10, 1969.

YANKEE

For Monthly Periodical (Int. Cl. 16).
First use Nov. 1, 1935.

SN 337,812. Alan Levenson, d.b.a. Small World Unlimited, Santa Monica, Calif. Filed Sept. 12, 1969.



For Greeting Cards (Int. Cl. 16).
First use August 1969.

SN 337,854. The Hearst Corporation, New York, N.Y. Filed Sept. 15, 1969.

MAGIC SPELL

For Syndicated Newspaper Feature (Int. Cl. 16).
First use Feb. 24, 1969.

SN 337,874. Ad-A-Day Company, Inc., Taunton, Mass. Filed Sept. 15, 1969.

DATEFINDER

For Calendars (Int. Cl. 16).
First use May 15, 1945.

SN 338,010. The Hearst Corporation, New York, N.Y. Filed Sept. 16, 1969.

BARD BOOKS

Applicant disclaims any exclusive rights in the word "Books" apart from the mark as shown.
For Series of Books (Int. Cl. 16).
First use Aug. 20, 1969.

SN 338,324. The Walter Reade Organization, Inc., Oakhurst, N.J. Filed Sept. 19, 1969.

STERLING EDUCATIONAL FILMS

Applicant disclaims the right to the exclusive use of the phrase "Educational Films" apart from the mark as shown.
For Developed Motion Picture Films, Film Strips, and Continuous Film Loops in Cartridges, Intended Primarily for Use by Educational Institutions (Int. Cl. 9).
First use not later than Apr. 1, 1959.

SN 339,263. Western Publishing Company, Inc., Racine, Wis. Filed Sept. 29, 1969.



For Comics, Magazines, Comic Books, and Comics Digests, Published Periodically (Int. Cl. 16).
First use June 28, 1962.

Class 39—Clothing

SN 286,706. Mr. Boots, Inc., New York, N.Y. Filed Dec. 11, 1967.



Applicant disclaims the representation of the boots and the word "Boots" apart from the mark as shown.
For Ladies' and Girls' Shoes and Boots and Footwear (Int. Cl. 25).
First use Nov. 17, 1967.

SN 290,354. V.I.P. Imports, Ltd., New York, N.Y. Filed Feb. 5, 1968.



The drawing is lined for red and gold.
For Boys' and Men's Slacks, Shirts, and Underwear (Int. Cl. 25).
First use Jan. 13, 1968.

SN 302,835. Gold Glove Ltd., Montreal, Quebec, Canada. Filed July 16, 1968.

Kombi

For Gloves (Int. Cl. 25).
First use at least as early as September 1961; in commerce at least as early as July 16, 1968.

SN 315,627. International Playtex Corporation, Dover, Del. Filed Dec. 30, 1968.



Applicant disclaims the representation of the girdle apart from the mark as shown. The drawing is lined for the colors blue and green. The mark consists of a representation of a container for the goods.
For Girdles (Int. Cl. 25).
First use Feb. 15, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 334,442. Stitchendipity, Austin, Tex. Filed Aug. 5, 1969.

STITCHENDIPITY

For Hobby Craft Kits, Specifically, Needle Craft or Creative Stitchery Kits, Consisting of Fabric, Patterns, Yarns, Needles, and Related Decorative Material (Int. Cl. 26).
First use at least as early as Oct. 20, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 338,281. National Industries for the Blind, New York, N.Y. Filed Sept. 18, 1969.

NIBee

For Dishcloths (Int. Cl. 24).
First use Mar. 8, 1969.

Class 44—Dental, Medical, and Surgical Appliances

SN 322,169. Kabushiki Kaisha Jintan Terumo, d.b.a. Jintan Terumo Co., Ltd., Shibuya-ku, Tokyo, Japan. Filed Mar. 19, 1969.



For Surgical, Medical, Dental, and Veterinary Instruments—Namely, Hypodermic Syringes, Syringe Needles, Clinical Thermometers, and Vacuum Blood Collectors (Int. Cl. 10).
First use Jan. 20, 1969; in commerce Jan. 20, 1969.

SN 330,738. The Gorman-Rupp Company, Mansfield, Ohio. Filed June 23, 1969.

AQUAMATIC K·THERMETTE

Owner of Reg. Nos. 680,063, 687,635, and 709,706.
For Equipment for Applying Reduced Temperatures to the Human Body for Therapeutic Purposes (Int. Cl. 10).
First use on or about May 8, 1969.

SN 332,200. Chesebrough-Pond's Inc., New York, N.Y. Filed July 10, 1969.



Applicant disclaims the representation of the cotton swab apart from the mark as shown.
For Cotton Swabs (Int. Cl. 5).
First use Apr. 17, 1969.

SN 332,577. Henry P. Boos Dental Laboratories, Inc., Minneapolis, Minn. Filed July 15, 1969.

MUCOTITE

For Porcelain and Acrylic Denture Lining Material (Int. Cl. 5).
First use June 30, 1969.

Class 46—Foods and Ingredients of Foods

SN 263,596. McCormick & Company, Incorporated, Baltimore, Md. Filed Jan. 30, 1967.

FESTIVE FIXINGS

No claim is made to the word "Fixings" apart from the other features of the mark shown.
For Edible Food Decorations—Namely, Sugar Decors and Crystals (Int. Cl. 30).
First use Sept. 26, 1966.

SN 289,172. The Colorado Milling & Elevator Company, Denver, Colo. Filed Jan. 19, 1968.

high altitude hungarian

Owner of Reg. Nos. 387,397 and 582,146.
For Wheat Flour (Int. Cl. 30).
First use Dec. 27, 1967.

SN 311,306. Schluderberg-Kurdle Company, Inc., Baltimore, Md. Filed Nov. 4, 1968.

SOUTHERN ROSE

Owner of Reg. No. 129,069.
For Packers' Products—Namely, Lards, Pork Roll, Dried Beef, Cheese, Lard Compounds Made From Cotton-Seed Oil and Other Oils (Int. Cl. 29).
First use Jan. 1, 1920.

SN 318,310. La Preferida, Inc., Chicago, Ill. Filed Feb. 4, 1968.



For Foods, Food Adjuncts and Ingredients of Foods—Namely, Fresh, Frozen, Canned and Preserved Fruits and Vegetables; Fresh, Dry, Cured and Canned Meats; Meat Products, Namely, Chili Con Carne, Beef Stew, Ravioli, Beef Tripe Stew, Potted Meat, Tomato Based Sauce With Onions, Peppers and Spices (Sofrito) With Pork, Blood Pudding and Sausage in Sauce, Salted and Cured Pigs Feet, Fatback, Beans With Bacon, Spaghetti With Meat Balls; Fresh, Frozen, Dried and Canned Fish and Sea Foods, Namely, Salmon, Sardines, Shrimp, Crab Meat, Tuna, Oysters, Codfish, Pollock, Herring, Red Snapper, Cuttlefish, Octopus, Eels, Mussels, Cockles, Anchovies; Lard; Cooking, Flavoring and Salad Oils; Fresh, Frozen and Canned Fruit Juices and Nectars; Syrups for Food Purposes; Coffee; Tea; Rice; Crackers; Bread and Breadsticks; Canned Spaghetti Specialties, Namely, Spaghetti With Tomato Sauce; Spaghetti With Tomato Sauce and Cheese; Spices; Flavoring Agents, Namely, Chili Seasoning, Salt, Garlic Granules, Minced Onion, and Corn Husks in Which Foods Are Wrapped and Cooked; Sauces; Fresh, Frozen and Canned Tamales and Tortillas; Wheat, Rice and Corn Flour; Ground Oatmeal; Jellies and Marmalades; Fruit Pastes; Tomato Pastes; Vinegar; Dairy Products, Namely, Cheeses, Cheese Dips, Butter, Condensed and Powdered Milk; Candies; Confections, Namely, Turrones; Chocolate for Cooking and as Flavoring To Be Mixed With Milk or Water; Edible Seeds; Cereal Breakfast Foods; Cooking Wines; Herbs; Canned and Bottled Stuffed and Unstuffed Peppers; and Desserts, Namely, Custards and Puddings (Int. Cls. 29, 30, 31, and 33).
First use February 1967.

SN 321,115. Faribault Canning Company, Faribault, Minn. Filed Mar. 10, 1969.

VANDÉVER

For Canned Vegetables—Namely, Peas and Corn (Int. Cl. 29).
First use July 19, 1951.

SN 321,116. Faribault Canning Company, Faribault, Minn. Filed Mar. 10, 1969.



For Canned Vegetables—Namely, Peas and Corn (Int. Cl. 29).
First use July 19, 1951.

SN 322,006. The Swiss Colony, Inc., Monroe, Wis. Filed Mar. 17, 1969.

The Swiss Colony

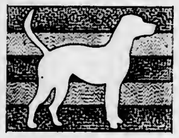
Owner of Reg. Nos. 642,127 and 846,388.
For Cheese, Candies, Pickles; Pastries and Baked Goods—Namely, Fruit Cakes, Butter Rum Cakes and Pound Cakes; Shelled Nuts, Meat Sauces, Cheese-Based Dips and Snack Sticks Made from Wheat Flour and Sesame Seeds or Cheddar Cheese and Caraway Seeds, Cookies; Salad Dressing, Honey, rice, Preserved Fruits and Vegetables, Jellies and Preserves, Pancake Flour, Snack Crackers, and Chocolate (Int. Cls. 29 and 30).
First use August 1948.

SN 322,417. Doughboy Industries, Inc., New Richmond, Wis. Filed Mar. 21, 1969.

HELPMEATS

For Pan Roast of Turkey in Gravy, Turkey Roast With Stuffing in Gravy, Turkey Slices in Gravy, Breast of Turkey Filets, Turkey Roasts, and Turkey Cutlets (All in Frozen Condition) (Int. Cl. 29).
First use Mar. 6, 1969.

SN 323,591. Pet Care Products, Inc., Chicago, Ill. Filed Apr. 3, 1969.



The representation of the dog is disclaimed apart from the mark as a whole. The drawing is lined for the colors orange and purplish red.
For Dog Food Supplement (Int. Cl. 31).
First use July 1, 1968.

SN 329,388. J. R. Chort Milling Company, Chicago, Ill. Filed June 6, 1969.

IOTEX

For Oxidant Additives for Use in Doughs in Making Bread (Int. Cl. 1).
First use at least as early as Feb. 25, 1969.

SN 329,441. Cumberland Packing Corp., Brooklyn, N.Y. Filed June 9, 1969.

CYC-LESS

For Low Calorie Sugar Substitute (Int. Cl. 1).
First use May 28, 1969.

SN 331,281. Kal Kan Foods, Inc., Los Angeles, Calif. Filed June 30, 1969.

KAL KAT

The word "Kat" is disclaimed apart from the association shown, without waiver of applicant's common law rights in the composite mark. Owner of Reg. Nos. 430,306, 645,835, and others.
For Cat Food (Int. Cl. 31).
First use June 17, 1969.

SN 337,752. Churny Company, Inc., Somerville, Mass. Filed Sept. 12, 1969.

TOWN BELL

For Sour Dressing or Imitation Sour Cream, Imitation Cream Cheese and Imitation Cheese Spreads, Whip Topping Base and Cheese (Int. Cl. 29).
First use at least as early as Aug. 1, 1969.

SN 338,855. The Quaker Oats Company, Chicago, Ill. Filed Sept. 25, 1969.

PERKY PIZZA SCOOPS

Without waiver of any common law rights, applicant disclaims the word "Pizza" except as part of its mark.
For Cereal-Derived Extruded Snacks (Int. Cl. 30).
First use Aug. 29, 1969.

SN 338,856. The Quaker Oats Company, Chicago, Ill. Filed Sept. 25, 1969.

TIGER PAWS

For Cereal-Derived Extruded Snacks (Int. Cl. 30).
First use Aug. 29, 1969.

SN 338,857. The Quaker Oats Company, Chicago, Ill. Filed Sept. 25, 1969.

TORRID TACO CLAWS

Without waiver of any common law rights, applicant disclaims the word "Taco" except as part of its mark.
For Cereal-Derived Extruded Snacks (Int. Cl. 30).
First use Aug. 29, 1969.

Class 47—Wines

SN 283,168. Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.," d.b.a. F. Chauvenet, Nuits-St-Georges, Cote d'Or, France. Filed Oct. 23, 1967.

GRAND PAVOIS

The English translation of "Grand Pavois" is a nautical term meaning "bulwark, awning or flags arranged in a certain order." Owner of U.S. Reg. Nos. 766,038 and 821,243.
For Wines (Int. Cl. 33).
First use June 1965; in commerce June 1965.

SN 309,970. J. T. Pinto Vasconcellos, Lda, Lisbon, Portugal. Filed Oct. 18, 1968.



Owner of Portuguese Reg. No. 131,174, dated Oct. 14, 1966.
For Table Wines (Int. Cl. 33).
First use February 1965; in commerce February 1965.

SN 338,083. E. & J. Gallo Winery, d.b.a. Gallo Champagne Cellars, and Gallo Vineyards, Modesto, Calif. Filed Sept. 17, 1969.

GALLO

Owner of Reg. Nos. 394,057, 640,139, and others.
For Wines and Champagnes (Int. Cl. 33).
First use 1909.

Class 48—Malt Beverages and Liquors

SN 302,482. Jay L. Ambrose, d.b.a. Kentucky Wholesale Company, Santa Monica, Calif. Filed July 11, 1968.

Einbock

For Beer (Int. Cl. 32).
First use August 1955.

SN 323,721. Molson Industries Limited, Montreal, Quebec, Canada. Filed Apr. 4, 1969.



Applicant disclaims any right to exclusive use of the words "Biere" and "Ale" apart from the mark as shown. Owner of Canadian Reg. No. 151,179, dated June 2, 1967; and U.S. Reg. No. 748,162.
For Beer and Ale (Int. Cl. 32).

Class 51 — Cosmetics and Toilet Preparations

SN 297,767. Helene Curtis Industries, Inc., Chicago, Ill. Filed May 9, 1968.

ROSES IN THE RAIN

Owner of Reg. No. 747,956.
For Body Lotion, Moisturizing Lotion, Bath Oil, and Talcum Powder (Int. Cl. 3).
First use on or about Aug. 3, 1965.

SN 304,607. Laboratoire Lachartre S.A., Paris, France. Filed Aug. 7, 1968.



Owner of French Reg. No. 535,017, dated July 9, 1965 (Seine) ; Natl. Inst. No. 256,266.
For Hair Lotions, Hair Conditioners, Hair Tonics, Scalp Creams, Hair Spray, Hair Pomade, Hair Brighteners, Hair Tinting and Coloring Preparations, Hair Straighteners, Wave Set, Cold Permanent Waving Lotions and Neutralizers, Hair Dressing, Hair Oil, and Creme Rinse (Int. Cl. 3).

SN 317,243. Koscot Interplanetary, Inc., Orlando, Fla. Filed Jan. 22, 1969.



For After Shave and Cologne (Int. Cl. 3).
First use at least as early as Dec. 16, 1968.

SN 319,722. Vincent O'Mara, d.b.a. Ultimate Beauty Products, Los Angeles, Calif. Filed Feb. 20, 1969.

ULTIMATE

For Hair Straightener (Int. Cl. 3).
First use Sept. 23, 1951.

SN 331,466. Zsa Zsa Limited, New York, N.Y. Filed June 30, 1969.

FORMULA Z

Applicant disclaims the word "Formula" apart from the mark as shown.
For Night Cream (Int. Cl. 3).
First use Feb. 5, 1969.

SN 333,667. Bristol-Myers Company, New York, N.Y. Filed July 28, 1969.

DRY BAN

Applicant disclaims the word "Dry" apart from the mark as shown. Owner of Reg. No. 628,408 and others.
For Antiperspirant Spray Deodorant (Int. Cl. 5).
First use May 26, 1969.

SN 334,147. Yardley of London, Inc., New York, N.Y. Filed July 31, 1969.

CREMES

For Cologne, Foam Bath, and Lipstick (Int. Cl. 3).
First use Jan. 17, 1969.

SN 334,720. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 7, 1969.

NATURALLY FEMININE

For Feminine Hygiene Deodorant (Int. Cl. 5).
First use June 24, 1969.

SN 334,722. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 7, 1969.

YOUNG & LOVELY

For Hand Lotions (Int. Cl. 3).
First use June 13, 1969.

SN 337,480. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 10, 1969.

PEACHES AND CLEAN

Applicant disclaims any exclusive rights to the word "Clean" apart from the mark as shown. Owner of Reg. No. 115,434.
For Facial Skin Cleanser (Int. Cl. 3).
First use Aug. 4, 1969.

Class 52 — Detergents and Soaps

SN 312,572. The Drackett Company, Cincinnati, Ohio. Filed Nov. 19, 1968.

ROD & ROAD

For White Wall Tire Cleaner and Vinyl Upholstery and Top Cleaner for Automobiles (Int. Cl. 3).
First use Nov. 6, 1968.

SN 312,575. The Drackett Company, Cincinnati, Ohio. Filed Nov. 19, 1968.

TRACK

For Vinyl Upholstery and Top Cleaner for Automobiles and White Wall Tire Cleaner (Int. Cl. 3).
First use Nov. 6, 1968.

SN 327,700. Thetford Engineering Corporation, Ann Arbor, Mich. Filed May 19, 1969.

AQUA K-7

Owner of Reg. No. 836,578.
For Cleaner for Bathroom Accessories, Such as, Toilets, Bathtubs, Shower Enclosures, Sinks, etc. (Int. Cl. 3).
First use Dec. 20, 1968.

SN 329,203. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 5, 1969.

OFF-WITH-IT

For Liquid Wax Stripper and All Purpose Cleaner (Int. Cl. 3).
First use May 5, 1969.

SN 329,207. American Cyanamid Company, Wayne, N.J. Filed June 5, 1969.

LEMONEX

For Household Cleaner (Int. Cl. 3).
First use May 22, 1969.

SN 331,019. John H. Breck, Inc., Wayne, N.J. Filed June 26, 1969.

BEAUTIFUL FEELING

For Hair Shampoo (Int. Cl. 3).
First use June 9, 1969.

SN 332,396. Zsa Zsa Limited, New York, N.Y. Filed July 11, 1969.

FORMULA Z

Applicant disclaims the word "Formula" apart from the mark as shown.
For Toilet Soap (Int. Cl. 3).
First use Mar. 24, 1969.

SN 336,295. Kimberly-Clark Corporation, Neenah, Wis. Filed July 24, 1969.

KOTIQUE

For Soap in Aerosol Form, To Be Applied to the Body in Lieu of a Tub Bath or Shower (Int. Cl. 3).
First use July 3, 1969.

SN 338,011. Huntington Laboratories, Inc., Huntington, Ind. Filed Sept. 16, 1969.

MOON DUST

For Carpet Soil Remover (Int. Cl. 3).
First use Aug. 27, 1969.

SN 338,860. Shulton, Inc., Clifton, N.J. Filed Sept. 25, 1969.

DESERT FLOWER

Owner of Reg. No. 263,058.
For Toilet Soap (Int. Cl. 3).
First use Oct. 3, 1951.

SN 338,969. Shulton, Inc., Clifton, N.J. Filed Sept. 26, 1969.

BURLEY

Owner of Reg. No. 833,796.
For Toilet Soap (Int. Cl. 3).
First use Nov. 8, 1967.

SN 338,970. Shulton, Inc., Clifton, N.J. Filed Sept. 26, 1969.

TAJI

Owner of Reg. No. 800,499.
For Toilet Soap (Int. Cl. 3).
First use Dec. 15, 1965.

SN 339,801. Lever Brothers Company, New York, N.Y. Filed Oct. 6, 1969.

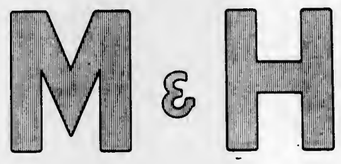
CLASS

Owner of Reg. No. 535,314.
For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use May 21, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 283,914. Miller & Holmes, Inc., St. Paul, Minn. Filed Nov. 1, 1967.



The drawing is lined for the color red.
For Drive-In Restaurant Services (Int. Cl. 42).
First use June 1, 1954.

SN 313,825. Martinelli, Inc., Cincinnati, Ohio. Filed Dec. 6, 1968.



For Restaurant Services (Int. Cl. 42).
First use 1953.

SN 314,636. United Services Planning Association, Inc., Fort Worth, Tex. Filed Dec. 16, 1968.

USPA

The screen design on the drawing is a feature of the mark and does not indicate color.
For Investment Counseling Services—Namely, Family Financial Programming (Int. Cl. 36).
First use Mar. 18, 1968.

SN 316,310. Hilton Hotels Corporation, Chicago, Ill. Filed Jan. 10, 1969.

Owner of Reg. No. 817,549.
For Restaurant Services (Int. Cl. 42).
First use September 1967.

SN 316,519. Boating Industry Association, Chicago, Ill. Filed Jan. 14, 1969.

BIA

Owner of Reg. Nos. 672,639, 750,694, and others.
For Association Services—Namely, Promoting Interest in Boating (Int. Cl. 42).
First use on or about Nov. 4, 1964.

SN 320,388. Sweet Sue Kitchens, Inc., Athens, Ala. Filed Feb. 28, 1969.

SWEET SUE

Owner of Reg. No. 831,169.
For Restaurant Services (Int. Cl. 42).
First use Apr. 6, 1968.

SN 324,361. Marion H. Parker, Inc., New York, N.Y. Filed Apr. 14, 1969.

CARE-RING

For Providing a personalized Telephone Service Wherein Subscribers Are Contacted on a Periodic Basis (Int. Cl. 42).
First use Feb. 3, 1969.

SN 325,343. Continental Oil Company, Ponca City, Okla. Filed Apr. 23, 1969.

CRITICAL PATH

For Providing Agronomic and Horticultural Advice (Int. Cl. 42).
First use about Feb. 8, 1968.

SN 328,083. General Mills, Inc., Minneapolis, Minn., assignee, by mesne assignment, of Tree House Restaurant Corp., Santa Barbara, Calif. Filed May 22, 1969.

TREE HOUSE

For Restaurant Services (Int. Cl. 42).
First use Aug. 30, 1963.

SN 328,935. Multidiscipline Research, Inc., New York, N.Y. Filed June 3, 1969.

Information Center on the Mature Woman

Applicant makes no exclusive claim to the words "Information Center on the Mature Woman" apart from the mark as shown.
For Collecting, Interpreting and Disseminating Information About Women Over Age 40 in the Field of Economics, Education, Health and Medicine, Sociology, Psychology, Physiology, Leisure and Cultural Activities for Use by Writers, Researchers, Editors, Reporters, Broadcasters and Members of the General Public (Int. Cl. 42).
First use Dec. 31, 1968.

SN 329,440. Consolidated Franchising Corporation, Lewisburg, Pa. Filed June 9, 1969.

CHOPPY'S BARN

For Restaurant Services (Int. Cl. 42).
First use Apr. 13, 1969.

SN 332,417. Longchamps, Inc., New York, N.Y. Filed July 14, 1969.

SOUTH PACIFIC PORTS

For Restaurant Services (Int. Cl. 42).
First use June 12, 1969.

SN 333,942. The Old Spaghetti Factory, Inc., Portland, Oreg. Filed July 30, 1969.

the old spaghetti factory

No claim is made to the word "Spaghetti" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on or about Jan. 15, 1969.

SN 335,923. Marriott Corporation, Washington, D.C. Filed Aug. 22, 1969.

WHERE GOOD THINGS HAPPEN EVERYDAY

For Restaurant Services (Int. Cl. 42).
First use October 1968.

SN 335,928. Social Dynamics, Incorporated, Boston, Mass. Filed Aug. 22, 1969.

SOCIAL DYNAMICS

For Management Consulting and Program Planning Services in the Field of Human Relations (Int. Cl. 42).
First use June 1, 1966.

SN 338,296. Carwood Incorporated, Culver City, Calif. Filed Sept. 19, 1969.

WOODY'S SMORGASBURGER

For Restaurant Services (Int. Cl. 42).
First Use Feb. 10, 1956.

SN 338,297. Carwood Incorporated, Culver City, Calif. Filed Sept. 19, 1969.



For Restaurant Services (Int. Cl. 42).
First use Jan. 2, 1962.

Class 101 — Advertising and Business

SN 207,183. Howard W. Wilson, d.b.a. Howard W. Wilson & Associates and Gifts Plus, Minneapolis, Minn. Filed Nov. 27, 1964.

GIFTS PLUS

For Promoting the Sale of Merchandise or Services Through the Use of Gift Certificates, Stamps, or Coupons Redeemable in Cash, Various Selected Items of Merchandise, or Certificates or Credits Therefor (Int. Cl. 35).
First use Jan. 21, 1964.

SN 293,188. William R. Wines, d.b.a. Dial-A-Tax, Dallas, Tex. Filed Mar. 13, 1968.

DIAL-A-TAX

For Preparation of Income Tax Returns for Others (Int. Cl. 35).
First use Mar. 8, 1968.

SN 303,443. The Pot Shop, Sudbury, Mass. Filed July 23, 1968.

THE POT SHOP

For Retail and Mail-Order Services Dealing Primarily in Gift Items and Gourmet Utensils (Int. Cl. 35).
First use at least as early as 1959.

SN 310,074. Fedder Data Centers, Inc., Baltimore, Md. Filed Oct. 21, 1968.

FED/PAY

For Computerized Payroll Services—Namely, Preparation of Payroll Checks, Payroll Registers, Accumulated History Ledgers, Deduction Registers, and Tax Reports for Others (Int. Cl. 35).
First use Sept. 19, 1968.

SN 314,022. Management Recruiters International, Inc., Cleveland, Ohio. Filed Dec. 10, 1968.

COMPU SEARCH

For Employment Agency Services (Int. Cl. 35).
First use Aug. 20, 1968.

SN 316,989. Chesterfield Club, Inc., Minneapolis, Minn. Filed Jan. 21, 1969.

CHESTERFIELD CLUB

For Promoting the Sale of Goods and/or Services Through the Issuance and Redemption of Trading Stamps (Int. Cl. 35).
First use Apr. 12, 1968.

SN 319,746. Universal Underwriters Computer Services, Inc., Kansas City, Mo. Filed Feb. 20, 1969.

AUTO·DAT

For Computerized Accounting, Leasing and Parts Inventory Control Services for Automobile Dealers (Int. Cl. 35).
First use Feb. 6, 1969.

SN 321,497. Informatics, Inc., Sherman Oaks, Calif. Filed Mar. 12, 1969.

DISPLAYALL

For Programming of Electronic Data Processing Equipment (Int. Cl. 35).
First use November 1968.

SN 321,610. Update Associates, West Hartford, Conn. Filed Mar. 13, 1969.

UPDATE

For Advertising Agency Services (Int. Cl. 35).
First use at least as early as November 1968.

SN 324,117. American Federation of Information Processing Societies, Montvale, N.J. Filed Apr. 10, 1969.

FJCC

For Conducting Conferences Pertaining to the Information Processing Profession (Int. Cl. 41).
First use in or about December 1962, 1951 as to "JCC."

SN 324,120. American Federation of Information Processing Societies, Montvale, N.J. Filed Apr. 10, 1969.

SJCC

For Conducting Conferences Pertaining to the Information Processing Profession (Int. Cl. 41).
First use in or about May 1962, 1951 as to "JCC."

SN 326,140. Southwest Printers, Inc., Yuma, Ariz. Filed May 1, 1969.

TRAV-L-OPE

For Preparing Special Stationery to the Specifications of Motels and Hotels (Int. Cl. 35).
First use Jan. 31, 1969.

SN 329,587. Chas. A. Stevens & Co., Chicago, Ill. Filed June 10, 1969.

STEVENS JR.

Owner of Reg. Nos. 197,746, 591,498, and 817,609.
For Retail Clothing Store Services and Operation of a Clothing Section of a Retail Store (Int. Cl. 35).
First use August 1968; 1888 as to "Stevens."

Class 102 — Insurance and Financial

SN 303,514. First National City Bank, New York, N.Y. Filed July 24, 1968.

READY-CREDIT

For Checking Account Services With Over-Draft Privileges (Int. Cl. 36).
First use February 1959.

SN 320,219. The Omaha National Bank, Omaha, Nebr. Filed Feb. 27, 1969.



Applicant disclaims the word "Checking" apart from the mark as shown. The drawing is lined for the color blue, however, no claim is made to color.
For Banking Services (Int. Cl. 36).
First use as early as Feb. 24, 1969.

SN 323,478. Shareholders Capital Corporation, Los Angeles, Calif. Filed Apr. 2, 1969.



The portrait shown on the drawing is a fanciful representation of a ship's officer, and is not the likeness of any known person.
Managing and Providing Investment Advice to Investment Companies and Distributing Shares of Capital Stock of Investment Companies (Int. Cl. 36).
First use Sept. 30, 1968.

SN 325,357. Exemplar Service, Inc., Teaneck, N.J. Filed Apr. 23, 1969.



Owner of Reg. Nos. 783,435 and 795,801.
For Insurance Brokerage and Consulting Services (Int. Cl. 36).
First use Apr. 6, 1964; during July 1963 in a different form.

SN 325,529. Financial Programs, Inc., Denver, Colo. Filed Apr. 24, 1969.

FINANCIAL DYNAMICS

Applicant disclaims the word "Financial" apart from the mark as shown. Owner of Reg. No. 854,889.
For Financial Advisory and Statistical Services (Int. Cl. 36).
First use in or about June 1966.

SN 338,321. The Omaha National Bank, Omaha, Nebr. Filed Sept. 19, 1969.

FCA/500

For Banking Services (Int. Cl. 36).
First use as early as Sept. 16, 1969.

Class 103 — Construction and Repair

SN 300,486. Servpro Industries, Carmichael, Calif. Filed June 14, 1968.



For Cleaning, Painting and Repairing Services in Homes, Offices, and Other Buildings (Int. Cl. 37).
First use Nov. 22, 1967.

SN 306,398. Production Systems International, Inc., Houston, Tex. Filed Aug. 30, 1968.



For Construction of Oil and Gas Production Plants and Equipment to the Order and/or Specification of Others (Int. Cl. 37).
First use at least as early as Aug. 15, 1968.

SN 310,222. Autoshepherd, Inc., Memphis Tenn. Filed Oct. 9, 1968.



The word "Auto" is disclaimed apart from the mark as shown.
For Automobile Maintenance Service (Int. Cl. 37).
First use Aug. 15, 1968.

SN 325,516. Servisco, Elizabeth, N.J. Filed Apr. 24, 1969.
For Laundry Service, Uniform Rental Service, Wiping

SERVISCO

Towel Service, Protective Cover Rental Service (Int. Cl. 37).
First use on or about Oct. 18, 1968.

Class 105 — Transportation and Storage

SN 260,746. Hudson Transit Lines, Inc., Mahwah, N.J. Filed Dec. 14, 1966.



For Transporting of Passengers by Bus (Int. Cl. 39).
First use 1922.

SN 272,431. Club Internationale Management Corp., Washington, D.C., by assignment and change of name from Travel Internationale, Ltd., Washington, D.C. Filed May 25, 1967.

CLUB INTERNATIONALE

Owner of Reg. No. 794,600.
For Organizing and Making Arrangements for Foreign Group Tours and Vacations (Int. Cl. 39).
First use Sept. 24, 1964.

SN 316,318. Koninklijke Luchtvaart Maatschappij N.V. (KLM Royal Dutch Airlines), New York, N.Y. Filed Jan. 10, 1969.

SUN RUN

For Transportation Services—Namely, Providing Air Transportation for Persons and Travel Tour Services (Int. Cl. 39).
First use at least as early as June 1968.

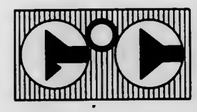
SN 325,460. Celebrity Host Golf Holidays, Inc., d.b.a. Celebrity Host Holidays, Arlington, Va. Filed Apr. 24, 1969.

CELEBRITY HOST HOLIDAYS

For Travel Agency Services (Int. Cl. 39).
First use Dec. 15, 1967.

Class 106 — Material Treatment

SN 313,572. Gemini Corporation, Rosemont, Ill. Filed Dec. 4, 1968.



The drawing is lined for shading only and color is not a feature of the mark.
For Grinding of the Goods of Others—Namely, Metal Fasteners, Bolts, Nuts, and Fittings (Int. Cl. 40).
First use Nov. 4, 1968.

Class 107 — Education and Entertainment

SN 314,642. S & H Collegiate Enterprises, Inc., Hays, Kans. Filed Dec. 13, 1968.



For Entertainment Agency Services—Namely, Providing Various Entertainment Groups for Others (Int. Cl. 41).
First use May 1, 1968.

SN 324,629. American Broadcasting Companies, Inc., New York, N.Y. Filed Apr. 16, 1969.

SAGA OF WESTERN MAN

For Television Program in the Nature of a Documentary of Great Events and Personalities of the Western World (Int. Cl. 41).
First use Oct. 16, 1963.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

886,954. TRANS KOTE. Transilwrap Company, Inc. SN 314,833. Pub. 12-16-69. Filed 12-18-68.

886,955. CYCLO-DYNE. Desert Minerals, Inc. SN 320,329. Pub. 12-16-69. Filed 2-28-69.

886,956. FMC. FMC Corporation. MULTIPLE CLASS (Classes 1, 6, 7, 13, 42, and 43). SN 321,105. Pub. 12-16-69. Filed 3-10-69.

886,957. MISTROBRITE. Cyprus Mines Corporation. SN 321,776. Pub. 12-16-69. Filed 3-14-69.

886,958. ABS ETC. AND SIGN DESIGN. American Breeders Service, Inc. SN 330,340. Pub. 12-16-69. Filed 6-18-69.

886,959. ASTREL. Minnesota Mining and Manufacturing Company. SN 331,832. Pub. 12-16-69. Filed 7-7-69.

Class 2—Receptades

886,960. NASCO. Nasco Industries. MULTIPLE CLASS (Classes 2, 23, and 26). SN 275,348. Pub. 12-31-68. Filed 7-5-67.

886,961. INSTANT OCEAN. Aquarium Systems, Inc. SN 311,456. Pub. 12-16-69. Filed 11-6-68.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

886,962. ZONA AND DESIGN. Zona Casuals, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 317,659. Pub. 12-16-69. Filed 1-27-69.

886,963. TRAVEL WISE. Seward Luggage Manufacturing Company, Inc. SN 322,351. Pub. 12-16-69. Filed 3-20-69.

Class 4—Abrasives and Polishing Materials

886,964. PROTECTO GLAZE. Burford Auto Finishes. SN 278,867. Pub. 12-16-69. Filed 8-23-67.

886,965. "THE HOOD." South Eastern Cordage Co. SN 315,110. Pub. 10-14-69. Filed 12-23-68.

886,966. AMERTUF. The Scott & Fetzer Company. SN 317,431. Pub. 12-16-69. Filed 1-24-69.

886,967. SILVERKINS. Dustikin Products, Inc. SN 328,679. Pub. 12-16-69. Filed 5-29-69.

886,968. EXCALIBUR. Turtle Wax, Inc. SN 328,749. Pub. 12-16-69. Filed 5-29-69.

Class 5—Adhesives

886,969. INSUL-COUSTIC AND DESIGN. Birma Products Corporation. MULTIPLE CLASS (Classes 5, 12, and 16). SN 247,881. Pub. 7-8-69. Filed 6-13-66.

886,970. SILBOND. Stauffer Chemical Company, assignee of International Minerals & Chemical Corporation. SN 300,708. Pub. 12-16-69. Filed 6-18-68.

Class 6—Chemicals and Chemical Compositions

886,956. (See Class 1 for this trademark.)

886,971. FLAIR. The Drackett Company, assignee, by mesne assignment, of Domtar Limited. SN 239,980. Pub. 3-28-67. Filed 3-2-66.

886,972. APELAN. Tanatex Chemical Corporation. SN 279,231. Pub. 5-28-68. Filed 8-28-67.

886,973. FRANEX. Societe le Lait et Ses Derives Maison Leon Claeys. SN 286,746. Pub. 12-16-69. Filed 12-12-67.

886,974. ITEK RS. Itek Corporation. MULTIPLE CLASS (Classes 6, 23, and 26). SN 295,587. Pub. 12-16-69. Filed 4-15-68.

886,975. UOP. Universal Oil Products Company, d.b.a. UOP Chemical Division and UOP Process Division. SN 302,997. Pub. 12-16-69. Filed 7-17-68.

886,976. MOLYNOCULANT. Kalo Inoculant Company. SN 307,651. Pub. 6-17-69. Filed 9-18-68.

886,977. MOLY-B. Kalo Inoculant Company. SN 307,652. Pub. 6-17-69. Filed 9-18-68.

886,978. TEED. S. F. Durst & Company, Inc. SN 308,279. Pub. 6-17-69. Filed 9-27-68.

886,979. CD AND DESIGN. Coulter Diagnostics, Inc. SN 318,761. Pub. 12-16-69. Filed 2-10-69.

886,980. POLASTREAM. Union Carbide Corporation. SN 321,094. Pub. 12-16-69. Filed 3-7-69.

886,981. ASTRINGEN. Robinson-Wagner Company, Inc. SN 327,681. Pub. 12-16-69. Filed 5-19-69.

Class 7—Cordage

886,956. (See Class 1 for this trademark.)

886,982. NYCOAT. Macwhyte Company. SN 317,351. Pub. 12-16-69. Filed 1-23-69.

Class 8—Smokers' Articles, Not Including Tobacco Products

886,983. SMOKE RING. Product Dynamics Corporation. SN 305,980. Pub. 12-16-69. Filed 8-26-68.

886,984. LEO. Leo Mfg. Co., Ltd. SN 324,207. Pub. 12-6-69. Filed 4-10-69.

Class 11—Inks and Inking Materials

886,985. FERMUS. Kores Manufacturing Corporation. SN 321,239. Pub. 12-16-69. Filed 3-10-69.

886,986. VIS-A-PAK. American Stencil Manufacturing Company, Inc., assignee of American Stencil Mfg. Co. SN 324,874. Pub. 12-16-69. Filed 4-18-69.

886,987. FLEX-O-CORE. Schwalm Electronics, Inc. SN 324,936. Pub. 12-16-69. Filed 4-18-69.

Class 12—Construction Materials

886,969. (See Class 5 for this trademark.)

886,988. MAINTZ. West Chester Chemical Company, Inc. MULTIPLE CLASS (Classes 12 and 16). SN 305,169. Pub. 12-16-69. Filed 8-14-68.

886,989. STRONGER-FASTER BETTER AND DESIGN. Preform Building Components, Inc. SN 318,456. Pub. 12-16-69. Filed 2-5-69.

886,990. ECHOSTOP. C. Gartenmann & Cie AG. SN 323,553. Pub. 12-16-69. Filed 4-3-69.

886,991. UNETTE. Crane Co. SN 325,012. Pub. 12-16-69. Filed 4-21-69.

886,992. DC3 AND DESIGN. Dynatron Corporation. SN 325,350. Pub. 12-16-69. Filed 4-23-69.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

886,956. (See Class 1 for this trademark.)

886,993. HOLD-KONTROL. Char-Lynn Company. SN 280,395. Pub. 12-16-69. Filed 9-15-67.

886,994. FERROCK. Water Works Supply Co., Inc. SN 289,635. Pub. 12-3-68. Filed 1-25-68.

886,995. GRIP-LOK. Pioneer Industries, Inc. SN 315,497. Pub. 12-16-69. Filed 12-31-68.

886,996. REED & PRINCE HEAD. Reed & Prince Manufacturing Co. SN 321,325. Pub. 12-16-69. Filed 3-3-69.

886,997. BIG GUN. L. R. Nelson Mfg. Co., Inc. SN 327,663. Pub. 12-16-69. Filed 5-19-69.

886,998. AGRIPPINE. Marcel Assael. SN 327,937. Pub. 12-16-69. Filed 5-21-69.

886,999. M AND FEATHER DESIGN. International Horseshoe Co., Inc., d.b.a. Multi-Products Co. SN 328,855. Pub. 12-16-69. Filed 6-2-69.

887,000. SPRAY MIST. Tolco Corporation. SN 328,917. Pub. 12-16-69. Filed 6-2-69.

887,001. MARINETRAC. Kirsch Company. SN 329,867. Pub. 12-16-69. Filed 6-12-69.

887,002. BIG BEND. Ford Motor Company. SN 330,379. Pub. 12-16-69. Filed 6-18-69.

Class 14—Metals and Metal Castings and Forgings

887,003. ALCOA-LUBE 19. Aluminum Company of America. SN 293,210. Pub. 12-16-69. Filed 3-14-68.

887,004. HC. Cyclops Corporation. SN 301,823. Pub. 10-14-69. Filed 7-2-68.

887,005. MILANO ROMAN. Bonder & Carnase Studio Inc. SN 303,261. Pub. 12-16-69. Filed 7-22-68.

887,006. GROUCH. Bonder & Carnase Studio Inc. SN 303,264. Pub. 12-16-69. Filed 7-22-68.

887,007. EUTECTIC. Eutectic Corporation. SN 321,342. Pub. 12-16-69. Filed 2-17-69.

887,008. ACOUSTILEAD. American Smelting and Refining Company. SN 331,711. Pub. 12-16-69. Filed 7-3-69.

Class 16—Protective and Decorative Coatings

886,969. (See Class 5 for this trademark.)

886,988. (See Class 12 for this trademark.)

887,009. DURA CREST. Metro Wholesale Corporation, assignee of Duron Paint Manufacturing Company, Inc. SN 217,614. Pub. 3-15-66. Filed 4-29-65.

887,010. BALANCE. Economics Laboratory, Inc. SN 303,287. Pub. 12-16-69. Filed 7-22-68.

887,011. CASEY'S. Fuller Laboratories, Inc. SN 310,084. Pub. 12-16-69. Filed 10-21-68.

887,012. FOUL-BAN. Woolsey Marine Industries, Inc. SN 321,879. Pub. 12-16-69. Filed 3-17-69.

887,013. DRUCOTE. The C. B. Dolge Company. SN 323,541. Pub. 12-16-69. Filed 4-3-69.

887,014. GLOBEMASTER AND DESIGN. Globemaster, Inc. SN 331,279. Pub. 12-16-69. Filed 6-30-69.

Class 17—Tobacco Products

887,015. MAC SORLEY'S Snug Harbour Tobacco, Ltd. SN 312,818. Pub. 12-16-69. Filed 11-21-68.

887,016. ROYAL BENGALS. Lorillard Corporation. SN 316,038. Pub. 12-16-69. Filed 12-30-68.

887,017. GRAND PRIX AND DESIGN. Bayuk Cigars Incorporated, d.b.a. Garcia y Vega. SN 321,165. Pub. 12-16-69. Filed 3-10-69.

887,018. ETERNA I. Bayuk Cigars Incorporated. SN 321,166. Pub. 12-16-69. Filed 3-10-69.

887,019. EL EMPERADOR. Bayuk Cigars Incorporated. SN 321,167. Pub. 12-16-69. Filed 3-10-69.

887,020. GRAND AWARD. Bayuk Cigars Incorporated. SN 321,168. Pub. 12-16-69. Filed 3-10-69.

887,021. CHARISMA. Bayuk Cigars Incorporated. SN 321,169. Pub. 12-16-69. Filed 3-10-69.

887,022. HOWARD HOUSE. The Briar Shop Limited. SN 321,599. Pub. 12-16-69. Filed 12-17-68.

887,023. DON QUIXOTE. Consolidated Cigar Corporation. SN 332,084. Pub. 12-16-69. Filed 7-9-69.

Class 18—Medicines and Pharmaceutical Preparations

887,024. DEPAKENE. Laboratories J. Berthier. SN 273,651. Pub. 12-16-69. Filed 6-12-67.

887,025. ATTENUVAX. Merck & Co., Inc. SN 299,366. Pub. 12-16-69. Filed 5-29-68.

887,026. QUITS. Abbott Laboratories, d.b.a. The Faultless Rubber Company. SN 302,696. Pub. 12-16-69. Filed 7-15-68.

887,027. CERUCLENS. The Purdue Frederick Company. SN 315,335. Pub. 10-14-69. Filed 12-27-68.

887,028. FOOT SHIELD AND DESIGN. The Barton Salt Company. SN 315,467. Pub. 12-16-69. Filed 12-31-68.

887,029. VI-BASIC. The Kendall Company. SN 321,503. Pub. 12-16-69. Filed 3-12-69.

887,030. VI-SPECTRUM. The Kendall Company. SN 321,504. Pub. 12-16-69. Filed 3-12-69.

887,031. HALF MOON (DESIGN). Carter-Wallace, Inc. SN 326,031. Pub. 12-16-69. Filed 5-1-69.

Class 19—Vehicles

887,032. ELECTRONICRUISER. The Greyhound Corporation. SN 274,619. Pub. 12-16-69. Filed 6-23-67.

887,033. WHEELIE BARS. Amax Industries, Inc. SN 286,074. Pub. 9-9-69. Filed 12-4-67.

887,034. PACE ARROW AND DESIGN. Selgran, Inc. SN 290,657. Pub. 12-16-69. Filed 2-8-68.

887,035. CAB SAVER. Keystone Safety Equipment Company. SN 301,435. Pub. 12-16-69. Filed 6-26-68.

887,036. IDLE TIME CAMPERS ETC. AND DESIGN. Jerry D. Peay, d.b.a. Allen Camper Manufacturing Co. SN 304,242. Pub. 12-16-69. Filed 8-2-68.

887,037. ROCK N REST. Spinks Industries, Inc., by change of name from M. H. Spinks Enterprises, Inc. SN 322,755. Pub. 12-16-69. Filed 3-25-69.

887,038. MISCELLANEOUS DESIGN. The Cessna Aircraft Company. SN 322,829. Pub. 12-16-69. Filed 3-26-69.

887,039. HYDRO-AIRE. Crane Co. SN 324,423. Pub. 12-16-69. Filed 4-14-69.

Class 21 — Electrical Apparatus, Machines, and Supplies

886,974. (See Class 6 for this trademark.)

887,040. POWER MITE 110 AND DESIGN. Mercury Electro Industries, Inc. SN 278,515. Pub. 12-16-69. Filed 8-17-67.

887,041. THE MOD SET. Packard-Bell Electronics Corporation. SN 279,213. Pub. 12-16-69. Filed 8-28-67.

887,042. SDI. Symbolic Displays, Inc. SN 290,907. Pub. 12-16-69. Filed 2-12-68.

887,043. SUN. Sun Battery Company, Inc. SN 293,059. Pub. 12-16-69. Filed 3-12-68.

887,044. UNIFILL. Ford Motor Company. SN 299,454. Pub. 3-18-69. Filed 5-31-68.

887,045. GROUND SHIELD AND DESIGN. I-T-E Imperial Corporation. SN 300,707. Pub. 12-16-69. Filed 6-18-68.

887,046. MOTOROLA AND DESIGN. Motorola, Inc. MULTIPLE CLASS (Classes 21, 26, and 36). SN 301,122. Pub. 12-16-69. Filed 6-24-68.

887,047. AQUASONIC AND DESIGN. Sealomatic Electronics Corporation. SN 301,452. Pub. 9-9-69. Filed 6-26-68.

887,048. ELECTRONIC SUSPENSION. L. W. Erath Company. SN 301,732. Pub. 12-16-69. Filed 7-1-68.

887,049. GAP-ARC. American Plasticraft Company. SN 303,249. Pub. 12-16-69. Filed 7-22-68.

887,050. ARC-GAP. American Plasticraft Company. SN 303,250. Pub. 12-16-69. Filed 7-22-68.

887,051. DAZOR. Dazor Manufacturing Corp. SN 303,400. Pub. 12-16-69. Filed 7-23-68.

887,052. VANTRAN. Vantran Electric Corporation. SN 304,026. Pub. 12-16-69. Filed 7-31-68.

887,053. VANPAK. Vantran Electric Corporation. SN 304,027. Pub. 12-16-69. Filed 7-31-68.

887,054. BANKOMAT. Metior Aktiebolag. SN 306,792. Pub. 12-16-69. Filed 9-6-68.

887,055. BUCKING HORSE DESIGN. Teledyne Electric Corporation, assignee of Western Insulated Wire Company. SN 306,971. Pub. 12-16-69. Filed 9-9-68.

887,056. POW-R-VAC. Central Quality Industries, Inc. SN 309,137. Pub. 12-16-69. Filed 10-8-68.

887,057. LOGIMETRICS. Slant/Fin Corporation. SN 310,806. Pub. 6-24-69. Filed 10-29-68.

887,058. CHESSCO. Chessco Industries, Inc. SN 318,752. Pub. 12-16-69. Filed 2-10-69.

887,059. ALUMA-FLEX. Decibel Products, Inc. SN 320,045. Pub. 12-16-69. Filed 2-25-69.

887,060. ECONO-FOAM. Avnet, Inc. SN 321,892. Pub. 12-16-69. Filed 3-17-69.

887,061. ECONO-POWER. Atlas Supply Company. SN 323,429. Pub. 12-16-69. Filed 4-2-69.

887,062. MATRICON. The Rank Organisation Limited. SN 323,963. Pub. 12-16-69. Filed 4-8-69.

887,063. UNION 76 AND DESIGN. Union Oil Company of California. SN 323,972. Pub. 12-16-69. Filed 4-8-69.

887,064. SAMSON. Kleen Car Tire Sales, Inc. SN 324,069. Pub. 12-16-69. Filed 4-9-69.

887,065. EBERT 100. Ebert Electronics Corporation. SN 324,580. Pub. 12-16-69. Filed 4-15-69.

887,066. MULT-E-LITER AND DESIGN. Ebert Electronics Corporation. SN 324,583. Pub. 12-16-69. Filed 4-15-69.

887,067. ATLAS. Atlas Supply Company. SN 324,790. Pub. 12-16-69. Filed 4-17-69.

887,068. ASTRO. The Stanley Works. SN 329,047. Pub. 12-16-69. Filed 6-4-69.

887,069. C AND DESIGN. All-Steel Equipment Inc. SN 331,807. Pub. 12-16-69. Filed 7-7-69.

887,070. UNIQUE. Unique Electronics Incorporated. SN 332,074. Pub. 12-16-69. Filed 7-9-69.

Class 22 — Games, Toys, and Sporting Goods

887,071. AROUND THE GREEN AND DESIGN. Norman K. Neddermeyer. SN 276,462. Pub. 12-16-69. Filed 7-20-67.

887,072. BLACK CAT AND DESIGN. Harold J. Searer, d.b.a. Searer Rubber Company. SN 284,399. Pub. 12-16-69. Filed 11-8-67.

887,073. GI (DESIGN). Gabriel Industries, Inc. SN 311,778. Pub. 12-16-69. Filed 11-12-68.

887,074. TURN-O-MATIC. Kohner Bros., Inc. SN 322,073. Pub. 12-16-69. Filed 3-18-69.

887,075. AI (DESIGN). Adirondack Industries, Inc. SN 322,241. Pub. 12-16-69. Filed 3-20-69.

887,076. AQUADECK AND DESIGN. Aquaslide 'n' Dive Corporation. SN 322,251. Pub. 12-16-69. Filed 3-20-69.

887,077. HEY, FATSO. Hasbro Industries, Inc. SN 322,293. Pub. 12-16-69. Filed 3-20-69.

887,078. GOLDEN ASTRONAUT. Miner Industries, Inc. SN 322,313. Pub. 12-16-69. Filed 3-20-69.

887,079. ALREX AND DESIGN. Kenneth Smith, Inc. SN 325,406. Pub. 12-16-69. Filed 4-23-69.

887,080. QB. "Automatic" Sprinkler Corporation of America. SN 325,571. Pub. 12-16-69. Filed 4-25-69.

887,081. SAND CRAB. Mattel, Inc. SN 330,674. Pub. 11-25-69. Filed 6-23-69.

887,082. JOHN DEERE AND DESIGN. Deere & Company. SN 333,872. Pub. 12-16-69. Filed 7-30-69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

886,960. (See Class 2 for this trademark.)

887,083. TRIM. The W. E. Bassett Company. SN 193,444. Pub. 8-3-65. Filed 5-14-64.

887,084. NESCO. Nelson Sales Company. SN 274,824. Pub. 12-10-68. Filed 6-26-67.

887,085. P.C. Lanex Importing Company. SN 289,200. Pub. 12-16-69. Filed 1-19-68.

887,086. ELNA LOTUS. Tavaro S.A. SN 293,601. Pub. 12-16-69. Filed 3-18-68.

887,087. WHISKER-WHISKER. Ernest P. Simmons, Sr., d.b.a. Ernie Simmons Enterprises. SN 295,849. Pub. 12-16-69. Filed 4-17-68.

887,088. CLEAR-SIX. Reynolds Metals Company. SN 297,217. Pub. 12-16-69. Filed 5-2-68.

887,089. ARCTIC-GRIP. Studebaker Corporation. SN 297,450. Pub. 12-16-69. Filed 5-6-68.

887,090. EKOMAT. Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co. SN 297,551. Pub. 12-16-69. Filed 5-7-68.

887,091. HOT BOX. Asphalt Equipment Company, Inc. SN 299,937. Pub. 12-16-69. Filed 6-7-68.

887,092. CALDWELL'S POWER GIANT AND DESIGN. E. L. Caldwell & Sons, Inc. SN 300,060. Pub. 12-16-69. Filed 6-10-68.

887,093. SIMMS. T. S. Simms & Co. Limited. SN 301,776. Pub. 12-16-69. Filed 7-1-68.

887,094. PLASTI-VAC. Plasti-Vac, Inc. SN 303,069. Pub. 12-16-69. Filed 7-18-68.

887,095. SWECO AND DESIGN. Sweco, Inc. SN 303,838. Pub. 12-16-69. Filed 7-29-68.

887,096. TMI AND DESIGN. Textile Machinery, Inc. SN 303,936. Pub. 12-16-69. Filed 7-30-68.

887,097. MEMCO-MATIC. Mill Engineering & Machinery Co. SN 304,615. Pub. 12-16-69. Filed 8-7-68.

887,098. TOP SHOP. George W. Weatherby Associates. SN 305,264. Pub. 12-16-69. Filed 8-15-68.

887,099. HELIPRESS. The Bauer Bros. Co. SN 305,304. Pub. 12-16-69. Filed 8-16-68.

887,100. RED LION. International Basic Economy Corporation. SN 305,546. Pub. 12-16-69. Filed 8-20-68.

887,101. CLEANMASTER. Practical Mfg. Co. SN 305,743. Pub. 12-16-69. Filed 8-22-68.

887,102. ELECTROMATIC CRA AND DESIGN. Cutting Room Appliances Corp. SN 305,815. Pub. 12-16-69. Filed 8-23-68.

887,103. HAMILGEAR. Combined Engineered Products Limited. SN 307,427. Pub. 12-16-69. Filed 9-16-68.

887,104. MODULODE. Fuller Company. SN 307,734. Pub. 12-16-69. Filed 9-19-68.

887,105. NUTMASTER. Peltzer & Ehlers. SN 308,433. Pub. 12-16-69. Filed 9-30-68.

887,106. BIG RED TAYLOR AND DESIGN. Taylor Machine Works. SN 308,723. Pub. 12-16-69. Filed 10-2-68.

887,107. INTERROLL AND DESIGN. Hans Vom Stein. SN 309,378. Pub. 12-16-69. Filed 10-10-68.

887,108. QUIK SET. Pennsylvania Sewing Research Corp. SN 309,890. Pub. 12-16-69. Filed 10-17-68.

887,109. HYDRAUDYNE N.V. AND DESIGN. Hydraudyne N.V. SN 311,598. Pub. 10-14-69. Filed 11-7-68.

887,110. TEMPO. Oneida Ltd. SN 314,442. Pub. 12-16-69. Filed 12-13-68.

887,111. VOLU-MATIK. Harnischfeger Corporation. SN 315,759. Pub. 12-16-69. Filed 1-3-69.

887,112. TOYOTA. Toyota Jidosha Kogyo Kabushiki Kaisha (Toyota Motor Co., Ltd.). SN 318,249. Pub. 12-16-69. Filed 2-3-69.

887,113. AQUA-FLATOR. G. H. Meiser & Co. SN 318,797. Pub. 12-16-69. Filed 2-10-69.

887,114. AIRTEK. Joseph R. Arno, d.b.a. Airtek Company. SN 320,934. Pub. 9-30-69. Filed 3-6-69.

887,115. BUNTON. Bunton Co. SN 322,551. Pub. 12-16-69. Filed 3-24-69.

887,116. KACARBITE. Kaman Corporation. SN 325,664. Pub. 12-16-69. Filed 4-28-69.

887,117. ENZINGER. The Durlron Company, Inc. SN 327,138. Pub. 12-16-69. Filed 5-13-69.

887,118. 1782 AND DESIGN OF EAGLE. Martin Miller Gesellschaft GmbH. SN 327,944. Pub. 12-16-69. Filed 5-21-69.

887,119. TORNADO. Bolton-Emerson, Inc. SN 328,153. Pub. 12-16-69. Filed 5-23-69.

887,120. TROND. Imperial International Corp. SN 328,300. Pub. 12-16-69. Filed 5-26-69.

887,121. MITE-E-LITE. McCulloch Corporation, assignee of McCulloch Mite-E-Lite Inc. SN 328,326. Pub. 12-16-69. Filed 5-26-69.

887,122. MON-A-MATIC. Nelco Sewing Machine Co., Inc. SN 328,327. Pub. 12-16-69. Filed 5-26-69.

887,123. FASTBACK. Sunbeam Corporation (Delaware corporation), by merger and change of name from Sunbeam Corporation (Illinois corporation). SN 328,459. Pub. 12-2-69. Filed 5-27-69.

887,124. POWER MAC 6. McCulloch Corporation. SN 329,259. Pub. 12-16-69. Filed 6-5-69.

887,125. INTERROLL. Hans vom Stein. SN 329,471. Pub. 12-16-69. Filed 6-9-69.

887,126. THOR-DRAULIC. Thor Power Tool Company. SN 329,540. Pub. 12-16-69. Filed 6-9-69.

887,127. MINI-JET. Halm Industries Co., Inc. SN 329,618. Pub. 12-16-69. Filed 6-10-69.

887,128. AMERICAN EAGLE. Imperial Knife Associated Companies, Inc. SN 329,620. Pub. 12-16-69. Filed 6-10-69.

887,129. AATLAS. Atlas Lift Truck Rentals & Sales, Inc. SN 329,682. Pub. 12-16-69. Filed 6-11-69.

887,130. CRUZ-AIR. J. I. Case Company. SN 330,287. Pub. 12-16-69. Filed 6-17-69.

887,131. UTILITY AND DESIGN. Utility Manufacturing Company. SN 330,335. Pub. 12-16-69. Filed 6-18-69.

887,132. SPRINT. The Gillette Company. SN 330,449. Pub. 12-16-69. Filed 6-19-69.

887,133. POWER-MIST. UTD Corporation. SN 331,579. Pub. 12-16-69. Filed 7-2-69.

Class 25 — Locks and Safes

887,134. TRANSLOK. Translok, Inc. SN 315,343. Pub. 12-16-69. Filed 12-27-68.

887,135. ELITE. Norris Industries, Inc. SN 329,501. Pub. 12-16-69. Filed 6-9-69.

887,136. DIAL-O-MATIC. Hartmann Luggage Company. SN 330,284. Pub. 12-16-69. Filed 6-17-69.

887,137. COLOR-LITE. Cole National Corporation. SN 330,358. Pub. 12-16-69. Filed 6-18-69.

Class 26 — Measuring and Scientific Appliances

886,960. (See Class 2 for this trademark.)

886,974. (See Class 6 for this trademark.)

887,046. (See Class 21 for this trademark.)

887,138. JET. Trans-Lux Corporation. SN 290,229. Pub. 8-26-69. Filed 2-5-68.

887,139. CYBERMAT. Pines Engineering Co., Inc. SN 294,407. Pub. 12-16-69. Filed 3-28-68.

887,140. AMERICAN ATOMICS AND DESIGN. American Atomics Corporation. MULTIPLE CLASS (Classes 26 and 34). SN 294,903. Pub. 12-16-69. Filed 4-4-68.

887,141. V AND DESIGN. Vernitron Corporation. SN 297,511. Pub. 9-23-69. Filed 5-7-68.

887,142. CREST (DESIGN). A. W. Faber-Castell, assignee of A. W. Faber-Castell Pencil Co., Inc. SN 306,127. Pub. 12-16-69. Filed 8-28-68.

887,143. TRI-WARE AND DESIGN. Tri-Point Industries, Inc. SN 306,600. Pub. 10-21-69. Filed 9-4-68.

887,144. D AND DESIGN. Rochester Datronics, Inc. SN 311,932. Pub. 12-16-69. Filed 11-12-68.

887,145. MCL ETC. AND DESIGN. Microwave Cavity Laboratories, Inc. SN 313,595. Pub. 12-16-69. Filed 12-4-68.

887,146. STROBOLUME. General Radio Company. SN 319,595. Pub. 12-16-69. Filed 2-19-69.

887,147. OPTOGRAPHICS. Speedring Corporation. SN 319,969. Pub. 12-16-69. Filed 2-24-69.

887,148. POLY-DEWAR. Kontes Glass Company. SN 322,303. Pub. 12-16-69. Filed 3-20-69.

887,149. DATA-VOX. Data Technology Corporation. SN 322,563. Pub. 12-16-69. Filed 3-24-69.

887,150. PROJECTA-MATH. Lapine Scientific Company. SN 329,798. Pub. 12-16-69. Filed 6-12-69.

Class 27 — Horological Instruments

887,151. ANDRE VILLARD. Endura Time Corporation. SN 324,431. Pub. 12-16-69. Filed 4-14-69.

Class 28 — Jewelry and Precious-Metal Ware

887,152. BOUTIQUE MONOGRAMS. M & N Silvers Corp. SN 319,615. Pub. 12-16-69. Filed 2-19-69.

887,153. MARCEL CHAVEL. M & N Silvers Corp. SN 322,174. Pub. 12-16-69. Filed 3-19-69.

887,154. CARNEGIEGEM. Wellington Jewelry Co. Inc. SN 328,924. Pub. 12-16-69. Filed 6-2-69.

887,155. LIFETIME AND PYRAMID DESIGN. Zell Bros. SN 329,299. Pub. 12-16-69. Filed 6-5-69.

Class 31 — Filters and Refrigerators

887,156. TECHNA. Ford Motor Company. SN 310,769. Pub. 12-16-69. Filed 10-29-68.

887,157. KEMPURE. Kewaunee Scientific Equipment Corporation. SN 314,974. Pub. 12-16-69. Filed 12-20-68.

887,158. D/B AND DESIGN. Dunham-Bush, Inc. SN 315,663. Pub. 12-16-69. Filed 12-30-68.

Class 32 — Furniture and Upholstery

887,159. GLIDE-A-MATIC. Marshallan Products, Inc. SN 303,690. Pub. 12-16-69. Filed 7-26-68.

887,160. TODAY. Congoleum Industries, Inc. SN 311,833. Pub. 12-16-69. Filed 11-12-68.

887,161. WESTWOOD. Westwood Industries, Inc. MULTIPLE CLASS (Classes 32, 34, and 50). SN 316,355. Pub. 12-16-69. Filed 1-10-69.

887,162. DYNAWOOD. Wilhelm W. Brockway. SN 316,407. Pub. 12-16-69. Filed 1-13-69.

887,163. FURTIQUE. Furtique Inc. MULTIPLE CLASS (Classes 32, 39, and 50). SN 323,987. Pub. 12-16-69. Filed 4-9-69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

887,140. (See Class 26 for this trademark.)

887,161. (See Class 32 for this trademark.)

887,164. TURBEX. Elex AG. SN 291,752. Pub. 12-16-69. Filed 2-23-68.

887,165. CHARMALLOY. Charmglow Products, Inc. SN 312,561. Pub. 10-7-69. Filed 11-19-68.

887,166. MURRAY. Murray Iron Works Company. SN 316,568. Pub. 12-16-69. Filed 1-15-69.

887,167. KNICKERBOCKER. Knickerbocker Guild Inc. SN 324,070. Pub. 12-16-69. Filed 4-9-69.

887,168. MAGICLEAN. Magic Chef, Inc. SN 326,241. Pub. 12-16-69. Filed 5-2-69.

887,169. ROYAL CAROUSEL. Malm Fireplaces, Inc. SN 326,393. Pub. 12-16-69. Filed 5-5-69.

887,170. MAYFAIR. Broan Mfg. Co., Inc. SN 326,990. Pub. 12-16-69. Filed 5-12-69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

887,171. Z AND CIRCLE DESIGN. Zimmerman Packing Company. SN 326,707. Pub. 12-16-69. Filed 5-7-69.

Class 36 — Musical Instruments and Supplies

887,046. (See Class 21 for this trademark.)

887,172. WAH WAH. Thomas Organ Company. SN 275,086. Pub. 9-2-69. Filed 6-29-67.

887,173. MAESTRO AND DESIGN. Chicago Musical Instrument Co. SN 285,525. Pub. 2-18-69. Filed 11-24-67.

887,174. STEREO-VIBRATO. The Estey Musical Instrument Corporation. SN 300,920. Pub. 8-12-69. Filed 6-20-68.

887,175. PHILIPS AND SHIELD DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 314,808. Pub. 12-16-69. Filed 12-18-68.

887,176. FINE-TONE AND DESIGN. Fine-Tone Audio Products, Inc. SN 318,537. Pub. 9-2-69. Filed 2-6-69.

887,177. ELECTROCORDION. Accordion Schools of America, Inc. SN 322,239. Pub. 12-16-69. Filed 3-20-69.

Class 37 — Paper and Stationery

887,178. THE ROCKET MINI-MARK. Duro Pen Company, Inc., assignee, by mesne assignment, of Duro Pen Company, Inc. SN 259,535. Pub. 4-2-68. Filed 11-28-66.

887,179. CONSUL. Penn Corporation, assignee of Ritepoint Corporation. SN 259,854. Pub. 9-5-67. Filed 12-1-66.

887,180. AD-GRIP. Adhesive Advertising Service, Inc. SN 312,970. Pub. 12-16-69. Filed 11-25-68.

Class 38 — Prints and Publications

887,181. MFI MARKINGS FOR INDUSTRY AND DESIGN. Pottersign, Inc. SN 263,693. Pub. 8-13-68. Filed 1-31-67.

887,182. U.S. MEDICINE. U.S. Medicine, Inc. SN 300,663. Pub. 12-16-69. Filed 6-18-68.

887,183. BIOGRAM. Industrial Bio-Test Laboratories, Inc. SN 302,085. Pub. 12-16-69. Filed 7-5-68.

887,184. WEIGHT WATCHERS. Weight Watchers International, Inc. SN 304,658. Pub. 11-19-68. Filed 8-8-68.

887,185. MC GRATH. Joseph E. McGrath, Jr. SN 317,357. Pub. 12-16-69. Filed 1-23-69.

887,186. MIXIE THE PIXIE. Forera Corporation. SN 318,703. Pub. 12-16-69. Filed 2-10-69.

887,187. COLOR MUSIC. Color Music, Incorporated. SN 319,135. Pub. 12-16-69. Filed 2-14-69.

887,188. DEGENERS' FLORA HAWAIIANA. Dr. Otto Degener and Dr. Isa Irmgard Degener. SN 321,580. Pub. 12-16-69. Filed 4-10-69.

887,189. THE INTERNATIONAL ECONOMIST. International Reports, Inc. SN 324,462. Pub. 12-16-69. Filed 4-14-69.

887,190. WHEELER-DEALER. Wheeler-Dealer Association. SN 326,013. Pub. 12-16-69. Filed 4-30-69.

887,191. INTER-ACT. Advanced Computer Techniques Corporation. MULTIPLE CLASS (Classes 38 and 107). SN 326,576. Pub. 12-16-69. Filed 5-7-69.

887,192. VFL VETERINARIAN/S FINANCIAL LETTER. Sieber & McIntyre, Inc. SN 327,104. Pub. 12-16-69. Filed 5-13-69.

887,193. ARROW AND GLOBE (DESIGN). Litton Educational Publishing, Inc. SN 327,822. Pub. 12-16-69. Filed 5-21-69.

887,194. MAN AND ANVIL (DESIGN). Litton Educational Publishing, Inc. SN 327,823. Pub. 12-16-69. Filed 5-21-69.

887,195. HALF FACE (DESIGN). Litton Educational Publishing, Inc. SN 327,824. Pub. 12-16-69. Filed 5-21-69.

Class 39 — Clothing

886,962. (See Class 3 for this trademark.)

887,163. (See Class 32 for this trademark.)

887,196. SMITTYS. Smith Brothers Manufacturing Co. SN 284,945. Pub. 10-29-68. Filed 11-15-67.

887,197. JOHN STANLEY BOOTMAKER SHOES. Eagle Clothes, Inc. SN 285,001. Pub. 12-16-69. Filed 11-16-67.

887,198. KOTTON HANK. Brady Manufacturing Company, Inc. SN 296,800. Pub. 12-16-69. Filed 4-29-68.

887,199. NEET HANK. Brady Manufacturing Company, Inc. SN 296,801. Pub. 12-16-69. Filed 4-29-68.

887,200. TIDY. Fort Howard Paper Company. SN 304,332. Pub. 10-14-69. Filed 8-5-68.

887,201. ASTRAMAN. Astraka Limited. SN 305,909. Pub. 12-16-69. Filed 8-26-68.

887,202. ENZO BORGHINI. Wilroy, Inc. SN 311,321. Pub. 12-16-69. Filed 11-4-68.

887,203. GREENSLEEVES AND DESIGN. CMC Industries, Inc. SN 311,569. Pub. 12-16-69. Filed 11-7-68.

887,204. GREEN FLASH. The Dunlop Tire and Rubber Corporation. SN 312,760. Pub. 12-16-69. Filed 11-21-68.

887,205. SALIK INTERNATIONAL. Etablissements J. Salik Societe Anonyme. SN 317,540. Pub. 12-16-69. Filed 1-27-69.

887,206. MISS SBICCA. Sbicca of California. SN 321,537. Pub. 12-16-69. Filed 3-12-69.

887,207. MR. SBICCA. Sbicca of California. SN 321,538. Pub. 12-16-69. Filed 3-12-69.

887,208. MASTER SBICCA. Sbicca of California. SN 321,539. Pub. 12-16-69. Filed 3-12-69.

887,209. MISS STATUS. The Status Shoe Corporation. SN 322,358. Pub. 12-16-69. Filed 3-20-69.

887,210. WEAR LEWIS GLOVES ETC. AND DESIGN. Rubin Bros. Waste Co., d.b.a. Lewis Industrial Supply Co. SN 322,485. Pub. 12-16-69. Filed 3-21-69.

887,211. CONDITIONER. Buccaneer Mfg. Co. Inc. SN 322,699. Pub. 12-16-69. Filed 3-25-69.

887,212. UGO VALLINI. L & M Fashions, Inc. SN 322,994. Pub. 12-16-69. Filed 3-27-69.

887,213. KNITCRAFT. Mamiye Brothers Inc. SN 323,342. Pub. 12-16-69. Filed 4-1-69.

887,214. NOTTINGHILL SHIRTS, LTD. Nottinghill Designers' Group, Inc. SN 324,625. Pub. 12-16-69. Filed 4-28-69.

887,215. ICE-CUTTER. The Puritan Sportswear Corp. SN 329,127. Pub. 12-16-69. Filed 6-4-69.

887,216. C-BAND. Sears, Roebuck and Co. SN 329,517. Pub. 12-16-69. Filed 6-9-69.

887,217. DRIFTWOOD. Hanes Corporation. SN 329,619. Pub. 12-16-69. Filed 6-10-69.

887,218. SCOWS. Melville Shoe Corporation. SN 334,026. Pub. 12-16-69. Filed 7-31-69.

Class 40 — Fancy Goods, Furnishings, and Notions

887,219. ROACH STUDIOS AND DESIGN. Jay & Ell Enterprises, Inc. SN 326,908. Pub. 12-16-69. Filed 5-9-69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

886,956. (See Class 1 for this trademark.)

887,220. NUREL. Standard Oil Company. SN 315,723. Pub. 7-29-69. Filed 1-3-69.

Class 43 — Thread and Yarn

886,956. (See Class 1 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

887,221. DYNAPOWER. Dynapower Systems Corporation. SN 321,643. Pub. 12-16-69. Filed 3-13-69.

887,222. NASA-SPEC. Burnett Instrument Company. SN 323,248. Pub. 12-2-69. Filed 4-1-69.

887,223. XANTOPREN. Farbenfabriken Bayer Aktiengesellschaft. SN 324,707. Pub. 12-16-69. Filed 4-16-69.

887,224. TRITAMS. Kimberly-Clark Corporation. SN 330,562. Pub. 12-16-69. Filed 6-20-69.

887,225. WESTPORT. Sherwood Medical Industries Inc. SN 330,638. Pub. 12-16-69. Filed 6-20-69.

887,226. CRYOGEL. Minnesota Mining and Manufacturing Company. SN 331,286. Pub. 12-16-69. Filed 6-30-69.

887,227. 3M. Minnesota Mining and Manufacturing Company. SN 331,287. Pub. 12-16-69. Filed 6-30-69.

Class 46 — Foods and Ingredients of Foods

887,228. GROSJEAN AND DESIGN. C. E. Grosjean Rice Milling Co. SN 285,922. Pub. 12-16-69. Filed 11-30-67.

887,229. TRAIL PACKET. Ad. Seidel & Son Inc. SN 298,048. Pub. 12-16-69. Filed 5-13-68.

887,230. COLONIAL INN. Armour-Dial, Inc. SN 301,327. Pub. 1-14-69. Filed 6-25-68.

887,231. MATCHMAKERS. Rowntree Mackintosh Limited., by change of name from Rowntree and Company Limited. SN 307,672. Pub. 10-28-69. Filed 9-18-68.

887,232. FRUIT'N CREME DELIGHT. ITT Continental Baking Company. SN 308,490. Pub. 8-26-69. Filed 9-30-68.

887,233. CROWN'S FRESHATIZED AND DESIGN. Crown Food Products, Inc. SN 311,471. Pub. 8-19-69. Filed 11-6-68.

887,234. FRISCO WAFERS. Bremner Biscuit Company. SN 318,748. Pub. 9-30-69. Filed 2-10-69.

887,235. ROYAL SEAL BRAND. Proteus Foods & Industries Inc. SN 319,955. Pub. 12-16-69. Filed 2-24-69.

887,236. CAPTAIN KIDD. Aunt Nellie's Foods, Inc. SN 320,698. Pub. 11-18-69. Filed 3-4-69.

887,237. EGGSTRA. Tillie Lewis Foods, Inc. SN 321,609. Pub. 7-29-69. Filed 3-13-69.

887,238. RABBIT HEAD (DESIGN). HMH Publishing Co. Inc. SN 323,293. Pub. 12-16-69. Filed 4-1-69.

887,239. FLAVOR-CHURNED. General Host Corporation. SN 324,585. Pub. 12-16-69. Filed 4-15-69.

887,240. COFFEETWIN. National Dairy Products Corporation. SN 325,066. Pub. 12-16-69. Filed 4-21-69.

887,241. JILL'S. Yakima Valley Grape Producers, Inc. SN 326,728. Pub. 10-14-69. Filed 5-8-69.

887,242. CUB. Gem, Incorporated. SN 329,039. Pub. 10-21-69. Filed 6-4-69.

Class 47 — Wines

887,243. ONDINE. Hermann Kendermann. SN 308,215. Pub. 9-2-69. Filed 9-25-68.

Class 50 — Merchandise Not Otherwise Classified

887,161. (See Class 32 for this trademark.)

887,163. (See Class 32 for this trademark.)

887,244. GRAPHMATIC MAGNE-GRAPH. Alvin J. Bytwork, d.b.a. Communication Aides. SN 308,461. Pub. 12-16-69. Filed 9-30-68.

887,245. BUNNYWELL. Paul Mannell, d.b.a. Ozark Enterprises. SN 316,105. Pub. 12-16-69. Filed 1-8-69.

887,246. PALLITE. Pallite Corporation. SN 333,343. Pub. 12-16-69. Filed 7-24-69.

Class 51 — Cosmetics and Toilet Preparations

887,247. LIVING STEPS. Ben Dinerstein. SN 221,978. Pub. 12-16-69. Filed 6-25-65.

887,248. HYDRAMNIOTIQUE. Laboratoires du Dr. N. G. Payot Etablissement. SN 272,732. Pub. 12-16-69. Filed 5-31-67.

887,249. INTERNATIONAL SET. The Wella Corporation. SN 303,091. Pub. 12-16-69. Filed 7-18-68.

887,250. KERAFIRM. L'Oreal. SN 321,427. Pub. 10-7-69. Filed 1-21-69.

887,251. FROSTED FRAGRANCE KISS. Luzier Incorporated. SN 325,616. Pub. 12-16-69. Filed 4-25-69.

887,252. BODY AND SOUL. Bristol-Myers Company. SN 329,220. Pub. 12-16-69. Filed 6-5-69.

887,253. FEELIN' BEAUTIFUL. John H. Breck, Inc. SN 331,989. Pub. 12-16-69. Filed 7-8-69.

887,254. FEELING BEAUTIFUL. John H. Breck, Inc. SN 331,991. Pub. 12-16-69. Filed 7-8-69.

887,255. ENSIGN. Beecham Inc. SN 332,576. Pub. 12-16-69. Filed 7-15-69.

Class 52 — Detergents and Soaps

887,256. HOGWASH. West Laboratories, Inc., assignee of Interstate Industries, Inc., d.b.a. Interstate Chemical Company. SN 274,209. Pub. 6-11-68. Filed 6-19-67.

887,257. CRC. C. J. Webb, Inc. SN 318,885. Pub. 9-16-69. Filed 2-11-69.

887,258. RID-X. Sterling Drug Inc. SN 322,493. Pub. 12-16-69. Filed 3-21-69.

887,259. PURE GOLD. Bristol-Myers Company. SN 324,683. Pub. 10-14-69. Filed 4-16-69.

Service Marks

Class 100 — Miscellaneous

887,260. ISE AND DESIGN. International Systems & Equipment, Inc. SN 274,627. Pub. 9-16-69. Filed 6-23-67.

887,261. P-V-T. P-V-T, Inc. SN 286,714. Pub. 12-16-69. Filed 12-11-67.

887,262. STEEL SUPPLIES AND DESIGN. Olean Steel Sales & Service, Inc. SN 287,457. Pub. 12-16-69. Filed 12-22-67.

887,263. WINDJAMMER. Marriott Corporation. SN 289,313. Pub. 8-19-69. Filed 1-22-68.

887,264. LEASE QUIP. Leasequip Corporation. SN 290,738. Pub. 12-16-69. Filed 2-9-68.

887,265. PINKERTON'S. Pinkerton's, Inc. SN 305,345. Pub. 12-16-69. Filed 8-16-68.

887,266. THE HOLY COW. Holy Cow Ice Creams, Inc., d.b.a. The Holy Cow. SN 306,141. Pub. 12-16-69. Filed 8-28-68.

887,267. RED ARROW CAMP AND DESIGN. Red Arrow Camps, Inc. SN 306,944. Pub. 12-16-69. Filed 9-9-68.

887,268. SEI AND DESIGN. Sudmeier Enterprises, Incorporated. SN 307,764. Pub. 9-30-69. Filed 9-19-68.

887,269. ASM AUTOMATED MANUFACTURING/PROCESSING/PRODUCTION EXPOSITION AND CONFERENCE. American Society for Metals. SN 308,265. Pub. 12-16-69. Filed 9-26-68.

887,270. GREYRAD. Greyrad Corporation. SN 310,091. Pub. 12-16-69. Filed 10-21-68.

887,271. BASTILLE. Young World Corporation, assignee of P.P.B., Inc. SN 313,134. Pub. 9-16-69. Filed 11-26-68.

887,272. RUNNING DOG (DESIGN). The Greyhound Corporation. SN 317,838. Pub. 12-16-69. Filed 1-29-69.

887,273. HEREFORD BARN. Hereford Barn, Inc. SN 322,163. Pub. 12-16-69. Filed 3-19-69.

887,274. FUN-MOBILE. Campers International, Inc. SN 328,003. Pub. 12-16-69. Filed 5-22-69.

887,275. MAN'S HEAD (DESIGN). Alfie's Fish & Chips, Inc. SN 329,934. Pub. 12-16-69. Filed 6-13-69.

887,276. RANCH HOUSE AND DESIGN. Ranch House of America Inc. SN 331,292. Pub. 12-16-69. Filed 6-30-69.

Class 101 — Advertising and Business

887,277. HOWDY-PAC. Guest Pac Corporation. SN 281,410. Pub. 12-16-69. Filed 9-27-67.

887,278. THE COLLECTOR'S GUILD LTD. Consolidated Fine Arts, Ltd. SN 313,265. Pub. 12-16-69. Filed 11-29-68.

887,279. ALL POINTS RELOCATION SERVICE, INC. AND DESIGN. All Points Relocation Service, Inc. SN 322,676. Pub. 12-16-69. Filed 3-25-69.

887,280. AN AUTHENTIC VILLAGER/LADYBUG SHOP. Villager Industries, Inc. SN 323,161. Pub. 12-16-69. Filed 3-28-69.

887,281. PDQ PRESS. Production Lithographing, Inc., d.b.a. PDQ Press. SN 325,074. Pub. 12-16-69. Filed 4-21-69.

887,282. SIZZLER STEAK HOUSES. Sizzler Family Steak Houses. SN 325,147. Pub. 12-16-69. Filed 4-22-69.

887,283. TIME OUT. Class Student Services, Inc. SN 325,465. Pub. 12-16-69. Filed 4-24-69.

Class 102 — Insurance and Financial

887,284. STYLIZED V (DESIGN). New York Venture Fund, Inc. SN 318,088. Pub. 12-16-69. Filed 1-31-69.

887,285. SASEGRO. Old Republic Life Insurance Company. SN 318,092. Pub. 12-16-69. Filed 1-31-69.

Class 103 — Construction and Repair

887,286. FANCIFUL REPRESENTATION OF A BUG. Delk Pest Control. SN 288,682. Pub. 12-16-69. Filed 1-12-68.

887,287. U.S. ROOTER AND DESIGN. U.S. Rooter Corporation. SN 311,315. Pub. 12-16-69. Filed 11-4-68.

Class 105 — Transportation and Storage

887,288. S AND DESIGN. The Superior Oil Company. SN 286,202. Pub. 12-16-69. Filed 12-4-67.

887,289. SUPCO. The Superior Oil Company, SN 286,210. Pub. 12-16-69. Filed 12-4-67.

887,290. SWINGATHON. HMH Publishing Co. Inc. SN 324,453. Pub. 12-16-69. Filed 4-14-69.

887,291. SOUTH AMERICAN CARNIVAL. AITS, Inc. SN 332,654. Pub. 12-16-69. Filed 7-16-69.

887,292. SOUTH ATLANTIC CARNIVAL. AITS, Inc. SN 332,655. Pub. 12-16-69. Filed 7-16-69.

Class 107 — Education and Entertainment

887,191. (See Class 38 for this trademark.)

887,293. ICM. Litton Business Systems, Inc. SN 289,105. Pub. 12-16-69. Filed 1-18-68.

887,294. NAUI SAFETY THROUGH EDUCATION QUALIFIED SCUBA DIVER AND DESIGN. National Association of Underwater Instructors. SN 293,559. Pub. 12-16-69. Filed 3-18-68.

887,295. QDM AND DESIGN. Eaton Yale & Towne Inc. SN 303,403. Pub. 12-16-69. Filed 7-23-68.

887,296. CAN-AM. Sports Car Club of America, Incorporated. SN 311,700. Pub. 12-16-69. Filed 11-8-68.

887,297. THE SPONTANEOUS GENERATION. John Lloyd Kindall. SN 312,839. Pub. 12-16-69. Filed 11-20-68.

887,298. FLYING COUNTRY CLUB. Progressive Aviation Ltd. SN 314,610. Pub. 12-16-69. Filed 12-16-68.

887,299. DYNAMIC TYPING. Dynamic Typing, Inc. SN 318,361. Pub. 12-16-69. Filed 2-5-69.

887,300. DAY OF DISCOVERY. The Radio Bible Class, Inc. SN 319,072. Pub. 12-16-69. Filed 2-13-69.

887,301. IMAGE 3. Black Star Publishing Co., Inc. SN 319,427. Pub. 12-16-69. Filed 2-18-69.

887,302. THE SIXTH SENSE. The Sixth Sense. SN 321,832. Pub. 12-9-69. Filed 3-14-69.

887,303. BUBBLE PUPPY. Dorothy Reinhackel. SN 324,495. Pub. 12-16-69. Filed 4-14-69.

Collective Membership Marks

Class 200

887,304. AI AND DESIGN. The Alpha Iota Sorority. SN 284,072. Pub. 12-16-69. Filed 11-3-67.

887,305. AMERICAN GOLF ASSOCIATION MEMBER AND DESIGN. American Golf Association, Inc. SN 294,715. Pub. 12-16-69. Filed 4-2-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

887,306. W. R. Grace & Co., New York, N.Y. SN 298,823. Filed P.R. 5-22-68; Am. S.R. 12-15-69.

QUIK-DRI

For Rinse Additive for Use in Automatic Dishwashers (Int. Cl. 3).
First use Apr. 30, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

887,307. First Processing Corporation, Vero Beach, Fla. SN 320,809. Filed P.R. 3-5-69; Am. S.R. 10-6-69.

FISHMEAL IN SECONDS

For Machinery for Cutting, Pressing and Milling Combined With Dehydration, Fired by Natural Gas or Diesel, for the Processing of Fish Into Fishmeal (Int. Cl. 11).
First use Oct. 15, 1967.

Class 37 — Paper and Stationery

887,308. Combined Paper Mills, Inc., Chicago, Ill. SN 282,060. Filed P.R. 10-9-67; Am. S.R. 10-3-69.

PORCELLANIZED

For Offset, Rotogravure, and Letterpress Printing Papers (Int. Cl. 16).
First use Oct. 14, 1966.

Class 38 — Prints and Publications

887,309. Telecine Film Studios, Inc., Chicago, Ill. SN 290,133. Filed P.R. 2-1-68; Am. S.R. 11-17-69.

VOCATIONAL FILMS

For Audio-Visual Teaching Aids for Use in Career Counseling and Guidance of Individual Persons—Namely, Films, Filmstrips and Sound Filmstrips, Sold as Units With Guidance and Counseling Instructional Material as a Part Thereof (Int. Cl. 9).
First use Mar. 15, 1967.

887,310. American Chemical Society, Washington, D.C. SN 300,510. Filed P.R. 6-17-68; Am. S.R. 12-11-69.

POLYMER SCIENCE & TECHNOLOGY

For Journal (Int. Cl. 16).
First use Feb. 6, 1967.

887,311. Dr. Otto Degener and Dr. Isa Degener (joint owners), Volcano, Hawaii. SN 324,181. Filed P.R. 4-10-69; Am. S.R. 11-24-69.

FLORA HAWAIIENSIS

"Flora Hawaiiensis," when translated into English means "plants of Hawaii."
For Fascicles of a Book About Hawaiian Plants (Int. Cl. 16).
First use June 30, 1932.

887,312. Vernon Book Sales Corp., Mount Vernon, N.Y. SN 329,167. Filed P.R. 6-4-69; Am. S.R. 11-24-69.

887,313. R/A Publications, Inc., New York, N.Y. SN 331,423. Filed 6-30-69.

LUCKY 7-11 NUMBER MONTHLY

For Numerology Leaflets, Published Periodically (Int. Cl. 16).
First use Jan. 4, 1966.

MODERN TIRE DEALER

For Magazine (Int. Cl. 16).
First use June 1919.

TRADEMARK REGISTRATIONS RENEWED

76,110. "CASTELL" AND DESIGN. Cl. 37 (Int. Cl. 16). 12-14-09.
77,817. DR. CHAS DEGRATH. Cl. 18 (Int. Cl. 5). 5-10-10.
78,107. REPRESENTATION OF PORTION OF BUILDING AND SEVERAL PERSONS. Cl. 18 (Int. Cl. 5). 5-31-10.
247,727. REZVI. Cl. 16 (Int. Cl. 1). 10-2-28.
262,520. "THE FINANCIAL WORLD" ETC. Cl. 38 (Int. Cl. 16). 10-15-29.
265,213. NUMOTIZINE. Cl. 6 (Int. Cl. 5). 12-17-29.
265,302. PETRO-SEAL. Cl. 16 (Int. Cl. 2). 12-24-29.
265,523. CENTURY. Cl. 12 (Int. Cl. 19). 12-31-29.
265,714. "PRIDE OF DIXIE" AND DESIGN. Cl. 46 (Int. Cl. 30). 1-7-30.
265,768. G-FIN. Cl. 13 (Int. Cl. 6). 1-7-30.
267,101. BLAZES. Cl. 4 (Int. Cl. 21). 2-11-30.
268,237. LIGHTNIN'. Cl. 52 (Int. Cl. 3). 3-11-30.
268,156. "MARTEL" ETC. AND DESIGN. Cl. 46 (Int. Cl. 29). 3-11-30.
270,389. "CONOCO" AND TRIANGLE DESIGN. Cl. 15 (Int. Cl. 5). 5-6-30.
442,701. WIDDECOMBE FAIR. Cl. 46 (Int. Cl. 30). 5-17-49.
442,989. HOB-E-OPTICS. Cl. 26 (Int. Cl. 9). 6-28-49.
443,428. MACHEMPITE. Cl. 14 (Int. Cl. 6). 10-4-49.
443,504. HAFINA. Cl. 46 (Int. Cl. 29). 11-1-49.
443,519. SA. Cl. 23 (Int. Cl. 7). 11-1-49.
443,520. S-A AND DESIGN. Cl. 23 (Int. Cl. 7). 11-1-49.
443,543. SKYDYNE. Cl. 12 (Int. Cl. 19). 11-8-49.
443,639. WYNENE. Cl. 43 (Int. Cl. 23). 12-20-49.
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762,904. TRANSPASEAL. Cl. 1.
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762,914. CUP-STIR AND DESIGN. Cl. 2.
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762,920. STAR-X. Cl. 2.
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763,013. ROTO-RAY. Cl. 21.
763,014. MHOGRAMMABLE. Cl. 21.
763,020. VID-E-AURAL. Cl. 21.
763,022. BAZOOKA-BALL. Cl. 22.
763,023. R REGALITE AND DESIGN. Cl. 22.
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763,027. HIGHWAY POODLE. Cl. 22.
763,028. BOWL-O-MATIC. Cl. 22.
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763,064. NOFORK. Cl. 23.
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763,094. G AND DESIGN. Cl. 28.
763,097. FLUTTERBYS. Cl. 28.
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763,115. PLEXI-PLEAT. Cl. 31.
763,117. THE FIRESIDE COLLECTION. Cl. 32.
763,120. SOPHISTICATE EAST. Cl. 32.
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763,154. PEST-O-GRAM. Cl. 38.
763,159. V.I.J.'S (VERY IMPORTANT JUNIORS) BY RUTH WALTER. Cl. 39.
763,161. JAY-THOMAS. Cl. 39.
763,164. BILTMORE. Cl. 39.
763,165. KURLY KRIM. Cl. 39.
763,170. SNAP TOO. Cl. 39.
763,173. IVY GIRL. Cl. 39.
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763,234. GREEN BANNER. Cl. 46.
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763,271. SELL-O-PAK. Cl. 101.
763,272. HIGHWAY GENTLEMAN ETC. AND DESIGN. Cl. 102.
763,275. KRAMER ETC. AND DESIGN. Cl. 103.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

46,993. HOWARD. Cl. 36. 10–17–05. The Baldwin Company. D. H. Baldwin Company, Cincinnati, Ohio. Amended to appear:

Howard

269,422. HAWAIIAN GOLD AND DESIGN. Cl. 46. 4–8–30. Hawaiian Canneries Company, Ltd. The Haserot Company, Cleveland, Ohio. Amended: In the statement, column 2, lines 9 through 11 are deleted, and the drawing is amended to appear:

HAWAIIAN GOLD

523,308. HELENE CURTIS. Cl. 51. 4–4–50. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 7 through 29, the description of goods is deleted and *solutions, lotions, preparations and compounds for cold waving; cold wave neutralizer; oil and oil compositions for treatment of the hair or scalp; hair dressing; shampoo of various types including oil, saponaceous, and medicated; shampoo tints, hair tint developer, dye remover, hair dyes; wave setting materials in powder and liquid form; hair rinse; hair bleach; hair whitener; hair lacquer; peroxide; cleansing cream; hand cream; hand lotion; protective cream* is inserted.

621,765. SHUR-HOOKS. Cl. 22. 2–21–56. House of Champion Research Laboratory, Inc., Akron, Ohio. Amended to appear:

SHUR-HOOK

621,765. SHUR-HOOKS. Cl. 22. 2–21–56. House of Champion Research Laboratory, Inc., Akron, Ohio. Corrected: In the certificate, lines 5 and 15, and in the statement, column 1, line 1, after "Laboratory" *, Inc.* should be inserted.

870,115. CLUB DATE. Cl. 36. 5–27–69. Leban Imports, Inc. Maryland Musical Instrument Corporation, Baltimore, Md. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name Maryland Musical Instrument Corporation* is inserted.

878,005. URIGLOX. Cl. 6. 10–7–69. Aktiebolaget Kabi, Stockholm, Sweden. Amended: In the statement, Column 2, line 2, "galactose" is deleted and *glucose* is inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 17—Tobacco Products

337,996. Aug. 25, 1936. Larus & Brother Company, also d.b.a. Reed Tobacco Company, Branch, Larus & Brother Company, Richmond, Va. Pub. by Larus & Brother Company, Richmond, Va.

TOPPERS

For Cigarettes.

Class 19—Vehides

240,774. Apr. 10, 1928. Société Anonyme des Usines Renault, Billancourt, France. Pub. by Renault, Inc., New York, N.Y.

RENAULT

For Automobiles and Constructive Parts Thereof (Int. Cl. 12).

Class 24—Laundry Appliances and Machines

443,871. Mar. 28, 1950. Pressing Supply Company, Philadelphia, Pa. Pub. by Gem, Incorporated, Byhalia, Miss.

GEM

For Ironing Board Pads and Ironing Board Covers (Int. Cl. 21).

Class 47—Wines

311,130. Mar. 13, 1934. Benegas Hnos & Cia. Ltda., Buenos Aires, Argentina. Pub. by registrant.

MONITOR

For Wines.

311,135. Mar. 13, 1934. Benegas Hnos & Cia. Ltda., Buenos Aires, Argentina. Pub. by registrant.

Trapiche

For Wines.

Class 48—Malt Beverages and Liquors

75,903. Nov. 23, 1909. J. & R. Tennent Limited, Glasgow, Scotland, Pub. by Tennent Caledonian Breweries Limited, Glasgow, Scotland.

T

For Lager-Beers (Int. Cl. 32).

INDEX OF REGISTRANTS

MARCH 3, 1970

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AITS, Inc., Chestnut Hill, Mass. 887,291–2, pub. 12–16–69. Cl. 105.
A/S Dansk Skinkekogeri, Copenhagen, to Hafnia Konserves A/S, Albertslund, Denmark. 443,504, ren. 3–3–70. Cl. 46.
A/S Dansk Handels- og Industrie-Compagni (Danisco), Copenhagen, Denmark. 443,769, ren. 3–3–70. Cl. 49.
Abbott Laboratories, d.b.a. The Faultless Rubber Co., North Chicago, Ill. 887,026, pub. 12–16–69. Cl. 18.
Abel Corp., The, Columbus, Ohio. 763,131, canc. Cl. 35.
Accordion Schools of America, Inc., Colorado Springs, Colo. 887,177, pub. 12–16–69. Cl. 36.
Adhesive Advertising Service, Inc., New York, N.Y. 887,180, pub. 12–16–69. Cl. 37.
Adirondack Industries, Inc., Dolgeville, N.Y. 887,075, pub. 12–16–69. Cl. 22.
Advanced Computer Techniques Corp., New York, N.Y. 887,-191, pub. 12–16–69. Multiple Class (Classes 38 and 107).
Aimcee Wholesale Corp. : *See*—
Associated Merchandising Corp., The.
Akay Corp., Chicago, Ill. 762,929, ren. 3–3–70. Cl. 2.
Aktiebolaget Kabi, Stockholm, Sweden. 878,005. Am. 7(d). Cl. 6.
Alfie's Fish & Chips, Inc., Houston, Tex. 887,275, pub. 12–16–69. Cl. 100.
All Points Relocation Service, Inc., Atlanta, Ga. 887,279, pub. 12–16–69. Cl. 101.
Allied Chemical Corp. : *See*—
Allied Chemical & Dye Corp.
Allied Chemical & Dye Corp., to Allied Chemical Corp., New York, N.Y. 515,183, ren. 3–3–70. Cl. 52.
Alligator Co., Inc., The : *See*—
Friedman-Marks Clothing Co., Inc.
All-Steel Equipment Inc., Aurora, Ill. 887,069, pub. 12–16–69. Cl. 21.
Alpha Iota Sorority, The, Des Moines, Iowa. 887,304, pub. 12–16–69. Cl. 200.
Alrose Chemical Co., Cranston, R.I., to Geigy Chemical Corp., Ardsley, N.Y. 523,825, ren. 3–3–70. Cl. 6.
Aluminum Co. of America, Pittsburgh, Pa. 887,003, pub. 12–16–69. Cl. 14.
Amax Industries, Inc., Elgin, Ill. 887,033, pub. 9–9–69. Cl. 19.
American Atomics Corp., Tucson, Ariz. 887,140, pub. 12–16–69. Multiple Class (Classes 26 and 34).
American Beauty Macaroni Co., Kansas City, Kans. 524,570, ren. 3–3–70. Cl. 46.
American Brass & Iron Foundry, The, Oakland, Calif. 762,964, canc. Cl. 13.
American Breeders Service, Inc., De Forest, Wis. 886,958, pub. 12–16–69. Cl. 1.
American Chemical Society, Washington, D.C. 887,310. Cl. 38.
American Enka Corp., Enka, N.C. 762,902, canc. Cl. 1.
American Golf Association, Inc., Morganton, N.C. 887,305, pub. 12–16–69. Cl. 200.
American Plasticraft Co., Chicago, Ill. 887,049–50, pub. 12–16–69. Cl. 21.
American Smelting and Refining Co., New York, N.Y. 887,008, pub. 12–16–69. Cl. 14.
American Society for Metals, Metals Park, Ohio. 887,269, pub. 12–16–69. Cl. 100.
American Stencil Mfg., Arlington Heights, Ill., from American Stencil Mfg. Co., Denver, Colo. 886,986, pub. 12–16–69. Cl. 11.
Aquarium Systems, Inc., Wickliffe, Ohio. 886,961, pub. 12–16–69. Cl. 2.
Aquaslide 'N' Dive Corp., South El Monte, Calif. 887,076, pub. 12–16–69. Cl. 22.
Armour-Dial, Inc., Chicago, Ill. 887,230, pub. 1–14–69. Cl. 46.
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Ascona Knits, Inc., Philadelphia, Pa. 763,177, canc. Cl. 39.
Asphalt Equipment Co., Inc., Fort Wayne, Ind. 887,091, pub. 12–16–69. Cl. 23.
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Astraka Ltd., London, England. 887,201, pub. 12–16–69. Cl. 39.
Atlas Lift Truck Rentals & Sales, Inc., Schiller Park, Ill. 887,129, pub. 12–16–69. Cl. 23.
Atlas Supply Co., Springfield, N.J. 887,061, pub. 12–16–69. Cl. 21.
Atlas Supply Co., Springfield, N.J. 887,067, pub. 12–16–69. Cl. 21.
Atlas Underwear Co., The, to Atlas Underwear Corp., Piqua, Ohio. 523,743, ren. 3–3–70. Cl. 39.
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Aunt Nellie's Foods, Inc., Clyman, Wis. 887,236, pub. 11–18–69. Cl. 46.
"Automatic" Sprinkler Corp. of America, St. Louis, Mo. 887,080, pub. 12–16–69. Cl. 22.
Automotive Utilities Co., Newark, N.J. 763,115, canc. Cl. 31.
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Barton Salt Co., The, Hutchinson, Kans. 887,028, pub. 12–16–69. Cl. 18.
Bassett, W. E., Co., The, Derby, Conn. 887,083, pub. 8–3–65. Cl. 23.
Bauer Bros. Co., The, Springfield, Ohio. 887,099, pub. 12–16–69. Cl. 23.
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Beechman Inc., Clifton, N.J. 887,255, pub. 12–16–69. Cl. 51.
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Bendix Corp., The, Washington, D.C. 763,134, canc. Cl. 36.
Benegas Hnos & Cia Ltda. Sociedad Anonima Industrial, Buenos Aires, Argentina. 311,130, 12(c) pub. 3–3–70. Cl. 47.
Benegas Hnos & Cia Ltda. Sociedad Anonima Industrial, Buenos Aires, Argentina. 311,135, 12(c) pub. 3–3–70. Cl. 47.
Birma Products Corp., Sayreville, N.J. 886,969, pub. 7–8–69. Multiple Class (Classes 5, 12, and 16).
Black Star Publishing Co., Inc., New York, N.Y. 887,301, pub. 12–16–69. Cl. 107.
Blue Anchor, Inc. : *See*—
California Fruit Exchange.
Bluhill Foods, Inc., to K.G. & W. Inc., d.b.a. Bluhill-American Products, Denver, Colo. 517,068, ren. 3–3–70. Cl. 46.
Bolton-Emerson, Inc, Lawrence, Mass. 887,119, pub. 12–16–69. Cl. 23.
Bon Ami Co., The, New York, N.Y. 763,263, canc. Cl. 52.
Bonder & Carnase Studio Inc., New York, N.Y. 887,005–6, pub. 12–16–69. Cl. 14.
Borg-Warner Corp. : *See*—
Stephens-Adamson Mfg. Co.
Boston Beer Co., South Boston, to Haffenreffer & Co., Inc., Boston, Mass. 519,148, ren. 3–3–70. Cl. 48.
Brady Mfg. Co., Inc., Ramseur, N.C. 887,198–9, pub. 12–16–69. Cl. 39.
Breck, John H., Inc., Wayne, N.J. 887,253–4, pub. 12–16–69. Cl. 51.
Breitmayer, Carl A., d.b.a. Pat Breitmayer, Monrovia, Calif. 762,933. canc. Cl. 3.
Bremner Biscuit Co., Chicago, Ill. 887,234, pub. 9–30–69. Cl. 46.
Briar Shop Ltd., The, Chicago, Ill. 887,022, pub. 12–16–69. Cl. 17.
Bristol-Myers Co., New York, N.Y. 887,252, pub. 12–16–69. Cl. 51.
Bristol-Myers Co., New York, N.Y. 887,259, pub. 10–14–69. Cl. 52.
Broan Mfg. Co., Inc., Hartford, Wis. 887,170, pub. 12–16–69. Cl. 34.
Brockway, Wilhelm W., Sherman Oaks, Calif. 887,162, pub. 12–16–69. Cl. 32.
Brookline-Industries, Inc., Chicago, Ill. 762,958, canc. Cl. 13.
Brown & Green, Ltd., Luton, England. 516,084, ren. 3–3–70. Cl. 24.
Buccaneer Mfg. Co. Inc., Brooklyn, N.Y. 887,211, pub. 12–16–69. Cl. 39.
Bunton Co., Louisville, Ky. 887,115, pub. 12–16–69. Cl. 23.
Burford Auto Finishes, Santa Ana, Calif. 886,964, pub. 12–16–69. Cl. 4.
Burnett Instrument Co., Lawrence, Kans. 887,222, pub. 12–2–69. Cl. 44.
Butler Brothers City Products Corp., Chicago, Ill. 524,458, ren. 3–3–70. Cl. 42.
Bytwork, Alvin J. d.b.a. Communication, Kalamazoo, Mich. 887,244. pub. 12–16–69. Cl. 50.
CMC Industries, Inc., New York, N.Y. 887,203, pub. 12–16–69. Cl. 39.
Caldwell, E. L., & Sons, Inc., Corpus Christi, Tex. 887,092, pub. 12–16–69. Cl. 23.
California Fruit Exchange, to Blue Anchor, Inc., Sacramento, Calif. 523,288, ren. 3–3–70. Cl. 46.
Cal-O-Sol Products, Inc., Los Angeles, Calif. 762,977, canc. Cl. 18.
Campers International, Inc., Honolulu, Hawaii. 887,274, pub. 12–16–69. Cl. 100.
Canada Dry Corp. : *See*—
Canada Dry Ginger Ale, Inc.
Canada Dry Ginger Ale, Inc., to Canada Dry Corp., New York, N.Y. 522,389, ren. 3–3–70. Cl. 45.
Carshel, Inc., Pennsakenu, N.J. 763,254, canc. Cl. 51.
Carter-Wallace, Inc., New York, N.Y. 887,031, pub. 12–16–69. Cl. 18.
Case, J. I., Co., Racine, Wis. 887,130, pub. 12–16–69. Cl. 23.

Catanzaro Banana & Tomato Co., to St. Louis Banana & Tomato Co., Inc., St. Louis, Mo. 523,577, ren. 3–3–70. Cl. 46.
Central Quality Industries, Inc., Polo, Ill. 887,056, pub. 12–16–69. Cl. 21.
Century Cement Corp., to Century Cement Mfg. Co., Inc., Rosendale, N.Y. 265,523, ren. 3–3–70. Cl. 12.
Century Cement Mfg. Co., Inc.: *See*—
Century Cement Corp.
Cerebrovascular Disease Foundation, Inc., The, New York, N.Y. 763,268, canc. Cl. 100.
Cessna Aircraft Co., The, Wichita, Kans. 887,038, pub. 12–16–69. Cl. 19.
Channel Master Corp., Ellenville, N.Y. 763,013, canc. Cl. 21.
Char-Lynn Co., Eden Prairie, Minn. 886,993, pub. 12–16–69. Cl. 13.
Charmglow Products Inc., Antioch, Ill. 887,165, pub. 10–7–69. Cl. 34.
Chessco Industries, Inc., Fairfield, Conn. 887,058, pub. 12–16–69. Cl. 21.
Chicago Electric Mfg. Co., Chicago, Ill., to Proctor-Silex Inc., Philadelphia, Pa. 521,407, ren. 3–3–70. Cl. 21.
Chicago Musical Instrument Co., Chicago, Ill. 887,173, pub. 2–18–69. Cl. 36.
Childgard, Inc., Williston Park, N.Y. 763,012, canc. Cl. 21.
Class Student Services, Inc., Rockville, Md. 887,283, pub. 12–16–69. Cl. 101.
Clyne, Joseph, New York, N.Y. 763,170, canc. Cl. 39.
Coastal Valley Canning Co., Oxnard, Calif. 703,217, canc. Cl. 46.
Cohen, Harry E., d.b.a. Homemakers Club, Atlantic City, N.J. 762,145, canc. Cl. 4.
Cole National Corp., Cleveland, Ohio. 887,137, pub. 12–16–69. Cl. 25.
Color Music Inc., New York, N.Y. 887,187, pub. 12–16–69. Cl. 38.
Combined Engineered Products Ltd., Toronto, Ontario, Canada. 887,103, pub. 12–16–69. Cl. 23.
Combined Paper Mills, Inc., Chicago, Ill. 887,308. Cl. 37.
Congoleum Industries, Inc., Kearny, N.J. 887,160, pub. 12–16–69. Cl. 32.
Consolidated Cigar Corp., New York, N.Y. 887,023, pub. 12–16–69. Cl. 17.
Consolidated Fine Arts, Ltd., New York, N.Y. 887,278, pub. 12–16–69. Cl. 101.
Continental Merchandise Co., Inc., New York, N.Y. 763,133, canc. Cl. 36.
Continental Oil Co., New York, N.Y. 270,389, ren. 3–3–70. Cl. 15.
Coro, Inc., New York, N.Y. 763,097, canc. Cl. 28.
Coulter Diagnostics, Inc., Miami Springs, Fla. 886,979, pub. 12–16–69. Cl. 6.
Craft, Griffin, and Hollis Craft: *See*—
Craft, W. L.
Craft, W. L., d.b.a. Dixie Syrup Co., Florence, to G. and H. Craft, d.b.a. Dixie Syrup Co., Sheffield, Ala. 265,714, ren. 3–3–70. Cl. 46.
Crane Co., New York, N.Y. 886,991, pub. 12–16–69. Cl. 12.
Crane Co., New York, N.Y. 887,039, pub. 12–16–69. Cl. 19.
Crompton Co., New York, N.Y. 763,183–4, canc. Cl. 42.
Crown Food Products, Inc., Atlanta, Ga. 887,233, pub. 8–19–69. Cl. 46.
Curtis, Helene, Industries, Inc., Chicago, Ill. 523,308. Am. 7(d). Cl. 51.
Cutting Room Appliances Corp., New York, N.Y. 887,102, pub. 12–16–69. Cl. 23.
Cyclops Corp., Pittsburgh, Pa. 887,004, pub. 10–14–69. Cl. 14.
Cyprus Mines Corp., Trenton, N.J. 886,957, pub. 12–16–69. Cl. 1.
D & M Supply Co., Inc., San Jose, Calif. 763,102, canc. Cl. 29.
Dale Fifth Ave., Inc., New York, N.Y. 516,926, ren. 3–3–70. Cl. 3.
Daly-Herring Co., to Daly-Herring Co., Kinston, N.C. 525,767, ren. 3–3–70. Cl. 6.
Data Technology Corp., Palo Alto, Calif. 887,149, pub. 12–16–69. Cl. 26.
Davis Electric Co., Cape Girardeau, Mo. 524,132, ren. 3–3–70. Cl. 21.
Dazor Mfg. Corp., St. Louis, Mo. 887,051, pub. 12–16–69. Cl. 21.
Decibel Products, Inc., Dallas, Tex. 887,059, pub. 12–16–69. Cl. 21.
Deere & Co., Moline, Ill. 887,082, pub. 12–16–69. Cl. 22.
Degener, Dr. Otto, and Dr. Isa Irmgard Degener, Waialua, Oahu, Hawaii. 887,188, pub. 12–16–69. Cl. 38.
Degener, Dr. Otto, and Dr. Isa Degener, Valcano, Hawaii. 887,311. Cl. 38.
Delk Pest Control, Fresno, Calif. 887,286, pub. 12–16–69. Cl. 103.
Delmonico Foods, Inc., Louisville, Ky. 763,247, canc. Cl. 50.
Denlston Co., The, Chicago, Ill. 522,675, ren. 3–3–70. Cl. 13.
Desert Minerals, Inc., Los Angeles, Calif. 886,955, pub. 12–16–69. Cl. 1.
Diana Mfg. Co., to Diana Mfg. Co., Green Bay, Wis. 515,523, ren. 3–3–70. Cl. 44.
Dinerstein, Ben, New York, N.Y. 887,247, pub. 12–16–69. Cl. 51.
Dispro Ltd., London, England. 762,903–4, canc. Cl. 1.
Dixie Sales & Marketing, Inc., Columbia, S.C. 763,037, canc. Cl. 22.
Dolge, C. B., Co., The, Westport, Conn. 887,013, pub. 12–16–69. Cl. 16.
Domtar Ltd.: *See*—
Drackett Co., The.
Dowd Rental Service & Sales, Inc.: *See*—
Dowd, Thomas J.
Dowd, Thomas J., d.b.a. Dowd Chair Rental and Sales, to Dowd Rental Service & Sales, Inc., Buffalo, N.Y. 514,406, ren. 3–3–70. Cl. 32.
Drackett Co., The, Cincinnati, Ohio, from Domtar Ltd., Montreal, Quebec, Canada. 886,971, pub. 3–28–67. Cl. 6.
Dunham-Bush, Inc., West Hartford, Conn. 887,158, pub. 12–16–69. Cl. 31.
Dunlop Tire and Rubber Corp., The, Buffalo, N.Y. 887,204, pub. 12–16–69. Cl. 39.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 763,056, canc. Cl. 23.
Dupont, S.T. S.A. R.I., Paris, France. 762,937, canc. Cl. 8.
Dura Business Machines, Inc., Oak Park, Mich. 763,058, canc. Cl. 23.
Duriron Co., Inc., The, Dayton, Ohio. 887,117, pub. 12–16–69. Cl. 23.
Duro Pen Co., Inc., from Duro Pen Co., Inc., Brooklyn, N.Y. 887,178, pub. 4–2–68. Cl. 37.
Durst, S. F., & Co., Inc., Philadelphia, Pa. 886,978, pub. 6–17–69. Cl. 6.
Dusharme Products Inc., Minneapolis, Minn., to J. Strickland & Co., Memphis, Tenn. 514,740, ren. 3–3–70. Cl. 51.
Dustikin Products, Inc., Bronx, N.Y. 886,967, pub. 12–16–69. Cl. 4.
Dynamic Typing, Inc., Washington, D.C. 887,299, pub. 12–16–69. Cl. 107.
Dynapower Systems Corp., Santa Monica, Calif. 887,221, pub. 12–16–69. Cl. 44.
Dynatron Corp., Atlanta, Ga. 886,992, pub. 12–16–69. Cl. 12.
Eagle Clothes, Inc., New York, N.Y. 887,197, pub. 12–16–69. Cl. 39.
Eastman Kodak Co., Rochester, N.Y. 523,059, ren. 3–3–70. Cl. 26.
Eaton Yale & Towne Inc., Cleveland, Ohio. 887,295, pub. 12–16–69. Cl. 107.
Ebauches S.A., Neuchatel, Switzerland. 763,083, canc. Cl. 27.
Ebert Electronics Corp., Floral Park, N.Y. 887,065–6, pub. 12–16–69. Cl. 21.
Economics Laboratory, Inc., St. Paul, Minn. 887,010, pub. 12–16–69. Cl. 16.
Elbert, Roland B., and Earl L. Stuart, Algona, to Humpy Bait Co., Inc., Webster City, Iowa. 518,785, ren. 3–3–70. Cl. 22.
Electronic Measurements Co., Inc., Eatontown, N.J. 763,014, canc. Cl. 21.
Electronic Vision Industries, Inc., Washington, D.C. 763,-028, canc. Cl. 22.
Elex AG, Zurich, Switzerland. 887,164, pub. 12–16–69. Cl. 34.
Ellis-Foster Co., Montclair, N.J., to Koppers Co., Inc., Pittsburgh, Pa. 247,727, ren. 3–3–70. Cl. 16.
Endicott Johnson Corp., Endicott, N.Y. 518,711, ren. 3–3–70. Cl. 39.
Endura Time Corp., New York, N.Y. 887,151, pub. 12–16–69. Cl. 27.
Erath, L. W., Co., Houston, Tex. 887,048, pub. 12–16–69. Cl. 21.
Estey Musical Instrument Corp., The, Harmony, Pa. 887,174, pub. 8–12–69. Cl. 36.
Etablissements F. Delory, Lorient, France, to Adolph Goldmard & Sons Corp., New York, N.Y. 268,156, ren. 3–3–70. Cl. 46.
Etablissements J. Salik Societe Anonyme, Brussels, Belgium. 887,205, pub. 12–16–69. Cl. 39.
Eutectic Corp., Flushing, N.Y. 887,007, pub. 12–16–69. Cl. 14.
Everfast Fabrics, Inc., New York, N.Y. 520,180, ren. 3–3–70. Cl. 39.
FMC Corp.: *See*—
Well Equipment Mfg. Corp.
FMC Corp., San Jose, Calif. 886,956, pub. 12–16–69. Multiple Class (Classes 1, 6, 7, 13, 42, and 43).
Faber, A. W., Stein, Germany, to A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. 76,110, ren. 3–3–70. Cl. 37.
Faber-Castell, A. W., Nuremberg, Germany, from A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. 887,142, pub. 12–16–69. Cl. 26.
Faber-Castell, A. W., Pencil Co., Inc.: *See*—
Faber, A. W.
Fairmoor Coat & Suit Corp., New York, N.Y. 763,165, canc. Cl. 35.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 887,223, pub. 12–16–69. Cl. 44.
Fayne, John J., Fresno, Calif. 762,981, canc. Cl. 18.
Fiber Industries, Inc.: *See*—
National Mattress Co.
Fine-Tone Audio Products, Inc., Brooklyn, N.Y. 887,176, pub. 10–2–69. Cl. 36.
First Processing Corp., Vero Beach, Fla. 887,307. Cl. 34.
Fischer-Davila Industries, Inc., d.bs. Heinrich Fischer & Co., Cincinnati, Ohio. 887,090, pub. 12–16–69. Cl. 23.
Flair Mfg. Corp., Long Island N.Y. 763,125, canc. Cl. 34.
Foppiano, L., Wine Co., to L. Foppiano Wine Co., Healdsburg, Calif. 521,931–2, ren. 3–3–70. Cl. 47.
Ford Motor Co., Dearborn, Mich. 887,002, pub. 12–16–69. Cl. 13.
Ford Motor Co., Dearborn, Mich. 887,044, pub. 3–18–69. Cl. 21.
Ford Motor Co., Dearborn, Mich. 887,156, pub. 12–16–69. Cl. 31.
Forera Corp., Washington, D.C. 887,186, pub. 12–16–69. Cl. 38.
Formart Containers, Inc., Cedarburg, Wis. 763,244, canc. Cl. 50.
Fort Howard Paper Co., Green Bay, Wis. 887,200, pub. 10–14–69. Cl. 39.
Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany. 763,-051, canc. Cl. 23.

Frieder, S., & Sons Co., The, Philadelphia, Pa. 525–331–2, ren. 3–3–70. Cl. 17.
Friedman-Marks Clothing Co., Inc., Richmond, Va., to The Alligator Co., Inc., St. Louis, Mo. 521,794, ren. 3–3–70. Cl. 39.
Fuller Co., Catasauqua, Pa. 887,104, pub. 12–16–69. Cl. 23.
Fuller Laboratories, Inc., Eden Prairie, Minn. 887,011, pub. 12–16–69. Cl. 16.
Furtique Inc., Darien, Conn. 887,163, pub. 12–16–69. Multiple Class (Classes 32, 39, and 50).
GCM Corp.: *See*—
Glidden Co., The.
Gabriel Industries, Inc., New York, N.Y. 887,073, pub. 12–16–69. Cl. 22.
Gartenmann, C., & Cie Ag., Berne, Switzerland. 886,990, pub. 12–16–69. Cl. 12.
Geigy Chemical Corp.: *See*—
Alrose Chemical Co.
Gem, Inc., Byhalia, Miss. 887,242, pub. 10–21–69. Cl. 46.
General Host Corp., New York, N.Y. 887,239, pub. 12–16–69. Cl. 46.
General Radio Co., West Concord, Mass. 887,146, pub. 12–16–69. Cl. 26.
Gillette Co., The, Boston, Mass. 887,132, pub. 12–16–69. Cl. 23.
Glidden Co., The, to GCM Corp., Cleveland, Ohio. 518,480, ren. 3–3–70. Cl. 16.
Globemaster, Inc., Houston, Tex. 887,014, pub. 12–16–69. Cl. 16.
Goldmard, Adolph, & Sons Corp.: *See*—
Etablissements F. Delory.
Grace, W. R., & Co., New York, N.Y. 887,306. Cl. 6.
Graflex, Inc.: *See*—
Strobo Research.
Gram, James P., Welland Junction, Ontario, Canada. 762,-913–14, canc. Cl. 2.
Green Bay Outerwear Co., Inc.: *See*—
Green Bay Specialty Co.
Green Bay Specialty Co., to Green Bay Outerwear Co., Inc., Green Bay, Wis. 518,697, ren. 3–3–70. Cl. 39.
Greyhound Corp., The, Chicago, Ill. 887,032, pub. 12–16–69. Cl. 19.
Greyhound Corp., The, Chicago, Ill. 887,272, pub. 12–16–69. Cl. 100.
Greyrad Corp., Princeton, N.J. 887,270, pub. 12–16–69. Cl. 100.
Griscom-Russell Co., The, New York, N.Y., to Baldwin-Lima-Hamilton Corp., Chicago, Ill. 265,768, ren. 3–3–70. Cl. 13.
Grosjean, C. E., Rice Milling Co., San Francisco, Calif. 887,-228, pub. 12–16–69. Cl. 46.
Grosset & Dunlap Inc.: *See*—
Wonder Books, Inc.
Gruenberg Electric Co., Inc., Garden City, N.Y. 762,673, canc. Cl. 21.
Guenther Publishing Corp., New York, N.Y. 262,520, ren. 3–3–70. Cl. 38.
Guest Pac Corp., Mount Vernon, N.Y. 887,277, pub. 12–16–69. Cl. 101.
Gulf-Western Industrial Products Co.: *See*—
Mackintosh-Hemphill Co.
HMH Publishing Co. Inc., Chicago, Ill. 887,238, pub. 12–16–69. Cl. 46.
HMH Publishing Co. Inc., Chicago, Ill. 887,290, pub. 12–16–69. Cl. 105.
Haffenreffer & Co., Inc.: *See*—
Boston Beer Co.
Hafnia Konserves A/S: *See*—
A/S Dansk Skinkekogeri.
Hall Bros., Inc., to Hallmark Cards, Inc., Kansas City, Mo. 525,798, ren. 3–3–70. Cl. 38.
Hallmark Cards, Inc.: *See*—
Hall Bros., Inc.
Halm Industries Co., Inc., Glen Head, N.Y. 887,127, pub. 12–16–69. Cl. 23.
Hanes Corp., Winston-Salem, N.C. 887,217, pub. 12–16–69. Cl. 39.
Harkey, Charlie P., d.b.a. C & H Enterprises, Pocahontas, Ark. 763,065, canc. Cl. 23.
Harnischfeger Corp., West Milwaukee, Wis. 887,111, pub. 12–16–69. Cl. 23.
Hartmann Luggage Co., Lebanon, Tenn. 887,136, pub. 12–16–69. Cl. 25.
Hasbro Industries, Inc., Pawtucket, R.I. 887,077, pub. 12–16–69. Cl. 22.
Haspel Bros., Inc., New Orleans, La. 525,466, ren. 3–3–70. Cl. 39.
Hawaiian Canneries Co., Ltd. The Haserot Co., Cleveland, Ohio. 269,422. Am. 7(d). Cl. 46.
Heileman, G., Brewing Co., Inc.: *See*—
Kingsbury Breweries Co.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 763,099, canc. Cl. 28.
Hereford Barn, Inc., Charlotte, N.C. 887,273, pub. 12–16–69. Cl. 100.
Hesse Carriage Co., Kansas City, Mo. 762,992, canc. Cl. 19.
High Temperature Materials, Inc., Brighton, Mass. 762,965, canc. Cl. 14.
Hobart Laboratories, Inc.: *See*—
Numotizine, Inc.
Holy Cow Ice Creams, Inc., d.b.a. The Holy Cow, St. Louis, Mo. 887,266, pub. 12–16–69. Cl. 100.
Homeowners Insurance Center, Hyattsville, Md. 763,272, canc. Cl. 102.
House of Champion Research Laboratory, Inc., Akron, Ohio. 621,765. Am. 7(d). Cl. 22.
House of Champion Research Laboratory, Inc., Akron, Ohio. 621,765, cor. Cl. 22.
Humpy Bait Co., Inc.: *See*—
Elbert, Roland B., and Earl L. Stuart.
Hydraphan, Ltd., Skokie, Ill. 762,930–1, canc. Cl. 2.
Hydraudyne N.V., Boxtel, Netherlands. 887,109, pub. 10–14–69. Cl. 23.
I-T-E Imperial Corp., Philadelphia, Pa. 887,045, pub. 12–16–69. Cl. 21.
ITT Continental Baking Co., Rye, N.Y. 887,232, pub. 8–26–69. Cl. 46.
Imperial International Corp., New York, N.Y. 887,120, pub. 12–16–69. Cl. 23.
Imperial Knife Associated Companies, Inc., Providence, R.I. 887,128, pub. 12–16–69. Cl. 23.
Industrial Bio-Test Laboratories, Inc., Northbrook, Ill. 887,183, pub. 12–16–69. Cl. 38.
Institutional Food Equipment Corp., d.b.a. Phillips Mfg. Co., Huntington Park, Calif. 763,106, canc. Cl. 31.
Institutional Food Equipment Corp., Huntington Park, Calif. 763,108, canc. Cl. 31.
International Basic Economy Corp., Cleveland, Ohio. 887,100, pub. 12–16–69. Cl. 23.
International Furniture Co., to Schnadig Corp., Chicago, Ill. 524,718, ren. 3–3–70. Cl. 32.
International Horseshoe Co., Inc., Lodi, Calif. 886,999, pub. 12–16–69. Cl. 13.
International Minerals & Chemical Corp.: *See*—
Stauffer Chemical Co.
International Reports, Inc., New York, N.Y. 887,189, pub. 12–16–69. Cl. 38.
International Systems & Equipment, Inc., Los Angeles, Calif. 887,260, pub. 9–16–69. Cl. 100.
Invac Corp., Natick, Mass. 763,077, canc. Cl. 26.
Itek Corp., Lexington, Mass. 886,974, pub. 12–16–69. Multiple Class (Classes 6, 21, and 26).
J.M.G. Manufacturers & Polishers, Inc., New York, N.Y. 763,094, canc. Cl. 28.
Jay & Ell Enterprises, Inc., Worthington, Ohio. 887,219, pub. 12–16–69. Cl. 40.
Jay-Thomas, Inc., Milwaukee, Wis. 763,161, canc. Cl. 39.
Johns-Manville Corp., New York, N.Y. 762,945, canc. Cl. 12.
K.G. & W. Inc.: *See*—
Bluhill Foods, Inc.
Kalo Inoculant Co., Kansas City, Mo. 886,976–7, pub. 6–17–69. Cl. 6.
Kaman Corp., Bloomfield, Conn. 887,116, pub. 12–16–69. Cl. 23.
Katzenstein, Miles, Mount Vernon, N.Y. 763,064, canc. Cl. 23.
Kendall Co., The, Walpole, Mass. 887,029–30, pub. 12–16–69. Cl. 18.
Kendermann, Hermann, Wiesbaden, Germany. 887,243, pub. 9–2–69. Cl. 47.
Kewaunee Scientific Equipment Corp., Adrian, Mich. 887,157, pub. 12–16–69. Cl. 31.
Keystone Consolidated Industries, Inc.: *See*—
Keystone Steel & Wire Co.
Keystone Safety Equipment Co., Tulsa, Okla. 887,035, pub. 12–16–69. Cl. 19.
Keystone Steel & Wire Co., to Keystone Consolidated Industries, Inc., d.b.a. Keystone Steel & Wire Co., Peoria, Ill. 523,557, ren. 3–3–70. Cl. 12.
Kimberly-Clark Corp., Neenah, Wis. 887,224, pub. 12–16–69. Cl. 44.
Kindall, John L., Atlanta, Ga. 887,297, pub. 12–16–69. Cl. 107.
King Milling Co., Lowell, Mich. 523,765, ren. 3–3–70. Cl. 46.
Kingsbury Breweries Co., Manitowoc, to G. Heileman Brewing Co., Inc., La Crosse, Wis. 521,998, ren. 3–3–70. Cl. 48.
Kirsch Co., Sturgis, Mich. 887,001, pub. 12–16–69. Cl. 13.
Kleen Car Tire Sales, Inc., Buffalo, N.Y. 887,064, pub. 12–16–69. Cl. 21.
Knickerbocker Guild Inc., New York, N.Y. 887,167, pub. 12–16–69. Cl. 34.
Knight Slipper Mfg. Corp., Brooklyn, N.Y. 519,456, ren. 3–3–70. Cl. 39.
Kohner Bros., Inc., East Paterson, N.J. 887,074, pub. 12–16–69. Cl. 22.
Kontes Glass Co., Vineland, N.J. 887,148, pub. 12–16–69. Cl. 26.
Koppers Co., Inc.: *See*—
Ellis-Foster Co.
Kores Mfg. Corp., Bronx, N.Y. 886,985, pub. 12–16–69. Cl. 11.
Kostan Brothers, Beverly Hills, Calif. 763,091, canc. Cl. 28.
Kramer Industries, Inc., Milwaukee, Wis. 763,275, canc. Cl. 103.
L & M Fashions, Inc., New York, N.Y. 887,212, pub. 12–16–69. Cl. 39.
Laboratoires du Dr. N. G. Payot Etablissement, Vaduz, Liechtenstein. 887,248, pub. 12–16–69. Cl. 51.
Laboratories J. Berthier, Grenoble, France. 887,024, pub. 12–16–69. Cl. 18.
Lanex Importing Co., Lodi, N.J. 887,085, pub. 12–16–69. Cl. 23.
Lanman & Kemp, New York, N.Y., to Sanman & Kemp-Barclay & Co., Inc., Palisades Park, N.J. 77,817, ren. 3–3–70. Cl. 18.
Lanman & Kemp, New York, N.Y., to Lanman & Kemp-Barclay & Co., Inc., Palisades Park, N.J. 78,107, ren. 3–3–70. Cl. 18.
Lapine Scientific Co., Chicago, Ill. 887,150, pub. 12–16–69. Cl. 26.
Larus & Brother Co., d.b.a. Reed Tobacco Co., by Larus & Brother Co., Richmond, Va. 337,996, 12(c) pub. 3–3–70. Cl. 17.
Leasequip Corp., Beverly Hills, Calif. 887,264, pub. 12–16–69. Cl. 100.
Leban Imports, Inc., to Maryland Musical Instrument Corp., Baltimore, Md. 870,115. Am. 7(d). Cl. 36.

Lel Inc., Coplague, N.Y. 762,999, canc. Cl. 21.
Leo Mfg. Co., Ltd., Tokyo, Japan. 886,984, pub. 12–16–69. Cl. 8.
Lern Inc., Chicago, Ill. 763,114, canc. Cl. 31.
Les Parfums Chypron S.A.: *See*—
Les Parfums de Dana, Inc.
Les Parfums de Dana, Inc., New York, N.Y., to Les Parfums Chypron S.A., Bois-Colombos (Seine), France. 519,280, ren. 3–3–70. Cl. 51.
Lewis, Tillie Foods, Inc., Stockton, Calif. 887,237, pub. 7–29–69. Cl. 46.
Liberty Orchards Co., to Liberty Orchards Co., Inc., Cashmere, Wash. 520,001, ren. 3–3–70. Cl. 46.
Lightnin Chemical Co., The, Painesville, Ohio, to Babbitt Products, Inc., Lakeville, Conn. 268,237, ren. 3–3–70. Cl. 52.
Lion Match Co., Inc., Long Island City, N.Y. 763,271, canc. Cl. 101.
Lipton, Nat, d.b.a. Nuva Products, Long Beach, Calif. 762,955, canc. Cl. 13.
Litton Business Systems, Inc., Carlstadt, N.J. 887,293, pub. 12–16–69. Cl. 107.
Litton Educational Publishing, Inc., New York, N.Y. 887,193–5, pub. 12–16–69. Cl. 38.
L'Oreal, Paris, France. 887,250, pub. 10–7–69. Cl. 51.
Lorillard Corp., New York, N.Y. 887,016, pub. 12–16–69. Cl. 17.
Luzier Inc., Kansas City, Mo. 887,251, pub. 12–16–69. Cl. 51.
M & N Silvers Corp., New York, N.Y. 887,152–3, pub. 12–16–69. Cl. 28.
Mackintosh-Hemphill Co., Pittsburgh, Pa., to Gulf+Western Industrial Products Co., Canton, Ohio. 443,428, ren. 3–3–70. Cl. 14.
Mackintosh-Hemphill Co., Pittsburgh, Pa., to Gulf+Western Industrial Products Co., Pittsburgh, Pa. 515,012–15, ren. 3–3–70. Cl. 23.
Mackintosh-Hemphill Co., Pittsburgh, Pa., to Gulf+Western Industrial Products Co., Pittsburgh, Pa. 515,032, ren. 3–3–70. Cl. 23.
MacRey Corp., Sarasota, Fla. 763,003, canc. Cl. 21.
MacWhyte Co., Kenosha, Wis. 886,982, pub. 12–16–69. Cl. 7.
Magic Chef, Inc., Cleveland, Tenn. 887,168, pub. 12–16–69. Cl. 34.
Malm Fireplaces, Inc., Santa Rosa, Calif. 887,169, pub. 12–16–69. Cl. 34.
Mamiye Brothers Inc., New York, N.Y. 887,213, pub. 12–16–69. Cl. 39.
Mannell, Paul, d.b.a. Ozark Enterprises, Willard, Mo. 887,245, pub. 12–16–69. Cl. 50.
Marriott Corp., Washington, D.C. 887,263, pub. 8–19–69. Cl. 100.
Marshall, James, (Devon) Ltd., to James Marshall (Devon) Ltd., Totnes, England. 442,701, ren. 3–3–70. Cl. 46.
Marshallan Products, Inc., Cleveland, Ohio. 887,159, pub. 12–16–69. Cl. 32.
Mattel, Inc., Hawthorne, Calif. 763,025, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 887,081, pub. 11–25–69. Cl. 22.
McCulloch Corp., Los Angeles, Calif., from McCulloch Mite-E-Lite Inc., Wellsville, N.Y. 887,121, pub. 12–16–69. Cl. 23.
McCulloch Corp., Los Angeles, Calif. 887,124, pub. 12–16–69. Cl. 23.
McCullough Tool Co., Los Angeles, Calif., to National Lead Co., New York, N.Y. 517,711, ren. 3–3–70. Cl. 26.
McDonnell Aircraft Corp., to McDonnell Douglas Corp., St. Louis, Mo. 524,806, ren. 3–3–70. Cl. 19.
McDonnell Douglas Corp.: *See*—
McDonnell Aircraft Corp.
McGrath, Joseph E., Jr., Detroit, Mich. 887,185, pub. 12–16–69. Cl. 38.
McNair, S. L., Corp., The, Anaheim, Calif. 763,200, canc. Cl. 44.
Medtronic, Inc., Minneapolis, Minn. 763,202, canc. Cl. 44.
Meiser, G. H., & Co., Blue Island, Ill. 887,113, pub. 12–16–69. Cl. 23.
Melander, Raymond C., d.b.a. Tufflite Plastics, to Tufflite Plastics, Inc., Ballston Spa, N.Y. 521,630, ren. 3–3–70. Cl. 50.
Melville Shoe Corp., New York, N.Y. 887,218, pub. 12–16–69. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 887,025, pub. 12–16–69. Cl. 18.
Mercury Electro Industries, Inc., Orlando, Fla. 887,040, pub. 12–16–69. Cl. 21.
Metior Aktiebolag, Lidingo, Sweden. 887,054, pub. 12–16–69. Cl. 21.
Metro Wholesale Corp., New York, N.Y., from Duron Paint Mfg. Co., Inc., Beltsville, Md. 887,009, pub. 3–15–66. Cl. 16.
Microwave Cavity Laboratories, Inc., La Grange, Ill. 887,145, pub. 12–16–69. Cl. 26.
Middlshade Co., Inc., The, Philadelphia, Pa. 524,358, ren. 3–3–70. Cl. 39.
Mill Engineering & Machinery Co., Oakland, Calif. 887,097, pub. 12–16–69. Cl. 23.
Miller, Martin, Gesellschaft GmbH, Vienna, Austria. 887,118, pub. 12–16–69. Cl. 23.
Miner Industries, Inc., New York, N.Y. 887,078, pub. 12–16–69. Cl. 22.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 519,756, ren. 3–3–70. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 886,959, pub. 12–16–69. Cl. 1.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 886,959, pub. pub. 12–16–69. Cl. 44.
Modern Coatings, Inc., Chicago, Ill. 763,248, canc. Cl. 50.
Modern Maid Food Products, Inc., Jamaica, N.Y. 763,215, canc. Cl. 46.
Moreno S.A.: *See*—
Baldomero Moreno Espino.
Morfun, Inc., Atlanta, Ga. 763,038, canc. Cl. 22.
Motorola, Inc., Franklin Park, Ill. 887,046, pub. 12–16–69. Multiple Class (Classes 21, 26, and 36).
Movado Watch Agency, Inc., New York, N.Y. 524,247, ren. 3–3–70. Cl. 27.
Moviette, Inc., Glen Head, N.Y. 763,010, canc. Cl. 21.
Murray Iron Works Co., Burlington, Iowa. 887,166, pub. 12–16–69. Cl. 34.
N.V. Philips' Gleeilampenfabrieken, Eindhoven, Netherlands. 887,175, pub. 12–16–69. Cl. 36.
Nasco Industries, Fort Atkinson, Wis. 886,960, pub. 12–31–68. Multiple Class (Classes 2, 23, and 26).
National Association of Underwater Instructors, Colton, Calif. 887,294, pub. 12–16–69. Cl. 107.
National Dairy Products Corp., New York, N.Y. 887,240, pub. 12–16–69. Cl. 46.
National Lead Co.: *See*—
McCullough Tool Co.
National Mattress Co., Huntington, W. Va., to Fiber Industries, Inc., Charlotte, N.C. 518,149, ren. 3–3–70. Cl. 32.
National Plastic Products Co., The, Odenton, Md., to Standard Oil Co., New York, N.Y. 443,039, ren. 3–3–70. Cl. 43.
National Titanium Co., Inc., Pico Rivera, Calif. 762,973, canc. Cl. 16.
Neddermeyer, Norman K., Redlands, Calif. 887,071, pub. 12–16–69. Cl. 22.
Nelco Sewing Machine Co., Inc., New York, N.Y. 887,122, pub. 12–16–69. Cl. 23.
Nelson, L. R., Mfg. Co., Inc., Peoria, Ill. 886,997, pub. 12–16–69. Cl. 19.
Nelson Sales Co., Kansas City, Mo. 887,084, pub. 12–10–68. Cl. 23.
New York Venture Fund, Inc., New York, N.Y. 887,284, pub. 12–16–69. Cl. 102.
Newberry, J. J., Co., New York, N.Y. 763,164, canc. Cl. 39.
Norris Industries, Inc., Los Angeles, Calif. 887,135, pub. 12–16–69. Cl. 25.
North, Charles W., d.b.a. Industrial Service, Minneapolis, Minn. 442,989, ren. 3–3–70. Cl. 26.
Nottinghill Designers' Group, Inc., Miami, Fla. 887,214, pub. 12–16–69. Cl. 39.
Numotizine, Inc., to Hobart Laboratories, Inc., Chicago, Ill. 265,213, ren. 3–3–70. Cl. 6.
Okla Homer Smith Furniture Mfg. Co., Inc., Fort Smith, Ark. 525,754, ren. 3–3–70. Cl. 32.
Old Republic Life Insurance Co., Chicago, Ill. 887,285, pub. 12–16–69. Cl. 102.
Olean Steel Sales & Service, Inc., Olean, N.Y. 887,262, pub. 12–16–69. Cl. 100.
Olin Mathieson Chemical Corp., New York, N.Y. 763,154, canc. Cl. 38.
Oneida Ltd., Oneida, N.Y. 887,110, pub. 12–16–69. Cl. 23.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 762,949, canc. Cl. 12.
Oxford Mfg. Co., Inc., d.b.a. Maxon Shirt Co. Division, Greenville, S.C. 763,173, canc. Cl. 39.
Oy. Kaukas AB, Lauritsala, Finland. 762,989, canc. Multiple Class (Classes 19 and 22).
P-V-T, Inc., Houston, Tex. 887,261, pub. 12–16–69. Cl. 100.
Packard-Bell Electronics Corp., Los Angeles, Calif. 887,041, pub. 12–16–69. Cl. 21.
Pallite Corp., Los Angeles, Calif. 887,246, pub. 12–16–69. Cl. 50.
Peavey Co.: *See*—
Russel-Miller Milling Co.
Peay, Jerry D., d.b.a. Allen Camper Mfg. Co., Allen, Okla. 887,036, pub. 12–16–69. Cl. 19.
Peltzer & Ehlers, Krefeld, Germany. 887,105, pub. 12–16–69. Cl. 23.
Penn Corp., Princeton, N.J., from Ritepoint Corp., St. Louis, Mo. 887,179, pub. 9–5–67. Cl. 37.
Pennsylvania Sewing Research Corp., Dunmore, Pa. 887,108, pub. 12–16–69. Cl. 23.
Pennwalt Corp.: *See*—
Pharma-Craft Corp., The.
Permatex Co., Inc.: *See*—
Uris Sales Corp.
Pharma-Craft Corp., The, New York, N.Y., to Pennwalt Corp., Philadelphia, Pa. 522,621, ren. 3–3–70. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 520,157, ren. 3–3–70. Cl. 15.
Pipes Engineering Co., Inc., Aurora, Ill. 887,139, pub. 12–16–69. Cl. 26.
Pinkerton's, Inc., New York, N.Y. 887,265, pub. 12–16–69. Cl. 100.
Pioneer Industries, Inc., Carlstadt, N.J. 886,995, pub. 12–16–69. Cl. 13.
Plasti-Vac, Inc., Charlotte, N.C. 887,094, pub. 12–16–69. Cl. 23.
Post Exchange Publishing Corp., Red Bank, N.J. 763,146, canc. Cl. 38.
Potlatch Forests, Inc., Lewiston, Idaho. 763,139–40, canc. Cl. 37.
Pottersign, Inc., Peabody, Mass. 887,181, pub. 8–13–68. Cl. 38.
Practical Mfg. Co., New York, N.Y. 887,101, pub. 12–16–69. Cl. 23.
Preform Building Components, Inc., Bear, Del. 886,989, pub. 12–16–69. Cl. 12.
Pressing Supply Co., Philadelphia, Pa., by Gem, Inc., Byhalia, Miss. 443,871, 12(c) pub. 3–3–70. Cl. 24.
Prince Candy Corp., New York, N.Y. 763,210, canc. Cl. 46.

Procter & Gamble Co., The, Cincinnati, Ohio. 520,067, ren. 3–3–70. Cl. 38.
Proctor-Silex Inc.: *See*—
Chicago Electric Mfg. Co.
Product Design & Development Corp., Beverly Hills, Calif. 763,022, canc. Cl. 22.
Product Dynamics Corp., San Francisco, Calif. 886,983, pub. 12–16–69. Cl. 8.
Production Lithographing, Inc., Crystal, Minn. 887,281, pub. 12–16–69. Cl. 101.
Production & Marketing Corp., The, to Production & Marketing Co., Newtown, Conn. 524,505, ren. 3–3–70. Cl. 22.
Progressive Aviation Ltd., San Jose, Calif. 887,298, pub. 12–16–69. Cl. 107.
Proteus Foods & Industries Inc., New York, N.Y. 877,235, pub. 12–16–69. Cl. 46.
Purdue Frederick Co., The, Yonkers, N.Y. 887,027, pub. 10–14–69. Cl. 18.
Puritan Fashions Corp., New York. N.Y. 763,159, canc. Cl. 39.
Puritan Sportswear Corp., Altoona, Pa. 887,215, pub. 12–16–69. Cl. 39.
Quaker Oats Co., The, Chicago, Ill. 523,168, ren. 3–3–70. Cl. 46.
R/A Publications, Inc., New York, N.Y. 887,313. Cl. 38.
Radio Bible Class, Inc., The, Grand Rapids, Mich. 887,300, pub. 12–16–69. Cl. 107.
Ralston Purina Co., St. Louis, Mo. 523,419, ren. 3–3–70. Cl. 6.
Ranch House of America Inc., Fort Lauderdale, Fla. 887,276, pub. 12–16–69. Cl. 100.
Rank Organisation Ltd., The, London, England. 887,062, pub. 12–16–69. Cl. 21.
Red Arrow Camps, Inc., Buffalo, Wyo. 887,267, pub. 12–16–69. Cl. 100.
Reed & Prince Mfg. Co., Worcester, Mass. 886,996, pub. 12–16–69. Cl. 13.
Reichhold Chemicals, Inc., White Plains, N.Y. 518,740, ren. 3–3–70. Cl. 1.
Reinhackel, Dorothy, San Antonio, Tex. 887,303, pub. 12–16–69. Cl. 107.
Reynolds Metal Co., Richmond, Va. 887,088, pub. 12–16–69. Cl. 23.
Ritepoint Corp.: *See*—
Penn Corp.
Robinson, A., Inc. of Altoona, d.b:a. Albudon Products Co., Altoona, Pa. 763,260, canc. Cl. 51.
Robinson-Wagner Co., Inc., Mamaroneck, N.Y. 886,981, pub. 12–16–69. Cl. 6.
Rochester Datronics, Inc., Rochester, Minn. 887,144, pub. 12–16–69. Cl. 26.
Rock of Ages Corp., Barre, Vt. 524,209, ren. 3–3–70. Cl. 1.
Rockwell-Standard Corp., Coroapolis, Pa. 763,122, canc. Cl. 32.
Ross, Betsy, Bakeries, Inc., Bluefield, W. Va. 763,216, canc. Cl. 46.
Rowntree & Co. Ltd.: *See*—
Rowntree Mackintosh Ltd.
Rowntree Mackintosh Ltd., from Rowntree and Co. Ltd., York, England. 887,231, pub. 10–28–69. Cl. 46.
Roxane, Phillips, Inc., New York, N.Y. 762,985, canc. Cl. 18.
Rubin Bros. Waste Co., d.b.a. Lewis Industrial Supply Co., Harrisburg, Pa. 887,210, pub. 12–16–69. Cl. 39.
Russel-Miller Milling Co., to Peavey Co., Minneapolis, Minn. 525,427, ren. 3–3–70. Cl. 46.
S and W Fine Foods, Inc., San Francisco, Calif. 517,033, ren. 3–3–70. Cl. 46.
St. Louis Banana & Tomato Co., Inc.: *See*—
Catanzaro Banana & Tomato Co.
Sandell Mfg. Co., Inc., Cambridge, Mass. 762,943, canc. Cl. 12.
Sanman & Kemp-Barclay & Co., Inc.: *See*—
Lanman & Kemp.
Sbicca of California, El Monte, Calif. 887,206–8, pub. 12–16–69. Cl. 39.
Scale Control, Inc., Fort Worth, Tex. 763,006, canc. Cl. 21.
Schiffman, Theodore, Tustin, Calif. 762,916, canc. Cl. 2.
Schlosser Textile Co., Inc., New York, N.Y. 763,187, canc. Cl. 42.
Schnadig Corp.: *See*—
International Furniture Co.
Schwalm Electronics, Inc., Highland Park, Ill. 886,987, pub. 12–16–69. Cl. 11.
Scotland Mills, Inc., Laurinburg, N.C., to Springs Mills, Inc., New York, N.Y. 519,336, ren. 3–3–70. Cl. 42.
Scott & Fetzer Co., The, Toledo, Ohio. 886,966, pub. 12–16–69. Cl. 4.
Screen Products, Inc., Caldwell, N.J. 763,109, canc. Cl. 31.
Screw Conveyor Corp., Hammond, Ind. 523,873, ren. 3–3–70. Cl. 23.
Sealomatic Electronics Corp., Brooklyn, N.Y. 887,047, pub. 9–9–69. Cl. 21.
Searer, Harold J., d.b.a. Searer Rubber Co., Akron, Ohio. 887,072, pub. 12–16–69. Cl. 22.
Sears, Roebuck and Co., Chicago, Ill. 519,221, ren. 3–3–70. Cl. 51.
Sears, Roebuck and Co., Chicago, Ill. 519,719, ren. 3–3–70. Cl. 28.
Sears, Roebuck and Co., Chicago, Ill. 887,216, pub. 12–16–69. Cl. 39.
Seidel, Ad., & Son Inc., Elk Grove Village, Ill. 887,229, pub. 12–16–69. Cl. 46.
Selgran, Inc., Anaheim, Calif. 887,034, pub. 12–16–69. Cl. 19.
Seng Co., The, to The Seng Co., Chicago, Ill. 524,161, ren. 3–3–70. Cl. 13.
Service Station Equipment Co., to John Wood Co., Muskegon, Mich. 522,894, ren. 3–3–70. Cl. 23.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 886,963, pub. 12–16–69. Cl. 3.
Sherwin-Williams Co., The, Cleveland, Ohio. 265,302, ren. 3–3–70. Cl. 16.
Sherwood Medical Industries Inc., Chicago, Ill. 887,225, pub. 12–16–69. Cl. 44.
Sieber & McIntyre, Inc., Chicago, Ill. 887,192, pub. 12–16–69. Cl. 38.
Simmons Co., New York, N.Y. 521,973, ren. 3–3–70. Cl. 32.
Simmons Co., New York, N.Y. 522,243, ren. 3–3–70. Cl. 32.
Simmons Co., New York, N.Y. 522,272, ren. 3–3–70. Cl. 32.
Simmons Co., New York, N.Y. 522,324, ren. 3–3–70. Cl. 32.
Simmons Co., New York, N.Y. 522,333, ren. 3–3–70. Cl. 32.
Simmons, Ernest P., Sr., d.b.a. Ernie Simmons Enterprises, Olathe, Kans. 887,087, pub. 12–16–69. Cl. 23.
Simms, T. S., & Co. Ltd., St. John, New Brunswick, Canada. 887,093, pub. 12–16–69. Cl. 23.
Sixth Sense, The, Colorado Springs, Colo. 887,302, pub. 12–9–69. Cl. 107.
Sizzler Family Steak Houses, Culver City, Calif. 887,282, pub. 12–16–69. Cl. 101.
Skydyne, Inc., Port Jervis, N.Y. 443,543, ren. 3–3–70. Cl. 12.
Slant/Fin Corp., Greenvale, N.Y. 887,057, pub. 6–24–69. Cl. 21.
Smith Bros. Mfg. Co., Carthage, Mo. 887,196, pub. 10–29–68. Cl. 39.
Smith, Kenneth, Inc., Kansas City, Mo. 887,079. Cl. 22.
Snow Chef, Inc., San Francisco, Calif. 763,234, canc. Cl. 46.
Snug Harbour Tobacco, Ltd., New York, N.Y. 887,015, pub. 12–16–69. Cl. 17.
Societe Anonyme des Usines Renault, Billancourt, France, by Renault, Inc., New York, N.Y. 240,774, 12(c) pub. 3–3–70. Cl. 19.
Societe Industrielle de Machines Agricoles Rotatives Simar, Geneva, Switzerland. 518,403, ren. 3–3–70. Cl. 23.
Societe le Lait et Ses Derives Maison Leon Claeys, Paris (Seine), France. 886,973, pub. 12–16–69. Cl. 6.
Somay Products, Inc., Miami, Fla. 522,676, ren. 3–3–70. Cl. 16.
South Eastern Cordage Co., Cleveland, Ohio. 886,965, pub. 10–14–69. Cl. 4.
Speaker, J. W., Corp., Milwaukee, Wis. 518,584, ren. 3–3–70. Cl. 35.
Speedring Corp., Warren, Mich. 887,147, pub. 12–16–69. Cl. 26.
Spinks Industries, Inc., from M. H. Spinks Enterprises, Inc., Fort Worth, Tex. 887,037, pub. 12–16–69. Cl. 19.
Spinks, M. H., Enterprises, Inc.: *See*—
Spinks Industries, Inc.
Spooner, Daniel, Long Beach, N.Y. 762,912, canc. Cl. 2.
Sports Car Club of America, Inc., Westport, Conn. 887,296, pub. 12–16–69. Cl. 107.
Sportsways, Inc., Paramount, Calif. 763,049, canc. Cl. 22.
Springs Mills, Inc.: *See*—
Scotland Mills, Inc.
Staley, A. E., Mfg. Co., Decatur, Ill. 525,776, ren. 3–3–70. Cl. 18.
Standard Oil Co.: *See*—
National Plastic Products Co., The.
Standard Oil Co., Flemington, N.J. 887,220, pub. 7–29–69. Cl. 42.
Standard Packaging Corp., New York, N.Y. 763,047, canc. Cl. 22.
Stanley Works, The, New Britain, Conn. 887,068, pub. 12–16–69. Cl. 21.
Star Paper Tube Inc., Rock Hill, S.C. 702,920, canc. Cl. 2.
Status Shoe Corp., The, New York, N.Y. 887,209, pub. 12–16–69. Cl. 39.
Stauffer Chemical Co., New York, N.Y., from International Minerals & Chemical Corp., Skokie, Ill. 886,970, pub. 12–16–69. Cl. 5.
Stephens-Adamson Mfg. Co., Aurora, Ill., to Borg-Warner Corp., Chicago, Ohio. 443,519–20, ren. 3–3–70. Cl. 23.
Sterling Drug Inc., New York, N.Y. 887,258, pub. 12–16–69. Cl. 52.
Stoody Co., Whittier, Calif. 763,124, canc. Cl. 34.
Strickland, J., & Co.: *See*—
Dusharme Products Inc.
Strobo Research, Milwaukee, Wis., to Graflex, Inc., Rochester, N.Y. 523,660, ren. 3–3–70. Cl. 26.
Stuart, D. A., Oil Co., Ltd., Chicago, Ill. 524,061, ren. 3–3–70. Cl. 15.
Studebaker Corp., Harrison, N.J. 887,089, pub. 12–16–69. Cl. 23.
Sudmeier Enterprises, Inc., Gardena, Calif. 887,268, pub. 9–30–69. Cl. 100.
Sun Battery Co., Inc., Santa Ana, Calif. 887,043, pub. 12–16–69. Cl. 21.
Sun Engineering Corp., Hialeah, Fla. 763,023, canc. Cl. 22.
Sunbeam Corp., from Sunbeam Corp., Chicago, Ill. 887,123, pub. 12–2–69. Cl. 23.
Superior Oil Co., The, Houston, Tex. 887,288–9, pub. 12–16–69. Cl. 105.
Sweco, Inc., Los Angeles, Calif. 887,095, pub. 12–16–69. Cl. 23.
Sweetheart Plastics, Inc., Wilmington, Mass. 763,063, canc. Cl. 23.
Symbolic Displays, Inc., Orange, Calif. 887,042, pub. 12–16–69. Cl. 21.
Tanatex Chemical Corp., Lyndhurst, N.J. 886,972, pub. 5–28–68. Cl. 6.
Tavaro S.A., Geneva, Switzerland. 887,086, pub. 12–16–69. Cl. 23.
Taylor, Edward R., d.b.a. The Taylor Precision Mfg. Corp., Bay Village Ohio. 518,609, ren. 3–3–70. Cl. 31.
Taylor Machine Works, Louisville, Miss. 887,106, pub. 12–16–69. Cl. 23.
Telecine Film Studios, Inc., Chicago, Ill. 887,309. Cl. 38.
Teledyne Electric Corp., Edinboro, Pa., from Western In-

sulated Wire Co., Los Angeles, Calif. 887,055, pub. 12–16–69. Cl. 21.
Tennent, J. & R., Ltd., by Tennent Caledonion Breweries Ltd., Glasgow, Scotland. 75,903, 12(c) pub. 3–3–70. Cl. 48.
Textile Machinery, Inc., Wheeling, Ill. 887,096, pub. 12–16–69. Cl. 23.
Thomas Organ Co., Sepulveda, Calif. 887,172, pub. 9–2–69. Cl. 36.
Thor Power Tool Co., Aurora, Ill. 887,126, pub. 12–16–69. Cl. 23.
Tolco Corp., Toledo, Ohio. 887,000, pub. 12–16–69. Cl. 13.
Tomlinson of High Point, High Point, N.C. 763,120, canc. Cl. 32.
Toyota Jidosha Kogyo Kabushiki Kaisha (Toyota Motor Co., Ltd.), Aichi-ken, Japan. 887,112, pub. 12–16–69. Cl. 23.
Transilwrap Co., Inc., Chicago, Ill. 886,954, pub. 12–16–69. Cl. 1.
Translok, Inc., Bayside, N.Y. 887,134, pub. 12–16–69. Cl. 25.
Trans-Lux Corp., New York, N.Y. 887,138, pub. 8–26–69. Cl. 26.
Tri-Point Industries, Inc., Commack, N.Y. 887,143, pub. 10–21–69. Cl. 26.
Tuffilite Plastics, Inc.: *See*—
Melander, Raymond C.
Turtle Wax, Inc., Chicago, Ill. 762,995–6, canc. Cl. 19.
Turtle Wax, Inc., Chicago, Ill. 886,968, pub. 12–16–69. Cl. 4.
USP Corp.: *See*—
United States Products Corp., Ltd.
UTD Corp., Athol, Mass. 887,133, pub. 12–16–69. Cl. 23.
Union Carbide Corp., New York, N.Y. 886,980, pub. 12–16–69. Cl. 6.
Union Fork & Hoe Co., The, Columbus, Ohio. 763,071, canc. Cl. 23.
Union Oil Co. of California, Los Angeles, Calif. 887,063, pub. 12–16–69. Cl. 21.
Unique Electronics Inc., East Brunswick, N.J. 887,070, pub. 12–16–69. Cl. 21.
Uniroyal, Inc.: *See*—
United States Rubber Co.
U.S. Medicine, Inc., Washington, D.C. 887,182, pub. 12–16–69. Cl. 38.
United States Products Corp., Ltd., to USP Corp., San Jose, Calif. 521,902, ren. 3–3–70. Cl. 46.
U.S. Rooter Corp., Santa Ana, Calif. 887,287, pub. 12–16–69. Cl. 103.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 525,715, ren. 3–3–70. Cl. 1.
Universal Oil Products Co., d.b.a. UOP Chemical Division & UOP Process Division, Des Plaines, Ill. 886,975, pub. 12–16–69. Cl. 6.
Uris Sales Corp., New York, N.Y., to Permatex Co., Inc., West Palm Beach, Fla. 267,101, ren. 3–3–70. Cl. 4.
Utility Mfg. Co., Kenosha, Wis. 887,131, pub. 12–16–69. Cl. 23.
Valley Fruit & Produce Co., to Val-Pro Inc., d.b.a. Valley Fruit & Produce Co., Los Angeles, Calif. 520,882, ren. 3–3–70. Cl. 46.
Val-Pro Inc.: *See*—
Valley Fruit & Produce Co.
Vantran Electric Corp., Vandalia, Ill. 887,052–3, pub. 12–16–69. Cl. 21.
Verenigde Nederlandse Brouwerijen D'Oranjeboom N.V., d.b.a. Doranjeboom Breweries, Rotterdam, Netherlands. 763,240, canc. Cl. 48.
Vernitron Corp., Farmingdale, N.Y. 887,141, pub. 9–23–69. Cl. 26.
Vernon Book Sales Corp., Mount Vernon, N.Y. 887,312. Cl. 38.
Vickers Todd & Dawson Ltd., Sussex, England. 763,246, canc. Cl. 50.
Villager Industries, Inc., Philadelphia, Pa. 887,280, pub. 12–16–69. Cl. 101.
Virginia Dare Extract Co. Inc., Brooklyn, N.Y. 763,204, canc. Cl. 45.
Volumes In Values, Inc., Chicago, Ill. 763,101, canc. Cl. 28.
Vom Stein, Hans, Rhineland, Germany. 887,107, pub. 12–16–69. Cl. 23.
Vom Stein, Hans, Dhuenn, Rhineland, Germany. 887,125, pub. 12–16–69. Cl. 23.
Warelands, The, Norfolk, Mass. 763,236, canc. Cl. 46.
Warfield, Wilmer A., d.b.a. F & W Food Shopping Center, Washington, D.C. 763,266, canc. Cl. 52.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 763,152, canc. Cl. 38.
Warner Mfg. Co., Minneapolis, Minn. 525,639, ren. 3–3–70. Cl. 23.
Water Works Supply Co., Inc., Union City, Calif. 886,994, pub. 12–3–68. Cl. 13.
Weatherby, George W., Associates, Hinsdale, Ill. 887,098, pub. 12–16–69. Cl. 23.
Webb, C. J., Inc., Dresher, Pa. 887,257, pub. 9–16–69. Cl. 52.
Weight Watchers International, Inc., Great Neck, N.Y. 887,184, pub. 11–19–68. Cl. 38.
Weisberg, David, Philadelphia, Pa. 763,027, canc. Cl. 22.
Well Equipment Mfg. Corp., Houston, Tex., to FMC Corp., San Jose, Calif. 515,176, ren. 3–3–70. Cl. 12.
Well Equipment Mfg. Corp., Houston, Tex., to FMC Corp., San Jose, Calif. 517,492, ren. 3–3–70. Cl. 12.
Well Equipment Mfg. Corp., Houston, Tex., to FMC Corp., San Jose, Calif. 518,458, ren. 3–3–70. Cl. 12.
Wella Corp., The, Englewood, N.J. 887,249, pub. 12–16–69. Cl. 51.
Wellington Jewelry Co. Inc., New York, N.Y. 887,154, pub. 12–16–69. Cl. 28.
West Chester Chemical Co., Inc., West Chester, Pa. 886,988, pub. 12–16–69. Multiple Class (Classes 12 and 16).
West Laboratories, Inc., Long Island City, N.Y., from Interstate Industries, Inc., Kansas City, Mo. 887,256, pub. 6–11–68. Cl. 52.
Western Insulated Wire Co.: *See*—
Teledyne Electric Corp.
Westwood Industries, Inc., Paterson, N.J. 887,161, pub. 12–16–69. Multiple Class (Classes 32, 34, and 50).
Wheeler-Dealer Association, New York, N.Y. 887,190, pub. 12–16–69. Cl. 38.
Wheeling Corrugating Co., to Wheeling-Pittsburgh Steel Corp., Wheeling, W. Va. 521,426, ren. 3–3–70. Cl. 12.
Wheeling-Pittsburgh Steel Corp.: *See*—
Wheeling Corrugating Co.
Williams Furniture Corp., Sumter, S.C. 763,117, canc. Cl. 32.
Wilroy, Inc., New York, N.Y. 887,202, pub. 12–16–69. Cl. 39.
Wonder Books, Inc., to Grosset & Dunlap Inc., New York, N.Y. 521,428, ren 3–3–70. Cl. 38.
Wood, John, Co.: *See*—
Service Station Equipment Co.
Woolsey Marine Industries, Inc., New York, N.Y. 887,012, pub. 12–16–69. Cl. 16.
Wyman, Jasper, & Son, to Jasper Wyman & Son, Millbridge, Maine. 517,194, ren. 3–3–70. Cl. 46.
Yakima Valley Grape Producers, Inc., Grandview, Wash. 887,241, pub. 10–14–69. Cl. 46.
Young World Corp., from P.P.B., Inc., Washington, D.C. 887,271, pub. 9–16–69. Cl. 100.
Zell Bros., Portland, Oreg. 887,155, pub. 12–16–69. Cl. 28.
Zimmerman Packing Co., Cincinnati, Ohio. 887,171, pub. 12–16–69. Cl. 35.
Zona Casuals, Inc., Tucson, Ariz. 886,962, pub. 12–16–69. Multiple Class (Classes 3 and 39).

U.S. GOVERNMENT PRINTING OFFICE: 0——1970

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March 10, 1970 Volume 872 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1970

Examiner affirmed	148
Examiner affirmed in part	17
Examiner reversed	28
Total	193

Erratum

In the OFFICIAL GAZETTE of January 28, 1969, vol. 858, p. 1218, column 2, under Patent No. 3,424,455, line 2, "BALANCE GAME APPARATUS" should read —WEIGHT COMPARISON BALANCE GAME APPARATUS—. The abstract should be cancelled in its entirety and the following should be inserted:

Groups of objects are placed on opposite sides of a balance to determine their relative total weights. From a series of group comparisons players deduce which individual objects are heavier or lighter than the others.

A plurality of cover members of identical construction are arbitrarily marked so that each is distinguishable from the others. A plurality of body members have the same external appearance when each is attached to a cover member, but have indicia indicative of their relative weights. When a body member is attached to a cover member, the weight indicia are concealed and each combined cover and body member unit (object) looks the same as each other unit except for the arbitrary markings on the cover members. In one embodiment the body members are hollow and differently weighted inner members are inserted in the hollows.

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Many of the patent application papers received by the Patent Office are copies of the original, ribbon copy. These are acceptable if, in the opinion of the Office, they are legible and permanent. Legibility includes ability to be photocopied and photomicrographed so that suitable reprints can be made. This requires a high contrast, with black lines and a white background. Gray lines and/or a gray background sharply reduce photo reproduction quality.

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RICHARD A. WAHL,
Assistant Commissioner.

Jan. 28, 1970.

Foreign Patents Received in the Search Center as of January 31, 1970

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Jan. 7, 1970	60,743/68
(*Patents*)	Sept. 8, 1969	288,438
Austria	Oct. 20, 1969	272,879
Belgium	Jan. 26, 1970	683,500
Canada	Dec. 16, 1969	823,240
Czechoslovakia	Dec. 8, 1969	130,900
Denmark:		
(*Applications*)	Jan. 7, 1970	115,385
(*Patents*)	Oct. 23, 1969	113,480
East Germany	Jan. 21, 1970	70,019
Egypt	June 28, 1969	6,878
Finland:		
(*Applications*)	Jan. 7, 1970	41,730
(*Patents*)	Apr. 7, 1969	87,180
France:		
(*Patents*)	Jan. 19, 1970	2,002,200
(*Additions*)	Jan. 28, 1970	94,200
(*Medicaments*)	Jan. 28, 1970	6,350 M
(*Additions*)	May 23, 1969	212 CAM
Germany:		
(*Auslegeschriften*)	Nov. 7, 1969	1,801,700
(*Offenlegungsschriften*)	Dec. 22, 1969	1,901,622
(*Patents*)	Sept. 22, 1969	1,282,547
Great Britain	Dec. 22, 1969	1,169,826
India	June 18, 1969	102,055
Ireland	Jan. 19, 1970	28,571
Italy	Mar. 3, 1969	700,000
Japan	Jan. 26, 1970	31,800/69
Korea	Sept. 12, 1969	234/69
Netherlands:		
(*Octrooiaanvragen*)	Aug. 7, 1969	2,394/69
(*Patents*)	Jan. 19, 1970	127,649
Norway:		
(*Applications*)	Jan. 19, 1970	118,264
(*Patents*)	Dec. 22, 1969	116,599
Pakistan	Mar. 3, 1964	112,446
Philippine Republic	May 13, 1962	458
Poland	Dec. 8, 1969	58,280
Rumania	Oct. 22, 1969	51,701
Sweden:		
(*Applications*)	Nov. 7, 1969	315,040
(*Patents*)	Dec. 16, 1969	317,742
Switzerland	Nov. 7, 1969	477,042
U.S.S.R.	Jan. 21, 1970	244,047

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445 031/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1950
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1920
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1938
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

New Applications Received During November 1969

Patents	7447
Designs	437
Plant Patents	8
Reissues	31
Total	7923

Issue—March 10, 1970

Patents	1300	No. 3,499,172 to No. 3,500,471, incl.
Designs	98	No. 216,765 to No. 216,862, incl.
Reissues	8	No. 26,813 to No. 26,820, incl.
Def. Pub	4	No. T872,001 to No. T872,004, incl.
Total	1410	

Certificates of Correction for the Week of Mar. 10, 1970

Re. 25,976	3,380,223	3,402,224	3,408,338	3,410,918	3,413,780	3,415,939	3,440,870
Re. 26,482	3,380,419	3,402,245	3,408,339	3,410,930	3,413,843	3,416,027	3,441,073
D. 208,186	3,380,964	3,402,303	3,408,341	3,410,939	3,413,925	3,416,093	3,441,075
D. 212,808	3,381,000	3,402,763	3,408,344	3,411,114	3,413,929	3,416,261	3,441,200
D. 212,815	3,382,179	3,403,100	3,408,368	3,411,133	3,414,000	3,416,310	3,441,523
D. 212,839	3,382,296	3,403,150	3,408,372	3,411,139	3,414,003	3,416,429	3,442,489
D. 212,875	3,382,790	3,403,290	3,408,388	3,411,249	3,414,103	3,416,807	3,442,517
D. 212,972	3,382,793	3,403,528	3,408,398	3,411,278	3,414,108	3,416,931	3,442,607
3,196,012	3,382,813	3,403,557	3,408,425	3,411,342	3,414,111	3,416,947	3,442,834
3,265,680	3,382,814	3,403,721	3,408,440	3,411,372	3,414,216	3,417,040	3,443,042
3,265,759	3,383,043	3,404,005	3,408,550	3,411,374	3,414,292	3,417,642	3,443,978
3,271,423	3,383,898	3,404,113	3,408,622	3,411,461	3,414,411	3,417,677	3,444,728
3,271,435	3,384,156	3,404,358	3,408,632	3,411,526	3,414,468	3,417,690	3,445,004
3,288,552	3,385,680	3,404,384	3,408,748	3,411,536	3,414,469	3,417,937	3,445,504
3,297,427	3,385,738	3,404,400	3,408,753	3,411,635	3,414,472	3,417,947	3,445,641
3,312,618	3,386,588	3,404,571	3,408,834	3,411,725	3,414,485	3,418,043	3,445,770
3,312,837	3,386,956	3,404,585	3,408,856	3,411,730	3,414,491	3,418,220	3,446,026
3,312,945	3,387,881	3,404,769	3,408,877	3,411,912	3,414,512	3,418,239	3,446,267
3,318,215	3,388,109	3,404,779	3,409,012	3,411,917	3,414,514	3,418,306	3,446,774
3,319,575	3,388,200	3,405,116	3,409,023	3,411,926	3,414,524	3,418,475	3,447,297
3,322,110	3,389,194	3,405,182	3,409,208	3,411,932	3,414,540	3,418,479	3,447,939
3,328,110	3,389,484	3,405,139	3,409,228	3,411,997	3,414,567	3,418,547	3,447,941
3,324,074	3,390,104	3,405,168	3,409,278	3,411,998	3,414,586	3,418,947	3,448,075
3,328,339	3,390,570	3,405,273	3,409,311	3,412,017	3,414,604	3,419,087	3,448,082
3,329,666	3,391,156	3,405,305	3,409,387	3,412,030	3,414,609	3,419,174	3,448,109
3,332,532	3,391,211	3,405,314	3,409,478	3,412,031	3,414,699	3,419,205	3,448,337
3,339,186	3,392,441	3,405,670	3,409,616	3,412,050	3,414,700	3,419,343	3,448,812
3,340,333	3,392,448	3,405,838	3,409,628	3,412,055	3,414,717	3,419,543	3,449,149
3,342,361	3,393,215	3,405,993	3,409,631	3,412,082	3,414,830	3,419,555	3,449,179
3,347,686	3,394,148	3,406,024	3,409,660	3,412,184	3,414,864	3,419,643	3,449,271
3,347,792	3,394,166	3,406,051	3,409,713	3,412,229	3,414,868	3,419,852	3,449,427
3,349,860	3,394,371	3,406,080	3,409,718	3,412,317	3,414,875	3,420,058	3,449,860
3,350,480	3,394,395	3,406,140	3,409,816	3,412,367	3,414,937	3,420,094	3,449,899
3,350,481	3,395,054	3,406,164	3,409,824	3,412,369	3,414,940	3,420,137	3,450,455
3,356,658	3,395,078	3,406,178	3,409,849	3,412,442	3,414,976	3,420,407	3,450,490
3,358,057	3,396,094	3,406,187	3,409,925	3,412,530	3,414,995	3,420,414	3,450,984
3,359,727	3,396,112	3,406,225	3,409,960	3,412,574	3,415,038	3,420,438	3,451,402
3,360,190	3,396,210	3,406,319	3,410,157	3,412,587	3,415,120	3,420,588	3,452,568
3,361,624	3,396,508	3,406,476	3,410,180	3,412,610	3,415,122	3,420,742	3,453,068
3,361,853	3,396,787	3,406,601	3,410,182	3,412,668	3,415,132	3,421,337	3,456,023
3,363,872	3,397,626	3,406,733	3,410,254	3,412,771	3,415,150	3,421,618	3,458,353
3,364,104	3,398,201	3,406,763	3,410,317	3,412,837	3,415,161	3,422,680	3,458,411
3,364,185	3,398,302	3,406,871	3,410,343	3,412,885	3,415,296	3,423,800	3,459,569
3,365,531	3,398,405	3,406,928	3,410,572	3,412,918	3,415,305	3,423,715	3,463,941
3,365,886	3,398,828	3,406,972	3,410,610	3,412,982	3,415,360	3,425,970	3,466,140
3,365,981	3,399,017	3,407,005	3,410,622	3,413,037	3,415,861	3,428,519	3,466,596
3,366,072	3,399,051	3,407,017	3,410,740	3,413,038	3,415,868	3,428,804	3,470,599
3,367,882	3,399,073	3,407,100	3,410,743	3,413,079	3,415,869	3,429,436	3,471,952
3,368,989	3,399,111	3,407,166	3,410,745	3,413,084	3,415,440	3,429,822	3,474,730
3,370,600	3,399,180	3,407,196	3,410,747	3,413,099	3,415,443	3,430,215	3,477,382
3,370,735	3,399,577	3,407,197	3,410,754	3,413,156	3,415,477	3,432,713	3,478,994
3,371,085	3,399,689	3,407,222	3,410,763	3,413,204	3,415,561	3,433,801	3,479,758
3,373,025	3,400,101	3,407,232	3,410,767	3,413,210	3,415,609	3,434,840	3,480,064
3,373,231	3,401,132	3,407,234	3,410,803	3,413,224	3,415,715	3,434,538	3,480,390
3,375,226	3,401,158	3,407,363	3,410,810	3,413,254	3,415,753	3,434,761	3,480,532
3,375,384	3,401,193	3,407,878	3,410,813	3,413,325	3,415,761	3,435,036	3,480,555
3,376,106	3,401,197	3,407,744	3,410,818	3,413,347	3,415,780	3,437,662	3,480,560
3,376,347	3,401,404	3,408,002	3,410,819	3,413,352	3,415,781	3,437,693	3,480,727
3,377,590	3,401,492	3,408,016	3,410,853	3,413,404	3,415,783	3,438,000	3,481,271
3,379,611	3,401,885	3,408,158	3,410,872	3,413,473	3,415,790	3,438,155	3,481,368
3,379,665	3,402,007	3,408,215	3,410,874	3,413,586	3,415,865	3,438,706	3,481,804
3,379,715	3,402,056	3,408,321	3,410,907	3,413,590	3,415,877	3,440,276	3,481,902
			3,410,909		3,415,910	3,440,637	3,483,174

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-04-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*8-29-67
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-24-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-68
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-26-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ASHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-03-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-19-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-68
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-02-68
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-29-68
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-19-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10-11-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-04-68
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	7-09-68
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-03-68
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	9-11-68
Total number of pending applications (excluding Designs)	183,028
Total number of Design applications pending	2,920

Expiration of patents: The patents within the range of numbers indicated below expire during February 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 76th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 82nd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents: Numbers 2,627,971 to 2,629,968, inclusive
Plant Patents: Numbers 1,162 to 1,171, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE MARCELLA FEERENS

No. 8177. Decided November 20, 1969

[57 CCPA —; — F.2d —; 163 USPQ 609]

1. PATENTABILITY—UTILITY—EVIDENCE—INCREDIBLE UTILITY.

"It is unfortunate, perhaps, that appellant finds herself engaged in a field of endeavor [growing hair] where 'little of a successful nature has been developed' despite constant effort over the years. * * * Of course, we recognize that the fact that some result has not previously been achieved is no reason for rejecting an application purporting to disclose how to achieve that result, since the very purpose of the patent system is to encourage attainment of previously unachievable results. * * * However, where an applicant predicates utility for the claimed invention on allegations of the sort here which are or border on the incredible in light of contemporary knowledge of the particular art, those allegations must be substantiated by acceptable evidence."

2. SAME—SAME—SAME—SAME.

"The amount of evidence which is acceptable and the character of such evidence required will obviously vary depending on the facts of each case, but the degree of certainty regarding the truth of the ultimate fact to be proved remains constant. * * * Evidence submitted to establish usefulness must be such as would be clear and convincing to one of ordinary skill in the particular art."

3. SAME—SAME—SAME.

"* * * we are unable to hold that appellant has convincingly established the ultimate fact upon which the assertion of usefulness is based, i.e., that the claimed method and composition will, in fact, grow hair. As pointed out by the Examiner and Board, there is no evidence that the 21 persons treated actually read and understood the specification or knew of the method and material applied to their scalps. Additionally, it was not established that healthy hair follicles were not present at the time treatment was started or that the appearance of any hair was not due to other causes. The value of the 'before' and 'after' photographs is also highly questionable since different lighting conditions and distances were apparent and not explained. In any event, such photographs merely tend to prove the fact that hair may have been grown, not that appellant's treatments caused such growth.'

4. SAME—SAME—SAME.

"* * * the affidavit of Dr. Stevens is also not persuasive. In the first place, it is not evident that a neuropsychiatrist is an expert in the field of hair growth. Secondly, the affidavit does not set forth the nature or frequency of his observations or what tests if any were performed on the hair or scalp to determine whether any hair growth was due to other than natural causes."

APPEAL from Patent Office. Serial No. 272,214.

AFFIRMED.

Eugene F. Buell, Buell, Blenko & Ziesenheim, for appellant.

Joseph Schimmel (*Leroy Randall*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, GANEY, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals which affirmed the Examiner's rejections of process claims 1–7 and composition claims 8–10 [1] "as failing to comply with the utility requirement of 35 U.S.C. 101" and on grounds of res judicata.

[1] Appearing in Serial No. 272,214, filed April 11, 1963, as continuation-in-part of Serial No. 681,444, filed September 3, 1957 and entitled "Methods of Growing Hair."

The invention relates to a method and composition said to be capable of producing "new growth of hair on denuded portions of the human body, particularly the scalp." The details of the method and composition employed are best illustrated in Example 1 of the specification:

* * * I treated a substantially denuded male scalp once each week in the following manner. The scalp was treated with a rake like electrode carrying high frequency current (10,000 oscillations per second) for two minutes at about 40 volts and 2 milliamperes. Immediately following this treatment I applied a composition made up of 30 cc. of tincture of jaborandi, 5 drops of capsicum extract and 5 cc. of mullein extract, all buffered to a pH of 4.5. I then gently massaged the scalp while applying a low voltage (40 volts) galvanic current of 1.5 milliamperes for about 3 minutes. I then applied a faradic current (10,000 oscillations per second) of 40 volts and 2 milliamperes to the scalp while gently massaging for 5 minutes. I again applied the jaborandi mixture set out above and warmed the scalp with steam until slightly pink and then repeated the massage with faradic current for 5 minutes. I removed excess jaborandi mixture and applied a lanolin ointment to the scalp. After two months of such weekly treatments there was a noticeable growth of fine short hair on the previously denuded, smooth scalp. At the end of five months the scalp was substantially covered by a natural growth of hair.

Claims 1 and 8 are representative:

1. A method of growing hair on the human body comprising the steps of applying a mixture of tincture of jaborandi, capsicum extract and mullein extract to a portion of the body to be treated, applying thereafter a galvanic current to the portion to be treated, massaging the portion to be treated while the galvanic current is applied, applying a faradic current to the portion to be treated immediately following the galvanic treatment and massaging the portion to be treated while said faradic current is applied.

8. A composition for promoting the growth of hair on the human body comprising a mixture of tincture of jaborandi, capsicum extract and mullein extract.

Faced with the recitations of usefulness appearing in the specification as above set forth, as well as the knowledge that numerous methods and compositions alleged to have the same usefulness have proven in the past to be uniformly ineffective and unreliable,[2] the Examiner rejected appellant's claims for lack of "convincing proof" that her method and composition "will grow hair." The Board agreed with the Examiner, finding that appellant had not presented "convincing evidence of operativeness of the claimed contribution for its intended purpose."

Here, as below, appellant relies heavily on an affidavit of one Dr. Stevens, a neuropsychiatrist, as well as the affidavits of 21 other persons, who claim to have been treated "by the method described" in

[2] As evidence of that, the Examiner cited the Journal of the American Medical Association, vol. 139, No. 13, pages 840–844 (March 26, 1949), which contains a rather candid discussion by the AMA's Committee on Cosmetics of the often "extravagant and deceptive" claims made by the purveyors of hair growth preparations. The committee stated in pertinent part:

Testimonials.—The advertising of hair "tonics" and hair and scalp treatments abounds in testimonials accompanied by "before" and "after" pictures. These statements testifying to miraculous results obtained from the use of a certain hair preparation must be viewed critically. The processes of the human body are so complex that the average person is unable to distinguish between results which are due to natural causes and those due to artificial remedies.

Testimonials can be obtained in several ways. They can be bought outright; they can be faked; often they are genuine from the documentary standpoint and have been written in good faith. These letters are usually volunteered by well meaning persons who have absolutely no knowledge of the nature of the challenging problems of the loss of hair. * * *

Widely used are "before" and "after" pictures showing a person with varying degrees of baldness originally and the same person with more hair following the use of certain brands of hair "tonics." In some instances, hair grows on a previously hairless head, but not as a result of any external applications or treatment. For example, about three months after prolonged febrile illnesses, severe nervous shocks or traumatic injuries, scalp hair may fall out completely or a rapid general thinning of the hair may take place. At other times, the hair falls out in patches known as alopecia areata," or the entire head and orbital areas are left without hair. These instances can be differentiated from ordinary baldness by the lack of characteristic patterning which occurs in the latter, first in the area above each eye and at the vertex of the head; both areas eventually merge, but hair will remain at the pe-

appellant's application, as "factual evidence showing that there has been a successful use of the invention for the purpose intended." Dr. Stevens averred that he had "for a period of two years observed continuously seven people who have been treated according to Example I"; that "each of the persons observed by me without exception showed a growth of hair in the areas being treated which areas had previously been devoid of hair"; and that, in his opinion, "all seven persons grew hair on previously denuded scalp areas solely as a result of the Ferens application and not because of any extraneous changing condition of environment, drug therapy or the like." The 21 parties treated by appellant uniformly were of the view that her treatments "were solely responsible for the growth of hair" on their respective scalps.

[1] It is unfortunate, perhaps, that appellant finds herself enaged in a field of endeavor where "little of a successful nature has been developed" despite constant effort over the years. See *In re Oberweger*, supra. Of course, we recognize that the fact that some result has not previously been achieved is no reason for rejecting an application purporting to disclose how to achieve that result, since the very purpose of the patent system is to encourage attainment of previously unachievable results. *In re Chilowsky*, 43 CCPA 775, 229 F.2d 457, 108 USPQ 321 (1956). However, where an applicant predicates utility for the claimed invention on allegations of the sort here which are or border on the incredible in light of contemporary knowledge of the particular art, those allegations must be substantiated by acceptable evidence. *In re Citron*, 51 CCPA 852, 325 F.2d 248, 139 USPQ 516 (1963); *In re Novak*, 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335 (1962); *Radoev* v. *Brenner*, 253 F. Supp. 923, 148 USPQ 702 (D.D.C. 1966).

[2] The amount of evidence which is acceptable and the character of such evidence required will obviously vary depending on the facts of each case, but the degree of certainty regarding the truth of the ultimate fact to be proved remains constant. See *In re Gazave*, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92 (1967); *In re Chilowsky*, supra. Evidence submitted to establish usefulness must be such as would be clear and convincing to one of ordinary skill in the particular art. *In re Irons*, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351 (1965). Cf. *In re Novak*, supra; *Radoev* v. *Brenner*, supra.

[3] Applying those principles to the case before us, we are unable to hold that appellant has convincingly established the ultimate fact upon which the assertion of usefulness is based, i.e., that the claimed method and composition will, in fact, grow hair. As pointed out by the Examiner and Board, there is no evidence that the 21 persons treated actually read and understood the specification or knew of the method and material applied to their scalps. Additionally, it was not established that healthy hair follicles were not present at the time treatment was started or that the appearance of any hair was not due to other causes. The value of the "before" and "after" photographs is also highly questionable since different lighting conditions and distances were apparent and not explained. In any event, such photographs merely tend to prove the fact that hair may have been grown, not that appellant's treatments caused such growth.

[4] Finally, the affidavit of Dr. Stevens is also not persuasive. In the first place, it is not evident that a neuropsychiatrist is an expert in the field of hair growth. Secondly, the affidavit does not set forth the nature or frequency of his observations or what tests if any were performed on the hair or scalp to determine whether any hair growth was due to other than natural causes.

We will not attempt to recite what evidence would be sufficient. Suffice it to say that, in this case, we are not persuaded that whatever growth of hair the various subjects did experience would necessarily be regarded by those skilled in this particular art as stemming from treatment with appellant's composition and method.

The view we take renders it unnecessary to consider the propriety of the rejection of all claims on res judicata. The decision is affirmed.

AFFIRMED.

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riphery so that, regardless of the extent of baldness, regular hair cuts are still necessary.

In symptomatic loss of hair, to resort to hair "tonics" and "professional" hair and scalp treatments is unnecessary. Regrowth usually takes place due to the forces of nature and not to any external application. The human mind is so constituted that one is much more prone to give credit to artificial measures than to nature and will, through misdirected gratitude, allow testimonials to be published.

* * * * * * *

If the general health of the man is satisfactory and the loss of hair is progressive and in characteristic patterns, the condition is probably, in young men, premature idiopathic baldness or, in older men, senile baldness, referred to previously as ordinary baldness. Medical science does not know any device, substance or method which will regenerate hair lost in these conditions. Neither widely advertised salves, ointments, "tonics," ultraviolet rays, massage nor mechanical devices are effective.

* * * * * * *

The claims of anyone that he has developed a remedy for the control or cure of baldness, or that he has inherited a formula for a remedy, or that he has accidentally discovered a remedy or method, should be viewed with the greatest skepticism.

Indeed, appellant's specification acknowledges:

* * * The loss of hair is a particularly disturbing phenomenon which accompanies aging in many people or which is the result of some physical disturbance in the body. Many efforts have been made towards the restoration of hair to such denuded spots without any significant success. Many methods of massage and chemical treatments have been heretofore proposed but the results have not been satisfactory.

See also *In re Oberweger*, 28 CCPA 749, 115 F.2d 826, 47 USPQ 455 (1940).

U.S. Court of Customs and Patent Appeals

IN RE THOMAS B. MCGUIRE AND ANDREW POGAN

No. 8189. Decided Oct. 23, 1969

[57 CCPA —; 416 F.2d 1322; 163 USPQ 417]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"TOOL FOR INTERNALLY CUTTING A TUBE AT AN ANGLE TO THE AXIS THEREOF."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Tool for Internally Cutting a Tube at an Angle to the Axis Thereof" as patentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 375,217.

AFFIRMED.

Bruce B. Krost, *Woodling, Krost, Granger and Rust*, for appellants.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, GANEY, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 5, 10, 11, 13, 17, 19, and 21 of application Serial No. 375,217, filed June 15, 1964, entitled "Tool for Internally Cutting a Tube at an Angle to the Axis Thereof." Five claims have been allowed.

The claimed invention is a tool used for cutting tubing or pipe, such as copper tubing used as water lines in buildings. Appellants' brief informs us that conventional plumbing procedure calls for the

rough installation of lengths of tubing in the open walls and spaces below the floors of buildings under construction such that the ends of the individual lengths extend slightly beyond the points where connections are ultimately to be made. Subsequently, it is necessary to cut off the excess tubing at the exact location where an "L" or "T" fitting, for example, is to be introduced. It is this cutting-off operation for which appellants' tool is said to be particularly well suited.

Setting the stage for a description of the claimed tool, appellants' brief states the following about certain prior art pipe and tubing cutting tools and the alleged shortcomings thereof:

> The customary tool used in the plumbing trade for cutting off the "throw-away" piece is an external cutter * * *.
>
> A typical external cutter has a C-shaped member that embraces the tubing and which carries rotatable disk cutters directed inwardly toward the outer wall of the tube. The C-shaped member usually has a handle extending outwardly and by manually revolving the C-shaped member carrying the cutter disks around the tube, the cutters cut into the outer wall of the tube. Means are provided on the C-shaped member for gradually moving the cutter disks toward each other against the tube as they progressively cut into the tube wall during revolving of the C-shaped member around the tube.
>
> There are distinct disadvantages in the use of such external cutters. First, very often there is not sufficient space around the outer wall of the tube to swing the cutter therearound. Sometimes, the tubing is extending alongside and very closely to a floor joist * * *. Sometimes, the tubing is extending up from a floor in the corner of a room too close to the walls for the revolving of the external cutter.
>
> Heretofore, in such tight situations plumbers have sometimes laboriously used a hack saw, but this is awkward and difficult in a cramped and confined space. Worse still, the hack saw mutilates, pinches and chews up the end of the tubing where cut, particularly the relatively soft copper tubing commonly used in installing water lines in a building. This requires considerable secondary operations on the tubing at the location of the saw cut, such as reaming it out to bring it back to cylindrical shape, removing burs and slivers, and trying to restore the cut end of the tubing so that it will fit readily and properly into the cylindrical socket of a coupling, "L" or "T" fitting for connection to another length of tubing.
>
> The external cutters have been the customary and standard tool used by plumbers for cutting off these end portions of tubing, notwithstanding their limitations on use in confined and restricted space. However, they have other serious shortcomings, such as the pinching of the metal wall of the tubing inwardly as the disk cutters progressively cut into the tube wall. This is particularly true of the softer metals such as copper, brass and aluminum, and which are now commonly used in installing lines in a building, such as water lines and electric cable conduits. This pinching in of the tube wall where cut seriously decreases the internal diameter of the tube and leaves a burred, rough edge directed inwardly of the tube. This necessitates the subsequent reaming out of the tube at the location of the cut to try to bring it back to its original true cylindrical form, and to remove the burs and sharp edges at the location of the cut. * * * For the tube end to fit readily and properly into the cylindrical socket of a coupling, "L" or "T" fitting, it should be a true cylinder free of burs and the like.
>
> Another approach has been tried out for cutting a tube, this being by means of an internal cutter. Such an internal cutter has been the type that has been used for cutting out steel tubes in a steam boiler in the removal of deteriorated steel tubes from the steel walls of the boiler in its renovation. In such internal cutters used for cutting the boiler tubes, a shaft was inserted into the open end of the tube from outside the boiler. The shaft carried either cutting disks or a cutting blade which was forced radially outward against the inner wall of the steel tube. The direction of the travel of the cutters was radially outward *in a plane normal* to the axis of the tube and of the shaft. As the shaft was rotated on its axis, the cutters would revolve around the shaft axis against the inner wall of the tube and progressively cut directly into the tube so as to sever it from the boiler wall.

> A very serious shortcoming of such internal cutting tools that had been used for cutting steel boiler tubes was that when the tool was utilized on copper, brass, aluminum, and other soft metal tubing, the cutters bellowed out or beaded the metal wall as they cut the metal. This resulted in a bell or flare on the end of the tubing where cut. Such a belled or flared end would not fit readily or properly into the cylindrical socket of a coupling, "L" or "T" fitting as required. * * * As a result, the plumbers usually preferred and used the external cutters with all of the shortcomings of the same. Although the boiler-tube internal cutters were old and well known, they did not become accepted to any extent in the plumbing industry dealing with tubing of the softer metals because of the described serious disadvantages and limitations of the internal cutting tools used for steel boiler tubes.

The claimed tool and the progressive steps in a cutting operation using it are shown in the following three figures from appellants' specification:

APPELLANTS

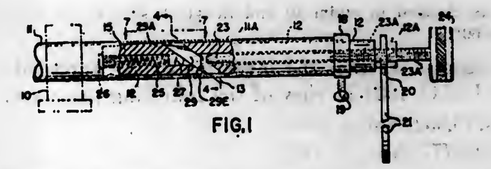


FIG. 1

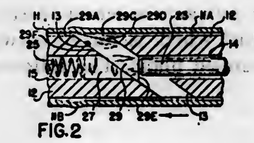


FIG. 2

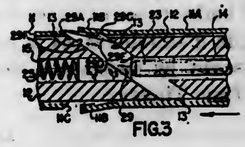


FIG. 3

A shaft 12 is inserted into the open end of tubing 11 to a depth that is determined by adjustable collar 18. Shaft 12 has a transverse slot 13 extending therethrough at an *acute angle* (such as 45°) to the axis of the shaft and tube. Disposed within slot 13 is a cutting bit 29 slidable therealong to move in a corresponding angular path.

A rod 23 extends through an axial opening 14 in shaft 12, the threaded end 23A of the rod being threaded into the outer end of opening 14. By turning knob 24, the inner end of rod 23 is caused to push against the rearward flat face 29E of cutting bit 29. This moves the bit simultaneously outwardly against the inner wall of tube 11 and at an incline away from the free end thereof.

As shown in FIG. 3, the cutting point 29A not only protrudes into and cuts the tube wall as shaft 12 is rotated, but also rides up over the tube wall as the cutting process progresses. This overriding action not only confines the tube wall to prevent it from flaring outwardly at the new tube terminal, thus holding its true cylindrical shape, but also forms the chamfered cut end 11C on the new tube terminal.

Claims 10, 11, and 21 are representative of those on appeal:

> 10. A tool for cutting a terminal piece from a metal tube from within the tube at a distance from the open free end of the tube, comprising a shaft insertable in said tube and rotatable therein relative to the tube wall, said shaft having an opening formed therein adjacent a first end portion and extending to a side of the shaft, said shaft having a second end portion accessible from the free end of said tube, said opening having a guide surface defining a wall on the side thereof farthest removed from said second end portion, said guide surface being disposed in a plane at an acute angle to the axis of the shaft and inclined away from said second end portion, a cutting bit disposed in said opening

and having a side surface slidably engaging said guide surface of said opening and disposed at said acute angle, said cutting bit being revolved by the shaft with the rotation of said shaft, actuating means carried by the shaft and operatively engaging said cutting bit to urge said cutting bit outwardly of said opening at said acute angle toward and against the wall of a tube in which the tube is inserted, said cutting bit having a cutting edge substantially in the plane of said side surface adapted to cut said tube wall upon being urged against the tube wall and upon being revolved relative thereto by the rotation of said shaft, the said cutting bit adjacent said cutting edge and extending therefrom to said side surface of the bit that is engageable by said guide surface being inclined toward said second end portion of the shaft to over-ride the edge of the tube farthest removed from said free end as the tube is being cut by said cutting edge, said over-riding of said tube restraining the tube at said edge from outward flaring, said cutting bit having a length not substantially exceeding the length of said opening to be substantially accommodated therein upon being positioned in withdrawn position for permitting the ready insertion of the cutting bit in said opening wholly into a tube with said first end portion of the shaft.

11. A tool as claimed in claim 10 and in which said acute angle is of the order of 35° to 55°.

21. A tool as claimed in claim 10 and in which said acute angle is of the order of 40° to 50°.

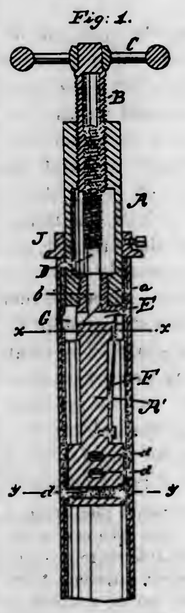
The sole issue is whether the invention of the appealed claims is obvious (35 U.S.C. 103) in view of the following prior art:

Thomas, 70,652, Nov. 5, 1867.
Vance, 380,777, Apr. 10, 1888.

Thomas, the primary reference, discloses a tool for cutting off the ends of boiler-tubes or tubes for other purposes wherein there is arranged, in a suitable stock, a cutting-tool which is forced outwardly with a screw by means of a double-inclined plane. The following is FIG. 1 from Thomas:

THOMAS

Fig. 1.



The cutting bit E is forced *radially* outward *in a plane normal to the tool axis* by the turning of handle C which moves the angular end

face of member *b* against the angular end face of cutter bit E. With respect to the issue of obviousness, the only material difference between the tool of Thomas and appellants' tool is the angle of inclination of the cutting bit to the axis of the tool.

Referring to FIG. 2 of Vance, reproduced below, a cutter C is carried in a diagonal channel *a* extending through tool shaft A. The shaft is intended to be inserted into the open end of a boiler tube T from outside the boiler wall. In use, the outer end of cutter C is struck so as to cause the sharp edge thereof to completely penetrate the tube wall. The eccentric device *e* is then turned to lock the cutter in its penetrated position and shaft A is then rotated on its axis to sever the tube in one revolution.

VANCE

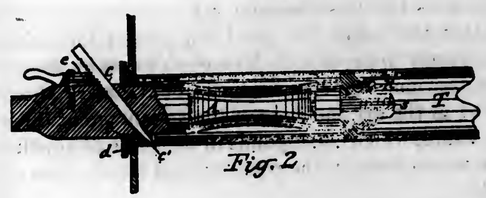


Fig. 2

The Examiner's position in the use of Thomas and Vance as references was as follows:

The Thomas reference discloses a metal tube, shaft (*a* and A') and a handle (C) for rotating said shaft. A cutting bit (E') is carried by the shaft and having means (*b*) to actuate the cutting bit and to adjust the protrusion of said cutting bit. The end of the actuating means (*b*) is inclined to engage the opposed surface of the cutting bit for slidable movement of said parts relative to each other, to vary the protrusion of the cutting bit. The cutting bit is sufficiently short so as to permit said bit in withdrawn position to be located within the tool, in order that it may be readily inserted or withdrawn from a tube.

The Vance reference discloses an internal tube cutter having an adjustable cutting bit that is positioned at an acute angle as included in these claims. The cutting bit also produces a bevel on the end of the severed pipe as stated above in the description of the Vance reference. To have the cutting bit of Thomas provided with additional cutting means to produce a bevel on the end of the severed pipe and positioned at an acute angle to the axis of the tool and tube as disclosed by Vance would be an expedient obvious to one skilled in the art in accordance with 35 U.S.C. 103, because it is merely a mechanical design feature as well as selecting various old features from the prior art and incorporating same into a single device, with each performing their old function.

The Board essentially agreed with the Examiner, saying "it is our opinion that it would be obvious to one skilled in the art to have the cutting means in Thomas extend at an angle to the axis of the tube as disclosed by Vance."

Appellants argue the century-old status of the references but this argument does not impress us, absent some showing that the art tried and failed to solve some problem notwithstanding its presumed knowledge of the references. For aught that appears, as soon as the need for an inside tubing cutter for copper tube was perceived it was produced out of the accumulated skill of the art.

Appellants rely heavily on the argument that the steel boiler-tube cutters of the references do not make their claimed invention obvious within the meaning of section 103 because it would not be apparent therefrom that internal cutters used on copper or other soft metal tubing would cause it to bulge from the pressure exerted thereon, thus

making subsequent assembly with other fittings difficult. But this desideratum of maintaining the external diameter of the cut tube was contemplated and disclosed by Vance, who says:

> The chisel-pointed cutting edge c' of the inclined cutter c produces a beveled cut on the end of the severed tube, and thereby leaves the same in proper shape to allow it to be removed through the same hole in the flue-sheet in which it was seated, and also in suitable shape for scarfing and welding the said end of the tube.

Obviously, if the boiler tube initially fits closely in the hole in the flue sheet, as clearly it does, it is not bulged by the cutting tool because of the angle of the cutting tool which exerts an inward pressure on the tube end as the cut is made. Thus the tubing can be withdrawn through the hole. It seems evident to us that Vance contemplated that a cut otherwise made might bulge the tube—even the steel boiler tube. Surely one skilled in this mechanic art would appreciate the elementary fact that the softer the metal the greater the bulge. Avoiding bulge was clearly uppermost in Vance's mind as he mentions it twice in his specification. The specification would convey this teaching to those skilled in the art and suggest the advantage of the cutter angle shown by Vance, which corresponds to the angle of appellants' claims.

[1] We see no error in the rejection and the decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,544,246, G. H. Butterfield, CORNEAL CONTACT LENS, filed Oct. 21, 1969, D.C., W.D. Pa. (Pittsburgh), Doc. 98–69 C.A. Erie, *George H. Butterfield, Sr.* v. *Erie Contact Lens Laboratory, Inc.* Same, filed Oct. 27, 1969, D.C., E.D. Va. (Norfolk), Doc. 548–69–N, *George H. Butterfield, Sr.* v. *Conforma Laboratories, Inc.* Consent judgment, defendant has infringed, Nov. 17, 1969.

2,803,105, Stoddard and Seem, APPARATUS FOR PROCESSING TEXTILE YARNS; **2,803,106**, same, METHODS OF PROCESSING TEXTILE YARNS; **2,803,109**, same, METHOD OF PROCESSING THERMOPLASTIC YARNS; **3,044,247**, R. G. Hilbert, HIGH SPEED FALSE TWISTER SPINDLE AND MACHINE, filed Oct. 29, 1969, D.C., M.D.N.C. (Greensboro), Doc. C220–G–69, *J. P. Stevens & Co., Inc.* v. *Leesona Corp.*

2,803,106. (See 2,803,105.)

2,803,109. (See 2,803,105.)

2,900,027, J. J. Fischer, LIQUIDS-SOLIDS BLENDING MACHINE, filed Oct. 23, 1969, D.C.N.J. (Newark), Doc. 1241–69, *The Patterson-Kelly Co., Inc.* v. *General Machine Company of New Jersey, Inc.*

2,951,761, J. T. Stephan, FISH BAIT, filed July 31, 1969, D.C. Idaho (Boise), Doc. C1–69–60, *Puget Sound Salmon Egg Company, Inc.* v. *Shoshoni, Inc. et al.*

3,002,514, W. M. Deyerle, HIP SETTING PIN, filed Oct. 27, 1969, D.C., W.D. Tenn. (Memphis), Doc. C–69–317, *William Minor Deyerle and Orthopedic Equipment Co., Inc.* v. *Wright Manufacturing Co. and Frank O. Wright.*

3,044,247. (See 2,803,105.)

3,104,799, D. J. Steidinger, ENVELOPE ASSEMBLY, filed Sept. 1, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1522, *Usrco Incorporated* v. *Moore Business Forms, Inc.* Decision, claims declared invalid, Nov. 19, 1969.

3,115,138, McElvenny, Snyder and Sullivan, EVACUATOR, filed Nov. 21, 1969, D.C., N.D. Ind. (South Bend), Doc. 69–S–194, *Mercantile National Bank of Chicago* v. *Houmet Corporation and Wayne Pharmacal Supply Co., Inc.*

3,118,151, H. Fredman, ONE-PIECE BELT-TYPE BEDDING CARRIER, filed June 5, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c978, *Harry Fredman* v. *Harris-Hub Company, Inc.* Same, filed May 24, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c928, *Harry Fredman* v. *Estee Bedding Company.* Decree, claim 3 of patent in suit is invalid, claim 4 is not infringed; complaints in each of the above captioned actions are hereby dismissed, Oct. 16, 1969.

3,199,840, L. E. Lindsey, CONVERTIBLE STRINGING BLOCK ASSEMBLY, filed Sept. 12, 1969, D.C., E.D. Tenn. (Chattanooga), Doc. 5696, *L. E. Lindsey* v. *Sherman and Reilly, Inc.*

3,215,266, R. L. Dreyfus, PACKAGING, filed Oct. 23, 1969, D.C.N.J. (Newark), Doc. 1244–69, *W. R. Grace & Company* v. *P. Ballantine & Sons and Reynolds Metals Company.*

3,224,291, J. L. Brunton, SHORING APPARATUS, filed May 6, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49212, *The Brunton Corp.* v. *The Ernric Company, Inc.* Consent judgment, defendant permanently enjoined, Nov. 5, 1969.

3,243,914, D. B. Poynter, ELECTRICALLY OPERATED COIN BOX VEHICLE, filed Mar. 10, 1967, D.C., S.D.N.Y., Doc. 67–C–1003, *Poynter Products, Inc. et ano.* v. *Windsor Pen Corporation.* Consent judgment, defendant enjoined, Nov. 5, 1969.

3,272,003, D. R. Harting, FATIGUE LIFE GAGING METHODS, filed Sept. 17, 1968, D.C.N.J. (Newark), Doc. 940–68, *The Boeing Company* v. *Dentronics, Inc.* Stipulation order of settlement, Oct. 3, 1969.

3,273,632, F. J. McCabe, FIRE DAMPER; **3,327,764**, same, DAMPER AND METHOD OF MAKING SAME, filed Dec. 24, 1968, D.C., W.D. Mo. (Kansas City), Doc. 17209–4, *Air Balance, Inc.* v. *Ruskin Manufacturing Company.* Judgment, plaintiff owner of patents. Defendant enjoined and permanently restrained, July 1, 1969.

3,287,193, M. Klein, METHOD OF REPRODUCING A TEXTURED SURFACE PAINTING, filed Jan. 23, 1967, D.C., E.D. Mich. (Detroit), Doc. 29502, *Max Klein, Inc.* v. *L. N. Slaes et al.* Stipulation and order of dismissal with prejudice, Oct. 29, 1969.

3,296,437, R. L. Nelson, CODED SHIPPING AND DISPENSING CARTON ASSEMBLY, filed Mar. 11, 1969, D.C. Del. (Wilmington), Doc. 3681, *Diamond Crystal Salt Company* v. *Package Masters, Inc.*

3,327,764. (See 3,273,632.)

3,350,651, R. D. Davis, WAVEFORM CONVERTERS; **3,386,039**, J. A. Naive, VARIABLE VOLTAGE-CONTROLLED FREQUENCY GENERATOR, filed Dec. 17, 1968, D.C., S.D. Calif. (San Diego), Doc. 68–292–S, *Spectral Dynamics Corp.* v. *Wavetek Corp.* Consent judgment, Aug. 13, 1969.

3,350,351, R. B. Bender, METHOD OF APPLYING INSULATION COATING FOR PIPE; **3,432,582**, same, APPARATUS AND METHOD FOR COATING PIPE, filed Oct. 30, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–1062, *Richard B. Bender and Thermacor Process Inc.* v. *Polymer Insulations, Inc.*

3,386,039. (See 3,350,651.)

3,396,399, J. R. Winegard, ULTRA-HIGH FREQUENCY FISHBONE TYPE TELEVISION ANTENNA, filed Sept. 16, 1969, D.C., S.D. Iowa (Davenport), Doc. 3–870–D, *De Jon Industries, Inc.* v. *Winegard Company.*

3,400,518, P Staheli, APPARATUS FOR SEPARATING FLOCK FROM AN AIR STREAM, filed Oct. 8, 1969, D.C.S.C. (Greenville), Doc. 69–823, *Maschinenfabrik Rieter, A.G.* v. *Blacksburg Mills, Inc. et al.*

3,406,572, Wolf and Marino, CONTROLLED AMPLITUDE FREQUENCY SHIFT SIGNAL GENERATOR, filed Sept. 12, 1969, D.C.N.J. (Newark), Doc. 1076–69, *Digitronics Corporation* v. *Marketing Systems, Inc.*

3,419,876, Edwards and Winterstein, STREAMLINED ANTENNA AND METHOD OF MAKING THE SAME, filed Sept. 23, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–760, *Tenatronics, Ltd., Inc.* v. *Tenna Corporation.* Notice of dismissal of plaintiff filed Nov. 4, 1969.

3,424,668, Boiko and Schneider, METHOD OF DESCALING OPEN WATER SYSTEMS, filed Sept. 15, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–726, *Tri-Bros. Chemical Corporation* v. *The Lau Blower Company.*

3,425,626, Dietz and Dietz, DRINKING STRAW, filed Mar. 18, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c578, *John F. Dietz et al.* v. *Sidney A. Tarrson Co. et al.* Consent decree, final judgment, Oct. 28, 1969.

3,432,582. (See 3,350,351.)

3,443,332, A. C. Christy, APPARATUS FOR WRITING WITH HAND MANIPULATED LIGHT SOURCE, filed Oct. 20, 1969, D.C., N.D. Ohio (Toledo), Doc. C–69–318, *Lite-Writer, Inc. and Alexander C. Christy* v. *The Ohio Art Co., F. H. Searls and W. D. Killgallon.*

Re. 26,518, Mau and Nagy, THREAD AND OTHER FORM ROLLING DIES, filed Aug. 1, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–591, *The National Rolled Thread Die Company* v. *Reed Rolled Thread Die Co., Litton Industries.*

DEFENSIVE PUBLICATIONS

PUBLISHED MARCH 10, 1970

Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T872,001

5-TERTIARY BUTYL-1,3-CYCLOHEXANEBIS-(METHYLAMINE)

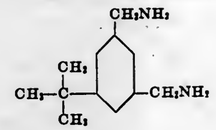
Marvin A. McCall and John R. Caldwell, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Jan. 15, 1968, Ser. No. 697,582

Int. Cl. C07c *87/38*; **C08g** *17/00, 17/02*
U.S. Cl. 260—563

No Drawing. 8 Pages Specification

5-tertiary butyl-1,3-cyclohexanebis(methylamine) having the structural formula:



is useful in the preparation of linear, condensation polymers having improved glass transition temperatures.

T872,002

PRINTED CIRCUIT TEST PATCH AND METHOD OF NONDESTRUCTIVE TESTING OF THE PRINTED CIRCUIT MATERIAL

Douglas C. Long, Franklin, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

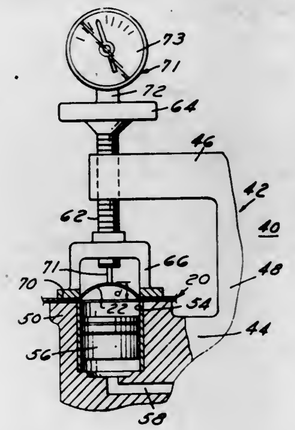
Filed July 2, 1968, Ser. No. 741,965

Int. Cl. C01n *3/28*
U.S. Cl. 73—102

2 Sheets Drawing. 14 Pages Specification

A printed circuit test patch for a flexible printed circuit that is suitable for use in an automative vehicle and a method for testing the physical properties of the thin flexible conductive material of the printed circuit test patch without destruction of the printed circuit. A flexible printed circuit comprises a sandwich of a thin conductive material, preferably copper foil, which forms the circuit and thin plastic base and cover layers, preferably comprised of a polyester film which protects the thin flexible conductive material forming the circuit. In this circuit a test patch is attached which is comprised of precisely the same material that forms the thin conductive flexible material, such as copper foil, and this test patch may or may not be covered with the two layers of plastic material referred to above.

In the testing of the thin flexible conductive material, the test patch is removed without destroying the printed circuit. The layers of thin plastic material are removed and the test patch is placed in a testing machine which will measure the ductility of the thin flexible conductive material of the printed circuit by measuring its elongation properties. A maximum indicating deflectometer having a probe in contact with the material measures the elongation of the thin flexible conductive material as it is subjected to fluid under pressure in the testing machine. The thin flexible material may or may not be carried to the point of rupture and the maximum indicating deflectometer indicates the distance between the conductive material of the patch prior to the application of the hydraulic pressure and the center of a bulge created



when the flexible conductive material is subjected to this pressure. This distance may be correlated by suitable mathematical formulas to the elongation and ductility of the conductive material of the test patch and hence the thin conductive flexible material or copper foil of the printed circuit.

T872,003

LIGHT-SENSITIVE POLYMERS

Douglas G. Borden, Jack L. R. Williams, and Thomas M. Laakso, all % Kodak Park, Rochester, N.Y. 14650

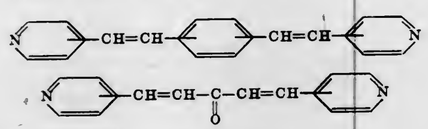
Filed Sept. 30, 1969, Ser. No. 862,503

Int. Cl. G03c *1/68*
U.S. Cl. 96—115

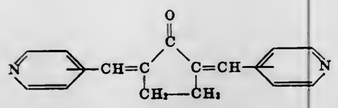
No Drawing. 16 Pages Specification

Light-sensitive polymers containing a plurality of quaternized and/or quaternizable nitrogen atoms in the polymer backbone are disclosed. The polymers are of two types. Type 1 polymers are formed by the quaternization with a difunctional quaternizing agent, such as a xylene dibromide, of a bis-tertiary amine containing chromophoric groups and which have conjugation extending

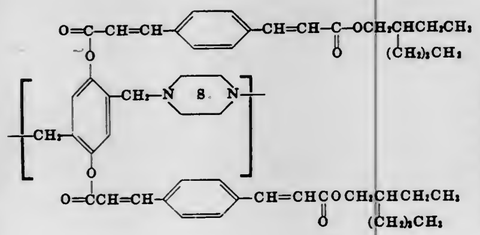
throughout the molecule from one nitrogen atom to the other. Examples of bis-tertiary amines which may be used include those having the formulae



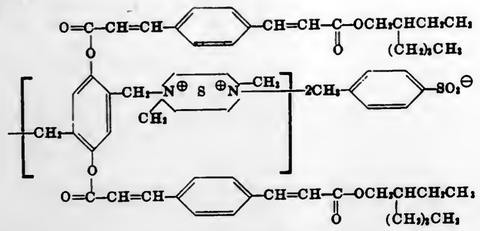
and



Polymers of Type 2 are obtained by esterifying a polymer containing quaternizable nitrogen atoms and reactive hydroxyl groups with an acidic light-sensitive compound. The nitrogen atoms contained in the polymer backbone may or may not be quaternized. Examples of such polymers are those containing recurring units having the following structures:



and



The polymers of both Type 1 and Type 2 are useful in photomechanical reproduction processes. Their use in the preparation of lithographic plates is disclosed.

T872,004
PHOTOGRAPHIC COATING COMPOSITIONS CONTAINING MERCAPTO COMPOUNDS
Ronald Verbow and Edwin B. Wyand, both % Kodak Park, Rochester, N.Y. 14650
Filed Oct. 9, 1969, Ser. No. 865,205
Int. Cl. G03c 1/76
U.S. Cl. 96—67
No Drawing. 12 Pages Specification

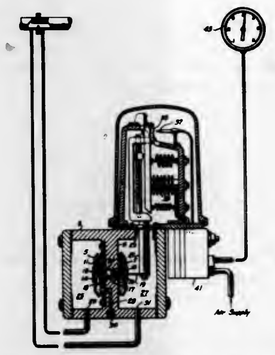
A photographic coating composition for protecting silver photographic images, particularly those formed by diffusion transfer which comprises an acidic film-forming polymer, such as an acidic vinyl monomer, a solvent for the polymer, and at least one material selected from the group of mercaptotetrazoles, and mercapto aromatic carboxylic acids, particularly in an amount of from 0.1 to 0.5 percent by weight of the solids content of the solution and mercapto aliphatic carboxylic acids such as 2-mercapto isobutyric acid, etc. in an amount of from 1 to 5 percent by weight of the solids content of said solution.

REISSUES

MARCH 10, 1970

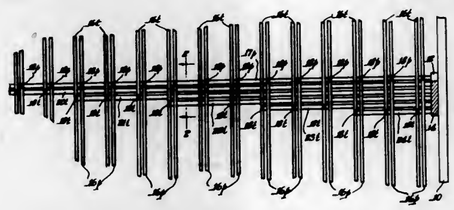
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,813
OVERPRESSURE SEAL FOR DIFFERENTIAL PRESSURE RESPONSIVE DEVICE
James E. McEvoy, Painesville, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Original No. 3,460,638, dated Sept. 10, 1968, Ser. No. 592,528, Nov. 7, 1966. Application for reissue Oct. 30, 1968, Ser. No. 791,820
Int. Cl. F15b 15/22; F01b 19/00; G01l 7/06
U.S. Cl. 92—10 **5 Claims**



A differential pressure responsive device having two bellows attached to a partition wall and enclosing a body of liquid. The partition wall has a passageway connecting the interiors of the bellows and is provided with a free floating valve acting as an overpressure seal.

26,814
BUILDING FLOOR CONSTRUCTION AND UNDERFLOOR WIRING DUCT SYSTEM
James W. Hudson, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Original No. 3,264,791, dated Aug. 9, 1966, Ser. No. 262,445, Mar. 4, 1963. Application for reissue Sept. 5, 1968, Ser. No. 760,393
Int. Cl. E04b 5/48
U.S. Cl. 52—221 **5 Claims**

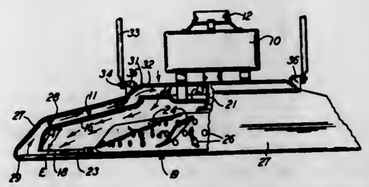


Groups of parallel distribution duct runs extending in one direction at an upper level are spaced successively farther from a housing, and a plurality of parallel feed duct runs extending in a transverse direction at a lower level extend successively farther from the housing, one feed duct run being connected to each group of distribution duct runs. An embedding concrete floor may have two different thicknesses, being thicker in the regions of the feed duct runs.

26,815
EXPLOSIVE COMPOSITION AND METHOD
Charles H. Grant and Thomas E. Slykhouse, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original No. 3,377,909, dated Apr. 16, 1968, Ser. No. 671,556, Sept. 29, 1967. Application for reissue Nov. 29, 1968, Ser. No. 793,204
Int. Cl. C06d 1/08
U.S. Cl. 86—20 **10 Claims**

A two component explosive composition system containing two distinct masses comprising (1) an inorganic oxidizing salt mass contiguous to (2) an over-fueled explosive mass, i.e., one having a paucity of oxygen as compared to the oxidizable fuel it contains, and more particularly pertains to a two component explosive system comprising an inorganic oxidizing salt mass adjacent to or surrounding a mass comprising a mixture of an excess of inorganic fuel and an inorganic oxidizing salt, and to methods for preparing the explosive and loading boreholes therewith.

26,816
AIR-SUPPORTED LAWN MOWER
Sherman C. Heth, Racine, Wis., assignor to Jacobsen Manufacturing Co., Racine, Wis., a corporation of Wisconsin
Original No. 3,293,836, dated Dec. 27, 1966, Ser. No. 385,928, July 29, 1964. Application for reissue Jan. 5, 1968, Ser. No. 702,141
Int. Cl. A01d 35/26
U.S. Cl. 56—25.4 **8 Claims**

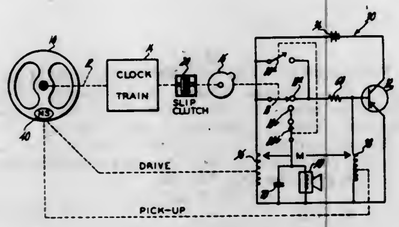


An air-supported lawn mower having a housing with an air inlet opening in the top. An engine with a shaft extending into the housing and having grass-cutting blades and air-blowing blades at the lower end of the shaft. The air-blowing blades are arranged with the housing to direct air through the inlet opening and have the air baffled by the housing and downwardly to the open bottom of the housing, for air supporting the mower while it is operating and cutting grass.

26,817
TRANSISTOR ALARM CLOCK
Alan E. Patrick, Statesville, N.C., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Original No. 3,318,084, dated May 9, 1967, Ser. No. 401,058, Oct. 2, 1964. Application for reissue Dec. 6, 1967, Ser. No. 698,067
Int. Cl. G04c 21/00
U.S. Cl. 58—38 **11 Claims**

A battery alarm clock employs a transistor circuit to impulse a balance wheel. Inductive feedback coupling between the pick-up and the drive coils causes the circuit

to operate in an oscillatory mode. The alarm transducer is a speaker which is connected at alarm time to be energized by the oscillatory balance-wheel-impulsing signal.



This signal is modulated at the balance-wheel-impulsing frequency to produce a special effect useful for waking people up.

26,818

N-PENICILLANOYLOXY DERIVATIVES

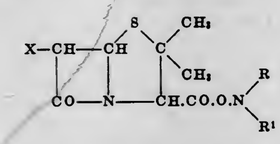
Kenneth David Hardy, Horsham, England, assignor to Beecham Group Limited, Brentford, England, a British company

No Drawing. Original No. 3,347,851, dated Oct. 17, 1967, Ser. No. 562,129, July 1, 1966. Application for reissue May 1, 1968, Ser. No. 728,091

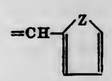
Int. Cl. C07d 99/22; A61k 21/00

U.S. Cl. 260—239.1 **9 Claims**

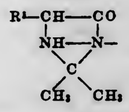
N-penicillanoyloxy derivatives are provided having the formula:



wherein R is benzoyl and R^1 is phenyl, or R and R^1 together are alkylidene having 1 to 6 carbon atoms, α-(alkylcarbonyl)alkylidene having 1 to 6 carbon atoms in the alkyl moiety and 1 to 6 carbon atoms in the alkylidene moiety, cycloalkylidene having 3 to 6 carbon atoms, aralkylidene of the formula:

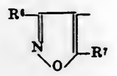


wherein Z is O, S or N, benzylidene, succinyl or phthaloyl; and X is:

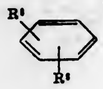


wherein R^5 is phenyl or 2-thienyl;

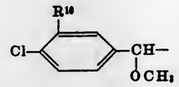
or X is Y.CO.NH—, wherein Y is benzyl; a 2,6-di(lower-alkoxy)-phenyl group in which each lower alkoxy group is methoxy or ethoxy; a 2-alkoxy-1-naphthyl group in which the alkoxy group has 1 to 4 carbon atoms; a 3,5-disubstituted-4-isoxazolyl group of the formula:



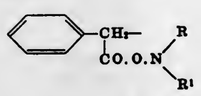
wherein one of R^6 and R^7 is a lower alkyl group of 1 to 4 carbon atoms and the other is



wherein R^8 and R^9 are each hydrogen, chlorine or fluorine; an α-(phenoxy)alkyl group wherein the alkyl group has 1 to 4 carbon atoms; 3-thenyl; 2-thenyl; furfuryl; α-sulphamoyl-benzyl; a group of the formula:



where R^{10} is hydrogen or chlorine; α-aminobenzyl; or a group of the formula:



wherein NRR^1 is as defined above.

26,819

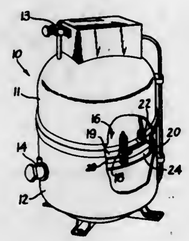
HERMETIC COMPRESSOR PRESSURE SWITCH

Charles B. Ellis and Sanford Brown, Fort Worth, Tex., assignors to Lennox Industries Inc., a corporation of Iowa

Original No. 3,383,031, dated May 14, 1968, Ser. No. 504,328, Oct. 24, 1965. Application for reissue July 1, 1968, Ser. No. 746,214

Int. Cl. F04b 49/02

U.S. Cl. 230—17 **1 Claim**



A reciprocating compressor including compression mechanism housed within a hermetically enclosed casing, the compression mechanism having a discharge gas cavity

therein, and a discharge gas pressure switch in the discharge gas cavity for sensing discharge gas pressure at its source and terminating operation of the compressor motor upon attainment of a predetermined gas pressure in the discharge gas cavity.

26,820

PUMP

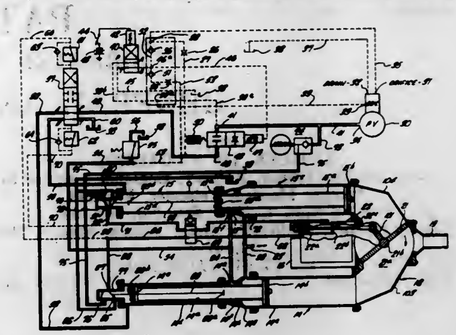
Marvin D. Bennett, Long Beach, Calif., assignor to Royal Industries, Inc., Pasadena, Calif., a California corporation

Original No. 3,279,382, dated Oct. 18, 1966, Ser. No. 359,628, Apr. 14, 1964. Application for reissue June 2, 1969, Ser. No. 847,475

Int. Cl. F04b 17/00, 7/00

U.S. Cl. 103—49 **37 Claims**

A fluid operated pump comprises a pair of piston-cylinder pumping units connected to a single valve for controlling the discharge of the materials and under the control of a fluid power control circuit. The pumping units are controlled to operate in alternate sequences of pumping and return strokes and to shift the control valve at a point in the pumping sequences when the pumping



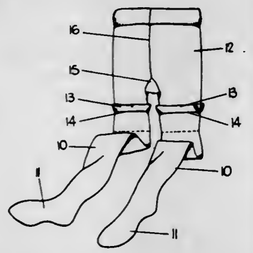
units are both momentarily at rest at the end of their alternate pumping and return strokes.

PATENTS

GRANTED MARCH 10, 1970

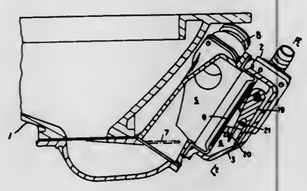
GENERAL AND MECHANICAL

3,499,172
ARTICLE OF CLOTHING
Lucy Eveline Milner, Rothley, England, assignor to Wolsey Limited, Leicester, England
Filed Mar. 1, 1968, Ser. No. 709,760
Claims priority, application Great Britain, Mar. 3, 1967, 10,067/67
Int. Cl. 41b *11/00, 9/04*
U.S. Cl. 2—240 **10 Claims**



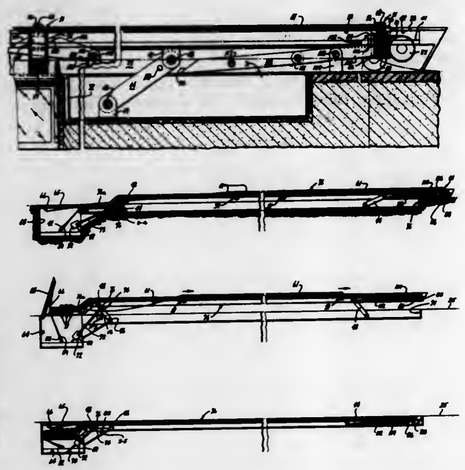
A nether garment comprising a hip embracing part and leg portions to fit closely to the wearer's legs below or above the knees and having provision for inside attachment of suspenders (such as depend from a body girdle) at positions around the upper parts of the leg portions. The means for attachment of suspenders may consist of internal pleats, folds or tabs, or slits through each of which part of a suspender may pass.

3,499,173
WATER CLOSETS
Gordon M. Lyall, Thornliebank, Scotland, assignor to Simpson-Lawrence Limited, Glasgow, Scotland, a corporation of the United Kingdom of Great Britain and Northern Ireland
Filed June 7, 1966, Ser. No. 555,827
Claims priority, application Great Britain, Nov. 4, 1965, 46,707/65
Int. Cl. E03d *5/092, 11/10;* **B63b** *29/14*
U.S. Cl. 4—77 **5 Claims**



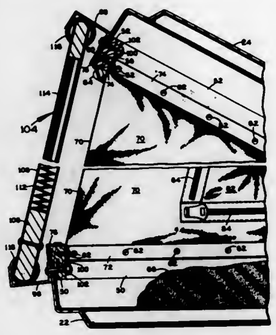
A water closet, especially for marine use, having a basin and a diaphragm dividing part of the casing into a soil chamber and a flushing water chamber. The soil chamber has an inlet valve for receiving soil and an outlet valve to a discharge opening. The flushing water chamber has an inlet valve for receiving fresh flushing water and an outlet valve to discharge flushing water to the main basin. An operating shaft in swingable about its axis to vibrate the diaphragm to move liquid through the soil chamber, and movable along its axis to control the valves of the flushing water chamber.

3,499,174
RETRACTABLE SWIMMING POOL COVER
Thomas Francis Carey, 546 Emory St., San Jose, Calif. 95110
Filed Dec. 18, 1967, Ser. No. 691,339
Int. Cl. E04h *3/19*
U.S. Cl. 4—172.14 **16 Claims**



A swimming pool cover movable between pool-covered and pool-uncovered position and having side rails which are recessed and out of view when the pool is uncovered.

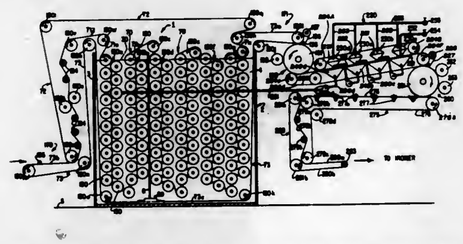
3,499,175
PORTABLE COMPARTMENT
Robert E. Orberg, 275 SW. 33rd St., Fort Lauderdale, Fla. 33315
Filed Jan. 3, 1968, Ser. No. 695,373
Int. Cl. A47c *29/00;* **A47g** *9/08;* **B60p** *3/32*
U.S. Cl. 5—113 **13 Claims**



A portable compartment useful as a car top sleeper and having hinged upper and lower shells, a mattress in the lower shell on which a person or persons may sleep,

a curtain attached to frames extending about the sides of the shells, and a telescoping prop having a biasing spring therein and insertable in brackets on the shells to hold the shells open and keep the curtain taut despite any dimensional changes therein. The prop may be used to open the shells. The curtain and shells form a compartment when the shells are open, and the curtain has a door flap and also window flaps. Among other features are a seal for making the sleeper water tight when closed, a beveled mattress for allowing the curtain to fold inwardly upon closing the shells, a tapered frame to match slanting shell walls, fabric type zippers for the window flaps, and an awning for forming a shelter adjacent the sleeper. The portable compartment may also be used as a portable stateroom for a boat, a beach cabana and dressing room, a life raft for a boat, a luggage carrier or a salesman's sample carrier.

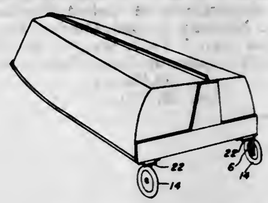
3,499,176
CONTINUOUS WASHING METHOD AND APPARATUS
Erwin B. Bahnsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada
Original application Oct. 21, 1965, Ser. No. 499,137, now Patent No. 3,439,365, dated Apr. 22, 1969. Divided and this application July 19, 1968, Ser. No. 746,012
Int. Cl. D06c *1/100;* **D06f** *29/02, 19/00*
U.S. Cl. 8—149.1 **57 Claims**



A method and an apparatus for washing, rinsing and drying soiled fabric articles, wherein the articles are washed by transporting them on a foraminous belt along a sinuous path through a soil loosening alkaline solution and then through a soil removing detergent solution all while subjecting elemental portions of the fabric to cycloidal motion at a repetition rate of four hundred per minute and a maximum displacement of one-quarter inch, and wherein the articles are rinsed by forcing a mixture of water and gas repeatedly through the articles in a countercurrent manner while the articles are transported along an upwardly inclined path, and wherein the articles are dried by subjecting them successively to radiant heat and blasts of warm air while the articles are transported along a horizontal path.

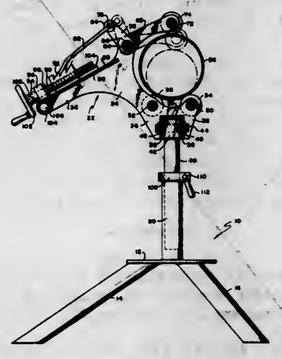
3,499,177
RETRACTABLE BOAT WHEELS
Chesley L. Wolfe, 412 Cherry Creek Road, Cloverdale, Calif. 95425
Continuation-in-part of application Ser. No. 627,833, Apr. 3, 1967. This application Nov. 21, 1968, Ser. No. 801,887
Int. Cl. B63c *1/00*
U.S. Cl. 9—1 **14 Claims**

Folding support for wheels mounted on a boat in such a manner that the wheels can be folded into an out-of-the-way position and permanently kept on the boat, yet can be easily turned into operative position for the moving of the boat on the ground. For each wheel a bracket plate is mounted on the boat, in this illustration on the inside of the transom. A pivot on each bracket plate supports a hollow carrier arm which can be held in selected positions by opposed abutments on the carrier plate. A telescopic



wheel carrier on the carrier arm carries a wheel, said wheel carrier being adjustable to hold the wheel in selected attitudes.

3,499,178
APPARATUS AND REAMER FOR WORKING PIPE
Donald E. Blake, 761 Chestnut Ridge Road, Morgantown, W. Va. 26505
Continuation-in-part of application Ser. No. 627,694, Apr. 3, 1967. This application Dec. 21, 1967, Ser. No. 692,514
Int. Cl. B23b *19/02, 25/00;* **B21d** *43/00*
U.S. Cl. 10—107 **9 Claims**

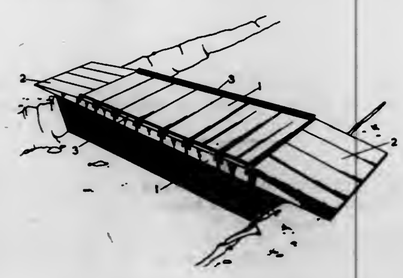


An apparatus for use in combination with pipe working tools for the cutting, reaming and threading of pipe of larger diameters, i.e., diameters in excess of 2" and particularly diameters in the range of 2½"–6". The apparatus rotatably supports and establishes a driving connection between a pipe and a rotary power source such as a portable power vise and, being so supported and driven, the pipe may be cut, reamed and threaded in a single work set-up.

The pipe is rotatably supported on a head or platform by means of a roller vise, and the head in turn is rotatably mounted on a stand for rotation about two axes. A tool support arm is carried by the rotatable head and moves in unison with the head upon movement of the head about its axes. An adapter ring and universal joint drivingly connect one end of the pipe to the rotary power source. The universal joint eliminates the need of alignment between the axis of rotation of the pipe and the axis of rotation of the power source and, as the pipe is rotatably driven, the rotatable head moves about its axes in response to any eccentric rotation of the pipe and thereby affords automatic alignment between the rotating pipe and the roller vise.

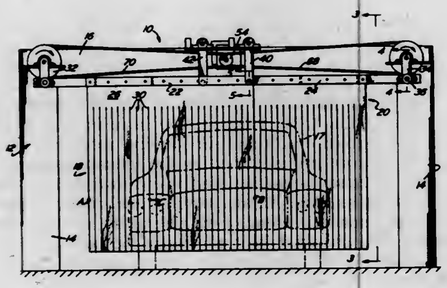
A conventional pipe cutter is used in combination with the apparatus to cut the pipe, and the pipe is reamed by a novel reamer which can be selectively adjusted to ream pipe of several different sizes. Threading is accomplished by the use of a conventional geared threader.

3,499,179
BRIDGES
Robin Trench Weld, Near Ringwood, England, assignor to The Secretary of State for Defence in Her Britannic Majesty's Government of United Kingdom of Great Britain and Northern Ireland, London, England
Filed Sept. 1, 1967, Ser. No. 665,083
Claims priority, application Great Britain, Sept. 1, 1966, 39,176/66
Int. Cl. E01d 15/14
U.S. Cl. 14—27 14 Claims



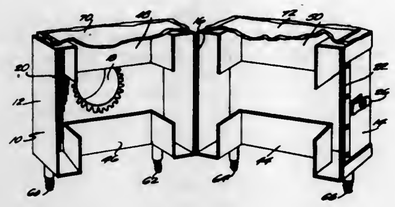
A bridge or like load carrying structure comprises a plurality of connected sections. Each section has a row of spaced members arranged along the length of each lower edge of an adjacent section. Compression faces extend along the upper edge of each section, and connecting members are provided for retaining the compression faces of adjoining sections in face to face juxtaposition. Guides and stop plates are provided for assisting in the assembly process. Pontoons may be attached to the bridge structure to provide or increase buoyancy, and motor-driven propellers may be used for mobility.

3,499,180
SCRUBBING APPARATUS FOR VEHICLES
Paul D. Hurwitz, Wyncote, Pa., assignor to Sherman Car Wash Equipment Co., Palmyra, N.J., a corporation of New Jersey
Filed June 12, 1968, Ser. No. 736,359
Int. Cl. B60s 3/00
U.S. Cl. 15—97 10 Claims



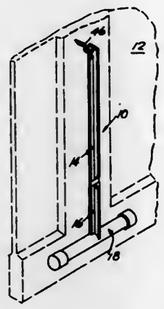
A scrubbing apparatus for vehicles comprising a pair of curtain-like scrubbing elements disposed across the path of the vehicle, and a linkage means for moving the scrubbing elements so that points on their respective outer edges describe approximately circular paths of motion, and points at their respective inner edges oscillate in arcuate paths of motion.

3,499,181
DUST COLLECTOR FOR DRILLING EQUIPMENT
Fay E. Barthel, 8434 W. 10th, Lakewood, Colo. 80215
Filed Dec. 21, 1967, Ser. No. 692,364
Int. Cl. A47l 5/00
U.S. Cl. 15—339 1 Claim



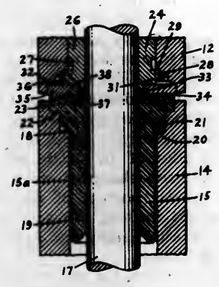
Attachment for drilling equipment of mating construction of a front and rear open box joined on one edge by a piano hinge, an opening for drilling equipment in the front face of the mating construction, the edges opposite the piano hinge edge adapted to be clamped by a fastener, and the remaining edges thereof having a recess formed by a flanged U-shaped member, and wherein the mating construction forming the attachment for drilling equipment is mounted by coil springs. The equipment may be used in a vertical or horizontal position.

3,499,182
GARAGE DOOR HANDLE
Troy L. Roquemore, 12680 Fieldstone Circle, Riverside, Calif. 92503
Filed Nov. 9, 1967, Ser. No. 681,838
Int. Cl. E05b 1/00
U.S. Cl. 16—112 10 Claims



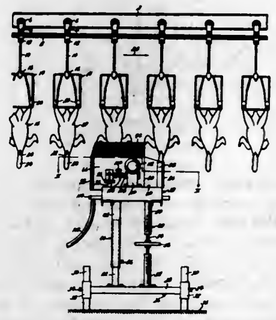
An integral, one-piece, plastic handle for an overhead garage door. The handle is swivelly connected to the interior of the lower part of the garage door, so it will hang freely pendant when the door is in a substantially horizontal open position. A lower bar portion terminating in a hand grip, is integrally hinged to an upper bar portion swivelly connected to the door, so that by pulling down on the hand grip, and manipulating the lower bar portion relative to the upper bar portion, the acceleration or retardation of the descent of the door can be controlled. The hand grip and upper and lower bar portions include flats for contact with the hands of the operator, to prevent slippage of the handle when manipulated.

3,499,183
HEAVY DUTIES HINGES
John S. Parsons, West Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 29, 1967, Ser. No. 671,701
Int. Cl. E05d 11/04; F16c 11/00
U.S. Cl. 16—136 21 Claims



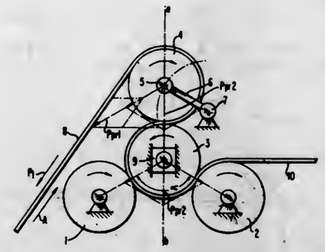
This invention relates to heavy duty or contract hinges for hanging heavy doors and the like which are provided with low-friction plastic bushings and cooperating highly polished metallic elements which do not require lubrication and are highly resistant to wear, shock and torsion stresses.

3,499,184
NECK DEHYDRATING APPARATUS FOR POULTRY
Henry E. Frederick, Kansas City, and Jack L. Hathorn, Independence, Mo., assignors, by mesne assignments, to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri
Filed Feb. 1, 1968, Ser. No. 702,359
Int. Cl. A22c 21/00; A22b 5/00
U.S. Cl. 17—11 9 Claims



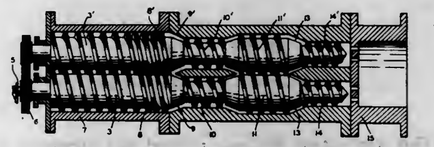
An apparatus for removing water from the neck skin, flesh and other tissue depending from the neck openings of poultry as said poultry is moved along a conveyor line suspended in a neck-down position in an automated poultry processing plant, said apparatus consisting of a frame supported adjacent said poultry and a pair of pressure plates carried by said frame so as to be disposed at relatively opposite sides of hte neck portions of said poultry as they move along said conveyor, and means for oscillating said pressure plates rapidly toward and from each other whereby the neck tissues of the birds are repeatedly squeezed therebetween to remove water therefrom.

3,499,185
ROLLER APPARATUS FOR STRETCHING FILM WEBS
Willi J. Schmidt, Hahn/Taunus, and Walter Seifried, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed May 6, 1968, Ser. No. 726,747
Claims priority, application Germany, May 8, 1967, K 62,235
Int. Cl. B29c 17/02
U.S. Cl. 18—1 9 Claims



A pair of idler rolls are mounted for rotation in a defined distance about fixed spaced parallel axes. A driving roll is supported by said idler rolls and is mounted in a bearing between said idler rolls for rotation on the axis of symmetry which is parallel with those of the idler rolls. The driving roll defines a nip with each of said fixed idler rolls. Drive means is connected over a suitable hinge coupling with the driving roll. A movable idler roll is disposed for rotation on or near the axis of symmetry which is substantially parallel with said aforementioned axes and is further mounted on the movable end of a rocking lever (swing beam) for pivotal movement toward the driving roll so that when the movable idler roll is in operative position to define a nip with said driving roll, it is disposed with its axis of rotation lying substantially in the longitudinal plane of symmetry of the axes of the other rolls. A web extends around the rolls in such a manner that the force necessary to exert pressure at the roll nips is derived from the tension in the web material.

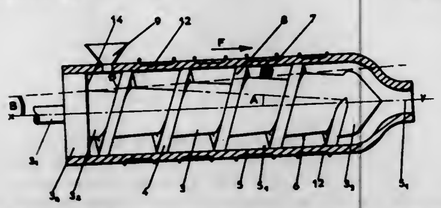
3,499,186
EXTRUDER FOR PRODUCING POROUS SHAPED RESINOUS ARTICLES
Nagamasa Sassa, Osaka, Japan, assignor to Kanegafuchi Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Mar. 25, 1968, Ser. No. 715,864
Claims priority, application Japan, Apr. 5, 1967, 21,744/67
Int. Cl. B29f 3/02
U.S. Cl. 18—12 2 Claims



Extruder for producing porous shaped resinous articles, said extruder being of any of the type comprising double screws, engaging discs, or intensive mixer rolls for carrying out kneading method and having first orifice means at the tip of the melting or gelation station of the raw plastic resin in the extruder, a kneading station for kneading foaming agent and said plastic resin together being connected to said first orifice means, said kneading station having inlet means for introducing foaming agent, said

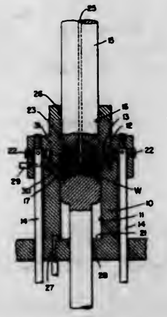
foaming agent and said plastic resin being kneaded together by means of said double screws, engaging discs, or double intensive mixer rolls, said extruder having furthermore second orifice means and a screw extruding station in the above mentioned order, a molding die being mounted on the tip of said extruding station.

3,499,187
EXTRUSION SCREW AS WELL AS EXTRUSION MACHINES PROVIDED WITH A SCREW IN ACCORDANCE WITH OR SIMILAR TO THE INVENTION
Raymond Cohen, 51 Rue J. B. Charcot, Courbevoie, France
Filed June 9, 1967, Ser. No. 645,025
Claims priority, application France, June 14, 1966, 65,447
Int. Cl. B29f *3/02*
U.S. Cl. 18—12 3 Claims



The invention relates to an extrusion screw, i.e., a screw itself which is placed inside a cylindrical body, this cylindrical body being provided with an extrusion orifice at one of its ends, and a filling orifice so that the material introduced through the filling orifice is moved by the screw, and extruded by the extrusion orifice or head.

3,499,188
APPARATUS FOR FORMING HOLLOW ARTICLES OF COLD-STRENGTHENABLE MATERIALS
Herbert G. Johnson, Havertown, Pa., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1966, Ser. No. 601,380
Int. Cl. B29c *17/02*
U.S. Cl. 18—19 7 Claims

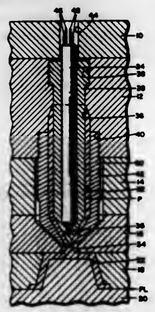


This application discloses method and apparatus for stretch-forming flanged hollow articles of cold-work-strengthenable plastic material, particularly polymer plastic material, particularly polymer plastic material, and the article made thereby wherein a female die unit with a tubular portion has an annular (but not necessarily always circular) peripherally confined blank-holding recess seat at one end, the female die unit being formed of separable parts, when desired; wherein independently power-actuated rim clamping means having axial movement clamp a rim portion of the blank securely in said recess seat against pull-in and with the added function of squeezing inventory material of the rim inwardly, when desired; and wherein an independently power-actuated axially movable article forming plunger moves through said clamping means, preferably being guided thereby and sealed, to force the unclamped inner portion of the blank through the female die unit to pull bottom inventory material radially outward without extrusion action to form the sidewall of the article.

An opposed independently power-actuated axially movable bottom plunger is provided to act against the bottom of the blank to control its shape during and at the end of the forming action and, if desired, to eject the formed article. Means are provided for supplying or removing fluid from one or both sides of the blank to assist the flow of material and in ejection of the article, when desired. The arrangement of the rim clamping means relative to the sidewall of the tubular portion of the female die unit and the shape of the forming plunger assist in the flow of material and in establishing the desired thickness of the sidewall of the article.

Means are also provided for biaxially working the material in the rim, as by circumferential movement of pressure means acting thereon.

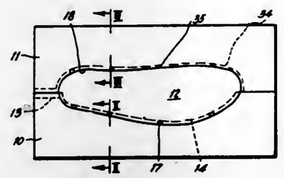
3,499,189
CARTRIDGE HEATER FOR COLD MANIFOLD MOLD
Henry A. Perras, Easthampton, Mass., assignor to Osley & Whitney, Inc., Westfield, Mass., a corporation
Filed Nov. 29, 1967, Ser. No. 686,444
Int. Cl. B29f *1/08*
U.S. Cl. 18—30 1 Claim



The combination with a cold manifold for an injection molding machine of a heating means disposed internally of the cold manifold in each of the sprue channels and runners thereof, each heating means being individually and independently controlled with temperature sensing means disposed internally of each heating means for sensing and indicating the temperature of the plastic material flowing through the channels or runners circumscribing the heating means.

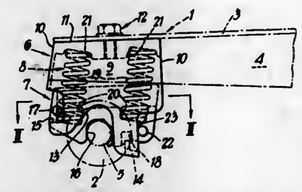
3,499,190
INJECTION MOLDING SHOE BOTTOMS
Herbert Ludwig, Desmastr. 112, Uesen, near Bremen, Germany
Continuation of application Ser. No. 573,239, Aug. 18, 1966. This application Dec. 23, 1968, Ser. No. 786,851
Claims priority, application Germany, Oct. 26, 1965, D 48,516
Int. Cl. B29c *1/00*
U.S. Cl. 18—42 4 Claims

A mold assembly comprising a side ring having an open top and bottom, on the top of which is adapted to be held a lasted upper and at the bottom of which a sole plate is supported for movement within the side ring relative to the bottom of the lasted upper, and passages



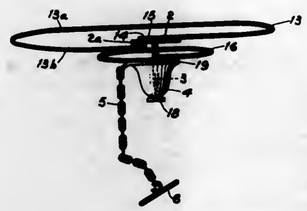
in the side ring and sole plate adapted to carry plastisol into the mold cavity at a plurality of points peripherally thereof.

3,499,191
TOP ARMS FOR TEXTILE FIBRE ROLLER DRAFTING MECHANISMS
John Michael Noguera, London, England, assignor to Casablancas Limited, Salford, England, a British company
Filed Dec. 8, 1967, Ser. No. 689,014
Int. Cl. D01h *5/50*
U.S. Cl. 19—281 8 Claims



A roller holding and weighting device for use with a top arm of a textile fibre roller drafting mechanism, the device comprising an outer holder part attachable to the top arm and an inner holder part mounted in the outer holder part for moving up and down therein, against resilient pressure, guided by guide means maintaining parallelism between the axes of a top roller supported by the inner holder part and the associated bottom roller but offering substantially no frictional resistance to small up and down movements of the top roller and inner holder part.

3,499,192
FASTENING DEVICE
Leonard Holtz, Brooklyn, N.Y.
(418 Jordan St., Oceanside, N.Y. 11572)
Filed Mar. 11, 1968, Ser. No. 712,045
Int. Cl. A44c *25/00*; A44b *21/00*; A41f *17/00*
U.S. Cl. 24—49 11 Claims



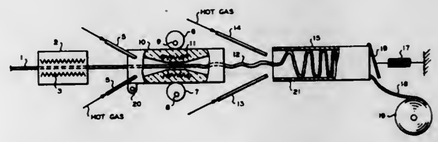
A fastening device for neckties which includes a member having a first elongated portion and a second portion which engages the rear face of the flap of a necktie without piercing the front face thereof. Further provided is a means for retaining the necktie in position while allowing some limited free movement thereof.

3,499,193
PUSHBUTTON SAFETY SEAT BELT BUCKLE
John Edward Hatfield, Stotfold, England, assignor to Irvin Industries Inc., Lexington, Ky., a corporation of New York
Filed Feb. 9, 1968, Ser. No. 704,355
Claims priority, application Great Britain, June 20, 1967, 28,495/67
Int. Cl. A44b *11/26*
U.S. Cl. 24—230 8 Claims



A safety seat belt buckle of relatively simple and sturdy construction which is of the pushbutton type, including improved interconnecting tongue and latching dog features, and a latching dog mounted for rocking action. A compact biasing spring is provided adapted to normally position the dog in latching position and an operating member in pushbutton position.

3,499,194
METHOD OF GLASS TEXTURIZING
Hayes J. Schmick, Greenville, S.C., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 20, 1968, Ser. No. 714,648
Int. Cl. D02g *1/12*
U.S. Cl. 28—72.14 10 Claims

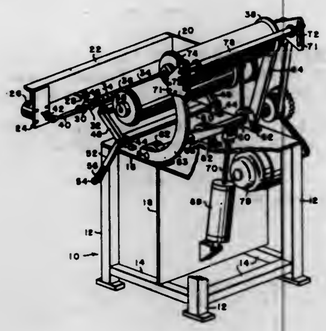


Glass fibers or strands comprising at least one glass filament are permanently waved, e.g., crimped, by passing them at a temperature within the working temperature range of the glass through an orifice oscillating laterally to the direction of strand travel, accumulating and compacting the waves thus formed at a temperature within the working temperature range and below the minimum cohesion temperature of said glass and cooling the compacted waved strand to a temperature below the working temperature thereof.

3,499,195
ABRASIVE APPARATUS
Charles A. Wethington, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,292
Int. Cl. D02j *3/02*
U.S. Cl. 28—67 9 Claims

Apparatus to deluster or dull the gloss of both sides of a synthetic ribbon yarn such as polypropylene by run-

ning a multiplicity of yarn ends over a series of abrading wheels. The apparatus includes a traverse means to



traverse the yarn and a mechanical means to position the abrading wheels for easy thread-up of the yarn.

3,499,196

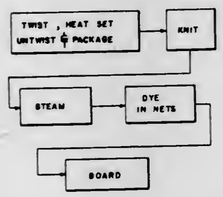
METHOD OF MAKING MINIATURE STOCKINGS

Robert M. Matthews, Charlotte, N.C., and James M. Latham, Gainesville, Ga., assignors to Chadbourn Inc., Charlotte, N.C., a corporation of North Carolina

Original application Ser. No. 590,402, Oct. 28, 1966. Divided and this application Feb. 15, 1968, Ser. No. 713,557

Int. Cl. D04b *11/28*

U.S. Cl. 28—74 2 Claims



A method of producing a miniature stocking which will stretch to fit average size legs wherein a stocking having a conventional number of courses is knit and relaxed by steaming over an extended period, then dyed while loose in a net, and boarded on a miniature board. The stocking is then left unrestrained over an extended period for further relaxing. The stocking in relaxed condition has a foot of from 4 to 6 inches and a leg of from 12 to 16 inches.

3,499,197

IMAGE ORTHICON TUBES

Werner Ort, Pfungstadt, and Kurt Frank, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany

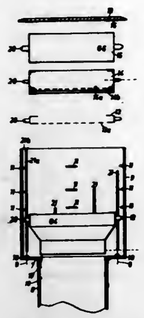
Filed Dec. 15, 1966, Ser. No. 601,943

Claims priority, application Germany, Dec. 16, 1965, F 47,938

Int. Cl. H01j *9/18*

U.S. Cl. 29—25.16 11 Claims

A method of making an image orthicon tube, which includes fusing one end of an open-ended tube of large diameter onto an outwardly projecting flange at one end of a tube of smaller diameter; also includes the step of inserting through the open end of the large tube a target and other image-converter electrodes, securing the image-converter electrodes in place in the large tube, and closing the open end of the large tube by a face plate.



3,499,198

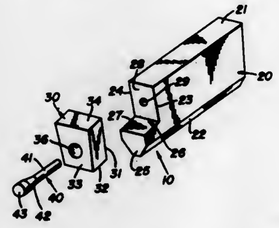
CUTOFF TOOL HAVING DEFORMABLE FIXTURING MEANS

Samuel Pollard, Mantua, Raymond E. Novkov, Cuyahoga Falls, and William B. Stein, Barberton, Ohio, assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed July 1, 1965, Ser. No. 468,723

Int. Cl. B26d *1/12*

U.S. Cl. 29—96 14 Claims



A cutoff tool having locating and fixturing means for a hardened cutting portion. The tool having a pocket for reception of the cutting element with an aperture thereon and the cutting element also having an aperture with an offset axis. A pin being passed through the apertures and being wedged in place to both locate the cutting element in the pocket and reinforce the same after the parts are brazed together. The cutting edge of the cutting element being supported by a V-shaped portion of the pocket.

3,499,199

PERMANENT MAGNET ROLL

Wallace W. Mojden, Palos Heights, and Norman J. Chivas, Naperville, Ill., assignors to Fleetwood Systems, Inc., La Grange, Ill., a corporation of Illinois

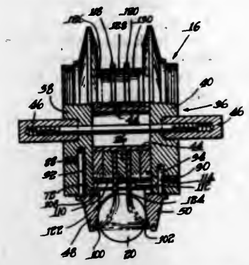
Continuation of application Ser. No. 501,927, Oct. 22, 1965. This application June 12, 1968, Ser. No. 739,901

Int. Cl. B21b *27/02*

U.S. Cl. 29—121 8 Claims

A permanent magnet roll for a conveyer including a first pair of flange members of magnetizable material mounted on a rotatable shaft and axially spaced from each other thereon. Permanent magnets located intermediate the first flange members serve to magnetize the last-mentioned flange members as well as a second pair of flange members

of magnetizable material, also located intermediate the first pair of flange members. Magnetic shields are located between a flange member of the first and second pairs respectively, so as to concentrate the magnetic field emanating from the permanent magnets. The first pair of flange members, while being longitudinally adjustable



on the shaft, are also selectively adjustable so as to position first predeterminedly shaped surfaces thereof inwardly toward each other to convey therebetween articles of a first size and to position second predeterminedly shaped surfaces thereof inwardly toward each other to convey therebetween articles of a second size.

3,499,200

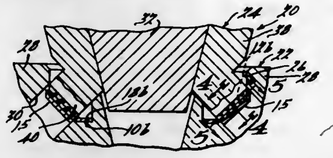
METHOD OF MAKING A BEARING RETAINER

George O. Wilson, Grosse Pointe Shores, Mich., assignor to Federal-Mogul Corporation, Inc., Southfield, Mich., a corporation of Michigan

Filed Feb. 13, 1967, Ser. No. 615,459

Int. Cl. B21d *51/12*; B21h *1/14*; B21k *1/04*

U.S. Cl. 29—148.4 8 Claims



A method for making from a generally conically shaped cup a bearing retainer having a plurality of retaining fingers.

3,499,201

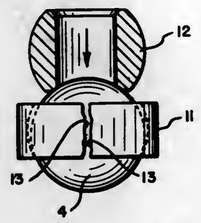
METHOD OF MAKING A SPHERICAL BEARING ASSEMBLY

William J. Roos, New London, N.H., assignor to MPB Corporation, Keene, N.H., a corporation of New Hampshire

Filed Mar. 15, 1968, Ser. No. 713,443

Int. Cl. B21d *53/10*; B23p *17/00*

U.S. Cl. 29—149.5 6 Claims



A method of making a bearing assembly having an inner bearing member with an outer spherical bearing surface and an outer race of plastic material wherein said race is molded about a spherical shaped die having a diameter at least at large as the inner bearing member, split or fractured, and then positioned about the inner bearing member.

3,499,202

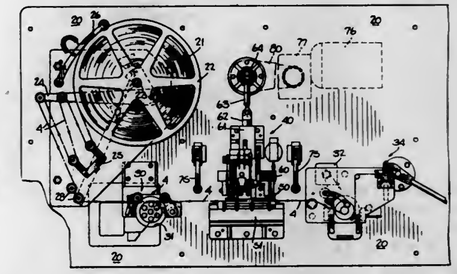
FILM CARTRIDGE LOADING MACHINE

Carl A. Napor, Glen Ridge, William T. Engel, Union, and Charles G. Krumm, Wyckoff, N.J., assignors to Kahle Engineering Company, Union City, N.J., a corporation of New Jersey

Filed Oct. 10, 1967, Ser. No. 674,151

Int. Cl. B23p *11/10*; B65d *57/20, 63/04*

U.S. Cl. 29—200 11 Claims



A machine for loading film into film cartridges such as motion picture camera cartridges and particularly cartridges having a film take-up roller positioned on the opposite side of a cartridge center partition from a rolled film supply. The machine includes a film supply roll holding an indeterminate length of film and a driven film winding roller spaced from the supply roll. A film footage counter and a film punch are positioned between the supply roll and the film winding roller for controlling the length of the roll and for cutting and matching the leading and trailing ends of the wound film. Adjacent the film winding roller a staking tool is mounted for attaching the leading end of the rolled film to the cartridge take-up spool. A cartridge loading mechanism is provided which withdraws the film winding roller from the wound film roll and which also positions the cartridge to facilitate the mounting of the rolled film on one side of the cartridge center partition and the attached cartridge film take-up spool on the opposite side of the cartridge center partition with the film lead threaded along a curved guide path in the magazine. The loading mechanism includes a movable support to move the loaded cartridge body to an inclined position to permit the cartridge cover to be slipped over the cartridge body.

3,499,203

CHIP POSITIONING MACHINE

Kendall Clark, Poughkeepsie, George C. Beck, Fishkill, Eugene J. Creighton and Frank L. De Turris, Wappingers Falls, Joseph G. Drop and Jean J. L. Godat, Poughkeepsie, Arne H. Larsen, Wappingers Falls, and Thomas J. Rajac, George R. Santillo, Jr., and Walter J. Schuelke, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

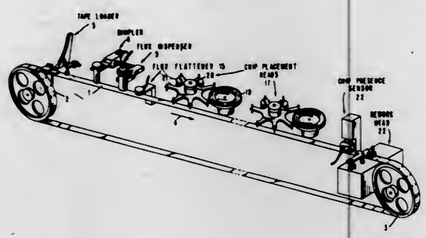
Filed May 27, 1965, Ser. No. 459,179

Int. Cl. H01r *15/00*

U.S. Cl. 29—203 24 Claims

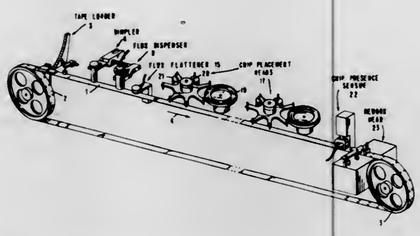
A chip positioning machine for automatically placing chips onto the conductive lands of printed-circuit substrates. The machine has one or more chip placement stations, conveying means for carrying the substrates to the placement stations in sequence, chip supply means,

means for selecting the chips from the supply, means for moving the chips into a predetermined orientation, and vacuum means for placing the oriented chips on the substrate. The apparatus further includes means for fluxing the substrate lands including means for dimpling the lands, applying flux to the lands and flattening the flux. The apparatus also includes means for detecting whether



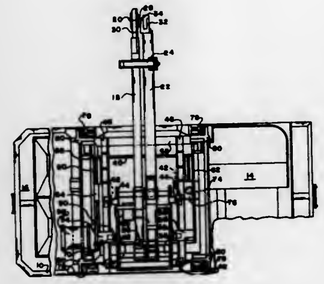
the vacuum placement means is properly carrying a chip, and in the absence of such a chip, to recycle the orienting and placement means while holding the substrate at a given station. In addition, the apparatus includes means for sensing the presence of chips on each completed substrate and for removing from the substrate conveyor those substrates which do not have the prerequisite number of chips thereon.

3,499,204
ELECTRICAL CONTROL SYSTEM FOR A CHIP POSITIONING MACHINE
Joseph G. Drop, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation of application Ser. No. 459,383, May 27, 1965. This application Jan. 30, 1967, Ser. No. 612,738
The portion of the term of the patent subsequent to Aug. 29, 1984, has been disclaimed
Int. Cl. B23p *19/04*
U.S. Cl. 29—203 **26 Claims**



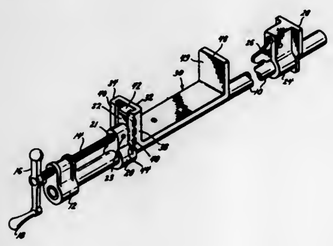
A chip positioning machine which automatically assembles semiconductor chips onto printed-circuit substrates is provided with a recycle control circuit whereby in the event that a particular vacuum needle fails to place a chip upon the substrate because the chip fell off or was blown off or some other cause, the tape conveyor does not index, the substrate is held in position, and the chip placement head recycles to bring the next needle into operation in another attempt to position a chip upon the same substrate. This head recycling operation will continue repeatedly while the conveyor remains stationary until either a chip is finally placed upon the substrate so that thereafter the operation continues normally or a predetermined number of successive chip placement head recycles occur whereafter the machine is stopped for adjustment or repair.

3,499,205
FLEX RAISE MACHINE
Richard D. Finch, Tacoma, Wash., and Carl G. Mathews, Slidell, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,983
Int. Cl. B23p *19/04*
U.S. Cl. 29—203 **18 Claims**



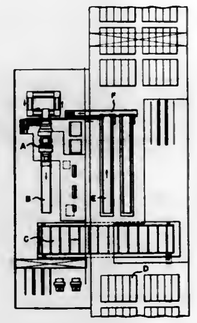
This invention relates to apparatus for changing the position of the current conducting flexes in horizontal stud Soderberg electrolytic reduction cells for the production of aluminum from current conducting connection with one stud to another. The apparatus includes means for compensating for and adjusting to any warpage or mislocation of a stud. The apparatus will unbolt the connection and slide the bolt and flex from the stud. The flex and bolt are then raised to the next stud and the copper flex and the base of the stud are cleaned. The bolt is cleaned and lubricated and the bolt and flex are slid into position and bolted up tightly. The apparatus then proceeds on to the next position where the cycle may be repeated.

3,499,206
ATTACHMENT FOR BAR CLAMP
David E. Quernheim, 311 Lincoln Ave., Waterloo, Ill. 62298
Filed July 17, 1967, Ser. No. 653,912
Int. Cl. B23p *19/04;* **B25b** *1/24*
U.S. Cl. 29—239 **1 Claim**



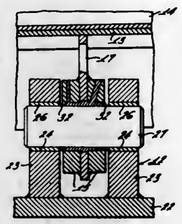
An attachment is releasably securable to the force-applying, movable member of a bar clamp to enable that bar clamp to apply tensile forces to an object.

3,499,207
MECHANISM FOR PULLING OUT SUSPENSION BARS IN AN ELECTROLYTIC REFINERY FOR METALS
Kuniya Sasaki, Niihama, Japan, assignor to Sumitomo Metal Mining Company Limited, Tokyo, Japan
Filed Oct. 5, 1967, Ser. No. 673,058
Int. Cl. B23p *19/04;* **B25g** *47/36;* **B05c** *11/14*
U.S. Cl. 29—241 **3 Claims**



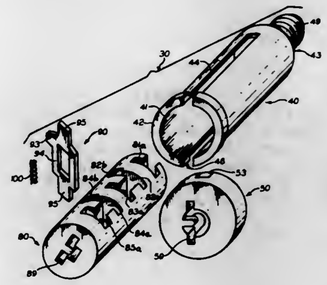
A mechanism for pulling out suspension bars in an electrolytic refinery for metals consists of a suspension bar for receiving and supporting a member provided at a lower position than the upper surface of a conveyor, a member for receiving and supporting the lower end of a metal plate suspended from the suspension bar, said member being provided below the conveyor, and a suspension bar push-out device on the side of one end of the first mentioned member. The mechanism pulls out automatically and quickly the suspension bars inserted through loops provided on the metal plate.

3,499,208
METHOD OF BEARING ALIGNMENT
Frank J. Gross and John M. Horn, York, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 29, 1967, Ser. No. 671,868
Int. Cl. B23p *19/00*
U.S. Cl. 29—434 **1 Claim**



A method to provide alignment of crest gates to journal bearings. Support ribs are rigidly connected to the crest gate and are provided with bores larger than the outside diameter of the journal bearing pivot pins. Any misalignment of the gate and the pivot pins is accommodated by the oversized bore. Once the gate is roughly aligned on the pins, the oversized bore is filled with a liquid material which solidifies when cured which is poured into the cavity between the pins and the support ribs providing a solid connection therebetween.

3,499,209
LOCK ASSEMBLY
Lawrence J. Laviana, Kensington, Conn., assignor to M. H. Rhodes, Inc., Hartford, Conn., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,549
Int. Cl. B23p *11/00*
U.S. Cl. 29—437 **1 Claim**



A corrosion resistant cylinder lock having a plug comprising an injection molded acetal plastic core having a keyway and transverse slots for the tumblers, and a longitudinally slotted brass sleeve surrounding the core to provide the plug with longitudinal and circumferential strength.

3,499,210
METHOD OF MOUNTING A PROTECTOR ON A DRILL PIPE
Herman J. Schellstede, Houma, and Thomas M. Sanders, New Iberia, La., assignors to Sparta Industries, Inc., Houma, La., a corporation of Louisiana
Filed June 13, 1967, Ser. No. 645,739
Int. Cl. B23p *11/02;* **B23k** *31/02*
U.S. Cl. 29—447 **6 Claims**

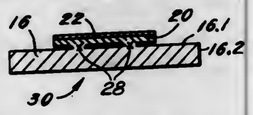


A longitudinally split sleeve is opened, as by wedging means, to permit application thereof longitudinally over an upset end of a drill pipe section. The sleeve, preheated, is released adjacent a cleaned area of the pipe surface to snugly grip this area. A back-up strip and a stringer bead of weld metal are then inserted at the bottom of the split to complete the envelopment of the pipe so that the sleeve, upon cooling, will assume a very firm shrink fit upon the pipe. Filling of the split with weld metal is completed by conventional methods during cooling of the sleeve body.

3,499,211
METAL INLAY AND METHOD FOR MAKING THE SAME
Rene A. Dubuc, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 9, 1967, Ser. No. 614,985
Int. Cl. B23k *31/02*
U.S. Cl. 29—480 **7 Claims**

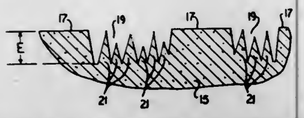
A metal inlay of precisely controlled dimensions is formed by seam welding a first metal tape to a second relatively wider metal tape and by subsequently roll

squeezing the composite seam welded tape with substantial reduction of the thickness thereof for embedding the



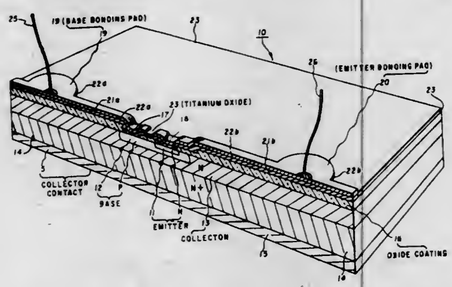
first tape into the second tape and for further bonding the first tape to the second tape.

3,499,212
METHOD OF PRODUCING PRINTING PLATES
Robert J. Russell, North Dighton, and Russell E. Miller, North Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 593,535, Nov. 10, 1966. This application Apr. 9, 1969, Ser. No. 824,718
Int. Cl. B22d 11/12
U.S. Cl. 29—527.7 **9 Claims**



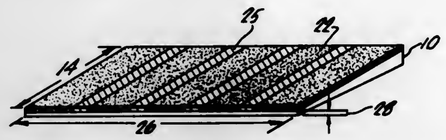
A method of fabricating etchable printing plates which possess relatively few iron-induced concretions. The printing plates are continuously cast from a zinc alloy which includes traces of iron not exceeding seventy parts per million and heat is abstracted from the poured melt at a rate sufficient to prevent the formation of any substantial number of pimple-forming concretions adjacent at least one surface of the solidified alloy. The rate of heat abstraction is in the range of 0.001–3.00 B.t.u./lb./sec. of weight of the poured melt.

3,499,213
METHOD OF MAKING A MULTILAYER CONTACT SYSTEM FOR SEMICONDUCTOR DEVICES
Larry G. Lands and Sam S. McCleese, Jr., Garland, and Edwin A. Domel, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 491,674, Sept. 30, 1965. This application May 21, 1968, Ser. No. 743,579
Int. Cl. B01j 17/00; H01l 7/00
U.S. Cl. 29—577 **4 Claims**



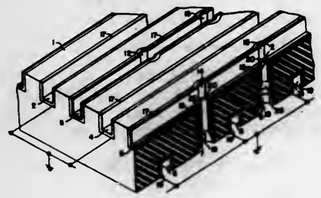
A method of making contact to a body is disclosed wherein a body is provided with a layer of titanium and a layer of aluminum on top of the titanium. A portion of the aluminum layer is removed and the exposed portion of the titanium is oxidized; the remainder of the aluminum layer preventing oxidation of the underlying titanium.

3,499,214
METHOD OF MAKING STATIONARY HEAD FOR MAGNETIC STORAGE MEDIUMS
Robert A. Schneider, Arcadia, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Original application Oct. 11, 1965, Ser. No. 494,475, now Patent No. 3,417,386, dated Dec. 17, 1968. Divided and this application Oct. 25, 1968, Ser. No. 806,328
Int. Cl. G11b 5/42
U.S. Cl. 29—603 **3 Claims**



This disclosure relates to methods of manufacturing wear resistant magnetic tape heads wherein the pole tips of the head and their supporting structure are made of sendust and a wear resistant non-magnetic alloy respectively.

3,499,215
CAPACITIVE FIXED MEMORY SYSTEM
Harry D. Fetterolf, Syracuse, N.Y., and Beuford E. Tindal, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Original application Sept. 3, 1964, Ser. No. 394,241, now abandoned. Divided and this application May 5, 1967, Ser. No. 636,307
Int. Cl. H01f 7/05
U.S. Cl. 29—604 **3 Claims**

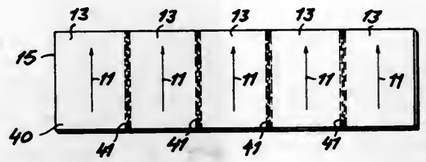


A method of fabricating a capacitive memory structure which employs capacitive coupling elements formed in holes in an insulative panel, the capacitive elements of which are selectively connected to conductors arranged on opposite sides of the panel.

3,499,216
MANUFACTURING PROCESS FOR MAGNET STEEL STRIPS WITH ORIENTED GRAINS
Subovici Vadim, Bucharest, Rumania, assignor to Ministerul Industriei Constructiilor de Masini, Bucharest, Rumania, a corporation of Rumania
Filed July 28, 1965, Ser. No. 475,597
Claims priority, application Rumania, Aug. 5, 1964, 48,333
The portion of the term of the patent subsequent to Aug. 27, 1985, has been disclaimed
Int. Cl. B23p 17/00; H01f 7/06
U.S. Cl. 29—605 **2 Claims**

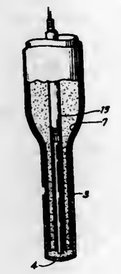
Method of making generally cylindrical cores from magnetic steel wherein a rolled steel strip having grain orientation in the direction of rolling is, after the rolling process and preliminary heat treatment, severed

transversely into sections of a length equal to the altitude of the cylindrical core, the sections being welded



together laterally to form a strip with grain orientation in the direction of the width and being then coiled after further heat treatment or the like.

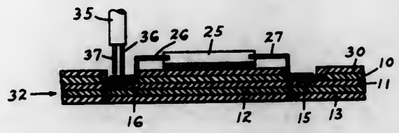
3,499,217
METHOD OF MAKING A TEMPERATURE PROBE
Mitsuaki Mochizuki, Kobe, Japan, assignor to Okazaki Manufacturing Company, Kobe, Japan
Filed July 26, 1967, Ser. No. 656,205
Claims priority, application Japan, Aug. 12, 1966, 41/53,183
Int. Cl. H01c 7/04
U.S. Cl. 29—612 **6 Claims**



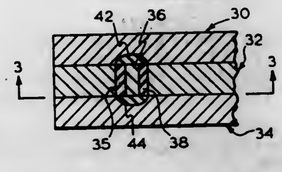
A temperature probe incorporating a temperature-sensitive element for translating a temperature into a voltage to actuate or control some exterior means in accordance with an instantaneous temperature or change therein. The temperature-sensitive element is ruggedized by enclosure in a rigid sheath together with a suitable dielectric refractory to support and electrically insulate the element and sheath. The disclosure relates to a method of fabricating a probe as aforesaid in which the temperature-sensitive element, during assembly, is properly located and protected against damage.

3,499,218
MULTILAYER CIRCUIT BOARDS AND METHODS OF MAKING THE SAME
Victor F. Dahlgren, Chelmsford, Mass., and Sidney K. Tally, Nashua, and Thomas H. Stearns, Amherst, N.H., assignors to Electro-Mechanisms, Inc., Methuen, Mass., a corporation of New Hampshire
Filed Oct. 31, 1966, Ser. No. 590,677
Int. Cl. H05k 3/30
U.S. Cl. 29—624 **2 Claims**

As described herein, a printed circuit is made by laminating together one or more layers of conductors mounted on insulating media. To the outermost exposed layers of conductors is applied a sheet of insulating material having strips of metal imbedded in its surface adjacent to the printed circuit and overlying the portions of the printed circuit to which other circuits are to be connected. The sheet of insulating material is then laminated to the printed circuit and, thereafter, the strips of metal are stripped from the laminated product to remove the insulating material overlying the strips and expose the portions of the printed circuit which were behind the metal strips.



3,499,219
INTERCONNECTION MEANS AND METHOD OF FABRICATION THEREOF
William Griff, Tarzana, and Tome Kitaguchi, Northridge, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Nov. 6, 1967, Ser. No. 680,913
Int. Cl. H01b 13/06; H05k 3/20
U.S. Cl. 29—624 **6 Claims**



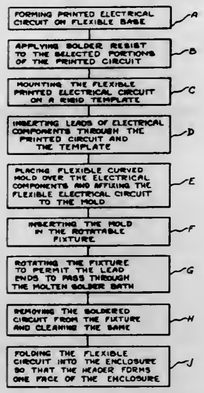
An electrical interconnection structure and a method of fabrication thereof. The structure is comprised of a stack of one or more electrically conductive plates. Openings extending through the plate end elongated in the plane of the plate contain dielectric material supporting an elongated conductive island. The island is preferably formed from the plate by removing portions of the plate forming a channel enclosing the island. The dielectric material electrically isolates the island from the remaining portions of the plate. Adjacent conductive layers shield the island to thus effectively form a coaxial transmission line.

3,499,220
METHOD OF AND APPARATUS FOR MAKING A FLEXIBLE, PRINTED ELECTRICAL CIRCUIT
Carman R. Hintz, Deal, N.J., and William A. Seabury, Ulster Park, N.Y., assignors, by mesne assignments, to Amerace Esna Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,260
Int. Cl. H05k 3/30
U.S. Cl. 29—626 **8 Claims**

A method of making a flexible, printed electrical circuit including bonding a metallic sheet to a flexible polyimide, stable at temperatures of the order of 700° F., applying an etch resistant material to selected, desired portions of the metallic sheet, etching away the undesired portions of the metallic sheet to form a metallic circuit of the remainder of the metallic sheet, applying solder resistant material to selected portions of the metallic circuit, inserting electrical components in predetermined locations in the metallic circuit, holding the combination in a flexible mold and rotating it through a bath of hot solder such that the leads of the electrical components are soldered to the circuit and the selected portions of the metallic circuit are free of solder.

Apparatus for carrying out the method including a curved, flexible mold, formed to receive the electrical

components, mounted on a rotating fixture above a solder batch such that the electrical components are soldered

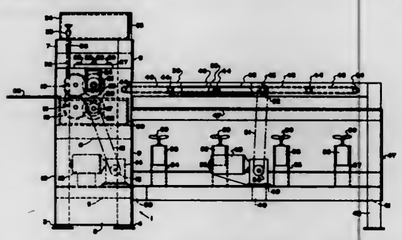


to the metallic printed circuit as the combination passes through the solder bath.

3,499,221
DRYER AND CONVEYER APPARATUS FOR COATED MATERIALS

Earl E. Crist, 806 Morris, Washington, Ill. 61571, and Lyman B. Furry, 15 N. Alexander, Danville, Ill. 61832

Original application Oct. 5, 1967, Ser. No. 673,179. Divided and this application Aug. 12, 1968, Ser. No. 751,888
Int. Cl. F26b *13/02, 3/04, 13/20*
U.S. Cl. 34—156 1 Claim



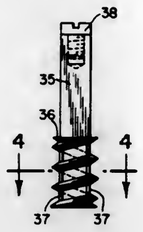
An off-take conveyor mechanism for removing coated stock from a coating apparatus suspends the coated material until the coating has solidified or dried. The off-take mechanism includes a system of conveyor belts and a system of fans directed to suspend the coated stock against the conveyor belts with the coated surface exposed to high velocity air from the fans. This arrangement provides for rapid cooling and drying from the coating and suspends the coated stock in the conveyor for removal from the coating apparatus.

3,499,222
INTRA-OSSEOUS PINS AND POSTS AND THEIR USE AND TECHNIQUES THEREOF

Leonard I. Linkow, 591 Park Ave., Cedarhurst, N.Y. 11516, and Alfred E. Edelman, 2723 Federal St., Camden, N.J. 08105

Filed Aug. 17, 1965, Ser. No. 480,367
Int. Cl. A61c *13/22*
U.S. Cl. 32—2 9 Claims

The disclosure relates to dental implants and more particularly to intra-osseous pins and posts and splints for joining implant parts and methods and techniques for their use. The implants include corona portions preferably of polygonal configuration and intra-osseous portions shaped to facilitate penetration into the jaw bone of a

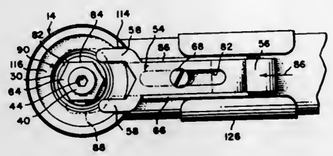


patient and also designed to prevent undesired removal of the implant once it has been driven into and anchored in place in the jaw bone.

3,499,223
DENTAL HANDPIECE IN COMBINATION WITH COLLET WRENCH MEANS

Nathaniel H. Lieb, Philadelphia, and Anthony J. Turchi, Bala Cynwyd, Pa., assignors to Star Dental Manufacturing Co., Inc. (also known as Star Dental Manufacturing Company, Inc., and Star Dental Mfg. Co., Inc.), Philadelphia, Pa., a corporation of Delaware

Continuation of application Ser. No. 361,988, Apr. 23, 1964. This application Jan. 22, 1968, Ser. No. 699,428
Int. Cl. A61c *1/12*
U.S. Cl. 32—27 15 Claims



A dental handpiece including turbine rotor means having a hollow bore and a collet chuck threadedly mounted within the bore. The collet chuck is adapted to secure a dental bur within the bore through longitudinal movement of the collet within the bore. A locking wrench is provided for engaging the rotor means at a position spaced from the rotor blades to prevent rotation of the rotor means while a shaft of non-circular cross-section is used for rotating the collet chuck in the threaded means to move the chuck within the rotor means.

3,499,224
GUNSIGHT

Wells M. Squier, 1712 SE. 19th Ave., and Bob R. Jenny, 1725 SE. 19th Ave., both of Pompano Beach, Fla. 33062

Filed Feb. 27, 1967, Ser. No. 618,946
Int. Cl. F41g *1/02, 1/08*
U.S. Cl. 33—47 4 Claims



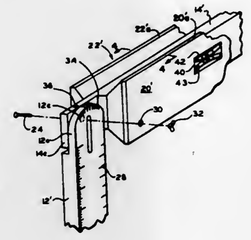
A gunsight includes a rear sight having two sighting elements arranged in a V shape, and a front sight includ-

ing a single vertically extending sighting element. When the front and rear sights are properly aimed, the three sighting elements cooperate to form a Y shape.

3,499,225
MAGNETICALLY ATTACHED IRONWORKER TOOL

Percy A. Darrah, R.D. 1, Conklin, N.Y. 13748

Continuation of application Ser. No. 690,493, Dec. 14, 1967. This application Mar. 10, 1969, Ser. No. 805,901
Int. Cl. G01c *9/00*
U.S. Cl. 33—89 11 Claims

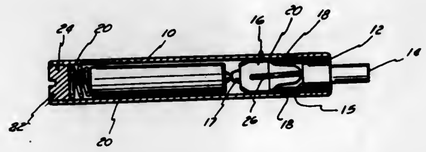


An ironworker's tool comprising a non-magnetic square having magnet means located along one leg with scale indicia inscribed on the other leg.

3,499,226
MACHINE INDICATOR

William J. Hopkins, Detroit, Mich., assignor, by direct and mesne assignments, to Randcar Corporation

Continuation-in-part of application Ser. No. 643,811, May 31, 1967. This application Jan. 22, 1968, Ser. No. 699,545
Int. Cl. G01b *3/22*
U.S. Cl. 33—169 5 Claims



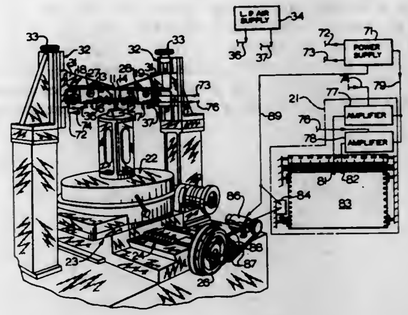
A device to aid in setting up metalworking machinery and the like by providing an indication when a reference point has been located. The indicating device includes a battery and a light energized upon contact with the machine part workpiece to complete the electrical circuit.

3,499,227
CONTOUR RECORDER

Harold R. Krause, Peoria, George A. Doggett, Mason City, and Robert B. Zimmerman, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed May 6, 1968, Ser. No. 726,789
Int. Cl. G01b *7/28*
U.S. Cl. 33—174 7 Claims

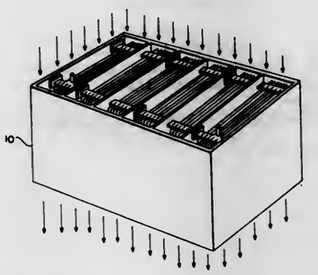
A contour recorder for making a permanent record of cross-sectional configurations of various objects. A mounting for the object movable normally between opposing probes which are to be urged into light, constant contact with the object by regulated low pressure air. Displacement transducers sense the positions of the probes. A chart recorder has styli responsive to the transducers with motion of film past the styli proportional to motion of the object between the probes.



3,499,228
METHOD OF DRYING ELECTRODES IN BATTERY CONTAINERS

Frederick J. Port, Shaker Heights, Ohio, assignor to ESB Incorporated, a corporation of Delaware

Filed May 2, 1968, Ser. No. 726,067
Int. Cl. F26b *3/00*
U.S. Cl. 34—22 4 Claims



A battery container having at least one opening at both the top and bottom of each cell compartment contains electrodes which are dried by passing a drying agent into the opening at one end of the cell compartment and out the opening at the other end of the cell compartment. Preferably the electrodes are assembled into elements and then charged before the drying occurs.

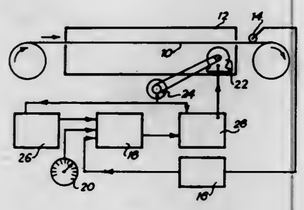
3,499,229
PROCESS CONTROL SYSTEMS

Maldwyn Hugh Roberts, Hazel Grove, Stockport, England, assignor to The Cotton Silk and Man-Made Fibres Research Association, an association of Great Britain, Northern Ireland and the Isle of Man

Filed Feb. 26, 1968, Ser. No. 708,403
Claims priority, application Great Britain, Feb. 25, 1967, 9,092/67; June 7, 1967, 26,253/67
Int. Cl. F26b *3/00*
U.S. Cl. 34—23 25 Claims

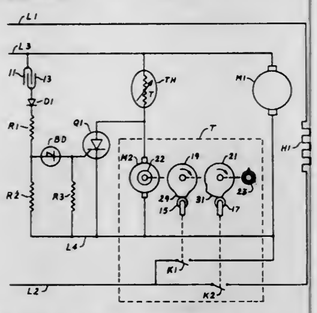
This invention is concerned with intermittent feedback control of processes in which the dead time may vary, and provides for automatic variation of the interval between successive control actions to take into account any variation in dead time in such a manner that variation of

control stability is reduced or prevented. The invention is particularly concerned with feedback control of continuous drying of textile material to ensure constant dryness of the processed material. Speed of the material through a heating zone is the control variable and when speed is changed dead time is changed. Stability of control is preserved by varying the interval between corrective actions inversely with processing speed. The invention is also concerned with feedback control techniques and apparatus which involve feeding signals representing



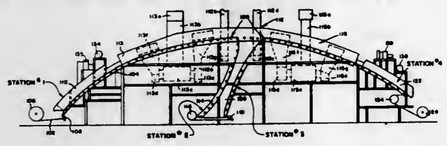
respectively the desired and actual values of the controlled variable to a specially programmed device which then gives as output, signals representing the expected corresponding values of the manipulated variable, and correctively changing the value of the manipulated variable either according to any difference in the output signals, or according to the output signal derived from the fed desired value signal, in this case correcting said output signal intermittently according to any difference between the two output signals.

3,499,230
DRYER CONTROL
Thomas E. Slugantz, Versailles, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 23, 1968, Ser. No. 746,873
Int. Cl. F26b *21/06*
U.S. Cl. 34—45 8 Claims



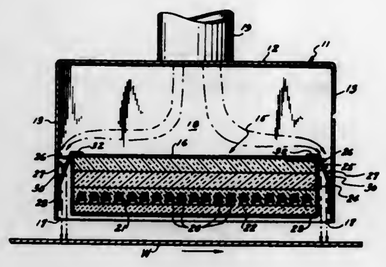
An electronic dryness control for a home laundry dryer is described. The control is of the type which employs the resistance of a current path extending through the load to be dried as an indication of the dryness or moisture content of the load. When a preselected level of dryness is reached a motor driven timer is energized to control the remainder or terminal portion of the cycle. The timer motor is energized through a serially connected PTC thermistor which is self-heated to a high level of resistance while the sensing path resistance is low. This high level of thermistor resistance thus prevents operation of the timer during the time that the load is still damp and the thermal inertia of the thermistor prevents energization of the timer motor by transient variations in the resistance of the path.

3,499,231
A FAST AUTOMATIC INFRARED DRYING AND FUSING APPARATUS FOR A HIGH MELT COATING ON AN EASILY COMBUSTIBLE WEB
Thomas F. Mullaney, Birmingham, Mich., assignor, by mesne assignments, to Fostoria-Fannon, Incorporated, a corporation of Ohio
Filed June 23, 1964, Ser. No. 377,279
Int. Cl. F26b *3/30, 13/08, 3/04*
U.S. Cl. 34—48 10 Claims



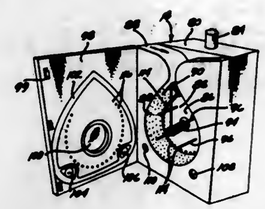
An apparatus for continuously applying at a high speed one or two successive polyvinylidene chloride coatings to a paper web comprising first drying the coating with infrared radiation, further drying it with hot air, then fusing the dried coating with infrared radiation and finally chilling the fused coating. Automatic means are provided responsive to (a) the speed of the web, (b) the temperature in the heating zones, and (c) the time, for controlling (1) the number of infrared heaters to be energized, and (2) to what degree, (3) the positions of these heaters with respect to the web, and (4) the exhaust air through each of the heating zones.

3,499,232
DRYER HAVING REMOVABLE HEATING UNITS
Eduard J. Zimmermann, 173—15 67th Ave., Fresh Meadows, N.Y. 11365
Filed Nov. 13, 1967, Ser. No. 682,418
Int. Cl. F26b *3/30, 13/02*
U.S. Cl. 34—68 4 Claims



A dryer for drying moving webs or other articles by the combination of infra-red radiations and air flow has a downwardly opening elongated housing in which one or more heating units each having a metal casing are received with clearance between the sides of the casing and housing so that air admitted to the housing above the casing issues through such clearance after absorbing heat from the casing which is heated by means therein emitting infra-red radiations from the bottom thereof, and each casing is removably mounted in the housing by laterally projecting ears received in slots of resiliently flexible portions of mounting brackets carried by the housing and which can be displaced away from the casing to release the ears.

3,499,233
DRYING CHAMBER FOR CONTINUOUS WEB STOCK
James A. Black, 13700 Sparta NW., Kent City, Mich. 49330
Filed Feb. 23, 1967, Ser. No. 617,885
Int. Cl. F26b *13/06*; B41l *27/00*
U.S. Cl. 34—155 3 Claims

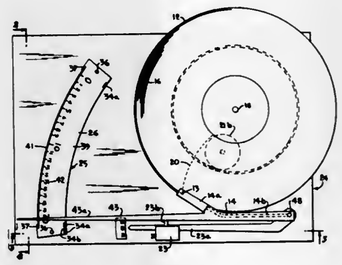


Dryer apparatus for continuous web stock with a housing forming a drying chamber having web inlet and outlet means, the drying chamber having a smoothly curved, perforate concave surface blended into a pair of curved convex shoulders adjacent the web inlet and outlet. A pair of end walls astraddle this surface and containing ports in a curved pattern adjacent the concave surface. A negative pressure drawn on this perforate surface and on these ports draws air in through the web inlet and outlet means and out this perforate surface and these ports to retain a web being advanced through the chamber, adjacent the perforate surface.

ERRATUM

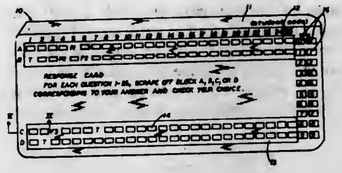
For Class 34—156 see:
Patent No. 3,499,221

3,499,234
INTELLIGENCE DATA CONVEYING SYSTEM
Rudolph F. Mallina, Hastings-on-Hudson, N.Y., assignor to Design for Learning, Inc., New York, N.Y., a corporation of New York
Filed Sept. 16, 1966, Ser. No. 579,967
Int. Cl. G09b *5/06*
U.S. Cl. 35—8 11 Claims



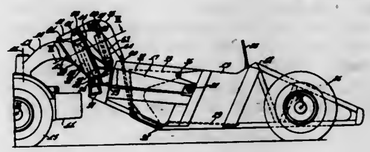
An intelligence conveying system for a readable material and a record, has a turntable that turns the record, sensing means receiving data from the record and conveying them into audible signals, and an indicator indicating coordinate positions on the record as sensed and on the readable material.

3,499,235
DEVICE FOR EDUCATIONAL PURPOSES
Dudley E. Cornell III, and James L. Evans, both of 225 San Pedro NE., Albuquerque, N. Mex. 87108
Filed Oct. 10, 1966, Ser. No. 585,504
Int. Cl. G07b *3/06*
U.S. Cl. 35—9 2 Claims



Device for educational purposes in which a transparent separator has adhesive means on one surface for securing the same to a surface of a card having indicia printed thereon, the opposite surface of the separator having removable opaque material thereon, preferably of an electrically conductive material. Preferably, the separator is in the form of a tape supplied in a roll.

3,499,236
APRON AND BOWL LIFT MECHANISM
Dale W. Hawk, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 12, 1967, Ser. No. 630,372
Int. Cl. E02f *3/62*
U.S. Cl. 37—129 5 Claims

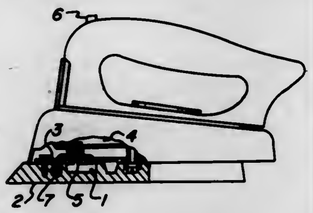


Herein described is an earthmover having a wheeled scraper bowl connected in draft relation to a wheeled tractor by a draft yoke. An inside arm apron is pivoted to the bowl side walls to provide a swinging door for the front of the scraper bowl and an ejector is provided to eject material from the bowl. A bowl lift mechanism and an apron lift mechanism are mounted on the yoke with hydraulic actuators in alignment on the vertical central plane of the earthmover. The hydraulic actuator for lifting the bowl is ahead of the actuator for raising the apron and is disposed in an open bottom well in the gooseneck portion of the draft yoke.

3,499,237
COATING FOR STEAM IRON FLASH BOILER
Glenn T. Piper, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,237
Int. Cl. D06f *75/20*
U.S. Cl. 38—77.83 7 Claims

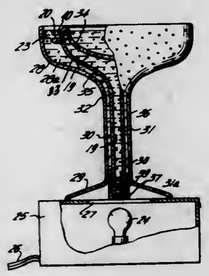
A coating is provided for the flash boiler in the soleplate of a steam iron to prevent a phenomena referred to in the art as "spitting," whereby water is driven out of the flash boiler as liquid globules entrained in the steam. Spitting is most prevalent at higher iron temperatures and results in staining the fabrics being ironed. The coating consists of an at least partially soluble alkali

metal silicate and powdered glass in water. While sodium silicate is preferred, for cost reasons, potassium, lithium or other metal silicates can be used. Also for cost reasons, the powdered glass is preferably a soda lime type. Although relative amounts of silicon dioxide to sodium oxide, comprising the alkali metal silicate, can vary, the ratio by weight, which has been found to be the most effective is approximately 3.75 to 1, respectively. The glass particles should pass through a 100 mesh screen. An example of a preferred coating would include a sodium silicate solution diluted with an equal amount of distilled or de-ionized water of a specific gravity of 1.157 at 80° F. The ratio by weight of powdered glass to diluted sodium silicate solution, while not being critical, preferably is,



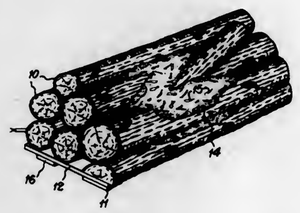
by weight, 1 part of powdered glass to 3 parts of the diluted sodium silicate solution. The coating is applied to the surface of the flash boiler in an iron soleplate by a brush or any other convenient method. The water is then removed from the coating composition by heating which tends to cause the alkali metal silicate to etch the powdered glass particles until the concentration of the silicon dioxide in the alkali metal silicate is increased until the composition is substantially insoluble. The final coating has a roughened surface, to break up the water globules, resulting from the remaining powdered glass bonded to the surface of the flash boiler by the water insoluble alkali metal silicate. The alkali metal silicate, being hydrophilic, also tends to cause the water drops to flatten out and expand across the surface of the coating.

3,499,238
BUBBLING DISPLAY DEVICE
Sidney Publicker, 534 Alicia Drive, Westbury, N.Y. 11590
Filed June 9, 1967, Ser. No. 644,953
Int. Cl. G09f *13/24*
U.S. Cl. 40—106.21 **6 Claims**



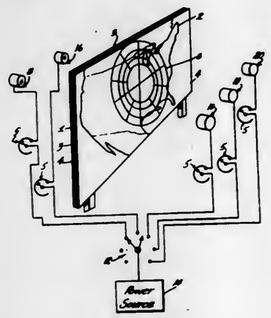
Bubbling display device of transparent material and shaped like a champagne glass or beer schooner containing a non-toxic, non-flammable liquid having a boiling point at approximately room temperature, preferably Freon 11, is provided with a chamber at the bottom of the column of liquid having a perforated upper wall or plate and housing solid particles which promote generation of bubbles and coalescence of small bubbles into larger ones which rise through the perforations in approximately uniform size. In the case of a champagne glass, a smaller liquid filled envelope is contained in a larger one which magnifies the smaller envelope.

3,499,239
FIREPLACE FLAME SIMULATING DEVICE
Adolph J. Mungo, Scarsdale, N.Y., assignor to Drum Fire, Inc., Tuckahoe, N.Y., a corporation of New York
Filed Mar. 22, 1968, Ser. No. 715,395
Int. Cl. G09f *13/34*
U.S. Cl. 40—106.53 **11 Claims**



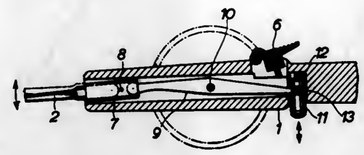
A fireplace fire simulating device comprising a member simulating combustible material and having a translucent portion, a motor-driven, rotatable member mounted behind the translucent portion and having a multiplicity of radially extending fingers with mirror-like faces, the fingers being arranged so that they extend in a multiplicity of directions and the rotatable member is brush-like, and a light source arranged to direct light so that it is reflected from the fingers onto the rear face of the translucent portion.

3,499,240
ILLUMINATED GRID FOR BACKLIGHTED PLOTTING BOARDS
Simeon H. Cotton, Jr., Springfield, Va., and Bruno A. Cagna, Winter Park, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 21, 1967, Ser. No. 618,297
Int. Cl. G09f *13/02, 13/04*
U.S. Cl. 40—130 **3 Claims**



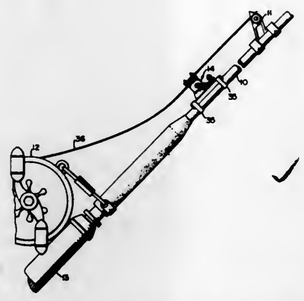
Light sources of different frequencies are alternatively directed from back and/or front of a multilayered display wherein the front translucent layer or layers bear indicia sensitive to light of different frequencies so that information on different layers is made visible selectively by selecting front or back lighting of appropriate frequency.

3,499,241
FISHING GEAR
Aaro Arvo Ruppa, Kohnionkatu 75, Jyvaskyla, Finland
Filed Apr. 12, 1968, Ser. No. 720,934
Claims priority, application Finland, Dec. 28, 1967, 3,464/67
Int. Cl. A01k *89/02*
U.S. Cl. 43—19.2 **3 Claims**



Fishing gear having a grip part and a rod turnably pivoted in this grip part, and in which the bait is moved by mediation of the line, by repeatedly pressing an actuating lever placed in the grip part. Between the actuating lever and the rod there is journalled in the grip part a two-armed transmission lever, one arm of which engages the actuating lever and the other arm engaging the rod.

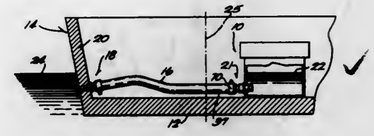
3,499,242
FISHING APPLIANCE
Sherman R. Tucker, Sr., 578 Magnolia Ave., Eu Gallie, Fla. 32935
Filed July 11, 1968, Ser. No. 744,177
Int. Cl. A01k *87/00*
U.S. Cl. 43—25 **4 Claims**



A fishing line holder mounted on a fishing rod, or a reel or to any other surface adjacent said rod and/or reel. The holder comprises a cam plate pivoted on a base member, the cam plate having line-holding means on one edge thereof and a cam notch on the opposite edge engaged by an adjustably-tensioned, fulcrumed spring to hold the cam plate in holding position. When a fish pulls on the line, the tensioned spring is released from the cam notch allowing the cam plate to pivot to release the fishing line so that the fish is effectively hooked when the angler engages the reel and "sets" the hook.

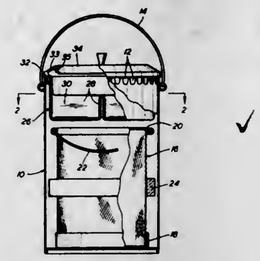
3,499,243
MINNOW BUCKET IRRIGATING VALVE
Joseph Artin, 4451 N. 58th St., Milwaukee, Wis. 53218
Filed Aug. 31, 1967, Ser. No. 664,833
Int. Cl. A01k *97/04*
U.S. Cl. 43—56 **9 Claims**

Disclosed herein is a transportable live bait container which can be connected by a balanced type double valve coupling assembly to allow for the free flow of water into and out of the container when the container is placed in a boat. The coupling assembly is provided with normally closed valve members which are spring biased so



that both valve members are opened on connection of of the coupling assembly to allow for the free flow of water through the hose.

3,499,244
LIVE BAIT RECEPTACLE AND TACKLE BOX
Carney E. Malone, 1209 E. Sunnyside, Houston, Tex. 77022
Filed Apr. 8, 1968, Ser. No. 719,603
Int. Cl. A01k *97/04*
U.S. Cl. 43—56 **2 Claims**

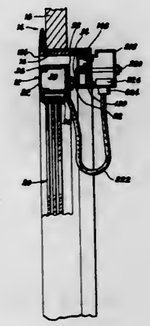


A live bait receptacle having an outer bucket and a removable inner, foraminated, floating bait holder. The foraminated holder has a closed bottom adapted to retain water sufficient to allow the transfer of the holder from the water in the bucket to the water in the fishing area while maintaining the bait in a live condition. The bucket also has a removable cover in the form of a compartmental tackle box shaped for coaction with the inner bait holder to prevent the same from floating in the bucket. The bucket is provided with air inlet openings adjacent its upper end positioned to allow access of air to the water in the bucket.

3,499,245
GLASS PANEL REFRIGERATOR DOOR AND FRAME
Robert J. Winsler, Elkton, Ky., and Fred A. Richter, Chicago, Ill., assignors to Ardco, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1967, Ser. No. 611,020
Int. Cl. E06b *7/23, 3/24*
U.S. Cl. 49—70 **13 Claims**

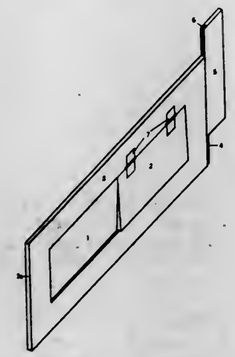
A glass panel refrigerator door having a glass molding secured by screws to a flange on the door frame, a magnetic gasket mounted on the glass molding, and a gasket molding retaining the gasket on the glass molding and screwed to the glass molding while also clamping the glass molding under another flange on the door frame; the door being mounted in a frame having a removable magnetic

armature plate for cooperating with the magnetic gasket, heater cables being positioned in channels closed by the



magnetic plate; the frame having a sealing strip with a dog-leg resilient retaining portion and a rip-off flange.

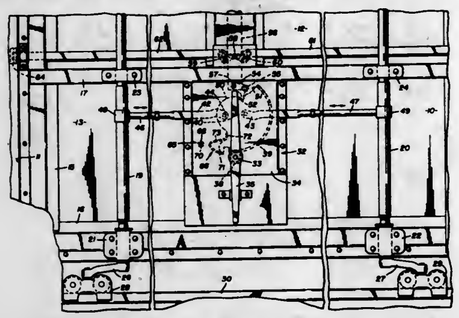
3,499,246
WINDOWGATE ASSEMBLY
Annette D. Loukas, 4021 Beecher St. NW., Washington, D.C. 20007
Filed Feb. 26, 1968, Ser. No. 708,372
Int. Cl. E06b *7/32*
U.S. Cl. 49—169 2 Claims



The windowgate assembly consists of a frame dimensioned to fit within the window opening provided by a sliding window. This frame defines at least one animal access opening which is closed by a closure secured to the frame and pivoted relative thereto. The frame is removably secured in a window opening by a frame mounting unit which cooperates with the window track.

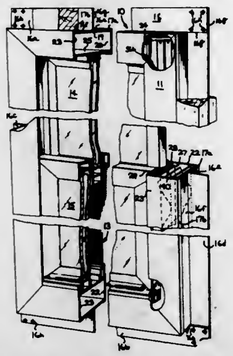
3,499,247
GEAR RETARDER MECHANISM FOR RAILWAY CAR DOORS
Thorvald Madland, Arlington Heights, Ill., assignor to The Youngstown Steel Door Company
Filed Apr. 4, 1967, Ser. No. 628,489
Int. Cl. E05d *15/10*; E05f *11/34*
U.S. Cl. 49—220 2 Claims

A retarder device for the operating mechanism of a plug-type railway car door having a portion of a movable gear segment in the operative mechanism formed to frictionally engage a fixed elastomeric member effectively to



retard the tendency of the operating lever to spin during a predetermined portion of the operating cycle.

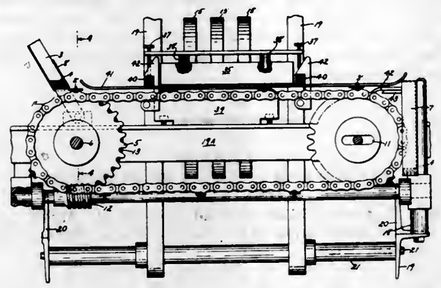
3,499,248
PREFABRICATED WINDOW AND FRAME STRUCTURE HAVING REMOVABLE SASH-BALANCED WINDOW PANELS
Hans Baer, 4 Vermont Ave., Toronto, Ontario, Canada
Filed Feb. 26, 1968, Ser. No. 708,392
Int. Cl. E05d *13/12*; E06b *3/44*
U.S. Cl. 49—430 10 Claims



A prefabricated prime window and frame structure of primarily plastic construction and providing removable assembly of sash-type sliding windows and/or screen panels by means of a resiliently displaceable window guide track carried within the frame structure. The window and frame structure is further characterized by having sash balancing means accommodating substantially free removability of the panels and by frame mounting means encompassing and stregthening the frame structure. Among other structural features embodied in the window and frame structure is a snap-fit frame extension member which provides enhanced versatility, weathertightness and appearance to the structure.

3,499,249
KNIFE SHARPENING APPARATUS
Roy F. Aberle, Aberdeen, N.C., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 23, 1968, Ser. No. 699,856
Int. Cl. B24b *7/00, 9/00, 21/00*
U.S. Cl. 51—76 4 Claims

A gravity assisted whetting device used to impart a variable bevel to the cutting edges of knives used in tufting machines. The device utilizes two separate studded endless conveyor chains to remove the unsharpened knives from a feed hopper to carry knives through the whetting



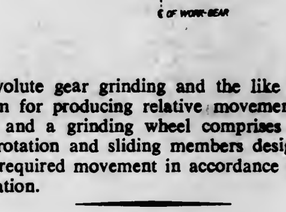
cycle and to deposit the sharpened knives in a storage receptacle. The relative alignment of the two can be varied to change the bevel or angle imparted to the knives.

3,499,250
POLISHING APPARATUS
Elmer W. Jensen, Mount Vernon, N.Y., and Hans R. Jacobsen, Norwalk, Conn., assignors to Geoscience Instruments Corporation, Mount Vernon, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 562,757, July 5, 1966. This application Apr. 7, 1967, Ser. No. 629,307
Int. Cl. B24b *7/00, 9/00, 11/00*
U.S. Cl. 51—109 7 Claims

An organization for polishing bulk materials such as glass, stone, metals or the like, includes layers of a poromeric material such as Corfam and sponge rubber to produce an internal self-cleaning, waste material expelling mechanism.

3,499,251
ROOM OR CABIN SPACE PARTITIONING SYSTEM
Fritz Sandmann, Hamburg, and Arno Votteler, Braunschweig, Germany, assignors to Blohm & Voss A.G., Hamburg-Steinwerder, Germany, a company of Germany
Filed Oct. 25, 1967, Ser. No. 677,998
Claims priority, application Germany, Oct. 26, 1966, B 89,566
Int. Cl. B63b *29/02*; E04c *2/48*; E04h *1/12*
U.S. Cl. 52—122 12 Claims

Room or cabin space partitioning system particularly adapted for fitting out ship's cabins comprising a skeleton framework of identically shaped profiled members having wing parts onto which spring-grip clipping members provided on wall and ceiling panels are mountable, being retained by ledging means on the wing parts to retain said mounted wall and ceiling panels on said profiled members, the like profiled members being prefabricated and con-



nected together as by spot welding to form the skeleton framework, the profile members additionally having generally dove-tail shaped channels intermediate the wing parts in which channel dove-tail portions of cover rails or skirting boards may be engaged.

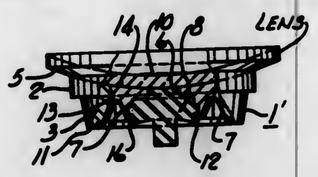
3,499,252
MEANS FOR GENERATING INVOLUTE GEARS
Peter Herbert Cleff, 5 Hartside Place, Melton Park, Newcastle-upon-Tyne, N3 5th, Gosforth, England
Filed Dec. 26, 1967, Ser. No. 693,234
Claims priority, application Great Britain, Jan. 6, 1967, 844/67
Int. Cl. B24b *3/34, 5/00, 47/02*
U.S. Cl. 51—123 2 Claims

For involute gear grinding and the like machines, a mechanism for producing relative movement between a workgear and a grinding wheel comprises an arrangement of rotation and sliding members designed to produce the required movement in accordance with a given basic equation.

3,499,253
LENS BLOCK WITH SHIELD PLUG
Richard J. McCall, Summer Hill, Pa., assignor, by mesne assignments, to Shuron/Continental Division of Textron Inc., Rochester, N.Y., and Providence, R.I., a corporation of Rhode Island
Filed Dec. 6, 1966, Ser. No. 599,591
Int. Cl. B24b *19/00*
U.S. Cl. 51—277 10 Claims

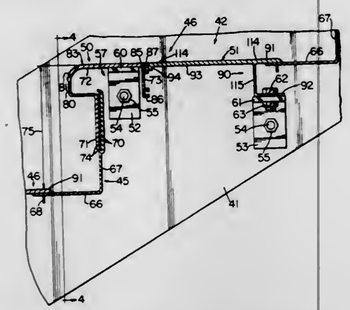
A lens mounted on a lens block having a central opening closed by a removable shield plug sealing the ocular

vertex surface area against abrasives when generating and finishing the lens. The shield plug is removable to



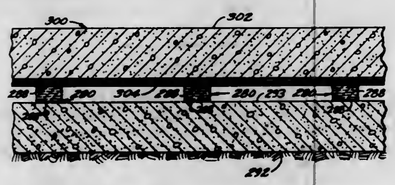
check the power and prism for correction before removing the lens block.

3,499,254
STEP CONSTRUCTION
Henry J. Jefferys, Sabot, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 1, 1967, Ser. No. 687,174
Int. Cl. B04f 11/12, 11/16
U.S. Cl. 52—179 6 Claims



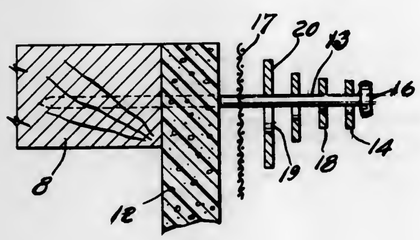
This disclosure relates to a step assembly having a riser which is adjustable and a tread comprised of a tread nosing and a reversible tread pan which defines a horizontal surface in one of its positions and provides an integral pan-like mold for receiving a step-forming material in its reversed position.

3,499,255
APPARATUS FOR ISOLATING VIBRATIONS
Patrick M. Sweeney, Dayton, and Laurence L. Eberhart, Columbus, Ohio, assignors to Consolidated Kinetics Corporation, Columbus, Ohio, a corporation of Ohio
Continuation of application Ser. No. 273,530, Apr. 16, 1963. This application Feb. 17, 1967, Ser. No. 632,853
Int. Cl. E04b 1/98, 1/62; E04f 15/22
U.S. Cl. 52—263 4 Claims



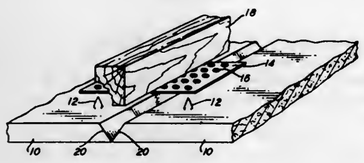
A vibration isolation floor construction for supporting vibration sensitive and vibration producing machines, equipment and the like. The floors uniquely comprise pads of glass fiber material which are uniquely formed so as to maintain constant natural frequencies under variations in loading. In particular, the floor constructions are constructed and loaded in accordance with uniquely fabricated isolation pads. In addition, the floor constructions can be fabricated in accordance with a formula which has been established to provide the above mentioned meritorious advantages.

3,499,256
PANELS FOR HOMES AND BUILDING CONSTRUCTION
Cecil F. Schaaf, 2126 E. Coldwater Road 48505, and Walter Macciomei, 5615 Marlow Drive 48504, both of Flint, Mich.
Filed Sept. 18, 1967, Ser. No. 668,438
Int. Cl. E04c 1/04; E04f 13/04
U.S. Cl. 52—483 1 Claim



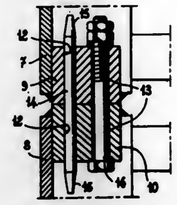
The disclosure deals with a panel and means for securing several individual pieces in assembled relation, the securing means comprising a nail having a plurality of washers mounted thereon and movable in a transverse direction with relation to each other, and also an enlarged expanded metal member engageable with a washer and the assembly to provide an enlarged bearing area without in any manner loosening the driven nail.

3,499,257
CEILING STRUCTURE
Robert Owen Heverly, Manville, N.J., and Andrew Michael Geller, Northport, N.Y., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1967, Ser. No. 699,008
Int. Cl. E04b 5/57, 1/40
U.S. Cl. 52—484 4 Claims



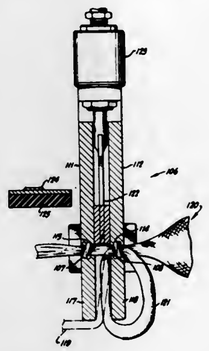
A fastener embedded in a structurally weak, low density ceiling panel projects beyond the back surface of the panel and through an opening in a complementary fastening member to hold the panel in place.

3,499,258
ASSEMBLED STEEL STRUCTURE SECTIONS
Pierre Durand, Lyon, France, assignor to Richier, Paris, France, a French company
Filed Nov. 8, 1966, Ser. No. 592,907
Int. Cl. E04h 12/08; B23p 19/04; B23q 3/18
U.S. Cl. 52—637 4 Claims



Tower crane sections are connected and centered by means of removable cylindrical drift pins passing through aligned calibrated holes in fittings of the tower sections while bolts pass with play through oversize holes which are approximately aligned in the fittings.

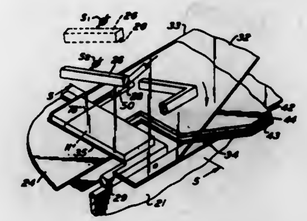
3,499,259
PACKAGING APPARATUS AND METHOD
Maynard J. G. Tipper, Oakland, and James W. Marietta, Jr., San Leandro, Calif., assignors to Rheem Manufacturing Company, New York, N.Y., a corporation of California
Original application Feb. 9, 1966, Ser. No. 526,301, now Patent No. 3,389,533, dated June 25, 1968. Divided and this application Jan. 22, 1968, Ser. No. 721,905
Int. Cl. B65b 61/14
U.S. Cl. 53—14 2 Claims



A method of packaging meat and poultry products or other objects of irregular shape is provided wherein a flexible wrapper is gathered into a rope-like extension at one end of the package, formed into a loop and clipped in place to form a carrying handle. In an alternate embodiment such a handle is formed and one end of a succeeding package is closed simultaneously therewith.

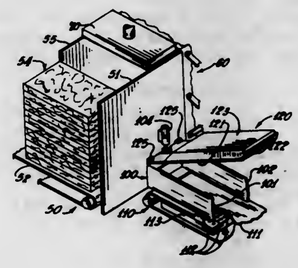
3,499,260
METHOD OF INCORPORATING A CUTTER IN OVERWRAPPED PACKAGES AND RELATED APPARATUS
Harold M. Forman, 2510 Grant Road, Broomall, Pa. 19008
Filed Jan. 16, 1968, Ser. No. 698,214
Int. Cl. B65b 9/02, 51/26, 61/18
U.S. Cl. 53—14 6 Claims

A method of positioning a length of flexible cutter material about an item to be wrapped is provided, which involves grasping one end of a supply of flexible cutter material and advancing the item in contact with the material so that additional material pays off the other stored end as the item is moved a predetermined distance. With the item thus encompassed by flexible cutter material, the end is released, a new end (formerly an intermediate portion) is grasped and the cutter material severed to free the item from the cutter supply.



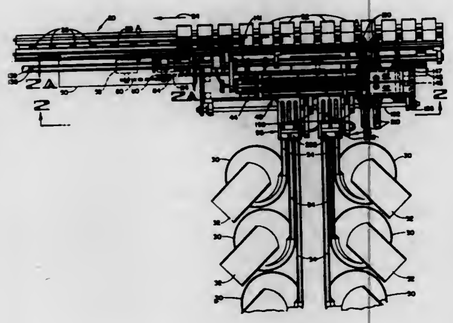
An apparatus suitable for practicing the method, and adaptable for use with conventional film wrapping machinery, involves a clamp beneath a table across which the item will travel and a nutating wand leading cutter material from a supply source to the clamp. This wand has an upper position wherein it permits the item to pass between its end and the clamp to thus pick up the length of cutter as it moves and a lower position where it permits the clamp to grasp a new end of cutter material after which a knife, provided proximate the clamp, severs the old length of cutter material from the newly clamped end.

3,499,261
METHOD AND APPARATUS FOR HANDLING AND PACKAGING MATERIAL
William B. Hullhorst and Pierce B. Brown, Granville, and William H. Mosier, Pleasantville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 456,748, May 18, 1965. This application Apr. 26, 1968, Ser. No. 724,642
Int. Cl. B65b 1/20, 5/04; B30b 9/28
U.S. Cl. 53—24 19 Claims



Methods and apparatus for compressing and packaging fibrous material and handling the resulting or similar compressed packages. Mechanical compression and air evacuation are used simultaneously for loose fibrous material, flat mats, and rolled sections. One or more charges of compressed mats may be held in position in a cross ram means by vacuum while the compression station compresses additional charges for a single package. Means are disclosed for removing an expanded package from package holding flanges.

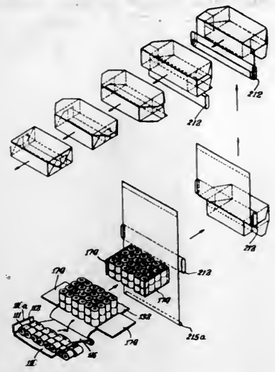
3,499,262
APPARATUS FOR PACKAGING CONFECTIONERY ARTICLES IN INDIVIDUAL RECEPTACLES AND GROUPING THE ARTICLES FOR TRANSFER INTO AN UPWARDLY OPEN BOX OR THE LIKE
Franklin J. Thurston, Hartford, and Joseph M. Nazzali, West Hartford, Conn., assignors to Kamen Corporation, Bloomfield, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 595,447, Nov. 18, 1966. This application Feb. 14, 1968, Ser. No. 705,340
Int. Cl. B65b 5/08, 35/38, 43/44
U.S. Cl. 53—124 30 Claims



Two walking beam type conveyors are arranged side-by-side and are driven from a single drive means so that as one beam advances boxes therealong, the second beam is returning after having advanced groups of articles along it. Paper cups are fed onto the second conveyor at its upstream end by a dispensing apparatus which is driven from said single drive means. The articles are loaded either into the paper cups, or directly onto the second conveyor, by an apparatus which operates in timed step-by-step relationship with the second conveyor. A compacting device on the second conveyor compresses the articles and cups into appropriately sized groups and a transfer unit picks up each such group off said second conveyor and lowers the articles and cups into a box on said first conveyor. The transfer unit is driven by one of the conveyors and as a result of the 180° phase relationship between the two conveyors, each group is picked up off the second conveyor while the second beam is returning and lowered into a box on said first conveyor during return movement of the first conveyor beam.

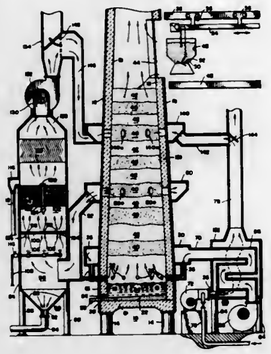
3,499,263
WRAPPING MACHINE
Peter Paul Stanley, River Forest, and Carl Byrd, Chicago, Ill., assignors to Reichel & Drews, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 3, 1966, Ser. No. 591,824
Int. Cl. B65b 11/00, 57/02; B65g 57/00
U.S. Cl. 53—210 15 Claims

This disclosure deals with an automatic wrapping machine for wrapping a group of articles in a protective sheet and for sealing the sheet about the articles. In each wrapping cycle of the machine, a number of articles are assembled into a group, sheets of dunnage are placed against the ends of the group, a protective sheet is folded about the group and the dunnage, the sheet is tucked at the ends, and the sheet is sealed with an adhesive. The protective sheet is cut from a supply roll and is vertically suspended in front of an elevator and a vacuum chamber. To fold the sheet about the group, the group is pushed in one direction against the sheet and into the elevator, the elevator is moved upwardly relative to the vacuum chamber, and the group is pushed out of the elevator in the reverse direction. The vacuum chamber



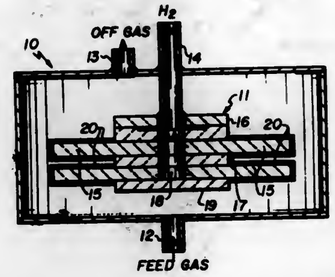
creates a drag on the sheet during the folding movements in order to form a tightly wrapped package.

3,499,264
METHOD AND APPARATUS FOR CONTROLLING FUME AND DUST EMISSIONS FROM CUPOLA FURNACES AND THE LIKE
Frank O. Ekman, Barrington, Ill., assignor to National Dust Collector Corporation, Skokie, Ill., a corporation of Illinois
Filed June 12, 1968, Ser. No. 736,422
Int. Cl. B01d 53/34
U.S. Cl. 55—90 6 Claims



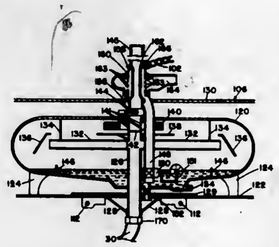
A method and apparatus for controlling dust and fume emissions from a cupola furnace of the type including a stack having a charging opening therein spaced upwardly of a blast gas tuyere system adjacent the lower end of the stack. The method includes the steps of removing a portion of the gases flowing in the stack at a takeoff level intermediate the tuyere system and the charging opening. The portion of the gases removed are passed through a dust collector for treatment to remove dust, fume, and contaminants therefrom. Inert, noncombustible gas is introduced into the stack forming a blanket between the charging opening and the takeoff level so that outside air infiltrating into the stack through the charging opening is greatly reduced, thereby preventing the possibility of explosion in said stack by rapid oxidation of the gases generated in the cupola.

3,499,265
APPARATUS FOR GAS SEPARATION
Robert C. Langley, Millington, John W. Lindenthal, Freehold, Herbert Myers, Newark, and Heinrich K. Straschil, East Orange, N.J., assignors to Engelhard Minerals & Chemicals Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 1, 1968, Ser. No. 709,615
Int. Cl. B01d 13/00
U.S. Cl. 55—158 3 Claims



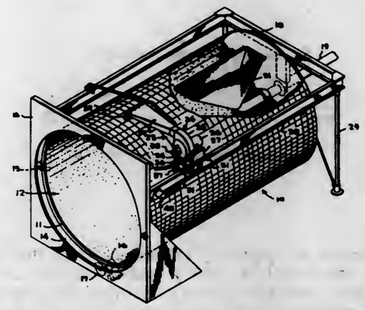
Improvement in apparatus for the separation of hydrogen by diffusion through palladium containing films deposited on a ceramic support wherein the ceramic support is of laminated structure having a surface of fine porosity and an inner layer of coarse porosity to improve the structural strength of the support while permitting high gas flow through the support.

3,499,266
MARINE OIL-GAS SEPARATOR
William A. Talley, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Nov. 13, 1968, Ser. No. 775,235
Int. Cl. B01d 19/00
U.S. Cl. 55—169 7 Claims



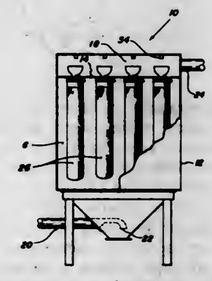
The specification discloses a system for producing, separating, and storing submarine oil and gas. The system includes a floating storage vessel having a ship-shaped hull which is moored to a buoy so that it is free to pivot through 360° in response to the combined forces of wind and water. Produced fluids are directed from an underwater location through a swivel joint on the buoy and a floating hose to the storage tanks of the floating vessel. Mounted in the buoy is a unique oil-gas separator which comprises a rigid standpipe surrounded by a main pressure vessel. An inlet conduit intersects the rigid standpipe in the main pressure vessel at right angles, thus providing a pair of fluid inlets, one of which is always above the sump fluid. Separated oil is directed through a swivel joint concentric with the top of the standpipe, while separated gas is flared through an upward extension of the standpipe.

3,499,267
CLEANING APPARATUS FOR ROTARY DRUM FILTERS
James F. King, Jr., and Donald Alfred Sloan, Winston-Salem, N.C., assignors to The Belmont Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Aug. 20, 1968, Ser. No. 754,007
Int. Cl. B01d 45/18
U.S. Cl. 55—290 9 Claims



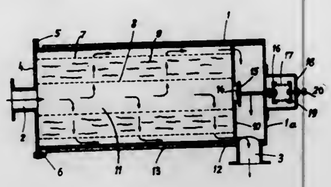
Apparatus for cleaning the filter medium surface of a rotary drum type filter wherein contaminant laden air enters an open end of the filter drum and is withdrawn outwardly through the filter medium wall to accumulate the contaminants on the interior surface of the drum wall, and suction collection means communicating with the interior of the drum wihtdraws the contaminants from a selected location within the drum. A blower nozzle outwardly adjacent the drum wall is reciprocated along a scanning path paralleling the drum axis during rotation of the drum to dislodge the contaminant accumulations from the drum wall and cause them to migrate to the suction location, and is caused to stop and dwell for at least one drum revolution when it reaches each end of the drum. The blower nozzle may be rotated in a special manner to keep the mat of accumulated contaminants from rotating or curling back on itself and to cause the mat to be exploded away from the filter medium surface.

3,499,268
MEANS FOR CLEANING DUST SEPARATING APPARATUS
Josef Pausch, Hopkins, Minn., assignor to Aerodyne Machinery Corporation, Hopkins, Minn.
Continuation-in-part of application Ser. No. 658,111, Aug. 3, 1967. This application July 12, 1968, Ser. No. 744,391
Int. Cl. B01d 46/04, 41/00
U.S. Cl. 55—302 1 Claim



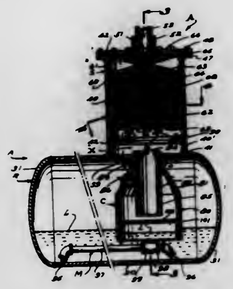
An apparatus for removal of dust accumulated on the outer surface of a tubular porous filter element including means to release high energy gas into a tubular element, the intake end of which is formed on an outwardly curved radius constituting a "bowl-shaped" portion that connects

3,499,269
EXHAUST GAS PURIFYING DEVICES
Anthelme Bois, Lyon, France, assignor to Automobiles M. Berliet, Lyon, Rhone, France,
Filed Mar. 18, 1968, Ser. No. 713,774
Claims priority, application France, Mar. 22, 1967, 99,871; Mar. 23, 1967, 100,018
Int. Cl. B01d *46/46*
U.S. Cl. 55—309 1 Claim



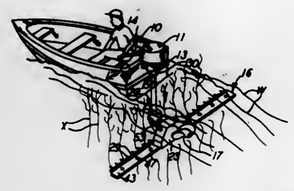
A device for purifying exhaust gases of thermal engines, which contain solid particles, notably diesel engines, this device comprising a filter element of refractory fibrous material capable of retaining the solid components of the exhaust gases led therethrough including a spring biased by-pass valve, and being characterised in that said refractory fibrous material consists of kaolin wool and that it is disposed so close to the engine that the temperature of the exhaust gases causes the ignition and therefore the combustion of the solid components such as soot, at least when the engine is operating under full-load condition.

3,499,270
GAS LIQUID RECEIVER AND LIQUID SEPARATOR
Fred E. Paugh, 4127 E. Florence, Bell, Calif. 90201
Filed July 26, 1967, Ser. No. 656,174
Int. Cl. B01d *50/00*
U.S. Cl. 55—337 2 Claims



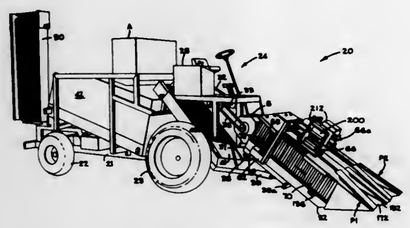
A receiver-separator unit comprising, a receiver tank, an elongate, vertical casing fixed to and extending upwardly from the tank and closed at its upper end, openings in the tank establishing communication between the interior of the tank and the casing, a supply of oil in the bottom of the tank, a cyclone separator in the tank having an outer vertical flow tube open at its lower end and provided with an upwardly convergent conical head at its upper end, an inner central open ended flow tube extending through the head and having a lower portion terminating within the outer flow tube and an upper portion extending through the tank into the lower end of the casing and an elongate inlet tube with an inner end tangential with and communicating with the interior of the head and an outer end accessible at the exterior of the tank and adapted to connect with the discharge end of an air compressor, a filter pack in the casing above the inner flow tube, an air delivery line communicating with the upper end of the casing above the filter pack and means at the lower portion of the tank to conduct oil therefrom.

3,499,271
POWERED UNDERWATER WEED CUTTER
Leonard E. Drigert and Thomas E. Drigert, both of 1900 Quincy Ave., Racine, Wis. 53403
Filed June 20, 1967, Ser. No. 647,483
Int. Cl. A01d *45/08*
U.S. Cl. 56—8 3 Claims



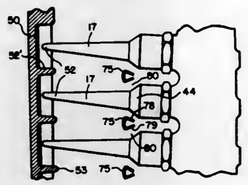
An underwater weed cutter mountable on a powered boat for cutting weeds below the surface of the water as the boat is advanced over the water. The cutter and propeller are attachable to the motor, and both are drivingly connected to the motor to be powered thereby. The cutter is an attachment removable from the motor, and the propeller may be mounted on the motor when the cutter is either present or removed. Also, the propeller may vary in size so that the propulsion of the boat may be varied in accordance with one speed of cutter operation.

3,499,272
CORN HARVESTING MACHINE
Olin L. Looker, Milford, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,467
Int. Cl. A01d *45/02*
U.S. Cl. 56—18 13 Claims



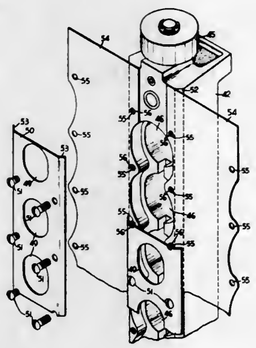
A moving stop bar assembly is formed of a pair of simultaneously driven endless gathering belts having confronting flights of closely spaced stop bars which straddle the cornstalks. The stop bars are so formed that the confronting flights cooperatively form an upright moving wall, at each side of the cornstalks, with a diagonal lower edge portion which declines toward the stalk to form, in conjunction with the other edge portion, a ledge or butt stop for arresting downward movement of the ears to be thereby stripped from the stalk, an elongate slot to provide clearance for the stalk, and an ejection path for loose husks, leaves and other waste material.

3,499,273
COTTON PICKER SPINDLE SLAT BAR STRUCTURE
Robert M. Fachini, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 169,219, Jan. 29, 1962. This application Dec. 28, 1967, Ser. No. 701,518
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 10 Claims



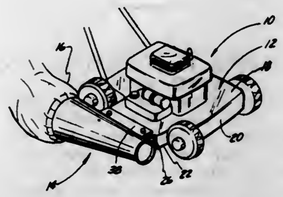
A cotton picker having a plant passage defined at one side by a compressor sheet and at the other side by a slatted wall comprising slat bars which have frontal areas dipped toward the picker rotor to permit early initial projection of its sprindles into the passage and having intermediate their ends portions contoured to permit maximum extension of the spindles into the passage and in one embodiment having at the juncture of these portions a plant parting projection into the passage to separate the branches of the plant to permit the spindles better access to the lint cotton.

3,499,274
COTTON HARVESTER
Rector C. Ferguson, 218 Argyle Circle, Gadsden, Ala. 35901
Filed Aug. 25, 1967, Ser. No. 663,356
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 5 Claims



A cotton harvester having stripper bars connected by flexible plastic members to prevent foreign material from passing between stripper bars and winding about picking spindles rearwardly of the strippers so that such material will not be stripped.

3,499,275
GRASS CATCHER FOR LAWN MOWER
Franklin R. Loson, 29155 Tawas, Madison Heights, Mich. 48071
Filed July 7, 1967, Ser. No. 651,909
Int. Cl. A01d *35/22*
U.S. Cl. 56—202 7 Claims

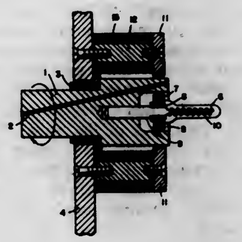


A sheet metal duct attached to the cowling of a rotary power lawn mower for delivering the grass clippings from the cowling to a rearwardly supported collection bag.

One embodiment employs a generally frusto-conical duct having open ends with a forward narrow end for admitting air, a rearward wide end for discharging the clippings to the collection bag and a lateral opening intermediate the forward and rear openings attached to the discharge opening of the power mower for receiving the clippings into the duct.

Another embodiment of the invention has a generally conical configuration with a rearwardly facing exhaust opening and a lateral inlet at the forward narrow end of the duct adapted for attachment to the grass discharge opening of the mower.

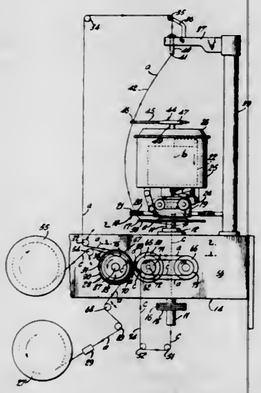
3,499,276
APPARATUS FOR COILING WIRES, FILAMENTS AND THE LIKE
Hans Schmid, Ludwigshafen (Rhine), Heinrich Feldhoff, Bad Durkheim, and Edelfried Hahn and Wolfgang Martin, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed July 17, 1968, Ser. No. 745,425
Claims priority, application Germany, July 29, 1967, 1,602,621; Aug. 17, 1967, 1,602,623
Int. Cl. D01h *1/14*
U.S. Cl. 57—34 6 Claims



Apparatus for coiling wires, filaments, bundles of filaments or yarns on a winding core, consisting of a winding core, a rotor provided with an eccentric feed bore for the filament and revolving about the winding core,

and a feed screw which transports the filament over the winding core. The revolving rotor is formed with an axial recess which contains the feed screw having a shaft connected to the rotor. The recess further contains an armature to which the winding core is attached and through which the shaft of the feed screw passes. The armature is mounted on a bearing on the shaft of the feed screw and is prevented from rotating by magnets located outside the rotor.

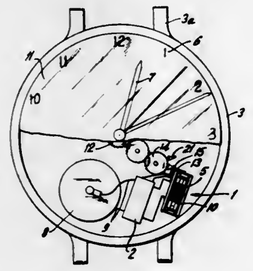
3,499,277
APPARATUS FOR TWISTING AND PLYING STRANDS
Alfred W. Vibber, 560 Riverside Drive, New York, N.Y. 10027
Continuation-in-part of applications Ser. No. 635,013, May 1, 1967, and Ser. No. 685,996, Nov. 9, 1967. This application Sept. 10, 1968, Ser. No. 759,538
Claims priority, application Canada, June 6, 1967, 992,327; Jan. 26, 1968, 10,858
Int. Cl. D01h *7/90*
U.S. Cl. 57—58.3 **34 Claims**



A stranding machine of the skip type for twisting and plying strands. A loop or balloon of a second strand fed under tension from a source of supply, is rotated about a source of supply of a first strand, and the two strands are fed forward under tension at substantially constant speed to a plying point. The resulting plied strand or cord is pulled from the plying point by a variable speed take up capstan which is under the control of at least one tension sensitive means engaging a strand of the singles strand-plied strand system. In the illustrative embodiments, the one or more tension sensitive means are connected to one branch shaft of a differential gearing mechanism, the main shaft of which is driven at constant speed and the other branch shaft of which drives the variable speed take up capstan. The apparatus of the present invention may be advantageously employed in a system of the general type shown in Clarkson et al. Patent No. 3,108,427, wherein a plurality of outer singles strands are fed under tension from a common multiple supply beam to a plurality of similar ply-wrapping spindles of the skip type. In such system, the cords from the spindles are pulled therefrom, assembled in close parallel relationship, and are wound up on a common beam.

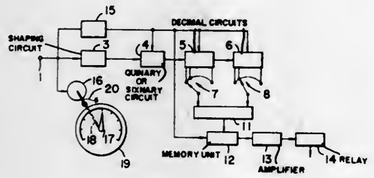
In accordance with one embodiment of the invention, three tension sensitive means, all connected to said one branch shaft of the differential gearing mechanism, are employed in the system: (1) between the source of the second strand and its feeding capstan, (2) between such feeding capstan and the balloon, and (3) between the variable speed capstan for the cord and the common take up beam. In other embodiments, a single tension sensitive means, engaging the second strand between its source and its feeding capstan, is employed.

3,499,278
ELECTROMAGNETIC DRIVE FOR A HOROLOGICAL INSTRUMENT
Paul Wuthrich, Woodbury, Conn., assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 3, 1967, Ser. No. 613,902
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **7 Claims**



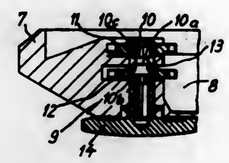
An electronic watch has a power source and a driven vibrator. The vibrator is attached to a magnetizable pawl. A coil around the pawl is selectively pulsed so that the pawl magnetically drives a ratchet (index) wheel. Preferably the pawl has a plurality of teeth which cooperate with the teeth of the ratchet wheel in a vernier effect.

3,499,279
DIGITAL TIMER
Akira Abe, 168 Tenou-cho, Takatsuki-shi, Osaka-fu, Japan, and Isao Hatano, 14–5 Tomooka, Nishiyama, Nagaoka-cho, Otokuni-gun, Kyoto-fu, Japan
Continuation-in-part of application Ser. No. 432,783, Feb. 15, 1965. This application Feb. 20, 1967, Ser. No. 628,199
Int. Cl. G04f *3/06*
U.S. Cl. 58—39.5 **7 Claims**



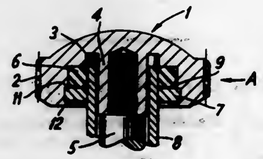
An apparatus for counting a preset number of clock pulses and continuously displaying the total number of pulses received. A moving mechanical system is used as an analog display. The static digital counter cuts off the analog display when the preset number is reached.

3,499,280
WINDING AND SETTING PINIONS MOUNTED IN CASE INDEPENDENT OF MOVEMENT
Raoul-Henri Erard, 82 Boulevard des Endroits, La Chaux-de-Fonds, Switzerland
Filed May 12, 1967, Ser. No. 638,052
Claims priority, application Switzerland, May 13, 1966, 6,940/66
Int. Cl. G04b *27/02*
U.S. Cl. 58—63 **1 Claim**



A timepiece including a recessed casing and a clockwork free of any winding and setting mechanism and being receivable in the recess of the casing.

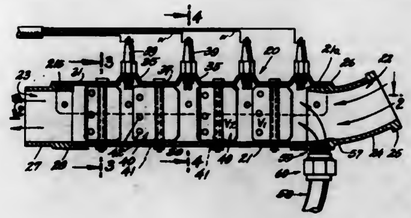
3,499,281
WATCH CROWN
Robert W. Denley and Raymond J. Grohoski, Watertown, Conn., assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 29, 1968, Ser. No. 709,262
Int. Cl. G04b *37/08*
U.S. Cl. 58—90 **13 Claims**



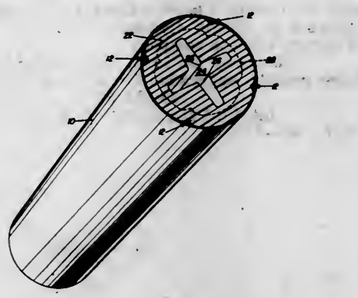
A watch is wound or set, or both, by a crown having external teeth. The crown is constructed with a cavity that fits over a tubular case pendant. The crown is waterproof in that it prevents leakage between the crown body and the pendant. The crown construction includes a gasket positioned between the internal wall of the cavity of the crown and the case pendant. The crown also includes a washer which rotates on the base pendant. The washer, which is fastened to the bottom of the crown, closing its cavity, also retains the gasket in position. The inside diameter of the washer is accurately made to a specified formula to prevent sidewise motion of the crown relative to the pendant.

3,499,282
SMOG-CONTROL EQUIPMENT FOR INTERNAL COMBUSTION ENGINES, INCINERATORS AND BOILERS
Genaro G. Celayan, 317½ N. Beaudry Ave., Los Angeles, Calif. 90012
Filed Oct. 13, 1967, Ser. No. 675,757
Int. Cl. F01n *1/14*; F23g *3/00*
U.S. Cl. 60—30 **6 Claims**

An elongated chamber has an air inlet and an exhaust gas inlet at one end with a series of butterfly vanes mounted for rotation along the length of the chamber and a spark-plug between each adjacent pair of butterfly vanes for igniting the mixture of exhaust gas and air as it passes along the length of the chamber.



3,499,283
ROCKET CHARGE DESIGN
Don L. Simpkins, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 516,067
Int. Cl. F02k *9/04*
U.S. Cl. 60—39.47 **2 Claims**



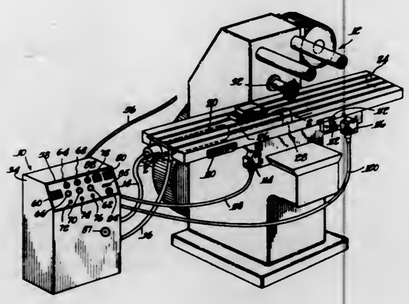
This invention relates to solid propellant rocket motors and more particularly to improved solid propellant rocket motors having means which provide relatively constant rates of combustion of the solid propellant in their terminal stages.

3,499,284
HYDRAULIC CONTROL UNIT
Harry W. Johnson, 156 W. Washington St., West Chicago, Ill. 60185
Continuation of application Ser. No. 655,862, July 25, 1967. This application Apr. 23, 1969, Ser. No. 820,039
Int. Cl. F15b *15/14, 15/18, 15/22*
U.S. Cl. 60—52 **11 Claims**

The present application discloses a self-contained portable control unit in combination with material working machines, such as machine tools which have been converted from mechanical to hydraulic actuation.

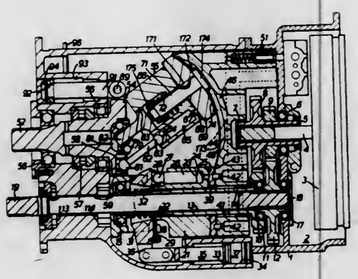
Thus for example, a mechanically actuated milling machine may be converted to hydraulic actuation by replacing the lead screw mechanism with a hydraulic actuator in the form of a cylinder and piston construction. The present invention contemplates provision of a self-contained control unit for use in combination with such a converted milling machine though positioned

wholly exteriorly and structurally independent of the milling machine. The compact control unit disclosed herein includes a reservoir, pump means, and hydraulic and electrical circuitry for controlling the speed and direction of



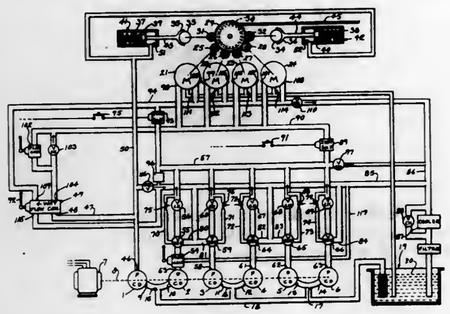
fluid flow combined as a single unit within a housing or casing. The aforesaid control unit may be hydraulically coupled with the opposite extremities of the actuator cylinder associated with the converted milling machine.

3,499,285
HYDRAULIC APPARATUS
James A. Nicholls, Charlton Kings, Cheltenham, England, assignor to Dowty Hydraulic Unit Ltd., Ashchurch, England, a British company
Filed July 18, 1968, Ser. No. 745,735
Claims priority, application Great Britain, July 21, 1967, 33,693/67
Int. Cl. F16d *31/02*; F15b *15/18*
U.S. Cl. 60—53 16 Claims



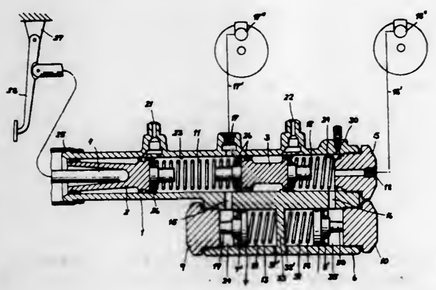
This invention provides a compact hydrostatic power transmission and comprises a swash plate pump in hydraulic connection with a tilting head motor. Preferably the tilting head motor is of the kind in which the tilting head is carried by arcuate lands for movement about an axis transverse to the motor drive shaft axis for variation of motor displacement. The swash plate pump may be of the kind in which either the cylinder block rotates and the swash plate is non-rotary or the swash plate rotates and the cylinder block is non-rotary. Preferably the pump cylinder block is mounted in side by side relation with the motor cylinder block and the valve means for the pump and motor are at similar ends of their cylinder blocks so that the hydraulic connections are quite short.

3,499,286
CONTROLLABLE HYDRAULIC POWER UNIT
Karl E. Reischl, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Continuation-in-part of application Ser. No. 631,083, Apr. 14, 1967. This application Oct. 15, 1968, Ser. No. 767,726
Int. Cl. F16d *31/06, 67/00*; B63b *35/00*
U.S. Cl. 60—53 8 Claims



The hydraulic power unit for driving the hoist cable drum on a crane on a ship has six pumps driven by an A-C motor to power four hydraulic motors on the hoist drum. Five of these pumps are connected through sequence valves to direct fluid flow to, or around the motors, depending upon the fluid pressure reflecting the load on the hoist cable. A 4-way control valve and solenoid valves can reverse the fluid flow through the motors. Flow control valves and the 4-way valve can meter fluid flow through the motors. Spring-set brakes can lock the cable drum.

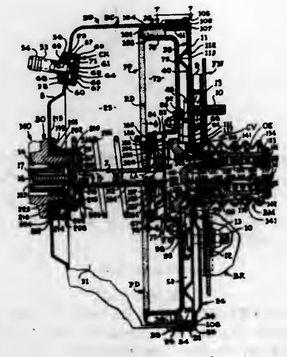
3,499,287
MASTER CYLINDER FOR HYDRAULIC INSTALLATIONS
Gert Schrader, Walldorf, Hessen, Germany, assignor to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 2, 1968, Ser. No. 702,594
Claims priority, application Germany, Feb. 3, 1967, T 33,141
Int. Cl. F15b *7/08, 15/00*; B60t *11/16*
U.S. Cl. 60—54.5 7 Claims



A dual-network brake system for automotive vehicles wherein individual fluid-transmission networks deliver respective streams of fluid to the wheel-brake cylinders and the dual master cylinder is provided with expansible chambers for the admission of pressurized fluid whenever

the pressure in the system exceeds a predetermined maximum. The expansion of the chambers, and the ensuing drop in the pressure, is effected against spring-biased pistons in a housing connected to the master cylinder of the brake system.

3,499,288
VACUUM-OPERATED BRAKE BOOSTER DEVICE
Glenn T. Randol, Loch Lynn, Md.
(P.O. Box 275, Mountain Lake Park, Md. 21550)
Filed Dec. 5, 1967, Ser. No. 688,106
Int. Cl. F15b *9/10, 7/08*
U.S. Cl. 60—54.6 42 Claims



A vacuum-operated booster device for producing the major portion of the actuating force for vehicular brake systems under manual follow-up control. The device includes a provision for manually taking up the slack in the connected brake system prior to activation of a follow-up control valve to applied position for controlling operative energization of said device; a provision for sealing an operably related master cylinder to said device in metal-to-metal stabilized relationship; and a provision for anchoring the peripheral margin of a flexible power-diaphragm in said device.

3,499,289
MONOPROPELLANT IN BINDER MATRIX
Robert N. Olsen, New York, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 2, 1961, Ser. No. 107,259
Int. Cl. F23r *1/18*; C06d *5/06*
U.S. Cl. 60—218 10 Claims

1. A solid rocket propellant formulation of at least about 75 wt. percent of hydrazine bisborane in a binder matrix of about 5 to 25 wt. percent of epoxy resin having a viscosity of about 4.5 to 145 poises at 25° C.

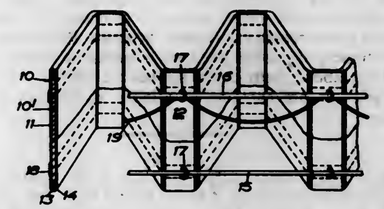
3,499,290
FLOATING BOOM
Millard F. Smith, Westport, Conn.
(P.O. Box 295, Saugatuck, Conn. 06882)
Filed June 24, 1968, Ser. No. 739,452
Int. Cl. E02b *15/04, 3/04*
U.S. Cl. 61—1 10 Claims

A portable flexible floating boom for confining oil or other material floating on the water, or as a current or wave controlling or inhibiting breakwater, groin, jetty, or the like, or for protecting beaches from harmful marine creatures, the boom incorporating a series of elongated floats of foamed elastomer connected in longitudinally spaced end-to-end relation by a continuous underwater barrier in the form of a water-impervious flexible polymer fin depending from and supported by the floats substantially in the central longitudinal vertical plane of the floats, the barrier being extended at its ends beyond the two end floats of the boom and having end plates secured thereto for connection of towing or anchoring lines, the upper edge of the barrier between the floats and along its extended ends being substantially level with the upper sides of the floats, and each of the floats having a series of longitudinally spaced yoke-like metal straps embracing its upper side in imbedded non-projecting snag-proof relation, the sides of the straps converging beneath the floats with their ends clamped upon opposite



sides of the barrier fin, whereby the barrier fin is supported by the straps in suspended relation beneath the floats. A reinforcing cable extends the length of the boom at one side of the barrier fin adjacent the undersides of the floats and is anchored at its ends to the end plates, supporting clips being swaged to grip the cable in correspondingly spaced relation to the longitudinal spacing of the barrier fin supporting straps along the boom, each clip being clamped between one side of the barrier and one end of each respective strap. It is also contemplated that an auxiliary barrier, which may be in the form of a water-pervious net or the like of suitable extent may be suspended from the cable to extend to any desired depth in the water below the water-impervious barrier fin.

3,499,291
BOOM FOR SCREENING IN AND COLLECTING UP OF POLLUTION ON WATER
Trygve Mikkelsen, Straumesvingen 22, Straumsgrend, Norway
Filed Nov. 5, 1968, Ser. No. 773,621
Claims priority, application Norway, Nov. 6, 1967, 170,406
Int. Cl. E02b *15/04, 3/00*
U.S. Cl. 61—1 12 Claims



A boom construction for closing off and collecting up pollution, especially oil contamination on areas of the sea. A boom which comprises a plurality of floatable and foldable flat sections linked together in the form of a zig-zag rail and provided with one or more purse lines arranged to fold said flat sections on being drawn in. In water the boom will provide an upstanding barrier above the surface of the water. The boom can be set up in a ring in the water and by hauling in the purse lines the closed-off area will be decreased. The boom is manufactured of individual plates of porous plastic covered and

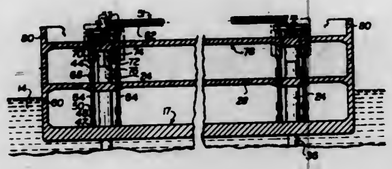
linked together by a pliable material which is durable to sea-water and oil. The purse lines are guided by rings at alternate links. Between adjacent links are connected bands to limit the flattening out of the boom.

3,499,292

METHOD OF MAKING PARTIALLY SUBMERGED STRUCTURES

Carlos J. Tavares, San Diego, Calif., assignor to Marine Space Enclosures, Inc., New York, N.Y., a corporation of New York

Filed Dec. 20, 1968, Ser. No. 792,890
Int. Cl. E02b 29/06, 17/00; E04b 5/16
U.S. Cl. 61—46 17 Claims



Piles are driven into the bottom underlying a body of water, preferably into bedrock. Columns in the form of sleeves are disposed about the piles and are releasably restrained from downward movement relative thereto. A lowermost floor is constructed utilizing the sleeves as supports therefor, and vertically extending outer walls are erected from the bottom floor structurally upwardly one level. A second floor structure is then built using the sleeves as supports therefor and thereafter the structure is permitted to move downwardly toward or into the water under the urging of gravity, the downward movement being controlled as by jacks. Thereafter, additional outer walls are constructed and joined to the second floor and a third floor is constructed which third floor uses the sleeves as supports. Thereafter, the sleeves are lowered further into the water. The above described steps are continued until the desired amount of structure is submerged in the water. If hydrostatic pressure prevents the submergence of an adequate volume of structure, the structure may be temporarily flooded in order to overcome hydrostatic pressure and permit gravity to move the constructed floors downwardly into the water. Finally, an above water level structure is constructed using the piles as supporting columns therefor which structure provides the necessary weight to overcome hydrostatic pressure. Preferably, after the submerged portion has been constructed in accordance with the above method, the sleeves are fixed as by keys to the piles to prevent further relative movement therebetween.

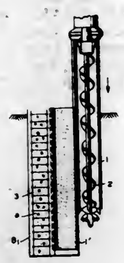
3,499,293

METHOD AND APPARATUS FOR FORMING UNDERGROUND CONSTRUCTION IN SITU

Seiji Kato, Tokyo, Japan, assignor to Taisei Kensetsu Kabushiki Kaisha (Taisei Construction Co., Ltd.), Tokyo, Japan

Continuation-in-part of application Ser. No. 552,308, May 23, 1966. This application Nov. 20, 1968, Ser. No. 777,216
Int. Cl. E02d 5/34, 5/00, 7/00
U.S. Cl. 61—53.64 10 Claims

A method and apparatus for forming an underground construction such as a pile or one element of a wall. A casing is first driven into the ground using an auger and vibrating means, and preferably forcing water or liquid into the hole being formed ahead of the auger and conducting the soil excavated at the bottom of the hole up the spiral blade of the auger along with the water or other liquid. Thereafter, and before all of the earth is forced out of the auger, motar is forced into the casing through a conduit in the auger or in the casing under pressure, the auger and the earth in the blade thereof acting as a plug against which the pressure can be exerted. Either



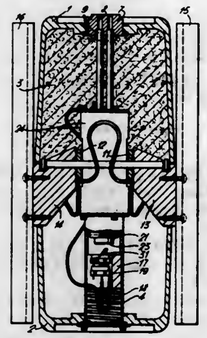
the auger alone or the auger and casing together can be withdrawn while continuing to vibrate both the auger and the casing. Thereafter a reenforcing cage can be lowered into the mortar. Where a wall is to be built, further casings are placed side by side.

3,499,294

TEMPERATURE REFERENCE APPARATUS

Donald Moore Barton, Maidenhead, and Anthony George Smith, Hayes, England, assignors to De La Rue Frigistor Limited, London, England, a British company

Filed Mar. 7, 1968, Ser. No. 711,432
Claims priority, application Great Britain, Mar. 13, 1967, 11,774/67
Int. Cl. F25b 21/02
U.S. Cl. 62—3 10 Claims



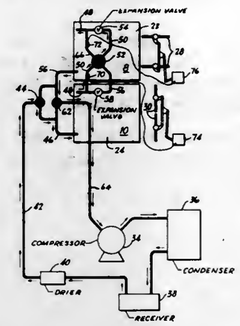
A temperature reference apparatus including a chamber containing a fluid which undergoes a change of volume or pressure consequent upon a gain or a loss of heat, thermoelectric heat transfer means positioned to transfer heat to or from the chamber and a switch arrangement coupled for operation in accordance with a change of pressure or volume of the fluid, the switch arrangement including a first switch device connected to control the operation of the thermoelectric heat transfer means and a second switch device connected to control the operation of an alarm signal so that an indication may be obtained when the volume or pressure is below a minimum and above a maximum.

3,499,295

REFRIGERATION SYSTEM

James H. Brennan, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 693,200, Dec. 26, 1967. This application June 17, 1968, Ser. No. 737,679
Int. Cl. F25b 41/00
U.S. Cl. 62—81 8 Claims



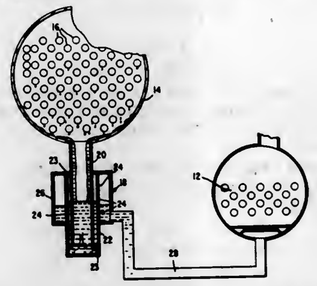
A refrigerating system embodying two evaporators which are alternatively operated on refrigerating and defrosting cycles, the liquid refrigerant being supplied to the evaporator that is operating on a refrigerating cycle being first passed through the other evaporator to defrost the same and reduce the temperature of the liquid refrigerant prior to expansion thereof in the evaporator undergoing refrigeration. When the temperature of the evaporator being defrosted has risen sufficiently to reduce its cooling action on the liquid refrigerant passing therethrough, the operation is reversed and the evaporator previously refrigerated is utilized to chill the liquid refrigerant passed to the previously defrosted evaporator for expansion therein in a refrigerating cycle.

3,499,296

REFRIGERANT FLOW CONTROL MECHANISM

William T. Osborne, East Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed May 17, 1968, Ser. No. 730,166
Int. Cl. F25b 41/06
U.S. Cl. 62—115 3 Claims



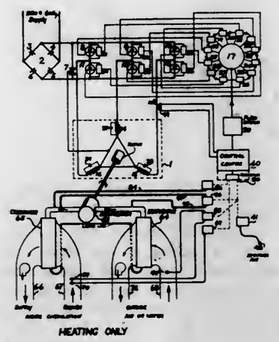
A refrigerant flow control device for regulating passage of refrigerant from the condenser of a refrigeration machine to the evaporator of the machine characterized in that the device serves as a fixed restriction and is effective to pass refrigerant under circumstances where the condenser and evaporator are subject to movement whereby the machine may assume any one of a number of positions during its operation.

3,499,297

VARIABLE CAPACITY REFRIGERATION SYSTEM

John D. Ruff, 206 Birch St., and Phillip R. Wheeler, 209 Pine St., both of Alexandria, Va. 22305

Continuation-in-part of applications Ser. No. 613,271, Feb. 1, 1967, and Ser. No. 676,368, Sept. 22, 1967. This application Feb. 20, 1969, Ser. No. 801,130
Int. Cl. F25b 13/00
U.S. Cl. 62—160 16 Claims



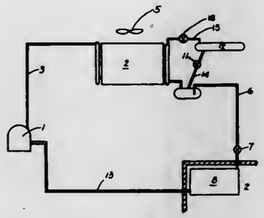
This invention is an electrically powered mechanical refrigeration system using hermetic, centrifugal or axial flow compressors and with a variable frequency, speed control on the high speed compressor motor system. Stability in operation over a wide range of operating conditions is accomplished by automatically modulating system capacity with this speed control.

3,499,298

CONDENSER PRESSURE CONTROL MEANS

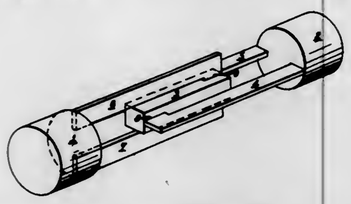
John P. Norton, St. Louis, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Original application Nov. 8, 1966, Ser. No. 592,914. Divided and this application Apr. 8, 1968, Ser. No. 740,005
Int. Cl. F25b 41/00
U.S. Cl. 62—174 2 Claims



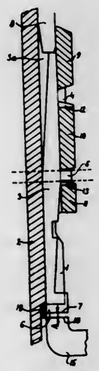
The present invention relates to heat exchange circuits where an expandable-condensible working fluid is circulated through a closed heat exchange fluid flow circuit which includes means to vaporize the fluid and condenser means to condense a portion of the vaporized working fluid, and, more particularly, relates to method and apparatus for advantageously and selectively distributing a noncondensible gas through such circuits in response to the condition of the circulating working fluid to regulate the operation and control the pressure within such circuits.

3,499,299
FLEXIBLE UNIVERSAL JOINT
Nils Folke Hector, 13 Bjorkvagen, Solna, Sweden
Filed Apr. 8, 1968, Ser. No. 719,344
Claims priority, application Sweden, Apr. 7, 1967, 4,870/67
Int. Cl. F16d 3/66
U.S. Cl. 64—15 2 Claims



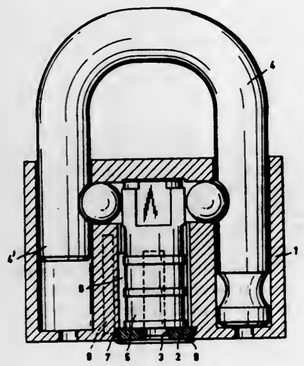
A universal joint comprising two substantially axially aligned shaft members, a rigid intermediate connecting member which is located between end surfaces of the shaft members and extending in the axial direction of the shaft members, and two pairs of leaf springs extending in the axial direction with the planes of the springs extending radially and with the springs of each pair lying diametrically opposite each other. The plane of the springs of each pair is common to the springs of the pair and is perpendicular to the plane of the springs of the other pair. The springs of one pair has one end connected to one of the shaft members and the opposite end connected to the intermediate connecting member and, similarly, the leaf springs of the second pair has one end connected to the other one of said shaft members and the opposite end connected to the intermediate connecting member. The connecting member is located centrally of the innermost edges of all said leaf springs and constitutes a central, elongated body of the joint.

3,499,300
PATTERN DEVICE FOR CIRCULAR KNITTING MACHINES
Pavel Zahrádka, Trebic, Czechoslovakia, assignor to Elitex, Zavody Textilniho Strojirenstvi Generalni Reditelstvi, Liberec, Czechoslovakia
Filed June 26, 1967, Ser. No. 649,434
Claims priority, application Czechoslovakia, July 1, 1966, 4,420/66
Int. Cl. D46b 15/16
U.S. Cl. 66—14 3 Claims



A circular knitting machine wherein jacks are shiftable in the direction of needle movement and respectively terminate in butt ends which during rotation with the needle cylinder move past and in close proximity to a needle-selecting station where an electromagnetic means is located. This electromagnetic means will act magnetically on selected jacks to displace them in their grooves in the direction of needle movement, and a cam means coacts with the shifted jacks to tilt them in their grooves so that they will coact with further cam means in a manner differently from non-selected jacks.

3,499,301
LOCK WITH A SEPARATE BOTTOM PLATE
Armas Kalervo Niilola and Into Vilho Sinervo, Helsinki, Finland, assignors to Oy Wartsila AB, Helsinki, Finland
Filed Aug. 10, 1967, Ser. No. 659,731
Claims priority, application Finland, Aug. 11, 1966, 2,101/66; June 26, 1967, 1,776/67
Int. Cl. E05b 67/02, 67/16
U.S. Cl. 70—52 9 Claims

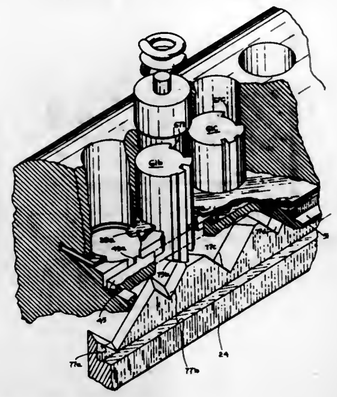


A key operated lock with locking means of the cylinder lock type. The locking means are protected by a separate disk of hard material which is permanently fixed to the bottom of the lock by means of plastic deformation of an attachment part.

3,499,302
CYLINDER LOCK
Roy C. Spain, Rte. 2, Box 166A; Roy N. Oliver, 148 Ellen Drive; Elvis C. Flora, 1241 Forest Lawn Drive; and Paul A. Powell, 935 West Point Road, all of Salem, Va. 24153
Filed Mar. 1, 1967, Ser. No. 627,243
Int. Cl. E05b 27/04, 15/14, 19/02
U.S. Cl. 70—364 10 Claims

A cylinder lock with a key plug rotatably mounted in the cylinder shell is described. The key plug has a plurality of tumblers that are set by the V bits of a key inserted in the key plug. The key is cut at three different levels and cut at three different angles. Each tumbler in the key plug may be positioned by the properly bitted key reciprocally to clear the shear line and also positioned rotationally to allow the fence to be cammed out of engagement with the cylinder shell. The key plug may then be rotated.

A side bar cylinder lock is also described with the same key cut at three different levels and cut at three different angles. The tumblers are positioned reciprocally and rotationally by the properly bitted key to allow the fence to be cammed out of engagement with the cylinder shell. The key plug may then be rotated.



3,499,303
CYLINDER LOCK
Roy C. Spain, Rte. 2, Box 166A, Salem, Va. 24153
Filed Apr. 17, 1968, Ser. No. 729,477
Int. Cl. E05b 15/14, 19/04, 63/00
U.S. Cl. 70—364 2 Claims



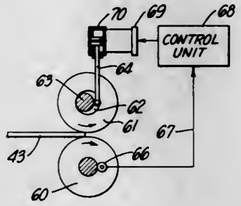
A cylinder lock may be operated by a properly angularly bitted key. The key plug is rotatably mounted in the cylinder shell. The key plug has a plurality of tumblers that are set by the V bits of a key inserted in the key plug. The key is cut at five different levels, and cut at two different angles. Each tumbler in the key plug may be reciprocally positioned by the properly bitted key to clear the shear line, and also rotationally positioned to allow the fence member to engage true gates in the tumblers. The cylinder lock may be used in a master key system using wafers as shown so that a master key cut at a lower level than the normal key can reciprocally position the tumbler, wafers, and drivers to clear the shear line. The angularly bitted keys used has at least one slope of one V bit cut perpendicular to axies of the key so that the use of an improper key causes at least one tumbler to be rotationally positioned to prevent the engagement of the fence member with the true gate of that tumbler.

3,499,304
FLAT KEYS FOR CYLINDER LOCKS
Manfred Naujoks, Velbert, Rhineland, Germany, assignor to C. Ed., Schulte G.m.b.H., Velbert, Rhineland, Germany
Filed Apr. 19, 1967, Ser. No. 632,085
Claims priority, application Germany, Apr. 21, 1966, Sch 38,851
Int. Cl. E05b 19/04, 19/16
U.S. Cl. 70—406 4 Claims



Flat keys for cylinder locks in which both faces of the keys are provided with alternate ribs and grooves of which different ones are omitted to provide different key profiles within a series, all the ribs being omitted from the master key of the series and all the grooves being present in the master key.

3,499,305
ROLLING MILL AND METHOD OF ROLLING STRIPS
Thomas William Abernathy, Sunland, Calif., assignor to PRP Corporation, Sun Valley, Calif., a corporation of California
Filed May 2, 1967, Ser. No. 635,422
Int. Cl. B21b 37/14, 31/30
U.S. Cl. 72—7 2 Claims

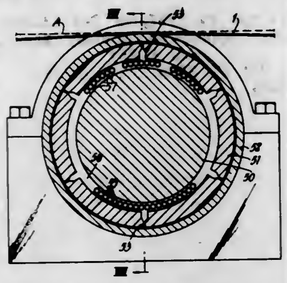


A rolling mill and method for rolling a strip with a varying thickness, including at least two power rolls and means for varying the spacing between the rolls during a rolling operation. Several mechanisms for controlling the spacing variation according to a predetermined program, including a roll position indicator coupled to one of the rolls providing a signal indicative of roll rotational position as an input to the control for the space variation.

3,499,306
MEASUREMENT OF THE SHAPE AND FLATNESS OF SHEET OR STRIP MATERIAL
William Kenneth Jamieson Pearson, Amersham, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Filed July 6, 1966, Ser. No. 563,173
Claims priority, application Great Britain, July 9, 1965, 29,224/65
Int. Cl. B21b 37/04
U.S. Cl. 72—17 18 Claims

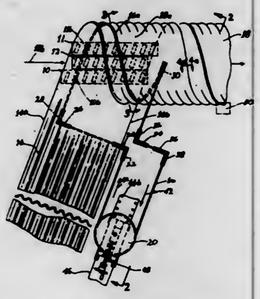
This invention relates to a method and apparatus for measuring the flatness or shape of sheet or strip material

under tension in which at least two floating members supported by fluid pressure in spaced relationship to a fixed member are urged into engagement with the sheet



or strip material at spaced locations and the displacement of each floating member relative to its associated fixed member or the fluid pressure is measured.

3,499,307
METHOD AND APPARATUS FOR CONTROLLING THE DIAMETER OF SPIRAL PIPE
Andrew H. Hutton, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Mar. 14, 1968, Ser. No. 713,164
Int. Cl. B21f 3/02
U.S. Cl. 72—135 **15 Claims**

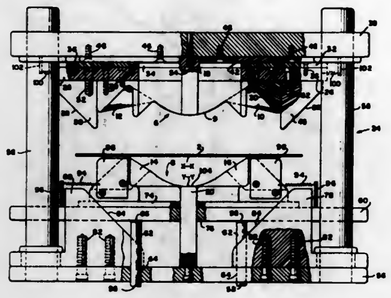


A method for fixing and maintaining constant the diameter of free-formed spiral pipe as it is being formed from a strip of metal, which comprises the step of helically disposing a flexible, endless member of sufficient length to provide one complete spiral wraparound around the first width of metal strip which forms the first helical convolution of said pipe.

An apparatus for fixing and maintaining constant the diameter of free-formed spiral pipe as it is being formed from a strip of metal, which comprises a flexible, endless member of sufficient length to provide one complete spiral wraparound, in uniform contact with said pipe, around the first width of metal strip which forms the first helical convolution of said pipe.

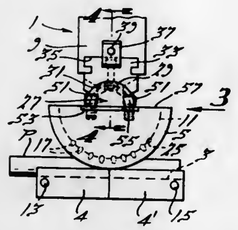
3,499,308
MOLDING METAL
Arthur Ford, Smithtown, N.Y., assignor to S. Tepfer & Sons, Inc., Deer Park, N.Y., a corporation of New York
Filed Mar. 22, 1967, Ser. No. 625,195
Int. Cl. B21d 11/20
U.S. Cl. 72—380 **7 Claims**

Forming die apparatus having top and bottom die sections, each die section being vertically movable with respect to the stationary horizontal bed of a power press, and each die section including a pair of horizontally and relatively movable die members, each pair of die members being movable between open and closed positions, said pairs of die members assuming the closed position when said die sections are fully mated and in the open



position when said die sections assume the open position. A method of die forming a developed work-blank into a finished article by first shaping the edge extremities of the work-blank and subsequently moving the shaped extremities toward the longitudinal axis of the work-blank while concurrently shaping the central portions thereof.

3,499,309
ROTATABLE PUNCH FOR TUBE BENDER
Paul V. Gregg, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Continuation-in-part of application Ser. No. 596,859, Nov. 25, 1966. This application Nov. 20, 1967, Ser. No. 684,416
Int. Cl. B21d 9/07
U.S. Cl. 72—389 **5 Claims**

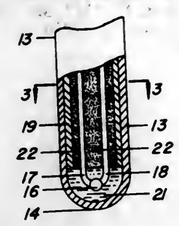


A bending punch for a tube bender is adjustably mounted on the ram so that its angular position can be varied to locate indentations on the punch as desired with respect to a tube being bent.

3,499,310
SELF-CALIBRATING TEMPERATURE SENSING PROBE AND PROBE - INDICATOR COMBINATION
Alf Hundere and Heinz G. Buschfort, San Antonio, Tex.; said Buschfort assignor to Alcor Aviation, San Antonio, Tex.
Continuation-in-part of application Ser. No. 651,221, July 5, 1967. This application May 27, 1968, Ser. No. 732,286
Int. Cl. G01k 15/00
U.S. Cl. 73—1 **9 Claims**

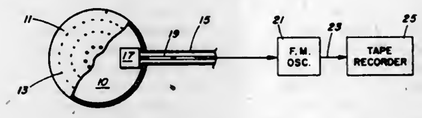
A temperature sensing probe composed of a sheath having therein a temperature sensing element capable of exhibiting a signal indicative of the temperature sensed,

the element being embedded in a body of fixed melting point material. A signal indicator permits reading the temperatures sensed by the probe. When the temperature



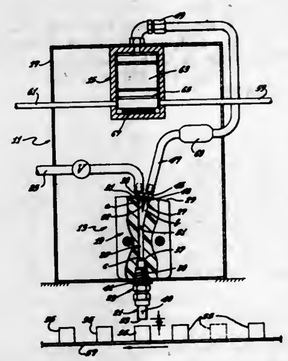
of the probe is changed past the fixed melting point, the temperature indication will remain constant at the fixed melting temperature during phase change.

3,499,311
OMNIDIRECTIONAL BLAST WAVE SENSOR
John L. Lankford, Silver Spring, and Arnold E. Seigel, Chevy Chase, Md., and Robert E. Wilson, Menlo Park, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 7, 1967, Ser. No. 629,878
Int. Cl. G01n 33/22; G01l 9/00
U.S. Cl. 73—35 **1 Claim**



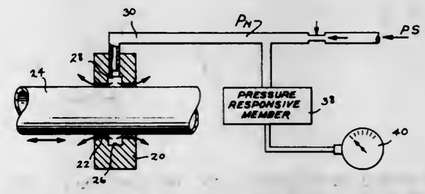
An omnidirectional pressure gage for measuring weak blast waves in which a pressure sensing element is encapsulated within a porous spherical shell.

3,499,312
SENSING APPARATUS
Franklin C. Eickenhorst, Mason, Ohio, assignor to Dayton Reliable Tool & Mfg. Company, Dayton, Ohio, a corporation of Ohio
Filed Feb. 16, 1968, Ser. No. 706,090
Int. Cl. G01b 13/08
U.S. Cl. 73—37.5 **15 Claims**



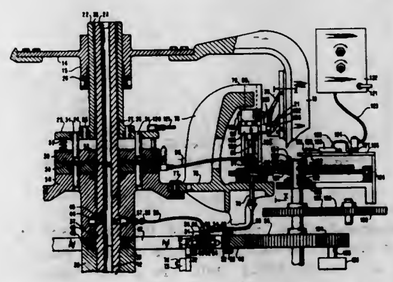
This disclosure describes a sensing apparatus utilizing a proximity sensor of the back pressure sensing type. The proximity sensor is supplied with a control fluid, such as air, which flows through the sensor and exits at a sensing passageway. If an object is placed closely adjacent the opening of the sensing passageway and in confronting relationship thereto, a back pressure is created which diverts some of the fluid flow through a back pressure passageway. Flow of a predetermined amount of fluid through the back pressure passageway provides a signal which can be utilized to perform various control functions.

3,499,313
METHOD AND MEANS FOR CONTINUOUSLY GAUGING THE CROSS SECTION OF ELONGATED STOCK
Harold E. Eller, Michigan City, Ind., assignor to The Hays Corporation, Michigan City, Ind.
Filed Dec. 11, 1967, Ser. No. 689,497
Int. Cl. G01b 13/08
U.S. Cl. 73—37.7 **6 Claims**



A method for continuously gauging the cross section of elongated stock by passing the same through a gauging hole of a detector of the same shape and slightly larger cross sectional size to which gas at selected pressure is delivered through a line having a restrictor of greater area than the clearance space between the stock and the hole, and measuring variations in back pressure in the line between the restrictor and the hole. The apparatus for performing the method has either a groove thereabout for equalizing pressure around the stock, or has a plurality of lines each of the same gas supply characteristics and connected to a set of opposed gas inlets and having independent back pressure measuring means.

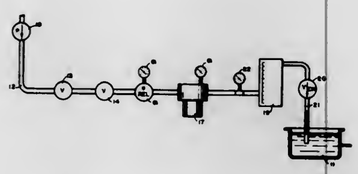
3,499,314
APPARATUS FOR TESTING COVERS
Victor Isaac Roberts and Maynard Harry Riddell, Randolph, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 12, 1968, Ser. No. 704,610
Int. Cl. G01m 3/04
U.S. Cl. 73—45.2 **5 Claims**



Apparatus for high pressure testing covers for cans or the like. A cover is placed into a cell such that the cover

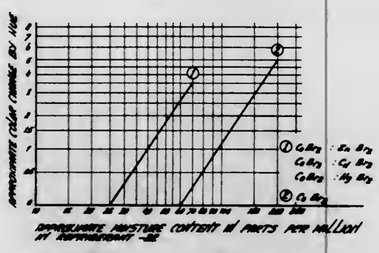
divides the cell into first and second sections. A source supplies high-pressure gas into the first section while concurrently the second section is connected to the atmosphere. A sensor communicating with said second section indicates a leak in the cover. A sorting mechanism responsive to a pressure buildup in the second section ejects leaky covers.

3,499,315
CONTAMINATION DETERMINATION IN A FLUID SYSTEM
Joseph A. Marino, Blackwood, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1967, Ser. No. 665,684
Int. Cl. G01n 11/02
U.S. Cl. 73—61 1 Claim



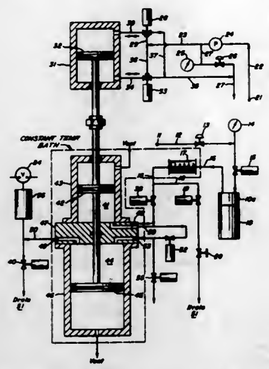
A method for determining the contamination of a fluid system having a fluid reservoir at one end of the system and suction pump at the other end. A filter element is selected having a dirt holding capacity equal to the maximum acceptable limit of the system and placed between the pump and reservoir. The fluid is then drawn through the filter at a predetermined rate and the differential pressure produced across the filter element is recorded and indicated as the contamination level of the system.

3,499,316
DUAL SALT MOISTURE INDICATING COMPOSITION
Walter O. Krause, Chesapeake, Va., assignor to Virginia Chemicals, Inc., West Norfolk, Va., a corporation of Virginia
Filed Aug. 19, 1968, Ser. No. 753,655
Int. Cl. G01n 33/00; C01g 51/08
U.S. Cl. 73—61.1 5 Claims



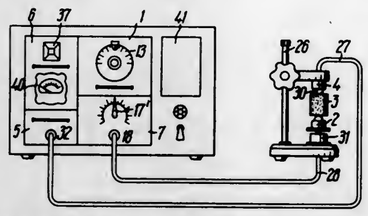
Moisture-indicating materials of the type used in refrigerant systems to detect moisture content which may have a deleterious effect upon the system capabilities, particularly, a dual bromide salt moisture indicator composition which undergoes a reversible color change as wetted, indicating the degree of moisture within the refrigerant system.

3,499,317
APPARATUS FOR MEASURING VAPOR PRESSURE
Roy E. Hook, Griffith, Ind., assignor to Standard Oil Company, Chicago, Ill.
Filed Sept. 27, 1967, Ser. No. 670,876
Int. Cl. G01n 11/00
U.S. Cl. 73—64.2 8 Claims



Instrument for the direct determination of the vapor pressure of a mixture of liquids having different boiling points is described. Basically, the instrument has a liquid measuring first chamber, a liquid vaporizing second chamber, an interruptable fluid flow communication connecting the chamber for flow only from the first chamber to the second chamber, a reference temperature maintaining receptacle for the connected chambers, and a vapor pressure measuring means connected to the vapor space of the second chamber. A more complex form of the instrument operates automatically from flushing through measurement of vapor pressure and is adaptable for the automatic monitoring of process streams. One or more pre-operations of the instrument with new liquid sample flushes the remains (liquid and vapor) of previously tested samples from the instrument and eliminates the need for use of contaminating and/or interfering wash materials.

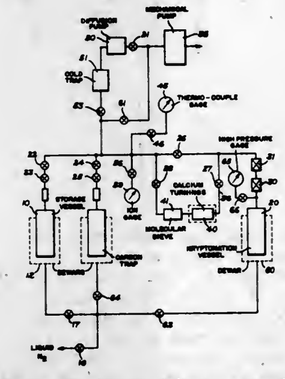
3,499,318
APPARATUS FOR DETERMINING THE TOUGHNESS OF ABRASIVE ARTICLES
Vladimir Vladimirovich Bogdanov, ul. Pestelya, 8/36, kv. 2; Boris Aronovich Glagovsky, Farforovskaya ul. 4, kv. 24; Igor Borisovich Moskovenko, Kirovsky pr., 50, kv. 6; Evgeny Vasilievich Nesmashny, ul. Gertsena 11/6, kv. 29; Evgeny Dmitrievich Pigulevsky, Vitebsky pr., 21, korp. 4, kv. 38; and Vladimir Alexeevich Rybakov, Nevsky pr., 114, kv. 59, all of Leningrad, U.S.S.R.
Filed Mar. 6, 1967, Ser. No. 620,960
Int. Cl. G01m 7/00
U.S. Cl. 73—67.2 4 Claims



Apparatus for determining the toughness of abrasive articles, such as grinding wheels, utilizing a piezoelectric oscillation emitter which is excited by an electrical oscillator and is provided with a contact element for transmitting mechanical oscillations from the contact element

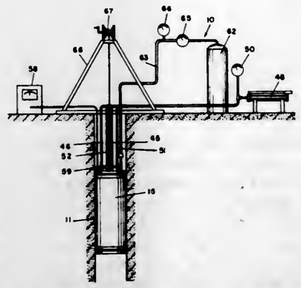
to the sample being tested. A receiving member is provided which is similar to the emitter and has a contact element adapted to engage the test sample to sense mechanical oscillations thereof and convert them into electrical oscillations. The latter oscillations are transmitted to a resonance indicator. A calibrating table provides the toughness indication corresponding to the frequency of resonance of the mechanical oscillations; that is, for the maximum vibration amplitude frequency.

3,499,319
FATIGUE DETERMINATION BY RADIOACTIVE GAS
Carlos G. Figueroa, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 609,226
Int. Cl. G01b 5/30
U.S. Cl. 73—88 18 Claims



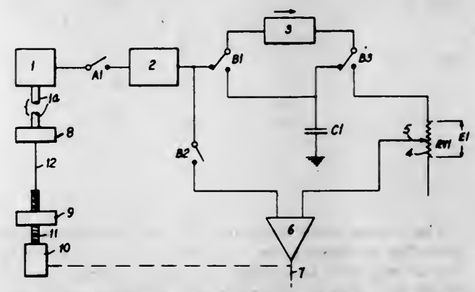
Incipient fatigue, prior to failure, as a function of changes in crystal structure is determined by incorporating a radioisotope of an inert, rare gas interstitially into the part being tested before or after application of load thereto. Changes in residual radioactivity or increased absorption indicate changes in crystal structure and identify areas of incipient fatigue prior to failure of the part.

3,499,320
METHOD AND APPARATUS FOR MEASURING THE LOAD DEFORMATION CHARACTERISTICS OF SOIL BY PRESTRESSING AND THEN DEFORMING
Nathaniel S. Fox, 6211 Raymond Road, Madison, Wis. 53711, and Richard L. Handy, Des Moines, Iowa (Iowa State University, Ames, Iowa 50010)
Filed Sept. 1, 1967, Ser. No. 665,062
Int. Cl. G01n 3/08
U.S. Cl. 73—94 12 Claims



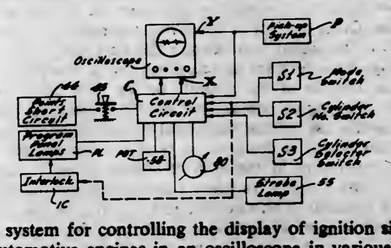
Method and apparatus for applying a simulated gravitational pressure for reducing the inherent distortion between a model footing-soil system and the actual foundation-soil system. The model load test apparatus has rigid model footing plates which are movable laterally outward within an expandable membrane whereby a "surcharge pressure" equal to the distance from the top of the test bore hole to the center of the model footing plates times the unit weight of the soil and a "simulated gravitational pressure" equal to the ratio of the smallest linear dimension of the full size foundation to the smallest linear dimension of the model footing plates times the unit weight of the soil times the depth of the soil affected are first applied to the wall of a test bore hole by inflating the expandable membrane and then the model footing plates are expanded to deform the soil under incremental loads.

3,499,321
STRESS TESTING APPARATUS AND METHOD
Bernard Stuart Baker, Coventry, England, assignor to Courtaulds Limited, London, England, a British company
Filed July 21, 1967, Ser. No. 655,018
Claims priority, application Great Britain, Aug. 5, 1966, 35,108/66
Int. Cl. G01n 3/28, 3/08, 3/22
U.S. Cl. 73—95.5 6 Claims



Stress testing apparatus which employs an electrical device responsive to the test load applied to an article to generate an output voltage proportional to the test load applied, and a comparator circuit in which the output voltage is compared with a reference voltage representing the desired test load, the comparator circuit preventing further application of the test load when the output voltage equals the reference voltage. High grade capacitors are employed to reproduce the output voltage of the device corresponding to no-load conditions.

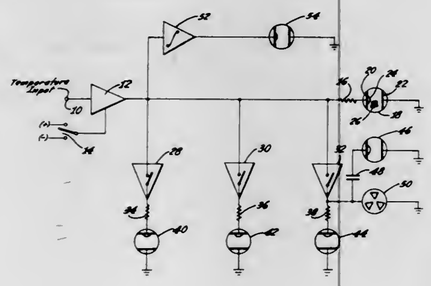
3,499,322
ANALYZING DEVICE FOR AUTOMOTIVE ENGINE
Edmond R. Pelta, Pacific Palisades, and Kenneth S. Gold, Canoga Park, Calif., assignors to Autoscan, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 29, 1968, Ser. No. 724,758
Int. Cl. G01r 29/02
U.S. Cl. 73—116 29 Claims



A system for controlling the display of ignition signals of automotive engines in an oscilloscope in various configurations and independent from engine speed. A slope

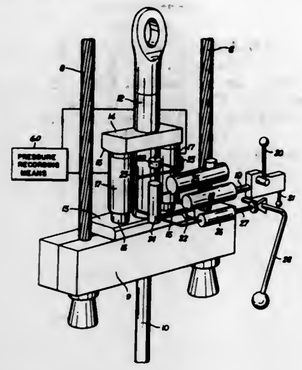
controlled time base, sweep signal generator is used to control some of the displays but serves also as variable speed, phase metering device controlling a second sweep generator for providing a likewise speed-dependent slope and adjustable, speed-independent phase as to sweep begin within each engine cycle. The second generator controls also selective cylinder short-circuiting and stroboscopic illumination for observation of ignition advance.

3,499,323
AIRCRAFT SERVICE COMPUTER
James T. Sturges, San Marcos, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California
Filed June 21, 1968, Ser. No. 738,995
Int. Cl. G01l 3/26
U.S. Cl. 73—116 22 Claims



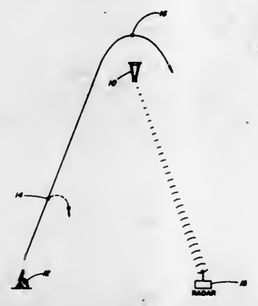
The present invention relates to an aircraft service computer for monitoring the operating characteristics of an aircraft engine in accordance with the temperature of the engine and using an electrochemical storage member having at least a pair of electrodes and with the electrochemical storage member including active material for transfer between the electrodes and with a transfer of the active material occurring in accordance with the temperature conditions of the aircraft engine. Specifically, the invention includes applying a signal to the electrochemical storage member, which signal has a characteristic in accordance with the time-temperature operating characteristics of the aircraft engine. The invention also includes the use of a plurality of electrochemical storage elements for monitoring the operating characteristics of the aircraft engine by dividing the temperature of the engine into a plurality of temperature bands and with the electrochemical storage elements receiving signals in accordance with temperatures above predetermined values, which values represent the minimum temperature in each band. The means for driving the individual electrochemical storage members may be part of a function generator, which function generator also derives the signal representing the time-temperature operating characteristic of the aircraft engine. Other aspects of the invention include varying the level of the signal representing the time-temperature operating characteristics in accordance with conditions such as the altitude of the aircraft or the flow of a coolant within the engine cooling system. The invention also includes the use of an additional electrochemical storage member which is designed to receive a signal each time the temperature of the aircraft engine exceeds a certain value, which signal transfers a predetermined quantity of active material in an electrochemical cell. The use of such an electrochemical storage member provides for an event counter so as to count the number of times the temperature exceeds a predetermined value.

3,499,324
DYNAMOMETER FOR WELL PUMPS
Josef Wenisch, Neusiedel an der Zaya, Austria, assignor to Osterreichische Mineralolverwaltung Aktiengesellschaft, Vienna, Austria
Filed Dec. 14, 1966, Ser. No. 601,641
Claims priority, application Austria, Dec. 22, 1965, A 11,571/65
Int. Cl. G01l 5/12
U.S. Cl. 73—141 3 Claims



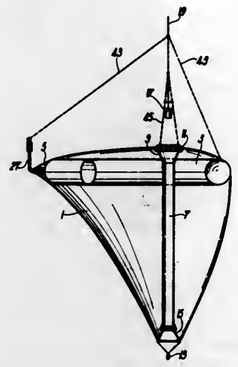
A low-pressure, high-displacement pump is connected to a cylinder for quickly and easily moving a piston into engagement with the force transmission path of a deep well pump. A second high-pressure, low-displacement pump is also connected to the cylinder and once the piston is brought into engagement, the second pump causes the piston to support the weight of the pump rod, so that the weight of the rod can quickly be determined.

3,499,325
ATMOSPHERIC DETERMINING APPARATUS
George J. Sloan, Jr., Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 7, 1967, Ser. No. 688,767
Int. Cl. G01w 1/08
U.S. Cl. 73—170 12 Claims



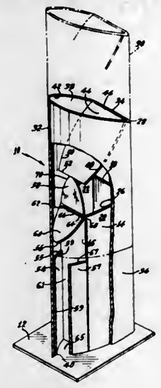
An apparatus for determining atmospheric density wherein a ram-air inflated conical aerodynamic body is ejected into the upper atmosphere and is tracked by radar during its descent. The aerodynamic body, constructed of thin metallized plastic film, is packed in a meteorological rocket or gun probe and is ejected near the apogee of the flight where it inflates in a parachute-like manner. The descent is tracked by radar and since the exact dimensions, weight and drag coefficient are known the density of the atmosphere can be derived.

3,499,326
AIR-COLLECTING BALLOON FOR SAMPLING AIR AT HIGH ALTITUDE
Pierre Madier and Robert Regipa, Aire-sur-l'Adour, and Raymond Pannetier, Massy, France, assignors to Commissariat a l'Energie Atomique
Filed Jan. 18, 1968, Ser. No. 698,801
Claims priority, application France, Feb. 23, 1967, 96,182
Int. Cl. G01m 1/22
U.S. Cl. 73—421.5 16 Claims



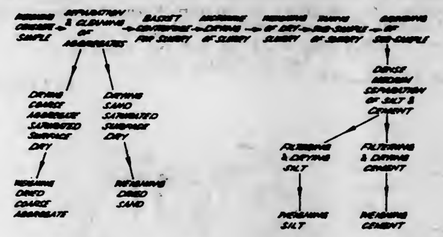
An air-collecting balloon of suitable volume which is empty and closed at the time of launching is lifted to a high altitude by a carrier balloon of any suitable type by means of a central suspension cable. The air-collecting balloon is so constructed that, when it has attained the desired altitude, it opens, fills with the air to be collected, separates from its carrier balloon and closes automatically so as to trap the collected air as it finally descends.

3,499,327
URINE COLLECTORS
Walter W. Lane, Jr., Temple Terrace, Fla. (5202 Busch Blvd., Tampa, Fla. 33610)
Filed Jan. 22, 1968, Ser. No. 699,436
Int. Cl. G01n 1/10
U.S. Cl. 73—421 17 Claims



A urine collector for obtaining a urine sample other than the first portion of the urine stream emitted during normal urination comprising a urine sample receptacle and a compartment forming means disposed about the urine sample receptacle and forming a compartment exteriorly of the urine sample receptacle. The compartment has an open top for receiving the first portion of the urine stream thereinto and the urine sample receptacle has an opening adjacent the top portion thereof for the ingress of urine thereinto after the first portion of the urine stream has been deposited into the compartment. The collector further includes means for shielding the urine sample receptacle from initial direct entry of the first portion of the urine stream deposited into the urine collector. Additionally, in one aspect of the invention, the urine collector includes diversion means associated with the urine sample receptacle for diverting the mid-portion of the urine stream from the compartment into the urine sample receptacle, these means permitting the first portion of the urine stream deposited in the collector to pass into the compartment.

3,499,328
ANALYSIS OF UNHARDENED CONCRETE
Robert Anthony Kenny, Radlett, and Bruce Murray Lionel Gregorie, Ealing, England, assignors to John Laing Research and Development Limited, London, England, a British company
Filed July 17, 1967, Ser. No. 653,852
Claims priority, application Great Britain, July 23, 1966, 33,232/66
Int. Cl. G01f 15/14; G01j 5/04
U.S. Cl. 73—432 10 Claims

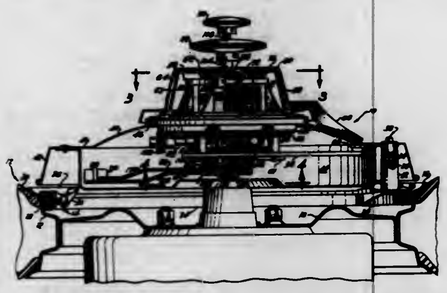


Unhardened concrete is analysed for accuracy of the aggregate/cement ratio by taking a sample of known weight and wet sieving it to separate the cement and silt as an aqueous slurry from the coarse and fine aggregates. The slurry is dewatered in a centrifuge and all the solids are dried in a microwave radiation oven and weighed. The dry slurry, or a known sub-sample thereof, is then ground to a given particle size—preferably between 10 and 60 microns—and fed to a dense medium separator using bromoform as the dense medium. The separated cement and silt fractions are filtered in a centrifuge, dried by microwave radiation, and separately weighed, the weight of silt being added to that of the fine aggregate.

3,499,329
MECHANICAL WHEEL BALANCER
Thomas E. Bjorn, Northbrook, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Continuation-in-part of application Ser. No. 501,817, Oct. 22, 1965. This application Sept. 19, 1966, Ser. No. 586,914
Int. Cl. G01m 1/00
U.S. Cl. 73—458 5 Claims

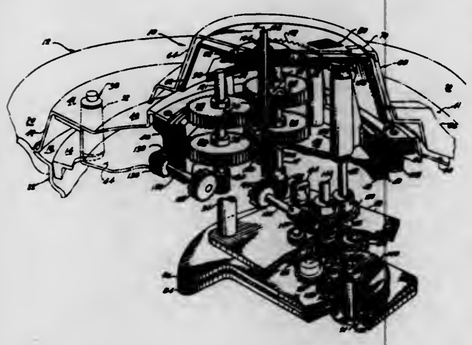
A mechanical wheel balancing device attachable to a vehicle wheel having manually manipulatable weight arms therewithin to provide a counterbalance against an unbalance in the vehicle wheel. The weight arms are

shaped with offset portions such that the center of mass of the weight arms and the respective weights carried on their ends lie in a common radial plane. Worm gear and wheel trains are provided for driving the balance weight arms and provisions are made for scale readings of the



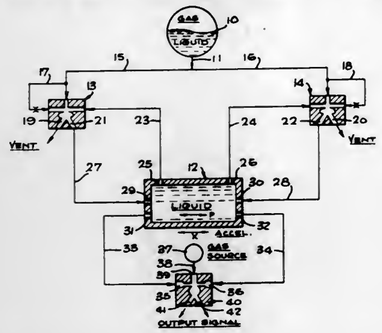
necessary compensating weight corresponding to different size vehicle wheels. In one embodiment special indicia are provided on the readout scale to prevent ambiguities in the location of a compensating weight to be added.

3,499,330
MECHANICAL BALANCERS
Thomas E. Bjorn, Northbrook, and David S. Dopp, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Dec. 27, 1966, Ser. No. 604,921
Int. Cl. G01m *1/00*
U.S. Cl. 73—458 **10 Claims**



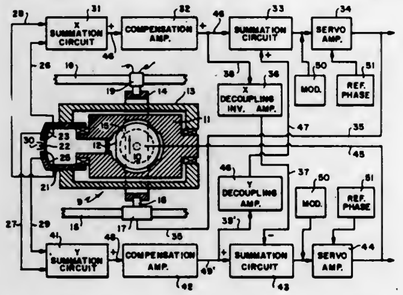
This application describes mechanical balancers used for correcting unbalance in rotating bodies, particularly of the type which attach to a rotating body and have structure therein to compensate for the unbalance in the rotating object. The counterbalance mechanism is cyclically operable through the manipulation of knobs by an operator as the object is spinning and includes two weights, each of which is rotatable about an axis radially spaced from the axis of the object being balanced. The weights are rotated simultaneously in opposite directions so that the resultant of their vectorially added moments move along a diametric line passing through the axis of the object. The weights are constructed and arranged so that the counterbalance force of the device ranges from a completely balanced or zero condition to a maximum counterbalance force position, and so that it may be cyclically operated to approach the maximum and zero positions from either direction.

3,499,331
FLUIDIC ACCELEROMETER
William V. Miller, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed May 29, 1967, Ser. No. 641,786
Int. Cl. G01p *15/02*
U.S. Cl. 73—515 **2 Claims**



There is disclosed an apparatus capable of measuring linear acceleration along one or more predetermined axes without the use of any electrical part or circuitry or of any moving mechanical parts. The invention is based on the science of fluidics, and its operation is entirely fluid in nature. Its output signal is a differential pressure indicative of the linear acceleration to which the unit is subjected. Operation of the device is based on the sensitivity of liquid within a cylinder to a linear acceleration field parallel to the cylinder's axis. Output ports are provided at each end of the cylinder which are connected to a differential pressure sensor to provide the differential output signal. When the cylinder is accelerated axially, a linear pressure gradient is developed along its length from end to end, with pressure decreasing in the direction of acceleration. The resultant differential pressure across the cylinder is proportional to axial acceleration, and can be operated on subsequently by fluidic amplifiers and/or circuits to provide a fluid signal in any desired form, mode, or fluid media.

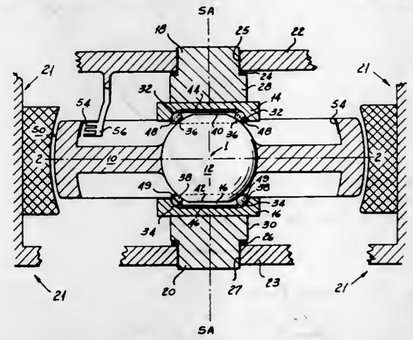
3,499,332
CONTROL SYSTEM FOR AN INERTIAL PLATFORM
Joseph A. Fingerett, Van Nuys, Laurence McGann, Woodland Hills, and Richard C. Turnblade, Northridge, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1968, Ser. No. 762,432
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **8 Claims**



A control system for an inertial platform having a gas bearing rotatably supported gyroscope ball rotor in a spinning rotor with a mirror surface concentric and normal

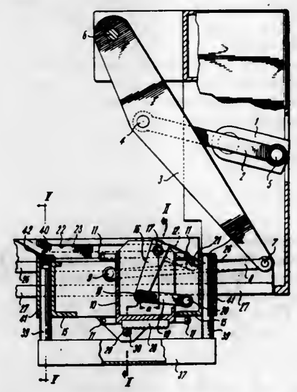
to the spin axis of the ball rotor to reflect a point light source to fall equally on light sensitive elements arranged to detect light inequalities in the x and y directions to control through servo amplifiers and servo motors coupled to the x and y axes gimbals the detected errors to correct the misalignment of the spinning rotor axis to maintain equal amount of light on the light sensitive elements.

3,499,333
MEANS FOR SUPPORTING AND TORQUING A ROTORS OF A MULTIPLE DEGREE OF FREEDOM GYROSCOPE
Donald J. Abel, Franklin Lakes, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 14, 1967, Ser. No. 616,075
Int. Cl. G01c *19/06*
U.S. Cl. 74—5.7 **8 Claims**



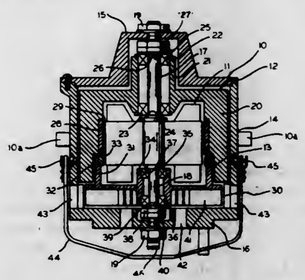
This invention relates to means for supporting and torquing a rotor of a multiple degree of freedom gyroscope and more particularly to a multiple degree of freedom thrust type bearing supported rotor of a gyroscope and torquing means for restoring the multiple degree of freedom rotor to a normal spin axis position.

3,499,334
DRIVE FOR A FEED DEVICE
Karl Griesinger, Goppingen-Jebenhausen, Germany, assignor to L. Schuler G.m.b.H., Goppingen, Germany
Filed Oct. 26, 1967, Ser. No. 678,416
Claims priority, application Germany, Nov. 7, 1966, Sch 39,790
Int. Cl. F16h *21/32*
U.S. Cl. 74—40 **9 Claims**



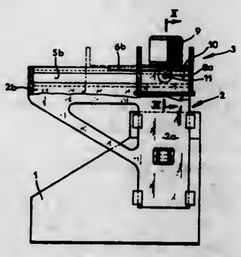
A drive for a feed device for workpieces, particularly useful in conjunction with presses, driven by a rotary shaft with the aid of a cam guide and stationary in the reversal points of a reciprocating motion, including two slide members guided for reciprocal motion in a transporting direction, one of which derives an oscillating motion from a crank operatively connected with the rotary shaft, wherein the two slide members are coupled for conjoint motion except for swinging movement executed by the slide member in the zone of the reversal points of their reciprocal motion at which point a curved guide means causes a relative motion between the two slide members such that one slide is slowed with respect to the other in the zone of the reversal points.

3,499,335
ELECTRICALLY DRIVEN AIR ERECTED GYRO
Eugene Korzeniauskas, Grand Rapids, Mich., assignor to R. C. Allen Business Machines, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 12, 1968, Ser. No. 704,605
Int. Cl. G01c *19/30, 19/52*
U.S. Cl. 74—5.43 **10 Claims**



Gyroscopic instrument that is electrically driven and air erected. A single fixed stator is mounted in the gyro casing with shafts extending from both sides. A gyro rotor is rotatably received on one shaft and provided with a hysteresis ring that coacts with the stator to drive the gyro rotor, while a pump rotor is rotatably received on the other shaft and provided with a hysteresis ring that coacts with the stator independently of the gyro rotor to drive the pump rotor independently.

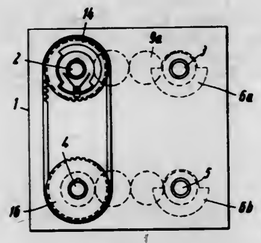
3,499,336
MACHINE-TOOL
Vittorio Louis Achille Bianchi, 37 Ave. Paul Doumer, Paris, 16° France
Filed Apr. 2, 1968, Ser. No. 718,180
Claims priority, application France, Apr. 6, 1967, 101,819
Int. Cl. F16h *19/04*
U.S. Cl. 74—29 **2 Claims**



The machine-tool comprises a stationary frame carrying a vertically movable frame and a carriage slidably mounted on said movable frame. The carriage is driven in

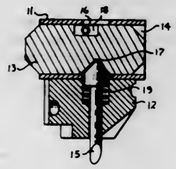
translation by a motor supported on the carriage itself and connected to pinions meshing with racks solid with the movable frame.

3,499,337
VIBRATOR DEVICE
Ludwig Müller, 44–66 Heinrich-Heine-strasse, 355 Marburg, Germany
Filed July 22, 1968, Ser. No. 746,440
Claims priority, application Germany, July 22, 1967, M 74,874
Int. Cl. F16h *33/08*
U.S. Cl. 74—61 8 Claims



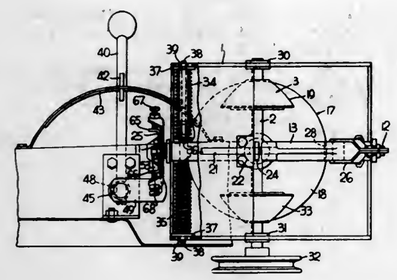
A vibrator device as used for instance for driving construction piles into the ground, is started by initially rotating two or more unbalance shafts in mutually angularly displaced positions in which the unbalances of the shafts are out of phase so that the device does not generate vibrations of appreciable force and then turning the unbalance shafts in reference to each other into mutually angular positions in which the unbalances of the shafts are in phase so that vibrations are now generated thereby avoiding the occurrence of heavy current surges during the starting period of the device.

3,499,338
ANTI-SHOCK LATCH
Ralph R. Schneider, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed May 31, 1968, Ser. No. 733,465
Int. Cl. F16h *21/08*
U.S. Cl. 74—110 1 Claim



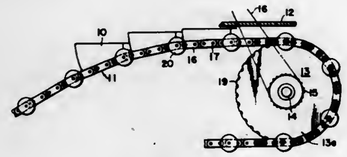
A latching device including a pin retained piston movable axially and resiliently centered within an open-ended cylinder, a lateral surface of the piston being notched near its midpoint to cam one end of a coacting resiliently biased plunger movable transversely through an opening in the cylinder upon displacement of the pis on in either direction, the device being mounted with the axis of the cylinder along a three-dimensional diagonal of a member subject to the forces of shock and the other end of the plunger arranged, when cammed, to engage and lock a movable element associated with the member against operation or movement resulting from forces of shock applied to said member.

3,499,339
ENGAGING AND DISENGAGING MEANS FOR FRICTION DRIVE
Robert A. Moore, Waukesha, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 26, 1968, Ser. No. 716,094
Int. Cl. F16h *15/18*
U.S. Cl. 74—191 10 Claims



A mechanical engaging and disengaging means for a transmission on a tractor having conical engaging internal and external friction facings.

3,499,340
DRIVING APPARATUS FOR MOVING STAIRWAYS
Katsuya Teranishi, Katsuta-shi, and Ken Ichiryu and Mitsuaki Takenoshita, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan
Filed Nov. 16, 1967, Ser. No. 683,572
Claims priority, application Japan, Nov. 16, 1966, 41/105,103
Int. Cl. F16h *7/06, 55/30*
U.S. Cl. 74—229 7 Claims

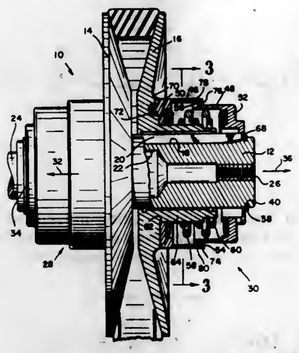


In order to prevent the chain rollers in a driving apparatus for moving stairs or escalators from clashing against the sprocket teeth which drive the chains, the sprocket teeth roots are each provided with resilient members, each of which is inserted into a circular hole formed radially at the teeth root in such a manner that the top portion thereof projects beyond the teeth root by an appropriate amount just sufficient to cushion the chain rollers when they are received between the teeth.

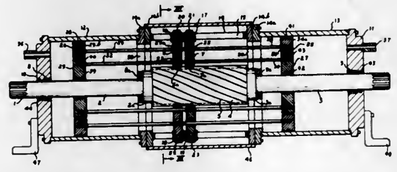
3,499,341
SPRING RETAINER FOR EXPANSIBLE V-PULLEY
David A. Landau, Muncie, Ind., assignor to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 18, 1968, Ser. No. 760,507
Int. Cl. F16h *55/56*; F16f *1/06, 1/12*
U.S. Cl. 74—230.17 12 Claims

A spring retainer cartridge comprising a pair of tubular members, each member having a partially closed end and an open end, the members being telescopically and coaxially disposed with the partially closed ends defining the opposing end walls of the cartridge. A coiled spring

is compressed between the opposing end walls. Each tubular member is provided with peripherally and radially extending lip means adjacent its open end, the lip means being proportioned and arranged so that, when one member is rocked about its axis to one position relative to the other member, the lip means are cooperatively engaged to prevent axial separation of the members, thereby to hold the spring in compression, and when the one member is rocked about its axis to a second position relative to the other member, the lip means are disengaged to permit axial separation of the members by the spring. Preferably, the lip means are so designed that, in said one relative position, relative rocking movement of said members is inhibited. This spring cartridge or retainer is ideally suited for use with a resiliently-expansible V-pulley.



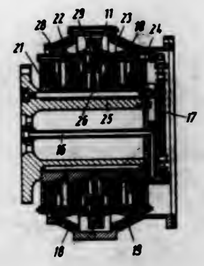
3,499,342
MULTIPLE MOTION CONVERTING ACTUATOR
David R. Ligh, 193 Main St., Madison, N.J. 07940
Filed Mar. 11, 1968, Ser. No. 712,232
Int. Cl. F16h *39/00*
U.S. Cl. 74—410 24 Claims



Two hydraulic pistons subjected to the same fluid pressure, drive a pair of input means connected by female threads with male thread on an output shaft in the same direction so that the same is turned while the pressure forces are evenly distributed over the contacting thread surfaces.

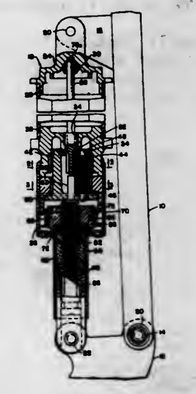
3,499,343
TWO-STEP REDUCTION GEAR TRANSMISSION
Walter Burkhardt, Klaus Haasgen, and Gerhard Bidder, Witten (Ruhr), Germany, assignors to Lohmann & Stolterfoht Aktiengesellschaft, Witten (Ruhr), Germany, a corporation of Germany
Filed Feb. 1, 1968, Ser. No. 702,367
Claims priority, application Germany, Feb. 3, 1967, L 43,960
Int. Cl. F16h *57/00*; F16d *3/14*
U.S. Cl. 74—411 9 Claims

A two-step reduction gear transmission has an input and an output shaft, and therebetween paired distributing and collecting shafts, the distributing shaft of each pair being in driving connection with its collecting shaft by



means of a flexible coupling disposed outside the walls of the transmission housing.

3,499,344
POWER RECLINER ASSEMBLY
Joseph Pickles, Bloomfield Hills, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Filed May 13, 1968, Ser. No. 728,717
Int. Cl. F16h *1/10*
U.S. Cl. 74—424.8 5 Claims

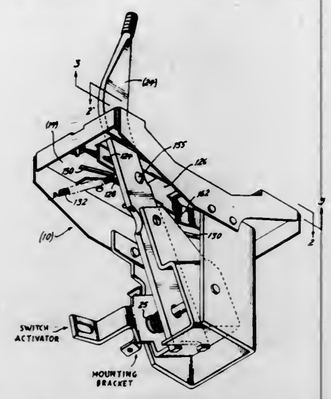


A power unit connected between the seat and back frame of a seat, the assembly including a motor and planetary gearing connecting to a nut and screw device for effecting movement of the seat between erect and reclining position. The drive includes a one-way drive connection which permits movement of the seat from reclining to erect position by direct application of force to the seat.

3,499,345
GEARSHIFT MECHANISM
James F. Hobbins and Emanuel F. Cambria, Philadelphia, Pa., assignors to Hurst-Gambell, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed July 10, 1968, Ser. No. 743,774
Int. Cl. G05g *9/00, 13/00*
U.S. Cl. 74—473 6 Claims

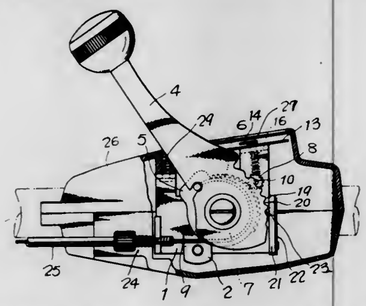
A gearshift mechanism including a rotary latch for preventing the shift stick from entering the second gear

position, except when the stick is moving from low to second gear position, and including means for insuring positive movement of the shift stick into the third gear



position to prevent accidental movement of the stick from second gear position into the neutral position while the engine is operating at high speed.

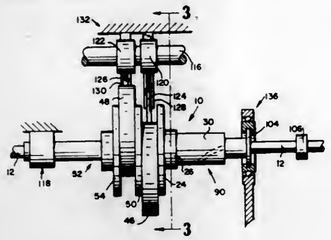
3,499,346
INDICATING SYSTEM OF SPEED-CHANGING CONDITION FOR A BICYCLE
Takuo Ishida and Masayoshi Kise, both % Shimano Industry Co., 77, 3-cho, Oimatu-cho, Sakai, Osaka, Japan
Filed May 22, 1968, Ser. No. 731,096
Claims priority, application Japan, Apr. 19, 1968, 43/32,014, 43/32,015
Int. Cl. F16c *1/10*; G05g *1/08*
U.S. Cl. 74—501 **5 Claims**



Apparatus for indicating the positions of gear shifting lever on a bicycle comprising a frame which is attachable to the bicycle, gear position indicator, a gear shifting lever, which lever is located away from the indicator, and flexible drive mechanism connectable between the lever and the indicator for moving the position indicator in response to movement of the lever.

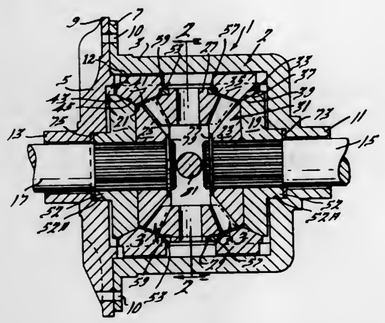
3,499,347
VARIABLE ECCENTRICITY DRIVER
Melvin A. Pearson, 1431 E. Dudley Ave., Indianapolis, Ind. 46227
Filed May 29, 1968, Ser. No. 733,125
Int. Cl. F16h *53/00*
U.S. Cl. 74—568 **18 Claims**

A variable eccentricity driver comprising a cam shaft, a drive cam journalled on an eccentric portion of the cam shaft, and means for selectively positioning the drive cam about the axis of the eccentric portion. The positioning means includes a member connected to the drive cam



and arranged for controlled rocking movement about the axis of the cam shaft. The drive cam is ideally suited for driving the piston of a variable stroke pump or other follower means.

3,499,348
LOCKING DIFFERENTIAL
Perry B. Hartupee, Royal Oak, Mich., assignor to Powr-Lok Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 9, 1967, Ser. No. 673,751
Int. Cl. F16h *1/44*
U.S. Cl. 74—710.5 **18 Claims**

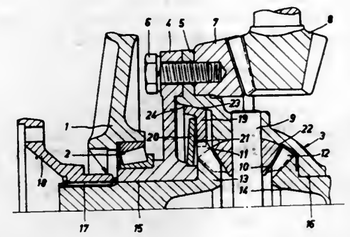


A locking differential without a spider pin has two or more floating pinions meshing with side gears. The pinions have hub means which form a part of a cam means for locking and unlocking staggered cone type clutches to permit drive to the axles or normal differentiation.

3,499,349
FRICTION BLOCKING DIFFERENTIAL FOR VEHICLES
Otto Hausinger, Im Grimmle 8, Geringen, Wurttemberg, Germany
Filed May 9, 1968, Ser. No. 727,952
Claims priority, application Germany, May 9, 1967, 1,630,931
Int. Cl. F16h *1/44*
U.S. Cl. 74—710.5 **10 Claims**

Limited slip is obtained by means of a friction element spring biased into engagement with the differential cage and secured for rotation with one of the differential side

bevel gears by means of teeth that interengage with the side bevel gear teeth. The side bevel gear teeth may extend beyond the bearing surface for the differential



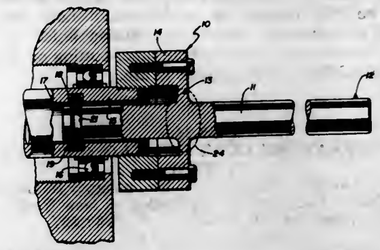
bevel gears, an annular cup spring may provide the bias and the friction surfaces may be conical. The cage friction surface may be carried by a friction ring mounted on the cage for rotation therewith.

3,499,350
BORING BAR WITH MEANS TO REDUCE VIBRATIONS
Robert S. Hahn, Northboro, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,583
Int. Cl. F16k *31/12*; E21b *33/06*
U.S. Cl. 77—58 **6 Claims**

This invention has to do with the boring bar and, more particularly, the machine tool apparatus in which unwanted vibrations are reduced to a minimum wherein the boring bar shaft extends from both sides of a mounting flange having the cutting tool mounted on one end of the shaft and a vibration damping means located at the other end of the shaft.

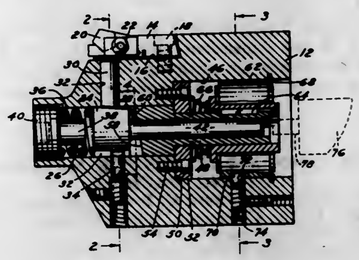
3,499,351
BORING BAR WITH MEANS TO REDUCE VIBRATIONS
Alden H. Jacobson, Princeton, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,599
Int. Cl. B23b *29/04*
U.S. Cl. 77—58 **5 Claims**

This invention has to do with a boring bar and, more particularly, to a machine tool apparatus in which unwanted vibrations are reduced to a minimum wherein the boring bar shaft extends from both sides of a mounting flange having the cutting tool mounted on one end of the



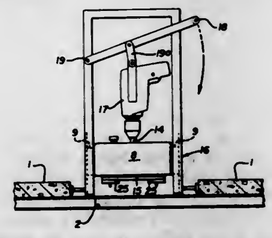
shaft and a vibration damping means located at the other end of the shaft.

3,499,352
AUTOMATIC BORING BAR ADJUSTMENT MEANS
Victor Milewski, Birmingham, and Terry L. Sletten, Westland, Mich., assignors to The Valeron Corporation, a corporation of Michigan
Filed Apr. 18, 1968, Ser. No. 722,448
Int. Cl. B23b *29/02, 51/00*; B23d *77/00*
U.S. Cl. 77—58 **12 Claims**



A boring bar including an axially reciprocal member for radially setting the cutting diameter of the tool and having means for automatically adjusting the relative axial disposition thereof between end and intermediate shoulder stopped positions for selective retraction and/or compensating adjustments as required thereof.

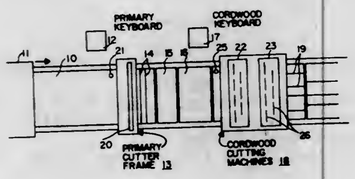
3,499,353
MACHINE FOR CUTTING OBROUND HOLES
Harvey A. Ewell, Fairfax, Calif. (15980 Mt. Rose Road, Reno, Nev. 89502)
Filed Feb. 14, 1968, Ser. No. 705,419
Int. Cl. B23b *51/08, 51/04*; B26d *1/46*
U.S. Cl. 77—65 **7 Claims**



A pair of hole saws is combined in a novel manner with a band saw and a specially constructed driving mechanism. The three saws are operated simultaneously as a

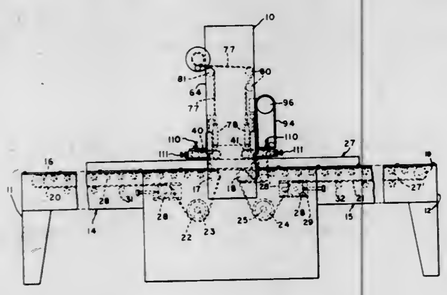
unit by the mechanism and will cut a hole of generally oblong configuration, having two parallel sides and semicircular ends in one operation, and which is known in the building industry as an "obround" hole. My invention is especially adapted for cutting holes of this shape in narrow duct work where other cutting or sawing means are difficult or impossible to use.

3,499,354
TEMPERATURE COMPENSATED CONTROL SYSTEMS
John D. Layman, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,407
Int. Cl. B26d *5/30*
U.S. Cl. 83—72 13 Claims



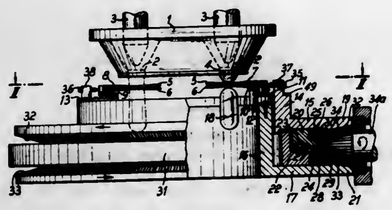
In a system for controlling the automatic processing of articles whose dimensions vary as a function of temperature, techniques are disclosed for modifying the control to compensate for such dimensional variations.

3,499,355
HOLD-DOWN APPARATUS FOR MATERIAL CUTTING MACHINE
James G. Wiatt and Edward C. Bruns, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 8, 1967, Ser. No. 636,968
Int. Cl. B26d *7/06*
U.S. Cl. 83—155 16 Claims



A hold-down apparatus for exerting a predetermined downward force on material, which is advanced longitudinally by a pair of endless bands relative to a cutting blade. The cutting blade is moved transversely through a transverse passage between the endless bands. The hold-down apparatus includes a secondary endless band disposed adjacent to the endless passage on each side of the cutting blade and having substantially the same width as the endless band above which it is disposed. The pair of secondary endless bands is supported by suitable means from a shaft, which is supported on a bridge. The bridge supports the cutting blade and is disposed above the transverse passage. A hydraulic cylinder is attached to the shaft to exert a counter-balancing force relative to the mass of the secondary endless bands and their support structure. The force exerted on the material by the secondary endless bands may be varied by varying the counter-balancing force of the hydraulic cylinder.

3,499,356
CUTTING ARRANGEMENT
Kurt Becker, Obernkirchen, Germany, assignor to Firma Hermann Heye, Oberakirchen, Germany
Filed July 20, 1967, Ser. No. 654,791
Claims priority, application Germany, July 27, 1966, H 60,077
Int. Cl. B26d *5/20*
U.S. Cl. 83—355 14 Claims

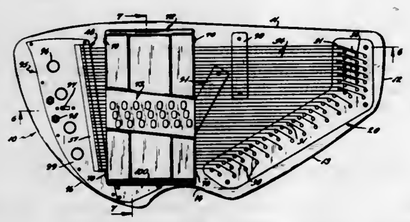


First and second cutters are rotated in opposite directions along a circular cutting path so that the cutters overlap in two cutting positions located at two cutting points of the circular cutting path. Workpieces such as highly viscous glass ropes are fed along feeding paths intersecting the cutting path at the cutting points so that the workpieces are cut by the cutters at the cutting points.

ERRATUM

For Class 83—451 see:
Patent No. 3,499,360

3,499,357
MULTI-STRINGED MUSICAL INSTRUMENT
Glen R. Peterson, Jr., Summit, N.J., assignor to Oscar Schmidt-International, Inc., Union, N.J.
Filed July 21, 1967, Ser. No. 655,143
Int. Cl. G10d *1/12*
U.S. Cl. 84—285 9 Claims

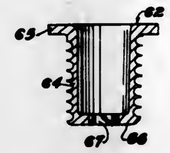


A zither designed to employ a large number of strings has a solid body, a removable pin block, a combined lower bridge and string anchor recessed in the face of the instrument, and a chord bar mechanism in which the chord bars may be easily interchanged.

ERRATA

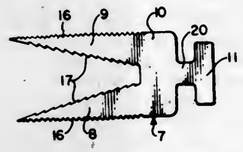
For Classes 84—402 and 84—434 see:
Patents Nos. 3,499,361 and 3,499,362

3,499,358
RADIALLY DEFORMABLE FASTENING MEMBER
John S. Frye, Chamblee, Ga. 30005, and James B. Fuss, College Park, Ga. 30337
Original application Dec. 22, 1966, Ser. No. 605,144, now Patent No. 3,410,588, dated Nov. 12, 1968. Divided and this application Apr. 4, 1968, Ser. No. 718,674
Int. Cl. F16b *39/30, 39/16, 35/00*
U.S. Cl. 85—1 3 Claims



A one-piece fastener for connecting together rigid elements including a tubular body portion permitting radial deformation within the elastic limit of the fastener to compensate for variances in the rigid elements.

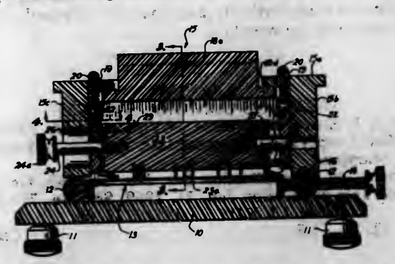
3,499,359
EASY PULL STAPLE
John J. Yrjanainen, 1214½ Pleasant St., De Kalb, Ill. 60115
Filed Oct. 23, 1968, Ser. No. 769,962
Int. Cl. F16b *15/00*
U.S. Cl. 85—49 2 Claims



This staple, designed for driving into wood, has a T-shaped driving head on the outer end which in no way interferes with driving the staple in, enables easy pulling out with a claw hammer or crow-bar, whereas the legs of the staple are designed to take a good hold in the wood by virtue of the transverse serrations on the outer parallel sides of the two legs and the saw-toothed projections on the outwardly diverging inner sides. The relatively large rectangular head end portion of the body of the staple gives adequate support for the legs so that they will not spread perceptibly when driven into the wood. The staple is punched from sheet metal and thereafter subjected to hardening, so it can be produced economically and sold at a low price.

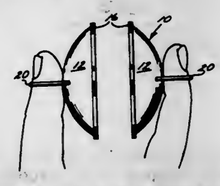
3,499,360
PATTERN CUTTING DEVICE AND INDEXING SYSTEM
Charles L. Davis, 6955 Y St., Lincoln, Nebr. 68505
Filed Feb. 12, 1968, Ser. No. 704,897
Int. Cl. B26f *1/04*
U.S. Cl. 83—451 10 Claims

A combination immunoelectrophoresis and immunodiffusion pattern cutting device and indexing system has a leveling table suitable for carrying a tray containing agar thereon. The pattern cutter is slidably mounted on the leveling table above the agar. The pattern cutter includes a plurality of patterns, each of which may be alternately selected and positioned from a location within the device for pattern cutting with respect to the agar on the tray.



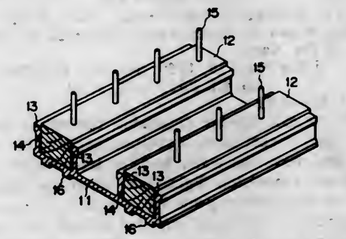
A pattern is cut in the agar by manually pressing down on an extended upper surface of the pattern cutter construction. Indexing marks on the table cooperate with the cutter to facilitate optimal spacing of the patterns as they are cut in the agar.

3,499,361
RHYTHM INSTRUMENT
Paul D. Harleman, 729 South St., Long Beach, Calif. 90805
Filed July 2, 1968, Ser. No. 741,937
Int. Cl. G10d *13/06*
U.S. Cl. 84—402 8 Claims



A rhythm instrument comprising a pair of elements having concave walls defining the interiors and rims percussively interengageable to produce a sound, the wall of each element including an opening to acoustically modify the sound.

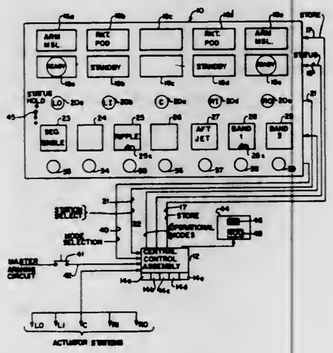
3,499,362
PIN AND RAIL ASSEMBLY
Eizi Harada, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan, a corporation of Japan
Filed Apr. 2, 1968, Ser. No. 718,970
Claims priority, application Japan, Apr. 7, 1967, 42/22,222
Int. Cl. G10c *3/12*
U.S. Cl. 84—434 10 Claims



A pin and rail assembly included in the keyboard system of a piano comprises a metal rail having one channel or two parallel channels each of which is provided with

two elongated clamping members (clampers) protruding all along the inner side wall of the channel at the upper edge thereof, elongated wooden members disposed in the channel in a manner to be securely supported by the clampers and contacted with the bottom thereof, and a plurality of pins vertically and spatially disposed on the elongated wooden member.

3,499,363
WEAPONS CONTROL SYSTEM
Michael J. Lauro, Brentwood, N.Y., assignor to Fairchild Hiller Corporation, Farmingdale, N.Y., a corporation of Maryland
Continuation of application Ser. No. 507,980, Oct. 18, 1965. This application Jan. 21, 1969, Ser. No. 796,283
Int. Cl. F41f 5/00, 5/02, 3/04
U.S. Cl. 89—1.5 29 Claims



A weapons control system for use with an aircraft having a plurality of weapon firing stations, comprises a central control assembly which may be programmed by a plurality of plug boards each corresponding to one of the stations. According to the programming of the control assembly, a visual display within the cockpit identifies the weapons loaded at each of the stations as well as the status of such weapons. When a particular weapon is selected for firing, an additional visual display, controlled by the control assembly, provides a visual display of each of the possible operational modes of the weapon. Thereafter, any of the displayed operational modes may be selected by the pilot so as to enable operation of the selected weapon pursuant to the selected mode.

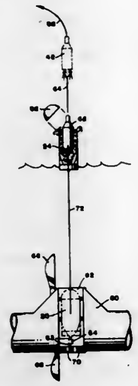
3,499,364
APPARATUS FOR SUBMERGED LAUNCHING OF MISSILES
Charles L. D'Ooge, Citrus Heights, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 19, 1959, Ser. No. 854,208
Int. Cl. F41f 3/00, 3/04
U.S. Cl. 89—1.81 7 Claims

1. Water exit capsule apparatus, for use in conveying an air flight rocket from a position beneath the water to a position above the water and for launching the rocket into rocket propulsion flight, said apparatus comprising:

(a) an elongated capsule for containing the rocket and forming a buoyancy impelled vehicle for conveying the rocket in a nose up attitude along a vertical trajectory to the surface of the water and therebeyond to a position in which the capsule is fully emerged from the water,

(b) means disposed in the capsule for supporting said rocket in spaced relationship to the interior wall of the capsule,

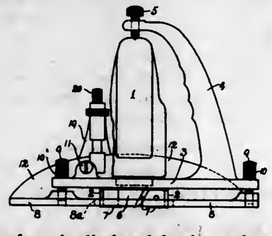
(c) means for firing the rocket at a moment when the capsule is fully emerged from the water to thereby pressurize the space between the rocket and interior wall of the capsule and rupture the capsule to permit egress of the rocket,



(d) the construction and arrangement of the capsule being such that it ruptures along predetermined rupture lines, said predetermined rupture lines including a plurality of longitudinally extending ruputre lines substantially co-extensive with the length of the rocket in its supported position within the capsule, said plurality of rupture lines being disposed around the lateral wall of the capsule in angularly spaced relationship about the capsule axis, whereby the pressurized rocket propulsion gases which rupture the capsule are momentarily released along the length of the rocket to prevent damage to the rocket by the gases, and

(e) releasable means for circumferentially fastening said capsule against rupture along said longitudinally extending rupture lines, said releasable means being actuable to release the capsule for rupturing in timed relationship to the firing of the rocket.

3,499,365
ROUTER PLANES
Victor E. Needham, 69 Gertrude Road, West Bridgford, Nottingham, England
Filed Sept. 27, 1965, Ser. No. 490,603
Int. Cl. B23d 41/02, 41/04; B27c 5/10
U.S. Cl. 90—12 10 Claims

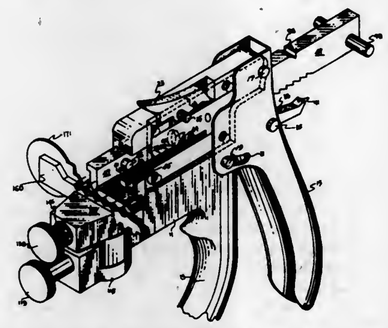


A router plane is disclosed having a base plate upon which is detachably mounted a motor and below which is disposed a sole plate adjustable with respect to the base plate to regulate the depth of cut. A handle portion is connected to the base plate and extends upwardly therefrom and into overlying relationship with the motor. The overlying portion of the handle is interconnected with the motor and forces the motor downwardly into firm seating engagement with the base plate.

A cutter is disposed in an opening in the sole plate and the sole plate may be of one piece or two-piece construction adjustable on each side of the cutter.

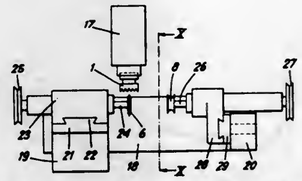
Alternatively, the sole plate may be connected to an upwardly sloping portion of the base plate for sliding movement therealong.

3,499,366
KEY CUTTING MACHINE
Roy Clifton Spain, P.O. Box 190, Salem, Va. 24153
Filed July 17, 1967, Ser. No. 653,856
Int. Cl. B23d 41/08; B23c 1/16; B26d 7/00
U.S. Cl. 90—95 11 Claims



A key cutting machine has a rotatably mounted key holder where a key blank may be mounted for cutting. The key holder is positioned for the desired angle of the cut, and is also positioned to cut the desired V bit. The broach is then advanced to cut the selected V bit to the desired bitting level.

3,499,367
PROCESS AND APPARATUS FOR MANUFACTURING GEARS
Paul Leo Glocker, Grenchen, Solothurn, Switzerland
Original application Aug. 20, 1964, Ser. No. 390,932, now Patent No. 3,345,883, dated Oct. 10, 1967. Divided and this application Aug. 15, 1967, Ser. No. 660,730
Claims priority, application Switzerland, Aug. 23, 1963, 10,395/63, 10,396/63
Int. Cl. B23f 5/20
U.S. Cl. 90—9.6 6 Claims

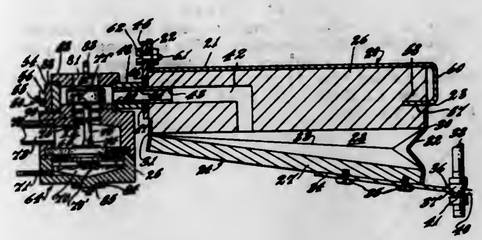


A process for manufacturing a gear by first cutting conventional gear teeth from a gear blank and then cutting the conventional gear teeth at the tip portions thereof with a rotary cutting tool which machines opposed faces of the tip portions of the gear teeth to surface areas which intersect both a plane perpendicular to the gear axis and a cylinder coaxial with the gear along a pair of lines which converge toward each other in a predetermined direction; and a machine for carrying out the process.

ERRATUM

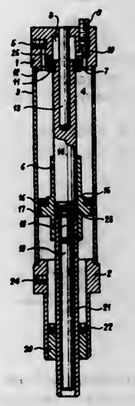
For Class 91—335 see:
Patent No. 3,499,752

3,499,368
PNEUMATIC APPARATUS HAVING DETACHABLE MOUNTING MEANS
James S. Ballantine, P.O. Box 307, Absecon, N.J. 08201
Filed Dec. 21, 1967, Ser. No. 692,535
Int. Cl. F15b 11/16, 13/042; F01b 19/00
U.S. Cl. 91—418 2 Claims



The invention relates to pneumatic apparatus having detachable mounting means including differential diaphragm devices such as differential valves and pilot operated differential valves. The differential diaphragm valve device is positioned at the front of the pneumatic apparatus, and the pneumatic apparatus is engaged and supported by a groove or slot which surrounds a tongue on a support, the opposite end of the pneumatic apparatus being supported by securing a bracket to a slotted or perforated flange on the support.

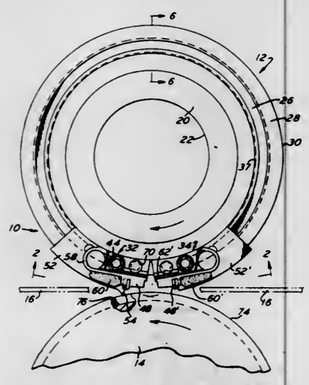
3,499,369
PNEUMATIC PUNCH PRESS
Michel Joseph, Rue du Midi 1, 1450 Sainte-Croix, Switzerland
Filed Jan. 24, 1968, Ser. No. 700,160
Claims priority, application Germany, Mar. 6, 1967, T 33,353
Int. Cl. F15b 15/26; F01b 31/00; F16j 1/10
U.S. Cl. 92—16 7 Claims



In a punch press with accelerated piston are provided a main cylinder in which moves an anvil, a secondary cylinder coaxial with the first and positioned in an extension of

the first cylinder, and a piston frictionally sliding in at least a part of the secondary cylinder, there being a channel connecting the main cylinder to the secondary cylinder through an adjustable narrowed section, so that when the pressure in the secondary cylinder is sufficient for moving the piston against the frictional force retaining it in the secondary cylinder, the piston leaves the secondary cylinder thus placing the two cylinders in communication with the result that the piston suddenly subjected to the pressure existing in the main cylinder is accelerated and strikes the anvil.

3,499,370
TAB CUTTER
Henry E. Kulwicki, Willingboro, and Henry J. Gugolz, Haddonfield, N.J., assignors to The Langston Company, Camden, N.J., a corporation of New Jersey
Filed Mar. 11, 1968, Ser. No. 712,298
Int. Cl. B31b 1/14; B23d 25/12; B26d 1/56
U.S. Cl. 93—58.2 6 Claims



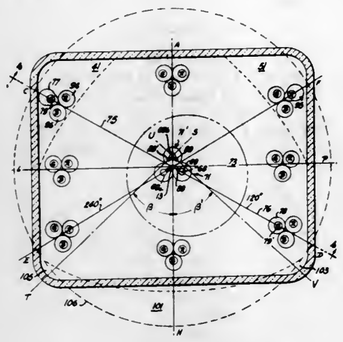
A device for cutting tabs on paperboard box blanks. The device includes a knife holder pivotably supported from a body and cam means for selectively pivoting the holder. The pivotable support may be in the form of a leaf spring.

3,499,371
MARKERS
Nelson Jonnes, Stillwater, and Robert C. Vanstrum, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,225
Int. Cl. E01f 9/00
U.S. Cl. 94—1.5 8 Claims



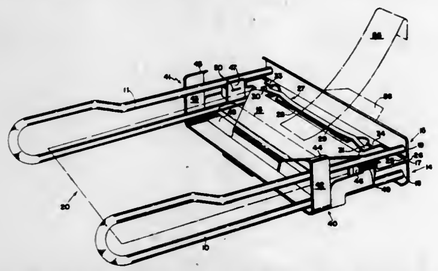
Reflective and reflex-reflective traffic markers especially adapted for use on pavement surfaces to delineate traffic lanes, center lines and the like are disclosed, the markers comprising a base member for attachment to a pavement and having a channel formed in its upper surface for receiving a horizontally reflex-reflecting marker.

3,499,372
CATHODE RAY TUBE SCREEN EXPOSURE
Kenneth L. Stauntos, Columbus Grove, Ohio, assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,563
Int. Cl. G03
U.S. Cl. 95—1 7 Claims



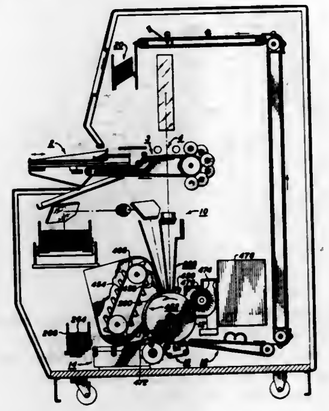
An optical system utilized for providing a tri-dot patterned color cathode ray tube screen wherein the dot patterns are modified in discrete screen areas to improve the registration of the electron beams with their respective phosphor dots thereby improving color purity of the display. The light source in the optical system used in effecting screen exposure has contiguously oriented light control device with portions formed to provide both symmetrical and unsymmetrical exposure illumination. Thus, by utilizing unsymmetrical exposure, patterns of elongated dots are disposed on different edge oriented portions of the screen for each of the respective phosphors to achieve improved beam dot registration.

3,499,373
PHOTOGRAPHIC APPARATUS
Ezio D. Cotta, Dorchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,832
Int. Cl. G03b 17/50; G03d 3/00
U.S. Cl. 95—13 21 Claims



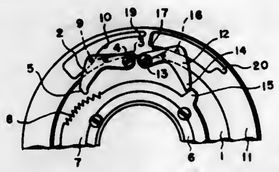
A photographic processing apparatus in which a pair of cantilever springs are attached to opposite ends of a pair of rigid spreader members. The spreader members being utilized for distributing a processing liquid between a pair of superposed photographic sheets. In performing this function a leaf spring device is provided for preventing leakage of the processing liquid from between the sheets as well as regulating the relative spacing between the spreader members.

3,499,374
XEROGRAPHIC PRINTER
Thomas H. Galster, Syracuse, Allen M. Hitchcock, Palmyra, and Gordon P. Tallie, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 1, 1965, Ser. No. 436,168
Int. Cl. G03g 13/22
U.S. Cl. 355—3 4 Claims



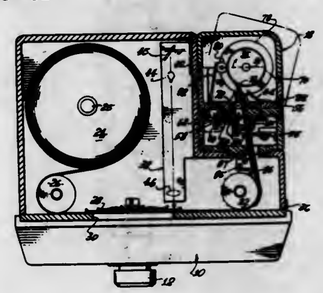
Apparatus for conforming a data processing card to the surface of a xerographic drum during the transfer step including a plurality of continuous strands held in contact with the drum surface.

3,499,375
SHUTTER ALARM DEVICE FOR FLASH PHOTOGRAPHING
Tatsuo Kobayashi, Kaizuka, and Hiroshi Ueda, Nara, Japan, assignors to Minolta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan, a Japanese corporation
Filed May 19, 1967, Ser. No. 639,806
Claims priority, application Japan, May 21, 1966, 41/32,386; May 26, 1966, 41/33,824; June 1, 1966, 41/35,273
Int. Cl. G03b 19/00, 3/00, 17/00
U.S. Cl. 95—11 3 Claims



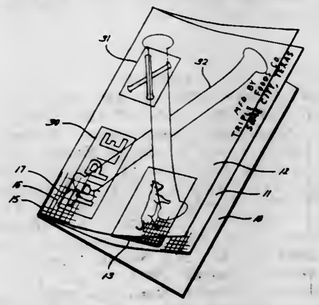
An alarm device for a photographic camera which warns the operator if the exposure setting is not properly set for making a flash exposure. The alarm device is made up of a first sensing member which is pivotably mounted on the shutter casing of the camera and has a sharpened tip, and a click cam secured to the distance control ring of the camera which is engageable with the sharpened tip. The guide number ring of the camera has a cam surface which cooperates with a pin on the sensing member to control the position of the sensing member with respect to the click cam in accordance with the particular setting of the guide number ring and the distance ring. If the distance control ring is moved beyond the maximum allowable distance for making a flash exposure, the sharpened tip of the sensing member will engage the click cam and produce a clicking noise thereby warning the operator that the camera is not properly set for making a flash exposure. A second sensing member which is also pivotably mounted on the shutter casing, engages the distance control ring to prevent further rotation of the ring if the operator has reached the minimum allowable distance setting for making a flash exposure.

3,499,376
REMOVABLE CASSETTE CAMERA WITH FILM SEVERING MECHANISM
William R. Swift, Placenta, Calif., assignor to Coleman Engineering Company, Inc., Santa Ana, Calif., a corporation of California
Filed Feb. 13, 1967, Ser. No. 615,414
Int. Cl. G03b 19/04
U.S. Cl. 95—31 14 Claims



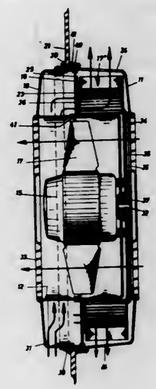
A camera having a removable cassette in which the exposed film is wound and having a built-in cutter to sever the exposed film to permit removal of the cassette from the camera body. A threading mechanism is also provided to thread the cut end of unexposed film into a new cassette.

3,499,377
ARTWORK PRODUCTION SYSTEM
Max F. Esses, 3262 Brainard, Apt. 10, Houston, Tex. 77006
Filed Jan. 3, 1967, Ser. No. 606,930
Int. Cl. G03b 15/00, 27/02
U.S. Cl. 95—85 2 Claims



A system of preparing production artwork to be photographed. The artwork assembly is made up of an illustration board, a reproduction type proof sheet, a transparent sheet and an additional sheet superimposed on the other sheets. Each sheet has corresponding grids which are photographically non-reproductively printed on it. These grids are used in the alignment and positioning of artwork on the component sheets.

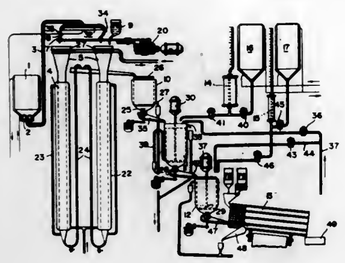
3,499,378
VENTILATING FAN UNIT
Ludwig Baumann, Niederhelfenschil, St. Gall, Switzerland, and Benno Schutze, Frankfurt am Main, Germany; said Schutze assignor to said Baumann
Original application Jan. 4, 1967, Ser. No. 607,269, now Patent No. 3,421,428, dated Jan. 4, 1969. Divided and this application Feb. 5, 1968, Ser. No. 736,962
Claims priority, application Switzerland, Jan. 6, 1966, 274/66; Nov. 30, 1966, 17,170/66
Int. Cl. F24f 9/00; F04d 25/12
U.S. Cl. 98—33 10 Claims



This disclosure provides a ventilating fan unit insertable into an opening of a building. The fan unit includes a housing having a shell portion located on the inside of the building and a shell portion located on the outside of the building. Each of the shell portions has peripherally and axially located openings to provide means for air inlet and air outlet. The separating means is located within the said housing to form a first passageway along the periphery thereof and a second air passageway axially of the fan unit. A drive means is mounted within the housing to operate a radial fan member within the first passageway and an axial fan member within the second air passageway. Means are provided to direct the air flow through the passageways of the fan unit.

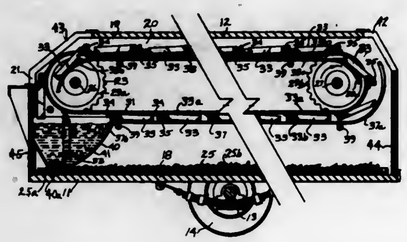
3,499,379
INSTALLATION FOR PRODUCING PROTEIN SYNTHETIC GRANULAR CAVIAR
Alexandr Nikolaevich Nesmeyanov, Leninskie Gory, MGU, korpus K, kv. 105; Sergei Vasilievich Rogozhin, Ulitsa Vavilova 55/5, kv. 52; Grigory Lvovich Slonimsky, Ulitsa Chkalova 1/4, kv. 16; Vladimir Ivanovich Misjurev, Poselok Krasny Mayak 16, kv. 15; Vladimir Borisovich Tolstoguzov, B. Polyanka 34, kv. 6; Vladimir Ilich Malakhov, Sadovo-Chernograyazskaya ulitsa 5/9, kv. 101; Natalia Vladimirovna Batenina, Leninsky prospekt 60/2, korpus 7, kv. 73; Vera Alexandrovna Ershova, Staro Konjushenny pereulok, 14, kv. 1; Vladimir Sigizmundovich Dzyavgo, Ulitsa Vavilova 17, kv. 157, all of Moscow, U.S.S.R.; and Vladimir Ivanovich Grekov, Podolsky Palon, Pavlovskoe 39, Moskovskaya Oblast, U.S.S.R.
Filed Aug. 9, 1967, Ser. No. 659,499
Claims priority, application U.S.S.R., Aug. 10, 1966, 1,096,804
Int. Cl. A23b 9/00; A23l 1/10
U.S. Cl. 99—234 15 Claims

The installation produces protein synthetic granular caviar from an aqueous solution, suspension or emulsion of food substances; it comprises a vessel adapted to contain a cooling liquid non-miscible with water, means for delivering at least one stream of liquid food substances and for breaking it into drops in said vessel thereby congealing the drops in said cooling liquid and



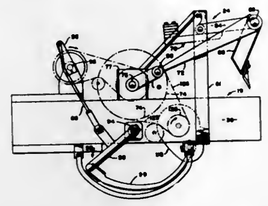
producing granules, means for accumulating the granules, means for washing said granules, means for spraying said granules with a tanning agent thereby forming a membrane on the surface of said granules and means for dyeing and flavoring said granules.

3,499,380
AUTOMATIC FOOD COOKING MACHINE
Nelson L. Gongwer, Wakarusa, Ind. (2020 Ida Road, Elkhart, Ind. 46514)
Filed Oct. 6, 1967, Ser. No. 673,335
Int. Cl. A47j 37/04, 37/10
U.S. Cl. 99—346 10 Claims



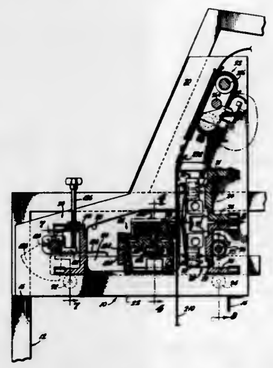
An automatic food cooking machine comprising a frame supporting a housing having an unobstructed opening with a burner at the bottom thereof. Mounted in the opening of the housing are a pair of spaced parallel endless conveyor chains supported on sprockets connected to a pair of spaced shafts driven by a motor. A plurality of spaced rods are connected normal to the conveyor chains and a basket for holding food is pivotally supported by each of the rods. Preferably a sauce tank disposed above the burner is supported at one end of the housing at the end of travel of the conveyor chains. Guide rails longitudinally mounted in the housing between the spaced shafts and the conveyor chains support the basket parallel to the burner. When each of the baskets reaches the end of one of the rails, each of the baskets pivots from a horizontal position to a vertical position and into the sauce tank dipping the basket and the food into the sauce.

3,499,381
HARVESTER AND BALER COMBINATION
Albert M. Best, New Holland, and Charles M. Kline, Reinholds, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,686
Int. Cl. B30b 15/00, 1/26
U.S. Cl. 100—100 3 Claims



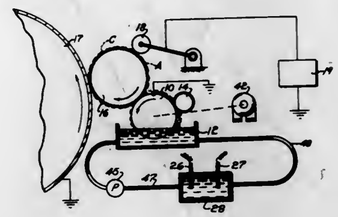
An agricultural machine adapted to travel through a field and having a rotatable flail-type pickup at a forward end which is adapted to sever crop material and deliver it into a bale case in line with the pickup, and a baling mechanism operable in the bale case for forming the crop material into bales.

3,499,382
MODULAR ASSEMBLY FOR HIGH SPEED CHAIN PRINTERS
John T. Potter, Plainview, Thomas P. Foley, Huntington, and Carmine J. Antonucci, Uniondale, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Original application Nov. 24, 1965, Ser. No. 509,501. Divided and this application Nov. 24, 1967, Ser. No. 703,499
Int. Cl. B41j 1/30
U.S. Cl. 101—93 7 Claims



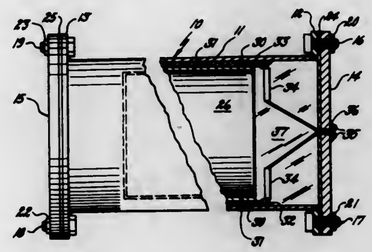
This disclosure contains drawings and a description of a high speed chain printer in which the print chain is established by a plurality of integrally cast printing slugs clipped about the edges of a reinforced elastomeric timing belt. The print chain is supported relative to a plurality of print hammers by a frame featuring a modular or subassembly construction in which the basic components are formed from a length of precision stock of the same cross-section. Also, the printer includes a substantially inertialess control for web or paper feed by employing a paper feed clock in format control loop formed of paper and driven directly by the same tractors which feed the paper web.

3,499,383
DAMPENING SYSTEM FOR LITHOGRAPHIC PRINTING PRESS
Donald L. Southam, Brecksville, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,541
Int. Cl. B41l 23/16
U.S. Cl. 101—148 4 Claims



Dampening system for lithographic printing presses including means for monitoring the electrical resistance of a film on a dampening roll of the system to indicate changes in dampening fluid supply with compensation for changes in the specific resistivity of the dampening fluid.

3,499,384
LIQUID MASS DISSEMINATOR
Louis Zernow, Glendora, and Ronald E. Brown, Altadena, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 13, 1968, Ser. No. 705,043
Int. Cl. F42b 25/12
U.S. Cl. 102—6 6 Claims



An apparatus for disseminating liquids, having a rupturable container in which the liquid mass to be disseminated intact is stored. The container is launched into a high velocity air stream ranging from sonic to supersonic speeds. The container is then ruptured by explosive means and the liquid mass is ejected, as an intact mass, into the high velocity air stream. Thereby, the liquid mass is disseminated rapidly over a wide area.

3,499,385
AIRCRAFT PARACHUTE FLARE
Bernard E. Douda, Bloomfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 12, 1968, Ser. No. 704,745
The portion of the term of the patent subsequent to Nov. 18, 1985, has been disclaimed
Int. Cl. F42b 25/04; C06d 1/10
U.S. Cl. 102—35 1 Claim

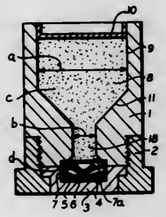
An aircraft parachute flare comprising a cylindrical casing having pyrotechnic material with a central cavity therethrough and having at least two supporting bands

around said cylindrical casing for attaching said flare to a parachute whereby upon descent of said parachute the



longitudinal axis of said central cavity is disposed parallel to the ground.

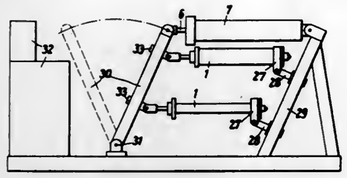
3,499,386
PRIMER
Hans Stadler, Nuremberg, and Heinz Gawlick and Hellmut Bendler, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany
Continuation of application Ser. No. 326,457, Nov. 27, 1963, which is a continuation of application Ser. No. 612,049, Jan. 26, 1967. This application Dec. 18, 1967, Ser. No. 691,647
Claims priority, application Germany, Nov. 29, 1962, D 40,379
Int. Cl. F42c 19/08
U.S. Cl. 102—86.5 4 Claims



A prime comprising a body of priming composition composed of a thermal mixture and an initial detonating agent and a body of booster material composed of thermal mixture substantially free of initial detonating agent.

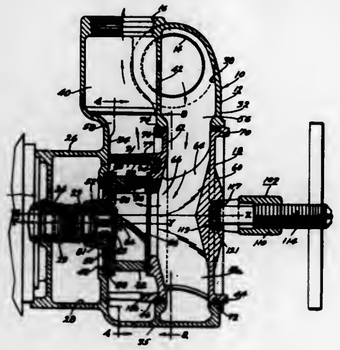
3,499,387
PLASTIC INJECTION MACHINES
Richard Zippel, 12–17 Bremer Strasse, 344 Eschwege, Germany
Original application Feb. 17, 1966, Ser. No. 528,120. Divided and this application May 2, 1968, Ser. No. 739,987
Claims priority, application Germany, Feb. 19, 1965, Z 11,347
Int. Cl. F04b 49/08, 17/00; F04d 15/00
U.S. Cl. 103—38 2 Claims

A plastic injection machine having a plurality of piston pumps for feeding a plurality of plastic material components in the required relative proportions, quantities and through-put rates to a mixing chamber. Non-return valve means associated with each pump to control the discharge of the plastics material therefrom in dependence on the pressure of the same in the pump. Each of the pumps is mounted with one end adjustably connected by a pivoted coupling to a respective guide channel in a pivotable frame, and the other end similarly connected



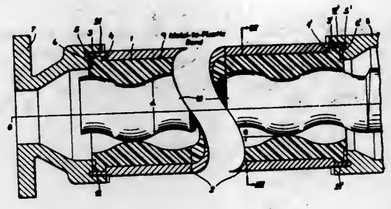
to a fixed frame: the stroke of each pump being determined by the position at which said ends are connected to their respective frames which are connected to a base member. The pumps being actuated by a cylinder-piston arrangement mounted between said frames, at the ends of the frames remote from the base member.

3,499,388
CENTRIFUGAL PUMP
Harry A. Eberhardt, Paoli, Pa., assignor to Hale Fire Pump Company, Conshohocken, Pa., a corporation of Pennsylvania
Filed June 13, 1967, Ser. No. 645,708
Int. Cl. F04d 1/00, 29/02; F15j 15/40
U.S. Cl. 103—103 19 Claims



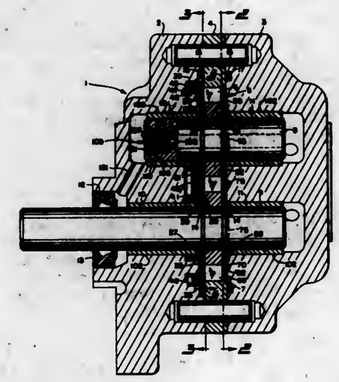
A centrifugal pump comprising a one-piece casing having an intake side with at least one inlet port and a discharge side with a discharge port, a volute assembly mounted in the casing comprising a suction volute section and a discharge volute section, an impeller mounted in the discharge volute section. Chambers, passages and passageways are provided in the various parts of the pump so that flow of fluid is directed through the pump from the inlet to the discharge port. The volute includes a volute tongue which in the present instance is a blade-like insert positioned closely adjacent the trace of the outer edge of the impeller blades, the juncture of the blades and inner edge defining a cut-off point. The volute assembly is mounted for rotation about an axis eccentric to the rotational axis of the impeller for adjustment of the volute relative to the impeller blades.

3,499,389
WORM PUMP
Fritz Seeberger, Kirchhellen, and Werner Wehling, Dorsten, Germany, assignors to Seeberger K.G., Kirchhellen, Germany, a corporation of Germany
Filed Apr. 17, 1968, Ser. No. 722,087
Claims priority, application Germany, Apr. 19, 1967, S 109,417; Aug. 12, 1967, S 111,327
Int. Cl. F04c 5/00, 17/12
U.S. Cl. 103—117 6 Claims



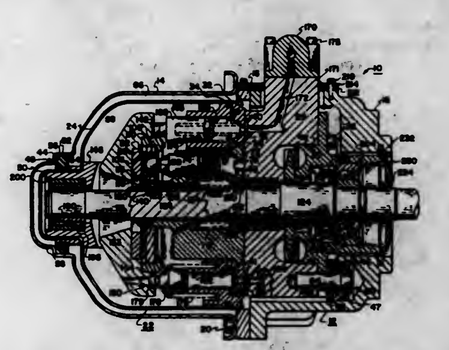
The stator of a worm pump, in the form of a generally cylindrical plastic body with a twisted channel and a pair of end flanges, is held in a metallic housing by adhesive bonding and by a pair of annular clamping heads which bear upon the end flanges and upon abutments on the housing that limit their axial displacement toward each other so as to prevent excessive compression of these flanges. The stator body may be of uniform thickness, with the inner housing surface shaped to conform to its channel, and a cooling space may be formed between this peripheral surface and an outer cylindrical jacket.

3,499,390
ROTARY PUMP
Edward A. Prijatel, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 11, 1968, Ser. No. 720,562
Int. Cl. F04c 1/04; F04b 21/08
U.S. Cl. 103—126 20 Claims



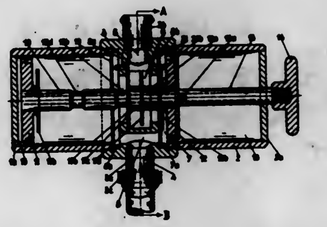
A rotary pump (or motor) having a wear plate and thrust plate in sealing engagement with opposite sides of the pump impellers to prevent fluid leakage between the high and low pressure zones, with vent grooves in the inner face of the pump housing engaged by the thrust plate on the low pressure side for relieving high pressure therebehind to provide a substantial balance in the pressure acting on opposite sides of the thrust plate. Relieved portions on the outer periphery of high pressure side of thrust plate provide a large zone of high pressure in the pump cavity which may be communicated with intermediate compartments behind the wear plate through apertures therein; and a low pressure relief valve in bore of pump shaft maintains sufficient back pressure against shaft seal to keep out air and foreign matter.

3,499,391
POWER TRANSMISSION
Wu Wai Chao, Bloomfield Hills, Robert W. Stephan, Detroit, and Walter J. Zoya, Troy, Mich., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,220
Int. Cl. F04b 1/02, 1/16, 39/00
U.S. Cl. 103—162 2 Claims



A fluid pressure energy translating device of the axial piston type including a pumping mechanism rotatably mounted on a rigid inner structure within an inner housing which is flexibly mounted within and isolated from an outer housing.

3,499,392
LIFT AND DELIVERY PUMP
Leo R. Czermak, 13 Anichstrasse, 6020 Innsbruck, Austria
Continuation of application Ser. No. 620,919, Mar. 6, 1967. This application Feb. 7, 1969, Ser. No. 800,033
Claims priority, application Austria, Mar. 17, 1966, A 2,529/66
Int. Cl. F04b 1/02, 7/04
U.S. Cl. 103—171 17 Claims



In a pump with two coaxially aligned cylinders and an intermediate casing with the inlet and outlet ducts, the two pistons in the respective cylinders are interconnected by a piston rod which extends through a centrally located outlet passage of the casing, the outlet passage being

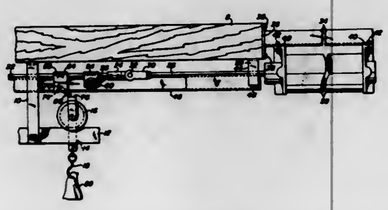
in communication with the outlet duct. The corresponding inlet passage of the casing is located radially outward of the outlet passage. Inside the casing the two mouth openings of the central outlet passage are surrounded by respective coaxially spaced valve seats which face each other and of which one at a time is engaged by movable valve closure means seated and axially displaceable on the piston rod within the outlet passage of the casing. Preferably the two mouths of the inlet passage have an arcuate shape and are located on the same axially opposite sides of the casing as the respective mouths of the outlet passage and are controlled by annular valve-disk members which coaxially surround the cylinder axis and of which one member at a time is pressed from the outside against the casing to thus close the inlet passage toward one of the cylinders. The two cylinders are thus alternately connected to the inlet and outlet ducts.

3,499,393
SURGICAL ASPIRATOR
John H. Bent, Hacienda Heights, Calif., assignor, by mesne assignments, to Air Instruments, Inc., Santa Barbara, Calif., a corporation of Pennsylvania
Filed June 5, 1968, Ser. No. 734,621
Int. Cl. F04f *5/24*
U.S. Cl. 103—263 5 Claims



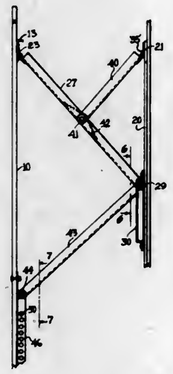
A disposable surgical aspirator has a suction tube projecting into one end of a tubular passage to define a ring orifice therebetween, and a manually operable valve is positioned adjacent a port in the tubular passage upstream from the ring orifice, to control flow of gas under pressure through the port and the orifice, and a disposable bag is connected to the other end of the tubular passage.

3,499,394
TROLLEY ADVANCING AND SPACING DEVICE
Robert W. Lambert, Burlingame, and Frank M. Cook, San Francisco, Calif., assignors to Cincinnati Butchers' Supply Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 15, 1967, Ser. No. 668,316
Int. Cl. B61b *13/04*; B61k *7/00*
U.S. Cl. 104—162 14 Claims



The device utilizes a fluid motor and reciprocable pusher rod in axial alignment to occupy the space between a trolley rail and an overhead support for the rail, thereby to minimize the need for head-room in applying the device to existing conveyor installations; and an included ball-bearing carriage supporting a reciprocable pusher rod over a track for the carriage provides for virtually frictionless advancement and retraction of trolley impellers used in relocating a succession of trolleys in uniformly spaced relationship upon a trolley rail. Simplicity of parts, and of installation and maintenance, are among the primary objectives along with power conservation and minimal initial manufacturing cost.

3,499,395
ADJUSTABLE LOAD SPACER
Emanuel Val Verde, Chicago, Ill., assignor to Transco Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,727
Int. Cl. B61d *45/00*
U.S. Cl. 105—369 3 Claims



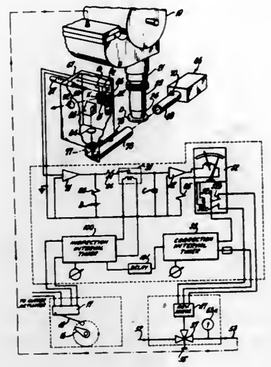
An adjustable load spacer for use in freight hauling vehicles and the like wherein it is required to have a wall panel section movable inwardly in contact with lading to prevent the same from shifting or becoming damaged during transit.

The adjustable load spacer provides a frame connected to the wall surface of the vehicle or freight compartment and a corresponding frame carried on the confronting face of the spacer panel. A pair of spreader arms separate the frames and also provide latch arms that have extended therebetween a latch bar for releaseably latching the panel in any extended position with respect to the wall surface of the vehicle or freight compartment.

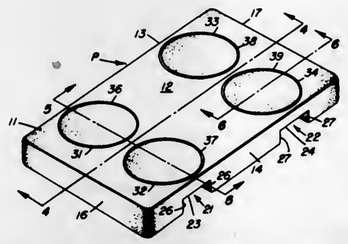
3,499,396
APPARATUS FOR THE REGULATED PRODUCTION OF SHAPED PIECES OF PLASTIC MATERIAL
Harold B. Kaufman, Jr., New York, and Albert Spiel, Yonkers, N.Y., assignors to DCA Food Industries Inc., New York, N.Y., a corporation of New York
Filed Jan. 11, 1968, Ser. No. 697,112
Int. Cl. A21c *11/16*
U.S. Cl. 107—14 22 Claims

An apparatus for forming ring-shaped pieces of dough of uniformly regulated size or weight including a dough chamber connected to compressed air through a pressure control valve and provided with a depending dough ring extrusion nozzle with an annular extrusion opening and having a reciprocating cutter sleeve. A pair of bridge-connected photocells are exposed to a beam of light directed tangentially along the extrusion opening to cast a shadow of the periodically extruding dough on one of the photocells; a mask being manually movable across

the face of the other photocell. The differential signal from the photocells periodically controls the charging of a capacitor at a predetermined time following the actuation of the cutter sleeve and the capacitor charge voltage controls the sense of the periodic energization of a reversible motor which adjusts the pressure control valve whereby to regulate the severed dough piece size each cutting cycle.



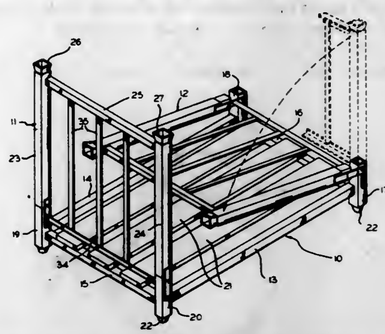
3,499,397
PALLET
Walter E. Johnson, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed May 20, 1968, Ser. No. 730,417
Int. Cl. B65d *19/24*
U.S. Cl. 108—51 6 Claims



A pallet having a body having a one-piece body of foam plastic material the bottom surface of which is provided with a pair of channels for accommodating the lifting forks of a vehicle and the upper surface of which is provided with slots centrally overlying the channels and having reinforcing members positioned therein to distribute the lifting force extended on the pallet by the forks.

3,499,398
PORTABLE STORAGE RACK OR PALLET
John M. Murray, Joliet, Ill., assignor to Cerco Corporation, Joliet, Ill., a corporation of Illinois
Filed May 2, 1968, Ser. No. 726,097
Int. Cl. B65d *19/12*
U.S. Cl. 108—53 3 Claims

A portable storage rack or pallet having foldable end frames used in the shipment and/or conveying of articles, and more particularly to a storage rack or pallet including a platform with foldable end frames hingedly connected thereto, and still more particularly to a storage rack or pallet having end frames movable between upright and folded positions to facilitate shipping of the frames after useage.



3,499,399
CHARCOAL STARTER
William F. Kaufmann, 6126 3rd Ave., Kenosha, Wis. 53140
Filed Apr. 15, 1968, Ser. No. 721,382
Int. Cl. F23b *1/02*; F23l *5/04*
U.S. Cl. 110—1 3 Claims



A charcoal starter formed from a single blank of sheet material, the opposite side edges thereof being folded to form interlocking seams thereon so that it can be shipped and/or stored flat and thereafter easily formed into a tube. A number of flanges formed in the blank are bent interiorly of the formed tube, to form a grate for supporting the charcoal and for providing an area below the charcoal in which newspaper or other similar easily ignitable material can be placed and ignited to start the charcoal. Individual flues also can be functionally associated with each of the flanges forming the grate, to enhance combustion and faster starting of the charcoal.

3,499,400
WASTE COMBUSTION SYSTEM
Berton G. Altmann, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed June 3, 1968, Ser. No. 734,045
Int. Cl. F23g *23/00*; F23l *1/00*; F23c *7/00*
U.S. Cl. 110—8 8 Claims

Waste combustion system wherein solid or semi-solid waste is fed to a closed combustion chamber into which limited amounts of oxidizer (e.g., air) are fed to effect

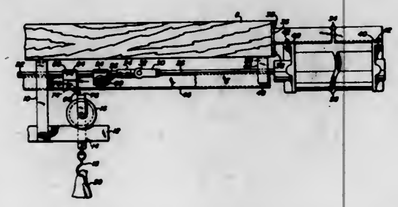
in communication with the outlet duct. The corresponding inlet passage of the casing is located radially outward of the outlet passage. Inside the casing the two mouth openings of the central outlet passage are surrounded by respective coaxially spaced valve seats which face each other and of which one at a time is engaged by movable valve closure means seated and axially displaceable on the piston rod within the outlet passage of the casing. Preferably the two mouths of the inlet passage have an arcuate shape and are located on the same axially opposite sides of the casing as the respective mouths of the outlet passage and are controlled by annular valve-disk members which coaxially surround the cylinder axis and of which one member at a time is pressed from the outside against the casing to thus close the inlet passage toward one of the cylinders. The two cylinders are thus alternately connected to the inlet and outlet ducts.

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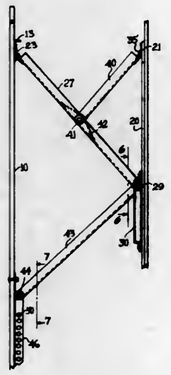
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Filed Sept. 15, 1967, Ser. No. 668,316
Int. Cl. B61b *13/04*; B61k *7/00*
U.S. Cl. 104—162 14 Claims



The device utilizes a fluid motor and reciprocable pusher rod in axial alignment to occupy the space between a trolley rail and an overhead support for the rail, thereby to minimize the need for head-room in applying the device to existing conveyor installations; and an included ball-bearing carriage supporting a reciprocable pusher rod over a track for the carriage provides for virtually frictionless advancement and retraction of trolley impellers used in relocating a succession of trolleys in uniformly spaced relationship upon a trolley rail. Simplicity of parts, and of installation and maintenance, are among the primary objectives along with power conservation and minimal initial manufacturing cost.

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Int. Cl. B61d *45/00*
U.S. Cl. 105—369 3 Claims

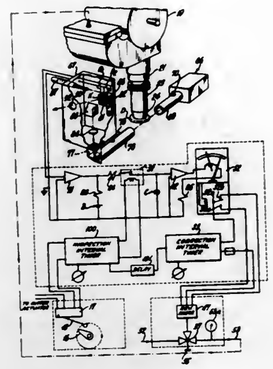


An adjustable load spacer for use in freight hauling vehicles and the like wherein it is required to have a wall panel section movable inwardly in contact with lading to prevent the same from shifting or becoming damaged during transit.

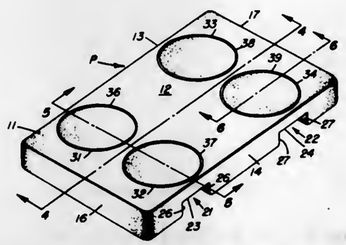
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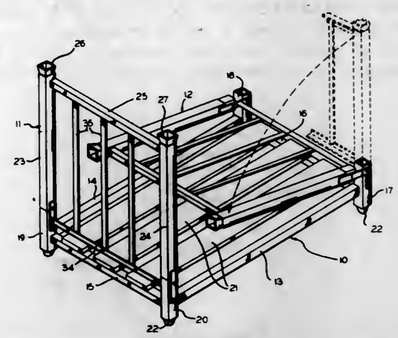
3,499,397
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Walter E. Johnson, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed May 20, 1968, Ser. No. 730,417
Int. Cl. B65d *19/24*
U.S. Cl. 108—51 6 Claims



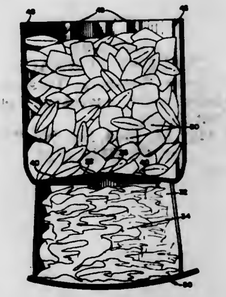
A pallet having a body having a one-piece body of foam plastic material the bottom surface of which is provided with a pair of channels for accommodating the lifting forks of a vehicle and the upper surface of which is provided with slots centrally overlying the channels and having reinforcing members positioned therein to distribute the lifting force extended on the pallet by the forks.

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Filed May 2, 1968, Ser. No. 726,097
Int. Cl. B65d *19/12*
U.S. Cl. 108—53 3 Claims

A portable storage rack or pallet having foldable end frames used in the shipment and/or conveying of articles, and more particularly to a storage rack or pallet including a platform with foldable end frames hingedly connected thereto, and still more particularly to a storage rack or pallet having end frames movable between upright and folded positions to facilitate shipping of the frames after useage.



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Filed Apr. 15, 1968, Ser. No. 721,382
Int. Cl. F23b *1/02*; F23l *5/04*
U.S. Cl. 110—1 3 Claims

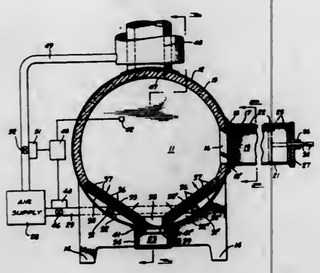


A charcoal starter formed from a single blank of sheet material, the opposite side edges thereof being folded to form interlocking seams thereon so that it can be shipped and/or stored flat and thereafter easily formed into a tube. A number of flanges formed in the blank are bent interiorly of the formed tube, to form a grate for supporting the charcoal and for providing an area below the charcoal in which newspaper or other similar easily ignitable material can be placed and ignited to start the charcoal. Individual flues also can be functionally associated with each of the flanges forming the grate, to enhance combustion and faster starting of the charcoal.

3,499,400
WASTE COMBUSTION SYSTEM
Berton G. Altmann, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed June 3, 1968, Ser. No. 734,045
Int. Cl. F23g *23/00*; F23l *1/00*; F23c *7/00*
U.S. Cl. 110—8 8 Claims

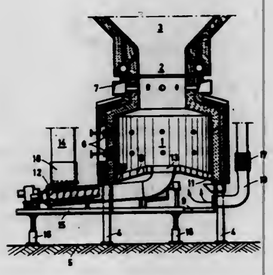
Waste combustion system wherein solid or semi-solid waste is fed to a closed combustion chamber into which limited amounts of oxidizer (e.g., air) are fed to effect

gasification of the waste. The chamber contains a fluid pressure sensing means operatively connected to the means for feeding fluid oxidizer whereby, if the pressure in the chamber falls below a preselected value, further oxidizer is fed to the chamber and whereby, if the pressure in the chamber exceeds a certain preselected value, the amount of oxidizer fed to the chamber is reduced. The gaseous products of the limited combustion in the cham-



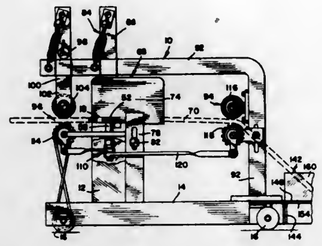
ber, which gases are further combustible, are led to a further treating means, for example an afterburner, wherein they are fully oxidized. The oxidizer (e.g., air) input to this afterburner can also be operatively connected to the pressure sensing means whereby when the pressure in the chamber exceeds a certain preselected value, increased amounts of oxidizer are fed to the afterburner.

3,499,401
CYCLONE FURNACE
Jacob Erland Magnus Wennberg, Torslanda, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed May 23, 1968, Ser. No. 731,375
Int. Cl. F23b *1/16*
U.S. Cl. 110—89 **1 Claim**



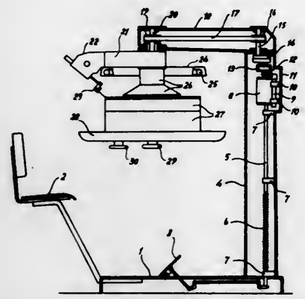
Owing to the intense heat generated during the combustion of solid fuel in a cyclone furnace certain residues are formed, which melt, flow down through the fuel bed and congeal on the grate clogging the same. This slag is difficult to remove and usually a number of openings must be provided in the furnace wall to provide access for cleaning purposes, which is inconvenient for many purposes. In order to avoid such openings and to facilitate the cleaning of the grate the furnace proper is built on pillars a distance above the floor of the boiler room and the mechanical stoker as well as the grate structure are built on a platform which may be lowered from the furnace to make the grate fully accessible.

3,499,402
SEWING DEVICE
William Pugach, 73—11 Bell Blvd., Bayside, N.Y. 11364, and Jack G. Price, 7—24 166th St., Whitestone, N.Y. 11357
Filed Dec. 8, 1967, Ser. No. 689,185
Int. Cl. D05b *23/00*
U.S. Cl. 112—7 **7 Claims**



A mobile carpet sewing device having powered means to feed the carpet to and from a sewing mechanism and to propel the device along the floor as the sewing progresses.

3,499,403
KNITTED FABRIC LINKING MACHINES
Juan Pruna Flaque, Avenida del Maresme 14–22, Mataro, Barcelona, Spain
Filed Nov. 12, 1968, Ser. No. 776,002
Claims priority, application Spain, Aug. 7, 1968 357,001
Int. Cl. D05b *7/00*
U.S. Cl. 112—25 **4 Claims**

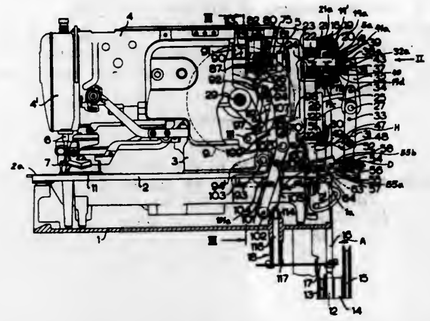


An improvement in a knitted fabric linking machine having a supporting base plate with a column supporting a rotatable crown thereon and a chair for an operator positioned closely adjacent the crown so that the operator can accurately control the operation of the machine with a minimum of effort.

3,499,404
BUTTONHOLE SEWING MACHINE WITH IMPROVED STOPPING MECHANISM
Karl Nicolay, Bielefeld, Germany, assignor to Durkoppwerke G.m.b.H., Bielefeld, Germany, a corporation of Germany
Filed Sept. 25, 1968, Ser. No. 762,387
Claims priority, application Germany, Sept. 26, 1967, 1,660,841
Int. Cl. D05b *3/00*
U.S. Cl. 112—67 **10 Claims**

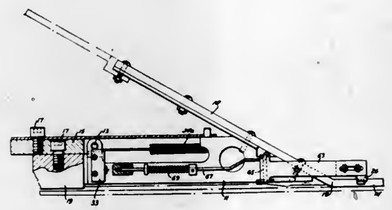
A high-speed buttonhole sewing machine having a belt-shifting mechanism for bringing the main shaft of the sewing machine to a low-speed condition after completion

of the buttonhole-stitching cycle and prior to the commencement of the next cycle. The main control cam triggers a lever which initiates the shift from high-speed to low-speed by a belt-control fork and simultaneously triggers a follower lever riding in a worm carried by the main drive shaft so that the latter, after a predetermined



number of revolutions independent of the stitching speed of the machine, operates a latch adapted to lock the main control shaft, a clutch de-coupling the latter from the two-speed belt-shifting transmission, and the belt-shifting fork to return the transmission to its high-speed condition preparatorily for the next cycle.

3,499,405
LOADER AND ALIGNER FOR BUTTONS
Theodore F. McKee, 108 Spruce St., Muscatine, Iowa 52761, and William A. Banks, West Burlington, Iowa; said Banks assignor to said McKee
Filed Feb. 15, 1966, Ser. No. 527,414
Int. Cl. D05b *3/22*; B65g *47/22*; B23q *7/08*
U.S. Cl. 112—113 **3 Claims**



Loading mechanism and alignment means for positioning and advancing for sewing buttons by machine onto garments such as shirts, by providing an attachment for loading and aligning buttons into an aligned position by partially rotating the button with pins inserted in the buttons.

3,499,406
CONTROL DEVICES FOR BOBBIN THREAD REPLENISHMENTS IN LOCKSTITCH SEWING MACHINES
Robert G. Greulich, Cranford, Alfred H. Mack, Linden, and John Blackwood, Bayonne, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 20, 1968, Ser. No. 738,428
Int. Cl. D05b *57/14, 59/00*
U.S. Cl. 112—184 **7 Claims**

An improved operator influenced arrangement is disclosed for effecting replenishment of thread on a bobbin in place in the loop taker of a lockstitch sewing machine. An angularly shiftable control member for bobbin thread replenishment is accessible when the slide cover

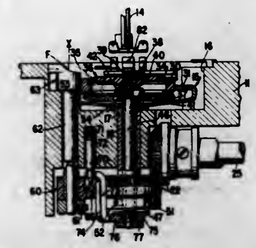
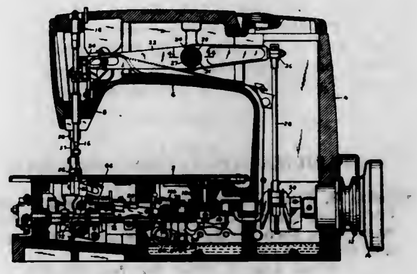


plate above the loop taker is retracted. The control member acts by way of a cam segment selectively to influence the movement into and out of effective position of a bobbin winding member within the loop taker.

3,499,407
FLAT BED SEWING MACHINE
George M. Reimer, Elmwood Park, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 416,500, Dec. 7, 1964. This application Sept. 19, 1967, Ser. No. 695,810
Int. Cl. D05b *69/30*; F16c *27/06*
U.S. Cl. 112—218 **8 Claims**

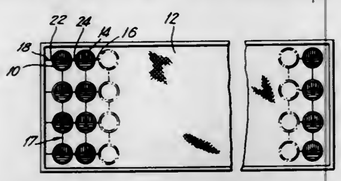


A sewing machine having a needle bar, looper and feed bars in which the drive connections between the drive, the needle bar, looper and feed bars are resiliently mounted in the sewing machine frame by resilient pivots and supports, such resilient pivots and supports having a Shore Scale A durometer not substantially lower than 80 and not substantially higher than 90.

3,499,408
METHOD FOR SEPARATING STITCHED EMBLEMS FROM A BASE FABRIC
Theodore E. Theodorsen, Manhasset, N.Y., assignor to Kurt Salmon Associates, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 18, 1968, Ser. No. 722,395
Int. Cl. D05b *95/00*
U.S. Cl. 112—262 **6 Claims**

A method for separating stitched emblems from a base fabric wherein a stitched border of a thread which has

been treated with a combustible material is sewn around the outline of the emblem. The treated thread is ignited



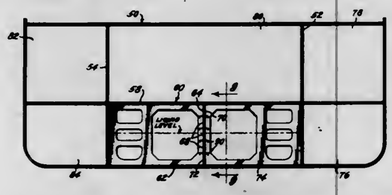
and allowed to burn completely through the base fabric material to free the emblems from the base material.

3,499,409
SHIP, IN PARTICULAR FOR THE TRANSPORTATION OF CONTAINERS
Ernst Bernhard, Goteborg, Sweden, assignor to AB Internavia, Goteborg, Sweden, a corporation of Sweden
Filed Apr. 8, 1968, Ser. No. 719,546
Claims priority application Sweden, Apr. 10, 1967, 4,939/67
Int. Cl. B63b *1/10, 25/18*
U.S. Cl. 114—72 **6 Claims**



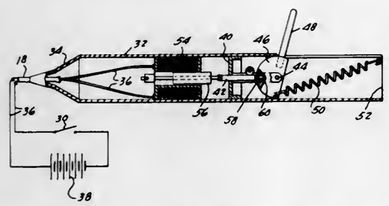
The present invention relates to a ship of catamaran-type preferably but not exclusively adapted for carrying load containers and the principal object of the invention is to provide a ship of said type having a good stability also in high sea and the object aimed at has been achieved by carrying the deck at one end on two stays movably on two essentially parallel pontoons and at the other end by an arm extending in the longitudinal direction of the ship on a cross beam, the latter being at its ends movably carried by stands on said pontoons.

3,499,410
STABILIZATION SYSTEM FOR LIQUID CARGO SHIPS
Sheldon B. Field, Floral Park, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 3, 1964, Ser. No. 386,982
Int. Cl. B63b *25/12, 43/04*
U.S. Cl. 114—125 **3 Claims**



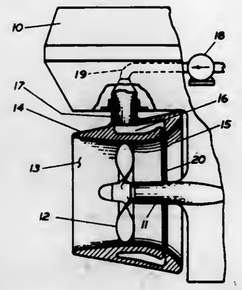
1. A liquid cargo tanker comprising a plurality of transverse liquid tight bulkheads mounted within the hull and forming therewith a plurality of compartments, a pair of longitudinal bulkheads symmetrically mounted in said hull, and being spaced from the centerline and hull sides all said bulkheads extending to the main deck of said tanker, a horizontal tween deck mounted between said longitudinal bulkheads and forming with the hull bottom, adjacent transverse bulkheads and longitudinal bulkheads an enclosed passive stabilizer tank, which is bounded on three sides by liquid tight cargo subcompartments, at least one additional longitudinal bulkhead spaced from said pair of longitudinal bulkheads and mounted across said stabilizer tank and extending vertically from the hull bottom to the tween deck, said additional bulkhead having a plurality of openings spaced throughout the vertical dimension thereof, and a liquid body partially filling said stabilizing tank to a static liquid level which is above some of the openings and below others of said openings.

3,499,411
UNDERWATER BUOY RELEASE
Hilbert J. Savole, P.O. Box 98, Boutte, La. 70039
Filed Apr. 5, 1968, Ser. No. 719,151
Int. Cl. B63b *21/52, 21/56;* **B63c** *11/48*
U.S. Cl. 114—235 **8 Claims**



Means, operable from the surface, for releasing a marker buoy under water comprising: buoy holding means spring-impelled toward holding position; latch means securing said holding means in holding position against the drag of a held buoy, an electromagnet to release said latch and surface-operated means to energize said magnet.

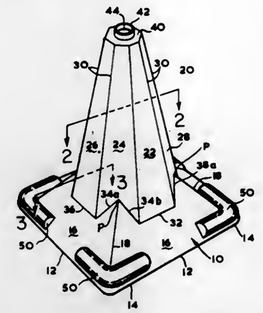
3,499,412
KORT NOZZLE
John A. Anthes, Carnegie, and Albert M. Martinson, Leetsdale, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1968, Ser. No. 703,969
Int. Cl. B63h *1/28, 25/06;* **F01d** *1/02*
U.S. Cl. 115—42 **7 Claims**



This application discloses the combination of a screw propeller surrounded by a Kort type nozzle where an added flow of water is induced along the inside wall of the nozzle to relieve cavitation at the tips of the propeller blade. This is effected by discharging water around the forward end of the nozzle through a slit so arranged that water forced through the slit flows under influence of the so-called Coanda effect along the inner wall of the nozzle.

The flow may be adjusted by controlling the water supply to the slit and additional thrust may be obtained from the added flow of water.

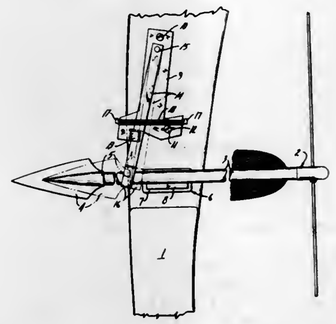
3,499,413
ROAD MARKERS
Robert W. Heard, 391 Bell St., Milton, Ontario, Canada
Filed Jan. 24, 1968, Ser. No. 700,060
Int. Cl. G01f *13/00*
U.S. Cl. 116—63 **29 Claims**



A road marker comprises a hollow body member that is fabricated of a flexible, resilient material and that includes a base portion and an upper portion, weights being associated with the base portion to lower the centre of gravity of the hollow body member, the weights being spaced apart from and discontinuous with respect to each other and located at different points around the perimeter of the base portion by virtue of which the weights are separated from each other by unweighted parts of the base portion.

In another embodiment the base and upper portions both are of polygonal configuration and are so oriented with respect to each other that the side corners of the base portion terminate at points that are intermediate adjacent side corners of the upper portion.

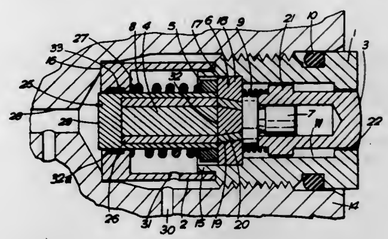
3,499,414
ARROW HOLDER AND RELEASE SIGNAL DEVICE FOR A BOW
Arthur J. Frydenlund, 533 N. Marquette Road, Prairie Du Chien, Wis. 53821
Filed Dec. 7, 1967, Ser. No. 688,875
Int. Cl. G08b *3/00*
U.S. Cl. 116—67 **12 Claims**



A bow and arrow having a sounding device which emits a detectable signal when the bow has been drawn to a desired limit.

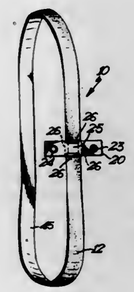
The signal device is a leaf-spring which is held in tension over the arrow shaft and slidably holds the arrow against a guide-rest when the bow is being drawn, and which is released to swing up and vibrate when an abutment on the arrow shaft engages one edge of the spring.

3,499,415
INDICATOR DEVICES
Janusz Gutkowski, Lewes, England, assignor to BTR Industries Limited, London, England, a British company
Filed Feb. 15, 1968, Ser. No. 705,752
Claims priority, application Great Britain, Feb. 17, 1967, 7,645/67
Int. Cl. G01l *19/12*
U.S. Cl. 116—70 **6 Claims**



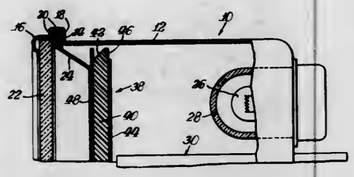
A device for indicating when a fluid pressure or pressure difference exceeds a predetermined value. The device has a sensing member and an indicating member which may be held together magnetically, and which are separable when a predetermined fluid pressure is applied to overcome magnetic attraction between them. When the two members are separated the indicating means is spring urged into an indicating position.

3,499,416
REFLECTIVE SAFETY BAND
Gladys I. Thorsheim, 32 Luverne Ave., Minneapolis, Minn. 55419
Filed May 17, 1968, Ser. No. 730,076
Int. Cl. G01d *21/00*
U.S. Cl. 116—114 **11 Claims**



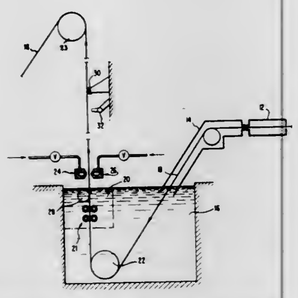
A signal warning device worn by pedestrains, cyclists, or children playing in or around roadways which incorporates a continuous loop of flexible fabric material having a reflective surface and/or a luminescent surface on opposite sides thereof and with a cover strip attached thereto which may be utilized for shortening or storing the continuous loop of fabric material when not in use.

3,499,417
TRANSLUCENT INSTRUMENT DIAL MEANS
Walter M. Heinke, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed June 7, 1967, Ser. No. 644,309
Int. Cl. G09f 9/30
U.S. Cl. 116—129 5 Claims



An illuminated dial plate means for instruments where the dial plate includes a layer of optical material, opaque light-colored indicia on the layer and opaque dark-colored material bordering the indicia whereby the indicia is distinguishable under all usual illuminating conditions of operation of the instrument dial plate.

3,499,418
CONTINUOUS METALLIC STRIP HOT-DIP METAL COATING APPARATUS
John T. Mayhew, Toronto, Ohio, assignor to National Steel Corporation, a corporation of Delaware
Continuation-in-part of applications Ser. No. 282,474, May 22, 1963, and Ser. No. 409,053, Nov. 5, 1964. This application Dec. 1, 1966, Ser. No. 598,380
Int. Cl. B05c 11/10, 3/02
U.S. Cl. 118—4 6 Claims



(a) Continuous metal strip hot dip metal coating apparatus in which the conventional finishing rolls are eliminated and the coating weight is controlled by streams of hot gas impinged against continuous metal strip emerging from a molten coating metal bath, the gas being impinged against the strip at a point very close to the surface of the molten coating metal bath and at an angle to the strip at or near the perpendicular.

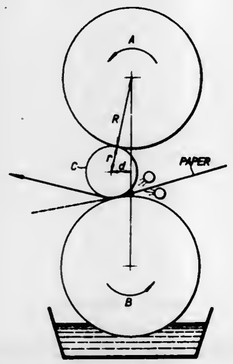
(b) Continuous metallic strip hot dip metal coating apparatus in which the conventional finishing rolls are eliminated and the coating weight is controlled by streams of hot gas impinged against continuous metal strip emerging from a molten coating metal bath, the gas being impinged against the strip at a point very close to the surface of the molten coating metal bath in conjunction with a guide means submerged in the bath very close to the surface acting to prevent flutter of the strip as it passes the streams of hot gas.

(c) Nozzle means for controlling the coating weight of molten metal coating on a continuous metallic strip, the nozzle orifice being shaped to deliver a concentrated, thin stream of hot gas against the strip across the width of the strip with a major component of motion of the stream of gas being perpendicular to the strip.

(d) Means for controlling the temperature of a portion of the molten coating metal bath adjacent the exit point of continuous metallic strip being coated in connection with the use of streams of gas instead of finishing rolls for controlling the coating weight on the strip to thereby obtain better control of the coating weight.

(e) Means for controlling the coating weight of molten metal coating on continuous metallic strip in response to an indication of the coating weight in conjunction with coating weight control by streams of gas.

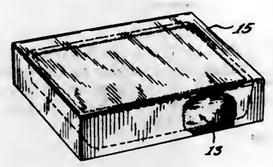
3,499,419
MECHANICAL SYSTEM FOR MANUFACTURING PIGMENT-COATED PAPER
Einar Bohmer and Tore Aarefjord, Oslo, Norway, assignors to Papirindustriens Forskningsinstitutt, Oslo, Norway, a corporation of Norway
Filed Dec. 20, 1967, Ser. No. 692,208
Claims priority, application Norway, Dec. 21, 1966, 166,094
Int. Cl. B05c 1/12
U.S. Cl. 118—206 2 Claims



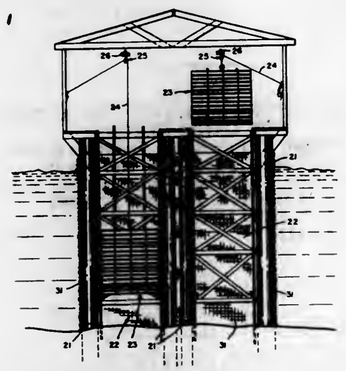
For the one or two side coating of a paper web, a device is provided comprising two spaced main rollers with an intermediate roll arranged therebetween. The intermediate roll is of a smaller diameter than the main rolls and intermediate roller is arranged so that the web passes through a nip between one of the main rollers and the intermediate roll. The web is led in contact with the intermediate roll over a part of the circumference of the latter after the web is passed through the nip, so that there is obtained an abruptly moving of the web from the surface of the main roll which the web makes contact. The intermediate roll is arranged for horizontal displacement on both sides of a center line between the main rolls in such a way that contact is maintained with the main rolls.

3,499,420
BEDDING COMPOSITION AND PACKAGING FOR WORMS
Charles W. Atwell, 230 Kellar Lane, Decatur, Ill. 62523
Filed May 3, 1968, Ser. No. 726,311
Int. Cl. A01k 29/00
U.S. Cl. 119—1 8 Claims

A bedding composition composed of approximately equal portions of black foamy dirt, moisture saturated cellulose fiber such as shredded paper, and shredded corn cob, also preferably containing a small amount of finely divided sugar limestone to help control acidity and provide grit material in which worms such as night crawlers can be kept alive for long periods without refrigeration if the composition containing the night crawlers is enclosed in a moisture-proof wrapper or container such as aluminum foil and then insulated to provide against substantial temperature change by enclosing the wrapper or container in layers of paper or in other heat-insulating enclosure.



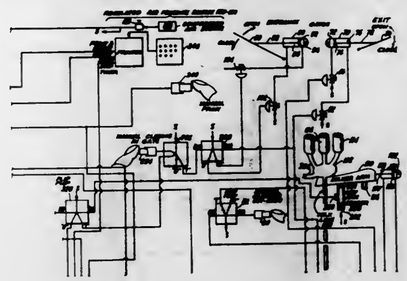
3,499,421
CAGE TYPE LOBSTER FARM
Joseph R. MacDonald, 63 Franklin Road, Winchester, Mass. 18190, and Winfred A. MacDonald, 230 Essex St., Melrose, Mass. 02176
Filed Mar. 6, 1968, Ser. No. 710,995
Int. Cl. A01k 61/00, 63/00
U.S. Cl. 119—2 15 Claims



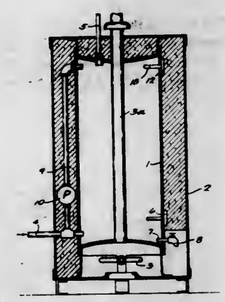
Lobster rearing farm including cages movable between submerged and servicing positions together with means to supply feed to the submerged cages and with means for entrapping fish drawn to the station by escaping lobster food, and cages, cells, and food containers for use in rearing lobsters.

3,499,422
AUTOMATED MILKING SYSTEM
Kurt Nelson, Wappingers Falls, N.Y., assignor to The De Laval Separator Company, Poughkeepsie, N.Y., a corporation of New Jersey
Filed Feb. 21, 1968, Ser. No. 707,230
Int. Cl. A01d 5/00
U.S. Cl. 119—14.08 21 Claims

An automated milking system employs a reciprocating tilt table milk metering unit and fluidic logic apparatus to effect a plurality of supervisory milking functions, and to determine the completion of a milking operation. The logic apparatus is responsive to the table reciprocating at less than a threshold rate for automatically separating the milking structure from the cow, and for opening exit and entrance gates at the milking station to initiate a succeeding milking operation.



3,499,423
LIQUID HEATERS HAVING TEMPERATURE BUILDUP PROTECTION
Edward G. Phlaum, Kankakee, Ill., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Apr. 4, 1968, Ser. No. 718,801
Int. Cl. F24b 1/08
U.S. Cl. 122—14 4 Claims

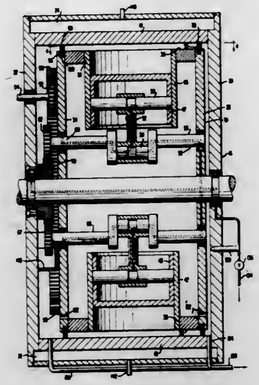


The present disclosure relates to a hot water heater tank having a bottom fired burner which is controlled by a thermostat sensing the water temperature in the lower portion of the tank. A conduit connects the cold water line or the lower portion of the tank to the upper portion of the tank with a motor-pump unit connected in the line to transfer cold water from the lower portion of the tank to the upper portion. A secondary sensing unit is also connected in the upper portion of the tank. If the temperature in the upper portion of the tank rises above a selected level, cold water is pumped from the bottom to the top of the tank until the over temperature condition is eliminated at which time the pump means shuts off.

3,499,424
ROTARY INTERNAL COMBUSTION ENGINES
Joe G. Rich, 2996 NW. 62nd St., Miami, Fla. 33147
Filed Feb. 29, 1968, Ser. No. 709,306
Int. Cl. F02b 57/00
U.S. Cl. 123—44 16 Claims

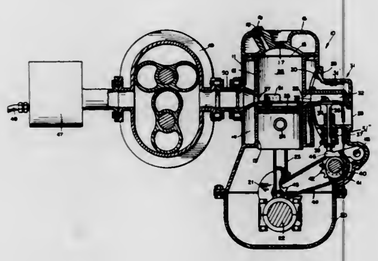
Rotary internal combustion engines include a rotor mounted in a stationary housing. Four pistons are provided at 90° intervals around the rotor. Power from

reciprocation of the pistons is transmitted to planetary gears which act against a fixed sun gear to rotate the rotor. An oil spring nozzle sprays cooling lubricant onto



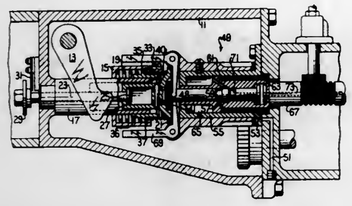
the cylinders as the rotor rotates. Annular sealing rings and longitudinal sealing strips on the rotor seal combustion areas from one another and from ambient.

3,499,425
INTERNAL COMBUSTION ENGINE
Dewey E. Gommel, Box 4627, Greenville, Miss. 38701
Filed June 4, 1968, Ser. No. 734,333
Int. Cl. F02b *75/02, 33/04;* **F02d** *39/02*
U.S. Cl. 123—75 **21 Claims**



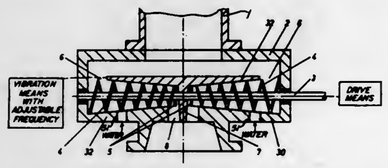
A reciprocating-piston type of internal combustion engine in which many of the desirable characteristics of a 2-cycle engine are combined with many of the desirable characteristics of a 4-cycle engine, while undesirable characteristics of both kinds of engines are eliminated. In at least one form, the fuel is supplied directly to a variable-volume combustion chamber which is devoid of valves, and exhaust from the combustion chamber is through an auxiliary chamber, normally closed from the combustion chamber during fuel combustion, and through a valve remotely located in the auxiliary chamber and open for gas flow therethrough only after completion of the piston power stroke and before initiation of the first of two piston compression strokes. In another form, fuel is supplied to the combustion chamber through the engine crank case and the passageway between the crank case and the combustion chamber is closed at all times except when the fluid pressure in the crank case exceeds the fluid pressure in said passageway, whereby backflow of fluid from the passageway to the crank case is prevented. In still another form, valve means is provided at the point of introduction of fuel to the crank case to prevent fluid flow from the crank case toward the source of fuel supply.

3,499,426
MAXIMUM-MINIMUM GOVERNOR DEVICE
John M. Bailey, Dunlap, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois
Filed May 29, 1968, Ser. No. 733,134
Int. Cl. F02d *1/04*
U.S. Cl. 123—140 **1 Claim**



A hydro-mechanical governor in which a cup shaped spring seat has mounted therein a sleeve biased to an extended position. The spring seat and sleeve construction is biased away from an adapter actuated by centrifugal flyweights. The construction allows the engine operator to control the fuel pump rack within the operating range while still having a governed low idle and maximum speed.

3,499,427
FUEL-AIR MIXTURE IMPROVEMENT APPARATUS FOR CARBURETORS
Paul August, C./Capellades, Barcelona 6, Spain
Filed June 15, 1967, Ser. No. 646,389
Claims priority, application Germany, Nov. 5, 1966, J 32,167; Feb. 14, 1967, J 32,984
Int. Cl. F02m *31/00, 7/00;* **F02b** *75/02*
U.S. Cl. 123—122 **18 Claims**

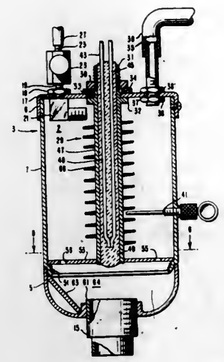


Apparatus for the improvement of the mixture formation in internal combustion engines comprising a driven scroll device between the carburetor and the cylinders for compressing the fuel-air mixture and forming a homogeneous condensate which is droplet free and is supplied thusly to the cylinders.

3,499,428
SMOG RETARDER APPARATUS
Harold Tamplin Stirling, 249 Roycroft Ave., Pittsburgh, Pa. 15234
Filed Feb. 20, 1968, Ser. No. 706,922
Int. Cl. F01m *1/10;* **F16n** *17/06;* **C10g** *17/00*
U.S. Cl. 123—196 **9 Claims**

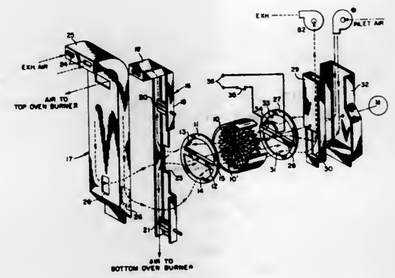
Smog retarder apparatus designed for use with an internal combustion engine which includes a chamber under vacuum having disposed therein an electrically heated

vaporizing unit to volatilize water, gasoline hydrocarbons, etc. and a chemically reactive, e.g., magnesium, perforated plate over which a film of oil is passed to remove liquid sulfuric acid by chemical reaction, thereby removing potential air contaminants from the lubricating oil



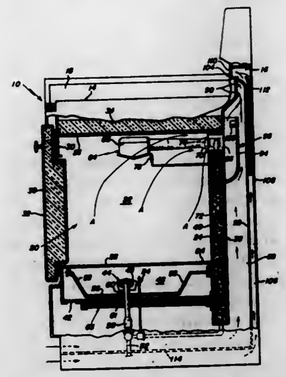
and reducing air contaminants in the exhaust gases due to more efficient combustion. Preferred embodiments include a catch basin for removing particulate solids, a magnet for removing magnetic particles and chemical reaction means for removing sulfuric acid vapors.

3,499,429
OVEN HEAT REGENERATOR
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Jan. 17, 1968, Ser. No. 698,498
Int. Cl. A21b *1/00*
U.S. Cl. 126—21 **4 Claims**



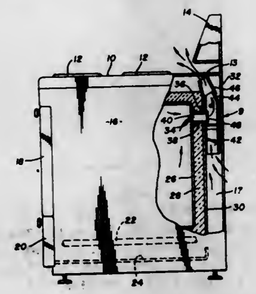
A heat regenerator for a self-cleaning gas cooking oven including heat sink means in the form of a wheel with multiple axial passages which are rotated successively through flows of hot flue gases from the oven and relatively cool ambient air being delivered to the oven burner means for combustion, with an auxiliary electric heater arranged at the side of the wheel remote from the oven and at the location where passages move from the exhaust into the incoming air flow. The auxiliary heater serves to add heat to the wheel at such location for heat cleaning of the same and to preheat the incoming air as it enters the wheel.

3,499,430
HIGH TEMPERATURE OVEN STRUCTURE
Wayne T. Kemp, Kutztown, Pa., assignor to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Apr. 3, 1968, Ser. No. 718,590
Int. Cl. F24c *15/32*
U.S. Cl. 126—21 **8 Claims**



A household range having an oven adapted to be operated at high temperatures and having heat protecting means therefor comprising a dilution flue disposed outwardly of one of the oven walls, which flue contains a flue box overlying an exhaust opening in the wall, the flue passing cool air from an area beneath the level of the opening upwardly and outwardly of the range through upper vents, the flue box being positioned to receive degradation products exhausted by the oven through the exhaust opening, the flow of exhausted products mixing with the cool air flow in an upper portion of the flue. Additional means for cooling the outer wall of the range comprises a second cool air flue spaced outwardly of the first flue, and baffles in said flues for preventing heat in the area of the exhaust opening from overheating the outer wall of the range.

3,499,431
COOKING RANGE PREHEAT AND VENT SYSTEMS
George McArthur, Jr., Delaware, Ohio, assignor, by mesne assignments, to Glenwood Range Company, Taunton, Mass., a corporation of Massachusetts
Filed June 26, 1967, Ser. No. 648,839
Int. Cl. F24c *3/00, 15/32*
U.S. Cl. 126—39 **24 Claims**

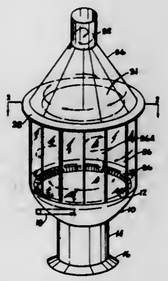


A preheat system is shown comprising a preheat box-like compartment in the lower part of the cooking range into which ambient air enters through holes in or near

its bottom. Above this preheat compartment is an intermediate compartment separated from the preheat compartment by a heat conductive wall having an opening and a gas burner positioned in the opening spaced from the periphery of the opening. Above the intermediate compartment is an upper compartment separated from the intermediate compartment by a deflection wall with peripheral passages. Air is preheated in the preheat compartment, passes up through the opening in the heat conductive wall, sweeping the burner, turns outwardly and enters the upper compartment through the peripheral holes in the deflection wall.

A vent system is described through which the air exits from the upper compartment of the oven. It comprises a horizontally aligned hot air duct connected to the oven cavity at the rear of the oven liner, an exit stack connected to the hot air duct and extending upwardly from it, a cool air duct connected to the exit stack and extending downwardly from it, and a rotatable flat plate closure positionable alternately either for partial obstruction of air flow through the hot air duct or for complete prevention of air flow through the cool air entrance duct. A hydraulic thermostat bulb is positioned in the exit stack. At high oven temperatures, such as during heat cleaning, the draft of hot air from the oven is slowed by the obstructing closure while the hot air that does escape is mixed with cool air and then passed across the bulb. At lower temperatures, the hot air path is unobstructed and no cool air is admitted into the vent.

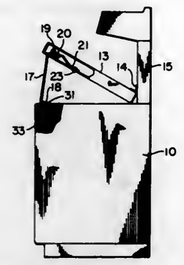
3,499,432
HEATING UNIT
Harold W. Hannebaum, Gooding, Idaho, assignor of ten percent to The Raymond Lee Organization, Inc., New York, N.Y., a corporation of New York
Filed Mar. 8, 1968, Ser. No. 711,552
Int. Cl. F24b *1/18*
U.S. Cl. 126—120 **10 Claims**



A heating unit which can be used in place of a conventional fireplace in a home, which can utilize wood as fuel, which operates efficiently and produces a beautiful and decorative effect while producing light as well as heat.

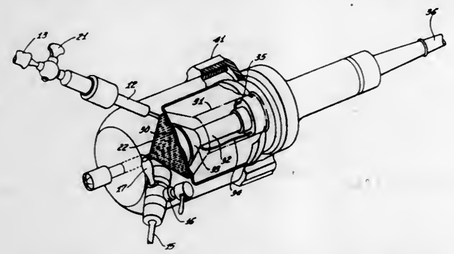
3,499,433
LIFT-UP RANGE TOP SUPPORT
Richard E. Payne, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed May 27, 1968, Ser. No. 732,214
Int. Cl. F24c *15/10*; B65d *43/16, 43/24*
U.S. Cl. 126—211 **1 Claim**

A range top hinged at the rear and having support rods attached at the front corners by leaf springs which bias the rods forwardly. The rods are normally within the range side walls and have bottom steps which, when the top is lifted, are withdrawn from and snap over the top



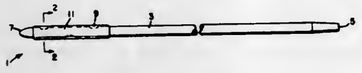
edges of the side walls to support the top in the open position.

3,499,434
DEVICE FOR MEASURING AND/OR RECORDING INTRACARDIAC PRESSURE AND SOUNDS
Georg Ulrich and Roland Gaggstatter, Freiburg im Breisgau, Germany, assignors to Fritz Hellige & Co., G.m.b.H., Freiburg im Breisgau, Germany
Filed Apr. 11, 1966, Ser. No. 541,637
Claims priority, application Germany, Apr. 12, 1965, 1,466,832
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **6 Claims**



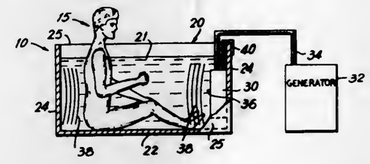
An intracardiac sound and pressure diagnostic apparatus comprising fluid-containing pressure head means and catheter means cooperating with sound transducer means and pressure transducer means for providing respective electrical signals indicative of sounds and pressures, respectively.

3,499,435
ESOPHAGEAL PROBE FOR USE IN MONITORING
Paul E. Rockwell, 38 Belle Ave., Troy, N.Y. 12180, and Donald D. Cameron, Waterford, N.Y., said Cameron assignor to said Rockwell
Filed June 2, 1967, Ser. No. 643,195
Int. Cl. A61b *5/02, 1/26*
U.S. Cl. 128—2.05 **10 Claims**



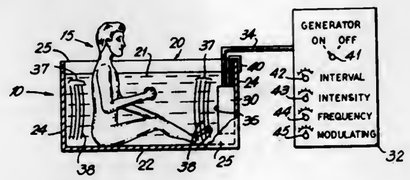
A disposable esophageal probe for use in monitoring, with a conventional stethoscope. Modifications of the esophageal probe of integral one-piece construction include the combination of the esophageal probe and a gastric drainage tube; the combination of the esophageal probe, gastric drainage tube and a temperature probe; the combination of the esophageal probe, gastric drainage tube and electrocardiogram lead; and the combination of the esophageal probe, gastric drainage tube, temperature probe and electrocardiogram lead.

3,499,436
METHOD AND APPARATUS FOR TREATMENT OF ORGANIC STRUCTURES WITH COHERENT ELASTIC ENERGY WAVES
Lewis Balamuth, New York, N.Y., assignor to Ultrasonic Systems, Inc., Farmingdale, N.Y., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,126
Int. Cl. A61h *1/00*; A61b *17/00*
U.S. Cl. 128—24 **38 Claims**



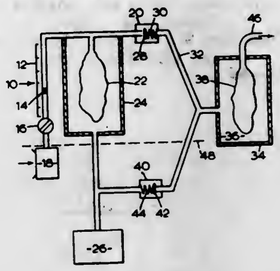
The use of coherent elastic energy waves in a defined frequency range, of generally from 500 cycles per second to 600,000 cycles per second, for the treatment of organic structures, such as humans and other animals, fish or plants, for therapeutic purposes.

3,499,437
METHOD AND APPARATUS FOR TREATMENT OF ORGANIC STRUCTURES AND SYSTEMS THEREOF WITH ULTRASONIC ENERGY
Lewis Balamuth, New York, N.Y., assignor to Ultrasonic Systems, Inc., Farmingdale, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 622,126, Mar. 10, 1967. This application Sept. 11, 1967, Ser. No. 666,871
Int. Cl. A61h *1/00, 23/00*
U.S. Cl. 128—24 **56 Claims**



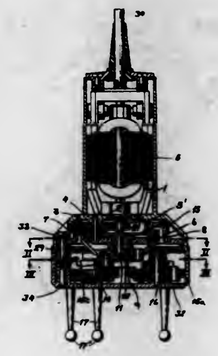
Application of ultrasonic energy to organic structures, and particularly humans, for therapeutic stimulation of the various systems, i.e., nervous, circulatory etc., with elastic coherent wave energy that is applied in pulses at relatively high repetition rate with the interval of time between each pulse as well as dosage and intensity, selected that the heat generated by a single pulse will be well dissipated before the application of the next pulse. In this way, the superficial body areas are treated, whereby the chief effects produced are those due to the coherent wave energy which the pulse gives to the tissue. The heat produced by absorption dissipates and there is no real thermal effect, such as a significant temperature rise in the tissue as is produced with high frequency vibrations at the same or similar frequency when applied in a continuous wave pattern.

3,499,438
RESPIRATORY METERING DEVICE
Roger E. W. Manley, Chorleywood, England, assignor to Blease Anaesthetic Equipment Limited, Chesham, England
Filed May 19, 1966, Ser. No. 551,286
Int. Cl. A62b *7/02*; A61b *5/08*
U.S. Cl. 128—145.6 **3 Claims**



A metering device particularly for supplying a predetermined small quantity of air or oxygen to the lungs of an infant for ventilation purposes employs a deformable bag which is squeezed to supply the air or oxygen. Such squeezing is done by supply of a predetermined volume of air or gas to the exterior of a further deformable bag located within a closed chamber. The volume of the contents of the latter bag so expelled is determined by the volume supplied, the latter being accurately determined by a constant flow rate supply of air or gas which is allowed to fill the said bag for a selected period of time.

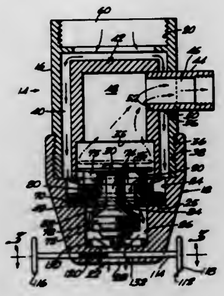
3,499,439
MASSAGE DEVICE
Hans Boller, 818 N. La Mont Drive, Cortland, N.Y. 13045
Filed May 26, 1967, Ser. No. 641,683
Int. Cl. A61h *7/00, 23/00*
U.S. Cl. 128—49 **4 Claims**



Massaging device with a motor mounted in a handle which terminates in an enlarged head accommodating a transmission with a plurality of intermeshing gears lying in a plane transverse to the motor shaft; a crank driven by that shaft; preferably via a speed reduced including a peripheral array of stepped gears, is centered on the shaft axis and plays in a fork or loop which is rigid with one

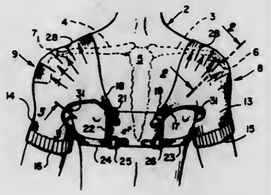
of the intermeshing gears and thus swingable about the axis of the latter, thereby imparting a rocking motion to all these gears. Each gear carries one or more massaging implements, such as a pair of resilient fingers guided in arcuate slots of a cover plate.

3,499,440
CLEANING DEVICE
Alan Gibbs, 16030 SW., 106th Ave., Miami, Fla. 33157
Filed May 8, 1968, Ser. No. 727,560
Int. Cl. A61h *13/00*
U.S. Cl. 128—66 6 Claims



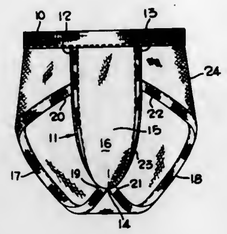
A device especially useful for cleaning operations which includes (a) a unit having an inlet port and two outlet ports, and (b) a spray head, connected to the unit (c) by a hose, which unit is adapted to be connected to a faucet to cause the fluid to flow through the unit which includes a diverter means and a valve effective in response to the flow to open and close and divide the flow into two pulsating components one of which is directed through the hose to the spray head for delivery through jets in a plurality of parallel pulsating fluid components in a spray form.

3,499,441
CLAVICLE BRACE
Kenneth F. Hall, 9205 W. 73rd Place, Arvada, Colo. 80002
Filed Sept. 1, 1967, Ser. No. 665,123
Int. Cl. A61f *5/03, 13/12, 5/02*
U.S. Cl. 128—87 10 Claims



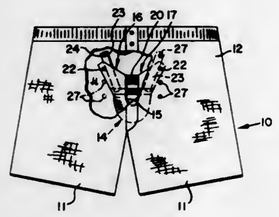
Clavicle brace including shoulder pieces adapted to bear against shoulders of wearer having flexible bands extending from shoulder pieces to front pad member and force applying strap members extending from shoulder pieces oppositely of bands diagonally across portions of back and around sides of wearer and joined to front pad member to apply equally distributed forces backwardly, outwardly and upwardly on shoulders of wearer to relieve forces on clavicle bone. Shoulder pieces having cut-out portions for ventilation of axilla and sleeve-like portions fitting over upper arm of wearer.

3,499,442
UNDERGARMENT
William A. Steinmetz, 2565 Telegraph Road, St. Louis, Mo. 63125
Filed Feb. 21, 1968, Ser. No. 707,190
Int. Cl. A61f *5/40*; A41b *9/02*; A41c *1/00*
U.S. Cl. 128—159 7 Claims



A man's supporter-brief undergarment that includes an elastic U-shaped pouch strap attached to an elastic waistband, and an elastic panel attached to and located inside the U-shaped strap to provide a shaped, supporting pouch at the front of the garment. A pair of elastic leg straps are attached to the U-shaped strap substantially at the strap bight, and are attached to opposite sides of the U-shaped strap to provide leg openings. A cloth covering is attached to and extends between the waistband, pouch strap and leg straps.

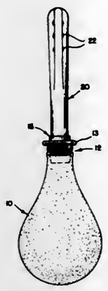
3,499,443
COMBINATION DRAWERS AND SUPPORTER
Ernest O. Scheerer, 777 Vaughn Ave., Toms River, N.J. 08753
Filed Apr. 8, 1968, Ser. No. 719,308
Int. Cl. A61f *5/40*
U.S. Cl. 128—159 3 Claims



In combination with a pair of men's drawers, a supporter or suspensary including a bag-like member adjustably attached to and suspended from what may be termed the front wall of the drawers, that is, the front portion which extends vertically between the waist band and the horizontal level of the crotch. The attaching and adjusting means consists of snap buttons partly on the supporter and partly on the said front wall, whereby the supporter may be selectively attached in any of a plurality of relatively lower or higher positions to suit the wearer's convenience. Thus the supporter functions

without the need of an elastic waist band such as is necessary as part of the common type of separate supporter and which is generally uncomfortable to wear and likely to cause skin irritation.

3,499,444
DISPOSABLE SYRINGE WITH ELASTICALLY EXPANSIBLE BAG
Katherine Koutsandreas, 2895 W. Ritchie Parkway, Rockville, Md. 20850
Filed Feb. 28, 1968, Ser. No. 708,977
Int. Cl. A61m *3/00, 7/00*
U.S. Cl. 128—232 6 Claims



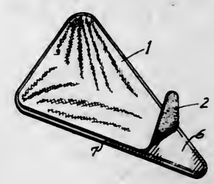
Disposable syringe having an elastically expansible balloon-like bag with a sleeve received within the neck of the bag. The neck projects beyond the corresponding end of the sleeve so that it may be expanded around a faucet for filling the bag and may be rolled back upon itself to to expose the end of the sleeve for engagement with a nozzle. The sleeve and the nozzle may have cooperating valve elements.

3,499,445
ANIMAL HUSBANDRY
Jack Owen Reed, Englewood, N.J., assignor to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 16, 1966, Ser. No. 572,679
Int. Cl. A61m *31/00, 7/00*
U.S. Cl. 128—260 8 Claims

The present invention involves an estrus block and enhancement method which predetermines when domestic animals such as cows, sheep, horses, etc., go into estrum. A medicament implant surgically inserted in the domestic animal slowly releases a medicament whose pharmacological action blocks occurrence of estrus, the total dosage available in the medicament implant being in excess of what will be absorbed over the residence period i.e. 14–18 days. Surgical removal of the implant after a predetermined period, i.e. from 14–18 days abruptly halts medication. A rebound phenomena enhances estrus and onset of estrum occurs in from 2–7 days following removal of the implant. By treating a group of cows in this fashion, onset of estrum for the entire group is synchronized and all may be artifically inseminated during the 2–7 days post removal period.

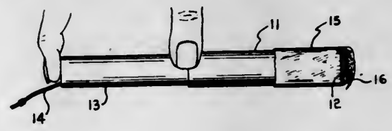
3,499,446
COSMETIC PATCH
Yosōji Tsuneizumi and Kiyoko Tsuneizumi, both of 1055 Kami Ikegami, Ota-ku, Tokyo, Japan
Filed Oct. 7, 1966, Ser. No. 585,184
Int. Cl. A61f *7/02*; A61m *35/00*
U.S. Cl. 128—260 13 Claims

A cosmetic patch including a base of thin, flexible, porous and elastic material of sheet form with a layer of cosmetic preparation on one of its main surfaces which is characterized by a melting point of about body temperature and a protective liner overlaying the layer of



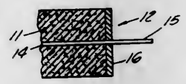
cosmetic preparation, said liner including tab means. The cosmetic patch is preferably contoured to nest over a portion of the human body.

3,499,447
TAMPON APPLICATOR
William J. Mattes, Neenah, Virginia A. Olson, Appleton, and Robert F. Skora, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,601
Int. Cl. A61f *13/20*
U.S. Cl. 128—263 8 Claims



A tube-type tampon applicator having its leading edge covered by an open-ended sleeve of thin plastic film. The forward portion of the sleeve, including the open end, is flattened and folded back on itself to bridge over and close the front opening of the tube where it serves to smooth over the nose portion of the tube and facilitate insertion into a body cavity. The film is sufficiently thin to retain its flattened and folded condition before and during insertion, but will unfold and open easily when the tampon is pushed against it while being ejected from the applicator.

3,499,448
INTEGRAL TAMPON SHIELD
John Leslie Jones, Pasadena, Calif., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Continuation-in-part of application Ser. No. 350,193, Mar. 9, 1964. This application Feb. 13, 1967, Ser. No. 615,681
Int. Cl. A61f *13/20*; B29d *27/00*
U.S. Cl. 128—285 4 Claims

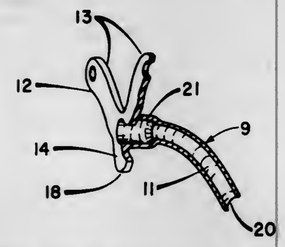


This invention teaches a flexible, integrally bonded menstrual shield for a one-piece regenerated cellulose sponge tampon, located in the tampon and adjacent the withdrawal string handle. It includes a teaching of a process for making the menstrual shield, together with a process for simultaneously fabricating a multiplicity of tampons having a menstrual shield.

3,499,449
RESORBABLE SURGICAL SUTURES FROM CELLULOSE ACID ETHERS
David F. Smith, 120 Grove St., Bay Head, N.J. 08742
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,209
Int. Cl. A61l *17/00*
U.S. Cl. 128—335.5 20 Claims

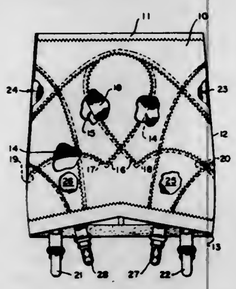
This invention discloses products suitable for use as resorbable surgical sutures, and methods for making them from certain cellulose acid ethers—such methods comprising orientation, stretching and drying procedures including special methods of orienting molecular chains through the action on their polar groups of diffusion- and/or membrane-potentials.

3,499,450
PEDIATRIC SIZE TRACHEAL TUBE
Arthur H. Rathjen, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Oct. 25, 1967, Ser. No. 678,035
Int. Cl. A61m *25/00*
U.S. Cl. 128—351 5 Claims



An improved tracheostomy tube of the size suitable for use in infants. The tube is preferably made of radiopaque silicone rubber and includes a transversely extending flexible flange at its proximal end. The flange has upwardly extending arms suitable for securing the tube to the infant's neck and a downwardly extending tongue, or tracheotomy incision shield, suitable for holding the tube in the trachea of the infant regardless of the position or forward movement of the infant's head and for providing an inferior contact edge of the tube at a point away from the wound site on the neck of the infant.

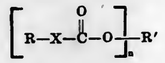
3,499,451
REINFORCED GIRDLE
Leo Strell, Forest Hills, N.Y., assignor to I. B. Kleinert Rubber Company, New York, N.Y., a corporation of New York
Filed June 12, 1967, Ser. No. 645,112
Int. Cl. A41c *1/00*; A61f *5/37*
U.S. Cl. 128—539 7 Claims



A girdle having a basic body-holding sheath and two pairs of reinforcing auxiliary panels, one of said pairs being partially overlapped at the abdominal area and extending around the thighs to the lower edge of the rear of the basic body sheath and the second pair abutting each other at a seam in the back of the garment and extending around the thighs to the lower front edge of the sheath.

3,499,452
TOBACCO COMPOSITIONS INCORPORATING NOVEL ESTERS OF POLYHYDROXY COMPOUNDS
Andrew G. Kallianos, John F. Porter, and James D. Mold, Durham, N.C., assignors, by mesne assignments, to Liggett & Myers Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 22, 1967, Ser. No. 649,422
Int. Cl. A24b *15/04*
U.S. Cl. 131—17 6 Claims

This invention relates to esters of polyhydroxy compounds having the following formula:



wherein *n* is an integer from 1 to 4, R is a radical selected from the group consisting of acyclic alkyls having from 1–12 carbon atoms, vanillin and phenethyl; R′ is a radical of a polyhydroxy compound selected from the group consisting of monosaccharides, disaccharides, trisaccaharides, polysaccharides and glycols; and X is oxygen. These compounds may be used in applications where release of an alcohol by heat is desired. For example, they may be incorporated in tobacco and decompose during smoking of the tobacco thereby releasing a flavorant into the smoke stream. In addition the rate of release of these compounds may be controlled by adjustment of the pH of the medium in which they are dissolved.

3,499,453
TOBACCO SHEET OF HIGH WET STRENGTH
John Townend, Lancaster, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
No Drawing. Original application Dec. 1, 1966, Ser. No. 598,215, now Patent No. 3,416,537, dated Dec. 17, 1968. Divided and this application July 10, 1968, Ser. No. 761,364
Int. Cl. A24b *13/00*
U.S. Cl. 131—17 4 Claims

This invention relates to the manufacture of coherent tobacco products suitable for smoking and more particularly to such tobacco products in the form of a leaf or foil with an appearance and other physical qualities that they may be applied as the outer wrapper of cigars, cigarillos and the like in lieu of leaf tobacco ordinarily used as such wrapper. A feature of the new tobacco products is high resistance to disintegration when moistened and even chewed.

In essence, tobacco products of high wet strength are made of comminuted tobacco and film-forming cellulose derivatives which are substantially insoluble in water at normal (25° C.) and higher temperatures but are substantially soluble in organic acid of not less than about 15% by weight concentration in water. Preferably, the water-insoluble cellulose derivative is dissolved in formic or acetic acid of about 20% to 40% by weight concentration in water. While a tobacco sheet produced simply by admixing dry-ground tobacco powder with a solution of a cellulose derivative in acetic acid, casting and drying the resultant tobacco suspension will have high wet strength, such tobacco sheet will not have adequate resistance to chewing particularly when used as wrapper on large cigars that are frequently subjected to excessive chewing by some smokers. However, where chew resistance in addition to wet strength is desired in a tobacco

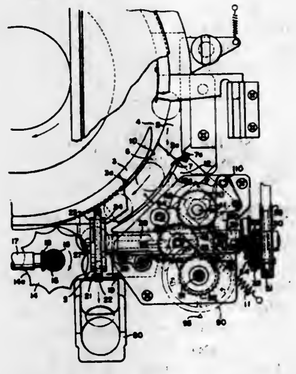
sheet, this is achieved pursuant to the invention by incorporating in the suspension of tobacco in acetic acid highly hydrated, well-beaten cellulose fibers which may be derived from tobacco, particularly tobacco stems, or other plants as is known in the pulp art.

The particularly valuable tobacco sheets which include cellulose fibers for chew resistance have been made possible by the dual nature of the solvent used in accordance with this invention which combines organic acid to dissolve the water-insoluble cellulose derivative with water to hydrate the cellulose fibers.

3,499,454
METHOD OF MAKING TOBACCO SHEET MATERIAL
John D. Hind, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Continuation-in-part of application Ser. No. 606,527, Jan. 3, 1967. This application Dec. 7, 1967, Ser. No. 688,653
Int. Cl. A24b *9/00, 3/14, 13/00*
U.S. Cl. 131—140 1 Claim

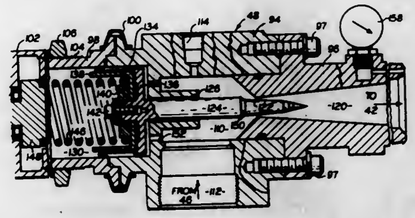
This disclosure relates to a process for producing reconstituted tobacco sheets. The binder is made from tobacco plant parts and involves the use of the naturally occurring tobacco pectins, which are obtained by a process in which ammonium carbonate is employed to treat the tobacco plant parts. The treatment involves the destruction of the alkaline earth metal cross-links of the tobacco pectins, the release of the resulting tobacco pectins by a washing action and the depositing of the released tobacco pectins on the treated plant parts.

3,499,455
COIN HANDLING APPARATUS IN WHICH COINS ARE SELECTED, COUNTED, STACKED AND WRAPPED
Isamu Uchida and Shigeru Miyayama, Tokyo, Kenkicki Watanabe, Kanagawa-ken, Eiichi Kokubo Saitama-ken, and Kyoichi Osako, Tokyo, Japan, assignors to Tenshin Manicounting Machine Co. (Tenshin Kahei Keisanki K.K.), Taito-ku, Tokyo, Japan
Filed Oct. 25, 1967, Ser. No. 678,081
Claims priority, application Japan, Oct. 27, 1966, 41/70,961
Int. Cl. G07d *9/04, 9/06, 3/16*
U.S. Cl. 133—8 17 Claims



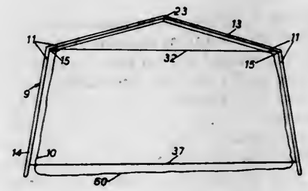
A coin handling machine with a selecting section, a counting section and a wrapping section with a control for simutaneously and cooperatively adjusting all of the sections by the operation of a shaft system controlling various cams.

3,499,456
FLUID FLOW CONTROL SYSTEM
Francis Rerecich, Dover, and Henry Alfred Petry, Sparta, N.J., assignors to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey
Filed June 5, 1967, Ser. No. 643,684
Int. Cl. B08b *3/02*; B22d *11/12*; B05b *1/30*
U.S. Cl. 134—151 5 Claims



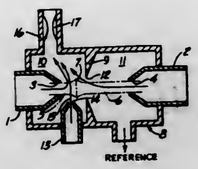
A fluid flow control system delivers constant volume of fluid in spite of variations in the back pressure over a substantial range. A constant inlet pressure is used for the fluid, and a cavitating venturi is placed in the delivery line so that flow is independent of back pressure as long as the back pressure does not reach a critical value which is substantially 85% of the upstream pressure on the venturi. The system is suitable for various uses requiring somewhat different combinations, but one of the principal use is ts supply fluid for cooling the metal in continuous casting processes where it is essential that the amount of coolant sprayed on all sides of the casting be uniform to prevent warping or stressing, and cracking or rupturing of the casting.

3,499,457
TENT
Raymond Hugh Waring, 17 Kingfisher Court, Bridge Road, East Molesey, Surrey, England, and David Malcolm Brohn, Tunnel House, Saltford, Somerset, England
Filed July 31, 1967, Ser. No. 657,340
Claims priority, application Great Britain, Aug. 5, 1966, 35,164/66
Int. Cl. A45f *1/16*
U.S. Cl. 135—3 5 Claims



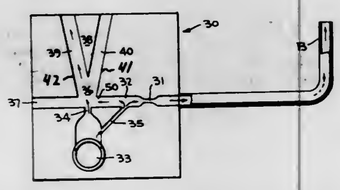
A frame for a tent has a plurality of upright members each of which consists of upper and lower struts, pivotally or detachably connected at or adjacent to a knee joint so that the upper strut can adopt an inclined position when the lower strut is substantially vertical. The knee joint limits any relative movement between the upper and lower struts. A crown unit connects the upper ends of the upper struts and a tension element interconnects the uprights at or adjacent the knee joints.

3,499,458
FLUID JET MODULATING CONTROL
Lawrence B. Korta, Milwaukee, and Thomas J. Lechner, Jr., Menomonee Falls, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 1, 1966, Ser. No. 539,558
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 6 Claims



This disclosure relates to a pure fluid modulating device, including a chamber within which a pair of opposing free streams impact. A deflection control stream orifice applies a control stream to one side of the one free stream. The output means is connected directly to this chamber and the load or output pressure is the downstream pressure of the control stream orifice. The device thus operates in a manner analogous to the transistor emitter follower circuit of the electronic art wherein all of the emitter current which consists of the base and the collector current is supplied to the load.

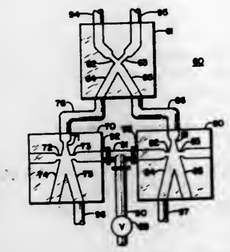
3,499,459
FLUERIC STALL SENSOR CIRCUIT
Elmer L. Swartz, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 17, 1967, Ser. No. 617,780
Int. Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 1 Claim



A pickup probe is placed on an aircraft wing to measure stall and nonstall conditions thereon. A biased bistable amplifier is communicated to said pickup probe by a flow restrictor. During stall conditions the biased bistable amplifier will direct the power fluid it receives to a first output conduit while in nonstall conditions it will direct its power fluid to a second output conduit. The bias in the bistable amplifier is accomplished by communicating part of the power fluid the amplifier receives to a first control conduit therein.

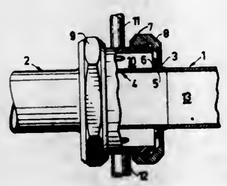
3,499,460
FLUID CIRCUIT
Charles W. Rainer, Anoka, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,964
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 5 Claims

A fluidic variable gain circuit comprising three proportional fluid amplifiers interconnected such that the outlet passages of the first amplifier supply fluid to the power nozzles of the second and third amplifiers at oppositely varying presures. The circuit gain is changed by changing a bias pressure at control ports of the second and third



amplifiers. The circuit output signal is produced between an outlet passage of the second amplifier and an outlet passage of the third amplifier.

3,499,461
COMBINED PIPE COUPLING AND PIPE FLUSHING DEVICE
Alex Tuma, Loddekopinge, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed July 24, 1967, Ser. No. 658,307
Claims priority, application Sweden, Aug. 15, 1966, 10,993/66
Int. Cl. F16k *19/00, 15/16*
U.S. Cl. 137—240 21 Claims

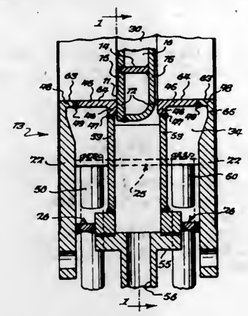


A device for coupling pipes together is provided having a chamber for a flushing material which may be admitted into the pipe through a non-return valve for cleansing and/or sterilizing the pipes to remove foreign matter which might collect at the joint. A pipe system employing the coupling device is also disclosed.

3,499,462
SLIDE VALVE CASING
Frank A. Berczynski, Williamsville, N.Y., assignor to A. E. Anderson Construction Corporation, Buffalo, N.Y.
Filed June 28, 1967, Ser. No. 649,615
Int. Cl. F16k *49/00*
U.S. Cl. 137—340 10 Claims

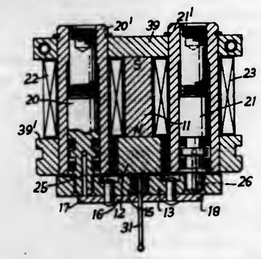
The slide valve casing includes a sealing ring having a radially disposed annular sealing face along one edge for co-operating with a sealing face on a slide valve body. The sealing ring is welded at its other edge of the annular edge of a flange formed as an integral part of and projecting at a right angle from a radial support member, the inner surfaces of the sealing ring and flange forming a high temperature air passage. The sealing ring and support member together with a pair of right angularly related structural members form a built-up, welded cooling conduit outwardly about the sealing ring and flange to cool the same. The sealing ring, flange and an annular

portion of the support member immediately adjacent the flange have substantially the same thickness, thereby providing uniform expansion. The weld at the junction of the



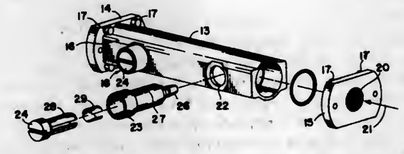
sealing ring and the flange is disposed on the side thereof remote from the air passage and is directly exposed in the cooling conduit.

3,499,463
ELECTROHYDRAULIC SERVO VALVE
Frederick George Trott, Northwood, and Ronald Walters, Wembley, England, assignors to Sperry Rand Limited, London, England, a company of Great Britain
Filed Nov. 20, 1967, Ser. No. 684,219
Int. Cl. G05d *16/20*; H01f *7/08*; F16k *51/00*
U.S. Cl. 137—595 2 Claims



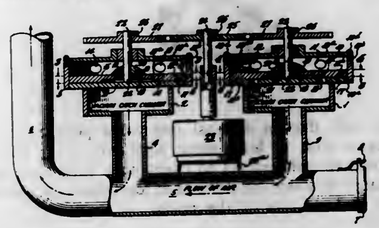
The armature of an electrohydraulic servo valve is formed integrally with a pair of oppositely extending arms. The arms are rigidly secured to stationary structure with distance pieces therebetween to set a gap between the armature and the stationary structure. The armature can tilt by torsional deformation of the arms.

3,499,464
FLUID SUPPLY MANIFOLD SYSTEM FOR FLUID OPERATED INSTRUMENTATION
George F. Williams, Riverside, R.I., and Hoel L. Bowditch, Foxboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed July 15, 1968, Ser. No. 744,834
Int. Cl. F17d *1/00*
U.S. Cl. 137—608 5 Claims



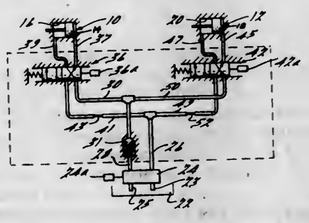
A manifold system for distributing operating fluid from a fluid source to various areas of control and/or energy instrumentation. The system is provided with individual flow to several special valves within the manifold.

3,499,465
MILKING MACHINES
William Roger Roop, Union Bridge, Md., assignor of one-third to Maurice Rhodes Zent, Keymar, Md.
Filed Feb. 8, 1967, Ser. No. 614,676
Int. Cl. A01j *5/10*
U.S. Cl. 137—624.13 3 Claims



This invention relates to an improved pulsator for milking machine operated by suction in which there is one or more suction chambers containing a rotatable disc serving to periodically couple a chamber with suction or to the atmosphere to effect a relief of suction, the mechanism including in each chamber a rotatable disc closely fitting the inner periphery of a suction chamber and having holes therethrough, said disc being adapted to rotate over the floor of the respective chamber and which has openings therethrough leading to the atmosphere or to the port for connection with the vacuum side. The foregoing mechanism is duplicated with a common drive when it is desired to provide perfect balance and a desired ratio as between the demand on the front and rear teats.

3,499,466
PORTABLE POWER SUPPLY WITH VALVE FOR DUAL TOOL OPERATIONS
Peter R. Chirco, Utica, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed July 12, 1968, Ser. No. 744,475
Int. Cl. F15b *18/00, 11/16, 13/06*
U.S. Cl. 137—624.18 8 Claims



Apparatus whereby a pair of hydraulic tools can be actuated from a common fluid source.

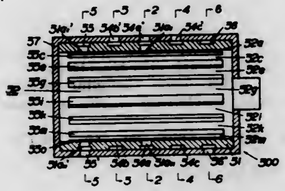
3,499,467
MULTIPLE FLOW-PATTERN VALVE
Philip D. McCord, Cincinnati, Ohio, and Ellis P. Lang, Jr., Highland Heights, Ky., assignors to The Lunkenheimer Company, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 12, 1967, Ser. No. 630,289
Int. Cl. F16k *11/08*
U.S. Cl. 137—625.19 8 Claims

Multiple flow pattern valve including a valve body which has at least four circumferentially arranged ports

connecting with a bore, and a rotatable plug positioned within the bore and including a first peripheral slot dimensioned and positioned such that in at least one valve position it communicates with at least two adjacent ports and having a second slot dimensioned and positioned such that in at least one valve position it communicates with at least three adjacent ports. The slots are position with respect to each other such that one of the spaces between the slots, in at least one valve position, blocks at least one of the ports.

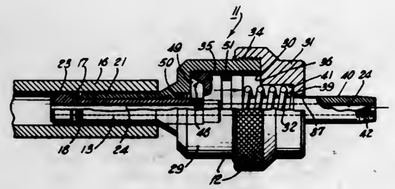


3,499,468
CONTROL VALVE FOR USE WITH HYDRAULIC STEP MOTOR
Yoshitsugu Tsuchiya, % Mr. Hasegawa, 9–22 1-chome, Kishi-machi, Urawa-shi, Saitama-ken, Japan, and Kazuyoshi Uyama, 25–4, 3-chome, Nishirokugo, Ota-ku, Tokyo-to, Japan
Filed Apr. 25, 1968, Ser. No. 724,157
Claims priority, application Japan, Apr. 28, 1967, 42/26,876
Int. Cl. F17d *3/00*
U.S. Cl. 137—625.19 **9 Claims**



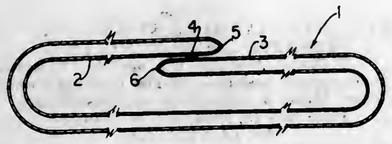
A control valve for use with a hydraulic step motor in which in order to control the direction and angle of rotation per step of a spool rotatably fitted into a sleeve and coupled mechanically to an output shaft of a rotary type hydraulic driving device, the spool is provided with a group of cavities equidistantly spaced apart from each other and arranged and disposed circumferentially of said sleeve; the sleeve is provided with a suitable number of groups (of sets) of ports each consisting of these ports each of which has different functional characteristics so that the positions of said ports relative to said cavities are always reversed relative to each other, said ports being arranged and disposed in such a manner that the ports which belong to the different phases are not opened to one common cavity and the ports of each of said groups (sets) of ports which belong to the same group are positioned along the same circumference; outer ports for said first mentioned ports are positioned in said sleeve in axial alignment with said first mentioned ports and the outer ports which have the same functional characteristics are positoned along the same circumference; and said outer ports are communicated with supply inlets of said driving device and a hydraulic pressure source through throttles or restrictions while the port groups are opened to the outside, phase by phase, sequentially, whereby the difference of the opening products relative to the cavity group of the ports of each phase having different functional characteristics are utilized to rotate the driving device through a predetermined angle and the selection of the sequence of opening said port groups in each phase controls the direction of rotation of said driving device.

3,499,469
SELF SEALING PRESSURE PLUG
Bennie Vizuete and Richard J. North, Port Arthur, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,778
Int. Cl. F16l *55/12, 21/04*; **G01m** *3/04*
U.S. Cl. 138—90 **5 Claims**



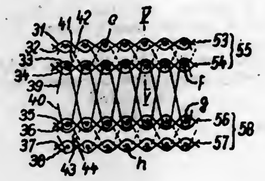
A hydraulic test plug for pressure testing of tubes. There is a hollow mandrel for admitting the hydraulic test fluid to the interior of a tube under test. There is a passage connected to the hollow for permitting the test fluid directly to apply actuation force to expand a seal between the mandrel and the interior of the tube.

3,499,470
MULTILAYER LATERALLY EXPANSIBLE TUBE OF THERMOPLASTIC MATERIAL
Ulrich Ströle, Leutershausen, Rudolf Klein, Mutterstadt, and Walter Weldinger, Mannheim-Kafertal, Germany, assignors to Zellstoffabrik Waldhof, Mannheim-Waldhof, Germany, a corporation of Germany
Filed Dec. 27, 1967, Ser. No. 693,876
Claims priority, application Germany, Dec. 31, 1966, Z 12,624
Int. Cl. F16l *11/06, 11/12*
U.S. Cl. 138—170 **3 Claims**



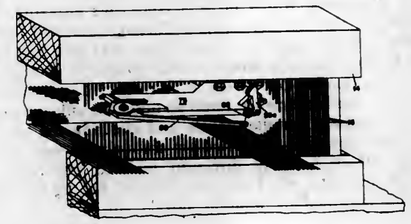
This invention relates to a multilayer tube of thermoplastic material adapted for the manufacture of multilayer bags consisting of a cylindrical tube with two overlapping edges formed from a flat, thin tube whereby said two overlapping edges have four layers of thermoplastic material, and a longitudinal seam connecting the inner two layers of said overlapping edges, said two overlapping edges extending beyond said longitudinal seam. The invention also relates to bags or sacks formed from said multilayer tube, which bags or sacks have a certain degree of cross-sectional expansion and resist excessive lateral internal pressures.

3,499,471
METHOD OF WEAVING VELVET TAPES AND THE LIKE
Hans Kuny, Plattenhof, Kuttigen, Switzerland
Filed May 12, 1967, Ser. No. 638,130
Claims priority, application Switzerland, May 12, 1966, 6,891/66
Int. Cl. D03d *39/16, 27/10*
U.S. Cl. 139—21 **5 Claims**



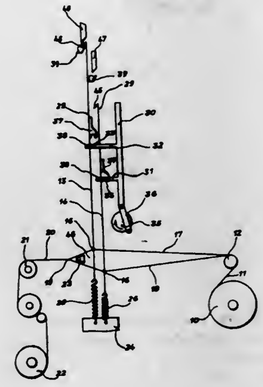
In the manufacture of velvet ribbons, two ribbons connected to each other by common pile warp threads are woven simultaneously and separated by cutting up the pile. According to the invention, four weft threads are simultaneously inserted each by one shuttle, two for each ribbon, only one of them carrying the pile. The two weft threads may be inserted for each ribbon, either into one shed subdivided by a set of pile warp threads, on both sides of the latter, or each into one of two superposed sheds so as to produce tubular ribbons.

3,499,472
TERRY LOOM OPERATING WITH STATIONARY WEFT SUPPLIES
Gordon Taylor Gurney and Kenneth Jeurit Hall, Worcester, Mass., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 28, 1967, Ser. No. 663,604
Int. Cl. D03d *39/02, 47/12*
U.S. Cl. 139—25 **10 Claims**



An outside filling supply loom adapted to weave terry cloth and operating with a gripper shuttle, the loom having a lay which operates in cycles of partial beat-ups followed by a full beat-up, a presenter for presenting weft from the outside supply source to the shuttle before it is picked and for retrieving the weft after the shuttle is picked. The presenter retrieves the weft at the intersection of a weft (at one of the beat-up positions) and the selvage and a pick placer positions a portion of the weft from the other beat-up position to the same intersection for retrieval by the presenter.

3,499,473
JACQUARD MACHINE WITH ELECTROMAGNETICALLY CONTROLLED HEALDS
Heinrich Fend and Ferenc V. Nemethy, Zurich, Switzerland, assignors to Werkzeugmaschinenfabrik Oerlikon Buhrle & Co., Zurich, Switzerland
Filed Mar. 8, 1968, Ser. No. 714,162
Claims priority, application Switzerland, Mar. 10, 1967, 3,490/67
Int. Cl. D03c *3/00, 13/00*
U.S. Cl. 139—59 **12 Claims**

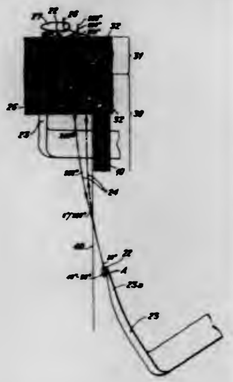


The healds of a Jacquard machine are raised and lowered by a separate drive. Each heald comprises at its upper end a hook-shaped stop which can be brought into engagement with a stationary knife by means of an electromagnet when the heald is in the upper position so that the heald drive can no longer lower the heald into its lower position. The upper portion of the heald is constructed in the form of a leaf spring and, when the magnet is energised bends, with the stop, within range of the knife and, when the electromagnet is not energised, the stop describes a path of movement out of range of the knife.

3,499,474
METHOD AND APPARATUS FOR FORMING SELVAGES ON CLOTH
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Dec. 27, 1967, Ser. No. 693,935
Claims priority, application Switzerland, Dec. 29, 1966, 18,766/66
Int. Cl. D03d *47/48*
U.S. Cl. 139—122 **3 Claims**

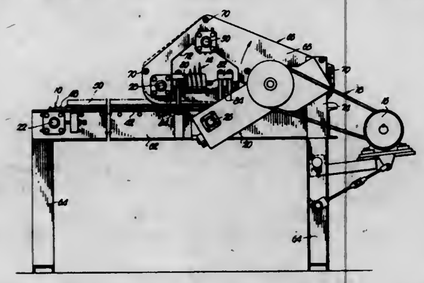
In the weaving of cloth on a loom in which the weft threads are pulled through the shed from a supply bobbin outside the shed, a selvage is formed by a method in which a tuck-in needle is subjected to a reciprocating arcuate motion generally transversely of the warps and a reciprocating linear or substantially linear motion generally lengthwise of the warps, these motions being superposed. The arcuate motion includes a positive acceleration of the needle back toward the shed from an extreme position in which the weft-grasping hook on the needle is laterally outside the shed but vertically between the upper and lower halves of the shed, a deceleration which retards the passage of the weft-holding hook across the selvage portion of the width of the web of cloth, and a reacceleration toward an inner rest position in which the

needle is retracted out of the shed and out of the way of the reed. Separate cams produce the arcuate and linear motions which are superposed on each other, the latter motion also including a pause timed to bring the needle briefly to rest as regards both motions while the hook is within the selvage portion of the width of the cloth being woven. A third cam suitably coupled to those already



mentioned effects reciprocating motion, lengthwise of the warps, of a weft thread clamp adjacent the edge of the cloth between the line of picking and a position making it possible for the tuck-in needle to grasp the weft last picked through the shed. A fourth cam moves the clamp up and down.

3,499,475
SPIRAL MEAT CUBER
Marshall Long, Leawood, Kans. assignor to Marlen Equipment Company, Overland Park, Kans., a corporation of Kansas
Filed Feb. 9, 1968, Ser. No. 704,352
Int. Cl. B02c *18/06, 7/10*
U.S. Cl. 146—95 **10 Claims**

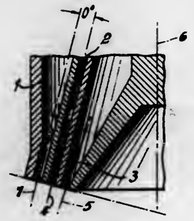


Meat is advanced between and by an endless conveyor and an endless retainer and is severed during advancement by a frusto-conical, helical knife whose axis of rotation is parallel with both the upper meat supporting lap of the conveyor and the lower meat engaging stretch of the coveyor, such axis being inclined relative to the path of travel of the meat. Progressively deeper cuts, normal to such path of travel are made in the meat during each revolution of the knife until complete severance; and the weight of the swingable retainer unit tightly presses the meat downwardly against the conveyor. The convolutions of the knife depend through the retainer between the spaced, transverse stripper rods thereof; the larger convolutions not only project across the space between the conveyor and the retainer, but extend through the conveyor between the spaced, transverse meat supporting rods of the conveyor; and lugs on the conveyor rods hold the meat against lateral displacement.

ERRATUM

For Class 150—52 see:
Patent No. 3,500,044

3,499,476
SPRAY DRYING OF LIQUIDS TO FORM PARTICULATE SOLIDS
Gerhard Hartlapp, Hermulheim, near Cologne, Helmut Klee, Cologne, and Josef Koch, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Apr. 23, 1968, Ser. No. 723,394
Claims priority, application Germany, Apr. 29, 1967, K 62,184
Int. Cl. B01d *1/16*
U.S. Cl. 159—4 **10 Claims**

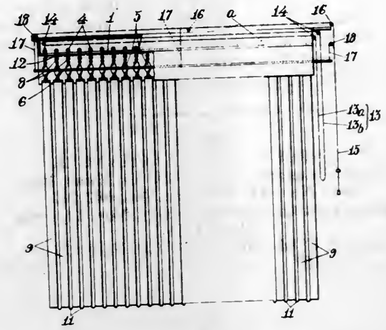


Production of particulate solids from starting material comprising solutions or suspensions, by nozzle-spraying the starting material in a tower through a flame zone produced by means of a set of burners arranged in annular fashion, the nozzle being formed with three mutually inclined annular chambers which are arranged concentrically with respect to each other and comprise an inner annular nozzle chamber, an intermediate annular nozzle chamber and an outer annular nozzle chamber, whose outlet openings form concentric annular nozzle slits, and the starting material being sprayed through the said intermediate nozzle chamber in association with a spray inducing medium issuing through the said inner and outer nozzle chambers, which process comprises effecting the spraying of the starting material through the said intermediate annular nozzle slit and of the spray inducing medium through the said inner annular nozzle slit in a spray direction extended outwardly with respect to the nozzle centre axis and inclined to impinge upon the effluent from the intermediate annular nozzle and effecting the spraying of the spray inducing medium through the said outer nozzle slit in a spray direction inclined inwardly to impinge upon the jet of sprayed material issuing through the said intermediate annular nozzle slit.

3,499,477
BLIND
Takashi Niwa, 2–9–9, Shingashi, Itabashi-ku, Tokyo, Japan
Filed Mar. 18, 1968, Ser. No. 713,740
Claims priority, application Japan, Mar. 23, 1967, 42/17,687; Apr. 7, 1967, 42/28,668, 42/28,669; Apr. 12, 1967, 42/29,943; Jan. 31, 1968, 43/5,374
Int. Cl. E06b *9/36*
U.S. Cl. 160—166 **4 Claims**

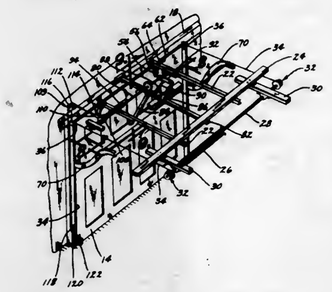
The present invention discloses a blind comprising a number of vertically extending louver boards suspended

through rotary members to rollers travelling on a rail, said rotary members being rotatably fitted to the rollers at their upper parts and fixedly fitted to the upper ends of the louver boards at their lower parts, and character-



izing in that the opening and closing directions of the louver boards are decided by rotating the rotary members to a desired amount by a single actuating bar which engages the rotary members at a right angle.

3,499,478
DOOR ASSEMBLY
Oakley A. Schneider, Blockton, Iowa 50836
Filed Mar. 6, 1968, Ser. No. 710,998
Int. Cl. E05d *15/26, 15/04*
U.S. Cl. 160—207 **6 Claims**



A variable power cable drum for opening a garage door having top and bottom door sections pivoted together and movable as a unit rearwardly in a horizontal plane. A rack and gear door opener is used to break the door from its vertical closed position.

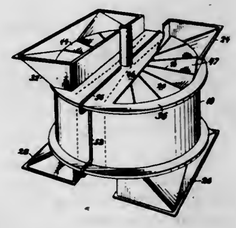
3,499,479
CENTRIFUGAL PIPE CASTING APPARATUS
Jean Denyszyn, Lynchburg, Va., assignor to Glamorgan Pipe & Foundry Co., a corporation of Virginia
Filed May 18, 1967, Ser. No. 639,535
Int. Cl. B22d *13/02*
U.S. Cl. 164—302 **6 Claims**

Centrifugal pipe casting utilizing a rotatable mold and a permanent-type reusable core for partially closing the mold at its pipe withdrawal end. The portion of the core facing casting material within the mold presents a surface with indentions for receiving and solidifying casting material so as to hold the end of the pipe and prevent distortion



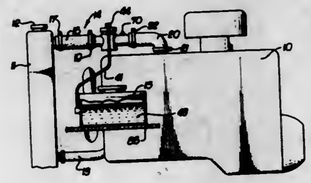
and end cracking prior to removal of the pipe from the mold.

3,499,480
FLAME SEALS
Gregory Theoclitus, Wellsville, N.Y., assignor to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware
Filed Sept. 10, 1968, Ser. No. 758,739
Int. Cl. F23l *15/02;* **F28d** *19/04*
U.S. Cl. 165—9 **6 Claims**



Sealing means for use in a rotary regenerative preheater whereby fluid leakage between relatively movable parts thereof is subjected to the heat of burning gases whereby noxious constituents of the escaping fluid are oxidized and thus reduced to an innocuous state.

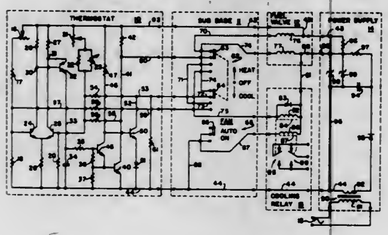
3,499,481
PRESSURIZED LIQUID COOLING SYSTEM
Walter C. Avrea, Placentia, Calif., assignor to Saf-Gard Products, Inc., a corporation of Arizona
Continuation-in-part of application Ser. No. 683,223, Nov. 15, 1967. This application Mar. 24, 1969, Ser. No. 813,800
Int. Cl. F28d *15/00;* **F01p** *17/02, 11/18*
U.S. Cl. 165—11 **5 Claims**



A pressurized cooling system for a conventional internal combustion engine, wherein the cooling system includes an overflow passage communicating with the

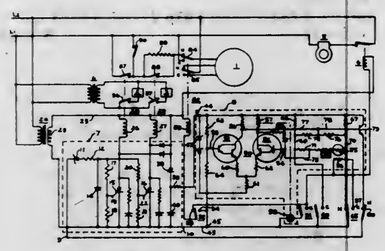
highest point in the radiator system in which there is an outflow check valve so that liquid expansion unseats the check valve and excess liquid passes through a passage to an accumulator tank; and when the radiator system cools and a low pressure suction condition is created, the liquid in the tank is drawn back through the same passage through the second check valve which opens inwardly toward the radiator to allow the liquid to be returned to the radiator.

3,499,482
TEMPERATURE CONTROL SYSTEM
Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Original application Jan. 26, 1968, Ser. No. 700,770. Divided and this application Feb. 19, 1969, Ser. No. 816,858
Int. Cl. F25b 29/00
U.S. Cl. 165—24 4 Claims



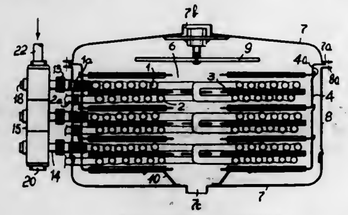
A solid state temperature control system that uses a bridge network to control transistor circuits that operate a heating fuel valve or a cooling relay. The selection of a heating or cooling mode of operation is made by a manual switch on a subbase at the thermostat. The operation is in turn controlled by the use of feedback circuits between the transistor circuits and the bridge.

3,499,483
MODULATING TEMPERATURE CONTROL APPARATUS
Paul D. Schrader, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,418
Int. Cl. F25b 29/00
U.S. Cl. 165—26 5 Claims



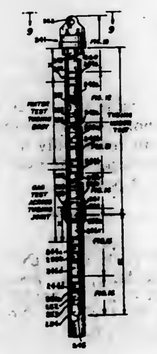
A temperature control apparatus for controlling the operation of an air conditioning device for heating, cooling, or heating and cooling a space and having at least two output stages with operating relays for each stage comprises means including a thermistor responsive to space temperature for supplying a control voltage which is variable with the space temperature. This voltage is supplied to parallel connected silicon controlled rectifiers for respectively energizing the relays. The silicon controlled rectifiers are gated to fire at different gating voltages and hence at different temperatures sensed by the thermistor to provide a staged or modulated output from the conditioning device. In a preferred form, the thermistor forms part of a modified Darlington single stage differential amplifier adapted to supply the controlled voltages to the silicon controlled rectifiers.

3,499,484
TWO-FLUID HEAT EXCHANGER
Gianluigi Lanzoni, Via Civitali 13, Milan, Italy
Filed Nov. 13, 1967, Ser. No. 682,002
Claims priority, application Italy, Nov. 24, 1966, 30,314/66
Int. Cl. F28d 7/00; F28f 7/00; F16l 47/00
U.S. Cl. 165—159 3 Claims



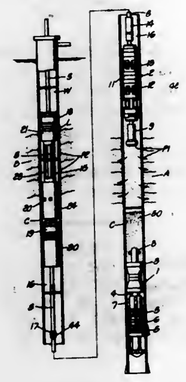
This invention relates to a two-fluid heat exchanger comprising modular members each in the form of two superimposed plane spirals including a plate member therebetween, union means for connecting said spirals to an external circuit for a first fluid, an envelope enclosing said modular members and in communication with an external circuit for a second fluid.

3,499,485
WELL TOOL COMBINATION AND ADAPTER
Clayton L. Phillips, Rte. 4, Box 793–B, Houston, Tex. 77040
Continuation-in-part of application Ser. No. 620,043, Mar. 2, 1967. This application Nov. 4, 1968, Ser. No. 785,838
Int. Cl. E21b 33/03, 43/00
U.S. Cl. 166—67 9 Claims



The invention includes a well tool for testing well tubing for leakage, section by section, as a tubing string is built up in a well bore, one channel supplying upper, central and lower packer setting liquid to isolate an upper annular space for liquid testing for leakage, and a lower annular space for gas testing for leakage across tubing joint; the tool also providing another channel for conveying test liquid to the upper annular space, and still another channel for conveying test gas to the lower annular space.

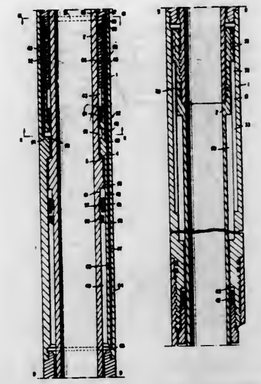
3,499,486
METHOD OF AND APPARATUS FOR TREATING WELLS
Lyle B. Scott, South Gate, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 703,983
Int. Cl. E21b 23/00
U.S. Cl. 166—147 4 Claims



A method of preventing the flow of fluid into a low pressure zone of earth formation traversed by a well bore when said fluid is placed in the well bore, in which a liner is temporarily employed to block off said low pressure zone. Apparatus for performing such method in which the liner is provided with a by-pass valve, opposing packers, and a releasable connection with a running-in string of pipe.

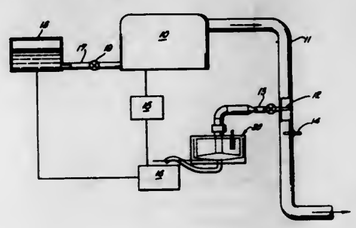
3,499,487
WELL TOOL WITH HYDRAULIC IMPEDANCE MECHANISM
Burchus Q. Barrington, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Original application Dec. 23, 1966, Ser. No. 604,209, now Patent No. 3,435,897, dated Apr. 1, 1969. Divided and this application Nov. 19, 1968, Ser. No. 793,213
Int. Cl. E21b 23/00
U.S. Cl. 166—237 2 Claims

A well tool including a tubular body and two longitudinally displaced conduits mounted for individual telescoping movement therewithin. The lowermost inner tubular conduit supports a rotary valve. The uppermost tubular conduit, which serves to transmit actuating force to the rotary valve, is connected to the outer tubular member by an hydraulic coupling. This hydraulic coupling impedes, without preventing, movement of the valve actuating conduit. The two inner conduits are telescopingly interconnected and an annular by-pass passage extends between the outer conduit and the telescopingly interconnected inner conduits. A slide valve defined by portions of the outer conduit and the valve actuating conduit serves to control fluid flow through this by-pass passage. A lug and slot control mechanism is provided to control movement of the valve actuating conduit relative to the outer conduit to insure that either the by-pass valve or



the rotary valve is placed in an open position in response to movement of the actuating conduit.

3,499,488
SECONDARY OIL RECOVERY PROCESS USING STEAM
Stewart Haynes, Jr., and Fuad T. Saadeh, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 686,931
Int. Cl. E21b 47/00, 43/24
U.S. Cl. 166—250 3 Claims

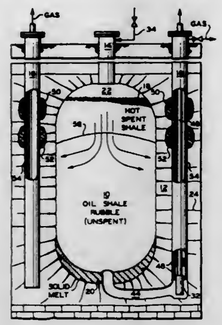


A method of and apparatus for determining the properties of steam by measuring the temperature thereof, adiabatically expanding a sample of the steam, separating the liquid from the expanded sample of steam, and comparing the chloride ion concentration of the separated liquid to that of the feed water used to generate the steam. The above method and apparatus are used in generating wet steam for injection into a hydrocarbon-bearing formation during a secondary oil recovery process. The effectiveness of the steam flood is determined by measuring the enthalpy of the steam injected into the underground formation.

3,499,489
PRODUCING OIL FROM NUCLEAR-PRODUCED CHIMNEYS IN OIL SHALE
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,618
Int. Cl. E21b 43/24
U.S. Cl. 166—258 10 Claims

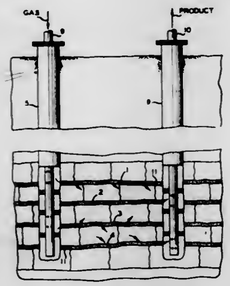
Oil shale rubble in a nuclear chimney is produced by injecting a gas capable of heating and retorting the

rubble at an elevated temperature into the rubble through a central borehole, venting produced gases through fractures surrounding the chimney into a ring of surrounding



boreholes, and recovering liquid oil from the bottom of the chimney through either the central well or one or more of the ring wells.

3,499,490
METHOD FOR PRODUCING OXYGENATED PRODUCTS FROM OIL SHALE
Riley B. Needham and Dixon W. Peacock, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,142
Int. Cl. E21b *43/24, 43/26*
U.S. Cl. 166—259 5 Claims

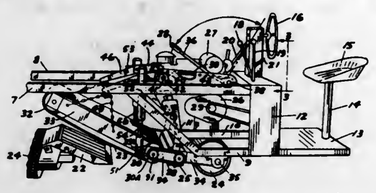


Contacting a hydrocarbon-containing shale with an oxygen-containing fluid at conditions sufficient to promote oxidation without ignition of said hydrocarbons results in an improved method for recovering hydrocarbons from hydrocarbon-yielding formations such as oil shale. This method can be conducted in situ.

3,499,491
METHOD AND COMPOSITION FOR CEMENTING OIL WELL CASING
Reece E. Wyant and Orien Van Dyke, Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
No Drawing. Filed June 28, 1968, Ser. No. 741,198
Int. Cl. E21b *33/14*; C04b *31/02, 35/16*
U.S. Cl. 166—292 14 Claims

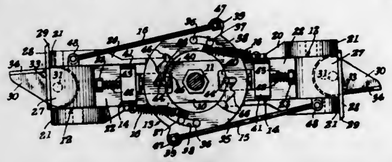
A process of cementing a string of pipe in a borehole by combining a properly treated aqueous drilling fluid with a cementitious mixture comprising hydraulic cement and powdered sodium silicate glass to form a mud concrete. The increased temperature of the borehole triggers the setting reaction of the mud concrete.

3,499,492
INCLINED CONVEYOR CONTROLS FOR SOD ROLLING MACHINE
Robert C. Daymon, 7450 Weller Road, Gregory, Mich. 48137
Continuation-in-part of application Ser. No. 577,067, Sept. 2, 1966. This application June 7, 1967, Ser. No. 644,306
Int. Cl. A01b *45/04*
U.S. Cl. 172—19 6 Claims



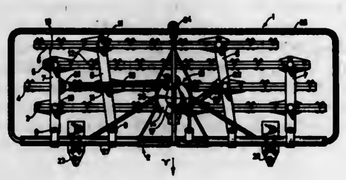
This application discloses remote control means for adjusting the pitch and inclination of the inclined conveyor comprising part of the mechanism of a sod rolling machine. The invention resides in novel combinations of elements for changing the position of either end of the conveyor with respect to the chasis of the machine, certain of which elements are remotely controlled from the operator's seat of the machine.

3,499,493
SOIL RENOVATOR AND MULCHER
Albert L. Hubbard, 4721 Clover Drive, Apt. 2, Oxnard, Calif. 93030
Filed May 19, 1967, Ser. No. 639,749
Int. Cl. A01b *45/00, 33/06, 33/10*
U.S. Cl. 172—45 7 Claims



A rotary device having pivoted centrifugally movable mulching blades, with adjustable movement-limiting means, centrifugally moved to lock the blades at the angle to which the movement-limiting means has been pre-set.

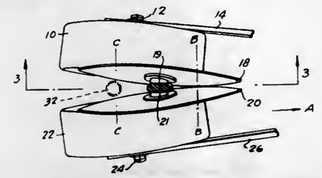
3,499,494
DEVICE FOR WORKING THE SOIL, ESPECIALLY FOR HARROWING FARMLAND
Joost Gijzenberg, Aalsmeerderweg 933, Rijsenhout-Post Aalsmeer, Netherlands
Filed Nov. 14, 1966, Ser. No. 593,824
Claims priority, application Belgium, Nov. 19, 1965, 45,117, Patent 672,528
Int. Cl. A01b *19/06, 23/00, 25/00*
U.S. Cl. 172—53 8 Claims



A device for harrowing farmland comprising a plurality of reciprocating horizontal parallel beams lying mainly perpendicular to the direction of travel of the device, each

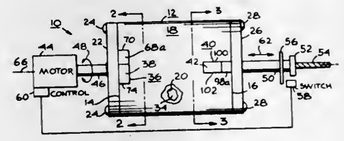
beam carrying a number of spaced tines, said device further comprising a driving mechanism for reciprocating the beams, means being provided for balancing the inertia forces and for leveling the peak loads, said means comprising either driving rods of different length, counterweights, springs, unevenly spaced crank arms or a combination of these elements.

3,499,495
CROP SEED PLANTING DEVICE
Waldo H. Pust, Savage, Mont. 59262
Continuation-in-part of application Ser. No. 621,391, Feb. 17, 1967. This application Mar. 29, 1968, Ser. No. 717,473
Int. Cl. A01c *5/06*; A01b *21/08, 15/16*
U.S. Cl. 172—536 6 Claims



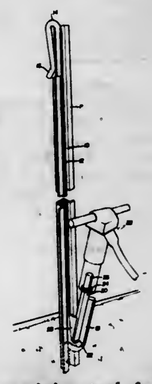
This invention relates to a means of forming seed rows while holding the ground from being carried away from opposite sides of the furrow. Furrow forming discs form the furrows and are inclined downwardly and upwardly from substantially the point of entry into the ground. Scraping wheels are mounted on axes offset from the disc axes and engage the ground adjacent the points where the scraping wheels leave the surface of the ground. The scraping wheels serve the double purpose of scraping dirt from the discs, and holding the dirt in position on opposite sides of the furrow.

3,499,496
TORQUE TRANSMITTING ARRANGEMENT WITH AXIAL MAGNETIC BIAS
Alman H. Vieths, 227 S. Avenue 59, Apt. 11, Los Angeles, Calif. 90042
Filed Oct. 7, 1968, Ser. No. 765,321
Int. Cl. B23g *5/28, 1/18*
U.S. Cl. 173—19 9 Claims



There is disclosed herein an improved torque transmitting arrangement particularly adapted for driving a tapping tool to provide a threaded hole in a workpiece. A tubular body member is provided having a tool end cap and a drive end cap to define therein a body cavity. Drive means for rotating the body member is coupled to the drive end cap. The tubular body member has a peripherally extending slot means in the walls thereof adjacent the drive end cap and an axially extending slot means in the walls thereof adjacent the tool end cap. Positioned within the body cavity is a drive assembly comprising a drive base plate having drive tabs extending into the peripheral slot and a drive connecting member coupled thereto and the drive connecting member has a plurality of alternating pole magnetic pole pieces. A tool assembly is also positioned in the cavity and has a tool baseplate with tool tabs extending into the axially oriented slot means adjacent the tool end cap and has a tool connecting member, coupled thereto that is similar to the drive connecting member, and the tool connecting member has the same plurality of alternating pole magnetic pole pieces. There is also provided a tool shaft coupled to the tool baseplate and extending through an aperture in the tool end cap to regions external the body member. A tool, such as a tapping tool, can be coupled to the tool shaft to provide a threaded hole in a workpiece. When the body member is rotated, there is initially relative motion between the body member and the drive assembly until the drive tabs engage the side walls of the peripheral aperture, at which time the entire drive assembly commences rotation with the body member. When the body member is rotated, the tool assembly always rotates with the body member but can move reciprocatingly in axial directions as the tool tabs slide in the axially oriented slot. For rotation in a first direction, the magnetic pole pieces of the drive connecting member and the tool connecting member are aligned so that they are repelled and, therefore, the tool assembly moves axially outwardly to engage the workpiece, and the rotation of the body member provides the necessary rotational movement for providing the torque necessary to tap the hole. When the hole has been tapped to a preselected depth, a signal is generated to reverse direction of rotation of the motor, and there is, once again, relative motion of the drive assembly with respect to the body member until the opposite side wall of the peripheral slot engages the drive tab means, but the tool drive assembly continuously rotates therewith. When the opposite wall of the peripheral slot engages the drive tab means, the magnetic pole pieces in the drive connecting member are aligned with unlike magnetic pole pieces of the tool connecting member and therefore a magnetic attraction exists for this attract position of the drive connecting member, and the tool drive assembly is axially moved away from the workpiece and towards the drive connecting member.

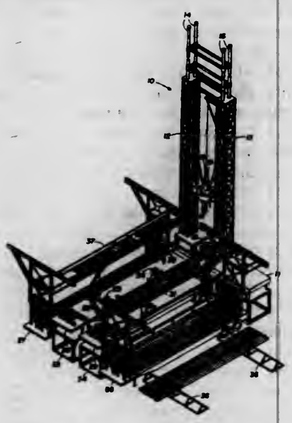
3,499,497
SIGN POLE DRIVER
Donald Moore, 2014 N. Mildred, Dearborn, Mich. 48128
Filed July 9, 1968, Ser. No. 743,483
Int. Cl. B25d *9/00*; E02d *7/06, 5/28*
U.S. Cl. 173—129 5 Claims



An impact transmitting tool for driving posts, particularly of the channel-shaped metal type employed for highway or traffic signs. The device is in the form of an elongate shank member which can be detachably secured to the post to be driven and provides an anvil ele-

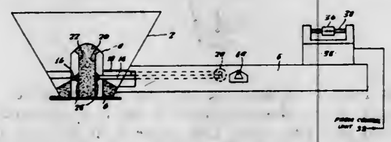
ment engageable with a pneumatic hammer or other impacting tool with the anvil supported in a position so that the post can be driven by an operator standing at ground level.

3,499,498
PIPE RACKING AND TRANSFER ASSEMBLY
Raymond J. Bromell, Dallas, and Paul E. Lynch, Richardson, Tex., assignors, by mesne assignments, to Kendrick Cattle Company, Sheridan, Wyo., a corporation of Wyoming
Filed Mar. 11, 1968, Ser. No. 712,164
Int. Cl. E21b *19/00*
U.S. Cl. 175—85 27 Claims



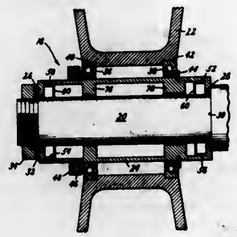
A self-contained portable pipe racking and transfer apparatus including a pipe handling crane operable in a collapsible rail mounted to a frame telescoping from a lower position to an upper position when operating in conjunction with a portable drilling rig. The telescoping operation of the crane rail permits storage of extra sections of drill pipe in a plurality of pipe storage bins during transportation of the entire assembly. A control system automatically sequences the pipe crane operation to transport sections of drill pipe from the storage bins to the drilling rig and return pipe from the rig to the racks. Limit switches advance the automatic control system from one sequence to the next for both the "in" and "out" functions of the pipe crane such that the entire operation is completely controlled without human intervention.

3,499,499
WEIGHING OF MATERIALS WITH MICROWAVE TESTING OF MOISTURE CONTENT
Jack Bilbrough, Newcastle-upon-Tyne, England, assignor, by mesne assignments, to The Bank Organization Limited, Millbank, London, England, a British company
Filed Oct. 11, 1967, Ser. No. 674,576
Claims priority, application Great Britain, Oct. 20, 1966, 47,008/66
Int. Cl. G01g *13/00*
U.S. Cl. 177—64 9 Claims



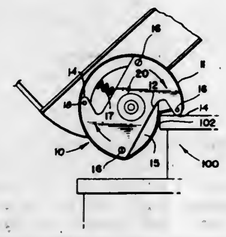
The specification discloses a batch weighing apparatus in which a portion of the material in a weighing hopper or in passage to such a hopper has its moisture content measured by attenuation of a microwave beam. The beam attenuation is employed to make a trimming adjustment in the batch weighing operation so that the dry material content of respective batches is rendered uniform independently of possible variations in the moisture content of the batches.

3,499,500
STRAIN-GAUGE WEIGHING APPARATUS FOR VEHICLE SUPPORT STRUCTURE
David G. Harding, Brookhaven, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,402
Int. Cl. G01g *3/14, 19/07, 19/12*
U.S. Cl. 177—136 11 Claims



Apparatus for measuring the weight of a vehicle in which a flexural member supports the entire weight borne by a supporting structure. A Wheatstone bridge network of strain gauges mounted on the flexural member detects the presence of the weight and a calibrated meter is responsive to a signal from the network for indicating the weight of the vehicle.

3,499,501
STAIR CLIMBING APPARATUS
Arthur Ernest Fitzgerald, McLean, Va., and Arthur A. Fitzgerald, Summerdale, Michael Joe Bauer, Theodore, and Lawrence Anton Geci, Mobile, Ala., assignors to Craft Corporation, Summerdale, Ala., a corporation of Alabama
Filed May 22, 1967, Ser. No. 640,176
Int. Cl. B62d *57/02*; B62b *5/02, 9/02*
U.S. Cl. 180—8 10 Claims



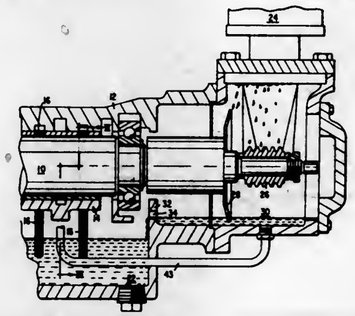
Stair climbing wheels having peripheral step-engaging notches and having floor engaging belts or tires mounted on the periphery of the wheels for driving and sliding engagement with the wheels, notched stair climbing wheels having notch-closing means, and stair climbing wheels having reciprocable and extensible step-engaging bars, clutches having simplified engaging and disengaging means, and hand trucks having raised wheels and rounded lower extremities are described herein.

3,499,502
KNEELING PAD
Judge E. Rosander, 7200 W. Arkansas Ave., Denver, Colo. 80226
Filed Oct. 24, 1968, Ser. No. 770,320
Int. Cl. E04g *1/00*
U.S. Cl. 182—230 3 Claims



A kneeling device for use by cement finishers and others comprising a smooth flat base having upwardly and inwardly curved end portions which constitute handles extending across the entire width of the base, and a kneeling pad on the base spaced from the ends of the base to provide spaces which make the inner surfaces of the handles accessible for engagement by the fingers of the user or a tool for lifting or moving the device. The pad is made of non-absorbent, non-porous, resilient material which is instantly expansible when pressure applied thereto has been released and which yieldingly and comfortably supports the knees of the user without bottoming.

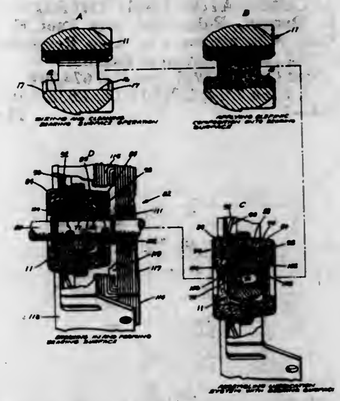
3,499,503
LUBRICATION SYSTEM
Philip A. Murray, Pittsburgh, and Carl H. Geary, Jr., Greensburg, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 31, 1967, Ser. No. 627,549
Int. Cl. F16n *1/00*; F01m *1/00*; F16c *1/24*
U.S. Cl. 184—1 2 Claims



A lubrication system for a rotating machine having oil ring lubricated bearings wherein the action of the shaft or journal as it rotates in the bearing is used to pump lubricant trapped therebetween to a remote location to satisfy a lubrication requirement.

3,499,504
LUBRICATED MOVABLE AND INTERACTING COMPONENTS FOR USE IN MACHINES AND A METHOD FOR FORMING AND BREAKING IN SUCH COMPONENTS
Ronald N. Nelson, Dekalb, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 15, 1968, Ser. No. 753,000
Int. Cl. F01m *1/00*; C10m *1/24*; F16c *1/24*
U.S. Cl. 184—1 24 Claims

A machine having relatively movable and interacting components and their method of manufacture and particularly a metal aluminum bearing surface which supports a coacting relatively rotatable journal surface in a dynamoelectric machine. The bearing surface is of a smooth and dimensionally accurate finish, and it is treated with an olefinic composition which is introduced over the fresh surface and is reacted with the surface to form a protective coating which prevents oxidation of the surface. The surface is then mounted within a machine in supporting relation with a journal of a movable assembly. The bearing surface is treated with olefinic material prior to initial break-in of the interacting surfaces between the bearing surface and the rotatable journal surface. The olefinic material will reduce both friction and oxidation between the two surfaces, especially during initial relative movement, and a lubrication system then feeds a non-olefinic lubricant mixture, in one form hydrocarbon oil and a selected stearate, e.g., methyl or vinyl by way of example, onto the interacting surfaces. The lubrication system provides a mixture of hydrocarbon and the selected stearate so that the relatively movable surfaces are continuously effectively lubricated from the very start of the break-in, providing a desired finish and the sustained lubrication during continued operation of the machine.



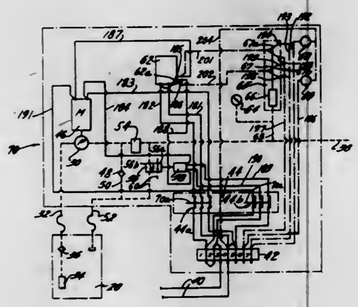
3,499,505
ELASTIC SHOCK-ABSORBING SUSPENSION
Christian Bourcier de Carbon, 64 bld Maurice-Barres, 92 Neuilly-sur-Seine, France
Filed Mar. 14, 1968, Ser. No. 713,080
Int. Cl. F01m *1/00*; F16a *13/00*; F16d *57/00*
U.S. Cl. 184—6 14 Claims



An elastic damping suspension of the type including a guiding tube surrounding a shock absorber, wherein the lubrication is performed by means of a provision of oil

carried in a section of the outer guiding tube, preferably its lower end, the oil being conveyed towards the frictional surfaces between the shock absorber and the outer guiding tube by the pumping action exerted between the latter and urging oil into a lubricating pipe extending along a generating line of the guiding tube or as a concentric lining for the latter.

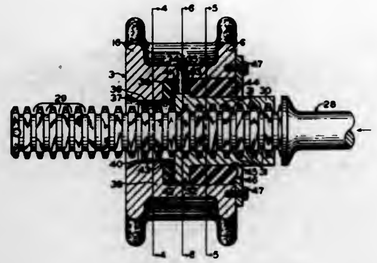
3,499,506
LUBRICANT DISTRIBUTING SYSTEM AND ACCUMULATOR USED THEREIN
William E. Duncan, Ridgewood, and Paul H. Reeve, River Vale, N.J., assignors to Auto Research Corp., Boonton, N.J., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 674,201
Int. Cl. E16n 7/14; G01f 11/06; E03b 7/07
U.S. Cl. 184—7 **12 Claims**



A system for distributing lubricant to a large number of machines, the system having a main distribution line into which lubricant is pumped from a reservoir for a period of time; a plurality of branch distribution lines connected in parallel with each other and communicating with the main distribution line to receive lubricant therefrom, and a plurality of machine lubricating lines connected with each branch distribution line; the machine lubricating lines at each branch distribution line being in parallel; each machine lubricating line carrying a plurality of meter units through which the lubricant is apportioned to predetermined parts of a machine; and an accumulator communicating with each machine lubricating line upstream of the plurality of meter units; each accumulator having a valve arrangement so that during operation of the pump, lubricant is accumulated in every accumulator, and upon termination of pump operation, lubricant is delivered from the several accumulator means through the several machine lubricating lines and the meter units carried thereby to the machines; and a plurality of junctions between distribution lines.

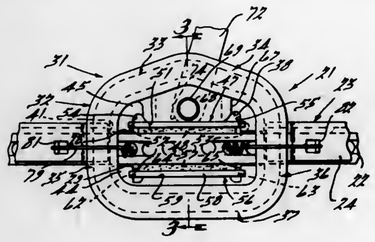
3,499,507
RAILWAY CAR TRUCK BRAKE APPARATUS AND ADJUSTING MEANS
Daniel G. Scott, Apollo, and Fred Temple, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1968, Ser. No. 769,519
Int. Cl. B61h 13/00; F16d 65/38, 65/52
U.S. Cl. 188—52 **11 Claims**

This invention relates to a railway car truck brake apparatus of the type in which two parallel-extending brake-shoe-carrying brake beams are operated to apply and release the brake shoes to and from the car wheel treads by means of one or more brake cylinders secured to the brake beams. Each cylinder is provided with a diaphragm type piston having a piston rod operatively connected to the other brake beam and embodying therein a manually operative double-acting slack adjuster mechanism that may be operated, upon travel of the diaphragm type



piston and piston rod with respect to the cylinder body exceeding a chosen amount incident to effecting a brake application, to increase or decrease the length of the piston rod so as to correspondingly take up slack or increase it.

3,499,508
DISK PARKING BRAKE
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Feb. 15, 1968, Ser. No. 705,727
Int. Cl. F16d 55/00
U.S. Cl. 188—73 **2 Claims**

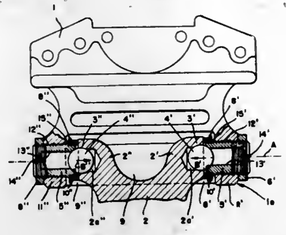


Several embodiments of disk type parking brakes for automotive applications. In each embodiment, a light weight parking brake assembly is provided that cooperates with the disk of the main brake assembly but which is operative and supported independently of the main brake system. In each embodiment the light-weight construction is facilitated through the use of a sheet metal caliper assembly.

3,499,509
DISK BRAKE CALIPER MOUNTING AND ADJUSTING MEANS
Hans Erdmann, Gravenbruch, Friedrich Beuchle, Frankfurt am Main, and Albert Beller, Bad Vilbel, Germany, assignors to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany
Filed July 9, 1968, Ser. No. 743,454
Claims priority, application Germany, Mar. 13, 1968, T 36,055
Int. Cl. F16d 55/228
U.S. Cl. 188—73 **9 Claims**

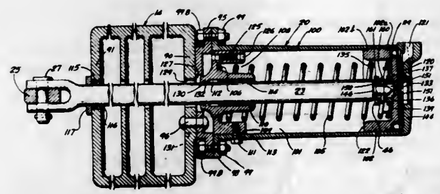
A disk brake whose yoke or caliper is swingably mounted upon a support connected to the axle housing

of the vehicle via a pair of axially aligned pivot balls resiliently held against spherically segmental seats by



elastically stressed screws. The screws have cup-shaped open ends engaging the balls.

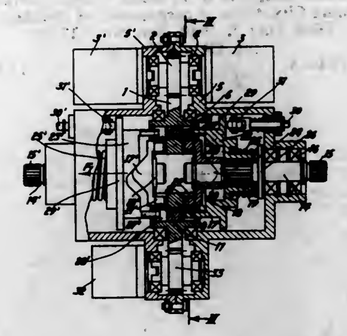
3,499,510
BRAKES
Thomas S. Taylor, Suffern, N.Y., and Frederick R. Ling, Milford, N.J., assignors to Abex Corporation, New York, N.Y., a corporation of Delaware
Original application Oct. 22, 1965, Ser. No. 501,538, now Patent No. 3,386,533. Divided and this application Dec. 7, 1967, Ser. No. 718,275
Int. Cl. B61h 13/24; B60t 11/18
U.S. Cl. 188—153 **4 Claims**



The invention is directed to a novel push rod and cylinder relationship enhancing repair and installation of the cylinder and an internal piston. More specifically, the invention comprises an automatic connection and disconnection of an actuating push rod, sub-assembly relative to a piston in the operating cylinder for the purpose of facilitating installation on a bolster and servicing of the cylinder and piston. A feature of the invention is the automatic connection of the push rod to a return spring and positioning of the push rod in operative relationship to a free floating piston, the piston being free floating in the sense of being non-positively connected to the push rod.

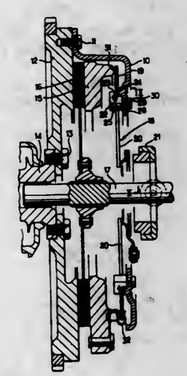
3,499,511
TORQUE RESPONSIVE ROLLER CLUTCH
Marcel Pierre Alexis Bouhot, 35 Avenue du General Sarrail, Paris, France
Filed Apr. 9, 1968, Ser. No. 719,922
Claims priority, application France, Apr. 19, 1967, 103,325; Nov. 21, 1967, 129,035
Int. Cl. F16d 7/06, 43/14, 43/20
U.S. Cl. 192—56 **1 Claim**

The invention relates to stopping device for disconnecting two shafts, which comprises input drive means, an output driven shaft, displaceable wedging cam means releasably coupling said input drive means to said output driven shaft, means to displace said wedging cam means thereby to release said input drive means and said output driven shaft, means sensitive to the torque resisting rotation of said output driven shaft, said torque sensitive means being associated with said displacing means whereby



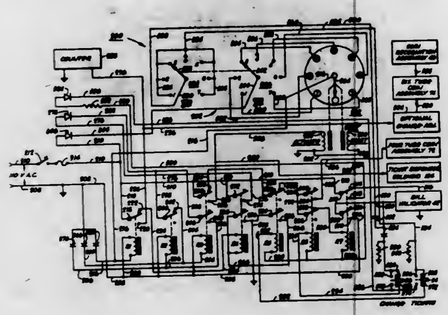
when the resistance to torque reaches a predetermined value said displacing means is actuated to displace said wedging cam means.

3,499,512
DIAPHRAGM CLUTCH
Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a French company
Filed Mar. 11, 1968, Ser. No. 712,046
Claims priority, application France, Mar. 31, 1967, 100,940
Int. Cl. F16d 13/44; F16b 19/04
U.S. Cl. 192—89 **16 Claims**



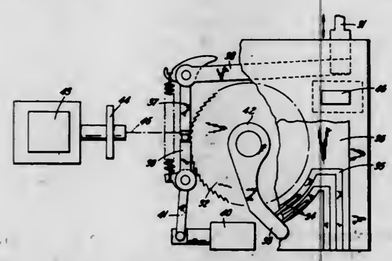
A diaphragm clutch of the kind in which the diaphragm has a continuous peripheral portion forming a dished clamping washer and a central portion having a plurality of radial slits defining a series of fingers adapted to cooperate with a declutching stop, an annular rocking zone being formed by said continuous portion in the vicinity of the slit central portion, said zone being interposed between two supports which are slightly spaced apart in a direction parallel to the axis and which are coupled to a cover rigidly fixed to one of the clutchplates, wherein at least one of the two supports is constituted by a series of isolated pillars which are fixed to said cover and which are distributed along a circumference, said diaphragm-rocking zone being permitted to bear directly against said pillars.

3,499,513
CHANGE-MAKING APPARATUS
Olen R. Armstrong, Oklahoma City, Billy J. Early, Del City, Donald W. Matlock, Oklahoma City, Jay W. McWaters, Bethany, and Charles E. Pruitt, Oklahoma City, Okla., assignors to Pyramid Manufacturing, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed May 7, 1968, Ser. No. 727,380
Int. Cl. G07f 1/06
U.S. Cl. 194—4 15 Claims



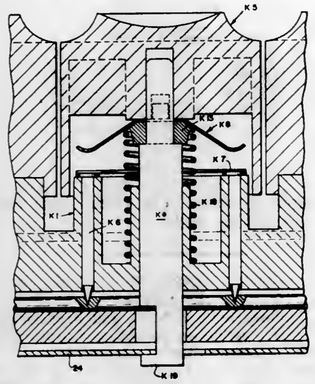
An apparatus for receiving coin or currency and dispensing coin change or tickets which consists of a security frame member housing ticket dispensing and coin change dispensing assemblies, the apparatus includes a coin changing mechanism and a bill validating mechanism for receiving coin or currency input to thereafter energize either or both of the coin change and ticket dispensing assemblies in accordance with a preset value adjustment.

3,499,514
CHECK CONTROLLED DISPENSING APPARATUS
William Lovell Robinson, Northolt, England, assignor to Electric Shop Development Limited, London, England, a British company
Filed Feb. 28, 1968, Ser. No. 708,969
Claims priority, application Great Britain, Feb. 28, 1967, 9,536/67
Int. Cl. G07f 11/00
U.S. Cl. 194—10 6 Claims



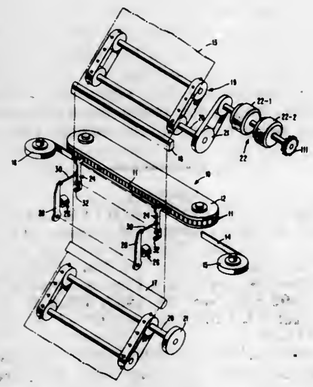
Dispensing apparatus for operation in two or more different ways, having a register for each possible operation to count the number of articles dispensed according to that operation and to stop the dispensing when the appropriate number has been dispensed. A sensing means senses the dispensing of each article and is normally connected to the register for one possible operation but during another possible operation is automatically connected instead to the register for that other operation. Thus one possible dispensing operation (e.g. a fruit machine operation) may be interrupted by other possible operations (e.g. change giving operations).

3,499,515
MODULAR ELECTRICAL KEYBOARD
Michael E. Mikrut, Littleton, Mass., assignor, by mesne assignments, to Synergistics, Inc., East Natick, Mass., a corporation of Massachusetts
Filed Dec. 11, 1967, Ser. No. 689,602
Int. Cl. B41j 5/12, 25/02, 29/00; G06c 7/02
U.S. Cl. 197—98 4 Claims



A modular keyboard has keys that are basically identical in construction to permit the positions of the keys to be changed or arranged as desired on the keyboard. Each key has a plurality of contacts and employs an electrically insulative mask which determines the electrical code that is generated by the keys actuation. The contacts of the keys are connected by solderless connections to the output terminals of the keyboard by parallel wires carried on insulative strips.

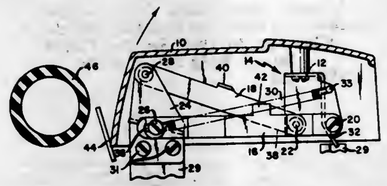
3,499,516
TAPELESS CARRIAGE CONTROL
Frederick W. Schaaf, Owego, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 21, 1967, Ser. No. 661,929
Int. Cl. B41j 15/00
U.S. Cl. 197—133 7 Claims



A carriage control system provides skip control of a printer carriage by means of coded representations of channel skip commands which are stored at different line

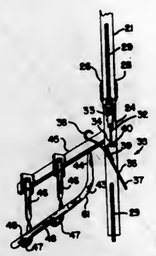
positions in a carriage control buffer and are compared with commands from the printer controls to determine if they are identical, upon which a compare signal is produced. A line counter is driven by a clock which controls the address of the carriage control buffer and is selectively activated by a control Start signal and emitter pulses responsive to movement of a motor driving the carriage. The counter is complemented when a Compare signal is produced, and when a predetermined count is attained in response to carriage emitter pulses, a Stop signal is generated to stop the carriage in a desired position.

3,499,517
TYPEWRITER RIBBON SPOOL COVER
Samuel D. Cappotto, Syracuse, N.Y., assignor to SCM Corporation, a corporation of New York
Filed June 26, 1967, Ser. No. 648,912
Int. Cl. B41j 29/02
U.S. Cl. 197—186 2 Claims



A linkage mechanism for guiding and positioning a typewriter ribon spool cover to open or closed positions. The mechanism includes a pair of hinges having a pair of spring biased links pivotally connected between the cover and the machine frame which first guides the cover through a tilted path and then through a rearward swinging path to provide maximum access to the machine ribbon carrier.

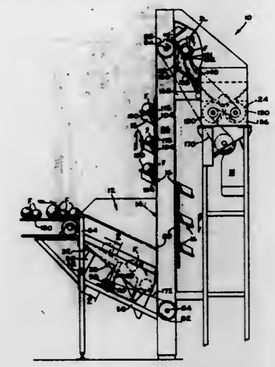
3,499,518
CONVEYING MEANS AND METHOD
Robert L. Goodpaster, Cincinnati, Ohio, assignor to Natmar, Inc.
Filed Aug. 17, 1964, Ser. No. 390,095
Int. Cl. B65g 47/00, 43/00, 17/20
U.S. Cl. 198—28 5 Claims



A conveyor pick-off member comprises telescoped rod-like structure wherein the pick-off member retracts when loaded so that additional articles are not removed from the conveyor.

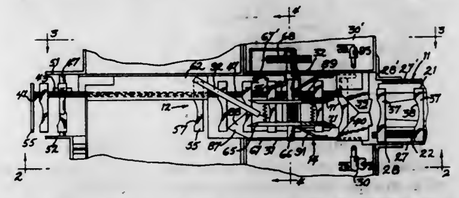
3,499,519
FRUIT FEEDING APPARATUS
Wilber C. Belk, Robert P. Robbins, and Donald C. Toothman, Lakeland, Fla., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 15, 1968, Ser. No. 713,419
Int. Cl. B65g 47/26
U.S. Cl. 198—30 20 Claims

A supply of fruit is received in a downwardly inclined, V-shaped hopper having side sections and a central section each reciprocating vertically in out-of-phase relationship to feed the fruit successively to the lowermost end of the hopper where it can be individually picked up upon the lift fingers of a vertical elevator. The elevator comprises a continuously driven endless chain carrying a



plurality of uniformly spaced sets of lift fingers, each set including a pair of upwardly inclined and outwardly diverging fingers which will pick up only one fruit at a time and discharge it into a feed conveyor at the top of the elevator structure.

3,499,520
EGG HANDLING EQUIPMENT
Charles H. Willsey, Topeka, and Francis W. Majors, Ozawkie, Kans., assignors, by mesne assignments, to Seymour Foods, Inc., Topeka, Kans., a corporation of Delaware
Original application Oct. 15, 1965, Ser. No. 497,242. Divided and this application Oct. 30, 1968, Ser. No. 771,723
Int. Cl. B65g 47/24
U.S. Cl. 198—33 13 Claims

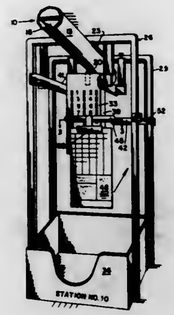


An egg handling apparatus comprising an endless conveyor having spaced cross bars for supporting eggs between pairs thereof with the long axes extending transversely of the path of advance and an overhead wheel carrying a pair of axially spaced, resiliently mounted, segmental plates which are arranged to have the peripheral edges engage the top of successive eggs at points adjacent opposite ends of the eggs so as to cause each egg to tilt to a small end down position on the conveyor.

3,499,521
MAGNETIC HOLDER CODABLE CONVEYING SYSTEM
Everett C. Gildehaus, Huntington Beach, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Feb. 20, 1968, Ser. No. 706,925
Int. Cl. B65g 43/08
U.S. Cl. 198—38 9 Claims

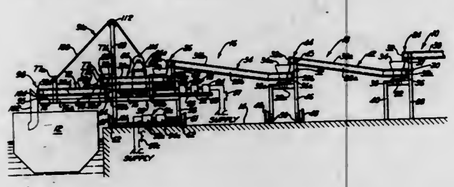
The invention relates to a conveying system wherein a series of plates of magnetic material are maintained in

continuous movement past a series of stations. Paper or other light-weight articles, office memos, letters, etc., can be held on any such plate by a magnetic holder device



secured at a particular coded position on the plate and releasable at a station by physical engagement with a tripping member in a correspondingly coded position at that station.

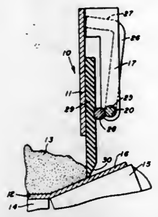
3,499,522
LOADING APPARATUS
Joseph B. Novak, Carnegie Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 690,962
Int. Cl. B65g *47/34, 47/74*
U.S. Cl. 198—88 **16 Claims**



This invention relates to loading apparatus for transferring either dry or fluid material from a material source to a storage means, such as vessel or the like, and having a reciprocating conveyor means reciprocable along the storage means to feed fluid material from the discharge end of the reciprocating conveyor means to the storage means. The receiving end of the reciprocating conveyor means is pivotably connected to the discharge end of an oscillating conveyor means. The receiving end of the oscillating conveyor means is pivotable adjacent the material source. An improved extensible type oscillating conveyor means is also provided.

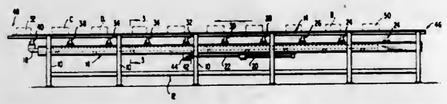
3,499,523
CONVEYOR BELT SKIRT BOARD
Hardeman Lee Clegg, 8645 Lime Ave., Fontana, Calif. 92335
Filed May 20, 1968, Ser. No. 730,453
Int. Cl. B65g *15/08, 21/00*
U.S. Cl. 198—204 **3 Claims**

A rigid side board overlying a side marginal area of a conveyor belt, with a flexible skirt overlapping and extending downwardly from said board, a simple lever actuated clamp providing for clamping said flexible skirt to said board to hold the same in place, and facilitating quick vertical readjustment of said skirt as its lower



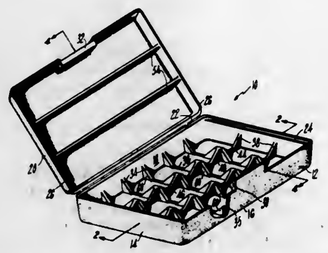
edge wears, and ultimately, the replacement of said skirt by a new skirt.

3,499,524
ACCUMULATING TRANSFER CONVEYOR
Carl J. Milazzo, Tonawanda, N.Y., assignor to Hohl Machine and Conveyor Co., Inc., Buffalo, N.Y.
Filed Apr. 24, 1968, Ser. No. 723,756
Int. Cl. B65g *25/08, 47/26*
U.S. Cl. 198—221 **4 Claims**



The pusher dogs on the carrier of an accumulating transfer conveyor are movable between operative and disabled positions and each is selectively moved to one of these positions by an associated cam mechanism. The cam mechanisms are fixed in position to be engaged by the pusher dogs as the carrier reaches the end of its return stroke so that as the carrier starts its working stroke, the pusher dogs move out of engagement with their cam mechanisms thus greatly simplifying the mechanism involved, avoiding any tendency for the pusher dogs to be operated during the working stroke, and allowing the cam mechanisms to be operated by a simple yet effective fluid pressure differential system.

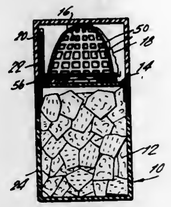
3,499,525
UNIVERSAL CRISS-CROSS CONTAINER FOR PACKAGING MULTI-SIZED THREADED TAPS
Spencer I. Kanter, Wethersfield, Conn., assignor to The Hanson-Whitney Company, Hartford, Conn., a corporation of Connecticut
Filed Aug. 9, 1968, Ser. No. 751,600
Int. Cl. B65d *85/54, 1/24, 1/36*
U.S. Cl. 206—17 **4 Claims**



A packaging case for individually immobilizing a plurality of taps of different diameters and lengths includes spaced intersecting partitions notched between the

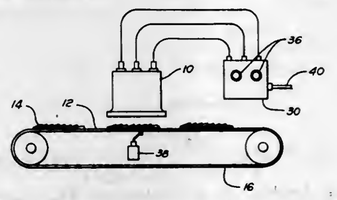
intersections in both the transverse and longitudinal directions for cradling the taps. The partitions in the longitudinal direction are spaced more widely than those in the transverse direction and the transverse partitions are notched more deeply to immobilize larger taps in cooperation with the cover. Longitudinal ribs overlie the longitudinal partitions to reduce the headroom for taps cradled transversely of the case.

3,499,526
FISH FEEDER ASSEMBLY
Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,155
Int. Cl. B65d *79/00;* **A01k** *63/00, 64/00*
U.S. Cl. 206—47 **5 Claims**



This invention is directed to providing a novel fish feeder combination in which the fish food, the food dispenser and instructions therefor are all held in a single storage container. The fish food, preferably freeze dried Tubifex worms, is stored in the lower portion of the two-part container while the food dispenser or feeder and the instructive material describing the use of the novel combination are stored in the upper portion.

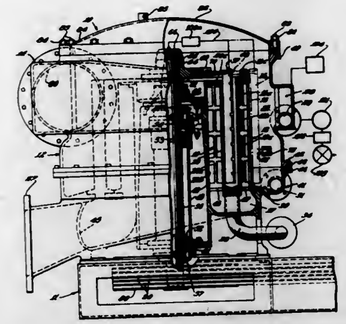
3,499,527
METHOD AND APPARATUS FOR SELECTIVELY SEPARATING MEAT PRODUCTS
Durward B. Badgley, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,062
Int. Cl. B07c *5/342;* **G01b** *11/28;* **G01j** *3/10*
U.S. Cl. 209—111.6 **8 Claims**



Meat products displaying surface areas of lean and fat are segregated in accordance with a desired ratio of lean to fat by projecting green light upon the surface areas and detecting the intensity of green light reflected therefrom.

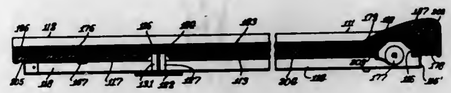
3,499,528
PRESSURIZED KNOTTER SCREEN
Salomon M. Salomon, Madison, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 21, 1968, Ser. No. 730,884
Int. Cl. B07d *1/04*
U.S. Cl. 209—273 **3 Claims**

A screening apparatus for removing knots and large wood chips from a slurry of wood pulp. The screening apparatus includes a stock screen which has a plurality of foils each of which comprises two members. One of the members of each foil pivots about the other so as to have an active and passive position. Connected to the



stock screen is a centrifugal separator, sump settling chamber and a rotary star valve which provide continuous removal of the undesired stock containing knots and large wood chips.

3,499,529
PHYSICIAN'S EXAMINING TABLE
James M. Katzfey and Warren J. Peterson, Two Rivers, Wis., assignors, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Original application Oct. 11, 1965, Ser. No. 494,853, now Patent No. 3,348,893, dated Oct. 24, 1967. Divided and this application Feb. 21, 1967, Ser. No. 617,581
Int. Cl. A61g *13/00*
U.S. Cl. 269—325 **8 Claims**

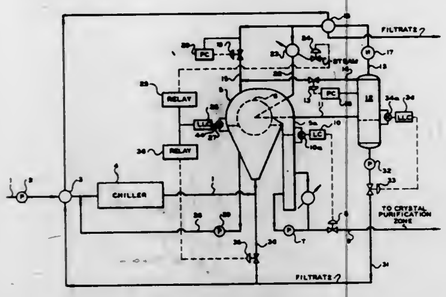


An articulated upholstered top for a physician's examining table, including two support members longitudinally spaced apart to form a gap therebetween. Upholstering material including a flexible cover is fixedly secured to the support members to extend across said gap, and flexible members bridge the opposite ends of the gap and bend the flexible cover into a smooth curve when one support member is pivoted relative to the other. The side edges of the upper surface of the upholstered top are raised to restrain a patient lying on the examining table.

3,499,530
CRYSTAL SEPARATION
Dwight L. McKay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,997
Int. Cl. B01d *33/02, 37/04*
U.S. Cl. 210—67 **5 Claims**

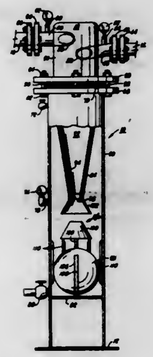
An improved separation process wherein crystals and mother liquor are separated from a slurry by passing the slurry to a rotary filter in a filter zone and forming a crystal cake thereon, the mother liquor passing therethrough and being withdrawn from said zone, the crystal

cake being discharged by a flow of blow gas from inside said filter at the desired point of discharge, said blow gas being heated to melt any frozen cake when the slurry



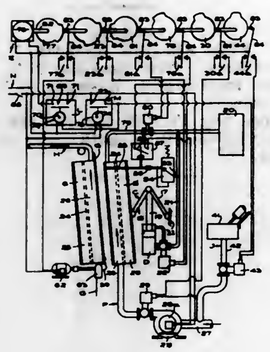
reaches a predetermined level in said zone and a portion of the mother liquor being recycled to said zone to control the level of filter submergence therein.

3,499,531
CYCLONIC SEPARATION DEVICES
Ray E. Feasel, Cushing, Okla., assignor to Industrial Service Company, Inc., Cushing, Okla., a corporation of Oklahoma
Continuation-in-part of application Ser. No. 762,071, Sept. 24, 1968. This application June 25, 1969, Ser. No. 836,540
Int. Cl. B04c *5/16, 5/085;* **B01d** *21/26*
U.S. Cl. 210—114 **10 Claims**



Improvements in apparatus for the separation of particulate matter from fluid under pressure, the apparatus consisting of a first chamber means for receiving tangential input flow of fluid under pressure for circulation therein and introduction into a low friction cone member disposed immediately thereblow, and conduit means leading from the upper portion of said cone member vertically through the center of said first chamber for communication into a second chamber isolated thereabove and providing a tangential flow output of the fluid. The apparatus includes still an additional chamber enveloping the cone means and in communication with the lower end thereof, and a continuously adjustable valve means to vary the degree of communication between the cone means and the additional chamber such that optimum pressure differential can be derived as between the first chamber interior, the interior of the cone member, and the interior of the second chamber leading to the outlet conduit.

3,499,532
LIQUID FILTERING DEVICE
John R. Schneider, P.O. Box 426, Belvedere-Tiburon, Calif. 94920
Filed May 9, 1966, Ser. No. 548,747
Int. Cl. B01d *25/32, 29/36, 37/02*
U.S. Cl. 210—138 **9 Claims**

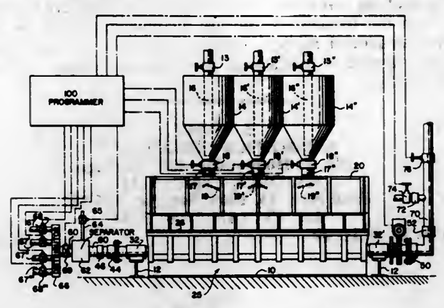


A liquid filtering device in which accumulated foreign matter is removed from a filter cake support medium on completion of the total operating time (either continuous or interrupted) of an adjustable set time period of a time switch, during which time a predetermined amount of aids to filtration are delivered to the filtering device, this amount being controlled by a percentage timer. Upon completion of this total operating time, automatic control means initiates an automatic cycle of operation, which disposes of the foreign material built up on the cake support medium and, also, automatically replaces the dirty cake support medium with a clean one for the next filter cycle. The cake support medium is held between adjacent separable liquid containers, and an arrangement is provided for preventing the filter cake from falling out of the filter area between the separated containers, and thus preventing the seal faces of the containers from being contaminated, and permitting these seal faces to be moved back into liquid-tight relation with one another. Moreover, a safety arrangement is provided to prevent a filter pump from starting up, causing excessive leakage, if the containers are not properly sealed together.

3,499,533
AUTOMATICALLY CLEANED, PIVOTABLE, FILTER ASSEMBLY
Edwin B. Lopker, Fort Lauderdale, Fla., assignor to American National Bank and Trust Company, Fort Lauderdale, Fla., trustee
Continuation-in-part of application Ser. No. 515,636, Dec. 22, 1965. This application Nov. 19, 1968, Ser. No. 812,495
Int. Cl. B01d *33/38, 33/36, 33/00*
U.S. Cl. 210—140 **10 Claims**

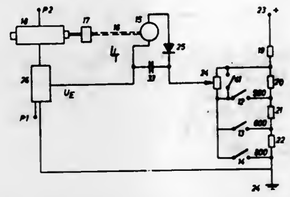
A horizontal vacuum pan filter in which the filter cake is not transported from feed point to wash point to cake discharge points as is commonly done. The feed of slurry, wash liquids, etc., is continuous to the filter system but they are charged to the filter surface intermittently in a predetermined sequence. Discharge of the filter cake is by inversion of the horizontal filter pan. The basic filter system consists of three fundamental units; surge boxes with their associated feed and charge valves; a horizontal filter pan with its distribution trough, inversion, i.e. tilting,

drive, filtrate and air valves, etc., and an automatic adjustable timing programmer. The normal accessories of feed and washer liquor pumps, scrubbers and condensers,



vacuum sources, filtrate pumps, air sources, cake handling equipment, etc., are similar to those usually provided for vacuum filters.

3,499,534
PROGRAM-SELECTING DEVICES FOR AUTOMATIC WASHING MACHINES
Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Germany
Filed Feb. 23, 1968, Ser. No. 707,861
Claims priority, application Germany, Feb. 22, 1967, H 61,919
Int. Cl. B01d *35/06, 33/00*
U.S. Cl. 210—144 **6 Claims**



A control for accurately setting and maintaining the spin speed of a washing machine tub. A selector switch is provided for enabling the selection of any one of a number of voltages, each of which represents a particular maximum rotation speed. A control potentiometer is further provided to precisely adjust the selected voltage to a desired voltage within a limited range below the selected value. The selected voltage is compared with a voltage in accordance with the actual spin speed of the tub and the motor speed controlled in response to the difference therebetween.

3,499,535
FILTER LEAF
James F. Zievers and Clay W. Riley, La Grange, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed Jan. 25, 1967, Ser. No. 611,642
Int. Cl. B01d *23/04*
U.S. Cl. 210—332 **8 Claims**

The faces of filter leaves, which are adapted to be spatially arranged in a filter for removing particles from a liquid as the liquid passes through the filter leaves, are each provided with a substantially imperforate strip for preventing the adherence of filter cake thereat so that the filter cake is pre-crazed in a predetermined manner. For purposes of cake removal, an impacting device vibrates the leaves to dislodge the filter cake, whereby the filter cake separates along the preselected, weakened area

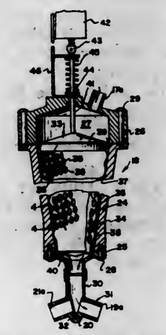


into separate sheets and each sheet falls downwardly into a receptacle without contacting any of the component parts of the filter located adjacent to the leaves.

ERRATUM

For Class 210—386 see:
Patent No. 3,500,011

3,499,536
FILTER APPARATUS
David Cohen, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 17, 1967, Ser. No. 653,837
Int. Cl. B01d *35/22, 29/00*
U.S. Cl. 210—391 **18 Claims**



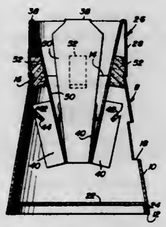
A filter apparatus for removing lint and similar material from wash water including means for rearranging the apparatus to permit self-cleaning thereof by passage of wash-off liquid therethrough. The filter apparatus includes a textured filter surface providing a plurality of tortuous filter flow paths functioning to trap the material to be filtered therein during the filtering fluid flow therethrough.

3,499,537
PRODUCTION OF ION EXCHANGE MEMBRANE
James A. Bittles, Claremont, Calif., assignor to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
No Drawing. Filed July 24, 1967, Ser. No. 655,334
Int. Cl. B01d *39/14;* **C01g** *31/00*
U.S. Cl. 210—510 **23 Claims**

Production of aluminum vanadate ion exchange membranes by dissolving vanadium oxide and an aluminum

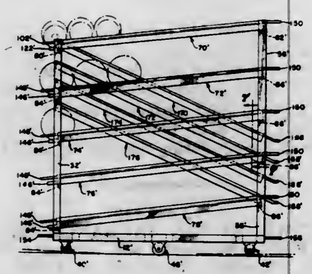
salt in either acid or base solution, precipitating aluminum vanadate from solution by addition of base or acid, respectively, to such solutions, and removing and drying the precipitate, to form an aluminum vanadate cation exchanger when precipitated from acid solution or an aluminum vanadate anion exchanger when precipitated from base solution. The resulting powdered ion exchangers, either alone, or together with a fused ceramic such as aluminosilicate, are then pressed and sintered to form strong stable aluminum vanadate ion exchange membranes operable at high temperatures up to 900° C.

3,499,538
HOT DOG HOLDER
David S. Sherard, 933 N. Congress St., Jackson, Miss. 39202
Filed Dec. 13, 1967, Ser. No. 690,332
Int. Cl. A47f 7/00; B65d 3/00
U.S. Cl. 211—13 10 Claims



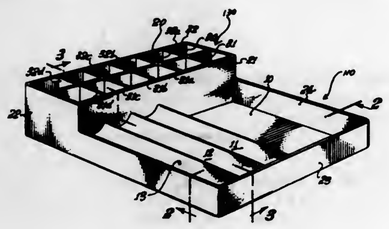
For use in restaurants, at lunch counters and the like, a server and holder for a hot dog. It is characterized by a closed-bottom self-standing cup-like hollow base whose hollow portion provides a receptacle capable of trapping surplus mustard, catsup, juices and drippings in a manner to keep the same from trickling on the user's hands or clothing. The base supports a receiver having bun clasping fingers depending into the receptacle portion. An opening in the side wall of the base permits a usable napkin to be stuffed therein.

3,499,539
MOVABLE SUPPORT MEANS
James Glenn Fisher, Hartwell, Ga., assignor to NVF Company, Wilmington, Del.
Filed Mar. 4, 1968, Ser. No. 710,181
Int. Cl. A47f 7/00
U.S. Cl. 211—49 11 Claims



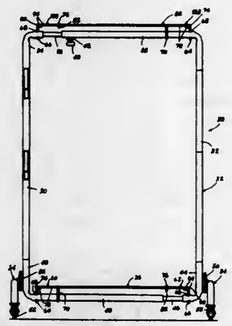
A framework is mounted on wheels so as to be readily movable. A plurality of support portions are mounted on the framework and are normally inclined with respect to horizontal so that cheeses or cones supported thereby will move toward one end thereof. The support means for cones includes at least two elongated guide portions adjustably mounted to accommodate different size cones to ensure proper rolling movement thereof. In a modified form of the invention, further support portions are mounted on the framework and are inclined oppositely to the first-mentioned support portions and at a greater angle with respect to horizontal for receiving empty starters or bobbins.

3,499,540
COSMETICS ORGANIZER
Lois A. Huncovsky, 4897 Hidalgo, San Diego, Calif. 92117
Filed Nov. 23, 1966, Ser. No. 596,587
Int. Cl. A47f 7/00, 3/14
U.S. Cl. 211—60 1 Claim



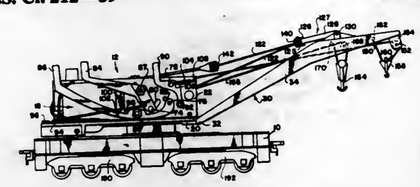
A storage box or cabinet for storage of cosmetics such as lipsticks, nail polish, and the like providing special compartments for organizing the cosmetics in, and maintaining them in, good and usable order.

3,499,541
EXPANDING SHELF CLOTHES RACK
James D. Mackie, St. Louis, Mo., assignor to Lee-Rowan Company, St. Louis, Mo., a corporation of Missouri
Filed Oct. 5, 1967, Ser. No. 673,141
Int. Cl. A47f 7/00, 5/10
U.S. Cl. 211—134 4 Claims



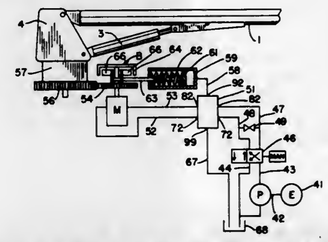
An improved clothes or garment rack which is expandable to different sizes. The garment rack has top and bottom shelf sections which are expandable through telescopic left and right hand shelf sections that rest upon one another in guided relationship and rest on the top portion of the rack. The rack has telescopic expandable sections and a special supporting tube anchoring means in one of the telescope sections effected by the bending of tubular sections in the formation of the rack frame.

3,499,542
TOY CAR INVENTION
Frank A. Turner, Brooke, Va. 22430
Filed Dec. 19, 1967, Ser. No. 691,880
Int. Cl. B66c 23/06; B66d 1/26
U.S. Cl. 212—59 10 Claims



A toy railroad car is provided with an operating crane having three winches for raising and lowering the boom and a pair of hoist lines. The winches, which are normally biased out of engagement with a single drive shaft driven by a reversible motor and which are restrained from rotation by engagement with rubber brake pads, may be engaged with the drive shaft by operation of corresponding control levers.

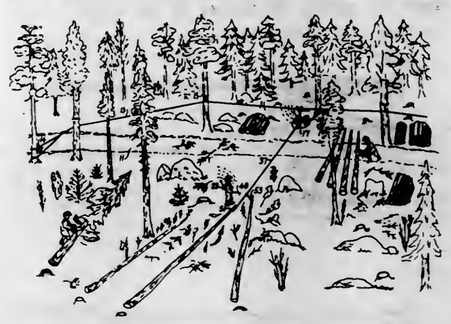
3,499,543
CRANE
Walter C. Updegrave, 300 Adams St., Reading, Pa. 19606
Continuation-in-part of application Ser. No. 498,870, Oct. 20, 1965. This application Nov. 13, 1967, Ser. No. 684,895
Int. Cl. B66c 23/84; F15b 15/26; F16d 67/00, 23/00
U.S. Cl. 212—66 18 Claims



A slewing system for mobile type cranes is provided that utilizes efficient, as opposed to self-locking, gearing. To secure the slewing mechanism at any selected position, a hydraulic brake system is provided that is responsive to the pressure in the hydraulic motor ports. This mechanism causes the brake to be released when the motor is being driven and for the brake to set when the motor is not being driven. By properly adusting the hydraulic system, the braking force may be varied between the fully set and the fully released positions to enable precise control over the rotation of the boom. A further modification of this invention permits control of the motor and braking mechanism from more than one location.

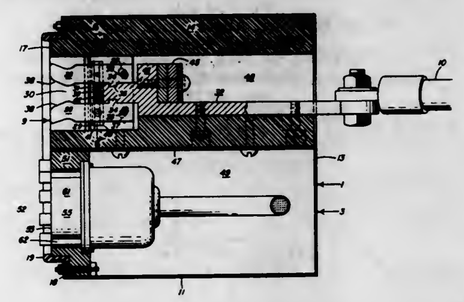
3,499,544
SUSPENDED APPARATUS FOR HAULING LUMBER
Ragnar Olof Kolpe, Parkvagen 11, Filipstad, Sweden
Filed Nov. 20, 1967, Ser. No. 684,223
Claims priority, application Sweden, Nov. 24, 1966, 16,057/66; Apr. 26, 1967, 5,891/67
Int. Cl. B66c 19/00, 21/00; B66d 1/00
U.S. Cl. 212—71 2 Claims

The invention relates to hauling of lumber from stump to roadside by means of a motor-driven remote-controlled winch. The winch is suspended in a carriage running upon a stationary cable which is suspended above the ground by attachment to standing trees. The pulling wire of the winch extends mainly horizontally from the cable at a sharp angle thereto. The pulling force is counter-balanced by a chain stay attached to the winch and extending in



opposite direction to the winch wire. The winch turns freely about a vertical axis in order to enable winching from both sides and from various directions. The winch can easily be shifted past the suspension points of the cable.

3,499,545
AUTOMATIC ELECTRIC COUPLER
Geoffrey W. Cope, Williamsville, and George C. Skinner, Elma, N.Y., assignors to Dresser Industries, Inc., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,600
Int. Cl. B61g 5/06
U.S. Cl. 213—1.3 13 Claims

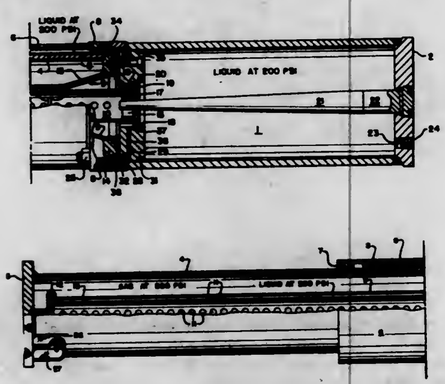


An electric coupler mounted on a mechanical coupler for automatically connecting electric lines between railway vehicles, having couplings for both a traction motor or other high voltage bus line and other relatively low voltage lines and so mounting the bus line coupling as to ensure against jumping of current therefrom to any of the other lines.

3,499,546
HYDRAULIC CUSHION DEVICE
Walter C. Dilg, Glen Ellyn, Ill., assignor to Hydra-Cushion, Incorporated, Chicago, Ill., a corporation of Maryland
Filed Jan. 25, 1968, Ser. No. 700,448
Int. Cl. B61g 11/12, 9/08, 9/16
U.S. Cl. 213—43 4 Claims

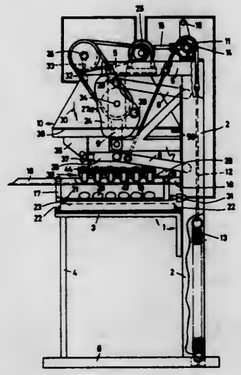
A hydraulic cushion device the principal use of which is as a part of a hydraulic draft gear for railroad car couplings or the like. The cushion device includes a hollow

piston rod and piston operating in a cylinder, the cushion effect being obtained at least in part by a throttled flow of hydraulic liquid from the cylinder into the piston chamber during a compression stroke. The restoring force for the return stroke is provided by a special boot arrangement producing an air spring in combination with a rolling sleeve for sealing the interior of the device against the



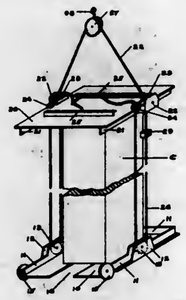
escape of the hydraulic liquid. A special ring construction is associated with the piston and arranged to produce a snubbing action at the end of the return stroke. A further feature is the provision in this special ring construction for maintaining the supply of hydraulic liquid in the rolling sleeve.

3,499,547
MECHANISM FOR TRANSPOSITION OF PIECES OF DOUGH
Herbert Schroder, Augustrasse, Staffelstein, Offenbach, Germany
Filed Feb. 19, 1968, Ser. No. 706,380
Claims priority, application Germany, Feb. 23, 1967, Sch 40,298
Int. Cl. B25j 11/00; B66c 1/42
U.S. Cl. 214—1 13 Claims



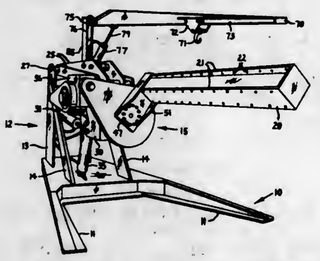
The grasping head and support of a kneading board or baking sheet are displaceable in distance from each other and laterally, with the trajectories of the board and sheet running beneath the grasping head and controlled by switches, the head being coupled by links and counterbalanced, and tiltable through 90° and immobilizable, and the displacements of the head being controlled by cams for grasping, transposing and repositioning of pieces of dough, with ejection of supports at appropriate times.

3,499,548
LIFTING DEVICE
John H. Kruse, 9219 Philadelphia Road, Baltimore, Md. 21206
Filed June 25, 1968, Ser. No. 739,744
Int. Cl. B66c 1/16
U.S. Cl. 214—1 2 Claims



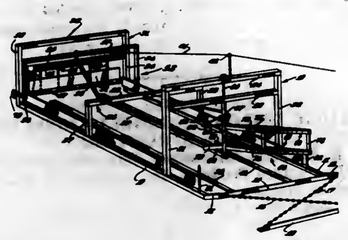
A principle for handling of various shaped objects including elongated square, round, etc., having a pair of plate-like members engageable with the opposite ends or sides of such objects, which primarily consist of two plate-like members having cables passing from the first plate to the second plate through guide pulleys, etc., then back to the first plate where it is anchored, wherein the arrangement is placed bilaterally of the object to be handled so that when a pull is exerted to the said cable the plates are moved toward each other and against the object for gripping and securing the same.

3,499,549
BEAM WELDMENT POSITIONER
Eddie B. Wagner, 4436 NE. Maywood Place, Portland, Oreg. 97220
Filed July 19, 1968, Ser. No. 746,042
Int. Cl. B65g 7/00
U.S. Cl. 214—1 5 Claims



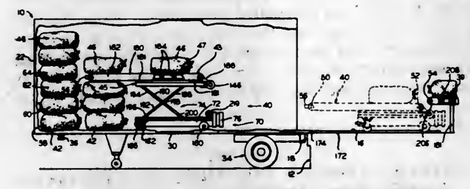
A boom is mounted for raising and lowering, for tilting up or down and for rotation about an axis parallel to the boom. The boom is made as a flanged beam which is adapted for connection to a workpiece by bolting or by C-clamps. A second boom is provided for suspending welding equipment or other tools.

3,499,550
BALE ACCUMULATOR
Doyne A. Jensen, Frederick, S. Dak. 57441
Filed Dec. 13, 1967, Ser. No. 690,317
Int. Cl. B65g 67/00; A01d 89/00
U.S. Cl. 214—6 3 Claims



A bale accumulator for accumulating bales of hay from a baler and grouping them in neatly stacked and compressed piles in order that a hook-type fork may be utilized in picking up a group of bales in the field.

3,499,551
APPARATUS FOR LOADING BAGGED MAIL FROM A LOADING DOCK INTO A HIGHWAY VEHICLE
Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill. 60025
Continuation-in-part of application Ser. No. 694,151, Dec. 28, 1967. This application Jan. 31, 1968, Ser. No. 702,008
Int. Cl. B65g 57/10, 57/22, 67/04
U.S. Cl. 214—6 2 Claims

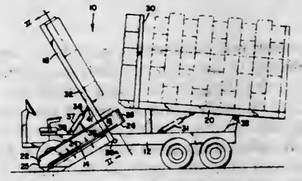


The invention relates to the loading of mail bags from a loading dock into an end loading highway vehicle, such as a truck or a trailer, to fully load the vehicle with stacks of mail bags in which the bags are loaded in individual stack forming tiers without those performing the bag loading operation having to enter the vehicle. In practicing the invention, the loading dock at the post office or the like is provided with a conveyor on which outgoing bags are placed and oriented in closely spaced tier form to form a load unit, in which the individual bags of the load unit may conveniently extend lengthwise of the conveyor and the vehicle to be loaded. Operating between the conveyor and the highway vehicle is a carriage that receives the tier load unit without disturbing the orientation of the bags and brings the tier load unit into the vehicle loading area for discharge of the stack forming tier unit, and effects placement of the tier as part of a stack in the vehicle, again without disturbing the previously established orientation of the bags. The carriage then returns to the conveyor for another tier load.

The carriage movements are controlled so that the individual tier loads forming the load units are formed into vertical stacks of mail bags that are disposed to position the bags of adjacent stacks in closely spaced relation, with the vehicle being thus filled with bags throughout its load receiving area. The operation of the carriage is mechanized so that workers do not having to go into the vehicle, and palleting of the bags in groups is avoided while still achieving uniform loading in tier form.

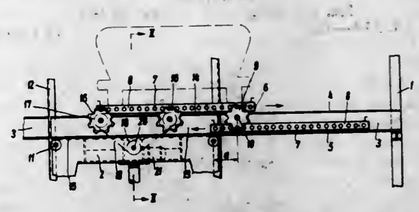
Several specific arrangements for practicing the invention are disclosed in which the carriage operations on the floor of the vehicle and loading dock, wherein the carriage is either self-propelled or cable actuated, and wherein the bags as loaded extend either longitudinally or transversely of the vehicle.

3,499,552
AUTOMATIC BALE WAGON
Patrick L. May and Ralph E. Beyer, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Illinois
Original application Aug. 28, 1967, Ser. No. 663,860, now Patent No. 3,446,369, dated May 27, 1969. Divided and this application Dec. 12, 1968, Ser. No. 800,020
Int. Cl. B65g 57/30, 57/28
U.S. Cl. 214—6 6 Claims



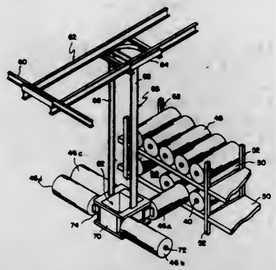
A self-propelled bale wagon having a stack-forming and a stack-receiving bed for arranging and accumulating bales in an interlocked pattern. The stack-forming bed includes elevating means having bale penetrating spikes for moving bales therealong and spring-loaded retainers for maintaining the position of the bales on the stack-forming bed. The bale wagon components are operated by a hydraulic system controlled by mechanical indexers. The indexers provide automatic means for accumulating bales in a predetermined, interlocked pattern.

3,499,553
STORAGE SYSTEM FOR MOTOR VEHICLES OR OTHER GOODS
Karl Heinz Stiesen, Boll-Stauffacher, Bern, Switzerland
Filed Jan. 22, 1968, Ser. No. 699,478
Claims priority, application Switzerland, Jan. 23, 1967, 900/67
Int. Cl. E04h 6/22
U.S. Cl. 214—16.1 6 Claims



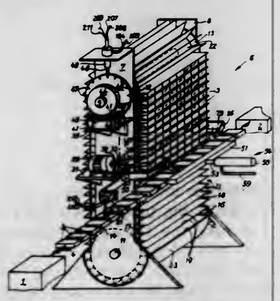
A storage system for motor vehicles or other goods has an elevator for conveying support platforms to and from a plurality of storeys, the support platforms running on upper flanges of rails at the storeys and on the elevator when loaded and on lower flanges of the rails when unloaded, and gears engageable in toothed racks on the support platforms for transferring loaded and unloaded support platforms in different directions between the elevator and any of the storeys.

3,499,554
STACKER CRANE AND WAREHOUSE SYSTEM AND METHOD FOR STACKING AND STORING ROLLS OF MATERIAL
Arthur A. Davis, West Lake, Ohio, and Martin L. Leibowitz, New York, N.Y., assignors to Commercial Affiliates, Inc., a corporation of New York
Filed Feb. 21, 1968, Ser. No. 707,200
Int. Cl. B65g *1/04;* B66c *1/00*
U.S. Cl. 214—16.4 7 Claims



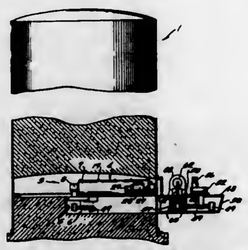
The invention relates to stacking, storage, and marshalling for delivery rolled material such as carpeting, textile material, or the like, rolled and preferably packaged around a core through which a ram of the crane may be inserted for lifting and moving same. The method is to pick up such rolled units from a pick-up and delivery station to be placed onto storage racks by means of the crane system. The essence of the apparatus of the invention is the provision of a load carriage adapted to be moved by the crane apparatus to different points and at different levels within the pick-up, delivery and storage areas of the warehouse, said load carriage being mounted on a mast, said mast being capable of 360 degrees rotation, said load carriage being adapted to move to different height levels with relation to the mast, and said load carriage having a plurality of rams horizontally disposed, and each adapted to 90 degree rotation in a horizontal plane, said mast being adapted to be moved throughout the area of the pick-up and delivery and warehouse portions covered by the crane.

3,499,555
APPARATUS FOR TRANSPORTING AND STORING CIGARETTE PACKS OR THE LIKE
Günter Wahle, Reinbek, Germany, assignor to Hauni Werke Korber & Co. KG, Hamburg, Germany
Filed Apr. 10, 1968, Ser. No. 720,299
Claims priority, application Germany, Apr. 19, 1967, H 62,483
Int. Cl. B65g *1/06, 47/44, 47/69*
U.S. Cl. 214—16.4 15 Claims



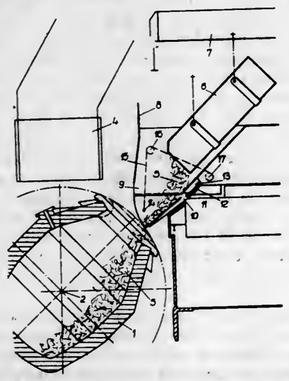
Apparatus for transporting cigarette packs from a first to a second packing machine comprises a belt which transports a row of packs along a horizontal path, a magazine having an endless conveyor provided with a series of narrow elongated compartments which are movable into registry with the packs on the belt by a reversible drive for the conveyor, and a transfer mechanism which can shift groups of packs from the belt into the compartments or vice versa, depending upon whether the output of the first packing machine exceeds the requirements of the second packing machine or vice versa.

3,499,556
HYDRAULIC UNLOADING MECHANISM FOR A STORAGE STRUCTURE
Leonard E. Broberg, Milwaukee, Wis., assignor to A. O. Smith Harvestore Products, Inc., Arlington, Ill., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,686
Int. Cl. B65g *65/46*
U.S. Cl. 214—17 10 Claims



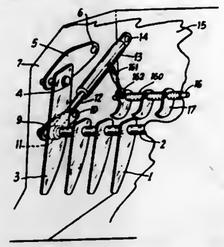
The invention relates to a hydraulically actuated unloading mechanism for unloading stored material from a sealed storage structure. The unloading mechanism comprises a cutter arm journalled for rotation about the center of the structure, and the cutter arm includes an auger having a series of teeth adapted to penetrate and dislodge the stored material as the arm rotates. The arm is driven from its outer end by a hydraulic motor carried by the arm.

3,499,557
CHARGING DEVICE FOR MELTING FURNACES
Leopold Walzel, Duisburg, Germany, assignor to Demag A.G., Duisburg, Germany
Filed Aug. 27, 1968, Ser. No. 755,552
Claims priority, application Germany, Sept. 1, 1967, 1,583,237
Int. Cl. F27d *3/10;* F65g *11/20*
U.S. Cl. 214—35 6 Claims



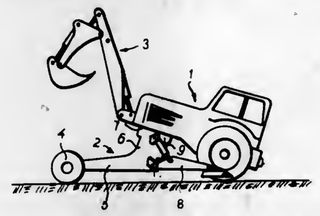
A charging device for melting furnaces is comprised of a chute having an outlet opening. A flap is positioned at the opening from the chute and is pivotally movable between a first position closing the opening and a second position permitting charging into the converter furnace. In its second position the pivot axis of the flap is movably positioning while maintaining the flap in a predetermined angular relationship to the horizontal for accommodating the build up of crusts at the opening to the converter furnace.

3,499,558
LOADING DEVICE
Fernand Rey, 2 Rue Antoine Roucher, 75 Paris 16°, France
Filed Feb. 21, 1968, Ser. No. 707,180
Claims priority, application France, Mar. 1, 1967, 97,081
Int. Cl. B65f *1/10*
U.S. Cl. 214—83.3 5 Claims



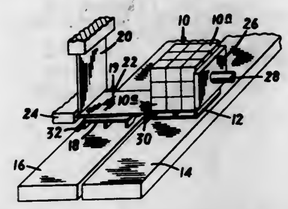
A set of teeth 1 disposed above a hopper, and connected to the end 4 of a link 5 carried by the lateral wall 7, are moved along a predetermined closed circuit in order to sweep the bottom 18, then to penetrate between the teeth 17 of a fixed or movable comb in an upwards circular motion to permit a cleaning of the said teeth, this motion following up to a maximal height position of the teeth 1 towards the rear of the hopper, for a new cycle.

3,499,559
MOBILE AND TURNABLE DIGGING MACHINE, CRANE OR THE LIKE
Egil Pedersen, Hasleoya, Fevik, Norway
Filed Aug. 30, 1967, Ser. No. 664,526
Claims priority, application Norway, Sept. 9, 1966, 164,655
Int. Cl. E02f *3/32*
U.S. Cl. 214—138 7 Claims



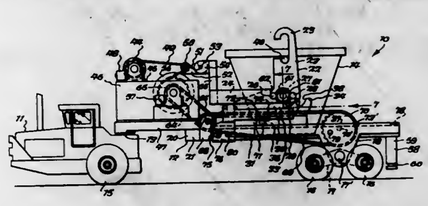
This invention relates to a mobile and turnable digging machine, crane or the like with a drive unit which may be turned with respect to the undercarriage, and which is equipped with its own propulsion machinery, comprising a drive unit which may be turned with respect to an undercarriage and by which the driven road wheels are situated on the drive unit and the non-driven road wheels (steering wheels) are situated on the undercarriage, and by which it is possible to alternate between a driving position with the driven wheels in contact with the ground and a digging position with the same wheels at a distance from the ground.

3,499,560
SMOOTH TO COARSE-FACED PALLET TRANSFER
Emile Albert Le Gros, Stamford, Conn., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Sept. 23, 1968, Ser. No. 761,549
Int. Cl. B65g *65/00*
U.S. Cl. 214—301 13 Claims



As described herein, a unit load carrying smooth-faced reversible pallet is carried to a position adjacent a non-reversible coarse-faced pallet. A tapered plate is then moved to a position above the non-reversible coarse-faced pallet and the unit load is transferred to the tapered plate. Thereafter, with the unit load being fixed against lateral movement, the tapered plate is retracted from its position above the non-reversible coarse-faced pallet and the unit load is deposited onto the non-reversible coarse-faced pallet.

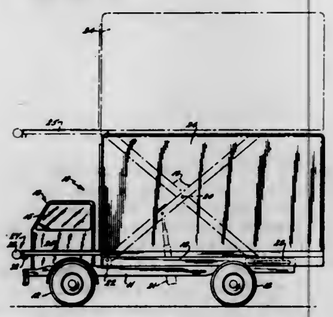
3,499,561
SLAG POT CARRYING VEHICLE
Walter C. Beckwith, Angola, N.Y., assignor to Clarence A. Hackett, Inc., Tonawanda, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 703,610, Feb. 7, 1968. This application Sept. 18, 1968, Ser. No. 766,667
Int. Cl. B65j *1/02;* B60p *1/14, 1/48*
U.S. Cl. 214—313 21 Claims



A slag pot carrying vehicle for lifting a slag pot and its contents from the ground, transporting it to a dumping site, tipping the pot to dump the slag contents, and thereafter returning the pot to a furnace area and setting it down in an upright position on the ground, comprising a vehicle having a frame, a carriage on said frame, motor means for moving the carriage from a rearmost pot lifting position on the trailer to a central transit position forwardly of the rear wheels and for moving said carriage to a pot dumping position at the rear of the vehicle, spaced arms pivotally mounted on the carriage, pivot means for pivoting the spaced arms from a pot lifting position to a pot holding position on the carriage, means for locking the slag pot to the arms for dumping, said pivot means causing said arms to pivot rearwardly with the pot locked thereto for effecting dumping of the pot, said pivot means thereafter returning said pot to an upright position and causing said arms to pivot rearwardly after said locking means release said pot to set said pot down in an upright

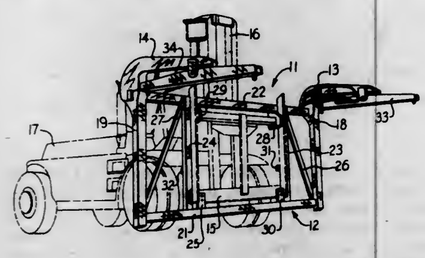
position. The mounting between the arms and the carriage are off-center as to permit the pot to tilt rearwardly by its own unbalance, both during dumping and when the pot is being set down in an upright position.

3,499,562
AIRLINE CATERING VEHICLE
William N. Phillips, Auburndale, Fla., assignor to Leco, Inc., Lakeland, Fla.
Filed Mar. 5, 1968, Ser. No. 710,470
Int. Cl. B62d 39/00; B60p 1/02
U.S. Cl. 214—512 2 Claims



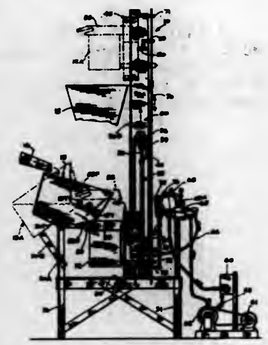
A vehicle having a chassis with an operator's cab located at one side of the front portion thereof and a high-lift body which can be raised and lowered relative to said chassis and such body having a ramp located beside the cab and extending forwardly of the chassis.

3,499,563
CONTAINER LIFT FRAME
James E. Forry, Monmouth, Cyril J. Nisbett, Salem South, and Norman D. Thompson, Dallas, Oreg., assignors to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 21, 1967, Ser. No. 692,478
Int. Cl. B66f 9/18; B66c 1/42
U.S. Cl. 214—621 9 Claims



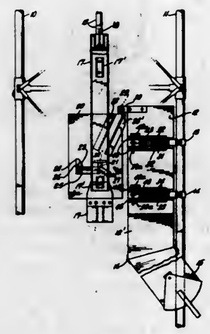
A frame for lifting and moving large transportation containers is provided. The lift frame is adapted for easy attachment and detachment to large size fork trucks. A vertical frame is provided for attachment to the lift carriage on a mast of a fork lift truck. Transversely extending arms form an extension on the upper corners of the frame. These transverse supporting arms pivotally support transverse clamping beams, which beams are provided with container lastching means at the extremities thereof. When properly positioned the lift frame of the invention engages the upper corner fittings of a cargo container whereby said container may be lifted and moved by said truck.

3,499,564
HOIST AND CONTROL MECHANISM FOR A HOPPER
Fred P. Hopfeld, Elmwood Park, Ill., assignor to Grand Specialties Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 18, 1967, Ser. No. 668,333
Int. Cl. B65g 47/40
U.S. Cl. 214—627 1 Claim



Movement of materials in process is facilitated by a transport support which moves between a loading station and an unloading station, and as the support arrives at each station a control is actuated resulting in reverse movement of the transport to the other station, virtually instantaneously. At the loading station the transport itself is effective to tilt a hopper causing the materials in process to be transferred from the hopper to the transport support, and as the transport support arrives at the unloading station it is tilted or dumped to transfer the materials to a receiver, the arrangement being such that the loading and unloading functions are repeatedly cycled.

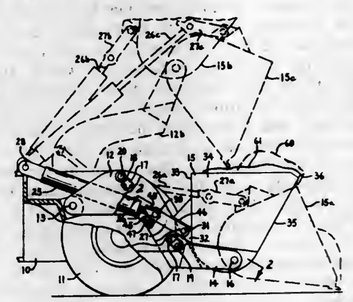
3,499,565
MATERIAL HANDLING APPARATUS
Fritz J. Nesslinger, College Point, and Arthur C. Borgman, Franklin Square, N.Y., assignors to Harsco Corporation, Harrisburg, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 621,310, Mar. 7, 1967, which is a continuation-in-part of application Ser. No. 524,803, Feb. 3, 1966. This application Apr. 23, 1968, Ser. No. 723,430
Int. Cl. B65g 47/16
U.S. Cl. 214—705 7 Claims



A skeleton type material hoisting tower includes a hopper releasably secured therein, and a cable supported

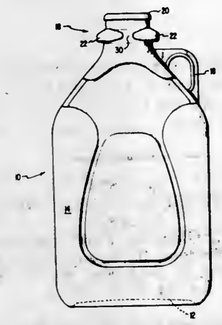
bucket for carrying material to and automatically discharging it into the hopper by operative engagement of guides or cams on the bucket with tilting means, as rollers, on the hopper. In a modification, the guides on the bucket are arranged to disengage from the rollers on the hopper when the bucket over-runs its discharging position; and, in such case, re-engagement of the guides and rollers ensures effective return of the bucket to loading position.

3,499,566
LOADER BUCKET LINKAGE
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Mining Scoop, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 9, 1968, Ser. No. 766,111
Int. Cl. E02f 3/36, 3/70
U.S. Cl. 214—775 6 Claims



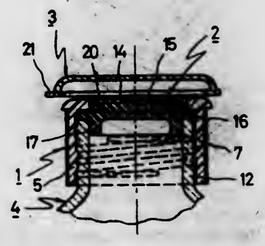
A link is pivotally connected between the bucket and a piston rod which tilts the bucket. Gravity actuated over-center stop means locks the joint between the link and piston rod when they are brought into alignment with each other. When the bucket is erected from scooping to carrying position, a first stop, on the loader boom, limits the swinging movement of the piston rod and a second stop, on the bucket, engages the link to stop rotation of the bucket abruptly to jar the load away from the lip of the bucket to prevent spillage in traveling.

3,499,567
NECK STRUCTURE FOR THIN-WALLED PLASTIC CONTAINERS
Gerald W. Spotts, Blackwood, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,572
Int. Cl. B65d 1/02
U.S. Cl. 215—31 7 Claims



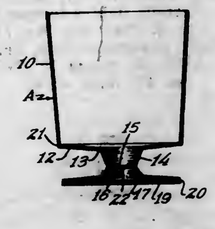
The disclosure is directed to an improved neck structure for thin-walled plastic containers wherein the conventional bumper or casing ring conventionally formed as a ring-like structure completely encircling the neck is replaced by two partial rings which are separated by vertical walls. The purpose of separating the partial rings by vertical walls is to provide increased resistance to vertical capping forces applied by a conventional capping machine.

3,499,568
STOPPER SYSTEM FOR BIOLOGICAL CONTAINERS
José Viñas Riera, Manuel, 8, 5, 2, Barcelona, Spain
Filed Dec. 23, 1968, Ser. No. 785,901
Claims priority, application Spain, Dec. 28, 1967, 349,249
Int. Cl. B65d 41/20, 41/04, 41/62
U.S. Cl. 215—37 4 Claims



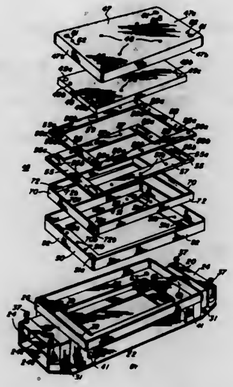
A stopper system comprising an inner flexible stopper disk, a rigid cap and a top capsule, the rigid cap having a central aperture in which an upper portion of the flexible disk is fitted.

3,499,569
HOLLOW STEM FOOTED TUMBLER
James L. Wentzel, Cottage Grove, Minn., assignor, by mesne assignments, to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed Jan. 17, 1968, Ser. No. 698,543
Int. Cl. A47g 19/22; B65d 1/00
U.S. Cl. 215—99.5 5 Claims



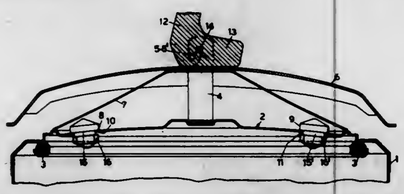
This invention resides in a hollow stem footed tumbler of a general type commonly known as a goblet. The tumbler includes an upper body portion having tapering side walls and a ring-shaped bottom wall connected at its inner edge to the large diameter of a frusto-conical upper stem portion terminating at its small diameter lower end in a partition wall. The glass also includes a second frusto-conical lower stem portion connected at its small diameter upper end to the upper stem portion adjoining the partition wall and includes a generally ring-shaped base preferably terminating in a downwardly extending short peripheral flange.

3,499,570
COVER ASSEMBLY FOR A JUNCTION BOX OF AN UNDERFLOOR ELECTRICAL WIRING SYSTEM
De Forrest D. Butler, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 1, 1968, Ser. No. 741,384
Int. Cl. H02g 3/14
U.S. Cl. 220—3.3 22 Claims



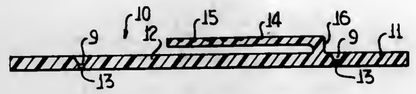
A cover assembly for a relatively large underfloor junction box includes a frame assembly, a trim pan and a cover plate. The frame assembly includes a frame member which receives a plurality of interfitting reinforcing bars and a four-piece tile trim. The cover plate is received in the trim pan which in turn is received within the frame assembly to complete the structure of the cover assembly. The cover assembly is received within a complementary access box defining an opening into the junction box proper. The four-piece tile trim fits between the frame member and the trim pan, the pieces of tile trim being capable of selective assembly to provide either a thick or a thin tile trim or a flush surface.

3,499,571
PRESSURE COOKER HAVING A SEALTIGHT OVAL LID ABUTTING THE INNER EDGE OF SAID COOKER
Pieraldo Mortara, Vercelli, Italy, assignor to Sambonet S.p.A., Vercelli, Italy, a company of Italy
Filed Apr. 8, 1968, Ser. No. 719,502
Claims priority, application Italy, Apr. 14, 1967, 14,946/67, Patent 791,595
Int. Cl. B65d 45/02
U.S. Cl. 220—25 6 Claims



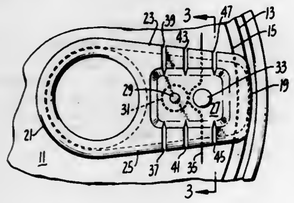
A presure cooker is disclosed, in which a resilient elongated body is used to compress two plugs acting both as safety valves and venting means for discharging steam prior to opening the cooker. The lid is of substantially planar configuration and acts as a resilient diaphragm capable of signalling the approximate value of the steam pressure. The shape of the plugs is also such as to signal when the plugs themselves are incorrectly mounted.

3,499,572
EASY-OPENING STRUCTURE HAVING A WELDED WEAKENING LINE
Herbert S. Ruekberg, Highland Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 8, 1968, Ser. No. 719,503
Int. Cl. B65d 17/12
U.S. Cl. 220—54 5 Claims



This invention relates to improvements in articles which are designed to have openings formed therein for numerous purposes, and more particularly to container structures such as but not limited to, can ends, crown caps, closures, container bodies, etc. which are constructed entirely from synthetic plastic material in such a manner that the conventional "score line" between a tear-out panel and a remaining portion of the container structures is eliminated. In lieu of the usual "score line" the various components of this invention are provided with a rupturable weld line of fused material which is inherently weaker than remaining material and sets-off a removable or fracturable panel from a remaining portion of the components. Thus, when a force is applied to the tear panel a rupture occurs along the weld line to effect, for example, the formation of an opening through which products may be dispensed or, in the case of crown closures, the entire removal of the closure from an associated bottle or similar container.

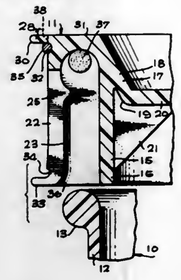
3,499,573
FLEXIBLE TAB FOR EASY OPENING CAN
Guy L. Adams, San Francisco, Calif., assignor to MJB Company, a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,542
Int. Cl. B65d 17/24
U.S. Cl. 220—54 1 Claim



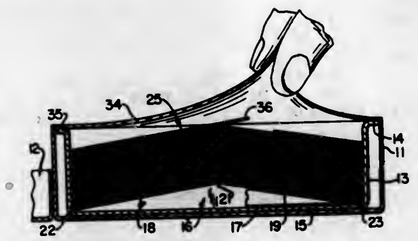
A tab for an easy opening can is provided wherein the tab has at least one pair of V shaped notches in its upper surface, allowing the tab to flex upwardly for a distance until the notches close, making the can easier to open.

3,499,574
RESILIENT CLOSURE HAVING RETAINING MEANS
George Yates, Jr., Glendale, Calif., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware
Filed Dec. 5, 1968, Ser. No. 781,556
Int. Cl. B65d 43/10
U.S. Cl. 220—60 19 Claims

A plastic closure assembly adapted for application to an open head container body comprises two flanges forming an inverted U-shaped channel provided with interlocking means adapted to engage the open end of the container body. The outer flange of the closure is slotted to provide tabs which may be sprung outwardly in order to disengage the closure from the container body. A retaining member is provided to normally maintain the closure in engagement with the container body.



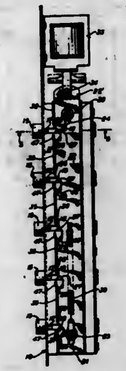
3,499,575
PACKAGE FOR DISPENSING MOIST SHEETS
Winston G. Rockefeller, Woodcliff Lake, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 14, 1967, Ser. No. 682,950
Int. Cl. B65h 1/00
U.S. Cl. 221—55 5 Claims



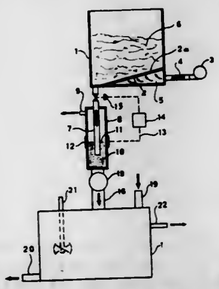
A sealed package contains a stack of folded premoistened flexible sheets of absorbent paper or the like disposed in a moisture resistant tray having a sealed top opening. The individual sheets are upwardly folded over upon themselves along parallel longitudinal regions so that one side fold is wider than the other and extends over the center of the folded unit but not so as to overlap the narrower fold, so that when the stack is placed on a central ridge support within the tray with the folds uppermost the free or tip end of the wider fold tends to spring upward away from its sheet as each sheet is uncovered by removal of the overlying sheet.

3,499,576
PUSHBUTTON SELECTOR ASSEMBLY
Irving Pitel, Metuchen, Floyd C. Cornine, Red Bank, and Richard S. Silverman, Union, N.J., assignors to Automatic Merchandising Machine Mfg. Corporation, Avenel, N.J., a corporation of New Jersey
Filed Mar. 1, 1968, Ser. No. 709,613
Int. Cl. G07f 5/26
U.S. Cl. 221—125 3 Claims

In a coin-operated vending machine, a pushbutton selector assembly, whereby, on depositing a coin, one may, by pushing a particular button, select one of a series of different articles available to be vended. Novel structural and operative features are provided for locking the assembly on such actuation of the button until delivery of the so-selected article, for actuating the selected article vending mechanism and for resetting the buttons after discharge of the article.



3,499,577
METHOD AND APPARATUS FOR DOSING POWDER
Vilgot Raymond Nilsson, Hagersten, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed Apr. 9, 1968, Ser. No. 719,996
Claims priority, application Sweden, Apr. 24, 1967, 5,688/67
Int. Cl. G01f 11/00
U.S. Cl. 222—1 7 Claims

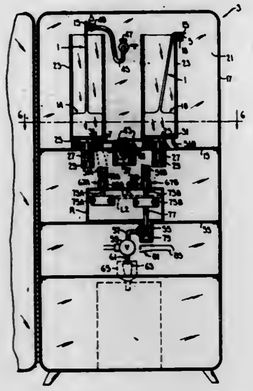


A suspension of the powder in a gas is led downward into a powder mass maintained under a reduced gas pressure, as compared to the gas pressure at which the powder is suspended; and a dosing means discharges powder from the powder mass. Preferably, means are provided to maintain a substantially constant level of the powder mass, from which the powder is discharged by the dosing means into a treatment vessel which is also maintained under reduced pressure.

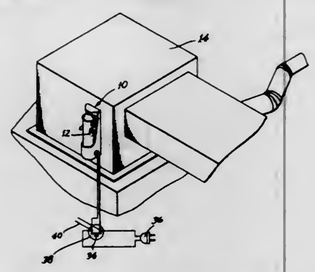
3,499,578
BEVERAGE DISPENSING SYSTEMS
Wilbert O. O'Neal, Crystal City, Mo., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,216
Int. Cl. B67d 5/08
U.S. Cl. 222—56 3 Claims

A beverage dispenser holding two packages partially filled with a beverage concentrate. Water is added to the

packages and the flow of the reconstituted beverage into a dispensing reservoir is controlled by valves which provide for complete dispensing from one package before the other.



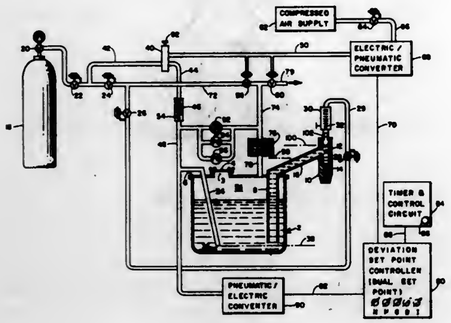
3,499,579
DEVICE FOR INTRODUCING SPRAY INTO AIR TREATMENT SYSTEMS
Raymond L. Garratt, 177 Caldwell Drive, Cincinnati, Ohio 45216
Filed Apr. 4, 1968, Ser. No. 718,716
Int. Cl. B67d 5/08
U.S. Cl. 222—54 5 Claims



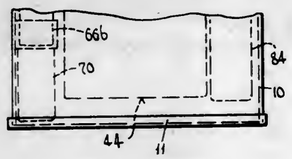
A device for introducing odor removing chemical spray, scented air freshener, bug killer and the like from a pressurized spray container, of the type having a dispensing valve at one end which is operative by relative movement of the container and the valve axially, into the forced air stream of an air treatment system, such as a furnace or air conditioning unit. The device comprises means for connecting the pressurized container to the forced air stream of the air treatment system and means for moving the container axially so as to depress the dispensing valve and thereby introduce the spray into the forced air stream of the air treatment system.

3,499,580
PRESSURE POUR APPARATUS AND COMPONENT THEREOF
Frank B. Smith, 712 Kains Ave., Albany, Calif. 94706
Filed July 2, 1968, Ser. No. 742,017
Int. Cl. B67d 5/08; G01f 23/00; B22d 17/06
U.S. Cl. 222—61 7 Claims

Pressure pour apparatus including a bubbler type pressure sensing system, also usable per se in other organizations, in which, to maintain continuous bubbling the flow rate of gas into the bubbler tube is automatically increased during increase of pressure in the liquid at the submerged end of the bubbler tube caused independently of the gas emitted from the bubbler tube. A cushion of gas from a regulated pressure source aids gravity to help maintain a constant head to force liquid out through the pouring orifice. Small pressure changes accompanying emergence of bubbles, amplified and transduced, apply a dither to apparatus-pressurizing valves.

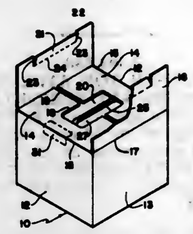


3,499,581
HAND-HELD DISPENSER WITH MIXING VALVES
Herbert G. Lehmann, Easton, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,865
Int. Cl. B67d 5/60; B65d 25/20
U.S. Cl. 222—132 11 Claims



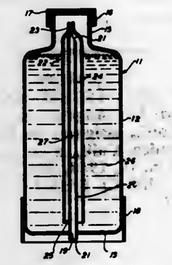
A hand-held dispenser with multiple valves and multiple containers whose discharge passages are controlled by the valves. An outer container, usually pressurized, encloses the other or others which comprise flexible bags subjected to the common internal pressure. One valve is a manually operable master, which controls the discharge to the exterior from an internal mixing chamber communicating with the inner bags. The other valve or valves are of the automatic, spring-charged back-check type which are mechanically independent of the master valve and operate instead in response to pressure differentials on their opposite sides, resulting from the opening of the master discharge valve. Different liquids in the container and bag or bags are internally discharged and mixed in the mixing chamber, and thereafter externally discharged when the master valve is shifted to its open position. The back-check valves are protected by splash-guard means and respond to the actual flow through the master valve, not to its mechanical position, whereby more consistent mixtures are obtained.

3,499,582
PLASTIC CONTAINER AND PACKAGE
Sheldon Berney, Winnipeg, Manitoba, Canada, assignor to Reliance Products Ltd., Winnipeg, Manitoba, Canada
Filed Dec. 19, 1967, Ser. No. 691,827
Int. Cl. B67d 5/06
U.S. Cl. 222—183 2 Claims



A container with a handle at the top thereof, enclosed by a rectangular cardboard package. The package includes first and second pairs of superposed top wall flaps, the first pair of flaps having cut-outs which form an opening above the container handle. The flaps in the second pair have initially flat portions which cover the opening, but are depressible into the opening so that access to the container handle may be had.

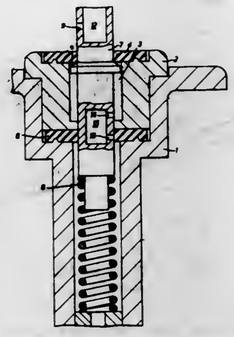
3,499,583
SIPHON-RESISTANT SQUEEZABLE DISPENSER
Werner Hauer and Anna M. Hauer, Sayre, Pa. (both of 14 Elm Place, Nutley, N.J. 07110)
Filed Oct. 11, 1967, Ser. No. 678,478
Int. Cl. B65d 37/00
U.S. Cl. 222—211 3 Claims



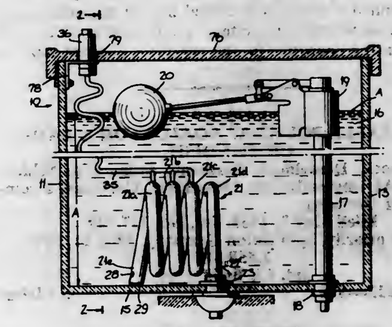
Our invention is a squeezable dispenser which embodies a discharge tube extending within the container in such a position that it will not leak when not in use notwithstanding variations in ambient barometric pressure and which can be operated in either a vertical or horizontal position or any position intermediate thereto.

3,499,584
VALVES FOR PRESSURIZED DISPENSERS
William Edward Warren, Cuffley, England, assignor to Bespak Industries Limited
Filed Dec. 21, 1967, Ser. No. 692,401
Claims priority, application Great Britain, Dec. 21, 1966, 57,287/66
Int. Cl. B65d 83/14
U.S. Cl. 222—402.2 3 Claims

The invention relates to metering type aerosol valves, and is primarily directed to eliminating variations in the size of dose delivered due to chemical attack and other deterioration of the valve seals. The seals at opposite ends of the usual metering chamber are dimensioned and arranged to be equally exposed to chemical attack and mechanical stress. Further, the usual valve return spring is preferably situated outside the metering chamber to eliminate variations due to spring volume tolerances. Another feature resides in holding at least the top seal in an inwardly dished condition, to nullify the tendency to inward dishing which arises in use of the valve.

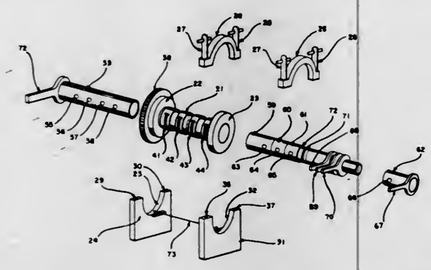


3,499,585
APPARATUS FOR CONTROLLING THE DISCHARGE OF LIQUID FROM A RESERVOIR
Albert H. Halff, 3514 Rock Creek Drive 75204, and Allen F. Reid, 3145 Spur Trail 75234, both of Dallas, Tex.
Filed Jan. 22, 1968, Ser. No. 699,665
Int. Cl. B67d 3/00; E03d 1/12; F16l 43/00
U.S. Cl. 222—416 9 Claims



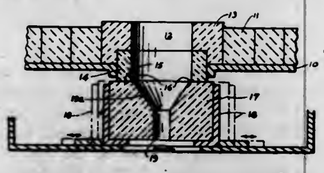
A tank for holding liquid has means for supplying liquid to the tank and stopping the supply when the liquid reaches a given level. The discharge of the liquid from the tank is controlled by a tubular conduit having generally vertical loops with an inlet at the bottom of the loops and an outlet extending through the bottom of the tank. The flow of liquid through the loops is controlled by opening a normally closed valve venting to atmosphere to initiate the flow of liquid through the loops for discharge to the outlet.

3,499,586
CONFECTIONERY DISPENSER
Russell H. Conley, Jr., High Shoals, Ga., assignor, by mesne assignments, of ninety-five percent to Quality Food Machinery, Inc., a corporation of Georgia, and five percent to Clyde A. Minder, trustee
Filed Apr. 19, 1968, Ser. No. 722,761
Int. Cl. B67d 3/00
U.S. Cl. 222—482 5 Claims



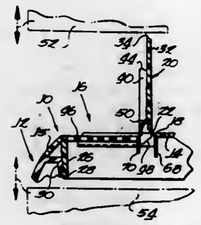
For depositing a filler substance atop a comestible wafer, a plurality of conveyors are disposed alongside each other and are arranged so as to move in a horizontal plane. Wafers mounted above the conveyors and spaced at intervals therealong are moved in parallel side-by-side relation. A dispenser is disposed above and in transverse relation to the paths of movement of the wafers and is synchronized so as to deposit on each wafer the desired quantity of filler material. The depositor comprises a pair of relatively rotatable depositor elements having apertures corresponding to the number and spacing of conveyors therebelow. As disclosed, each depositor element incorporates three sets of aligned dispensing apertures so that when one depositor element is rotated relative to the other, a deposit of material is made when an aperture in one depositor element comes into registry with an aperture in the other depositor element. Since the material to be deposited is in effect extruded from the depositor elements and since it is introduced into one end of the depositor elements under pressure, variations in the quantity extruded may result so that a control element is provided having adjusting apertures therein whereby the effective cross-sectional area of the dispensing apertures in one depositor element may be varied.

3,499,587
ADJUSTABLE POURING NOZZLE FOR A LADLE OR TUNDISH
Klaus Brock, Duesseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Duesseldorf, Germany, a company of Germany
Filed May 7, 1968, Ser. No. 727,249
Claims priority, application Germany, May 11, 1967, 1,558,310
Int. Cl. B67d 3/00
U.S. Cl. 222—526 6 Claims



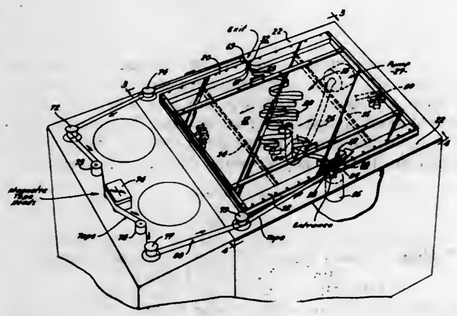
This is an adjustable nozzle for directing a stream of molten metal from a ladle or tundish which has a discharge orifice with a flat face surface around the discharge end of the orifice. The nozzle is provided by a block having a flat end surface abutting, and slidable across, the flat face surface around the orifice. A hole through the block with one end opening through the flat end surface of the block has a smaller diameter than the orifice so that the block may be shifted to alternative lateral positions relative to the orifice, while maintaining the hole in fluid flow communication with the orifice, for adjusting the position of the outflow from the exit end of the hole.

3,499,588
PLASTIC CONTAINER TOP WITH COMBINATION CLOSURE AND SPRINKLER
Benjamin M. Bartilson and Harold E. Trumbull, Columbus, Ohio, assignors to Morton International, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 25, 1968, Ser. No. 778,562
Int. Cl. B65d 47/00; A47g 19/24
U.S. Cl. 222—556 10 Claims



This low-cost, one-piece integrally molded plastic container top for containers of particulate substances such as salt features a wall member having an opening with a hingedly-attached cover and a recessed perforated sprinkler plate across the opening. Access openings for mold parts adjacent the sprinkler plate are effectively sealed by a projecting curved surface on the cover adjacent the hinge portion, which curved surface cooperates with edge portions of the sprinkler plate.

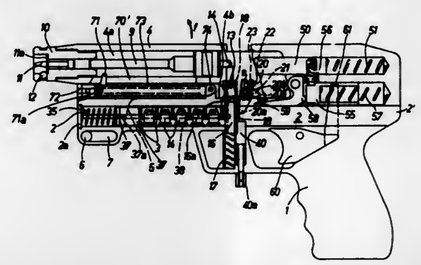
3,499,589
TAPE LOOP BIN SYSTEM AND APPARATUS
Keith O. Johnson, Los Angeles, and Donald J. Verrow, Studio City, Calif., assignors to Gauss Electrophysics, Inc., Santa Monica, Calif., a corporation of California
Filed Jan. 10, 1968, Ser. No. 696,869
Int. Cl. B65h 17/32
U.S. Cl. 226—97 8 Claims



A tape loop bin system is provided in which an endless magnetic tape, or other elongated flexible tape, is drawn past usual transducer heads, and in which the major part of the tape is stored in serpentine folds in a bin or magazine. The system of the invention may be used in conjunction with magnetic recorders, data processors, or other systems requiring relatively large signal storage capabilities.

The particular system to be described herein uses a horizontal storage bin for the tape, and an especially constructed tape drive mechanism, together with pneumatic means, to permit a large quantity of tape to be stored in the bin, and to be fed into and out of the bin at a relatively high speed and for relatively long running periods.

3,499,590
EXPLOSIVE ACTUATED FASTENER SETTING MEANS FOR USE WITH A CARTRIDGE MAGAZINE
Wolfgang Bayer, Schaan, Liechtenstein, Herbert Rangger, Frastanz, Austria, and Hartwig Kieber, Mauren, Liechtenstein, assignors to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed Sept. 1, 1967, Ser. No. 665,019
Claims priority, application Germany, Sept. 8, 1966, H 60,449; Mar. 13, 1967, H 62,116
Int. Cl. B25c 1/12, 1/14
U.S. Cl. 227—10 18 Claims

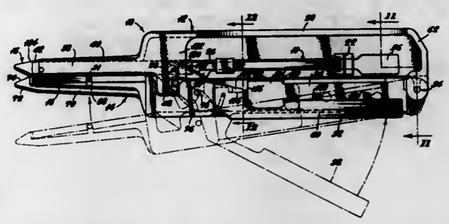


An explosive actuated fastener setting means includes a barrel arranged to receive a fastener to be set, a cartridge seat communicating with the barrel and extending normal to the axis of the latter, a handle, and a cartridge magazine. The cartridge magazine is slidably positioned in a magazine guide channel which is disposed beneath the cartridge seat and extends normal to the latter. The cartridge magazine carries a plurality of cartridges having, when the magazine is positioned in the guide channel, their axes extending parallel to the cartridge seat.

The cartridge seat is movable, relative to a breech, between a firing position and a loading position. In the load-position, a cartridge injector displaces a cartridge from the magazine into the cartridge seat and, in the firing position, a firing pin is operable to fire the cartridge.

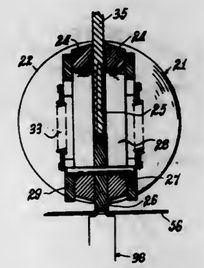
3,499,591
INSTRUMENT FOR PLACING LATERAL GASTRO-INTESTINAL ANASTOMOSES
David T. Green, Norwalk, Conn., assignor to United States Surgical Corporation, Baltimore, Md., a corporation of Maryland
Filed June 23, 1967, Ser. No. 648,276
Int. Cl. B25c; B27f 7/00
U.S. Cl. 227—76 20 Claims

An instrument for stapling and cutting gastro-intestinal organs having a plastic cartridge defining four rows of staple-carrying grooves. A pusher cam path divides associated pairs of rows and a plurality of plastic staple drive members are provided each bridging the path to ride in adjacent sets of grooves in opposite rows. A drive member part in the path is cammed to effect ejection. The staple-carrying grooves in corresponding pairs of rows are aligned but the pusher cams riding in paths are staggered to avoid simultaneous peak loads. The instrument includes an anvil mount with a central slot and the anvil has a central channel resiliently widened at its open end which is frictionally clamped under compression when it



is pressed into the slot so as to laterally secure the anvil to the mount. A slotted spacer rides on the elongated pusher bars and knife to facilitate initial insertion thereof through the corresponding channels opening through the cartridge rear. The instrument lower frame includes a pair of side flanges in the midregion connected by a pin so as to strengthen the midregion and receive a notch hinge defined in the clamping and locking lever.

3,499,592
FASTENER BASE ASSEMBLY MACHINE
Edward William Cooper, Scarborough, Ontario, Canada, assignor to Gary Industries, Inc., a corporation of Nevada
Filed July 9, 1965, Ser. No. 470,755
Int. Cl. B23p 11/00; B25c 3/04
U.S. Cl. 227—89 3 Claims

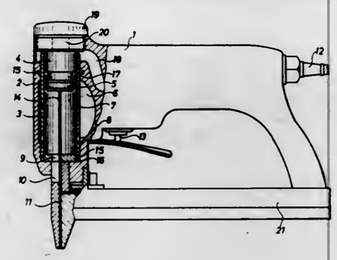


A fastener base forming and attaching machine of a character including rotatable means which functions to form and subsequently attach such fastener bases to a support sheet.

3,499,593
PNEUMATIC STAPLING DEVICE
Dieter Volkmann, Leinstrasse 49, Neustadt am Rubenberg, Germany
Filed Oct. 26, 1966, Ser. No. 589,745
Claims priority, application Germany, Oct. 27, 1965, H 57,523
Int. Cl. B25c 1/04
U.S. Cl. 227—130 2 Claims

A pneumatic stapler of the type having a working cylinder communicating with a surrounding air chamber by means of ports in the cylinder wall is provided with an outlet passage for venting air from the cylinder to the atmosphere during the driving stroke of the piston. The

size and location of the vent passage are such as to avoid development of counterpressure in the cylinder during the driving stroke. The ports in the cylinder wall provide open communication between the cylinder and the air chamber. The piston carries a resilient bumper which closes the

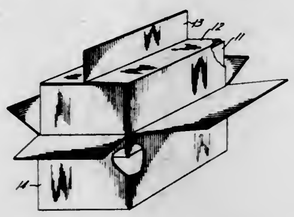


vent passage when the piston reaches the end of its driving stroke, and the bumper is of smaller diameter than the piston to provide an annular piston shoulder which is exposed to air pressure from the chamber for returning the piston to its initial position.

3,499,594
PACKING CASE FOR SHARP AND OXIDIZABLE ARTICLES

Guido Peene, Zwevegem, Belgium, assignor to Trefileries Leon Bekaert, P.V.B.A., Zwevegem, Belgium

Filed Jan. 26, 1968, Ser. No. 700,876
Claims priority, application France, Feb. 2, 1967, 93,436
Int. Cl. B65d 5/56
U.S. Cl. 229—14 3 Claims



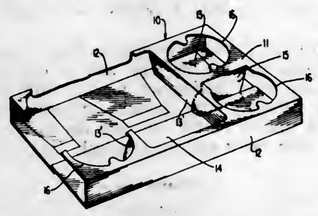
A packing case for shipping small, sharp articles which are subject to oxidization when exposed to humid air, an outer case made of a sturdy, shock-resistant material, an airtight second case within the outer case, and a third case for the sharp, oxidizable articles, whereby the walls of the third case are made of a material which is tough and strong enough to withstand physical destruction which may be caused by the small, sharp articles.

3,499,595
COLLAPSIBLE FOOD AND BEVERAGE SERVICE TRAY

Durward L. Brooks, P.O. Box 467, Pensacola, Fla. 32502

Filed Feb. 23, 1968, Ser. No. 707,798
Int. Cl. B65d 5/48
U.S. Cl. 229—28 3 Claims

A collapsible one-use paperboard service tray for drive-in restaurants and the like having self-contained means for leveling and stabilizing the tray and its contents on the slanting surface of an automobile seat. The construction makes use of the seat back to support part of the load on

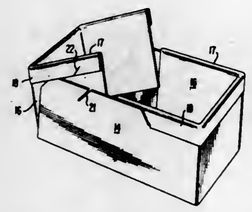


the tray. Optionally, the tray may also be used on a level surface.

3,499,596
PRODUCE CONTAINER WITH FLANGE LOCKS

Robert W. McCormick, Lake Worth, Fla., assignor to Union Camp Corporation, New York, N.Y., a corporation of Virginia

Filed Jan. 22, 1968, Ser. No. 699,562
Int. Cl. B65d 5/26, 5/22
U.S. Cl. 229—32 2 Claims

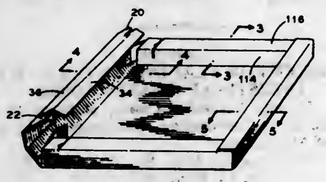


A container having end flaps secured to its end and dispersed internally of its sides and a folded collar flange interconnecting the outer edges of the end and the end flaps, a portion of the collar flange is disposed internally of the side and the remainder externally; the collar flange and sides having complementary locking slits and slots in interlocking engagement, each of the flange slits terminating at a point spaced from the horizontal fold line of said flange.

3,499,597
DISPLAY PACKAGE

Abe Katzman, Scarsdale, N.Y., assignor to S. L. Kaye Company, New York, N.Y., a corporation of New York

Filed July 15, 1968, Ser. No. 744,840
Int. Cl. B65d 5/22, 25/10, 25/54
U.S. Cl. 229—34 5 Claims

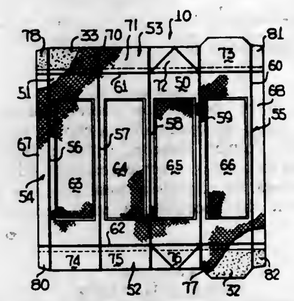


This invention relates to a package and display device, and the process for making said device, wherein a bold frame is positioned around and secured to the edges of a back member and removably supports a sheet member having an article holding pocket.

3,499,598
MULTI-PLY CARTON

Francis H. Foley, Jr., Old Bridge, N.J., and Vincent A. Adams, Pearl River, N.Y., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 17, 1967, Ser. No. 624,031
Int. Cl. B65d 5/08
U.S. Cl. 229—37 13 Claims

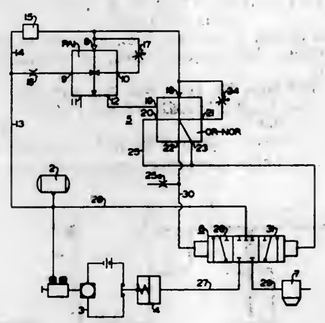


A multi-ply carton having a loose outer ply imparting a hand-wrapped appearance to the carton. A pair of webs are adhesively secured to each other only along longitudinal edge portions outboard of a pair of fold lines. The webs are formed into carton blanks each of which includes a plurality of body panels inboard of the pair of fold lines and lap panels having oppositely directed extensions at opposite unsecured edge portions. One of the lap panels is adhesively secured in overlying relationship to an adjacent body panel and the outer plies of the lap panels are thereafter secured to each other. When formed into a carton the absence of any securement whatever of the plies to each other in the area of the body assures that the outer ply remains loose and imparts a hand-wrapped appearance to an automatically machine-formed carton.

3,499,599
COMPRESSOR GOVERNOR HAVING FLUIDIC DEVICES

James L. Meininger, Irwin, and Donald Brown, Monroeville, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed July 25, 1968, Ser. No. 747,600
Int. Cl. F04b 49/02, 49/08; F04f 11/00
U.S. Cl. 230—17 7 Claims

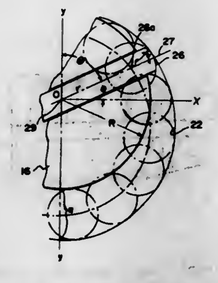


A compressor governor in which a plurality of interconnected fluidic devices sense predetermined upper and lower limits of a main reservoir pressure range and position an interface valve device to operate start-stop or load-unload compressor control means to maintain a main reservoir pressure within the predetermined pressure limits. The upper and lower limits of the pressure range may be individually varied to shift the range or provide broader or narrower ranges of operation.

3,499,600
ROTARY COMPRESSOR

Ralph McGregor, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Mar. 21, 1968, Ser. No. 714,948
Int. Cl. F04c 17/00, 29/02, 3/00
U.S. Cl. 230—153 6 Claims

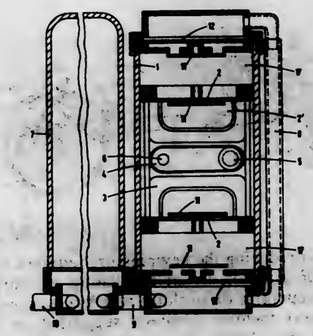


A rotary compressor having a rotor provided with a diametrical slot. A single blade is slidably positioned in the slot and has opposite arcuate end portions slidably engaging the wall defining the cylinder chamber. The compressor includes a centrifugal pump for pumping oil upwardly through the rotor shaft to lubricate the rotor in the cylinder. An electric motor is disposed within the compressor housing for driving the rotor and the centrifugal pumping means.

3,499,601
PUMP FOR MEDICAL PURPOSES

Amund S. Laurdal, Stavanger, Norway

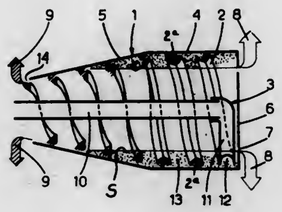
Filed Feb. 15, 1968, Ser. No. 705,746
Claims priority, application Norway, Feb. 18, 1967, 166,906/67
Int. Cl. F04b 37/10, 21/04
U.S. Cl. 230—192 7 Claims



A medical double acting combined vacuum and compression pump, in which a pair of pistons are held apart by a rigid connecting member to provide therebetween a free space which acts as a compression chamber, which is connected to atmosphere by an aperture in the pump

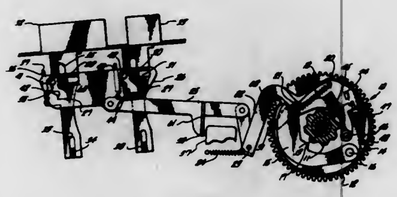
cylinder wall. Orifices in the pistons and in the end walls of the cylinder are selectively closed by large soft clack valves and permit secretion particles to enter the compression chamber and exit via the aperture.

3,499,602
CENTRIFUGAL SEPARATOR
Carl-Göran Nilson, Tullinge, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed Apr. 24, 1968, Ser. No. 723,742
Claims priority, application Sweden, May 9, 1967, 6,446/67
Int. Cl. B04b *11/00, 15/06*
U.S. Cl. 233—21 7 Claims



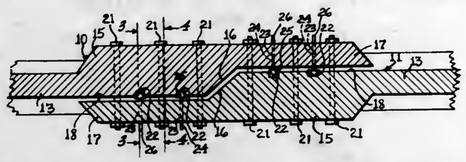
Within the centrifugal rotor is a conveyor screw arranged for continuously discharging sludge separated from a liquid supplied to the rotor, the conveyor screw defining with the rotor at least two side-by-side helically extending channels within the rotor. One of these channels communicates with the rotor inlet for liquid to be separated, and another communicates with the liquid outlet of the rotor, these two channels being so interconnected that liquid supplied to the rotor, in passing from the inlet to the liquid outlet, is caused to flow through the two channels one after the other while being separated.

3,499,603
CONTROL MECHANISM FOR CALCULATING MACHINES
Richard E. Busch, La Puente, Calif., assignor to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Filed Apr. 29, 1968, Ser. No. 724,838
Int. Cl. G06c *7/02, 23/00*
U.S. Cl. 235—145 5 Claims



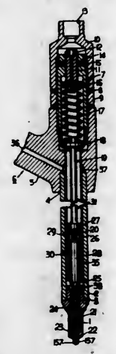
Means for reducing the key pressure required to initiate operation of a motor driven calculating machine having a cyclically operable drive clutch which comprises a spring pressed power member pivotally supported by a driven element of the clutch, the power member including a latching shoulder normally engaging a key operated clutch control member and a camming section effective upon initial movement of the clutch control member toward clutch engaging position to urge the latter through the remainder of its stroke.

3,499,604
RAILROAD TRACK CONSTRUCTION
Permil N. Nelson, Box 505, Galesburg, Ill. 61401
Filed Apr. 25, 1968, Ser. No. 724,049
Int. Cl. E01b *11/06*
U.S. Cl. 238—230 2 Claims



A railroad track construction wherein the end portion of the track has a longitudinally extending enlarged section integrally formed thereon, which extends beyond the track end to overlay a corresponding end portion of an abutting track for effectively connecting the tracks together without the necessity of an independent splice plate.

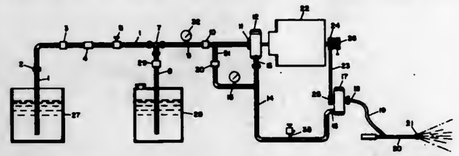
3,499,605
NOZZLE HOLDER
Alexander Dreisin, Olympia Fields, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 22, 1967, Ser. No. 692,879
Int. Cl. F02m *55/00*
U.S. Cl. 239—86 6 Claims



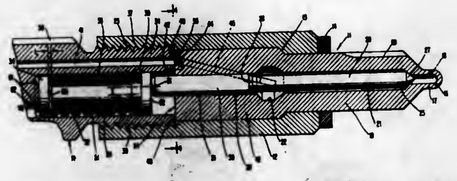
A nozzle and holder for fuel injection on a diesel engine.

3,499,606
INVERT EMULSION SPRAY APPARATUS AND METHOD
Ward Alan Smith, Louisiana, Mo., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed June 20, 1967, Ser. No. 647,416
Int. Cl. B05b; A62c *13/64, 13/26*
U.S. Cl. 239—304 4 Claims

An invert emulsion spray is formed by initially mixing together an oil phase component and a water phase component as a thin fluid premix, one of said components containing emulsifier, mixing the premix under pressure with invert emulsion of the same composition as the premix in a state of rotary agitation with induced flow opposed to the flow of the inflowing premix until increased amount of emulsion is formed, the pressure on the premix being greater than that of the opposing flow of emulsion, passing the increased amount of emulsion to a spray nozzle and discharging the invert emulsion from the nozzle as a spray. Apparatus for producing the emulsion comprises a pumping means to provide a forward pressure for the premix and pumping mixer connected in opposition to said pumping means to produce a back pressure, said back pressure being less than said forward pressure and means for withdrawing emulsion from said pumping mixer.

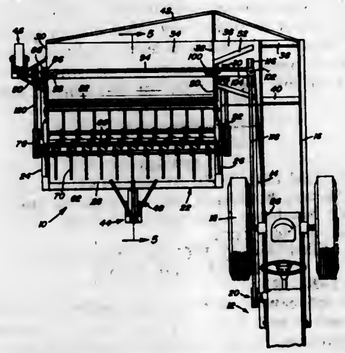


3,499,607
FUEL INJECTION VALVE DEVICE
Millard R. Thomson, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed May 7, 1968, Ser. No. 727,253
Int. Cl. B05b *1/32*
U.S. Cl. 239—533 14 Claims



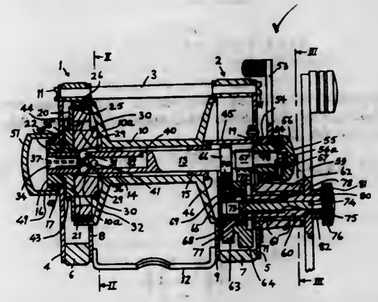
A valved nozzle adapted for the spraying of liquid fuel into the cylinders of internal combustion engines. The device includes an elongated main body to the inner end of which there is secured a spray nozzle forming an extension of the main body. The device has a normally closed valve with a reciprocable valve element which is opened by high pressure fuel delivered to the nozzle. A high pressure fuel passage extends within the main body of the device and into the body of the nozzle to the valve seats therein; a low pressure leakage fuel return passage extends rearwardly through the main body of the device. The device of the invention includes improved means for effecting a seal between the parts of the high pressure fuel passage in the main body of the device and the nozzle body.

3,499,608
MANURE SHREDDER
Roy L. Page, Rte. 2, Box 197, Snyder, Tex. 79549
Filed July 31, 1967, Ser. No. 657,111
Int. Cl. B02b *9/04*
U.S. Cl. 241—101 5 Claims



A tractor-towed machine raking and displacing piles of manure lying on the ground into a housing enclosing a shredder. The shredder grinds and expels the manure in particle form rearwardly from openings in the housing for distribution on the ground as fertilizer. A power take-off on the tractor drives the shredder and a pick-up device which displaces the raked manure into the shredder housing.

3,499,609
VARIABLE SPEED FISHING REEL WITH FRICTION DRIVE
Hyman Policansky, Box 1154, Cape Town, Cape Province, Republic of South Africa
Filed July 14, 1967, Ser. No. 653,560
Claims priority, application Great Britain, July 14, 1966, 31,650/66
Int. Cl. A01k *89/02*
U.S. Cl. 242—84.44 12 Claims



A fishing reel frame has opposite end housings, each supporting an end of a spindle on which a spool can rotate. A crank-operated transmission in one end housing is connected to the first end of the spindle while the second end of the spindle carries an expandable clutch-brake means to adjustably, frictionally connect the spindle to the spool. A lever at the first end of the spindle is rotatable to shift the spindle axially which causes balls on the spindle to coact with a tapered cam on the clutch-brake means to regulate the friction force in the clutch-brake means. A plug-like screw threaded in the second end of the spindle has a cam end to position the balls relative to the spindle. A pawl and ratchet prevent reverse rotation of the clutch-brake means. The crank-operated transmission includes change-speed gearing.

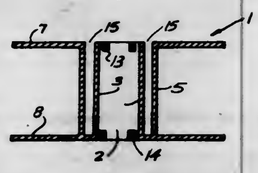
3,499,610
EXTENSIBLE TUBE ARRANGEMENTS
George Hamlin Leonard, Darien, Conn., assignor to Consolidated Controls Corporation, Bethel, Conn., a corporation of New Mexico
Filed Aug. 29, 1967, Ser. No. 664,185
Int. Cl. B65h *75/00*; E04h *12/18*
U.S. Cl. 242—54 6 Claims



An extensible boom structure is provided wherein a flat strip, which is initially drawn so that it forms a cylindrical tube of predetermined diameter when unrestrained,

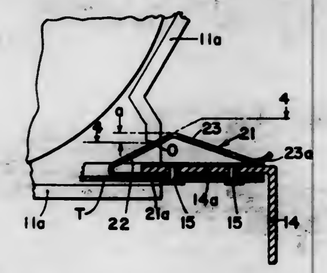
is stored on a storage reel in flat form and may be extended therefrom by suitable drive means to form a rigid, torque resistant cylindrical tube. The edges of the strip are provided with interlocking wedge shaped bearing surfaces which limit the diameter to which the tube can be formed to a diameter somewhat larger than said predetermined diameter. The bearing surfaces are thus continuously held in tightly wedged engagement so that the extended boom resists rotational and bending forces exerted thereon. Facilities are provided for extending and retracting the boom without tearing the interlocking edges of the strip and while providing the correct interleaving action of the opposed edges as the tube is extended. Facilities are also provided for extending and retracting the boom by means of a very low power device such as a small reversible electric motor.

3,499,611
REEL FOR WINDING FILM
Jules Florine Franck, 61 Bredabaan, Brasschaat, Belgium
Continuation-in-part of abandoned application Ser. No. 403,251, Oct. 12, 1964. This application Aug. 28, 1967, Ser. No. 663,572
Int. Cl. B65h *75/18*
U.S. Cl. 242—71.8 2 Claims



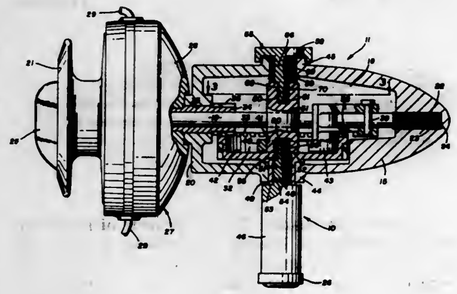
The present reel is for having strip material wound thereon and the reel mounted on a shaft of, for example, a photographic apparatus. The reel has a hub with a different number of teeth at one end than at its other end and the teeth at one end only will fit on said shaft to prevent the reel from being incorrectly mounted on the shaft.

3,499,612
TAPE MEASURE CONSTRUCTION INCORPORATING A TAPELINE MOUNTED TAPE HOOK BUMPER
Charles Zelnick, Saginaw, Mich., assignor to Cooper Industries, Inc., Houston, Tex., a corporation of Ohio
Filed Apr. 1, 1968, Ser. No. 717,596
Int. Cl. B65h *75/16, 75/48*
U.S. Cl. 242—84.8 11 Claims



A measuring tape construction including a casing having a tapeline opening and a spring to draw the tapeline into the casing except for the tapehook. A compressible spring strip mounted on the tapeline on the opposite side of the tape hook forms a tapeline return cushioning bumper. On retraction of the tapeline the spring strip is compressed sufficiently to allow its entry into the casing opening prior to the time the hook engages the casing and cushions the return of the hook.

3,499,613
FISHING REEL SELECTIVELY CONVERTIBLE TO RIGHT- OR LEFT-HANDED OPERATION
Thomas F. Sarah, Akron, Ohio, assignor, by mesne assignments, to Shakespeare Company, Kalamazoo, Mich., a corporation of Delaware
Filed Apr. 18, 1968, Ser. No. 722,476
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.21 10 Claims

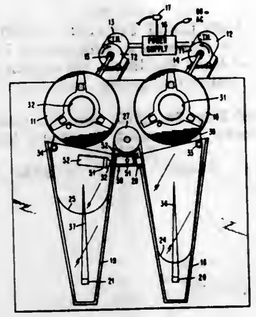


A fishing reel having a crank assembly adapted to convert the reel for use by either a right-handed or left-handed fisherman. The crank assembly has a first and second connector portion. The drive gear by which the line pickup mechanism can be selectively actuated is supported on an arbor that extends transversely across, and is accessible from, exteriorly of the housing. One end of the arbor is adapted to be fastened only to the first connector portion of the crank assembly (for use by an angler of one hand) and the opposite end of the arbor is adapted to be fastened only to the second connector portion (for use by an angler of opposite hand). The connector portions are detachably secured to the respective ends of the arbor by thread means of opposite hand so that the rotational direction of the crank preferred by either the right- or left-handed angler may be utilized without tending to loosen the connection between the arbor and crank assembly and without requiring any other changes to the reel. The reel is also provided with level wind and anti-reverse mechanisms operative irrespective of whether the reel is rigged for use by a right- or left-handed fisherman.

3,499,614
AUTOMATIC WEB BUFFERING MEANS
Paul J. Badum, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,194
Int. Cl. G11b *15/58*
U.S. Cl. 242—182 6 Claims

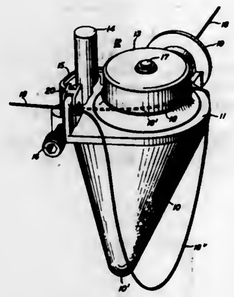
A tape drive with each reel connecting to a constant torque motor and providing tape to a variable-force vacuum column. Unidirectional motor torque is continuously applied to each reel for withdrawing tape from its vacuum column during bidirectional tape operation.

A tape capstan and brake are located in the tape path between the two vacuum columns. The capstan and brake are driven and controlled independently of the reel motors



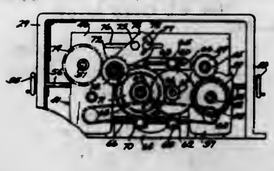
to obtain total tape buffering. The static position of the tape loop in each column is a function of the tape radius of the adjacent reel at the particular time.

3,499,615
SNAG SHIELD FOR MAGNETIC TORQUE YARN TENSION DEVICE
August C. Kircher, Farmington, Conn., assignor to Allied Control Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 8, 1967, Ser. No. 681,477
Int. Cl. B65h *59/16, 57/00*
U.S. Cl. 242—155 5 Claims



An inverted cone-shaped yarn snag shield is suspended below the rotatable capstan of a magnetic torque yarn tension device to prevent yarn loops from snagging or becoming entangled on the base plate or supporting frame of the device. The base of the shield is substantially coterminous with the capstan such that the conical surface of the shield extends to and is flush with the periphery of the capstan. The apex of the cone-shaped shield is displaced to the rear (toward the mounting frame) of the line of suspension of any yarn loop that may form so that the yarn will ride-up the conical surface of the shield and be repositioned automatically to its proper running position about the periphery of the capstan in response to tension being applied to the yarn when movement of the yarn is initiated.

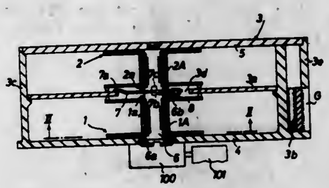
3,499,616
DRIVE SYSTEM FOR A FILAMENT WINDING MACHINE
William G. McClean, Milwaukee, Wis., assignor to McClean-Anderson, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 22, 1968, Ser. No. 699,730
Int. Cl. B65h *57/28*
U.S. Cl. 242—158 6 Claims



The drive mechanism for a filament winding machine including a single motor which operates a pair of variable speed transmissions. In one arrangement of the drive, the output of each transmission is connected to the carriage of the winding machine and to the mandrel, respectively, so that the speed of the mandrel rotation and carriage travel can be individually varied through the respective transmissions.

In a second arrangement of the drive, the output of one transmission is connected to both the carriage and the mandrel.

3,499,617
CARTRIDGE FOR ROLL FILM
Alfred Winkler, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 6, 1967, Ser. No. 665,761
Claims priority, application Germany, Sept. 8, 1966, A 26,325
Int. Cl. G11b *15/32*
U.S. Cl. 242—194 16 Claims



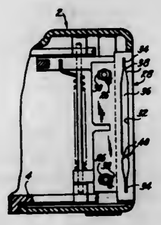
A cartridge for 8-mm. movie film wherein a housing comprises a partition dividing its interior into a pair of compartments each of which receives a reel. A shaft which can be driven by a reversible motor in a movie camera is journalled in the end walls of the housing and extends through the cores of both reels. A two-way clutch comprises parts mounted on the shaft and on the two reels and serves to drive one of the reels when the shaft rotates in one direction or the other reel when the shaft reverses the direction of its rotation. That part which is mounted on the shaft includes a disk which is turnable about an eccentric pivot pin carried by the shaft and is provided with two teeth each adapted to move into mesh with a gear provided on the respective reel. A friction generating follower of the disk bears against the partition of the housing and turns the disk about the eccentric pin when the shaft reverses the direction of its rotation to

thereby move one of the teeth into mesh with the associated gear while the other tooth moves away from the other gear.

3,499,618
FILM CARTRIDGE HAVING A FLOATING FILM GUIDE

Leon W. Wells, Closter, N.J., assignor to Panopix Research Inc., New York, N.Y., a corporation of New York

Filed Feb. 8, 1968, Ser. No. 704,147
Int. Cl. G11b 23/04
U.S. Cl. 242—197 4 Claims

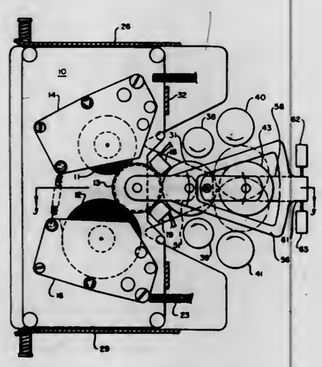


A film cartridge having a reel of film therein, the free end of which is provided with an enlargement and the film is guided to and from the cartridge through a slot in one end of a spring biased lever. When film is reeled into the cartridge the enlargement engages and swings the lever to actuate a switch to control terminal functions of a projector. The slotted end of the lever is floatingly mounted on the main portion so that it can accommodate to changing paths of movement of the film to and from the cartridge.

3,499,619
TAPE DRIVE POWER TAKE-OFF SYSTEM

Chester W. Newell, Santa Clara, Calif., assignor to Newell Associates, Inc., Sunnyvale, Calif., a corporation of California

Filed Apr. 29, 1968, Ser. No. 725,109
Int. Cl. B11b 15/32; B65h 17/42; G03b 1/04
U.S. Cl. 242—209 8 Claims

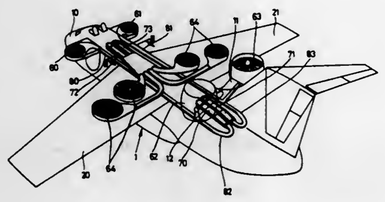


A number of tape cartridges of a type containing tape to be fed for recording or reproducing cooperates with a tape driving arrangement of mandrels, each of which is driven in one of two opposite directions at a given speed. By means of transfer roll operators, transfer rollers are moved into engagement with selected ones of the several mandrels for independently driving each of the tapes from the mandrels common to all of the tapes.

3,499,620
AIRCRAFT POWER PLANT

Joseph A. Erich Haberkorn, Riemerling, Rolf G. Sturm, Munich, and Hans Weidinger, Ottobrunn, Germany, assignors to Entwicklungsring Sud G.m.b.H., Munich, Germany

Filed Dec. 26, 1967, Ser. No. 693,226
Claims priority, application Germany, Jan. 18, 1967, E 33,235
Int. Cl. B64d 27/12, 27/14; B64c 29/00
U.S. Cl. 244—55 4 Claims

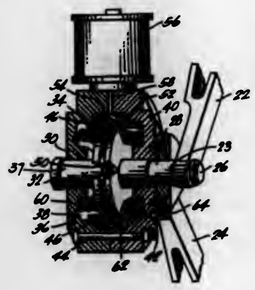


The described apparatus concerns a power plant for a vertical take-off and landing aircraft which allows maximum utilization of fuselage storage space. The lift fans of the aircraft are connected by tubing to the output of several gas generators which are mounted upon the exterior surface of the upper wall of the fuselage. Means are provided for selectively lowering the gas generators into the fuselage when desired. The generators together with their connecting conduit are covered by a suitable protective shell.

3,499,621
TORQUE LINKAGE DAMPER

Wilfred E. Boehringer, Fullerton, and Louis T. Kramer and Jane Little, Long Beach, Calif., assignors to McDonnell Douglas Corporation, a corporation of Maryland

Filed Sept. 6, 1967, Ser. No. 665,787
Int. Cl. B64c 25/50
U.S. Cl. 244—103 2 Claims

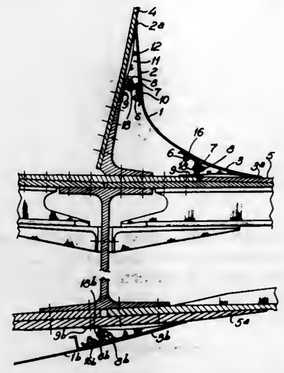


An aircraft landing gear damping mechanism which operates directly in conjunction with the landing gear torque linkage and combines the functions of a hydraulic damper and a spring type of damper.

3,499,622
JUNCTIONS BETWEEN THE FUSELAGE AND WINGS OF AN AIRCRAFT

Michel Germain Lugan and John Guy Surcin, Toulouse, France, assignors to Sud-Aviation Société Nationale de Constructions Aeronautiques, Paris, France

Filed Mar. 19, 1968, Ser. No. 714,222
Claims priority, application France, Mar. 22, 1967, 99,833
Int. Cl. B64c 7/00
U.S. Cl. 244—130 10 Claims

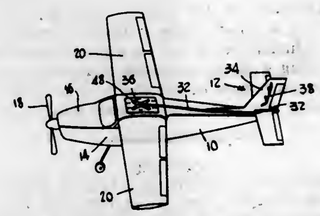


A fairing panel between a wing and a fuselage of an airplane is constituted by three panel elements wherein the intermediate panel is secured at its ends to securing ribs of respective end panels, the securing rib of one end panel being attached to the wing while the securing rib of the other end panel is attached to the fuselage. The end panels have resiliency at least at the ends thereof remote from the securing ribs so as to form lips respectively bearing resiliently against the wing and fuselage. The fasteners which attach the securing ribs to the wing and fuselage have heads which are accessible when the intermediate panel is removed.

3,499,623
PARACHUTE-PROTECTED AIRCRAFT

Odell C. Markham, 247 Colorado Ave., Bridgeport, Conn. 06605, and Alan C. Ferguson, Perry Ave., Norwalk, Conn. 06850

Filed Apr. 2, 1968, Ser. No. 718,035
Int. Cl. B64d 17/80
U.S. Cl. 244—139 11 Claims

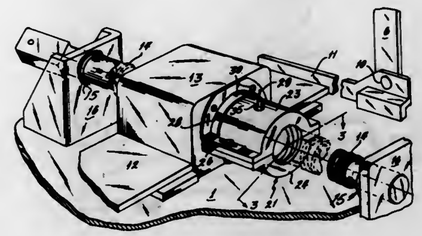


A parachute-protected aircraft having a fuselage and a normally folded parachute connected to the top of the fuselage by a long tethering rope. The top and bottom of the fuselage are interconnected by a vertical strut passing through the central fuselage area. The strut has a substantially direct connection with the tethering rope whereby forces imposed by the latter on the aircraft are applied to both the fuselage top and the fuselage bottom or floor.

3,499,624
TRAILER HITCH LUBRICATOR

George M. Custer, Lancaster, Pa., assignor to Hennessy Products, Inc., Chambersburg, Pa., a corporation of Delaware

Filed July 10, 1967, Ser. No. 652,133
Int. Cl. B60p 7/08, 3/06; F16n 11/00
U.S. Cl. 248—119 1 Claim

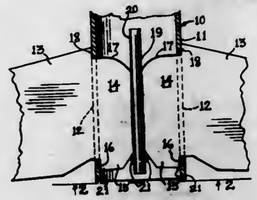


Collapsible hitch mechanism for a trailer vehicle including a thrust screw provided with a threaded nut for operating the hitch mechanism with associated lubricant container and screw wiping elements.

3,499,625
BASE CONNECTION FOR A PEDESTAL

Lanis A. Froedge, Chicago, Ill., assignor to Kaydee Metal Products Corp., Chicago, Ill., a corporation of Illinois

Filed Apr. 3, 1967, Ser. No. 627,847
Int. Cl. A47b 91/00
U.S. Cl. 248—188.7 2 Claims



A base construction for a pedestal in which the mating ends of legs are wedged against a wedging pin positioned between such mating ends to provide a rigid construction to rigidly hold the legs in proper radial relation with the end of the standard of the pedestal and to reinforce the welding connection between the legs and the standard and the wedging pin.

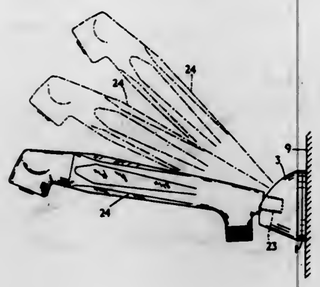
3,499,626
FITTINGS FOR MOUNTING ACCESSORIES ON WALLS AND LIKE SUPPORTS

Clifford L. Barker, 158 Leckhampton Road, Cheltenham, Gloucestershire, England

Filed Feb. 8, 1968, Ser. No. 704,062
Claims priority, application Great Britain, Feb. 14, 1967, 6,996/67
Int. Cl. A62c 23/04; A47f 5/08
U.S. Cl. 248—314 9 Claims

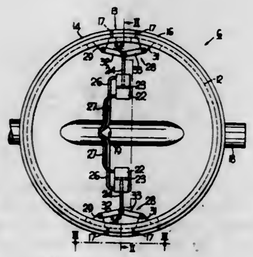
A fitting comprises a base having a resilient portion and two parallel pillars projecting from opposite sides of the said portion, a rocker located between and journalled in the pillars about an axis parallel to the base, and a cover enclosing the rocker and pillars and detachably assembled

to the base, one end of the rocker makes rolling contact with and flexes the resilient portion and is formed with a system of parallel grooves or ribs adapted to make successive engagement with a rib or groove on or in the resilient portion as the rocker is turned about its axis, whereas the opposite rocker end has a pocket which is



always exposed through an aperture in the cover and is adapted to be engaged by a projection from an accessory so that, when the fitting is secured upon a support, the accessory may be located and retained resiliently in any one of a range of different angular positions relatively to the support.

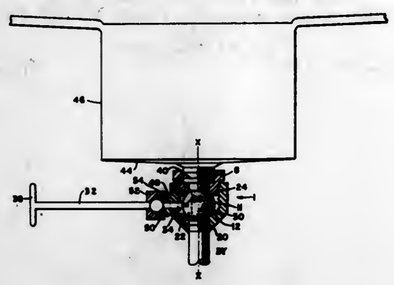
3,499,627
BUTTERFLY VALVE DISK
John M. Horn, York, Pa., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 26, 1967, Ser. No. 693,512
Int. Cl. F16k 5/14
U.S. Cl. 251—158 1 Claim



A butterfly valve with a disk having a seal ring in the outer periphery of the disk. The seal is moved radially into engagement with the valve seat by means of fluid operated power cylinders mechanically connected to the seal ring.

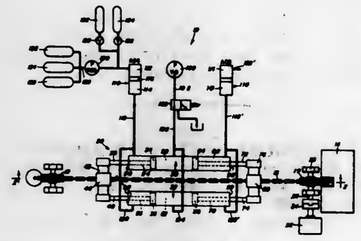
3,499,628
DUALLY ADAPTABLE DRAIN VALVE WITH EXTENDED CONTROL ROD MEANS
Milton Schwartz, 29 Coventry Road, Syosset, N.Y. 11791
Filed Aug. 28, 1967, Ser. No. 663,754
Int. Cl. F16k 5/06, 31/44
U.S. Cl. 251—309 9 Claims

A ball valve having alternatively functioning inlet and outlet passages of different standard diameters and therefore selectively connectible to the underside outlet of a sink drain in accordance with and depending upon the diameter dimension of the drain outlet. The valve is comprised of two body sections, one of the latter having an hexagonal peripheral portion integral therewith to facili-



tate and enable achievement of positive securement of either end passage to the sink drain. A control rod is provided to enable movement of the ball to the fluid-flow or fluid-restricting positions, said control rod being extended to at least the vertical front wall of the sink.

3,499,629
CONSTANT TENSION CHAIN JACK ASSEMBLY
Edward E. Horton, Portuguese Bend, Calif., assignor to Ocean Science and Engineering, Inc., Washington, D.C., a corporation of Delaware
Filed Mar. 19, 1968, Ser. No. 714,289
Int. Cl. B66f 3/24; F15b 1/04
U.S. Cl. 254—93 10 Claims

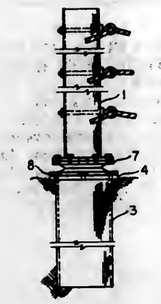


An apparatus for the step-by-step paying-out and hauling-in of a chain from a floating vessel wherein hydraulic cylinder means having a gas accumulator bias means working with the expansion chambers thereof permits limited movement of the chain for relieving tension and absorbing shock caused by vessel movements.

3,499,630
POSTS FOR HIGHWAY SAFETY RAILS
John C. Dashio, 4115 Ewalt Road, Gibsonia, Pa. 15044
Continuation-in-part of application Ser. No. 526,514, Feb. 10, 1966. This application May 7, 1968, Ser. No. 727,283
Int. Cl. E01f 15/00; A01k 3/00; E04c 1/00
U.S. Cl. 256—13.1 1 Claim

Posts for individual use such as stop signs, street signs, street lighting, post and guard rail supports having a shearing coupling for joining to a ground support, the shearing coupling being provided with a shearing section shaped to permit a limited amount of bending movement

while being sheared and which, upon impact, will provide spaced abutments which will shear off by impact and maintain the post in a vertical position, the shearing



coupling being preferably of V shape that extends inwardly from the outer periphery of the coupling to provide a reduced shearing area in the center of the coupling.

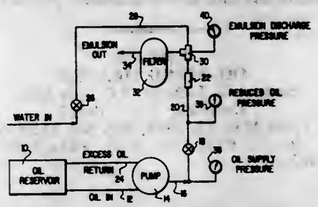
3,499,631
CORRAL CONSTRUCTION
Russell C. Heidenbrand, P.O. Box 178, New Iberia, La. 70560
Filed Nov. 29, 1968, Ser. No. 780,031
Int. Cl. E04h 17/16, 17/14
U.S. Cl. 256—25 10 Claims



A corral construction for animals wherein the posts can be positioned to define an area forming a corral, and wherein rail support means are provided for carrying, or securing to the posts, the rail support means having portions which fit within slots formed in the tubular rails whereby the rails may be positioned between the posts in a desired angular relationship to form a corral of any desired size and shape. A gate is pivotally secured to one of the posts and is provided with spring-loaded plunger latch means for fitting within an adjacent post whereby the gate may be secured to the adjacent post by engaging the plunger within the opening to close the corral, or the plunger may be removed from the opening in the adjacent post, so that access may be gained to the corral.

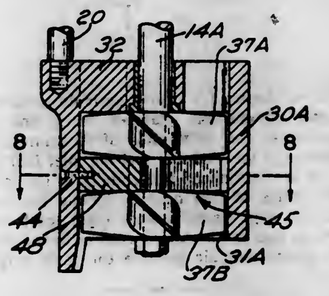
3,499,632
MIXING APPARATUS
John J. Piros, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 703,917
Int. Cl. B01f 15/04, 5/12
U.S. Cl. 259—4 2 Claims

A method of and an apparatus for forming an emulsion having a uniform consistency and in which the component ratios can be carefully controlled. A first liquid, for instance, oil, is delivered as dispersed drops into a mixing area at a determined flow rate and in a first direction. A second liquid, such as water, in which the first liquid is emulsifiable, is delivered into the mixing area at a



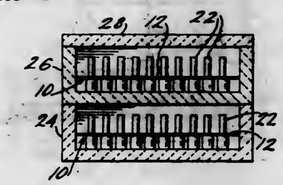
determined flow rate and in a second direction counter to the first direction. The resulting emulsion can be passed through a filter to break up remaining globules of liquid.

3,499,633
MIXING DEVICE
Richard L. Bowen, Jr., 35 Fessenden Road, Barrington, R.I. 02806
Filed Nov. 27, 1967, Ser. No. 685,753
Int. Cl. B01f 5/12
U.S. Cl. 259—95 21 Claims



A mixing device for blending, dispersing, emulsifying, or the like of two liquids which may be immersed in the liquids to be mixed and which applies a primary shearing action to the fluid mixture as it passes through the apparatus by providing a housing with a number of radial vanes defining channels and an impeller cooperating with the vanes and having a small clearance below said vanes. The structure provides a constant shear rate throughout the shearing area.

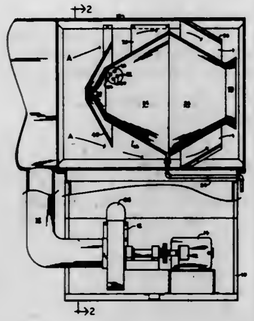
3,499,634
COMBUSTIBLE SUPPORT
Robert F. Rea, Bloomfield Hills, Mich., assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Feb. 14, 1968, Ser. No. 705,350
Int. Cl. F27b 21/00; B29c 1/02
U.S. Cl. 263—2 5 Claims



A combustible support for holding elongated articles upright in a sagger prior to firing the articles in a kiln.

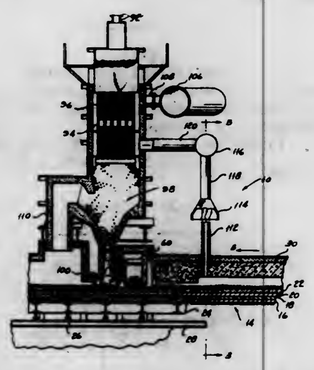
The support comprises a single, thin sheet of synthetic resinous material with a number of cups formed therein. The cups are shaped and spaced to receive and to hold the articles in an upright, laterally spaced position.

3,499,635
OIL-FIRED HEATER
Samuel G. Jackson, P.O. Box 5007, Lubbock, Tex. 79417
Filed Mar. 25, 1968, Ser. No. 715,883
Int. Cl. F23l *3/00, 5/02;* F23n *1/02*
U.S. Cl. 263—19 20 Claims



A soot-free heater for drying agricultural crops has a sheet metal combustion chamber which includes two conic frustums. The large ends of frustums are joined in the middle of the chamber and the inlet fuel and combustion air are introduced tangentially at the intake end. Three groupings of fuel nozzles, having fuel output of one, two and four units, provide eight levels of output from zero to maximum. An air control linked to the fuel provides combustion air suitable for each output level.

3,499,636
METHOD OF AND APPARATUS FOR PRODUCING LOW SULFUR LIME
Richard Terry Hall, Islington, Ontario, Canada, assignor to International Processes Limited, Nassau, Bahamas, a corporation of the Bahama Islands
Filed Apr. 5, 1968, Ser. No. 719,131
Int. Cl. C04b *1/00, 3/00;* F27b *9/00*
U.S. Cl. 263—28 11 Claims



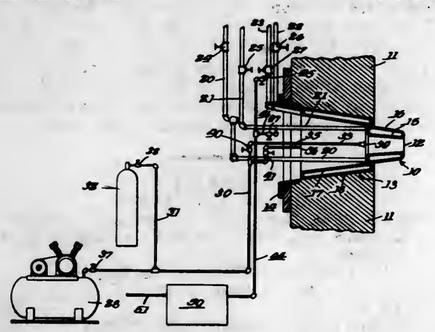
A process of and apparatus for calcining limestone to produce lime having an extremely low sulfur content in which sulfur gases generated during the terminal portion of the calcining process as sulfates break down and are positively and continuously removed from the hearth at a location just ahead of the kiln lime discharge while keeping oxygen away from the discharge area.

3,499,637
GAS CUPOLA FURNACE WITH GAS DISTRIBUTION RIDGE
Vladimir Alexandrovich Grachev, Ul. Uritskogo 74, kv. 9; and Anatoly Alexeevich Cherny, Ul. Tsiolkovskogo, 41, kv. 32, both of Penza, U.S.S.R.; Lev Mikhailovich Marienbakh, Bolshaya Cherkizovskaya 5, korp. I, kv. 73, Moscow, U.S.S.R.; and Ivan Lukich Kurbatsky, Ul. Volodorskogo 74, kv. 4, Penza, U.S.S.R.
Filed Apr. 6, 1967, Ser. No. 628,908
Int. Cl. C21b *7/02;* F27b *1/02*
U.S. Cl. 266—25 4 Claims



A lower shoulder in the shaft of a cupola furnace is provided with an upstanding central ridge extending from the aperture, formed between the lower shoulder and a spaced upper shoulder, to the opposite wall of the shaft. The material charged into the furnace is divided by the ridge and passes through the space between the shoulders into the shaft below the lower shoulder where superheating takes place, the ridge ensuring uniform gas distribution over the section of the shaft and preventing formation of a metal sow on the lower shoulder.

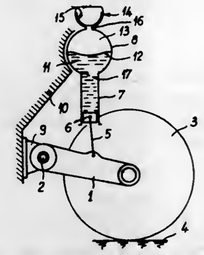
3,499,638
METHOD OF COOLING DAMAGED BLAST FURNACE COOLING ELEMENTS
John E. Allen, 606 Timber Lane, Lake Forest, Ill. 60045
Filed Nov. 13, 1967, Ser. No. 682,135
Int. Cl. C21b *7/16;* C21c *5/48;* F25d *31/00*
U.S. Cl. 266—41 6 Claims



The present method for the emergency cooling of furnace elements such as tuyeres and the like employs a high

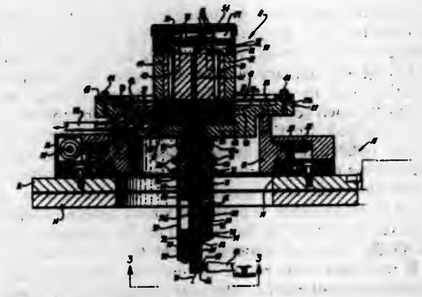
presure gas which is inert to the metallurgical process involved. Should the furnace element become damaged during operation, the flow of cooling water to the element is shut off and the high pressure gas is delivered to the element for release within the element. The resulting expansion of the gas produces the desired cooling effect.

3,499,639
HYDROPNEUMATIC SUSPENSION SYSTEMS OF VEHICLES
Paul Bonnotte, Suresnes, France, assignor to Societe Anonyme de Vehicules Industriels et d'Equipments Mecaniques SAVIEM, Suresnes, France
Filed Apr. 3, 1967, Ser. No. 627,738
Claims priority, application France, Apr. 27, 1966, 59,268
Int. Cl. F16f *9/08;* B60g *11/26*
U.S. Cl. 267—64 2 Claims



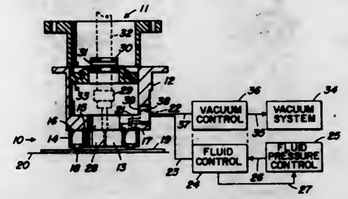
Hydropneumatic suspension system element utilizing a constant mass of gas, for automotive vehicles, comprising a main vessel having slidably mounted in its cylindrical portion a piston co-acting with a pressure-transmitting fluid, characterised in that said vessel is adapted to communicate with one or a plurality of auxiliary vessels containing additional masses of gas precompressed at pressures other and higher than the normal pressure prevailing in the main vessel, each auxiliary vessel being separated by a flexible diaphragm from said main vessel and from said pressure-transmitting fluid also acting as a damping means.

3,499,640
CHUCK ASSEMBLY FOR AUTOMATIC WAFER DIE SORT MACHINE
Gerhard Berz, Menlo Park, Calif., assignor to Electroglas, Inc., Menlo Park, Calif., a corporation of California
Filed Aug. 3, 1967, Ser. No. 658,124
Int. Cl. B25b *11/00;* G01r *35/00*
U.S. Cl. 269—21 7 Claims



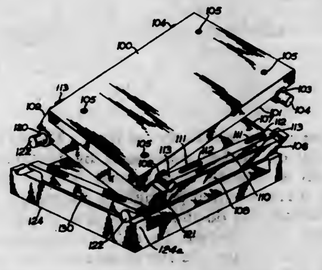
Chuck assembly for automatic die sort machine which is movable toward and away from the probe assembly either by the use of a vacuum or by the use of a pressurized fluid.

3,499,641
FLUID PRESSURE ACTUATED DIAPHRAGM WORKPIECE CLAMPING DEVICE
John R. Peterson, Garland, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 2, 1967, Ser. No. 672,355
Int. Cl. B23q *3/08*
U.S. Cl. 269—22 6 Claims



A fluid pressure actuated diaphragm machine workpiece clamping device. The device is in the form of an airtight annular chamber that is expanded into the work clamping state when pressurized, and when so activated it is designed to also form a shield enclosure around the work area of a workpiece clamped in place.

3,499,642
SINE TABLES
Charles Hackwood Porter, Birmingham, England, assignor to Harolds Gauges Limited, Birmingham, England, a British company
Filed Nov. 10, 1966, Ser. No. 593,530
Int. Cl. B23q *1/04*
U.S. Cl. 269—71 4 Claims



A sine table characterized by a work-supporting platform, a base, bearings mounted on the base, wherein the work supporting platform can be raised relative to the base and freely pivot about the roller at one end of the base.

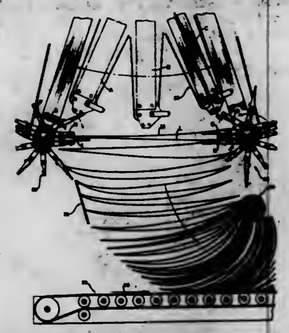
ERRATUM

For Class 269—325 see:
Patent No. 3,499,529

3,499,643
MACHINE FOR FOLDING WEBS OF INDEFINITE LENGTH
Frank M. Biggar, Jr., 159 Columbia Ave., Wanakah, Hamburg, N.Y. 14075
Continuation-in-part of application Ser. No. 609,181, Jan. 13, 1967. This application Oct. 4, 1967, Ser. No. 672,858
Int. Cl. B65h *45/20*
U.S. Cl. 270—79 11 Claims

A web of indefinite length is caused to issue lengthwise at a predetermined rate and simultaneously to be fed back and forth between a pair of spaced folding assem-

blies. At each end of the feed stroke a loop is formed in the web at a corresponding folding assembly, whereafter the folder closes upon to fold the web and hold it until



the other folder folds the web at the other end of the stroke, whereafter the first folder releases the web. The machine is adjustable to accommodate for different lengths between folds.

3,499,644

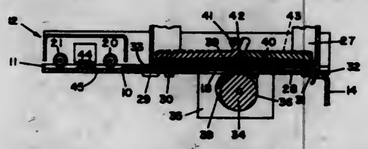
DOCUMENT FEEDING AND TRANSPORTATION

Albert V. Martin, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 682,041, Nov. 13, 1967. This application Apr. 29, 1968, Ser. No. 724,752

Int. Cl. B65h 1/06, 3/06

U.S. Cl. 271—44 7 Claims



Documents are selectively fed from a hopper containing a plurality of stacked documents by frictional engagement with a rotating cam located beneath the hopper which in a rest position permits all documents to lie flat. Upon rotation, the documents are first lifted slightly upwards and then engaged by a frictional portion of the cam for transporting the lowest one of such documents out from the stack of documents. Raising up the documents decreases the frictional engagement between adjacent documents and also the hopper bottom plate. One of the upstanding hopper end portions has an inwardly projecting cam with a mating inwardly opening recess on an opposing, upstanding end portion. As the documents descend into the hopper, their weight is primarily supported by the inwardly projecting cam, thereby limiting the weight on the frictional rotating cam such that substantially constant drive force is imparted to successively transported documents.

3,499,645

COPYING MACHINE PACK HOLDER

Koji Noda, Saiki, and Masaru Hashimoto, Kishiwada, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

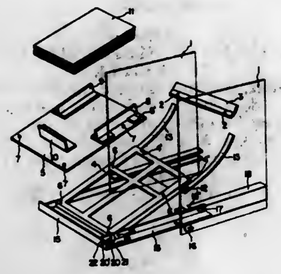
Filed May 22, 1968, Ser. No. 731,078

Claims priority, application Japan, May 23, 1967, 42/43,311, 42/43,312

Int. Cl. B65h 1/00; A47b 51/00

U.S. Cl. 271—61 4 Claims

A copying machine having a copying paper storing means automatically movable between an operative position ready for copying operation and a withdrawn position ready for loading and replacement of the copying paper. An indexing means is provided to register the copying paper properly with respect to other parts of



the copying machine. Indicator lamp means can be mounted on the copying machine to indicate the availability of the copying paper as well as the size thereof placed on the storing means.

3,499,646

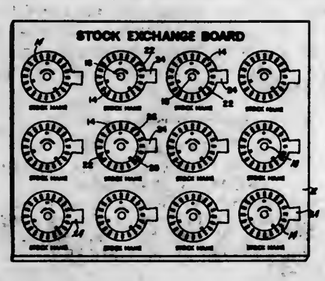
APPARATUS FOR PLAYING A GAME OF STOCK SPECULATION

Joseph Wesley Burgess, Jr., 3 Countryside Lane 63131, and Clifford E. Segal, 752 Louwen Drive 63124, both of St. Louis, Mo.

Filed Dec. 20, 1967, Ser. No. 692,180

Int. Cl. A63b 67/00; A63f 9/00

U.S. Cl. 273—1 8 Claims



A game of speculation including a stock market quotation board having a plurality of rotatable disks displaying current prices of an associated plurality of companies and each having an auxiliary window to display any dividend declaration and its amount. Groups of price disks are provided for each company and are shuffled for the selection of one disk for the play of each game. During the play, the indicating disk is advanced one unit for each corresponding unit of shares bought and moved backward one unit for each corresponding unit of shares sold. A stack of message cards is provided which generally affect the market in relation to the content of the message. During a single round of play, the front face of a message card is read and each player in turn has an opportunity to purchase or sell stocks. After all transactions are completed, the message card is turned over to obtain instructions as to what company disks should be rotated and in what direction and by how many units.

3,499,647

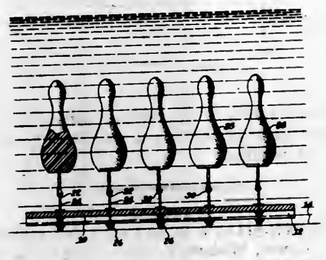
AQUATIC RECREATIONAL AND EDUCATIONAL DEVICE

Max F. Nestler, R.D. 1, Leesport, Pa. 19533

Filed Jan. 23, 1968, Ser. No. 699,948

Int. Cl. A63g 31/00; A63h 23/00; B63b 21/52

U.S. Cl. 272—1 5 Claims



A board having weights on its bottom.

A number of float members are detachably connected to rings extending upwardly from the board. In use, persons can take turns remaining under water and removing as many elements as possible while holding their breath.

ERRATUM

For Class 273—1 see:
Patent No. 3,499,646

3,499,648

DISTRIBUTING MECHANISM WITH SELECTIVELY OPERATED PIN GATE

William F. Huck, Forest Hills, and James B. Wyatt, Brooklyn, N.Y., Alexander J. Albrecht, Franklin Lakes, N.J., and Michael G. Gautraud, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Original application Aug. 7, 1964, Ser. No. 388,051, now Patent No. 3,409,296, dated Nov. 5, 1968. Divided and this application Nov. 13, 1967, Ser. No. 719,801

Int. Cl. A63d 5/08

U.S. Cl. 273—43 5 Claims



A bowling pin handling apparatus having pin distributor mechanism and a pin conveyor leading to the pin distributor with a three-position pin gate controlling passage of pins from the conveyor to the distributor and an actuating mechanism including a clutch for causing operation of said components.

3,499,649

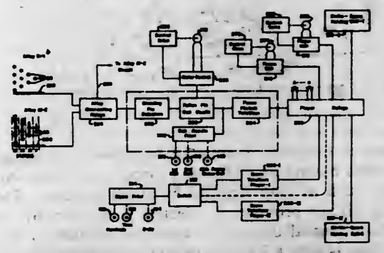
AUTOMATIC SCORING, TOTALIZING AND PRINTING APPARATUS FOR BOWLING GAME

Everett K. Mentzer, Struthers, and Robert H. Bonchonsky, Avon Lake, Ohio, assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 175,865, Feb. 9, 1962. This application Dec. 13, 1962, Ser. No. 244,492

Int. Cl. A63g 11/00

U.S. Cl. 273—54 26 Claims



5. In apparatus for automatically registering and totalizing the score for a bowling game and for printing the score on a bowling game score sheet, the combination of means for printing the score on said score sheet, drive means for moving said printing means to any frame box in any player line on the score sheet, mechanism for storing the total score, the accumulated but unscored strikes and spares and the number of frames previously bowled by each player in a bowling game, a plurality of manually actuable, independently operable, switches, one for each player in the bowling game, means for preventing actuation of all but one of the switches at any one time, the switches being actuable in any desired sequence, and circuit means operable when any one of said switches is actuated for controlling said printing means and the drive means therefor as a function of the information stored by said mechanism for the particular bowler whose switch has been actuated.

3,499,650

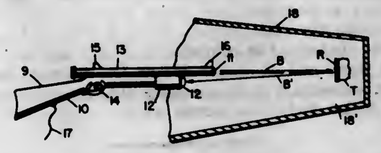
LIGHT PROJECTING AND SENSING DEVICE AND TARGET PRACTICE APPARATUS

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation of application Ser. No. 826,370, July 10, 1959, which is a continuation-in-part of application Ser. No. 450,131, Aug. 16, 1954. This application Feb. 10, 1966, Ser. No. 526,546

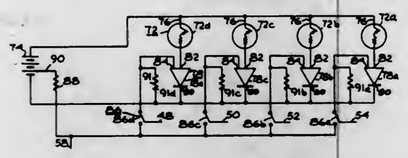
Int. Cl. A63f 9/02

U.S. Cl. 273—101.1 25 Claims



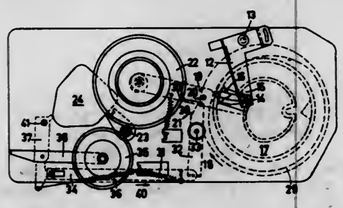
A light beam projecting device mounted on a simulated gun with light sensing means which are in position closely adjacent to the light projecting means for sensing the return of light from a reflective target constructed to reflect a light beam incident thereon along a path which is substantially parallel to and closely adjacent the incident beam. A hit-indicating circuit responsive to the receipt of light by said sensing means is connected with said sensing means for actuation thereby.

3,499,651
TARGET WITH AUTOMATICALLY TERMINATING VISUAL INDICATOR
Joseph W. Hubbard, Los Angeles, Calif. (26573 Basswood, Palos Verdes Peninsula, Calif. 90274)
Filed Feb. 23, 1967, Ser. No. 617,972
The portion of the term of the patent subsequent to Sept. 30, 1986, has been disclaimed
Int. Cl. A63b *63/00*
U.S. Cl. 273—102.2 6 Claims



There is disclosed herein an improved toy target arrangement having an indicating circuit operating on low voltage, such as that supplied by small batteries. The indicating circuit provides a selective indication by means of a visual signal depending upon the portion of the toy target that is struck by a projectile. The visual signal persists for a predetermined time period and then is automatically extinguished. Upon extinguishment, the circuit is automatically reset so that it will be activated again to provide another visual signal upon the next impingement of a projectile.

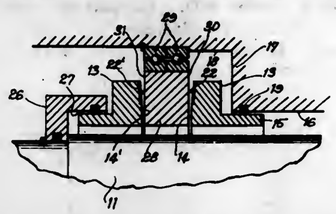
3,499,652
RECORD PLAYER
Martinus Holl, Fiers, Orne, France, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,913
Claims priority, application France, Sept. 22, 1966, 77,296
Int. Cl. G11b *25/04*
U.S. Cl. 274—9 3 Claims



A record player having a rotating control disc and mechanical linkage arrangement connected thereto for moving a tone arm and feeler device away from the turntable after the gauging of the diameter of a record placed thereon. The control disc is also provided with a cam track and associated means for delaying the rotational movement of the turntable until after the tone arm and feeler device has moved away.

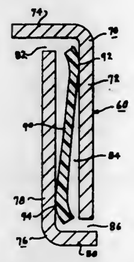
3,499,653
ROTARY MECHANICAL SEAL OF THE GAP TYPE
James F. Gardner, Chicago, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed June 5, 1968, Ser. No. 734,814
Int. Cl. F16j *15/16, 15/40*
U.S. Cl. 277—27 10 Claims

A rotary mechanical seal of the gap type wherein a predetermined spacing is maintained between the relatively rotatable sealing washers by the geometry of the faces of the washers, the present improvement comprising forming shallow spiral grooves in one of the washer faces



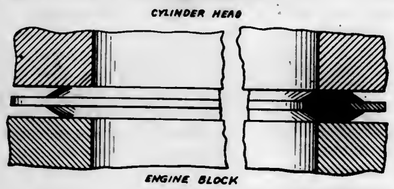
to cause a separation of the faces at start-up and thereby prevent damage or destruction to said faces before design pressures are attained.

3,499,654
BEARING-SHAFT SEALING STRUCTURE
Donald P. Lower, Mishawaka, Ind., assignor to Reliance Electric Company, a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 534,927
Int. Cl. F16j *15/34, 15/32*
U.S. Cl. 277—82 6 Claims



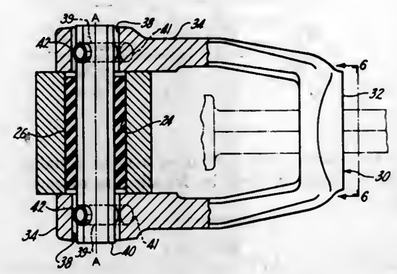
The sealing structure for a bearing and shaft combination in which spaced radially positioned, relatively rotating members form an annular space for a sealing member having annular areas contacting the opposed rotating members. The sealing member is a relatively rigid flexible element of plastic material and the sealing areas on opposite sides thereof are off-set axially and radially from one another.

3,499,655
ELASTOMERIC GROMMET FOR GASKETS
Daniel E. Czernik, Hinsdale, and Marion H. Kappa, Elmhurst, Ill., assignors to Victor Manufacturing & Gasket Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 30, 1966, Ser. No. 606,399
Int. Cl. F16j *15/10*
U.S. Cl. 277—235 7 Claims



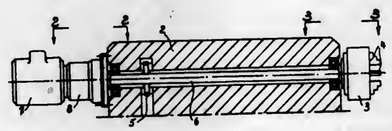
This application discloses an elastomeric grommet for insertion in cylinder head gaskets and the like and also discloses data derived from engineering tests which data enables the design of grommets to meet rigid specifications in an efficient and economical manner.

3,499,656
TOOL RETAINER
John E. Calmusky, 110 Clark Ave., Kitchener, Ontario, Canada
Filed Apr. 11, 1968, Ser. No. 720,580
Int. Cl. E21c *3/34*
U.S. Cl. 279—19.1 9 Claims



A rock drill tool retainer wherein the retainer is held in any one of several desired positions relative to such tool by a resiliently deformable bushing engaging a rotatable shaft having flat surfaces thereon within an opening having complementary flat surfaces therein.

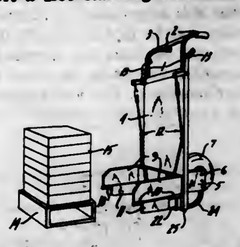
3,499,657
CHUCK FOR A MACHINE TOOL
Henri Giraud, 24 Rue Baudin, and Vincent Martin, 44 Rue de Champroud, both of Saint-Etienne, Loire, France
Filed Sept. 9, 1966, Ser. No. 578,223
Claims priority, application France, Sept. 13, 1965, 9,276
Int. Cl. B23b *31/16, 5/22, 5/34*
U.S. Cl. 279—114 3 Claims



A machine tool having a chuck with radially guided jaws driven by a rotatable member, either inwardly or outwardly, from a reversible motor, through a planetary differential system acting as a reduction gear and a coupling for the selective engagement and disengagement of the planetary system with the motor. Preferably the coupling is of electromagnetic powder type.

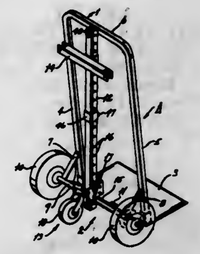
3,499,658
WHEELED HAND TRUCK
James A. Fernholz, Trempealeau, Wis., and Lyall B. White, Zephyrhills, Fla., assignors to L. B. White Company, Inc., La Crosse, Wis., a corporation of Wisconsin
Filed Apr. 19, 1968, Ser. No. 722,726
Int. Cl. B62b *1/08*
U.S. Cl. 280—47.2 4 Claims

A tiltable hand truck having a frame and primary wheels for transporting a load. A pair of hinged wing members extend forwardly from the frame and are manually pivoted to enter the open ends of a pallet. A pair of downwardly biased pilot wheels provide the sole rolling support for the unloaded truck when it is moved in an upright position. The pilot wheels cooperate with a cross bar to support a free standing truck. When the load is



placed on the truck, the pilot wheels retract so that the truck rests on the cross bar and tilting of the loaded truck moves the fulcrum from the cross bar rearwardly along a pair of curved skids.

3,499,659
MATERIAL HANDLING MEANS
Custer E. Capadalis, Memphis, Tenn.
Continuation-in-part of application Ser. No. 556,177, June 8, 1966. This application Nov. 18, 1968, Ser. No. 776,344
Int. Cl. B62b *3/12, 5/02*
U.S. Cl. 280—47.2 10 Claims

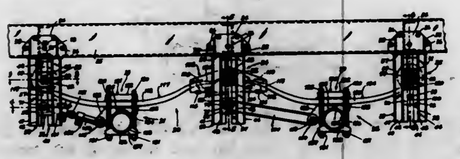


In a material handling device of the type incorporating a structure having a base plate and back support which is manually movable upon a pair of wheels, a rod connects to the structure along its back support and retains a slide bracket and connecting supplemental wheel, said slide bracket capable of being shifted along the rod or being fixed at an adjusted position. The slide bracket while capable of being shifted longitudinally along the rod may also be alid forwardly or rearwardly of said rod with respect to the back support so as to extend or retract said supplemental wheel. In this manner and through the co-operation of the aforementioned wheels, the material handling device may be disposed at almost any angle with respect to the horizontal or the surface upon which it rests. A handle connects with the rod, parallel to the back support, and upon its removal may be utilized as a linkage for interconnecting a pair of the devices for tandem movement.

3,499,660
TANDEM TRUCK SUSPENSION
John E. Raidal, Rte. 9, Box 400-M, Springfield, Mo. 65801
Filed Sept. 11, 1967, Ser. No. 666,827
Int. Cl. B60g *11/02, 17/02*
U.S. Cl. 280—104.5 8 Claims

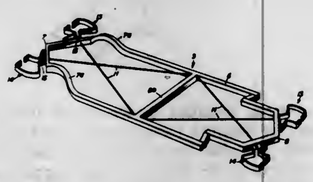
An adjustable vehicle suspension assembly for variable axle mounting height selections. Vertically adjustable hanger assemblies provide for vertical adjustment

of bearings against which the leaf springs of the suspension assemblies bear and provide for vertical adjustment of mounts to which radius rods are connected. These adjustments permit this suspension to accommodate any given axle mounting height application. Furthermore, the height adjustments can be reset any required number of turns. Hanger assemblies at front, rear and intermediate locations are interchangeable. The leaf springs and radius rods are joined to a central axle connector assembly, each



axle connector assembly being mounted to a vehicle axle. A central bearing between two suspension assemblies, which is also vertically adjustable, supports an equalizer that oscillates to equalize loads between two axles. With the height adjustments permitted by this suspension, no replacements or alterations in axle connector assemblies or components, radius rods, leaf springs, equalizers, or other components are required. Thus the same basic components are used for any axle mounting height application.

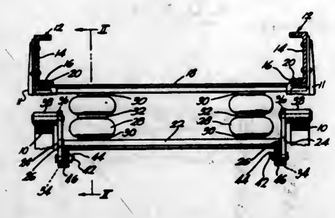
3,499,661
LATERAL PLANING FRAME AND BUMPER ASSEMBLY
Luther Kemp Rowe, Jr., Box 129A, Boyds, Md. 20720
Filed Mar. 22, 1968, Ser. No. 715,249
Int. Cl. B62d 21/00
U.S. Cl. 280—106 1 Claim



A lateral planing frame and bumper assembly for motor vehicles having a rigid frame with wedge-shaped fore and aft ends, each carrying a spaced bumper. The bumpers are mounted on the projecting ends of a plurality of leaf spring push bars fixed at their bases to the angular portions of respective frame ends. The angular structure and relative arrangement of the push bars coact with the wedge-shaped frame ends to directionally convert the excessive impact force of a head-on collision into a lesser lateral planing force, generally similar to a side swipe or glancing action, thereby causing lateral separation of the colliding vehicles at the inception of the collision.

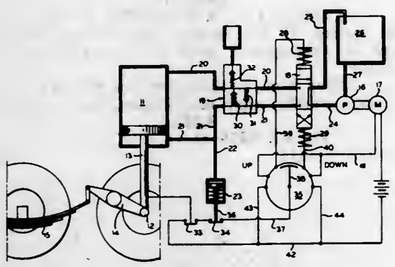
3,499,662
AIR CUSHION SYSTEM FOR VEHICLES
Mabrie F. Paul, 4329 Page Ave., Michigan Center, Mich. 49254
Continuation-in-part of application Ser. No. 272,322, Apr. 11, 1963. This application July 10, 1967, Ser. No. 652,221
Int. Cl. B60g 11/00, 9/00
U.S. Cl. 280—124 8 Claims

An air cushion system for vehicles, particularly suitable for improving the suspension characteristics of truck vehicles using leaf springs, wherein unloaded and loaded vehicles may be provided with improved riding characteris-



tics. The system of the invention may be installed upon existing vehicles, or may be installed as original equipment.

3,499,663
AUTOMATICALLY ACTING LOAD SENSOR
Bo Paul S. Hedlund and Anders T. Helgesson, Tranas, Sweden, assignors to Aktiebolaget Tranasverken, Tranas, Sweden, a corporation of Sweden
Filed Sept. 5, 1967, Ser. No. 665,610
Claims priority, application Sweden, Sept. 6, 1966, 11,987/66
Int. Cl. B60g 11/00, 25/00
U.S. Cl. 280—124 9 Claims



An automatically acting load sensor for the wheel shaft of a bogie of a car has means for observing the shaft pressure and then releasing the idle wheels thereby decreasing the shaft and wheel pressure, and means for again elevating the idle wheels when the load has decreased below the given level.

3,499,664
RELEASING COLLAR
Erwin Burns, Los Angeles, Calif. (% Burns Tool Company, 8346 Salt Lake Ave., Bell, Calif. 90201)
Filed July 29, 1968, Ser. No. 748,336
Int. Cl. F16l 35/00, 37/00, 55/00
U.S. Cl. 285—2 8 Claims

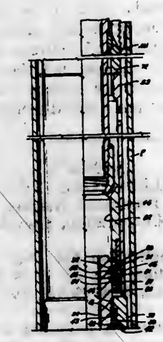
A fluid conducting releasing collar for engagement in an elongate string of tubing engageable in a well structure and such that it will permit rotary drive of the tubing string, allow for lowering and raising of the tubing string when said tubing is subjected to tensile forces below a predetermined maximum force and is such that it separates when said string is subjected to tensile forces in excess of said predetermined maximum force, said collar comprising an elongate, tubular upper section fixed to a portion of the tubing string above the collar, an elongate tubular lower section fixed to the portion of the tubing

string below the collar and having an upper portion slidably engaged in the upper section, circumferentially spaced flats about the upper end of the lower section and drive blocks carried by the upper section and engaging the flats to establish rotating driving engagement between the sections, an annular ring about the lower section adjacent the lower end of the upper section, circumferentially



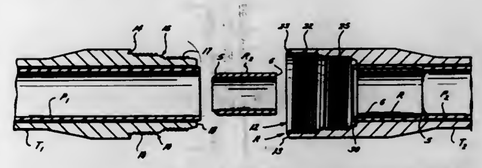
spaced registering openings in the ring and the upper section, shear pins in the openings, a removable retaining sleeve in the upper section normally overlying the openings and retaining the pins therein, and outer keeper sleeve carried by the upper section to normally overlie the openings and retain the pins therein and releasably maintaining the ring in fixed axial position adjacent the lower end of the upper section.

3,499,665
RELEASABLE COUPLING FOR USE IN WELL BORES
Martin B. Conrad, Carpinteria, Calif., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Aug. 17, 1967, Ser. No. 661,422, now Patent No. 3,422,898, dated Jan. 21, 1969. Divided and this application Aug. 12, 1968, Ser. No. 763,473
Int. Cl. F16l 37/08, 39/04
U.S. Cl. 285—3 4 Claims



The particular embodiment described herein as illustrative of the present invention in releasable couplings comprises an inner tubular member disposed within an outer tubular member, a laterally movable latch means engaging the inner member, a releasable support retaining the latch means in engagement with the inner member, recess means to enable the support to release from the latch means and to move away therefrom, and means to hold the support out of retaining relation with the latch means upon movement of the support means away from the latch means.

3,499,666
SEAL ARRANGEMENT FOR LINED TUBULAR MEMBERS
John W. Turner, 4 W. Court Drive, Houston, Tex. 77017
Filed Sept. 5, 1968, Ser. No. 757,582
Int. Cl. F16l 9/14
U.S. Cl. 285—55 1 Claim



A seal arrangement for a pair of lengths of pipe each length of pipe having an enlarged end portion forming a female socket on one pipe end and a male fitting at its other end, whereby the pair of lengths of pipe may be joined together and including a plastic tubular lining therein with a metallic insert adjacent each pipe end which is expanded and deformed to seal the plastic lining within the pipe. Both of the plastic linings extend beyond the metal ring which holds it in place approximately 1/32 to about 1/8 of an inch so that when the fitting of one length of pipe is positioned within the socket of the other length of pipe, the extending plastic is deformed to fill any voids between the socket and fitting of the pair of pipe lengths and form a fluid seal therebetween. The fitting on one end of each length of pipe and the socket on the other end of each length of pipe is provided with a particular thread configuration.

3,499,667
HOSE CLAMP
Anton Pfeuffer, 301 E. 78th St., New York, N.Y. 10021
Continuation-in-part of application Ser. No. 567,662, July 25, 1966. This application Oct. 21, 1968, Ser. No. 768,986
Int. Cl. F16l 55/00, 35/00
U.S. Cl. 285—93 3 Claims



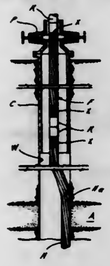
Conduit clamping devices for connecting the ends of similar or dissimilar tubular conduits designed to exert pressure on the outside surfaces of the conduit ends and/or on sealing elements associated therewith to provide liquid-tight joints, the clamping device being closeable with the aid of a suitable tool and openable, each

clamping device comprising one or more arcuate channels connected by one or more links which, when in place, are free from objectionable projections.

3,499,668
PIPE

Roy H. Cullen, Charles H. Elliott, Jimmie R. Aker, and Harvey O. Mohr, Houston, Tex., assignors to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 648,039, June 22, 1967. This application Mar. 11, 1968, Ser. No. 712,163
Int. Cl. F16l *39/00*
U.S. Cl. 285—149 9 Claims

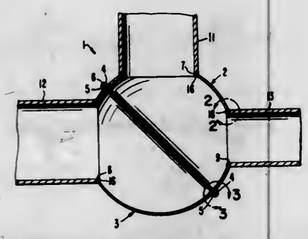


Flexible pipe for drilling and other well operations wherein the pipe has an external surface formed of helically disposed wires wherein the pipe has one or more portions or sections with the interstices at least partially filled with an elastomer or the like for sealing engagement by a blowout preventer and wherein the wires bear against an internal spring or other support to provide crush resistance for permitting retractor grippers and blowout preventer rams to be applied to the flexible pipe with high forces. Also, the unfilled or partially filled interstices between the outer wires provide helical grooves to prevent or inhibit the sticking of the flexible pipe to the wall of a well bore.

3,499,669
SPHERICAL CONNECTOR HAVING VACUUM LINES JOINED THERETO VIA WELDED JOINTS INTERNAL OF THE SPHERE

Paul W. Hait, Beaverton, Oreg., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 19, 1968, Ser. No. 706,490
Int. Cl. F16l *41/00, 5/00, 21/00*
U.S. Cl. 285—189 2 Claims

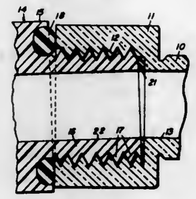


A spherical vacuum manifold connector structure is disclosed. The spherical vacuum connector is formed by a pair of sheet metal hemispheres having mating lip portions sealed together in a vacuum tight manner to form a hollow sheet metal sphere. The sphere has at least two circular openings therein with a vacuum pipe communicating with each of the circular openings. The vacuum pipes extend through the circular openings and are joined to the sphere by means of a continuous weld disposed on the inside of the sphere between the inside marginal edge of the circular openings and the inner ends of the vacuum pipes. In this manner, vacuum tight welds in a relatively thin walled vacuum manifold connector are obtained. In a preferred embodiment, the two hemispherical portions of the sheet metal sphere include outwardly flared lip portions which are joined together by means of a continuous peripheral weld. The vacuum pipes preferably include an external shoulder for mating with the outside marginal edge of the circular openings in the sphere to facilitate proper positioning of the vacuum pipes for welding thereof.

3,499,670
FLEXIBLE PRESSURE-TYPE JOINT FOR RIGID TUBING

Charles M. De Woody, Vineland, N.J., assignor to Ace Glass Incorporated, Vineland, N.J., a corporation of New Jersey

Filed Oct. 6, 1967, Ser. No. 673,376
Int. Cl. F16l *19/02, 49/00*
U.S. Cl. 285—355 8 Claims



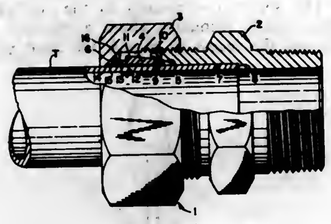
A high pressure coupling for joining sections of glass tubing and providing for substantial relative angular movement of the joined sections while, at the same time, maintaining a pressure-tight seal. The glass tubing is internally threaded, and a substantially cylindrical coupling element, formed of non-scratching rigid plastics material, softer than the glass of the tubing and having an integral, central, annular flange, terminates at opposite ends in externally threaded nipples. The threads of the nipples are of sufficiently reduced dimensions with respect to those of said glass elements to provide an annular clearance with the tubing threads, so as to permit relative angular movement of the coupled tubing sections. Compressible, annular seals are interposed between the threaded ends of respective tubing sections and the adjacent faces of the central flange to insure a tight seal, despite relative angular movement of the coupled sections.

3,499,671
FLARELESS TUBE COUPLING

James C. Osborne, Richmond Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 506,633, Nov. 8, 1965. This application Dec. 31, 1968, Ser. No. 798,850
Int. Cl. F16l *19/06, 19/08*
U.S. Cl. 285—341 4 Claims

A flareless tube coupling including a ferrule having an externally tapered portion at one end of taper less than that of the flare mouth of the body against which the externally tapered portion of the ferrule is urged by a nut having threaded engagement with the body. The maximum thickness of the ferrule is approximately twice the minimum thickness at such one end, and the other end is beveled for a major portion of its radial width leaving a narrow inner annular end face which forms a rounded

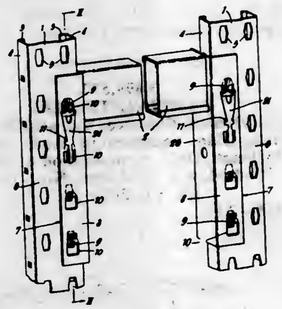


internal rib having vibration resisting contact around a tube when such other end is deformed into full mating contact with a shoulder on the nut.

3,499,672
CONNECTIONS BETWEEN STRUCTURAL COMPONENTS

Joseph Sunasky, Wembley Park, England, assignor to Dexion Limited, Wembley Park, England, a corporation of Great Britain

Filed Aug. 7, 1967, Ser. No. 658,927
Claims priority, application Great Britain, Aug. 8, 1966, 35,497/66
Int. Cl. F16b *1/00, 5/00, 7/00*
U.S. Cl. 287—189.36 12 Claims



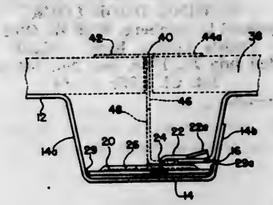
Improved hooks for connecting a horizontal beam to vertically disposed uprights in which the uprights are provided with vertically disposed, diamond-shaped openings with truncated top and bottom ends and the beam is provided with hollow, nose-shaped hooks projecting forwardly from a face of a portion of the beam, the nose-shaped hook having its side surfaces inclined downwardly toward one another as they approach the free end of the nose, bevelled or rounded lower ends on the side surfaces, a generally-flat edge or abutment at the top of the root of the nose, an inclined outer surface leading outwardly from the flat abutment toward the free end of the nose, and inner edges of the sides also inclined outwardly toward the free end of the nose. Resilient latching or locking devices are also mounted on the beam which project through the hole in the upright above the hook and prevent removal of the hook unless the latch is moved out of the hole.

Briefly, the present invention comprises means for connecting structural components which includes at least one hook member integral with a first of the components, projecting from the face thereof and engageable in the hole in a second of the components, the hook member having the form of a hollow nose whose free end portion is spaced from the face of the first component and whose side walls approach one another toward the free end.

3,499,673
ROOF DECKING CLIP

Edmund J. Sokyzik, Chicago, and Francis E. Ryder, Island Lake, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Jan. 22, 1969, Ser. No. 793,122
Int. Cl. F16b *1/00*
U.S. Cl. 287—189.35 10 Claims

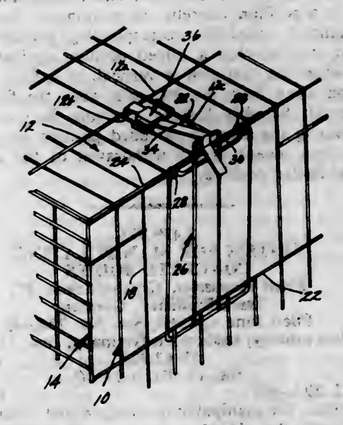


A deck clip for securing together lapped edges of decking material by rotation of the clip to interlock with one decking edge portion while moving into biting engagement with opposed inner surfaces of the upwardly extending wall portions between which the other lapping decking edge portion extends; and a cooperating insulation hold-down clip having a head portion overlying the insulation material and a lower fastener formation arranged to interlock with the previously installed deck edge securing clip.

3,499,674
POULTRY CAGE DOOR AND LATCH

Willis R. Voran, Zeeland, Mich., and Harvey Z. Burkholder, Ephrata, Pa., assignors, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware

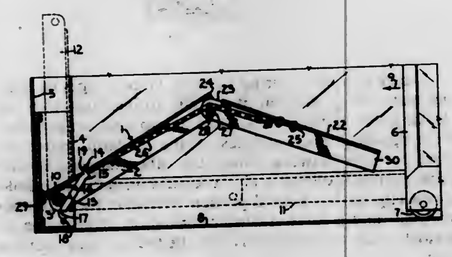
Filed Dec. 22, 1967, Ser. No. 692,924
Int. Cl. E05c *19/06*; A01k *31/00*; E05d *11/10*
U.S. Cl. 292—87 14 Claims



An improved door and latch for poultry cages, in which the latch comprises a strip of resiliently bendable material forming a leaf spring. This member normally engages a structure on the door in a hooking manner, to positively

prevent the door from being swung open. Upon resilient flexure of the spring member, the door is released and may be swung open, but when the leaf spring latch is released while the door is in an open position, an angularly offset tip of the leaf spring comes into contact with the door, such that the spring force of the flexed latch member acts to hold the door in its open position. From this position the door may be closed by simply pulling it against the resiliently flexed latch member, which initially causes further flexing of the latch and finally results in a return of the door and latch to a locking engagement, from which the door cannot be reopened until the latch is once again flexed.

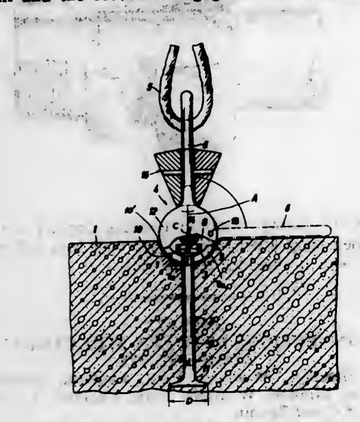
3,499,675
SLIDING DOOR LOCK
Raymond L. Isenberg, 4905 W. 69th St., Prairie Village, Kans. 66208
Filed July 22, 1968, Ser. No. 746,403
Int. Cl. E05c 17/34
U.S. Cl. 292—263 8 Claims



A first arm is pivotally mounted adjacent the well of a sliding door near the jamb for pivoting from a vertical position to a horizontal position directed toward the sliding door. A second arm is pivotally connected to the free end of the first arm and when both arms are extended toward the sliding door, the door is blocked against movement toward the jamb. A tensile member is anchored at one end thereof on the second arm and directed over a pivot pin between the first and second arm and anchored at the other end thereof adjacent the jamb in a position whereby the pivoting of the first arm automatically produces corresponding pivoting of the second arm between a folded position against the first arm, when the first arm is vertical, to a fully extended position away from the first arm when the first arm is horizontal. Suitable locking structure is provided for maintaining the arms in extended position in opposition to resilient means urging withdrawal of the arms into vertical folded position.

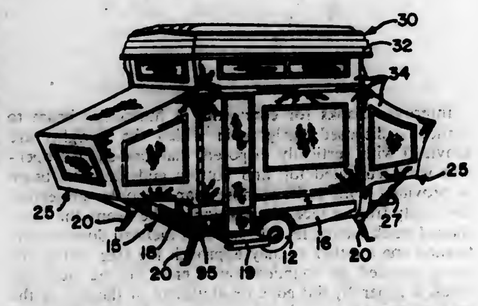
3,499,676
SYSTEM FOR MANIPULATING CONCRETE BODIES
Ernst Haeussler, Graebodstrasse 47, Essen-Bredeney, Germany
Filed June 6, 1968, Ser. No. 735,048
Claims priority, application Germany, June 13, 1967, H 62,993
Int. Cl. B25b 29/00
U.S. Cl. 294—90 10 Claims

A system for manipulating concrete and other massive bodies with the aid of a crane or other lifting device wherein an anchor is imbedded in the body and has a head projecting therebeyond in a spheroidal recess positioned such that the head lies below the outline of the body, the system including a ball-shaped socket member having a groove, extending along an arc of the periphery of the socket member through at least 90° and preferably about 180°, of a width less than the width of the anchor head but greater than the diameter of the anchor shank. The socket corresponds to the configuration of the recess and is swingable about a common center of the ball and the recess to engage the head from below



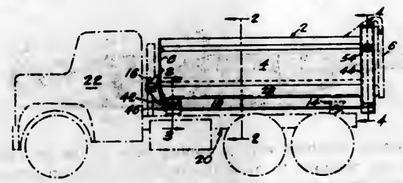
while an eye, loop or other attaching means is integral with the socket and receives a cable, wire rope, chain or hook for lifting the concrete body. A spherical core within the socket is spaced from the wall thereof by a distance equal approximately to the thickness of the head while a pin can be inserted across the lateral opening of the socket to prevent inadvertent withdrawal of the head.

3,499,677
CAMPING TRAILER
Lawrence E. Daniels, Florence, Ky., and Floyd R. Callon, Cincinnati, Ohio, assignors to Ward Manufacturing, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed May 6, 1968, Ser. No. 726,762
Int. Cl. B60p 3/32
U.S. Cl. 296—23 8 Claims



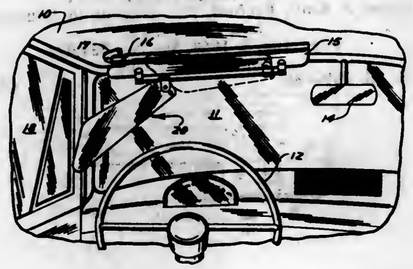
A collapsible camping trailer has a generally rectangular box-like body, a pair of extendable beds and a collapsible rigid plastic cover extending over the body. Each of the side and end walls of the body includes an outer plastic panel which is mounted for relative movement on a rigid inner support member to provide for expansion and contraction of the panel, and plastic cap members are mounted on the support members at the corners of the body for cooperation with the plastic panels and cover to provide the trailer with a highly durable outer surface.

3,499,678
HEATED TRUCK BODY
Max M. Richler, St. Laurent, Quebec, Canada, assignor to Atlas Hoist & Body Incorporated, Montreal, Quebec, Canada
Filed July 20, 1967, Ser. No. 654,726
Int. Cl. B60h 1/18; B62d 33/04; F24h 3/14
U.S. Cl. 296—28 4 Claims



A heated truck body formed with longitudinally extending duct members under the floor which also support the truck body on the truck chassis. The duct members conduct the hot exhaust gases from the truck engine to heat the floor of the truck body.

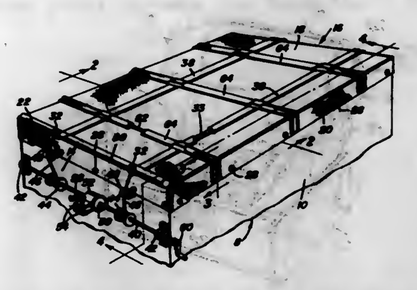
3,499,679
GLARE SHIELD ATTACHMENT FOR VEHICLE SUN VISORS
Kemuel B. Olander, 301 Parkview Terrace, Minneapolis, Minn. 55416
Filed Jan. 17, 1968, Ser. No. 698,509
Int. Cl. B60j 3/02
U.S. Cl. 296—97 6 Claims



A glare shield for mounting on an automobile windshield visor or the like in front of the driver's position, the mounting allowing movement of the shield in three different planes so as to be brought to any desired position of adjustment and wherein the locking mechanisms for restricting movement of the glare shield on any of said planes are controlled by a single manual control.

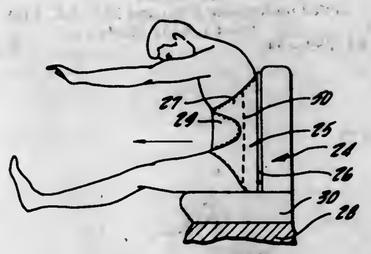
3,499,680
TARPAULIN ROLLER
George J. Straebel, R.F.D. Rte. 1, Dearing, N. Dak. 58731
Filed Sept. 12, 1967, Ser. No. 667,104
Int. Cl. B60p 7/04
U.S. Cl. 296—98 7 Claims

A tarpaulin embodying a rectangular body portion of an area to spread over the open top of a farm type truck. The depending marginal skirt-like flanges drape over and are battened down by grommets and holddown ropes or snap fasteners (as shown). This tarpaulin is unique in that the body portion has lengthwise hems which envelope flat but self-coiling springs. These springs roll up and wind the tarpaulin on a roller to which like ends of the springs are fastened. Means is provided to distend and spread the



tarpaulin at will. Transverse stays are also provided to prevent wrinkling and to make sure that the tarpaulin stays put and covers the grain or other produce.

3,499,681
HUMAN RESTRAINT SYSTEM
Mamerto Benitez, Jr., Granada Hills, and Douglas O'Neal, Malibu, Calif., assignors, by mesne assignments, to Hardman Aerospace, Los Angeles, Calif., a corporation of California
Filed Apr. 20, 1967, Ser. No. 632,310
Int. Cl. B60r 21/10; A62b 35/00
U.S. Cl. 297—385 20 Claims

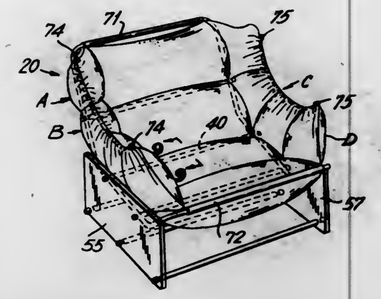


A constraining vest is held in place through a columnar support member which is generally oriented along the line of an occupant's spine and attached to the vehicle in which the system is installed. The vest includes flaps which are configured to extend from the columnar support around the occupant such that his pelvic region, abdomen and lower chest are constrained. Access to and egress from the vest are provided by fasteners on the flaps which may be operated at the behest of the occupant. Modifications of the restraint system are directed to supporting the upper portion of the torso by shoulder flaps and an occupant's head by extension of the columnar support.

3,499,682
INFLATABLE CHAIR
Philip Orenstein, New York, N.Y., assignor to Mass Art, Inc., New York, N.Y., a corporation of New York
Filed Feb. 13, 1968, Ser. No. 705,120
Int. Cl. A47c 4/54, 4/02
U.S. Cl. 297—456 6 Claims

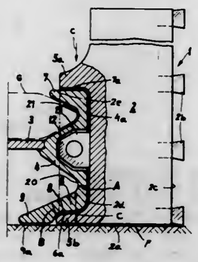
A plurality of inflatable panels are joined together at hinge-type connections and are mounted to a frame in a configuration producing a seat and having a backrest. The frame sections are readily disassembled and the

panels are readily detachable from the frame. Each panel is provided with end sections that are upwardly foldable



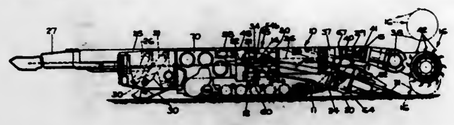
and cooperate with end sections of the remaining panels to form arms along the sides of the chair.

3,499,683
MINE EXCAVATOR-CONVEYOR ASSEMBLY
Ernst Braun and Gert Braun, Essen-Heisingen, Germany, assignors to Halbach & Braun, Wuppertal-Barmen, Germany, a company of Germany
Continuation-in-part of applications Ser. No. 626,059, 626,060, and 626,061, all Mar. 27, 1967. This application Jan. 3, 1968, Ser. No. 704,969
Claims priority, application Germany, Jan. 3, 1967, H 61,463
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. E21c *29/44*
U.S. Cl. 299—34 5 Claims



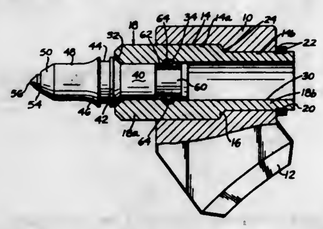
A mine excavator with a chain-driven flight conveyor. The conveyor trough has lateral walls forming channels guiding the flights and simultaneously, without the intermediary of any attached rail or other structure, forming guides for a coal-cutting tool having an inwardly open recess complementary to and engaging the lateral wall of the trough while enveloping it at least along three sides, the tool having a foot underlying the lower leg of the sidewise-turned W-profile forming the trough wall which also rests on the coal-seam floor at this lower leg. At the channels of the W, the cross-section of the profile is reduced to impart an inherent shock-resistant elasticity to the assembly. An inwardly extending flange forms a deflecting surface above the upper leg of the W and may have a formation complementarily mating with a longitudinal formation along the upper leg of the W to prevent lateral separation of the tool from the trough wall.

3,499,684
MINING MACHINE WITH DRIVE CONSTRUCTION FOR OPERATING ELEMENTS OF THE MINING MACHINE
William E. McCracken, Groveport, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Apr. 1, 1968, Ser. No. 717,855
Int. Cl. E21c *25/00*
U.S. Cl. 299—64 4 Claims



A mining machine with a mining head at the forward end of the machine to mine the material, traction means to propel the mining machine, gathering means to collect the mined material, a conveyor for moving the mined material to the rear of the machine to be discharged, and other power operated elements for the functions of the machine. The mining head is on a boom that is movable upwardly and downwardly about the transverse axis of a pivot support on the machine main frame. Motors mounted on the boom are the primary source of power for the operating elements of the mining machine. Forward drive connections from the motors connect to drive the mining head, and rearward drive connections from the motors connect to drive the traction means, the gathering means, the conveyor and the other power operated elements of the machine.

3,499,685
PICK-TYPE MINING BIT WITH SUPPORT BLOCK HAVING ROTATABLE SEAT
Thomas J. Kniff, Bedford, Pa., assignor to Kennametal Inc., Latrobe, Pa.
Filed Aug. 8, 1968, Ser. No. 751,094
Int. Cl. F21c *13/02*
U.S. Cl. 299—86 9 Claims



A pick type mining bit with a cylindrical shank has a support block with a bore and a hard insert detachably and rotatably mounted in the bore. The insert has a bore for rotatably receiving the shank of the bit.

The bit has a cylindrical working end projecting from the support block which tapers in at the tip and has a hard insert mounted in the tip.

3,499,686
METHOD OF MAKING A BRUSH
William James Landen, Cheshire, and Gunnar F. Lundquist, Kensington, Conn., assignors to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Dec. 21, 1967, Ser. No. 692,416
Int. Cl. A46d *3/08*
U.S. Cl. 300—21 4 Claims

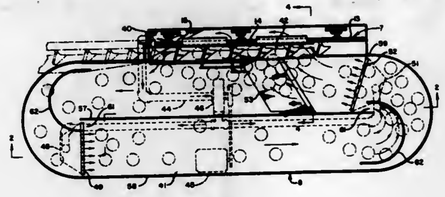
The invention contemplates securing a bundle of natural brush bristles in assembled relation to a tubular retaining ferrule having a bore open at both ends. The root ends

of the bristles are assembled within the bore, with the tip ends projecting outwardly as the applicator end of the brush. A guided pin is inserted on the central axis of the bundle to radially outwardly further compact the bristles



in the bore, and to serve a molding function as a thermosetting resin is cured to hardness; the root ends are thereby bonded to each other and to the ferrule, and a smooth central passage is defined for pomade supply.

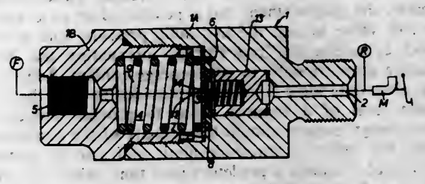
3,499,687
APPARATUS FOR FEEDING FRUIT TO A CONVEYOR FROM A BULK SUPPLY
Robert G. Ellis, Richmond, Calif., assignor to Atlas Pacific Engineering Company, a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 626,794, Mar. 29, 1967. This application Nov. 5, 1968, Ser. No. 777,982
Int. Cl. B65g *53/00*
U.S. Cl. 302—14 9 Claims



Apparatus for feeding fruit from a bulk supply into a pickup station and wherein pieces of fruit are floated in a continuous trough and recirculated in the trough until they are picked up by a conveyor.

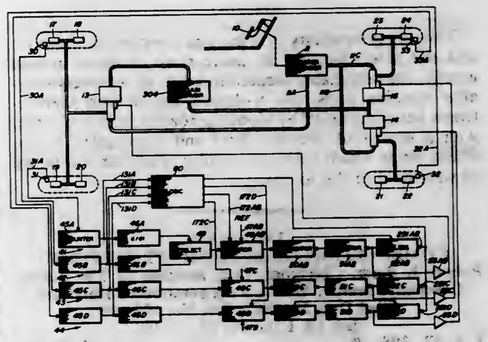
Apparatus for feeding fruit from a bulk supply into a pickup station comprising a trough for holding liquid in which pieces of fruit may be made to float; means separating the trough to provide a continuous track including a pair of fluidly connected legs, one leg being adapted to receive fruit in bulk; a conveyor extending along a side portion of the other leg of said trough and having a series of spaced pockets for receiving a piece of fruit at a pickup station within said trough as a pocket is moved through said pickup station; a pump means for discharging liquid under pressure into said trough to produce a continuous circulation of liquid through the legs of said trough; and means fluidly communicating the low pressure side of said pump means with an opening into said trough, said opening being located in a region of said pickup station for withdrawing liquid and producing a movement of fruit into the pickup station.

3,499,688
HYDRAULIC BRAKING SYSTEMS
Desmond Henry James Reynolds, Birmingham, England, assignor to Girling Limited
Filed May 23, 1966, Ser. No. 552,125
Claims priority, application Great Britain, May 22, 1965, 21,768/65
Int. Cl. F16k *15/02*
U.S. Cl. 303—6 4 Claims



A differential pressure valve for connection in a hydraulic brake line wherein internal valve means are arranged to respond to an initial predetermined rate of fluid flow to close a normally open passage through the valve and to respond to a predetermined increase in fluid pressure from said source to re-establish fluid communication through the valve. Preferably the valve member is subject to the control of a piston disposed with clearance in the passage leading from the inlet to the valve member, so that at predetermined flow rates the piston moves towards the valve member to obstruct it and then unseats it to re-establish flow through the valve.

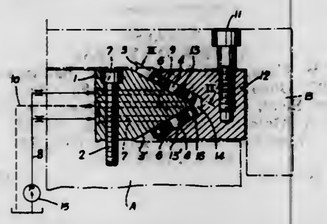
3,499,689
ANTISKID SYSTEM
Ralph W. Carp, 6643 Marett Drive, Baltimore, Md. 21207; Donald W. Howard, 24696 Adams Road, South Bend, Ind. 46628; and Dewey W. Eppley, 452 N. Main St., Nappanee, Ind. 46550
Filed Oct. 9, 1967, Ser. No. 673,651
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 27 Claims



An antiskid braking system for automobiles or trucks utilizing a control channel for each wheel to be controlled, wherein the rotational velocity of the wheel is sensed and electronically differentiated to generate a D.C. voltage level correlative to wheel acceleration. This D.C. voltage level is compared to a reference level to produce an error voltage which is applied to a pulse modulator to modulate a train of pulses. The pulses generated are then applied to a solenoid valve winding of a vacuum actuated hydraulic pressure modulator which is interposed in the hydraulic line between the master cylinder

and the wheel cylinders of the wheel being controlled. The solenoid valve opens in response to the pulses to admit air into the modulator body wherein a diaphragm and a cooperating displacement rod are repositioned in accordance with the volumetric rate of air admitted. The displacement rod cooperates with a ball valve to allow free communication between the master cylinder and wheel cylinders during periods of pulse absence or minimum pulse energy content. For increased pulse energy content, the displacement rod is positioned so as to allow the ball valve to seal the hydraulic pressure fluid in the wheel cylinders, the rod further attenuating the fluid pressure proportionally to pulse energy content. Additionally, electronic logic circuitry is provided to vary the reference level of a channel so as to provide maximum pulse energy content should the velocity of the controlled wheel fall below a threshold limit and also to disable all control channels a predetermined time delay after the last sensed wheel falls below the threshold limit, providing that during the time delay no wheel accelerates to a velocity above the threshold limit.

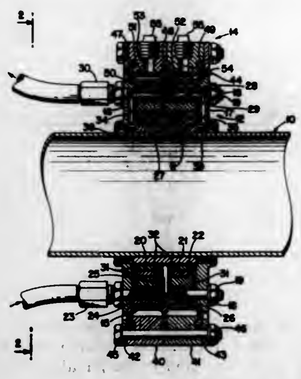
3,499,690
FLUID BEARING
Gunter Siebers, Nuremberg, Germany, assignor to Ardle-Werk GmbH, Nuremberg, Germany, a corporation of Germany
Filed Jan. 22, 1968, Ser. No. 699,600
Claims priority, application Germany, Jan. 21, 1967, A 54,685
Int. Cl. F16c 29/02
U.S. Cl. 308—3.5 3 Claims



Two complementary tracks, one forming a V-groove and the other forming an acute ridge received in said groove, are detachably secured to a pair of relatively movable machine parts, the V-shaped gap defined therebetween being occupied by elongate nozzles communicating with a source of pressure fluid and surrounded by resilient strips which form an annular space for the return of such fluid to the source.

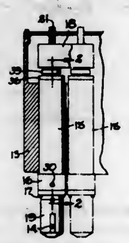
3,499,691
COMBINATION DAMPED SHAFT SUPPORT
Robert J. Baier, Claymont, Del., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,898
Int. Cl. F16c 17/16, 27/00
U.S. Cl. 308—9 13 Claims

A shaft, which rotates at supercritical speeds, is supported intermediate its ends by a structure that dampens vibrations of the shaft. The shaft has a cylindrical member fixed thereto and adapted to be rotatably supported within the inner of a plurality of concentric rings, which are mounted within a fixed housing. The spaces between the concentric ring are selected to ensure damping when the shaft rotates at a speed greater than a predetermined speed and have pressurized oil introduced therein to function first as a hydrodynamic bearing to allow shaft rotation and second as an energy absorbing medium for the vibrations of the shaft. When the speed of the shaft is no greater than the predetermined speed, a second damper structure, which surrounds the concentric rings and also is suported by the fixed housing, dampens the vibrations of the shaft. This second damping structure



includes a pair of adjacent chambers, which are filled with fluid and have an elastomer wall that is responsive to vibrations created by the shaft when its rotating speed is no greater than the predetermined speed.

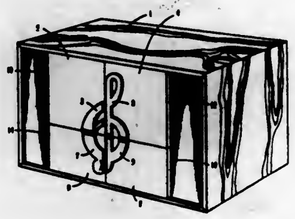
3,499,692
HYDROSTATIC BEARING WITH MECHANICAL PROTECTION
Karl B. Kaiser, Rockford, Ill., assignor to The Ingersoll Milling Machine Company, Rockford, Ill., a corporation of Illinois
Filed Feb. 19, 1968, Ser. No. 706,372
Int. Cl. F16c 17/16, 17/06
U.S. Cl. 308—9 10 Claims



A tool spindle is rotatably supported within a surrounding sleeve and by an end thrust plate through the medium of conventional hydrostatic bearings comprising opposed fluid pressure recesses or pads in the thrust plate and spaced around the interior of the sleeve, each pad being surrounded by a sill area coacting with an opposed surface rotatable with the spindle to provide a narrow clearance through which fluid supplied under high pressure is forced through compensating orifices to the respective opposed pads and flows outwardly across the sill area. Between opposed surfaces on the spindle and the sleeve and thrust plate are interposed rigid antifriction bearings having a clearance with such surfaces which is slightly less than said sill clearance so that the mechanical bearing normally floats between the opposed surfaces of the sleeve and spindle and remains unloaded

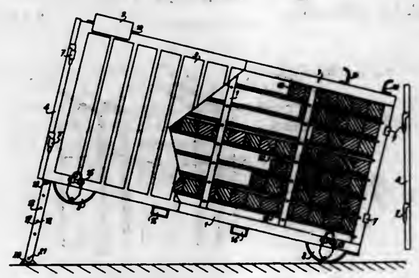
and inactive. But if the hydraulic pressure necessary to support the spindle hydrostatically fails or if the working load exceeds the capacity of the hydrostatic bearing, the mechanical bearing becomes effective to support the spindle and thus prevent damage to the opposed surfaces of the spindle, the sleeve, and the thrust plate during continued rotation of the spindle.

3,499,693
COMPOSITE HANDLE
Elmer Whitehead, Azusa, Calif.
(1602 Serenada Ave., Las Vegas, Nev. 89109)
Filed Mar. 18, 1968, Ser. No. 713,845
Int. Cl. A47b 81/06, 95/02; G11b 1/00
U.S. Cl. 312—8 10 Claims



The invention involves a novel handle adapted for use on a plurality of doors. The handle comprises a plurality of discrete parts each of which is attached to one door, but which collectively present a unitary structure when the doors are closed.

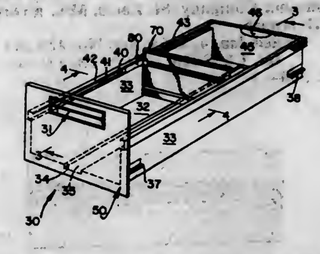
3,499,694
LARGE SIZE CONTAINER WITH FRAME
Georges Coppell, 31 Rue de Rosiers, 93, St. Ouen, France
Filed Aug. 3, 1967, Ser. No. 658,069
Claims priority, application France, Aug. 19, 1966, 73,507
Int. Cl. B65b 59/00
U.S. Cl. 312—35 1 Claim



The invention broadly relates to containers and particularly, of the type allowing "dynamic storage" of the products contained therein.

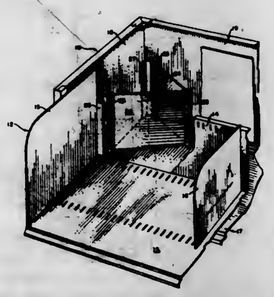
The instant invention more particularly provides a large size container consisting of a rigid frame and of panels attached to said frame so as to constitute a closed enclosure, a lever being secured at one of the corners of the floor of said container and hingedly mounted on a stand, whereby the container may be inclined for discharge of the said products.

3,499,695
DRAWER AND COMPRESSOR PLATE CONSTRUCTION
Robert A. Studinski, Aurora, Ill., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed Jan. 17, 1968, Ser. No. 698,457
Int. Cl. A47b 63/00
U.S. Cl. 312—294 10 Claims



The construction comprises a drawer including bottom, side and front walls, a pair of outwardly directed holding flanges respectively joined near the upper edge of the sidewalls, the holding flanges having a plurality of openings therein, a compressor plate disposed between the sidewalls for cooperation with the front wall to hold material disposed therebetween, a pair of guide brackets respectively connected to opposite sides of the compressor plate, each of the guide brackets having a lower surface resting upon the associated holding flange, a pair of downwardly extending fingers on the lower surface and spaced apart a distance equal to the distance between two of the openings in the associated holding flange, the pair of fingers respectively engaging in two of the openings, a rearwardly extending hook on the lower portion of each of the fingers and having an upper surface parallel to the lower surface of the guide bracket and spaced therefrom a distance slightly greater than the thickness of the associated holding flange, the upper and lower surfaces receiving therebetween the associated holding flange to limit vertical movement of the guide bracket.

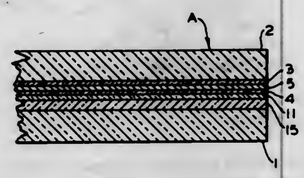
3,499,696
FILING CABINET WITH IMPROVED CANTILEVER HINGE TYPE DRAWER SUPPORT SYSTEM
Forest G. Stark, Jamestown, N.Y., assignor, by mesne assignments, to Clark Adams Corp., Chicago, Ill., a corporation of Delaware
Filed Jan. 11, 1968, Ser. No. 697,223
Int. Cl. A47b 57/28
U.S. Cl. 312—331 1 Claim



A filing cabinet drawer suspension device featuring in combination, paired hinge leaves which provide cantilever extensible-retractable support for the drawer, and which are hingedly interconnected by special self-locking hinge pin devices which are simple and inexpensive in

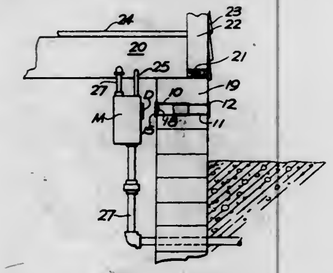
construction and which are installed in the assembly with utmost facility, and which thereupon remain in properly operative positions without further attention.

3,499,697
PELLUCID LAMINATE WITH INTERFERENCE FILTER MULTILAYER AND MONOLAYER
James W. Edwards, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,263
Int. Cl. G02b 5/20, 5/28, 13/14
U.S. Cl. 350—1 7 Claims



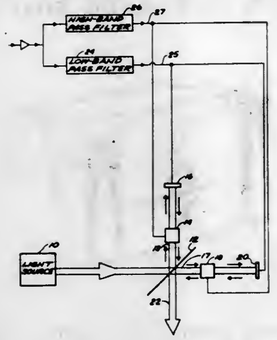
A pellucid laminate for selectively reflecting infrared radiation and transmitting visible wave lengths of radiation. The laminate includes a pair of outer panels. A relatively thin member formed of plastic has a multilayer dielectric film deposited on one surface thereof and a monolayer dielectric film depostied upon the opposite surface thereof. The multilayer film engages a relatively thin plastic film formed on the interior surface of one of the panels. The film is in the order of magnitude of thickness of the multilayer film so that during the lamination process any particles in the multilayer film will not become disoriented. The monolayer film in combination with the multilayer film is designed to cause some reflection of the transmitted visible radiation. A relatively thick interior panel is disposed beneath the monolayer film and may have incorporated therein light absorbing compounds in order to reduce angular dependency. A number of methods of laminating the various components are also disclosed.

3,499,698
METER READING TUBE
Joseph F. Malys, 1935 Donald Ave., Youngstown, Ohio 44509
Filed July 19, 1966, Ser. No. 566,318
Int. Cl. G02b 27/02
U.S. Cl. 350—115 2 Claims



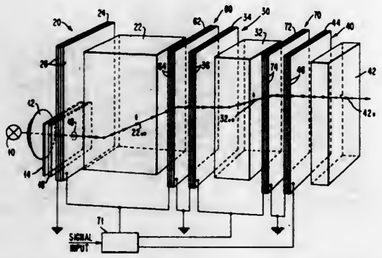
The device is a telescopic tube, having transparent windows or panels at each end, inserted through a wall and in alignment with the dial of a watermeter. The inner window or panel has a centrally located lens area. The panel carrying the lens is longitudinally adjustable with respect to the tube for focusing the lens on the dial. Light from the outside may be directed through the windows or panels to light up the dial for reading through the lens area.

3,499,699
WIDE-BAND LIGHT-MODULATOR
Roy J. Ayres, Huntington Beach, and John R. Priebe, Torrance, Calif., assignors to North American Rockwell Corporation
Filed Sept. 21, 1965, Ser. No. 488,923
Int. Cl. G02f 1/26, 1/28; G02b 27/00
U.S. Cl. 350—150 12 Claims



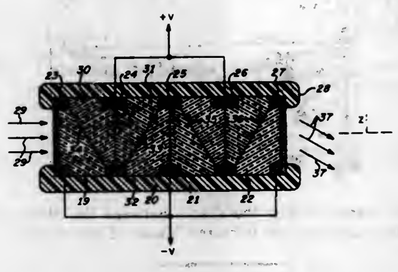
A wide band light modulator wherein a light-beam is serially modulated by two different-type transducers, each of which responds to a different frequency-range. A plurality of electronic filters may be used to provide a cross-over function for directing specific frequencies to respective transducers.

3,499,700
LIGHT BEAM DEFLECTION SYSTEM
Thomas J. Harris, Poughkeepsie, and Werner W. Kulcke, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 5, 1963, Ser. No. 285,832
Int. Cl. G02f 1/24, 1/26
U.S. Cl. 350—150 6 Claims



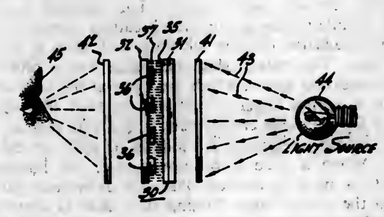
Light deflection apparatus is interposed between a source of a beam of plane polarized light and a target to deflect the beam to a selected position in the target. Each stage of the deflector includes in the order of the incoming light beam a first polarization rotator, a birefringent device which deflects the light in accordance with the plane of polarization established by the rotator, and a second polarization rotator which cancels any polarization change effected by the first rotator. The apparatus also deflects converging light through it to a location outside the apparatus.

3,499,701
ELECTRO-OPTICAL SCANNER
Warren M. Macek, Huntington Station, and Joseph R. Schneider, Larchmont, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 25, 1966, Ser. No. 522,933
Int. Cl. G02f 1/26
U.S. Cl. 350—150 7 Claims



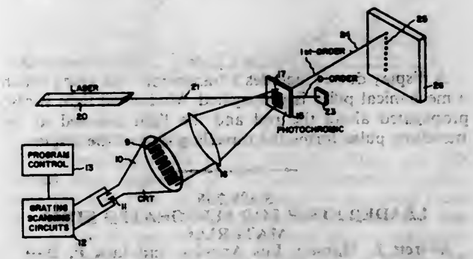
An electro-optical light beam scanning device comprising a plurality of cells each comprising a pair of wedge-shaped crystalline members affixed to one another and oriented in a manner to form a sloping interface relative to a light beam propagating therethrough in a direction substantially aligned with an electric field established along the Z' axis of the crystals, the electric field being effective to induce in the crystals orthogonal X' and Y' axes oriented perpendicular to the Z' axis and operative to differentially control the refractive index of the respective crystals in accordance with variations of the field intensity. In each cell, the X' axis of one member is aligned with the Y' axis of the other member and the adjacent cells are oriented such that the electric fields applied thereto and the sloping interfaces therein are inverted with respect to one another whereupon the deflection of the light beam occurring at each interface is cumulative in the plurality of cells.

3,499,702
NEMATIC LIQUID CRYSTAL MIXTURES FOR USE IN A LIGHT VALVE
Joel E. Goldmacher, Cranbury, N.J., and George H. Heilmeier, Philadelphia, Pa., assignors to RCA Corporation, a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,122
Int. Cl. G02f 1/26, 1/28, 1/36
U.S. Cl. 350—150 8 Claims



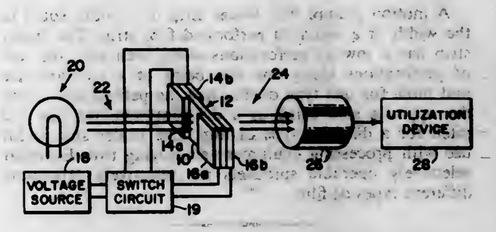
An electro-optic light valve comprises a nematic liquid crystal composition comprised of a mixture of p-n-ethoxybenzylidene-p'-aminobenzonitrile with p-n-butoxybenzylidene-p'-aminobenzonitrile and/or p-n-octoxybenzylidene-p'-aminobenzonitrile, means for applying an electric field thereto, and cross polarizing means.

3,499,703
RADIATION BEAM POSITIONING APPARATUS
Dominick John De Bitetto, Briarcliff Manor, N.Y., assignor to U.S. Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,886
Int. Cl. G02f 1/28, 1/36; G02b 5/18
U.S. Cl. 350—160 8 Claims



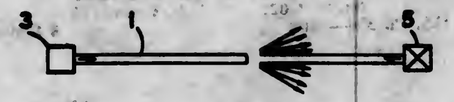
An optical beam deflection and focussing system using diffraction grating and Fresnel zone patterns generated on the face of a cathode ray tube to form similar patterns on a photochromic material placed in interfering relationship with the beam to be deflected and focused.

3,499,704
FERROELECTRIC CERAMIC ELECTRO-OPTICAL DEVICE
Cecil E. Land and Ira D. McKinney, Albuquerque, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 14, 1967, Ser. No. 668,307
Int. Cl. G02f 3/00
U.S. Cl. 350—160 10 Claims



An electro-optical device or apparatus comprising a hot-pressed, optically uniaxial ferroelectric ceramic plate, electrodes disposed at major surfaces of the ceramic plate for selectively polarizing the plate parallel or perpendicular to surfaces of the plate to align the ferroelectric domains along their crystallographic axes in the direction of polarization and thus vary the capacity of the plate, a light source disposed adjacent one side of the plate and means responsive to the level of light transmitted through the plate.

3,499,705
TRAVELLING SPOT DISPLAY DEVICE
Alexander Christopher Boynham and Huw David Rees, Malvern, England, assignors to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Oct. 18, 1968, Ser. No. 768,795
Claims priority, application Great Britain, Oct. 18, 1967, 47,436/67
Int. Cl. G02f 1/28
U.S. Cl. 350—162 4 Claims



A display device includes a transparent rod along which a mechanical pulse is propagated. Modulated light is also propagated along the rod and the light released at the travelling pulse forms the travelling spot of the display.

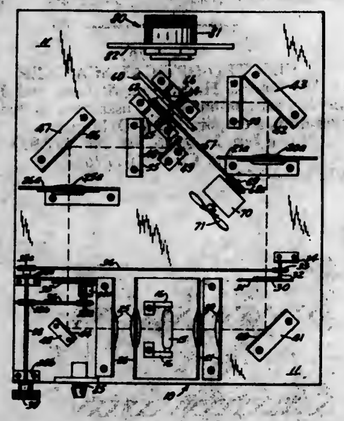
3,499,706
LEADER STRIP FOR PERFORATED STRIP MATERIAL
Everett L. Hansen, Los Angeles, and Jack P. Hall, Granada Hills, Calif., assignors to De Luxe Laboratories, Inc., New York, N.Y., a corporation of New York
Original application Dec. 28, 1965, Ser. No. 516,972, now Patent No. 3,344,158, dated Oct. 10, 1967. Divided and this application July 12, 1967, Ser. No. 652,768
Int. Cl. G03c 1/76
U.S. Cl. 352—235 2 Claims



A motion picture film leader strip of a width equal to the width of a standard perforated film strip. The leader strip has a row of perforations along each side, the row of perforations along one side being of a standard size and pitch for one type of film and the perforations along the opposite side being of a different standard size and pitch for a different type of film. The leader strip is for use with processing equipment employing two dissimilar selectively operable sprockets for selectively processing different types of film.

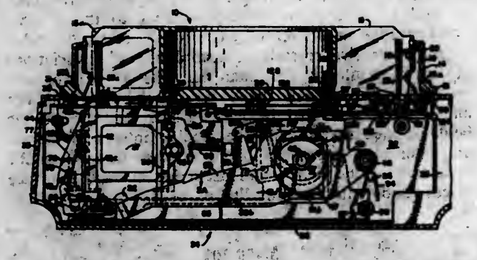
3,499,707
PHOTOGRAPHIC PROJECTION APPARATUS
Hubert U. Broeckner, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 661,982
Int. Cl. G03b 27/14
U.S. Cl. 353—99 5 Claims

A slide projector of compact design utilizing a single light source and a single projection lens which lap dissolves one slide or scene into another. The lap dissolve is accomplished through the use of coupled irises and a multi-bladed mirror-shutter rotating at a speed beyond the critical flicker frequency which permits the projection



of one scene through the spaces between the blades and a second scene off the mirrored blades of the shutter.

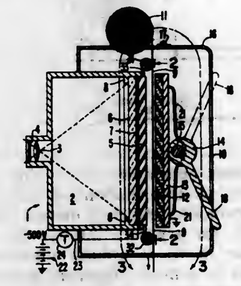
3,499,708
SLIDE PROJECTOR AND MAGAZINE THEREFOR
Walter J. Hall, Chicago, Ill., assignor to GAF Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 554,071, May 31, 1966. This application Nov. 20, 1967, Ser. No. 684,202
Int. Cl. G03b 23/06, 23/02
U.S. Cl. 353—107 10 Claims



The projector includes a vertically disposed projection gate located adjacent one side of the projector housing. The housing has a top wall portion with a slot therein disposed over the gate for entry of a slide thereinto and for exit of a slide therefrom. The projection gate includes a pair of vertically extending slide guides. One of these guides is mounted for movement toward and away from the other guide for alternately releasing and gripping a slide at the side edges thereof. The movable guide contacts a slide-releasing arm which causes release of a slide in the magazine thereby allowing such slide to drop into the gate. The rotary slide magazine has a plurality of slide-receiving spaces which are open at the tops and bottoms. A spring finger is mounted in each slide-receiving space for yieldable engagement with a side edge of a slide for releasably retaining the slide in its space in the magazine. When a slide is positioned over the housing slot which is in turn located over the projection gate, and when the spring finger biasing such slide is contacted by the aforementioned slide-releasing member, the slide is allowed to drop into the gate. The magazine includes an indexing gear engaged with a series of teeth on the magazine for indexing the magazine in forward and reverse

directions. The indexing gear is rotated in either direction by indexing means in the projector, such indexing means including a locking member which is yieldably urged into its locked position and positively withdrawn to an unlocked position. The projector includes a cam-operated lifting member to return the slide in the projection gate to its place in the magazine. The projector also includes an operating member or "Load" button. When this member is depressed, the indexing means are disabled and a latch is withdrawn permitting separation of the magazine from the projector.

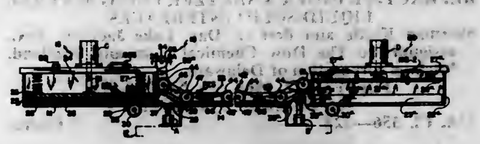
3,499,709
ELECTROPHOTOGRAPHIC STRIP FILM DEVICES WITH MEANS FOR HOLDING THE FILM AWAY FROM THE PHOTOCONDUCTOR DURING FILM TRANSPORT
Roy Uhlenberg, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 10, 1967, Ser. No. 615,133
Int. Cl. G03g 15/04
U.S. Cl. 355—3 7 Claims



An electrophotographic strip film apparatus having a photoconductive imaging plate onto which is focused a photon image to be reproduced. A strip of electrographic recording paper is positioned overlaying the photoconductive plate. A potential is applied across the photon image illuminated photoconductive plate and a charge retentive film layer of the electrographic paper. Under the influence of the applied potential, a charge image, corresponding to the photon image, is deposited upon the charge retentive surface of the electrographic recording paper for subsequent development by conventional powdered pigment techniques. During transfer of the charge image to the electrographic paper, the dielectric charge retentive surface of the paper is pressed into nominal contact with the photoconductive plate. After the charge image is deposited, the pressure on the paper is removed and a length of the paper is pulled past the photoconductive plate for development in accessory equipment and to position an undeveloped area of the paper strip over the photoconductive plate. A raised structure, such as a roller or a lip, is positioned at the leading and trailing edges of the photoconductive plate to prevent the paper from rubbing against the photoconductive plate during transport of the paper.

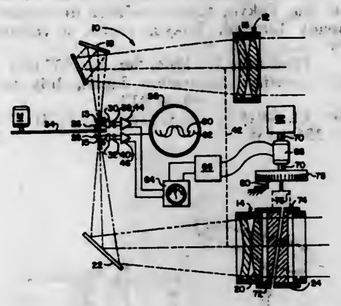
3,499,710
DOCUMENT FEEDER
Lloyd W. Sahley, Shaker Heights, Ohio, assignor to Midwestern Securities Corporation, New York, N.Y., a corporation of New York
Filed Feb. 21, 1967, Ser. No. 617,582
Int. Cl. G03b 27/32
U.S. Cl. 355—64 43 Claims

A document feeder for use with known copying machines in which the document to be copied is positioned at a copying station for exposure to the copying mechanism of the machine. The feeder advances a document from a document supply station to the copying station, positions the document properly thereat, and actuates the copying machine to copy the document. After the document has been exposed to the copying machine, it is fed to a document supply station. The operation is repeated until all pages of the document have been copied. Certain of the feeder embodiments provide for automatically feeding a document a preselected number of times to the copying machine to make the preselected number of copies of the document. The feeder automatically compensates for advancing different size and thickness of sheets so the individual sheets of a document stack to be fed may include sheets of widely differing



size and thickness. The pages of the document stack are fed in numerical order to the copying station and are stacked after exposure in the same numerical order. After the last page of the document is removed from the copying station, the feeder again advances the first page of the document to the copying station automatically if another copy of the document is to be made. The succeeding pages are then fed in numerical order to the copying station and the second copy of the document is made by the copying machine. The operation is continued until the selected number of copies of the document have been made and the feeder is shut off. The copies are delivered from the copying machine in numerical order since the document pages are always maintained in the order in which they are loaded into the feeder and consequently do not have to be collated.

3,499,711
PASSIVE-AUTOMATIC RANGE FINDER
Sidney C. Argyle, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Apr. 16, 1962, Ser. No. 188,924
Int. Cl. G01c 3/08
U.S. Cl. 356—5 13 Claims



1. A range finder, comprising:
first means for receiving radiation along a first path from a target, the range of which is to be determined;
second means for receiving radiation from the target along a second path different from the first path;

a radiation chopper disposed to receive radiation from the first and from the second means, the radiation from the first and second means being focused at the same point on the chopper when the target is at infinity;

radiation sensitive means for receiving the radiation from the chopper and converting it into corresponding electric siganls; and

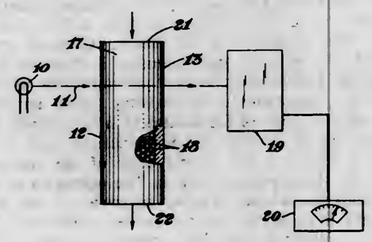
phase detection means fed by the signals from the radiation sensitive means whereby the phase of the signals obtained is representative of the range of the target.

3,499,712

REFRACTIVE INDEX ANALYZER USING SEVERAL LIQUID-SOLID INTERFACES

Sherman Kottle and Bert O. Day, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 27, 1968, Ser. No. 708,678
Int. Cl. G01n *21/46, 21/22*
U.S. Cl. 356—128 7 Claims



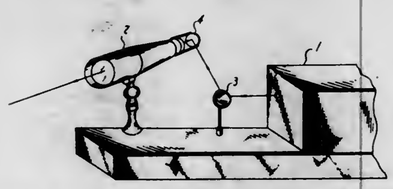
The present invention relates to an apparatus and method for analyzing liquids, particularly useful in measuring refractive index of liquids or mixtures of liquids, comprising a light radiation source, a photodetector and a sample liquid holder interposed therebetween having a transparent reservoir for the liquid being analyzed which contains a transparent structure which provides at least several liquid-solid interfaces when liquid is placed in the reservoir.

3,499,713

LASER COMMUNICATION DEVICE

Michiaki Ito, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed June 13, 1966, Ser. No. 557,050
Claims priority, application Japan, July 8, 1965, 40/41,013
Int. Cl. G01f *11/26*; G01c *1/00*; G02f *23/02*
U.S. Cl. 356—138 3 Claims



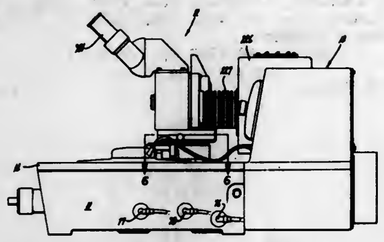
A laser communication device including a transmitter firmly fixed in position, and a collimator, typically an inverted Galilean telescope, pivotally mounted to assure arbitrary adjustment of beam direction. Two mirrors are provided optically disposed between the transmitter and collimator for aligning the laser beam. One mirror is located on the axis of the laser, and the other along the axis of the collimator. Both mirrors are pivotally mounted for attitude adjustment.

3,499,714

MASK ALIGNMENT APPARATUS

Hans Albert Schellenberg, Menlo Park, Calif., assignor to Electroglas Inc., Menlo Park, Calif., a corporation of California

Filed Oct. 13, 1966, Ser. No. 586,560
Int. Cl. G01j *3/04*
U.S. Cl. 356—138 26 Claims



Mask alignment apparatus for aligning a wafer and a mask for carrying out operations on the mask in which the wafer is positioned and then moved onto a vacuum chuck assembly for exposure through the mask.

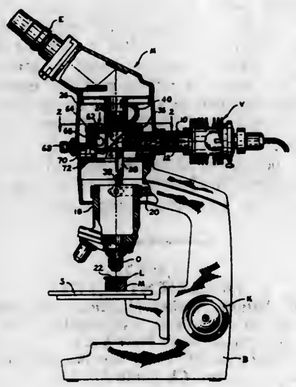
This invention relates to a mask alignment apparatus and particularly to a mask alignment apparatus for use in making semiconductor devices.

3,499,715

RADIUS MEASURING MICROSCOPE

Donald H. Hansen, Williamsville, and William E. Baumgartner, Buffalo, N.Y., assignors to American Optical Company, Southbridge, Mass., a corporation of Delaware

Filed May 4, 1967, Ser. No. 636,184
Int. Cl. G01b *11/02*
U.S. Cl. 356—171 10 Claims



A microscope for measuring the radius of surface curvature of a lens or similar specimen. An adjustable radius

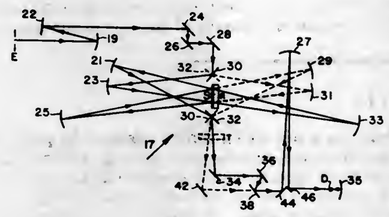
indicating scale is incorporated in the microscope system together with means for forming an image of the scale in the field of an eyepiece thereof.

3,499,716

WIDE RANGE ABSOLUTE REFLECTOMETER

Harold E. Bennett, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Continuation of application Ser. No. 78,791, Dec. 27, 1960. This application May 27, 1966, Ser. No. 560,037
Int. Cl. G01n *21/48, 21/16*
U.S. Cl. 356—209 3 Claims



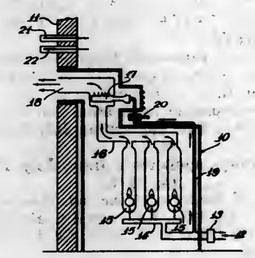
An instrument for measuring reflectance in the infrared as well as the visible spectrum comprising a system of plane and spherical mirrors, which twice images the exit pupil rather than the exit slit of a monochromator on the sample surface, including a pair of identical, or substantially identical, spherical mirrors positioned symmetrically with respect to the sample surface, each mirror of the pair having a radius of curvature whose center of curvature is at the sample surface, with provision for, in effect, optically interchanging the positions of the pair of mirrors.

3,499,717

METHOD AND APPARATUS FOR AVOIDING EXHAUST PLUMES

Robert B. Rosenberg, Evergreen Park, and Sanford A. Weil and William R. Staats, Chicago, Ill., assignors to Institute of Gas Technology, a nonprofit corporation of Illinois

Continuation-in-part of application Ser. No. 609,390, Jan. 16, 1967. This application Nov. 26, 1968, Ser. No. 784,524
Int. Cl. F23j *15/00*
U.S. Cl. 431—2 14 Claims



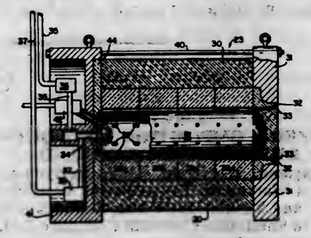
A method and apparatus for avoiding the formation of an exhaust plume when flue gases containing gaseous water are introduced to the atmosphere by raising the enthalpy or heat content of the flue gases, before introducing them to the atmosphere, to a level at which the gaseous water will not condense, regardless of the particular mixture between the flue gases and the atmosphere.

3,499,718

STEADY INTENSITY INCANDESCENT LIGHT SOURCE

Stanley Lehrer, Pompton Lakes, N.J., assignor to Astrosystems International, Inc.

Filed Nov. 3, 1967, Ser. No. 686,365
Int. Cl. F23m *1/00, 9/00*
U.S. Cl. 431—4 10 Claims



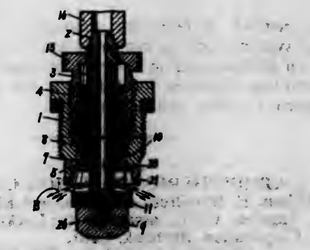
Combustion temperatures are increased and light output enhanced and maintained at uniform intensity in a tubular combustion chamber by having the burning gases flow around a rod inside the chamber as the gases pass to an exhaust nozzle. The tubular chamber is formed in segments which are structurally supported by a surrounding and coaxial tube. The rod in its preferred construction is hollow and its wall perforated with a multiplicity of apertures. In solid rod embodiments either the rod is tapered and longitudinally moveable in the chamber or the flow rate of gases is controlled to increase with time during illumination.

3,499,719

FLAME REGULATION VALVE COMBINED WITH FILL VALVE FOR LIQUEFIED GAS LIGHTER

Seiichi Kitabayashi, 2—2381, Nishisugamo, Toshima-ku, Tokyo, Japan

Filed Mar. 28, 1968, Ser. No. 716,840
Claims priority, application Japan, Mar. 29, 1967, 42/19,666; Apr. 6, 1967, 42/22,183
Int. Cl. F23d *13/04*
U.S. Cl. 431—344 1 Claim

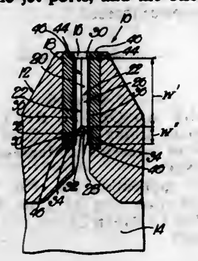


The present valves are attachable to the fuel reservoir of liquefied gas lighters and provide for flame regulation

as well as fill valves for adding fuel to said fuel reservoirs and exhausting gas in said reservoir before or during the filling of the reservoir with fuel.

3,499,720
PORT-FORMING RIBBON ASSEMBLY AND RIBBONS THEREOF
John H. Flynn, 234 Elk Ave., New Rochelle, N.Y. 10802
Filed July 23, 1968, Ser. No. 746,967
Int. Cl. A01n 9/20; A61k 27/00; A61l 13/00
U.S. Cl. 431—349 14 Claims

Mounted in a slot in a fluid manifold are two complemental longitudinal ribbons which form jet ports for the discharge of fluid in jet form. The ribbons are in side-by-side abutment with each other, and each ribbon is in the form of a flat metal strip with longitudinally-spaced transverse corrugations and a side margin offset from the plane of the strip, of which the corrugations in both ribbons are aligned to form the jet ports, and the offset side margins



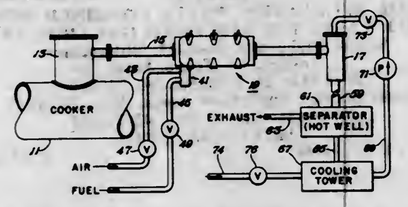
of these ribbons form mounting and sealing skirts bearing against the opposite sidewalls of the slot in the manifold.

CHEMICAL

3,499,721
STABILIZED COMPOSITION OF p-QUINONE-DIHALOIMINE COMPOUND
Hiroshi Sugiyama, Ashiya-shi, Ryozo Kuriyama, Ibaraki-shi, Otohei Matumoto, Toyonaka-shi, Kunihiko Imada, Sakai-shi, and Yoshio Matsushita, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Aug. 17, 1966, Ser. No. 572,913
Claims priority, application Japan, Aug. 13, 1965, 40/50,817, 40/50,818
Int. Cl. D06p 1/32, 3/08
U.S. Cl. 8—32 6 Claims

A p-quinonedihaloimine is stabilized with an alkali metal phosphate or acetate buffer agent.

3,499,722
METHOD OF REMOVING ATMOSPHERE POLLUTING ODORS FROM RENDERING OR SIMILAR OPERATIONS
Howard S. Ashley, 1905 Homan Ave., Fort Worth, Tex. 76106, David W. Ashley, Sr., and Howard J. Ashley, executors of said Howard S. Ashley, deceased
Filed Feb. 25, 1966, Ser. No. 530,046
Int. Cl. B01d 53/00
U.S. Cl. 23—2 10 Claims



A method of removing atmosphere polluting odors from systems such as rendering operations by introducing an oxidant and in selected instances a fuel into a combustion chamber located in a low pressure region between a cooker and a condenser.

3,499,723
ATMOSPHERIC POLLUTION CONTROL
William F. Hamilton, Altadena, and Eli Simon, Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 4, 1967, Ser. No. 636,056
Int. Cl. B01d 47/00; C09k 3/30
U.S. Cl. 23—4 2 Claims

Atmospheric pollution such as is commonly referred to as "smog" within areas illuminated by visible light can be reduced to levels which can be tolerated by plants and animals, including humans, by placing within the air within such an area an iodide compound. The compound may be placed in the air by being sprayed from a solution so as to form a mist. Preferably, the solution used is an iodide solution which has been chemically stabilized so that it will not deteriorate prior to its being used, containing compounds which are volatile under normal atmospheric conditions. Such a solution may be of an aerosol type.

3,499,724
METHOD OF BRINE TREATMENT FOR REMOVAL OF IMPURITIES
Arvel O. Franz, Cartersville, Ga., assignor to Chemical Products Corporation, Cartersville, Ga., a corporation of Georgia
No Drawing. Filed May 23, 1968, Ser. No. 731,638
Int. Cl. C01d 3/16
U.S. Cl. 23—42 10 Claims

A process for treating brines to remove impurities, and in particular sulfates, comprising flocculating a suspension of a high surface area, high reactive barium carbonate which has been deflocculated with a phosphate deflocculant, by adding a small quantity of hot brine to the suspension. The resultant flocculated barium carbonate slurry is added to the brine to be treated whereby the barium carbonate reacts with sulfate impurities present in the brine to produce a rapid settling barium sulfate precipitate. The barium sulfate precipitate acts as a getter, removing trace element impurities present in the brine.

3,499,725
METHOD OF PROCESSING KAINITE ORES THROUGH INTERMEDIATE FORMATION OF LANGBEINITE
Alberto Scarfi and Emanuele Gugliotta, Siracusa, Italy, assignors to SINCAT-Societa Industriale Catanese S.p.A., Milan, Italy, a corporation of Italy
Continuation-in-part of application Ser. No. 295,793, July 17, 1963. This application July 7, 1967, Ser. No. 651,823
Claims priority, application Italy, July 17, 1962, 14,395/62
The portion of the term of the patent subsequent to Dec. 10, 1985, has been disclaimed
Int. Cl. C01d 5/12, 3/08; C01f 5/40
U.S. Cl. 23—38 13 Claims

A process for producing potassium chloride and at least one salt from the group of schoenite, leonite and magnesium sulfate hydrate wherein kainite is treated with a brine containing magnesium chloride at a temperature between 90° C. and 115° C. to produce a langbenite slurry,

the slurry is cooled at a temperature between 40° C. and 20° C. to precipitate the desired potassium or magnesium salt from a final brine in equilibrium therewith, and the composition of the initial brine is adjusted for the production of potassium chloride and schoenite or leonite and for the production of potassium chloride and magnesium sulfate hydrate containing substantially 6 to 7 molecules of water per molecule of magnesium sulfate by either establishing the concentration of magnesium chloride in the final brine in equilibrium with the recovered salts at 43 to 52 moles per 1000 moles H_2O and saturation by potassium chloride, by maintaining the initial brine composition at 5 to 40 moles of magnesium chloride and at least 2 moles K_2Cl_2 per 1000 moles H_2O, or by establishing the concentration of magnesium chloride in the final brine in equilibrium with the recovered salts at 52 to 65 moles per 1000 moles H_2O and saturation by potassium chloride and magnesium sulfate, by maintaining an initial brine composition containing 10 to 50 moles magnesium chloride per 1000 moles H_2O.

3,499,726
MANUFACTURE OF CALCIUM CYANAMIDE
Kurt Scheinost, Tacherting, Germany, assignor to Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft, Trostberg, Germany
No Drawing. Filed Feb. 15, 1968, Ser. No. 705,620
Claims priority, application Germany, Feb. 17, 1967, S 108,386; Jan. 12, 1968, S 113,704
Int. Cl. C01c 3/18
U.S. Cl. 23—78 12 Claims

Calcium cyanamide is prepared from calcium oxide and urea at temperatures above 400° C. in the presence of a substance, such as carbon monoxide, which reacts with the water formed in the reaction.

3,499,727
PROCESS AND EQUIPMENT FOR PREPARING ^{14}C-LABELLED ALKALI METAL CYANIDES
Dezső Bánfi, Sándor Mlinkó, and Tivadar Paizgyl, Budapest, Hungary, assignors to MEDIMPEX Gyogyszerkulkereskedelmi Vallalat, Budapest, Hungary
Filed Aug. 30, 1966, Ser. No. 576,088
Int. Cl. C01c 3/10; C07b 23/00
U.S. Cl. 23—79 1 Claim

1. A process for preparing alkali-metal cyanides labelled with C–14 isotope, comprising the steps of thermally decomposing $Ba^{14}CO_3$ in a hydrogen stream at a temperature exceeding 720° C., in the presence of a compound selected from the group consisting of SiO_2, GeO_2 and a mixture thereof, transforming the carbon oxides being formed through methane, in the presence of hydrogen and ammonia, over a catalyst to hydrogen cyanide labelled with C–14 isotope, absorbing said hydrogen cyanide in an alcoholic solution of an alkali-metal hydroxide, evaporating the solution obtained, and extracting the thus-formed alkali-metal cyanide labelled with C–14 isotope with liquid ammonia.

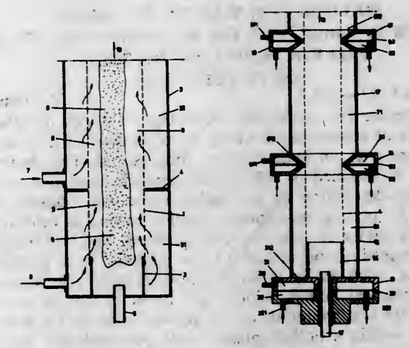
3,499,728
PROCESS FOR THE MANUFACTURE OF HYDROXYL-AMMONIUM-SALTS
Hans Zirngibl, Duisburg, Heinz Heine, Krefeld-Uerdingen, and Rudolf Gerken, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 29, 1966, Ser. No. 597,520
Claims priority, application Germany, Dec. 4, 1965, F 47,846
Int. Cl. C01c 1/28
U.S. Cl. 23—117 5 Claims

Process for the production of hydroxyl-ammonium-salts by the reduction of nitric oxide with hydrogen in an aqueous mineral acid solution with a noble metal catalyst, said reduction being performed in the presence of an inert organic substance reducing the solubility of the hydroxyl ammonium salt formed in said aqueous mineral acid solution.

3,499,729
MANUFACTURE OF PHOSPHORIC ACID
Richard M. O. Maunsell, Toronto, Ontario, Canada, assignor to Electric Reduction Company of Canada, Ltd., Toronto, Ontario, Canada
Filed May 17, 1967, Ser. No. 639,189
Claims priority, application Great Britain, Sept. 27, 1966, 43,157/66
Int. Cl. C01b 25/18, 25/22; B01d 3/00
U.S. Cl. 23—165 19 Claims

A process for preparing purified concentrated phosphoric acid wherein dilute WPA is heated in a distillation vessel to a temperature sufficient to volatilize P_2O_5 and water, thereby forming an aerosol, with the liquid product acid being recovered from the aerosol is improved by transferring effluent from the distillation vessel to a separation vessel in which solids are separated from residual impure acids, and then recycling the liquid phase in the separation vessel to the distillation vessel.

3,499,730
PROCESS FOR PRODUCING TITANIUM DIOXIDE BY THE VAPOR PHASE OXIDATION OF TITANIUM TETRACHLORIDE
Pierre J. Portes, Robert Jean Mas, and Jacques Hugues Richard, Thann, France, assignors to Fabriques de Produits Chimiques de Thann et de Mulhouse, a company
Filed July 29, 1966, Ser. No. 568,928
Claims priority, application France, Aug. 3, 1965, 27,016
Int. Cl. C01g 23/04
U.S. Cl. 23—202 4 Claims



Process for producing a metal oxide and which comprises oxidizing in the vapor phase a metal halide with an oxidizing gas and a combustible gas, surrounding a thin, foraminous walled zone having a wall from about 0.05 mm. to 4 mm. in thickness and restricting the resulting combustion reaction to a confined space containing a central flame by surrounding said space with a thick barrier layer of gas and sustaining the combustion reaction flame by means of an auxiliary flame invariably

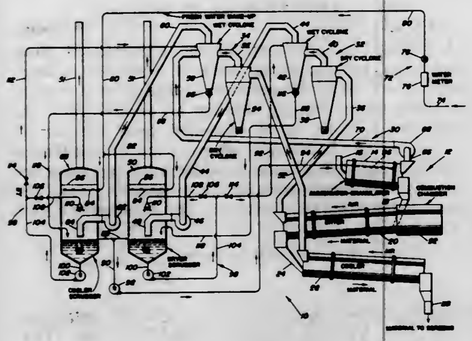
laterally opposing the central flame but keeping the auxiliary flame away from the foraminous wall. Apparatus for carrying out this product is also disclosed.

3,499,731

HIGH EFFICIENCY DISCHARGE CONTROL SYSTEM FOR A CHEMICAL PROCESSING PLANT

Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21206

Filed Feb. 16, 1967, Ser. No. 616,511
Int. Cl. B01j *2/00*; B04c *9/00*; B01d *47/00*
U.S. Cl. 23—259.1 3 Claims



A fully implemented control system for preventing the discharge of obnoxious wastes from plants such as those of the ammonium phosphate fertilizer types. The problem that the wastes are of different vapors and dusts in differing combinations is solved by the use of regenerating combinations of dry and wet cyclones and scrubbers taking into account that certain effluents are at elevated temperature.

3,499,732

METHOD FOR MAKING DIAMOND

Donald R. Garrett, 9742 Ebb St., Houston, Tex. 77034

Filed Feb. 26, 1968, Ser. No. 708,331
Int. Cl. C01b *31/06*
U.S. Cl. 23—209.1 4 Claims

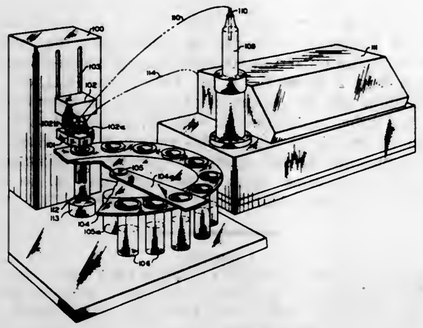
A device for artificially producing diamonds or other articles of substantial hardness by utilization of heat and pressure over an instantaneous time period. The device, which is designed to achieve the requisite heat and pressure by detonation in an implosive manner, consists of two (2) mating hemispheric bodies having a centrally interior cavity of spherical configuration. The two bodies are adapted to be affixed to one another in a positive manner, such as by internal screw threads. The hollow hemispherical bodies, which may be of bronze or other relatively soft material, are suspended such as by nylon string, within a hollow plastic shell. An explosive material is positioned about the exterior surface of the shell in an even and uniform manner with a plurality of detonators operatively connected to the explosive at appropriately spaced positions. An ignition harness is connected to the detonators so that they may all be actuated in a simultaneous manner. The material which is to be transformed, such as graphite or other carbonaceous matter, is disposed in the cavity of the bodies and upon detonation of the explosive there is created extreme inwardly directed pressures and temperatures which transform the carbonaceous material into stable diamond.

3,499,733

AUTOMATIC TITRATOR

Merlin D. Abbott and James C. Word, Jr., Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,644
Int. Cl. G01n *33/00*, *31/00*; B01k *3/00*
U.S. Cl. 23—253 4 Claims



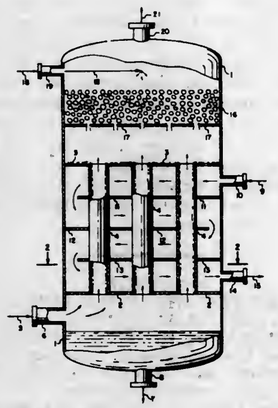
An improved circuit for an automatic titrator which provides a time delay between the point when the electrodes are inserted within the reaction cell and the point when the titrant dispensing is begun to provide for an initial pH reading of the solution within the reaction cell.

3,499,734

APPARATUS FOR NITROGEN OXIDES ABSORPTION TO PRODUCE CONCENTRATED NITRIC ACID

Daniel J. Newman, Jackson Heights, N.Y., and Jorge M. Matta, London, England, assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 5, 1967, Ser. No. 608,949
Int. Cl. C01b *21/40*; F28c *3/06*
U.S. Cl. 23—283 14 Claims



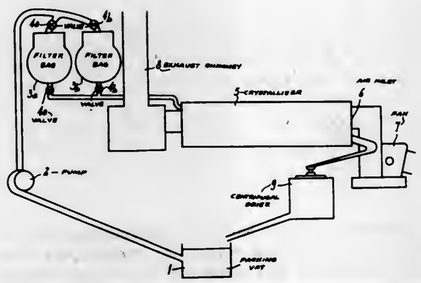
An apparatus is provided for the absorption of nitrogen oxides from a gas stream into an aqueous absorbent solution to form nitric acid, in which re-oxidation of nitric oxide also takes place. The apparatus is provided with a lower combination heat exchanger-absorber section in which the simultaneous absorption of nitrogen dioxide, re-oxidation of nitric oxide, and cooling of the liquid phase takes place. Two or more heat exchanger sections may be provided in series. A gas-liquid contact section such as a packed section or a plurality of perforated trays is provided above the heat exchanger sections. The feed gas stream containing nitrogen oxides and excess free oxygen is passed into the apparatus below the heat exchanger sections, while the aqueous absorbent solution in admitted above the upper gas-liquid contact section.

3,499,735

TREATMENT OF SILICON-STEEL PICKLING BATHS

Henri Marcel Robert, Saint-Chely d'Apcher, France, assignor to Compagnie des Ateliers et Forges de la Loire, St. Chamond-Firminy, St. Etienne-Jacob Holtzer

Filed Feb. 8, 1966, Ser. No. 525,938
Int. Cl. C01b *17/19*; C01g *49/14*; C23g *1/36*
U.S. Cl. 23—299 4 Claims



A process for the treatment of sulfuric acid containing liquor resulting from a silicon-steel pickling bath, for the purpose of recovering iron sulfate therefrom and to enable the recycling of the acid treating liquor, the improvement according to which the residual liquor coming from the baths used for the pickling of the silicon steel and containing hydrated silica is first passed through a filtering means which is a textile cloth of polyester fibers formed from terephthalic acid and ethylene glycol whereby the hydrated silica is separated in the form of a gel, said residual liquor being maintained at substantially the same temperature as that at which it leaves the pickling bath, and then in a subsequent step separating the iron sulfate present in the residual liquor by crystallization by cooling, followed by drying and recovering the pickling liquor in order to recycle it to the bath utilized for the treatment of the silicon steel.

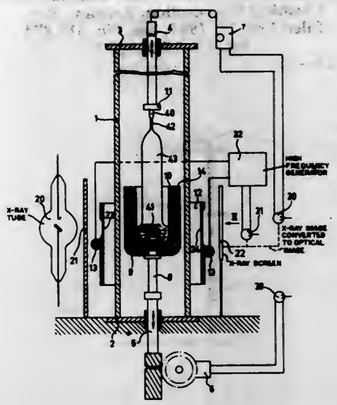
3,499,736

X-RAY OR GAMMA RAY USE IN CONTROL OF CRYSTAL DIAMETER

Gooltzen Zwanenburg, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 5, 1966, Ser. No. 584,584
Claims priority, application Netherlands, Oct. 6, 1965, 6512921
Int. Cl. B01j *17/20*
U.S. Cl. 23—301 4 Claims

1. A method of pulling crystals from a melt in a crucible, in which the diameter of the growing crystal is controlled, characterized in that the diameter of the growing portion of the crystal is controlled responsive to X-rays or gamma radiation passing through the wall of



the crucible and the grown crystal containing information of the diametral extent of the grown crystal.

3,499,737

METHOD AND APPARATUS FOR SPARGING CHLORINE INTO A REACTOR FOR PRODUCING CYANOGEN CHLORIDE

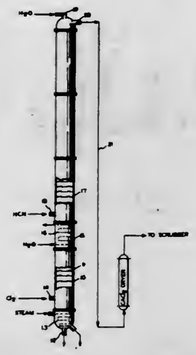
William S. Durrell and Yelagondahally S. Suryanarayana, Mobile, Ala., assignors to Geigy Chemical Corporation, Ardsley, N.Y.

Continuation-in-part of application Ser. No. 608,129, Jan. 9, 1967. This application Feb. 20, 1968, Ser. No. 712,320
Int. Cl. C01c *3/00*; B01f *3/04*
U.S. Cl. 23—359 3 Claims



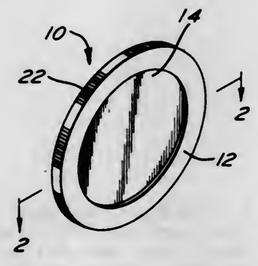
A sparger, for example of fritted glass, is positioned in the bottom of a reactor flooded with an aqueous reaction medium which is about 20% HCl and chlorine is sparged into the reaction medium through the sparger while hydrogen cyanide is fed into the reactor to produce cyanogen chloride. Heat is extracted from the reactor during the reaction, and cyanogen chloride is taken off the top of the reactor while hydrochloric acid at about 20% concentration is taken off the bottom of the reactor.

3,499,738
METHOD AND APPARATUS FOR PRODUCING CYANOGEN CHLORIDE USING A MODIFIED OLDERSHAW REACTION COLUMN
William J. Evers, Mobile, Ala., assignor to Geigy Chemical Corporation, Ardsley, N.Y.
Filed Feb. 17, 1967, Ser. No. 616,874
Int. Cl. C01c 3/00
U.S. Cl. 23—359 4 Claims



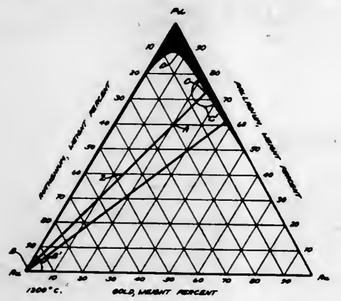
An Oldershaw or perforated plate reaction column is modified by providing a cooling section in the lower middle of the column and a steam boiler in the bottom thereof, and chlorine is fed into the column below the cooling section and hydrogen cyanide is fed in just above the cooling section, while water or low concentration aqueous hydrochloric acid is fed into the top of the column. The heat of reaction is removed by the cooling section, cyanogen chloride is taken off the top of the column as a gas. The by-product aqueous hydrochloric acid is removed from the bottom of the column at concentrations up to 23%.

3,499,739
BIMETALLIC TOKEN WITH ANNULAR RING HAVING DIFFERENT PERMEABILITY THAN INNER PORTION
Joseph M. Segel, Merion, Pa., assignor to The Franklin Mint, Inc., Yeadon, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1966, Ser. No. 545,728
Int. Cl. B21k 1/76
U.S. Cl. 29—191 7 Claims



A bimetallic token is comprised of an inner disk joined to an outer annular ring. The disk and ring are comprised of different metallic materials having different magnetic properties in order to permit rapid and accurate authentication of the token. The depth of the ring is greater than the depth of the disk to insure that a raised design on the disk will not hinder stacking of the tokens. The depth difference of the disk and ring also functions to effectively conceal the disk-ring junction.

3,499,740
OXIDATION RESISTANT COATED ARTICLE CONTAINING IRIDIUM, RUTHENIUM, MOLYBDENUM OR TUNGSTEN
David Wade Rhys, Gerrards Cross, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,821
Claims priority, application Great Britain, Oct. 26, 1965, 45,306/65
Int. Cl. B23p 3/00, 3/20, 3/10
U.S. Cl. 29—198 17 Claims



Coated metal article has body and coating of different compositions which are resistant to interdiffusion at elevated temperatures and which are single-phase conjugate compositions falling at opposite terminals of an alloy tie line on a ternary metallurgical system diagram having gold at one apex, palladium or platinum at a second apex and ruthenium, iridium, tungsten or molybdenum at the third apex.

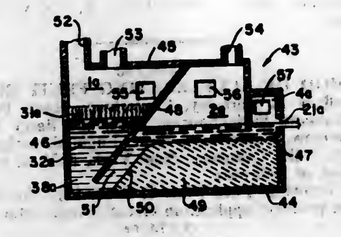
3,499,741
POUR DEPRESSANT COMPOSITION
William M. Sweeney, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 12, 1966, Ser. No. 571,970
Int. Cl. C10l 1/16
U.S. Cl. 44—62 5 Claims

Pour point of middle distillate oil is improved by adding an amorphous thermally cracked ethylene-propylene-nonconjugated diene terpolymer.

3,499,742
SMOKE SUPPRESSANT FUEL COMPOSITION
Doris Kivelevich and James G. Dadura, Fishkill, and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 22, 1967, Ser. No. 647,949
Int. Cl. C10l 1/18, 1/24
U.S. Cl. 44—76 11 Claims

There is disclosed a smoke inhibited diesel fuel composition comprising a hydrocarbon distillate fuel containing smoke suppressing amounts of a calcium alkylphenolate or sulfurized calcium alkylphenolate overbased with calcium 2-methoxyethoxide alone or with calcium hydroxide-2-methoxy-ethoxide. There is also disclosed a method of operating a diesel engine using the smoke suppressing additive combination.

3,499,743
METHOD AND APPARATUS FOR THE MANUFACTURE OF GLASS UTILIZING FLOATING MOLTEN ALKALI METAL SULFATE
Louis Fanica, Sceaux, and Andre H. Pons, Bourg-la-Reine, France, assignors to Compagnie de Saint-Gobain
Filed May 5, 1967, Ser. No. 636,410
Claims priority, application France, May 17, 1966, 61,915
Int. Cl. C03b 5/00
U.S. Cl. 65—27 5 Claims



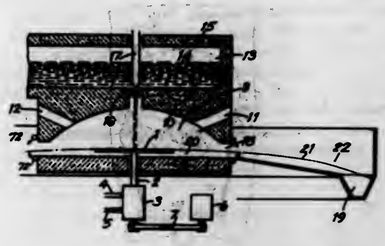
A supernatant layer of a molten alkali metal sulfate floats in direct contact with the surface of a bath of molten glass in a furnace and is essentially insoluble in the molten glass. A mixture of raw batch glass making materials is deposited on the surface of the layer, and newly formed molten glass is withdrawn from beneath the layer from the bottom of the furnace.

3,499,744
SECURING METAL BRACKETS TO GLASS
Richard J. Tolliver, Greensburg, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 2, 1966, Ser. No. 591,440
Int. Cl. C03c 27/00
U.S. Cl. 65—43 4 Claims

Adhering a metal bracket suitable for supporting a rear view mirror to a surface of a curved glass sheet by using the residual heat of bending to help adhere an adhesive coated surface of the metal bracket to said sheet.

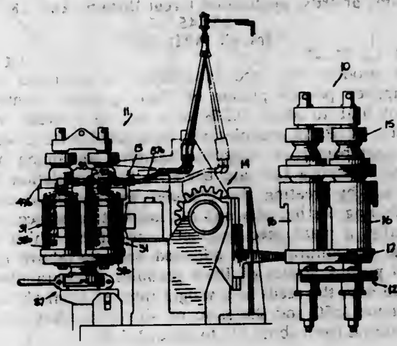
3,499,745
METHOD AND APPARATUS FOR MANUFACTURING SMALL BEADS BY CENTRIFUGAL ACTION
Emile Plumat, Gilly, Belgium, assignor to Glaverbel, S.A., Watermael-Boitsfort, Belgium
Continuation-in-part of application Ser. No. 449,490, Apr. 20, 1965. This application Feb. 21, 1968, Ser. No. 711,152
Claims priority, application Luxembourg, Apr. 21, 1964, 45,921
Int. Cl. C03b 19/10
U.S. Cl. 65—21 13 Claims

A method and apparatus for producing tiny spherical beads by applying molten glass to at least one surface of a rotating centrifugal member, permitting the molten glass to spread out in the form of a film, which flows outwardly under the influence of centrifugal force so as to be dispersed from the periphery of the member into tiny particles, and maintaining a hot zone containing at least that portion of the centrifugal member surface which is contacted by the material and a finite region through which the particles travel after dispersal, such that the hot zone is at a temperature sufficient to maintain this surface part and this region above the melting point of the material. Thus the glass is maintained at a temperature substantially above its melting point as it travels through space after being expelled from the member for permitting the particles to spherulize under the influence



of surface tension. Also, it is possible to use material other than glasses.

3,499,746
AIR AND WATER COOLING OF GLASSWARE FORMING MACHINES
Vernon L. Blankenship and Marion E. Ertle, Winchester, Ind., assignors to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,509
Int. Cl. C03b 9/38
U.S. Cl. 65—265 1 Claim

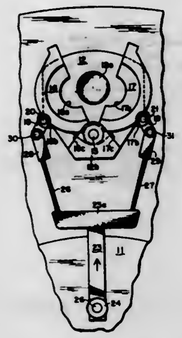


An improved mold design for glass molding machines such as I.S. machines wherein internal cooling passages and ducts are formed inside the mold to receive an airborne cooling mist. A water mist cooling system for parison neck rings may also be provided.

3,499,747
SPLIT MOLD OPERATING AND CLAMPING APPARATUS
Frederick A. Dahlman, Corning, and John F. Scholl, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 11, 1967, Ser. No. 630,115
Int. Cl. C03b 11/00
U.S. Cl. 65—307 6 Claims

An apparatus including elongate spring members of an elastic and resilient material, such as rods, strips, or leaves of such material, is linked to mold halves or sections of a split mold to actuate such halves about a common pivot pin or pintle between open and closed positions. In

the closed position of the mold halves such halves are clamped closed by forces acting substantially directly opposite to each other, such forces being exerted by the elasticity of the spring members.

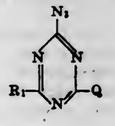


3,499,748
BACTERIA INOCULATED PLASTER OF PARIS AND AGRICULTURAL SEEDS ADMIXED THEREWITH
Margaret Evelyn Fraser, London, England, assignor to Allen & Hanburys Limited, London, England, a British company
No Drawing. Filed Aug. 10, 1966, Ser. No. 571,423
Claims priority, application Great Britain, Aug. 18, 1965, 35,445/65
Int. Cl. A01n *21/02*
U.S. Cl. 71—7 4 Claims

A product for seed inoculation is produced which comprises porous plaster of Paris granules containing about 0.01 to about 0.2% of a setting retarder, which plaster of Paris granules are inoculated with a culture of Azotobacter or Rhizobia bacteria containing a nutrient substance for said bacteria, the inoculation being effected by treating the granules with a liquid culture containing the bacteria and the nutrient substance. Additionally, a plant seed product is produced which comprises agricultural seeds admixed with the above inoculated porous plaster of Paris granules. The granules are mixed with the seeds in a weight ratio of from about 1:2 to about 1:50 and the ratio of size of seeds to size of granules is from about 1:1 to about 1:1.2.

3,499,749
HERBICIDAL TRIAZINYL AZIDES
Erwin Nikles, Allschwil, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Original application Nov. 23, 1964, Ser. No. 413,296, now Patent No. 3,415,827, dated Dec. 10, 1968. Divided and this application Oct. 26, 1967, Ser. No. 705,239
Claims priority, application Switzerland, Nov. 26, 1963, 14,458/63; June 4, 1964, 7,326/64
Int. Cl. A01n *9/12*; C07d *55/50*
U.S. Cl. 71—93 10 Claims

There are provided novel herbicidal compositions which contain as the active principal thereof a compound of the formula,



wherein R_1 is selected from the group consisting of



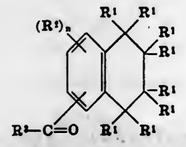
and N_3; wherein A_1 is lower alkyl, loweralkoxyloweralkyl wherein the alkyl moieties contain from 1 to 6 carbon atoms, and cyclohexyl, and A_2 is hydrogen and lower alkyl (C_1–C_6); and Q is selected from the group consisting of chloro, lower alkylthio, loweralkoxy and azido, wherein the loweralkyl moieties contain from 1 to 5 carbon atoms; provided that R_1 and Q are always different.

3,499,750
METHOD OF ACCELERATING FRUIT RIPENING
Geoffrey E. Barnsley, Canterbury, Kent, Peter A. Gabbott, Sittingbourne, Kent, and Barry V. Milborrow, Canterbury, Kent, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 6, 1967, Ser. No. 621,074
Claims priority, application Great Britain, Mar. 4, 1966, 9,574/66
Int. Cl. A01n *5/00*
U.S. Cl. 71—113 5 Claims

Acceleration of fruit-ripening in plants by treating the plants at the time the plant is bearing fruit with 3-methyl-5-(1-hydroxy-4-oxo-2,6,6-trimethyl - 2 - cyclohexen-1-yl)-2,4-pentadienoic acid.

3,499,751
METHOD AND COMPOSITION FOR CONTROLLING WEEDS WITH ACYLATED TETRAHYDRONAPHTHALENE
Thomas F. Wood, Wayne, N.J., and Wilbur F. Evans, Springhouse, Pa., assignors, by direct and mesne assignments, to Givaudan Corporation, Clifton, N.J., a corporation of New Jersey
No Drawing. Filed July 5, 1966, Ser. No. 562,494
Int. Cl. A01n *9/00*; C07c *15/24*
U.S. Cl. 71—123 5 Claims

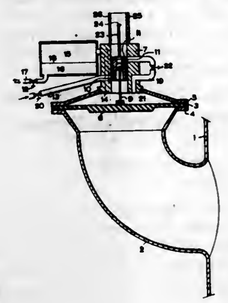
The use of herbicides is disclosed of compounds having the formula:



wherein R^1 is selected from the group consisting of hydrogen and alkyl radicals having from 1 to 5 total carbon atoms with the proviso that at least two of the R^1 radicals must be hydrogen; R^2 is selected from the group consisting of halogen and alkyl radicals having from 1 to 5 total carbon atoms; R^3 is selected from the group consisting of hydrogen and alkyl, alkenyl, alkynyl, cycloalkyl and cycloalkenyl radicals having from 1 to 11 total carbon atoms; and wherein *n* is an integer of 1 to 3.

3,499,752
PROCESS AND APPARATUS FOR PULSATING A LIQUID IN A PULSATION COLUMN
Winfried J. W. Vermije, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed July 22, 1964, Ser. No. 384,395
Claims priority, application Netherlands, July 26, 1963, 295,891
Int. Cl. F01b *31/12*; F01l *21/04*
U.S. Cl. 91—335 12 Claims

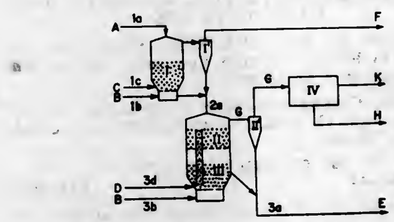
The pulse generator is based upon the resonance of a liquid column in conjunction with a volume of gas which acts as a spring. Oscillations are set up and maintained in the column by the alternate injection and exhaust of gas to and from the gas space. The system of gas valves is triggered by the movement of a diaphragm that separates the gas cushion from the liquid, so that the operating frequency is always the resonant frequency of the gas-liquid combination.



3,499,753
PROCESS FOR THE PREPARATION OF TANTALUM POWDER
Gustav Daendliker, Birsfelden, Switzerland, assignor, by mesne assignments, to Hermann C. Starck Berlin, Berlin, Germany
No Drawing. Filed Jan. 13, 1967, Ser. No. 609,001
Claims priority, application Switzerland, Feb. 2, 1966, 1,438/66
Int. Cl. C22b *51/00*; C22f *1/00*
U.S. Cl. 75—.5 5 Claims

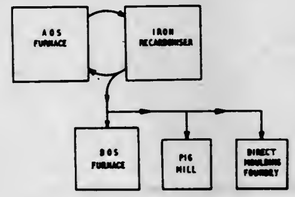
A process for the preparation of tantalum powder by reducing tantalum oxide with carbon in a high vacuum, wherein the reduction is performed in two stages and at temperatures below 2000° C., with the starting material having as far as possible a stoichiometric composition, possibly with a slight carbon excess, and wherein between the first and the second reaction stages the oxygen deficiency is made good by oxidation.

3,499,754
PROCESS FOR PURIFYING PYRITE CINDERS BY REMOVAL OF NONFERROUS METALS
Umberto Colombo, Novara, Itl Mini, Milan, and Giuseppe Stroni, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed June 27, 1967, Ser. No. 649,279
Claims priority, application Italy, June 30, 1966, 19,636/66
Int. Cl. C21b *1/00*; C22b *1/00*
U.S. Cl. 75—1 9 Claims



Described is a process for the purification of pyrite and pyrrhotite cinders for metallurgical utilization, by removal of nonferrous metals such as copper, zinc, lead, gold, silver, nickel, cadmium, cobalt, manganese and recovery thereof. The following sequence of operations is followed: (a) Heating and reduction to magnetite of the cinders by a carbonaceous fuel and air, at temperatures from 600° to 850° C.; (b) chlorination with chlorine and air, in absence of water at 650–950° C. of the hot cinders produced in (a), in a fluid-bed reactor constituted of at least two stages, wherein the chlorinating gas flows in countercurrent with respect to the cinders; and (c) wet removal of the metal chloride vapors with obtainment of aqueous solutions suitable for the recovery of the metals by conventional hydrometallurgical processes.

3,499,755
METHOD FOR THE PRODUCTION OF PIG IRON AND STEEL
David O. Morris, 11 Turnbull St., Merewether, New South Wales, Australia
Filed Jan. 3, 1967, Ser. No. 606,915
Claims priority, application Australia, Jan. 10, 1966, 255/66
Int. Cl. C21b *13/00*; C21c *5/28*, *1/00*
U.S. Cl. 75—46 10 Claims



Apparatus and method essentially involving:

(1) Supplying a charge of liquid pig iron derived from an iron carboniser unit together with added supplements of iron bearing materials and heat producing components such as carbon, silicon, aluminium, metal carbides or metal alloys to a crude oxygen steel furnace.

(2) The oxygen steel furnace may be lined with acid, basic or a neutral furnace lining, an acid oxygen steel furnace being generally preferred.

(3) Crude steel from the crude oxygen steel furnace is returned to the iron carboniser at a temperature between 150–1700° C. where carbon and further supplements of iron bearing materials and heat producing components are added and the cycle repeated resulting in a continuously increased volume of pig iron.

(4) A proportion of the pig iron is periodically drawn off and utilised for conversion to high quality steel or for foundry purposes and the balance recycled again producing pig iron.

3,499,756
RECOVERY OF METALLIC TIN FROM AQUEOUS SOLUTION OF TIN SALT
Edward F. Fitzhugh, Jr., Cleveland Heights, Ohio, and Don C. Seidel, Golden, Colo., assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
No Drawing. Filed Apr. 6, 1967, Ser. No. 628,838
Int. Cl. C22b *25/04*, *3/00*
U.S. Cl. 75—109 9 Claims

This invention comprises a process for the recovery of metallic tin from an aqueous solution containing a tin salt. The tin is precipitated by the addition of metallic

iron to the solution under appropriate temperature and acid conditions. Preferred conditions are a ratio of 2–3.5 moles of iron per mole of contained tin, a pH in the starting solution of 1.4–1.6, and a temperature of at least 100° C.

3,499,757

LOW ALLOY STEEL PLATE CONTAINING COPPER, CHROMOIUM, NICKEL, AND MOLYBDENUM

Louis I. Mandich, Kennet Square, Pa., assignor to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 642,324, May 31, 1967. This application Dec. 20, 1968, Ser. No. 785,730

Int. Cl. C22b *37/10*

U.S. Cl. 75—124 20 Claims

High-strength carbon steel plates in the as-rolled condition. The plates have yield strengths of above 50,000 p.s.i. and tensile strengths of 81,000 p.s.i. or higher. Additionally, they exhibit good toughness, particularly at low temperatures, and are readily weldable. The constituents of the steel plates fall essentially within the following ranges:

Elements:	Percentage by weight
C	0.15–0.25
Mn	1.00–1.50
P (max.)	0.040
S (max.)	0.050
Si	0.15–0.50
Cu	0.01–0.47
Ni	0.05–0.35
Cr	0.05–0.25
Mo	0.01–0.15

The copper, chromium and molybdenum should total at least about 0.2%, but preferably should not exceed 0.6%. The total of nickel and chromium should be at least 0.15% and preferably at least 0.20%. For ⅜-inch plate, the carbon should be 0.15–0.25%, the manganese 1.00–1.20% and the silicon 0.15–0.30%. For 7/16-inch plate, the carbon should be 0.18–0.25%, the managanese 1.10–1.35%, and the silicon the same as for the ⅜-inch plate, the carbon should be 0.18–0.25%, the manganese 0.25%, and the manganese and silicon should be the same as for the 7/16-inch plate. For plates of ¾-inch and above thicknesses the carbon should be 0.20–0.25%, the manganese 1.20–1.50% and the silicon 0.15–0.50%. Normalized plates of essentially the same chemistry exhibit impact strength at —50° F. in excess of 20 foot pounds per standard Charpy V-notch tests.

3,499,758

COLOR OSCILLOGRAPH RECORDING PAPER

Carl E. Johnson and Dewey M. Dumers, Binghamton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,063

Int. Cl. G03c *7/18*

U.S. Cl. 96—22 11 Claims

Multicolor recording paper for recording oscillograph traces in at least three colors comprising, on the flexible support, a hardened silver chlorobromide emulsion, sensitized to green light and containing a magenta color former, a hardened gelatin interlayer, a hardened silver bromoiodide emulsion having high blue sensitivity and containing a cyan color former, and an outer hardened gelatin surface layer.

3,499,759

LIGHT-SENSITIVE REPRODUCTION LAYER COMPRISING AN OXETANE POLYMER

Herbert Maar, Wiesbaden, Hartmut Steppan, Wiesbaden-Dotzheim, Günter Messwarb, Kelkheim, Taunus, and Walter Lüders, Neu-Isenburg, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

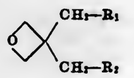
No Drawing. Filed July 3, 1968, Ser. No. 742,189

Claims priority, application Germany, July 6, 1967, K 62,742

Int. Cl. G03c *1/68, 5/00*

U.S. Cl. 96—35.1 23 Claims

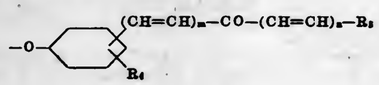
This invention relates to a light-sensitive reproduction layer for use in the preparation of printing forms, photographic copies, relief images, tanned images, and pigment images, which layer comprises at least one homopolymer or copolymer of an oxetane of the following general formula



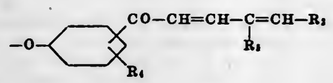
(I)

in which:

R_1 is one of the following groups:



and



R_2 is hydrogen, halogen, or an alkyl, alkoxy or aryloxy group, or the group R_1,

R_3 is a carbocyclic or heterocyclic aromatic group linked through a carbon atom of the ring,

R_4 is hydrogen, halogen, or an alkyl or alkoxy group,

R_5 is chlorine or a phenyl group,

m is 0 or 1, and

n is 0 or an integer from 1 to 4.

The co-monomer may be at least one non-light-sensitive oxirane, oxetane, or oxolane compound, which may be substituted, if desired.

3,499,760

DIAZOTYPE PHOTOPRINTING MATERIALS AND METHODS OF USE

Luigi Amariti and Hartwell L. Briggs, Chicago, Ill., assignors to Eugene Dietzgen Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 487,043, Sept. 13, 1965. This application May 2, 1968, Ser. No. 726,196

Int. Cl. G03c *1/58, 5/34*

U.S. Cl. 96—49 11 Claims

Heat developable diazotype photoprinting compositions in which a coupler is used containing an enolate structure. The system is able to couple under the influence of heat without requiring the use of alkaline solutions or vapors or alkaline generating compounds.

3,499,761

SILVER HALIDE EMULSIONS CONTAINING ALKYL ESTERS OF BENZIMIDAZOLE CARBAMIC ACID ANTIFOGGING AGENTS

Fritz Dersch, Binghamton, and Sally L. Paniccia, Endwell, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,963

Int. Cl. G03c *1/34, 5/30*

U.S. Cl. 96—66.5 17 Claims

A light sensitive photographic material comprising a silver halide emulsion and an anti-foggant compound contained therein, or in a layer contiguous therewith; the anti-foggant being an alkyl ester of benzimidazole carbamic acid.

3,499,762

PHOTOGRAPHIC ELEMENTS COMPRISING NOVEL U.V.-ABSORBING OPTICAL BRIGHTENING AGENTS

Homer W. J. Creasman and Robert J. Tuite, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,688

Int. Cl. G03c *1/92, 1/84*

U.S. Cl. 96—82 13 Claims

2-(nuclear substituted benzoxazolyl)-5-(nuclear substituted benzoxazolyl)thiophenes and 2-(nuclear substituted benzoxazolyl)-5-(nuclear substituted benzoxazolyl)thiazoles in which the benzene ring in each benzoxazolyl group has from two to four alkyl groups, are advantageously incorporated in at least one film-forming layer of a light-sensitive photographic element because these compounds are excellent ultraviolet-absorbing brightening agents that are characterized by being unexpectedly stable to prolonged exposure to radiation.

3,499,763

BIS PHENOLS AS HIGH OPACITY DIAZOTYPE COUPLERS

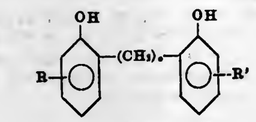
Nicholas J. Clecak, San Jose, and Robert J. Cox, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed May 1, 1967, Ser. No. 634,862

Int. Cl. G03c *1/58, 5/34;* C07c *39/16*

U.S. Cl. 96—91 6 Claims

This application discloses, for use as azo couplers, for diazotype materials, phenolic compounds of the formula:



wherein n is 1–3 and wherein R and R' are selected from the group consisting of hydrogen, lower alkyl, and halogen.

3,499,764

SILVER HALIDE COMPOSITIONS STABILIZED WITH PROPIOLIC ACID

Isei Iwai and Yasuo Yura, Tokyo, Yoshimi Kuwabara, Koganei, Tokyo, and Sadao Sagita, Hannou, Japan, assignors to Sankyo Co., Ltd., and Konishiroku Photo Industry Co., Ltd., both of Tokyo, Japan

No Drawing. Filed May 24, 1965, Ser. No. 458,433

Claims priority, application Japan, May 28, 1964, 39/30,179

Int. Cl. G03c *1/34*

U.S. Cl. 96—109 14 Claims

A light-sensitive, photographic silver halide composition containing propiolic acid as a stabilizer.

3,499,765

METHOD OF IMPROVING THE FLAVOR OF BAKED GOODS AND GOODS MADE BY THE METHOD

Andrew T. Leadvay, Oakland, N.J. (2916 Halstead Ave., Richmond, Va. 23235)

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,991

Int. Cl. A21d *15/00;* A23l *1/22*

U.S. Cl. 99—91 9 Claims

When a nutrient composition consisting of a fermented mixture of yeast autolyzate and a carbohydrate and including enough additional carbohydrate to suppress further fermentation is added to dough prior to baking, the resulting baked goods have the characteristic flavor of yeast-leavened baked goods even if prepared without yeast fermentation. Maltol added to the mixture during formation thereof further enhances the flavor of the baked goods.

3,499,766

PROCESS FOR MAKING A PUFFED MULTIPHASED CEREAL PRODUCT

Willard Leslie Vollink and Rudolph K. Scharschmidt, Battle Creek, Mich., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 576,494

Int. Cl. A23l *1/18*

U.S. Cl. 99—81 7 Claims

A process for making a puffed multiphased cereal or snack product having a uniform appearance by co-axially extruding at least two dissimilar dough masses through an extrusion zone wherein the pressure in said zone is gradually relieved prior to extrusion, and then puff-drying the extruded product.

3,499,767

METHODS OF BINDING LARGE PIECES OF POULTRY

Kermit F. Schlamb, Pittsburgh, Pa., assignor, by mesne assignments, to Calgon Corporation, a corporation of Delaware

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,440

Int. Cl. A23l *1/31*

U.S. Cl. 99—107 5 Claims

A method is provided for forming large pieces of poultry from small pieces by the steps of breaking the surface cell structure of said small pieces by mechanical action, adding to said surfaces a water soluble molecularly dehydrated phosphate in the presence of sodium chloride, pressing said slashed and coated surfaces together and cooking said poultry flesh to cause coagulation of water soluble proteins.

3,499,768

COLD-SET MILK DESSERTS AND COMPOSITIONS THEREFOR AND METHOD OF MAKING SAME

Arthur L. Moirano, Mountainside, N.J., assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,857

Int. Cl. A23l *1/04*

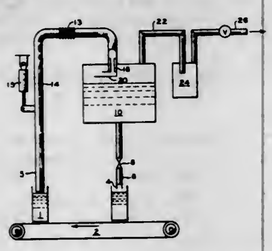
U.S. Cl. 99—139 16 Claims

Carrageenan, of which the lambda fraction constitutes at least 70% has the property of providing a cold-set milk pudding when present therein so as to constitute about 1 to about 6 grams per pint of milk. The pudding properties may be varied by the addition of one or more of spray dried fat, powdered cheese, and a tetra alkali metal pyrophosphate.

3,499,769
PROCESSES FOR PRODUCING STRAWBERRY FLAVOR COMPOSITIONS AND PRODUCTS
Philip deC. Kratz, Rumson, and Louis J. Strasburger, Elizabeth, N.J., assignors to International Flavors and Fragrances, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 14, 1966, Ser. No. 579,228
Int. Cl. A23l *1/22*
U.S. Cl. 99—140 8 Claims

Processes for imparting a fresh fruit flavor, particularly strawberry flavor, to foods by adding a small amount of 2-methyl-2-pentenoic acid, as well as flavoring concentrate compositions and food compositions prepared with such 2-methyl-2-pentenoic acid.

3,499,770
FOAM BREAKING
Eldred E. Robbins, Winston-Salem, N.C., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,599
Int. Cl. B01d *19/02;* B65b *3/22*
U.S. Cl. 99—171 5 Claims



Foam is passed through a cylindrical constriction and directed against a solid plate surface positioned substantially perpendicularly to the line of flow of the impinging foam, at a velocity sufficiently great to break down the foam. The ratio of the distance between the effluent end of the constriction and the solid plate surface to the diameter of the constriction is in the range of 0.25 to 1.

3,499,771
CONTROLLING THE GROWTH OF BACTERIA IN MILK
Carolina Marx de del Pozo, Mexico City, Mexico, assignor to Geusal, S. A. de C. V., Mexico City, Mexico, a corporation of Mexico
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,053
Claims priority, application Mexico, Apr. 15, 1964, 76,708
Int. Cl. A23c *9/08*
U.S. Cl. 99—213 23 Claims

The growth of bacteria in raw milk is controlled by passing it in contact with chloro-bromo dimethyl hydantoin without taking measurable amounts of the chloro-bromo dimethyl hydantoin into solution in the milk.

3,499,772
CERAMIC DIELECTRICS
Shinobu Fujiwara and Kiyoto Kawakami, Akita-ken, Japan, assignors to Tokyo Denki Kagaku Kogyo Kabushiki Kaisha
Continuation-in-part of application Ser. No. 359,131, Apr. 13, 1964. This application Dec. 29, 1967, Ser. No. 694,566
Int. Cl. C04b *35/00, 35/46;* H01b *3/00*
U.S. Cl. 106—39 1 Claim

Ceramic dielectric materials are provided which have high dielectric constants, low temperature coefficients and high Q values. The materials consist essentially of a sintered mixture of 6 to 80% by weight of $SrTiO_3$, 5 to 60% by weight of $CaTiO_3$, and 15 to 34% by weight of $Bi_2O_3 \cdot 2TiO_2$.

3,499,773
SEMICRYSTALLINE CERAMIC BODIES, AND METHOD
Richard W. Petticrew, Perrysburg, and George A. Simmons, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed July 22, 1966, Ser. No. 567,076
Int. Cl. C03b *31/00;* C03c *3/22, 23/00*
U.S. Cl. 106—39 13 Claims

A semicrystalline glass-ceramic article having transparent and opaque areas arranged in a manner such that they impart a decorative effect to the article or form letters, numbers, gradations, and the like, on the article. The article is formed from a thermally crystallizable lithium-alumino-silicate glass and is then subjected to a heat treatment sufficient to convert the glass to a transparent semicrystalline glass-ceramic. Selected portions of the glass-ceramic are then subjected to further heat treatment to convert those portions to an opaque glass-ceramic while the remainder of the glass-ceramic remains transparent.

3,499,774
MERCURY-CONTAINING PHOSPHATE GLASS
Woldemar A. Weyl, University Park, Pa., assignor to Glass Container Industry Research Corporation, New Castle, Pa., a corporation of Ohio
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,680
Int. Cl. C03c *3/12*
U.S. Cl. 106—47 12 Claims

Mercury-containing phosphate glass comprising 5–80% mercury (as HgO), 75–15% phosphorous (as P_2O_5) and at least 5% of a metal of Groups I–II of the Periodic Table, lead or aluminum. The glass may be heated to volatilize mercury and provide products of differing properties.

3,499,775
ULTRAVIOLET-ABSORBING GLASS COMPOSITIONS CONTAINING CERIUM AND MOLYBDENUM OXIDES
Marvin J. Albinak, Wheeling, W. Va., and Warren H. Turner, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed July 1, 1966, Ser. No. 562,330
Int. Cl. C03c *3/24*
U.S. Cl. 106—47 14 Claims

An ultraviolet ray-absorbing glass, such as a soda-lime-silica glass containing from about 0.1 to 5% by weight CeO_2 and from about 0.1 to 5% by weight MoO_3. These two ingredients together impart the improved ultraviolet ray-absorbing properties to the glass.

3,499,776
ALKALI METAL BOROSILICATE GLASS COMPOSITIONS CONTAINING ZIRCONIA
Nils Tryggve E. A. Bask, Ridgefield, Conn., and Charles F. Rapp, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed July 13, 1966, Ser. No. 564,867
Int. Cl. C03c *3/08, 3/30*
U.S. Cl. 106—54 14 Claims

A borosilicate glass composition having high chemical durability, being particularly resistant to attack by alkalis, and which is suitable for use in the pharmaceutical, scientific and biological fields for flasks, beakers, tubing, ampules, antibiotic containers, drug jars, pill bottles, and the like. The glass composition consists essentially of 72–85 mole percent SiO_2, 4–12 mole percent B_2O_3, 1–6 mole percent ZrO_2, and 2.5–7 mole percent R_2O (Na_2O and/or K_2O).

3,499,777
PROCESS FOR PRODUCING SUBSTANTIALLY PURE DEAD BURNED MAGNESIA WITH HIGH DENSITY AND LOW POROSITY HAVING DECREASED EFFECTIVE CRYSTAL SURFACES FOR REFRACTORY OR CERAMIC PURPOSES
Alfred P. Dreyling and Lewis J. Dreyling, East Brunswick, N.J., assignors to Quigley Company, Inc., a corporation of New York
No Drawing. Continuation of application Ser. No. 578,170, Sept. 9, 1966, which is a continuation-in part of application Ser. No. 395,287, Sept. 9, 1964. This application Oct. 24, 1968, Ser. No. 770,401
Int. Cl. C04b *35/04*
U.S. Cl. 106—60 2 Claims

This process comprises the step of thoroughly mixing in fine grain form magnesia-yielding material with three inorganic compounds in fine grain form and of the character to produce boron oxide, iron oxide and phosphoric oxide during calcining and to produce in the end magnesia product after calcining magnesium ferrites, magnesium ortho borates and magnesium ortho phosphates.

3,499,778
DIATOMACEOUS SILICA PIGMENTS AND THE LIKE
Clifford William Cain, Jr., Bound Brook, and Donald Earl Brody, Verona, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Nov. 22, 1966, Ser. No. 596,119
Int. Cl. C09c *1/28*
U.S. Cl. 106—288 9 Claims

A diatomaceous silica flatting agent capable of imparting both a high level of smoothness and a low level of 60 degree gloss and 85 degree sheen to various paints, the flatting agent being characterized by not more than about 5 percent diatomaceous silica coarser than about 10 microns, by at least 80 percent between about 2 and about 10 microns, and not more than about 15 percent smaller than about 2 microns, the particle sizes being the equivalent Stokes diameters obtained by a sedimentation test using the conventional Klein hydrometer technique.

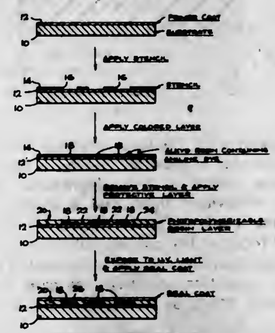
3,499,779
TITANIUM DIOXIDE PIGMENT
Robert K. Mays, Havre de Grace, and Philip Thomas Cloni, Bel Air, Md., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Jan. 26, 1967, Ser. No. 612,035
Int. Cl. C09c *1/28, 1/36*
U.S. Cl. 106—300 2 Claims

The disclosure sets forth a pigment consisting of an amorphous sodium silico aluminate titanium dioxide complex. A disclosed method for obtaining the complex consists of using the thermal hydrolysis or sulfate process of producing titanium dioxide and hydrolyzing the titanyl sulfate in blunge water containing sodium silico aluminate.

3,499,780
METHOD OF MAKING A COATED ALUMINUM REFLECTOR
Theodore L. Etherington and Herbert L. Curry, Hendersonville, N.C., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 6, 1966, Ser. No. 599,390
Int. Cl. G02b *5/08;* B44d *1/34*
U.S. Cl. 117—35 11 Claims

1. The method of making a reflective aluminum article which comprises treating the aluminum article to provide a highly specular reflective surface thereon of at least 80% specular reflectance while removing any oxide coating thereon, immediately applying a coating of a silicate solution on the thus treated surface, and heating the thus applied coating at a temperature of at least about 600° F. for removing substantially all the chemically bound water therefrom for producing a hard, tightly adherent, transparent silicate coating on the specular reflective aluminum surface.

3,499,781
PROCESS FOR PRODUCING MULTIPLE LAYER COLORED COATING USING ACTINIC IRRADIATION
Barbara F. Krueckel, Santa Monica, Calif., assignor to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Continuation-in-part of application Ser. No. 394,393, Sept. 2, 1964. This application Oct. 26, 1967, Ser. No. 678,346
Int. Cl. B41m *1/12;* B44c *1/14*
U.S. Cl. 117—38 14 Claims



Process for color coating of a surface with an organic colorant protected by an overlayer of a photopolymerized resin to obtain rapid curing of such resin and production of a color-fast, non-bleeding and wear-resistant colored coating which is highly adherent to the substrate surface, according to one embodiment, by applying to a substrate surface a clear alkyd resin as a primer, placing a pattern over said primer layer, applying over said pattern a layer of an organic colorant dispersed in an alkyd resin, removing the pattern, and providing a colored image, applying a layer of a clear, photopolymerizable resin, preferably a polyester, containing a photopolymerization catalyst such as benzoin, exposing the last-mentioned layer to actinic, that is, ultraviolet, light to polymerize the polyester, and, where such last-mentioned polymerization takes place in the presence of oxygen or air, preferably applying a seal coat containing a polyester and a suitable catalyst, and curing to produce a hard substantially non-tacky top coat.

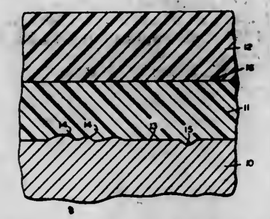
3,499,782
SUBSTRATE PROTECTIVE OXIDIZED COATING PROCESS
William L. Shockley, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa
No Drawing. Filed July 7, 1965, Ser. No. 470,223
Int. Cl. B44d *1/44;* C03c *17/00, 13/00*
U.S. Cl. 117—62 1 Claim

A process for developing a passivated thin film layer on a substrate so impervious to acids and alkaline solutions used in forming electrical circuits as to provide substantially complete protection to the substrate and with the passivated layer maintaining its passivated integrity throughout subsequent thin film circuit forming processes conducted thereover. This is accomplished by depositing a valve metal (such as tantalum) film approximately 800 angstrom units thick upon a substrate surface and then submitting the structure to prolonged baking in an oxygen rich atmosphere at a temperature of approximately 550° C. for approximately ten hours.

3,499,783
POLYURETHANE COATINGS DERIVED FROM AROMATIC AND ALIPHATIC POLYISOCYANATES

Floyd M. Nelson, St. Paul, and Grant O. Sedgwick, Minneapolis, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed May 17, 1967, Ser. No. 639,219
Int. Cl. B44d *1/14*
U.S. Cl. 117—72 11 Claims



This specification discloses coatings of polyurethanes, and in particular a substrate having a first coating of a polyurethane which is color-degradable under the influence of ultraviolet light, and a second coating of a polyurethane containing an ultraviolet light absorbent material. Processes for coating substrates with these two polyurethane coatings are also described. The coatings of the present invention are useful as paint substitutes and find particular utility as coatings for floors.

3,499,784
PROCESS FOR RENDERING POWDERS FREE FLOWING AND THE THUS OBTAINED POWDERS

Svend Asger Rud Bentholm, Naaland, Hendrik Hoogendoorn, Vlaardingen, Elkan Joachim de Jong, Rotterdam, and Wilhelm Engelbert Koenen and Jacobus Poldermans, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,602
Claims priority, application Netherlands, Dec. 4, 1964, 6414091
Int. Cl. B05c *3/00*; B44d *1/02*
U.S. Cl. 117—100 10 Claims

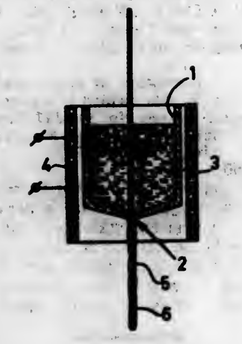
Finely divided solid substances or powders are rendered free flowing without altering the original particle size, in a two-step process which comprises (a) mixing the powder with a small amount of a solution of a coating material to obtain a moist non-coherent and non-homogeneous mass, and (b) passing it through a continuous grinder to completely homogenize said mass, both steps being performed without substantially altering the particle size of the substance. The process can be applied to medicinal substances, cleansers, fertilizers, catalysts, pesticides, foodstuffs, sweeteners, molding powders, and the like.

3,499,785
COATING SUBSTRATES BY EVAPORATION-DEPOSITION

Johannes Jacobus Asterius Pieter van Amstel, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 4, 1967, Ser. No. 607,177
Claims priority, application Netherlands, Jan. 7, 1966, 6600179
Int. Cl. B44d *1/18*; C23c *13/02, 13/04*
U.S. Cl. 117—107 7 Claims

A method of coating substrates by evaporation-deposition in which the substance to be evaporated is melted in a crucible having a hole in its bottom, and a wire extending through the hole such that the melt flows by gravity and/or capillary action onto or over the wire surface, is heated causing evaporation of the substance from the wire.



3,499,786
METHOD AND APPARATUS FOR COATING FILMS

Horace P. Fry, Jr., West Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Feb. 17, 1967, Ser. No. 616,927
Int. Cl. B44d *2/22, 1/24*
U.S. Cl. 117—111 8 Claims



A method and apparatus is disclosed in which a layer of coating material of controlled thickness is applied to a film having longitudinal elements of different length by a transfer roller which is contoured to cause the film to contact therewith generally evenly across its entire width.

3,499,787
METHOD OF MANUFACTURING LOW THERMAL-EXPANSION PORCELAIN

Motoyuki Inoue, Nagoya-shi, Aichi-ken, Japan, assignor to Nippon Joki Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan, a corporation of Japan

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,022
Claims priority, application Japan, Aug. 12, 1965, 40/48,699
Int. Cl. C03c *17/22*; C04b *33/24*
U.S. Cl. 117—118 1 Claim

A process for manufacturing low thermal-expansion porcelain comprising a low-expansion porcelain body and a low thermal-expansion glaze layer on said body which is dense, smooth and hard, which comprises coating a cordierite body containing Li_2O or a Li_2O-containing mineral as an additive with a glaze forming material containing SiO_2 as the principle component and then firing the coated body at a temperature of about 1250–1350° C.

3,499,788
METHOD IN THE MANUFACTURE OF AN EXCHANGER PACKING FOR TWO FLUIDS

Ola Glav, Vallentuna, Sweden, assignor to Carl Munters & Co., Stocksund, Sweden, a corporation of Sweden

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,283
Claims priority, application Sweden, Mar. 2, 1965, 2,680/65
Int. Cl. C03c *25/02*
U.S. Cl. 117—126 5 Claims

Heat and moisture exchanger packing assembled into a cellular body from coherent corrugated asbestos fiber sheets, and coated with insoluble inorganic substance and heated sufficient to drive off water of crystallization from the asbestos fiber and fuse the inorganic bonding material upon the fiber.

3,499,789
MAGNETIC RECORDING ELEMENT

Paul J. Delmore, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

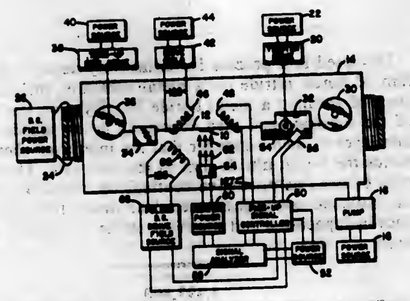
No Drawing. Filed Jan. 19, 1968, Ser. No. 699,036
Int. Cl. G11b *5/64*; G03g *19/00*
U.S. Cl. 117—235 7 Claims

A magnetic recording element such as magnetic tape having a coating of magnetic particles such as, for example, acicular gamma iron oxide, dispersed in a polymeric binder comprising the reaction product of a polyvinyl acetal polymer and an imine-terminated polymer having a polymeric backbone derived from a poly(alkylene ether) glycol or a linear polyester.

3,499,790
MAGNETOSTRICTION MONITOR FOR CONTINUOUS VAPOR DEPOSITION PROCESSOR

Alfred B. Engelmann, Burnsville, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,448
Int. Cl. C23c *13/04*; B44d *1/50*; G03g *19/00*
U.S. Cl. 117—238 9 Claims



A device for and a method of monitoring the varying magnetostrictive characteristics of a deposited-layer element, or test-film, during the generation thereof by applying cyclical stresses thereto and detecting the resulting varying switching field thereof. Provision is made for the monitoring of a separate test-film for each deposition step in a continuous series of discrete deposition steps.

3,499,791
QUATERNARY AMMONIUM SALT CONTAINING POLYOLEFIN COVERED ELECTRICAL CONDUCTOR

Daniel Edwin Maloney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

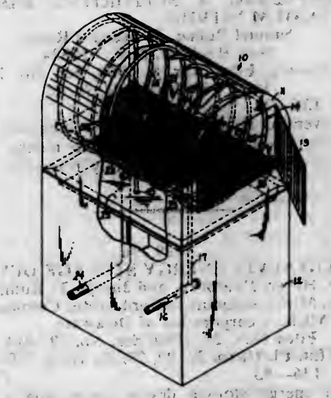
No Drawing. Continuation of application Ser. No. 20,533, Apr. 7, 1960. This application June 18, 1965, Ser. No. 463,032
Int. Cl. B44d *1/18*; H01b *9/00, 3/30*
U.S. Cl. 117—232 6 Claims

An electrical conductor having a coating of corona-resistant polyolefin resin containing from 0.1% to 2% of either a quaternary ammonium salt or a betaine.

3,499,792
CLEANING METHOD AND APPARATUS

Robert D. Veith, Hamden, Conn., assignor to Sonifiow Equipment Company, North Haven, Conn.

Filed Aug. 11, 1965, Ser. No. 478,800
Int. Cl. B08b *3/02, 7/02*
U.S. Cl. 134—1 11 Claims



Apparatus for cleaning the surface of an article which comprises a length of tubing having orifices spaced along the length thereof and means for forcing liquid under pressure into the tubing to produce jets of liquid emanating from the orifices. Ultrasonic energy is introduced into the liquid in the tubing so that a wave of ultrasonic energy is transmitted through the liquid and produces cavitation in the jet streams emanating from the orifices.

3,499,793
PROCESS FOR DESCALING DEVICES USED IN CONCENTRATING SODIUM ALUMINATE SOLUTIONS

Marc Petitjean and Paul Martin, Marseille, France, assignors to Ugine Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,013
Claims priority, application France, Feb. 7, 1966, 48,595
Int. Cl. C23g *1/14*
U.S. Cl. 134—2 6 Claims

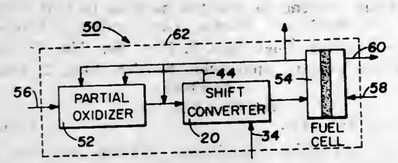
A process for the elimination of deposits formed on surfaces in contact with sodium aluminate solutions, such as exchange surfaces of evaporators used in the Bayer process, by circulating a milk of lime on the scaled surfaces.

3,499,794
AVOIDING ENCRUSTATION IN A DROP SEPARATOR
Hermann Dieter Fromm, Gruenstadt, Matthias Schwarzmann, Limbergerhof, Pfalz, Ludwig Vogel, Frankenthal, Pfalz, and Alfred Widmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik, Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland-Palatinate, Germany
No Drawing. Filed Apr. 23, 1968, Ser. No. 723,557
Claims priority, application Germany, Apr. 26, 1967, 1,670,216
Int. Cl. C23g 1/28; B08b 3/08
U.S. Cl. 134—5 7 Claims
Urea-containing reaction gas is washed with liquid urea to remove urea contained therein. Any drops of urea entrained with the gas are separated in a drop separator located downstream of the washing zone. To avoid encrustation in the separator, this is periodically flushed with molten urea which may contain melting point depressant substances.

3,499,795
STORAGE BATTERY HAVING ELECTRODES COMPRISING A SUPPORTING BASE OF TITANIUM NITRIDE
Samuel Ruben, 52 Seacord Road, New Rochelle, N.Y. 10804
No Drawing. Filed Apr. 8, 1968, Ser. No. 719,725
Int. Cl. H01m 43/04, 39/00
U.S. Cl. 136—24 2 Claims
The invention is an electrode for rechargeable batteries comprising a sintered porous titanium nitride body impregnated with an electrochemically reversible material.

3,499,796
SOLID STATE ENERGY STORAGE DEVICE
Keith O. Hever, Dearborn, and Joseph T. Kummer, Ann Arbor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,814
Int. Cl. H01m 21/00, 29/00; H01g 7/00
U.S. Cl. 136—83 11 Claims
1. An energy storage device comprising a ceramic sandwich having two end members in carbon-exchange relationship with and separated by a central member, wherein each of said end members is a polycrystalline object consisting essentially of an electronically-conductive structural lattice comprising ions of oxygen and ions of a metal in two valence states and cations which migrate in relation to said lattice, and wherein said central member is a polycrystalline object consisting essentially of an electronically-insulative structural lattice and cations which migrate in relation to said electronically-insulative structural lattice under influence of an electric field, the aforereferred to migratory cations of said end members and of said central member being cations of the same element.

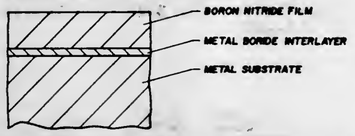
3,499,797
WATER GAS SHIFT CONVERTER AND FUEL CELL SYSTEM THEREWITH
Thomas N. Hooper, Decatur, Ala., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,900
Int. Cl. H01m 27/14, 27/00; C01b 2/10
U.S. Cl. 136—86 13 Claims
A fuel cell system which provides and utilizes hydrogen as power by partial oxidation or reforming of a carbonaceous fuel and shift conversion of the partially oxidized or reformed product to yield hydrogen as fuel cell feed. A catalytic shift converter containing a number of steel or ferrous oxide catalytic material for converting tubes constructed of or coated with an oxidized chrome



water gas to free hydrogen. The shift converter may be designed so as to allow heat exchange through the tube walls for temperature control.

3,499,798
PROCESS OF PRODUCING ELECTRIC CURRENT IN FUEL CELL USING CHROMIUM DIOXIDE CATALYST
Vinodkumar Mehra and William R. Wolfe, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,769
Int. Cl. H01m 27/04, 27/28
U.S. Cl. 136—86 4 Claims
Process for producing electric current using a relatively inexpensive catalyst with a fuel cell electrode, particularly at half-cell potentials of at least 0.88 volt with acid electrolytes, which is composed of chromium dioxide (CrO_2).

3,499,799
PROCESS FOR PREPARING DENSE, ADHERENT BORON NITRIDE FILMS AND CERTAIN ARTICLES OF MANUFACTURE
Robert J. Patterson, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 330,123, Dec. 12, 1963. This application June 2, 1964, Ser. No. 374,558
Int. Cl. C23c 11/00; B44d 1/34
U.S. Cl. 148—6.3 19 Claims

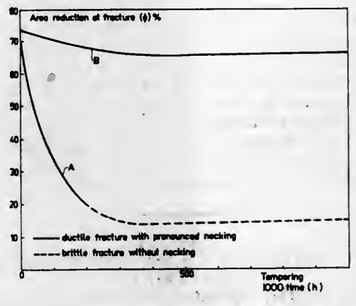


Disclosed is a process for adherently depositing a thin film of boron nitride on a metal substrate, including the steps of forming a metal boride interlayer on the surface of the substrate and then depositing boron nitride on the interlayer in such a manner that the interlayer chemically bonds the boron nitride film to the substrate. These films may be used as protective coatings on refractory metals, as insulative coatings on electrical conductors, as dielectrics in capacitors, and wherever stable, inert films are desired.

3,499,800
METHOD OF MAKING LEAD PARTICLES FOR NON-BUBBLING DISPERSION STRENGTHENED LEAD
Michael V. Rose, Sewickley, Pa., assignor to St. Joseph Lead Company, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,394
Int. Cl. C23f 7/02; B22f 3/24
U.S. Cl. 148—6.3 5 Claims
Lead particles for the production of lead products strengthened by the dispersion of solid substances therein and capable of being hot worked without substantial gas evolution are made by heating lead particles not exceeding about 150 microns in particle size, coated or admixed with solid substances capable of dispersion in the lead by plastic deformation, at a temperature in the range from about 280° C. to just below the melting point of the lead particles.

3,499,801
HEAT-CUTTING METHOD
Constantin Chilowsky, deceased, late of New York, N.Y., by W. Saxton Seward, executor, Morris Township, N.J., assignor to Conrad Precision Industries, Inc., New York, N.Y., a corporation of Delaware
Original application July 22, 1965, Ser. No. 474,186. Divided and this application Apr. 23, 1968, Ser. No. 736,241
Int. Cl. B23k 7/08
U.S. Cl. 148—9 8 Claims
The method of cutting metals wherein a liquefied oxygen-liberating salt material, such as niter, is projected against a heated area of the metal to be cut where said material supplies oxygen directly to the metal in high concentration and cuts said metal by burning it, the metal area being preferably heated, at least initially, by local combustion of a liquefied alkali metal such as sodium.

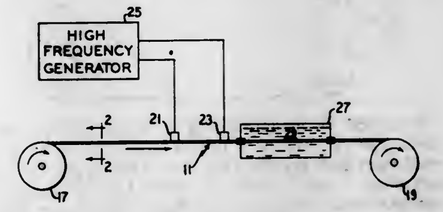
3,499,802
FERRITIC, MARTENSITIC AND FERRITE-AUSTENITIC CHROMIUM STEELS WITH REDUCED TENDENCY TO 475° C.-EMBRITTLEMENT
Rune Gunnar Lagneborg, Segeltorp, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed May 4, 1967, Ser. No. 636,107
Claims priority, application Sweden, May 4, 1966, 6,075/66
Int. Cl. C22c 39/14, 39/20
U.S. Cl. 148—37 3 Claims



"475° embrittlement" in ferritic chromium steels containing upwardly from 13% chromium is prevented by including in the steel composition an optimum—rather small—addition of aluminum or cobalt or both.

3,499,803
METHOD OF TREATING STAINLESS STEEL
John A. Henrickson, Bedford, and Nicholas Makrides, Cleveland Heights, Ohio, assignors to United States Steel Corporation, a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,441
Int. Cl. C21d 7/14
U.S. Cl. 148—12.1 6 Claims
A method of treating non-austenitic stainless steel of initially low carbon content to increase the carbon level in a manner to preclude formation of large primary carbides. The carbon level is increased by carbon diffusion from carbon steel disposed as cladding on opposite surfaces of the stainless steel. After hot rolling to metallurgically bond the carbon cladding to the stainless steel core, the composite is heat treated to diffuse carbon from the carbon steel into the stainless core to increase the carbon content of it to above about 0.7%.

3,499,804
HEAT TREATMENT OF CLAD WIRE OR THE LIKE
John F. Clarke, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,611
Int. Cl. C21d 1/10, 1/40, 1/42
U.S. Cl. 148—127 3 Claims



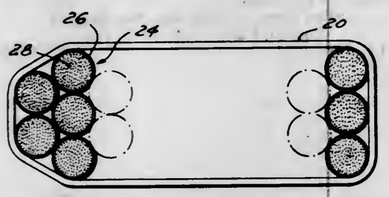
Metallurgically bonded metal-clad wire is continuously moved in electrical connection of its cladding with spaced terminals of a high frequency electric circuit and then immediately quenched by direct immersion in a quenching bath. Thus an electrical skin heating occurs in the cladding for preferentially annealing it without substantially heating the core or the interface between it and the cladding thereby preventing any substantial formation of brittle intermetallic compounds at said interface between the core and cladding while selectively annealing the cladding.

3,499,805
PROCESS FOR DEEP ETCHING A SILICON WAFER
Charles G. Brooks, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Aug. 29, 1966, Ser. No. 576,200
Int. Cl. C23f 1/02; C23b 3/04
U.S. Cl. 156—13 1 Claim
In a process for deep etching silicon wafers, a thin sheet of lens paper is cut to form the desired etch pattern. The paper is then immersed in a solution of Apiezon wax and trichloroethylene and permitted to become saturated with the solution. The saturated paper is placed on the silicon wafer and then exposed to air to permit the trichloroethylene to vaporize. The coated wafer is then heated to soften the wax to provide intimate contact between the wafer and the impregnated paper. After cooling, an etchant is applied to the mask on the wafer to etch the silicon to the desired depth.

3,499,806
DODECAHYDRO-2,5-BENZODIAZOCINES
Theodore S. Sulkowski, Narberth, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 12, 1967, Ser. No. 637,928
Int. Cl. C07d 53/00
U.S. Cl. 260—239 8 Claims
This invention is concerned with dodecahydrobenzodiazocines which are pharmacologically active as anorexiants. Further, this invention is concerned with the process for preparing these dodecahydrobenzodiazocines by the

hydrogenation of the corresponding hexahydrobenzodiazocines with hydrogen under pressure in the presence of a platinum oxide catalyst.

3,499,807
METHOD FOR MANUFACTURING AN ARTICLE HAVING A NON-WOVEN PILE
Walter Hurtes, 433 W. 34th St., New York, N.Y. 10001
Filed Sept. 27, 1965, Ser. No. 490,347
Int. Cl. B32b *5/00*; A41d *27/00*
U.S. Cl. 156—72 8 Claims



A method for manufacturing an article having a non-woven pile. A plurality of flexible sleeves which have opposed open ends are filled with yarns which press against each other in each sleeve and which have a length substantially equal to that of the sleeve. This sleeve length is sufficiently great, as compared with the cross-sectional area of the sleeve and pressure of the yarns, to maintain the yarns stably within the sleeve.

These yarn-filled sleeves are placed in side-by-side relation within a given area in which they are pressed against each other with the ends of the yarns exposed. Then the sleeves are removed so as to leave the yarns themselves pressing against each other in side-by-side relation within the confining area. A suitable support is adhered to the yarns at one of the exposed ends thereof, so that thereafter the yarns can be removed from the confining area with the support which adheres thereto, thus forming therewith an article which has a non-woven pile.

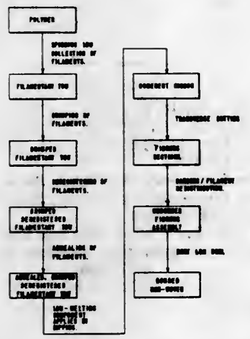
3,499,808
METHOD AND APPARATUS FOR SECURING PARTS TOGETHER BY SONIC ENERGY
Edward G. Obeda, Brookfield, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,228
Int. Cl. B29c *27/08*
U.S. Cl. 156—73 8 Claims

A method and apparatus for securing a thermoplastic part to another part by applying sonic energy to a projection of the thermoplastic part and causing deformation thereof, such as peening over. In order to localize softening of the thermoplastics, the projection is contacted by a tool having a progressively increasing contact area.

3,499,809
SONIC WELDING METHOD UTILIZING VIBRATION DAMPING
Robert D. Wysong, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Aug. 8, 1967, Ser. No. 659,189
Int. Cl. B29c *27/08*
U.S. Cl. 156—73 12 Claims

This application discloses an apparatus and method for the sonic welding of one or more flexible or vibratable blades with a blade portion of each blade held by two or more plastic holding members with a free blade portion extending out of said plastic holding members. A vibration damping means is provided to dampen the vibratable blade free portion of each of such one or more blades to prevent crystallization and fatigue of said vibratable blade or blades while said plastic holding members are being sonically welded. The vibration damping means may include a damping pad carried by one sonic welding means or base and another damping pad carried by another sonic welding means or horn. The blade or blades may each have a second free portion extending from the plastic holding members in another direction, and such second free portion may be dampened by a third damping pad.

3,499,810
METHOD OF MAKING A BONDED NONWOVEN WEB OF STAPLE-LENGTH FILAMENTS
Dinkar Gaupat Wagle, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 554,582, June 21, 1966. This application May 31, 1967, Ser. No. 646,146
Int. Cl. B32b *31/00*; D04h *3/16*
U.S. Cl. 156—152 6 Claims



A low-density bonded nonwoven fibrous product is made by applying a binder to a tow of crimped, separated, synthetic filaments, cutting the tow into staple-length sections, carding the sections to provide a low-density assembly, heating the assembly to fuse the binder, and cooling to bond the filaments. Prior to preparation of the low-density assembly, usually prior to application of the binder, the filaments are annealed in order to prevent shrinkage and densification during bonding.

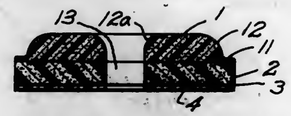
3,499,811
PRODUCTION OF MICROPOROUS FLEXIBLE MATERIALS
Dennis I. Clarke, Erdington, Birmingham, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
No Drawing. Filed July 12, 1965, Ser. No. 471,390
Claims priority, application Great Britain, July 22, 1964, 29,612/64
Int. Cl. B32b *5/00*; C08c *17/08*
U.S. Cl. 156—176 20 Claims

Microporous flexible sheet material permeable to water vapor but not to liquid water is prepared by admixing an aqueous emulsion of a silicone oil with a vulcanizable rubber latex composition, heating this mixture sufficiently to cause gelation with water in the disperse phase, further heating the resulting gel at the vulcanization temperature for a sufficient time to effect vulcanization in the presence of water to prevent substantial evaporation of the water content of the gel, and then heating the vulcanized gel product under drying conditions to remove the water from the gel thereby forming micropores.

3,499,812
METHOD IN THE MANUFACTURE OF AN EXCHANGER PACKING FOR TWO FLUIDS
Ola Glav, 21 Bellistavagen, Vallentuna, Sweden
No Drawing. Continuation-in-part of application Ser. No. 531,068, Mar. 2, 1966. This application June 30, 1966, Ser. No. 561,705
Int. Cl. B31f *1/20*
U.S. Cl. 156—210 13 Claims

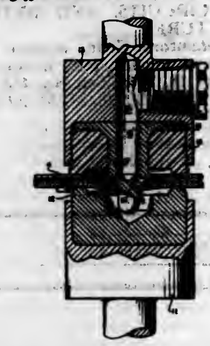
A porous fibrous packing, typically of coiled corrugated asbestos sheet is coated with a waterglass solution which is concentrated by washing with a water absorptive liquid such as alcohol or acetone in which the water is soluble but the silicate is not. Thereafter the thickened silicate coating may be coagulated by reacting with a salt to form an insoluble silica, or the concentrate gelatinuous soluble silica can be merely dried to greatly strengthen the coated fiber with a coating which will resist cracking.

3,499,813
METHOD OF MAKING SURGICAL PADS
Erich Schickedanz, Illenschen-Altenstadt, Germany, assignor to Firma Schädl-Werke, G.m.b.H., Bergen-Enkheim, Frankfurt, Germany
Original application Nov. 17, 1964, Ser. No. 411,811, now Patent No. 3,301,254, dated Jan. 31, 1967. Divided and this application May 9, 1966, Ser. No. 548,714
Int. Cl. B32b *31/06, 31/10*
U.S. Cl. 156—220 3 Claims



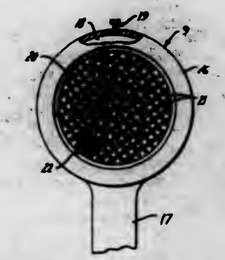
A method of making a surgical pad from laminated material including an upper layer of material which may be permanently compacted while cold by pressure alone, and a lower layer of material having restorative power to assume its original size upon removal of pressure, including the simultaneous cutting through the layers and compacting the upper layer to a desired shape.

3,499,814
INTERLAMINAR TANK SEALING
William S. Bissell, Granada Hills, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 12, 1967, Ser. No. 645,230
Int. Cl. G05g *15/00*; B32b *31/00*
U.S. Cl. 156—349 4 Claims



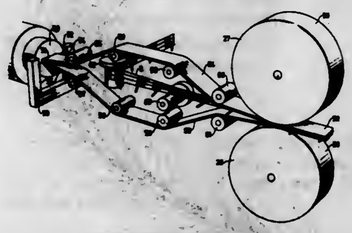
An apparatus for applying a sealant between multilayer structures at countersunk holes wherein individual layers are deflected from each other and the sealant is introduced between the layers.

3,499,815
FILAMENT WINDING APPARATUS
Richard Hof, North Little Rock, Ark., assignor, by mesne assignments, to A. O. Smith-Inland Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,122
Int. Cl. B65h *81/00*
U.S. Cl. 156—431 4 Claims



A device for gathering a series of fiber strands in the form of a tape having a greater width than thickness. The device includes a gathering member which is rotatably supported by a frame. The gathering member is provided with a series of openings which receive individual strands and the openings are arranged in a series of generally parallel first rows and a series of generally parallel second rows which are perpendicular to the first rows.

3,499,816
APPARATUS FOR ENCLOSING A RESISTANCE WIRE TAPE BETWEEN FLAT SECTIONS OF INSULATING CERAMIC PASTE COMPOUND
Carl Otto Aryakong, Vimmerby, Sweden, assignor to AB Installationsmateriel, Vimmerby, Sweden, a corporation of Sweden
Filed June 3, 1965, Ser. No. 461,091
Claims priority, application Sweden, June 4, 1964, 6,821/64
Int. Cl. B32b *31/02*; B29c *15/00*; B29d *7/04*
U.S. Cl. 156—436 4 Claims

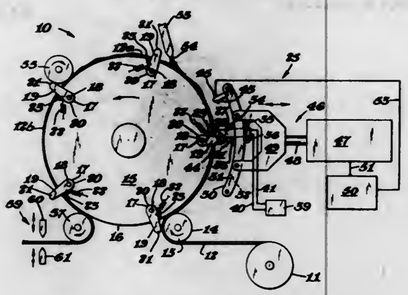


A ceramic insulation paste material is continuously split into two moving flat parallel sections while emerging from a nozzle, a tape of resistance wire is inserted between, and moved along with, the insulation sections. The sections are then squeezed together enclosing the resistance wire.

3,499,817
APPARATUS FOR THE FORMATION OF SEALS IN THERMOPLASTIC FILM
Carl E. Haven, Pinckney, and Hans U. Marx, Parma, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,221
Int. Cl. B32b *31/20*
U.S. Cl. 156—498 9 Claims

An apparatus to form a plurality of longitudinally spaced transverse seals in a thermoplastic tube. The apparatus has a rotating cylindrical drum which feeds the

thermoplastic tube past a transverse heated sealing head. The heated sealing head is provided with structure which moves the head radially in contact with the thermoplastic tube and which also moves circumferentially with the



movement of the tube. A cooling fluid is directed against the tube after the heat seal has been made by the heat seal head. The circumferential movement of the tube is less than that of the cylindrical drum so that the tube is tension-free at the heat sealed portion of the tube.

3,499,818

COMPOSITE BRANCH FOR ARTIFICIAL TREES PROTECTED BY TWIG MEMBERS ATTACHED BY A METAL CLAMP

Stephen D. Kent, Newburgh, N.Y., assignor to R. O. Kent Corp., New York, N.Y., a corporation of New York

Filed Dec. 20, 1968, Ser. No. 785,470
Int. Cl. A47g *33/06*
U.S. Cl. 161—24 7 Claims



The outer portion of the length of the branch consists of a number of substantially identical but separate twigs. The twigs are uniformly more pliable and of thinner twisted wire throughout than the remaining stiffer and thicker inner part of the branch constituting the limb. The twigs are compactly fastened by a sheet metal clip to the otherwise hazardous extreme cut and sharp outer end portion of the stiffer limb. The twigs are yieldable extensions of the limb and move out of the way when pushed. The needles of the limb, and of all of the twigs regardless on which side of the limb the twigs are arranged, are inclined away from the inner end of the twig or limb as the case may be. The inner end portions of the twigs are parallel to and overlap the outer end portion of the limb sufficiently to conceal and guard the hazardous end surface of the limb from being touched and to permit all said end portions to be compacted under pressure by the fastening clip with friction producing needles caught therebetween.

3,499,819

LAMINATES OF ALUMINUM AND POLYPROPYLENE FOAM AND METHOD THEREFOR

John R. Lewis, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,223
Int. Cl. B32b *5/18, 15/20, 31/22*
U.S. Cl. 161—161 4 Claims

Laminates of polypropylene foam and aluminum having good adhesion by initially priming the aluminum with a very thin layer of a maleic anhydride modified polypropylene.

3,499,820

SELF-SUPPORTING LAMINATE OF POLYMERIC FILMS WITH AN INTERMEDIATE LAYER OF MINERAL FILLER PARTICLES

Charles W. Dessauniers, Franklin, Mass., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Oct. 17, 1966, Ser. No. 587,194
Int. Cl. B32b *19/04*
U.S. Cl. 161—162 11 Claims



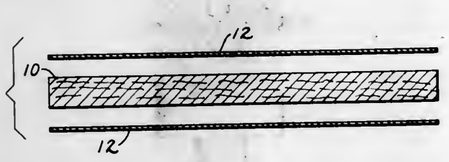
This invention is directed to a self-supporting laminate having a low permeability to gases, said laminate having a first film of polymer, a film of filler bonded to the first film of polymer, and a second film of polymer bonded to the film of filler. This invention is also directed to a self-supporting laminate having a first film of polymer, a filled polymeric film bonded to the first film and a second film of polymer bonded to the film of filled polymer.

3,499,821

LAMINATED BOARD PARTICULARLY FOR PRINTED CIRCUITS, AND METHOD OF MANUFACTURE

Benson Zinbarg, Stamford, Conn., assignor to New England Laminates Company, Inc., Stamford Conn.

Filed May 18, 1965, Ser. No. 456,732
Int. Cl. B32b *17/10, 27/38, 29/02*
U.S. Cl. 161—185 18 Claims



The invention provides a strong structural laminated board particularly for use in the electronic industries in which rigidity is effected by impregnation with expoy resin of a plurality of laminations comprising cotton batt, cotton cloth and glass fiber.

3,499,822

EXTRUDED, EXPANDED MAT-LIKE OR WEB-LIKE FIBRILLAR SHEET ASSEMBLY AND METHOD FOR ITS PRODUCTION

Ole-Bendt Rasmussen, 28 Rugmarken, Farum, Denmark

Filed Feb. 21, 1966, Ser. No. 528,916
Claims priority, application Great Britain, Feb. 23, 1965, 7,870/65
Int. Cl. D04h *13/00*
U.S. Cl. 161—169 11 Claims



An extruded sheet product having the form of an expanded mat- or web-like fibrous assembly and constituted by split fibers formed of elongated needle-like or thread-like formations, each having an average diameter of 0.5–10 microns, of a crystalline high molecular weight polymeric material A. The split fibers are interconnected by random branching of the crystalline formations into an integral network, the spaces intervening between the thread-like formations being partially filled by a second polymeric material B, chemically different from, incompatible with and having a lower melting point than material A, present in up to 40% of the aggregate weight of the two polymeric materials as a membrane-like covering on the crystalline formations.

The product is obtained by colloidally dispersing in molten condition about 10–40% polymeric material B with about 90–60% polymeric material A, extruding the melt as a sheet to strongly stretch the dispersion interfaces in the extrusion direction while the polymers are still molten, cooling the extruded sheet below the crystallization temperature of material A to coagulate the same into elongated thread-like formations while maintaining material B in fluid state, thereafter allowing material B to solidify, swelling or partially leaching out material B, and stretching the sheet transversely of the extrusion direction to expand the sheet into a mat- or web-like fibrillar sheet structure.

3,499,823

METHOD OF INHIBITING THE FORMATION OF FIBER-KNOTS IN PAPER PULP AND PRODUCT

Ingemar Lisp-Albin Croon, Alfredsheim, and Lars-Gunnar Samuelsson, Ornsköldsvik, Sweden, assignors to Mo och Domsjö Aktiebolag, Ornsköldsvik, Sweden, a limited company of Sweden

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,817
Claims priority, application Sweden, Aug. 24, 1965, 11,059/65
Int. Cl. D21c *3/00*
U.S. Cl. 162—158 14 Claims

This invention provides a method for inhibiting the formation of difficultly defibered knots at the cut edges of cut pulp sheet during drying of the pulp sheet, by incorporating in the pulp sheet at the cut edges thereof, either before, after, or during cutting, a water-soluble substance capable of maintaining the cellulose fibers spaced apart sufficiently to prevent the formation of cross-links between adjacent cellulose molecules in the respective fibers during drying. There are also provided cut cellulose pulp sheets having incorporated only at the cutting zone of the sheet a water-soluble substance capable of maintaining the cellulose fibers spaced apart sufficiently to prevent the formation of cross-links between adjacent cellulose molecules of the fibers when the pulp is drying.

3,499,824

AQUEOUS CATIONIC EMULSIONS OF PAPER-SIZING ISOCYANATES AND MANUFACTURE OF PAPER THEREWITH

Edward Strazdins, Russell Joseph Kallick, and Anthony Ralph Savina, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,011
Int. Cl. D21h *3/36*
U.S. Cl. 162—164 10 Claims

In the manufacture of sized paper wherein a paper-sizing isocyanate and a cationic resin are deposited on cellulose paper-making fibers from aqueous medium, the tendency of the cationic resin to decrease the sizing action of the isocyanate is partially or completely counteracted by depositing on the fibers, prior to the point at which they are dried, a hydrophobic organic acyl compound of acidic character having a melting point below 90° C.

3,499,825

PETRI DISH

Joseph R. Falcone, 217 Cooper Lane, De Witt, N.Y. 14728, and Anthony Falcone, Jr., 207 Oakridge Drive, Camillus, N.Y. 13031

Filed Feb. 14, 1966, Ser. No. 527,267
Int. Cl. C12k *1/10*
U.S. Cl. 195—139 1 Claim



A petri dish having a circular tapered sidewall to permit nesting and having a plurality of circumferentially spaced apart lid retaining lugs and stop means formed integral with said sidewall.

3,499,826

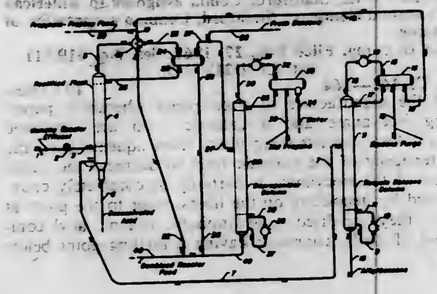
SEPARATION PROCESS FOR AROMATIC ALKYLATION EFFLUENT BY FLASH DISTILLATION AND PARTIAL CONDENSATION

Thomas L. Sabatech, Elk Grove Village, and Dennis J. Ward, Lombard, Ill. (both of 30 Algonquin Road, Des Plaines, Ill. 60016)

Filed Apr. 15, 1968, Ser. No. 721,444
Int. Cl. B01d *3/06*
U.S. Cl. 203—27 6 Claims

Separation process for a reaction zone effluent containing at least three components, such as an aromatic alkylation reaction zone effluent. The effluent is passed into a rectified flash zone under conditions sufficient to provide a first fraction comprising diluent and alkylatable aromatic compound and a second fraction comprising alkylatable aromatic compound and alkylated aromatic compound. The first fraction is passed to a partial condensing zone under conditions sufficient to provide a

vapor fraction rich in diluent and containing alkylatable aromatic compound, and a condensate fraction rich in alkylatable aromatic compound and containing diluent. The vapor fraction is separated to provide a diluent fraction and a third fraction comprising diluent and alkylatable aromatic compound. The second fraction is separated to provide a fourth fraction comprising alkylatable aromatic compound and a fifth fraction containing alkylated aromatic compound. The fifth fraction is recovered, while the third, fourth, and condensate fractions are returned to the reaction zone. The process is equally effective in the separation of the effluent from an oligomerization reaction zone. Specific application of the process is in the synthesis of ethylbenzene, cumene, heptene, propylene-trimer, and propylene-tetramer.

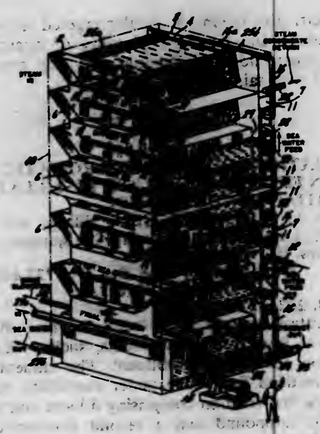


3,499,827

DISTILLATION PLANT

Robert Bruce Cox, New Rochelle, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Interior

Filed Apr. 12, 1967, Ser. No. 630,404
Int. Cl. B01d 3/28, 3/22; C02b 1/06
U.S. Cl. 202—173 18 Claims



A desalting plant comprises a vertical stack of effects each having horizontal vapor tubes, a perforated pan distributing feed water over the tubes and a pan for collecting unevaporated liquid. Feed liquid is fed to the distributing pan of the uppermost effect and then flows by gravity from one effect to the next. Vapor produced in one effect is conducted to the vapor tubes of the next effect. The condensate is collected and constitutes the product.

ERRATUM

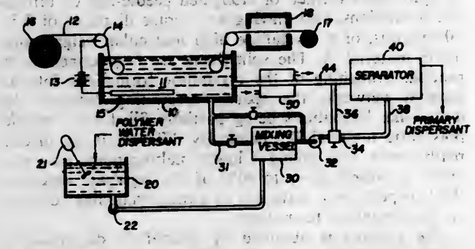
For Class 203—27 see:
Patent No. 3,499,826

3,499,828

RECONSTITUTING ELECTROCOATING BATHS

Joseph M. De Vittorio, Homewood, Ill., assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 24, 1967, Ser. No. 662,997
Int. Cl. C23b 13/00; B01k 5/02
U.S. Cl. 204—181 18 Claims



Method and apparatus for adding coating material to an electrocoating bath. Electrocoating tank containing dispersion of organic polymeric material in aqueous bath is operated to deposit polymeric coating on conducting surfaces using electrical potential. Coating material is dispersed by primary dispersant to form stable aqueous makeup liquid. Makeup mixed with electrocoating bath containing secondary dispersant. Primary dispersant is minimized in the reconstituted bath while secondary dispersant remains in relatively fixed concentration in the electrocoating bath.

3,499,829

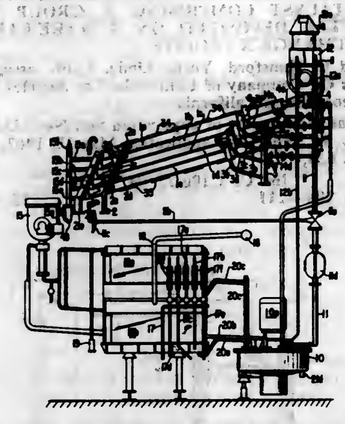
INCLINED PLANE MERCURY CATHODE ELECTROLYSIS CELLS

Georg Messner, Milan, Italy, and Alexander Louis Barbato, Perry, Henry William Lamb, Painesville, and Richard Eric Loffield, Chardon, Ohio, assignors, by direct and mesne assignments, to Oronzio de Nora Impianti Elettrochimici S.A.S., Milan, Italy, a corporation of Italy

Continuation-in-part of applications Ser. No. 234,369, Ser. No. 234,454, Ser. No. 234,379, and Ser. No. 234,287, Oct. 31, 1962, and application Ser. No. 560,832, May 20, 1966. This application Mar. 3, 1967, Ser. No. 621,399
Int. Cl. C22d 1/04
U.S. Cl. 204—219 9 Claims

Describes a multiple tier inclined plane bipolar mercury cathode electrolysis cell and method of operation in which

the mercury is discharged into the cell and onto a nickel cathode plate a substantial distance below the upper end



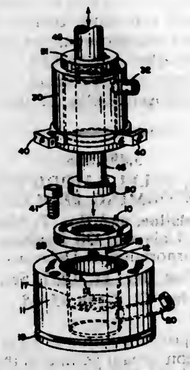
of the cell tiers which are maintained substantially filled with electrolyte so as to operate as flooded cells.

3,499,830

APPARATUS FOR ELECTROCHEMICALLY FORMING AND FINISHING GEARS

William Andrew Haggerty and Charles Evans Foertmeyer, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 20, 1967, Ser. No. 684,454
Int. Cl. B23p 1/04; B01k 3/04
U.S. Cl. 204—224 13 Claims



An apparatus for electrochemically machining an electrically conducting workpiece into a finished gear in a single machining operation includes a specially designed tool having a plurality of machining surfaces including a finishing machining surface oriented essentially parallel to the direction of relative movement between the tool and the workpiece to determine the final dimension and shape of the workpiece, a frontal machining surface oriented essentially normal to the finishing machining surface to form initial openings in the workpiece which correspond generally to the shape of the finished gear, and a tapered machining surface extending between the finishing machining surface and the frontal machining surface to enlarge the opening thus formed in the workpiece by the frontal machining surface and to limit the machining area of the finishing machining surface and thus limit the amount of overcut between the tool and the workpiece. The apparatus includes means to direct a high volume of electrolyte between the tool and the workpiece and further includes means to place a pressure on the electrolyte after it has passed through the electrochemical machining area.

3,499,831

COPPER AND FERROUS METAL CURRENT COLLECTOR AND ELECTROLYTIC CELL THEREWITH

Curtis J. McMinn and Vaughn L. Ballough, Florence, Ala., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Oct. 18, 1966, Ser. No. 587,526
Int. Cl. B01k 3/06; H01b 5/02
U.S. Cl. 204—243 5 Claims



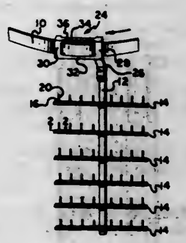
A current collector pin adapted to be electrically connected to a graphite cathode block in an electrolytic cell, such as an alumina reduction cell, by insertion into a socket in the block, comprises a tubular copper conductive member surrounding and in contact with a central reinforcing metal core extending therethrough, and an outer sleeve surrounding and extending over the portion of the length of the tubular member not inserted into the socket.

3,499,832

ELECTROPLATING RACK

Frank A. Hearn, Jr., 2507 Amara Drive, Toledo, Ohio 43615

Filed Sept. 11, 1967, Ser. No. 666,666
Int. Cl. B65g 49/04; C23b 5/70
U.S. Cl. 204—297 3 Claims



An electroplating rack for supporting hollow objects which may be readily manually carried from place to place and may be satisfactorily supported on the bus bar of an automatic plating system in a fashion to militate against unwarranted swinging movement.

3,499,833

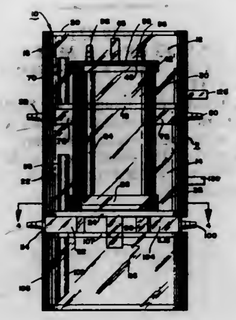
ELECTROPHORESIS DEVICE

Thomas George Ferris, Bethesda, and Richard Edgar Budd, Robert Eugene Easterling, and William Joseph Wright, Rockville, Md.; said Thomas G. Ferris assignor to Laura B. Ferris, Washington, D.C.

Filed Oct. 12, 1964, Ser. No. 403,812
Int. Cl. B01k 5/00
U.S. Cl. 204—299 22 Claims

The electrophoresis device includes apparatus for simultaneously electrophoretically separating samples on

an elongated annular gel slab which samples may be the same or of different compositions. The apparatus includes a means for cooling the gel during electrophoresis by refrigerating the buffer solution used as an electrolyte. Means for recirculating the buffer solution contained in



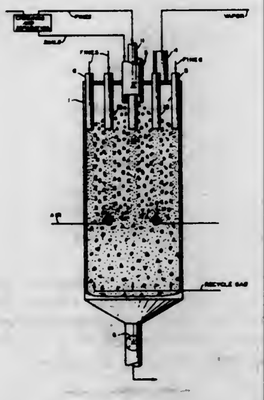
the anode and cathode compartments so as to intermix the buffer solution contained in the electrode compartments are provided to prevent changes in pH and ionic strength due to electrolysis without producing a short circuit.

3,499,834

RETORTING OF HYDROCARBONACEOUS SOLIDS

Robert R. Goins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 16, 1967, Ser. No. 616,665
Int. Cl. C10b *1/04, 53/06;* C10g *1/00*
U.S. Cl. 208—11 7 Claims



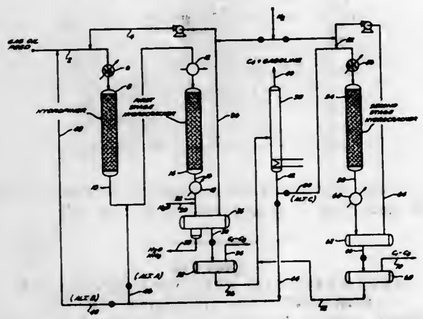
In retorting hydrocarbonaceous fines-containing material such as crushed oil shale or low quality coal, passing fines-containing material and coarse material to separate places in the retort, e.g., introducing coarse material centrally while introducing fines-containing material peripherally and/or introducing fines-containing material to other preselected places as at points near to or equidistant from air distributors or coarse material inlet or inlets. Both method and apparatus are provided.

3,499,835

HYDROCRACKING AMMONIA-CONTAINING HYDROCARBONS IN THE PRESENCE OF A CATALYST COMPRISING A GROUP VIII METAL DEPOSITED ON A RARE-EARTH EXCHANGE X ZEOLITE

Rowland C. Hansford, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Continuation-in-part of application Ser. No. 433,178, Feb. 16, 1965. This application May 15, 1967, Ser. No. 638,437
Int. Cl. C10g *23/04, 13/04*
U.S. Cl. 208—111 13 Claims



A mineral oil feedstock containing organic nitrogen compounds is first subjected to catalytic hydrofining to effect denitrogenation, and the resulting ammonia-containing effluent is then subjected to hydrocracking in contact with an ammonia-resistant catalyst comprising a Group VIII metal-promoted rare earth zeolite of the X crystal tape. In a preferred modification, the remaining unconverted oil is hydrocracked in a second stage, substantially in the absence of ammonia, in contact with a Group VIII metal-promoted hydrogen zeolite of the Y crystal type.

3,499,836

LOW PRESSURE, SULFUR-MODIFIED CATALYTIC REFORMING PROCESS

John C. Hayes, Palatine, and Roy T. Mitsche, McHenry, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,262
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 8 Claims

Concerns an improvement in a process for the reforming of a hydrocarbon stream boiling in the gasoline range at a pressure of about 50 p.s.i.g. to 250 p.s.i.g. to produce an aromatic-rich reformate having a high octane number. In this process a low octane gasoline stock, hydrogen, and sulfur are contacted in a water-free environment with a catalytic composite containing a platinum group component at conditions favoring the production of aromatics. Problem involves the acquisition and retention for commercially significant periods of a superior yield-octane relationship which is characteristic of the practice of a low pressure reforming process. Improved solution embodied herein comprehends the utilization of a reforming catalyst containing a platinum metal composited with an alumina matrix having finely divided aluminosilicate crystallites suspended therein in an amount of about 0.5 wt. percent to about 1.5 wt. percent of the alumina matrix.

3,499,837

WASTE WATER TREATMENT PHOSPHATE REMOVAL BY IRON OXIDE

Karlis Laimonis Jaunarajs, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 20, 1967, Ser. No. 684,474
Int. Cl. C02c *5/02;* C02b *3/06, 1/18*
U.S. Cl. 210—59 12 Claims

Phosphate is removed from waste water by contacting the waste water with a water-insoluble composition comprising hydrous iron oxide coated on a particular support. The composition can be formed by precipitating iron oxide from an aqueous iron salt solution on a porous support, or by activation of iron ore. The composition can be regenerated with alkali.

3,499,838

REACTION PRODUCT OF DIORGANOPHOSPHORODITHIOATES AND DIORGANOCARBODIIMIDES

Milton Braid, Westmont, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 23, 1968, Ser. No. 754,943
Int. Cl. C10m *1/48;* C07f *9/08;* C10b *1/26*
U.S. Cl. 252—32.7 8 Claims

Novel compounds are prepared by reacting a di(organo), preferably a dihydrocarbyl, phosphorodithioate with a di(organo), preferably a dihydrocarbyl, carbodiimide. These compounds possess excellent antioxidant properties and can be used in industrial organic fluids, such as lubricating oils, hydraulic fluids and the like. Diarylphosphorodithioates are preferred reactants.

3,499,839

AMINE-STABILIZED IODINE-CONTAINING LUBRICANTS

Julius Boehm, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 27, 1967, Ser. No. 649,137
Int. Cl. C10m *3/02, 3/26, 1/40*
U.S. Cl. 252—33.4 1 Claim

A lubricating oil having enhanced lubricating properties comprising a hydrocarbon lubricating oil, elemental iodine, a petroleum sulfonate, chlorinated wax and an amine.

3,499,840

CHLORINE DERIVATIVES OF m-DIPHENOXYBENZENE AND PROCESS OF PREPARATION THEREOF

Albert L. Williams, Hopewell Township, Mercer County, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 2, 1969, Ser. No. 789,066
Int. Cl. C10m *1/20, 1/30*
U.S. Cl. 252—54 8 Claims

Mixtures of mono-and di-chloro derivatives of m-diphenoxybenzene provide lubricants stable at high temperatures. The derivatives are formed by reacting, in the absence of molecular oxygen, a dialkali metal salt of resorcinol, a monohalobenzene and a m- or p-halochlorobenzene, in the presence of a copper salt catalyst and in certain solvents.

3,499,841

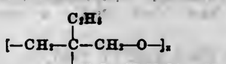
LOW FOAMING WASHING AND CLEANSING AGENTS

Günter Jakobi, Hilden, Manfred Dohr, Duesseldorf-Holthausen, and Ernst Götte, Ratingen-Tiefenbroich, Germany, assignors to Henkel & Cie. G.m.b.H., Duesseldorf, Germany, a corporation of Germany

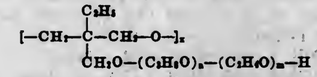
No Drawing. Filed Jan. 10, 1967, Ser. No. 608,279
Claims priority, application Germany, Jan. 15, 1966, H 58,255
Int. Cl. C11d *1/825, 1/72*
U.S. Cl. 252—170 10 Claims

This invention relates to low foaming washing and cleansing compositions comprising a content of:

(A) polymers of (3-hydroxymethyl-3-ethyl)-oxacyclobutane containing polyoxyalkylene radicals selected from the group consisting of (1) compounds of the formula



and (2) compounds of the formula



wherein x is an integer of from 5 to 12, m is an integer of from 2 to 16, n is an integer of from 1 to 8 and the ratio of m to n is between about 1.5 to 1 and 10 to 1; and

(B) surface-active polyoxyalkylene polymers containing oxyalkylene units selected from the group consisting of oxyethylene units and oxypropylene units, said polymers containing from 2 to 90 oxypropylene units, the amount of oxypropylene units in said polymer being more than 50 mol percent of the total number of said oxyalkylene units.

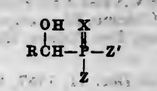
3,499,842

METAL SEQUESTRANT

Ronald H. Carlson, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 597,542, Nov. 29, 1966. This application Nov. 2, 1967, Ser. No. 680,022
The portion of the term of the patent subsequent to Nov. 11, 1986, has been disclaimed
Int. Cl. C02b *5/00*
U.S. Cl. 252—180 6 Claims

A method of sequestering at least one metal ion from solution which comprises introducing into the solution a water-soluble compound of the formula:



wherein X is a member selected from the group consising of sulfur and oxygen; R is a member selected from the group consisting of —H and alkyl of 1 to 2 carbon atoms; Z and Z' are each a member selected from the group consisting of alkyl of 1 to 3 carbon atoms, hydroxy alkyl of 1 to 3 carbon atoms and —OH, providing that both Z and Z' are not simultaneously $—CH_2OH$.

3,499,843

CATHODOLUMINESCENT PHOSPHORS

Jesse J. Brown, Jr., Towanda, and Bryce W. Van Noy, Troy, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,887

Int. Cl. C09k 1/68

U.S. Cl. 252—301.4 3 Claims

A series of green emitting, cathodoluminescent magnesium aluminate gallate phosphors activated by manganese.

3,499,844

METHOD OF PREPARING AN AQUEOUS HYDROGEN PEROXIDE GEL

William H. Kibbel, Jr., Pennington, and John A. Shepherd, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,803

Int. Cl. A61k 27/12; B01j 13/00; C01b

U.S. Cl. 252—316 3 Claims

Stable, aqueous gels of hydrogen peroxide having a concentration of up to about 15% by weight thereof are formed by preparing a slurry of the aqueous hydrogen peroxide with a water-dispersible copolymer of acrylic acid crosslinked with about 0.75% to about 1.5% of polyallyl sucrose, and gelling the slurry by addition of a small amount of a neutralizing agent.

3,499,845

PREPARATION OF DEHYDROGENATION CATALYST

Reno W. Mochel, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 28, 1967, Ser. No. 663,564

Int. Cl. B01j 11/06, 11/40; C07b 3/00

U.S. Cl. 252—442 7 Claims

A catalyst preparation useful in the dehydrogenation of hydrocarbons. An alumina hydrogel is precipitated from an aqueous aluminum chloride solution. The hydrogel is filtered and the chloride level of the wet filter cake adjusted to a predetermined level. The wet filter cake is then slurried with an impregnating solution of a compound of chromium and an alkali metal and then dried and calcined. The catalyst is of improved strength, selectivity, activity and stability.

3,499,846

METHOD OF CATALYST PREPARATION

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,321

Int. Cl. B01j 11/40; C10g 11/04

U.S. Cl. 252—451 15 Claims

A method of catalyst preparation. The catalyst is a crystalline aluminosilicate dispersed in a silica matrix. A finely divided crystalline alkali metal aluminosilicate is dispersed in a silica sol and treated in contact with a solution comprising hydrogen ions at a pH of 3.5–4.0, before or after gelation, to provide an improved catalyst, particularly with respect to the catalytic cracking of petroleum hydrocarbons.

3,499,847

PROCESS FOR CONTROLLING THE MOLECULAR WEIGHT OF ULTRAHIGH MOLECULAR WEIGHT OXYALKYLENE-CONTAINING POLYMERS FROM ALKYLENE OXIDES FREE OF GROUPS OTHER THAN OXIRANE GROUPS

Franklin E. Mauge, Rudolf S. Berlin, and Allen R. Fauke, St. Louis, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 3, 1966, Ser. No. 570,753

Int. Cl. C08g 23/06, 23/14

U.S. Cl. 260—2 2 Claims

Process of controlling the molecular weight of ultrahigh molecular weight oxyalkylene-containing polymers from alkylene oxides free of groups other than oxirane groups, said polymers being for use in preventing, breaking or resolving emulsions of the water-in-oil type, particularly petroleum emulsions, said polymers having molecular weights of 100,000–10,000,000 formed from a copolymer of a hydrophobic alkylene oxide and a hydrophilic alkylene oxide which contains more than 50 mole percent hydrophobic alkylene oxide, wherein the alkylene oxides are contacted with an alkyl metal-chelate-water catalyst under polymerization conditions characterized by using a minor amount of water to alkyl metal, for example, aluminum and zinc, in the presence of varying amounts of chelate.

3,499,848

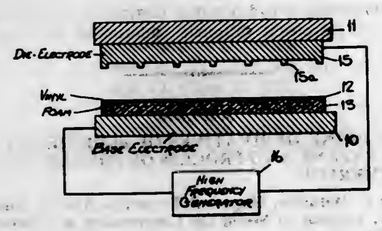
DIELECTRICALLY-MODIFIED POLYURETHANE FOAM

Morey Weinman, 147—23 Charter Road, Jamaica, N.Y. 11435

Continuation-in-part of application Ser. No. 520,528, Jan. 13, 1966. This application May 31, 1968, Ser. No. 733,563

Int. Cl. C08g 41/00

U.S. Cl. 260—2.5 5 Claims



A dielectrically-modified, flexible foam formed by a homogeneous polyurethane material of elastic consistency having uniformly dispersed therein colloidal particles which are electrically conductive or semi-conductive and free of agglomerates. The particles are in a concentration causing the modified form material to soften when subjected to a high-frequency field at a power level which is markedly lower than the amount of power necessary in the absence of these particles.

3,499,849

COPOLYMERS OF ALKOXYALKYLATED AMINOTRIAZINE TRANSESTERS

Kazys Sekmakas and Frank Ragas, Chicago, Ill., assignors to De Soto, Inc., Des Plaines, Ill., a corporation of Delaware

No Drawing. Original application Sept. 28, 1965, Ser. No. 491,049, now Patent No. 3,396,209, dated Aug. 6, 1968. Divided and this application May 27, 1968, Ser. No. 732,095

Int. Cl. C08g 9/36

U.S. Cl. 260—15 10 Claims

An essentially monomeric substantially completely alkoxyalkylated aminotriazine, such as hexamethoxy methyl melamine, is transesterified with a monoethylenically unsaturated carboxylic acid, such as maleic or fumaric acid, to form an unsaturated material to provide copolymers which are useful per se, and which are curable in admixture with resinous polyhydric alcohols.

3,499,850

VINYL CHLORIDE POLYMERIZATION

Richard C. Knizie, Jr., Prince George, Va., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,904

Int. Cl. C08f 1/11, 3/30

U.S. Cl. 260—17 7 Claims

Preparation of vinyl chloride polymers in the presence of hydroxypropyl cellulose and ethylenimine - modified hydroxypropyl cellulose as dispersing agent.

3,499,851

WASTE COFFEE GROUNDS AS A FILLER IN THERMOSETTING MATERIALS

Eugenio Ligo, 38 Calcraft House, Bonner Road, London, E 2, England

No Drawing. Filed Oct. 4, 1967, Ser. No. 672,740

Claims priority, application Great Britain, Oct. 6, 1966, 44,615/66; Dec. 23, 1966, 57,744/66; Feb. 16, 1967, 7,440/67

Int. Cl. C08g 5/18

U.S. Cl. 260—17.2 8 Claims

The present invention is concerned with plastic materials and articles made therefrom, characterised by the presence of waste coffee grounds as a filler.

3,499,852

COATING COMPOSITIONS CONTAINING POLYOL CROSSLINKING AGENT AND URETHANE PREPOLYMERS ENDBLOCKED WITH ETHYLENIC GROUPS

Herbert M. Schroeder, Williamsville, and Arthur J. Krawczyk, Cheektowaga, N.Y., assignors to Textron Inc., a corporation of Delaware

No Drawing. Filed Feb. 10, 1967, Ser. No. 615,071

Int. Cl. C08g 22/32

U.S. Cl. 260—18 25 Claims

Liquid coating compositions are made with, as the film-forming ingredient, a polyisocyanate-polyol urethane prepolymer prepared with excess isocyanate, the free isocyanate groups of which are blocked with a monoethylenically-unsaturated compound containing a single isocyanate-reactive group. Diisocyanates (aliphatic or aromatic) are preferred, as are aliphatic polyols. Suitable blocking compounds include those containing a single —OH, —NH_2,



or —SH group; often preferred blocking compounds, especially where the polyisocyanate is aliphatic in character, are glycol esters of acrylic acids. The coating compositions may be moisture-curable or polyol-curable, and in the latter case can contain as a crosslinking agent, a polyhydroxyl-containing compound such as a polyhydroxyl-containing fatty acid ester, e.g. castor oil.

3,499,853

POLYAMIDES

Eugen Griebsch, Unna, and Manfred Drawert, Werne an der Lippe, Germany, assignors to Schering AG., Berlin, Germany

No Drawing. Continuation-in-part of application Ser. No. 456,856, May 18, 1965. This application Mar. 22, 1968, Ser. No. 715,170

Claims priority, application Germany, May 23, 1964, Sch 35,282; Mar. 26, 1965, Sch 36,783, Sch 36,784

Int. Cl. C08g 20/26

U.S. Cl. 260—18 22 Claims

Copolyamides useful as thermoplastic adhesives of high peeling resistance comprising, and made by co-condensing, a largely dimeric fatty acid, an optional other dicarboxylic acid, and an amine component comprising an ether diamine alone or in admixture with ethylene diamine, or ethylene diamine in admixture with another aliphatic diamine.

3,499,854

PHENOL-METHACRYLALDEHYDE VARNISH RESINS

Robert W. Hill, Leawood, and James H. Rea, Olathe, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 24, 1967, Ser. No. 632,932

Int. Cl. C08g 5/00; C09d 3/54

U.S. Cl. 260—19 4 Claims

Resins which contain reactive aldehyde structures and are employed in thermally curable coating compositions for production of tough, abrasion-resistant finishes are made by condensing one mole of phenol or cresol with from one to three moles of methacrylaldehyde under acid conditions at temperatures ranging from ambient to about 100° C.

3,499,855

WATER-SOLUBLE POLYESTER COATINGS

Robert Roper, Summit, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1968, Ser. No. 695,563

Int. Cl. C08g 17/02, 17/16, 17/10

U.S. Cl. 260—22 16 Claims

A water-soluble coating composition comprising 20–80 wt. percent of a polyester containing alpha, beta-unsaturated dicarboxylic acid residues and hindered dihydroxycarboxylic acid residues, 80–10 wt. percent of a polyester containing beta, gamma-unsaturated ether groups and 0–20 wt. percent of a beta, gamma olefinically unsaturated ether of a polyhydric alcohol containing at least two of said ether groups.

3,499,856

ANTISTATIC AGENT COMPRISING A MIXTURE OF A TERTIARY AMINE CARBOXYLATE AND A HIGHER ALIPHATIC ALCOHOL AND A RESIN COMPOSITION CONTAINING SAME

Makoto Funatsu, Wakayama-shi, and Yasuhiro Terimae, Wakayama, Japan, assignors to Kao Soap, Ltd., Tokyo, Japan, a corporation of Japan

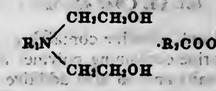
No Drawing. Filed Jan. 13, 1967, Ser. No. 608,972

Claims priority, application Japan, Jan. 17, 1966, 41/2,677

Int. Cl. C08f 3/30, 3/04, 3/08

U.S. Cl. 260—23 4 Claims

An antistatic composition for incorporation in synthetic resins comprising a tertiary amine carboxylate of the formula:



wherein each of R_1 and R_2 is an alkyl or alkenyl group of 8 to 22 carbon atoms, said antistatic composition being

comprised of a mixture of a tertiary amine carboxylate as aforesaid and a higher alcohol of the formula:

$$R_3OH$$

wherein R_3 is an alkyl or alkenyl group of 8 to 22 carbon atoms.

3,499,857

THERMOPLASTIC RESINOUS COMPOSITIONS, PARTICULARLY USING UNSATURATED TRIGLYCERIDES

Charles Edwin Searight and John Robert Ryan, Jackson, and Bernie Joseph Davis, Biloxi, Miss., assignors to Catalphote Corporation, Jackson, Miss., a corporation of Ohio

No Drawing. Filed Apr. 17, 1967, Ser. No. 631,161
Int. Cl. C08f 41/12, 19/14
U.S. Cl. 260—23.7 9 Claims

Disclosed is a thermoplastic resinous composition particularly suitable for traffic marking. The composition is a copolymer of a non-conjugated ethylenically unsaturated fatty oil with a mono- or di-ethylenically unsaturated hydrocarbon having 4 to 5 carbons and with a vinyl monomer.

3,499,858

POLYURETHANE-POLYUREA ELASTOMERS

Albert Pierre Strassel, Courbevoie, France, assignor to Ugine Kuhlmann (Societe Anonyme), Paris, France, a corporation of France

No Drawing. Filed July 18, 1966, Ser. No. 565,676
Claims priority, application France, July 22, 1965, 25,651
Int. Cl. C08g 22/02, 22/04
U.S. Cl. 260—30.2 16 Claims

In the method of preparing polyurethane-polyurea compositions by mixing a prepolymer obtained by reaction of a polyol with an excess of polyisocyanate, with at least one diamine having a melting point of over 60° C., the improvement which comprises utilizing said diamine in the form of a supersaturated solution in at least one aprotic polar solvent for said diamine.

3,499,859

STABLE THERMALLY CONDUCTIVE ROOM TEMPERATURE VULCANIZABLE SILICONE RUBBER

James E. Matherly, Elizabethtown, Ky., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 5, 1968, Ser. No. 742,491
Int. Cl. C08g 47/06, 51/04
U.S. Cl. 260—37 21 Claims

A stable thermally conductive room temperature vulcanizable silicone rubber composition containing boron nitride is disclosed. The composition is prepared from a hydrocarbonoxy endblocked diorganopolysiloxane, boron nitride and a curing catalyst. This composition is useful as an insulation for conducting heat away from an insulated body.

3,499,860

CHLORINE-CONTAINING POLYMER COMPOSITIONS

Richard J. Penneck, Colchester, England, assignor to Bakelite Xylonite Limited, a British corporation

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,013
Claims priority, application Great Britain, Oct. 20, 1964, 42,683/64
Int. Cl. C08f 45/62
U.S. Cl. 260—23 10 Claims

A color stabilized chlorine-containing polymer prepared from a chlorine-containing polymer and a plurality of organic metal salts and an acid additive selected from the group consisting of succinic acid, succinic anhydride, a mono-aliphatic ester of an aliphatic dicarboxylic acid, and an aromatic ester of an aliphatic dicarboxylic acid.

3,499,861

ROOM TEMPERATURE CURING RESIN AND FOUNDRY SAND COMPOSITION CONTAINING SAME

Francis M. Kujawa, Tonawanda, and Jonathan A. Stone, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 19, 1967, Ser. No. 639,640
Int. Cl. C08g 22/14, 51/04
U.S. Cl. 260—25 24 Claims

Novel polyurethane compositions are provided by reacting an organic polyisocyanate with a resin mixture comprised of (1) a resin prepared by reacting (a) a condensation product of a phenol and an aldehyde or ketone containing condensate units having reactive phenolic hydroxyl groups, and (b) a substance reactive with the phenolic hydroxyl groups such as a mono oxirane ring compound, an alkylene halohydrin or an alkylene carbonate; and (2) a resinous product of the carbonization of pine wood, in the presence of (3) a solvent. The condensation product can also be prepared by first reacting the phenol with the substance reactive with the phenolic hydroxyl group, and thereafter condensing the modified phenol with an aldehyde or ketone. A foundry sand composition which is capable of being cured at room temperature is prepared by mixing foundry sand with the foregoing resin mixture, and thereafter reacting an organic polyisocyanate with the resin mixture to provide a polyurethane resin binder. The resulting foundry sand composition readily cures at room temperature.

3,499,862

METHOD OF PREPARING SHAPE RETAINING BODIES OF ORGANIC POLYMER HYDROGELS

Otto Wichterle, Prague, Czechoslovakia, assignor to Ceskoslovenska Akademie ved, Prague, Czechoslovakia

No Drawing. Filed May 23, 1966, Ser. No. 551,873
Claims priority, application Czechoslovakia, May 24, 1965, 3,380/65
Int. Cl. C08f 47/12
U.S. Cl. 260—29.7 8 Claims

When a hydrophilic monoolefin is copolymerized with 0.1 to 2.0% of a cross-linking agent in a solvent essentially consisting of an inert, non-aqueous liquid miscible with water, the resulting gel shrinks in contact with water when the solvent amounts to 40% to 80% of the copolymerization mixture. The hydrogel ultimately obtained has better optical and mechanical properties than are available with less solvent or water in the polymerization mixture. Defects caused by imperfections of a mold in which the polymerization is performed are reduced in size by the shrinkage.

3,499,863

AIR-CURABLE POLYSULFIDE-POLYURETHANE SEALANTS

Edward Francis Kutch, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 310,925, Sept. 23, 1963. This application Apr. 21, 1967, Ser. No. 632,541
Int. Cl. C08k 1/36
U.S. Cl. 260—31.6 15 Claims

There are disclosed herein air-curable polysulfide-polyurethane sealant and coating compositions based on isocyanate-terminated polysulfide prepolymers of the structure

$$OCN-[R-NH-C(=O)-O-R'SS-(R''SS)_n-R'-O-C(=O)-NH]_m-R-NCO$$

wherein R is selected from alkylene and arylene radicals, R′ and R″ are the same bivalent aliphatic radical wherein

the carbon atom chain may be interrupted with oxygen atoms, n has an integral value from 1 to 100, and m has an integral value of at least 2, and preferably from 2 to 15, which prepolymers are admixed with inert materials such as fillers, plasticizers, internal lubricants and pigments to form compositions curable by ordinary atmospheric moisture they can be packaged and stored in single containers. The prepolymers can be prepared by reacting a polysulfide polymer of the structure

$$HO-R'SS-(R''SS)_n-R'-OH$$

with a polyisocyante in amounts such that the ratio of isocyanate groups to hydroxyl groups, NCO:OH, is in the range 1.0:1 to 2.0:1.

3,499,864

HEAT STABLE STORABLE, ONE PART POLYTHIOL COMPOSITIONS WITH AMINE-LOADED MOLECULAR SIEVES

Edward Millen, 246 Cold Soil Road, Princeton, N.J. 08540

No Drawing. Continuation-in-part of application Ser. No. 662,283, Aug. 22, 1967. This application Aug. 19, 1968, Ser. No. 753,764
Int. Cl. C08g 23/20, 43/00
U.S. Cl. 260—33.8 20 Claims

One-part polymer compositions comprising (a) a curable, liquid polythiol polymer, (b) a dormant amine activatable curing agent, (c) a desiccating, hygroscopic accelerating agent, and (d) an amine-loaded molecular sieve which are characterized by excellent storage stability at temperate ambient temperatures and undergo relatively fast cures when exposed to moisture or a moisture-laden atmosphere, are improved and rendered storage stable at elevated ambient temperatures by containing in the compositions (e) a stabilizing amount of elemental sulfur. The compositions are useful as sealants and caulking compounds, especially in hot climates and under elevated storage temperatures.

3,499,865

METHOD OF MAKING A VULCANIZABLE RUBBER COMPOSITION WITH REACTION PRODUCTS OF SULFUR AND ORGANIC AMINES

Hans Bosch, Neuried, Germany, assignor to Chemische Werke Munchen, Otto Barlocher GmbH, Munich, Germany

No Drawing. Filed Sept. 23, 1966, Ser. No. 581,444
Claims priority, application Germany, Sept. 23, 1965, C 36,947
Int. Cl. C08c 11/18, 11/44, 11/50
U.S. Cl. 260—41.5 7 Claims

For making vulcanizable rubber compositions a separate reaction is set up between an organoamino compound, sulfur and a filler at a temperature between 120 and 140° C. and the thus-prepared separate reaction mixture is later added to the rubber composition.

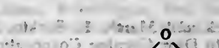
3,499,866

EPOXY STABILIZER IN POLY(VINYL CHLORIDE) RESINS

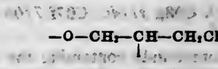
Peter A. Schwab, Ponca City, Okla., assignor, by mesne assignments, to Teknor Apex Company, a corporation of Delaware

No Drawing. Filed May 10, 1966, Ser. No. 548,860
Int. Cl. C08f 45/58
U.S. Cl. 260—45.8 9 Claims

It is disclosed that polyvinylchloride resins in a standard stabilized formulation containing a plasticizer, a primary stabilizer, and a secondary glycidyl ether stabilizer are improved when the glycidyl ether compound is characterized in containing at least one structural unit of the formula:



wherein R is alkyl, aryl, alkaryl, aralkyl or a radical of the formula



3,499,867

STABILIZED POLYAMIDE COMPOSITION

Naofumi Nakamura, Takatsuki-shi, and Yasufusa Hotta, Tadayoshi Murakami, Yoshiharu Shimpo, Kunisuke Etoh, and Yoshiharu Shiraishi, Tamaga-shi, Japan, assignors to Toyo Boseki Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed June 13, 1966, Ser. No. 556,855
Claims priority, application Japan, June 22, 1965, 40/36,756; Dec. 4, 1965, 40/74,745
Int. Cl. C08g 51/62
U.S. Cl. 260—45.75 8 Claims

A polyamide composition of improved thermal stability comprising an aliphatic or aromatic polyamide and from about 0.001 to about 1% by weight of a pre-formed copper complex prepared by heating a divalent copper salt at a temperature of from 100 to 140° C. with a lactam moiety having from about 5 to about 12 carbon atoms or an amino-saturated aliphatic carboxylic acid containing from about 5 to about 12 carbon atoms.

Optionally, styrenated phenol, an organic amine and/or a nitrogen-containing halide may be added for increased protection.

3,499,868

VINYL RESIN STABILIZERS

Michel Roussos, Yves Bourgeois, and Bruno Jasse, Paris, France, assignors to Melle-Bezons, Saint-Leger-les Melle, Deux-Sevres, France

No Drawing. Filed Jan. 27, 1967, Ser. No. 612,103
Claims priority, application France, Feb. 11, 1966, 49,217
Int. Cl. C08f 45/58
U.S. Cl. 260—45.75 15 Claims

Chlorine containing vinyl resins are stabilized by incorporating therein a biscyclohexanol and at least one member of the group consisting of tribasic lead sulfate, dibasic lead phthalate and dibasic lead phosphite.

3,499,869

LIGHT STABLE POLYURETHANE

Gerald R. Lappin and Gordon C. Newland, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 28, 1967, Ser. No. 656,645
Int. Cl. C08g 51/62
U.S. Cl. 260—45.75 9 Claims

An improved spandex type polymer having incorporated therein a metal chelate, for example, a metal chelate of a 1,3-diketone enol, for the purpose of providing increased ultraviolet light resistance to the polymer.

3,499,870

POLYMERIZING ORGANOSILICON COMPOUNDS WITH SULFUR-CONTAINING ORGANO TIN CATALYSTS

Ronald O. Hadlock and Martin E. Sorkin, Greensboro, N.C., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 601,840, Dec. 15, 1966. This application Mar. 8, 1968, Ser. No. 711,503

Int. Cl. C08g 31/40; C07f 7/08

U.S. Cl. 260—46.5 4 Claims

Organosilicon compounds containing the SiOH group are polymerized with diorgano tin compounds having the configuration $\equiv SnSCH_2COO-$ (e.g.

$$(C_4H_9)_2Sn[SCH_2COOC_4H_9]_2)$$

The cured products are superior for release applications.

3,499,871

COPOLYMER OF FORMALDEHYDE AND ACETALDEHYDE

Maurice J. A. Letort, Paris, and Bernard Fleureau, Lepercq-Verneuil-en-Halatte, Oise, France, assignors to Charbonnages de France, Paris, France, a public institution of France

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,182

Claims priority, application France, Apr. 23, 1960, 825,168/60

Int. Cl. C08f 3/40

U.S. Cl. 260—67 6 Claims

1. A process for producing a stable resilient thermoplastic high copolymer of formaldehyde and acetaldehyde, soluble at ambient temperature in organic solvents selected from the group consisting of pyridine, chloroform and acetone; comprising continuously feeding anhydrous formaldehyde monomer into a reaction zone maintained at a temperature of from —78° C. to 0° C. and containing a stirred liquid medium including acetaldehyde and a formaldehyde-polymerization catalyst selected from the group consisting of diphenylamine, tributylamine and cetyldimethylbenzylammonium bromide, continuously separating the precipitate produced as it precipitates from said liquid medium, removing said precipitate and submitting said precipitate to a processing step including washing and drying.

3,499,872

PROCESS FOR THE PRODUCTION OF POLYMERS CONTAINING POLYUREA OR POLYHYDRAZODICARBONAMIDE LINKAGES

Wilhelm Thoma, Cologne-Flittard, and Heinrich Rinke and Harald Oertel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of applications Ser. No. 341,185, and Ser. No. 341,186, Jan. 29, 1964. This application Aug. 19, 1966, Ser. No. 573,468

Int. Cl. C08f 22/02, 22/16

U.S. Cl. 260—75 11 Claims

A method is provided for making a polyurea or polyhydrazodicarbonamide suitable for films or filaments by reacting an organic diisocyanate with a compound prepared by reacting a diamine or hydrazine with carbon dioxide or sulphur dioxide in a polar solvent.

3,499,873

PREPARATION OF POLYETHYLENE TEREPHTHALATE BY MEANS OF FREE FALLING FILMS

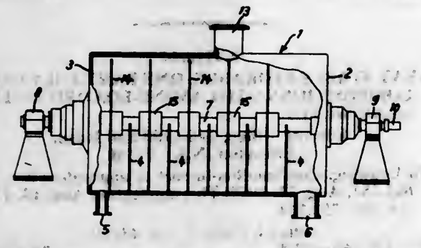
Heinz Kuehne, Oberhoechstadt, Taunus, Manfred Dietze, Offenbach am Main, and Franz Haser, Frankfurt am Main, Germany, assignors to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen

Filed May 24, 1968, Ser. No. 731,754

Claims priority, application Germany, June 22, 1967, V 33,924

Int. Cl. C08g 17/003

U.S. Cl. 260—75 10 Claims



An improved process for the manufacture of linear high polymers by the condensation of pre-condensates wherein the reacting material is repeatedly lifted and allowed to fall in the form of substantially coherent films under reaction conditions to expose large surface areas of said materials to the reaction conditions.

3,499,874

CATALYTIC PROCESS FOR PREPARING POLY-β-ALANINE

Yasunobu Takahashi and Yohei Fukuoka, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Oct. 17, 1966, Ser. No. 586,924

Claims priority, application Japan, Oct. 27, 1965, 40/65,462; Nov. 10, 1965, 40/68,526; Feb. 11, 1966, 41/7,720; Mar. 24, 1966, 41/17,640

Int. Cl. C08g 20/06

U.S. Cl. 260—78 5 Claims

A poly-β-alanine is produced by reacting β-aminopropionitrile with water in liquid phase at a temperature of 10–250° C. The process can be conducted in the presence of catalysts and solvents and in one embodiment includes reaction in the presence of preformed product polymer.

3,499,875

NOVEL PROMOTERS FOR THE ANIONIC POLYMERIZATION OF LACTAMS

Edward W. Pietrusza, Morristown, and Jack R. Pedersen, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 24, 1967, Ser. No. 655,298

Int. Cl. C08g 20/10, 20/12, 20/18

U.S. Cl. 260—78 8 Claims

This specification discloses novel benzoxazolyl derivatives selected from the group consisting of 1-(2-benzoxazolyl)benzotriazole, di-(2-benzoxazolyl)thioether, 1-(2'-benzoxazolyl)benzoxazolinone-2, and 1-(2'-benzoxazolyl)-3,5-dimethylpyrazole. These compounds are effective as promoters for the anionic polymerization of lactams, effecting conversion to high molecular weight polyamides rapidly at temperatures below the polymer melting point.

3,499,876

NOVEL ANHYDRIDE INTERPOLYMERS

Nathan D. Field, Allentown, and Earl P. Williams, Penn Argyl, Pa., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 21, 1967, Ser. No. 632,570

Int. Cl. C08f 15/40; A01n 23/00

U.S. Cl. 260—78.5 9 Claims

Anhydride interpolymers and their water-soluble derivatives comprising maleic anhydride and vinyl monomers of two different classes, one being a vinyl monomer such as alkyl vinyl ether or alkoxyalkylene vinyl ether and the other being a hydrocarbon oxyalkylene vinyl ether; said anhydride interpolymers being very useful as thickening agents for solutions of high ionic strength.

3,499,877

DIMETHYL ALPHA-METHYL STYRENE POLYMERS

Vernon W. Arnold, Hammond, Ind., and Robert J. Lee, Dolton, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,168

Int. Cl. C08f 19/04

U.S. Cl. 260—80.78 4 Claims

New resin compositions comprise from about 10 to 90 mol percent dimethyl alpha-methyl styrene, about 2 to 72 mol percent alpha-methyl styrene and about 0 to 72 mol percent styrene.

3,499,878

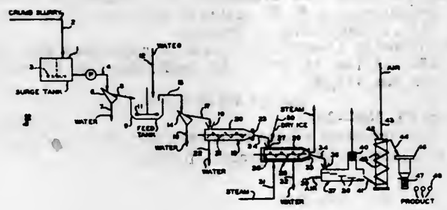
REMOVAL OF WATER FROM SOLID POLYMERS

James Q. Wood, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,612

Int. Cl. C08d 5/00; C08f 1/88

U.S. Cl. 260—85.1 5 Claims



A dewatering process for solid polymers is improved by the addition of Dry Ice to a confined zone so that the carbon dioxide gas released in the zone reduces the partial pressure of the water vapor therein and thereby enables the polymer to be dried to lower water levels when the polymer is passed to a reduced pressure zone and the associated water flashes into vapor.

3,499,879

PROCESS FOR PREPARING POLYAMIDE

Hidehiko Kobayashi, Chihiro Oizumi, Takeshi Yamashita, and Shigemasa Okubo, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,256

Claims priority, application Japan, Oct. 14, 1965, 40/62,689; Apr. 18, 1966, 41/24,140, 41/24,141

Int. Cl. C08f 3/74; C08g 20/02

U.S. Cl. 260—88.7 6 Claims

A process for preparing polyamide which comprises heating acrylonitrile or methacrylonitrile with water in a molar ratio ranging from 1:0.8 to 1:1.5 at a temperature of 100° C. to 250° C., preferably in the presence of a catalyst.

3,499,880

PURIFICATION OF POLYOLEFINS USING ALKANOIC ACIDS

Abraham Kutner, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,412

The portion of the term of the patent subsequent to Nov. 22, 1983, has been disclaimed

Int. Cl. C08f 3/08, 3/00

U.S. Cl. 260—93.7 5 Claims

An improved aqueous polyolefin work-up procedure is taught wherein the polymerization reaction is quenched with an alcohol, then treated with a small amount of a 2 to 8 carbon fatty acid or benzoic acid, followed by an aqueous extraction. The polymers exhibit a lower degree of corrosivity to metals during subsequent processing steps as a result of this treatment.

3,499,881

ELECTROPLATABLE POLYOLEFINS

Wassily Poppe and Habet M. Kheighatian, Springfield, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 3, 1967, Ser. No. 635,661

Int. Cl. C08f 45/00

U.S. Cl. 260—93.7 8 Claims

In the art of electroplating polyolefins, adhesion of the metal to the surface of the polyolefin article is enhanced by incorporating into the polyolefin from 0.25 to 1.5% by weight of a compatible sulfur compound such as dilauryl or distearyl thiodipropionate and a sulfate of a metal of Group II of the periodic system such as barium sulfate.

3,499,882

DIENE POLYMERIZATION PROCESS AND CATALYST THEREFOR

Walter Nudenberg, West Caldwell, N.J., Dudley B. Merrifield, St. Louis, Mo., and Edward Azoff Delaney, Dover, N.J., assignors to Texas-U.S. Chemical Company, Port Neches, Tex., a corporation of Delaware

No Drawing. Application June 19, 1963, Ser. No. 288,877, which is a continuation-in-part of application Ser. No. 38,417, June 24, 1960. Divided and this application Sept. 13, 1966, Ser. No. 578,995

The portion of the term of the patent subsequent to Jan. 28, 1986, has been disclaimed

Int. Cl. C08d 3/08, 1/14

U.S. Cl. 260—94.3 10 Claims

1. A process for preparing polybutadiene of controlled cis-1,4 structure and configuration which comprises contacting butadiene in a hydrocarbon medium inert to polymerization at a temperature between —10° and 90° C. with a catalyst comprising titanium tetrahalide and an ether-free organomagnesium compound of the formula R_2Mg and $RMgX$ wherein R is a hydrocarbyl radical containing 1–30 carbon atoms, and X is selected from the group consisting of bromine, iodine and chlorine, said catalyst being formed of said organomagnesium compound and said titanium tetrahalide in a mol ratio of 1:10 to 10:1 to give an active fresh hydrocarbyltitanium trihalide complex catalyst, wherein an oxidizing agent as a third component is added to keep the titanium in the tetravalent state.

3,499,883

POLYMER RECOVERY AND PURIFICATION PROCESS

Herbert J. Rosen, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

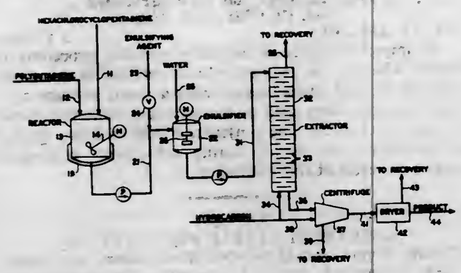
Filed Sept. 24, 1965, Ser. No. 489,892

Int. Cl. C08d 5/02; C08f 27/02

U.S. Cl. 260—94.7 13 Claims

Polymers of a butadiene polymer and a polyhalogenated cyclopentadiene are recovered and purified by a process

which comprises contacting an emulsion comprised of (a) the polymer of a butadiene polymer and a polyhalogenated cyclopentadiene, (b) unreacted polyhalogenated cyclopentadiene, (c) an emulsifying medium, and (d)



and emulsifying agent, with an acylic hydrocarbon to produce a hydrocarbon phase containing unreacted polyhalogenated cyclopentadiene and a second phase comprised of an emulsifying medium and polymer, and recovering the polymer from said second phase.

3,499,884
NUCLEATION OF 1-OLEFIN POLYMERS WITH NYLON SALTS

Harold V. Wood, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 10, 1967, Ser. No. 615,079
Int. Cl. C08f 1/88, 45/00
U.S. Cl. 260—94.9 **6 Claims**

The crystal structure of 1-olefin polymers is altered by the addition of a small concentration of a nylon salt. By nylon salt is meant the product formed on reacting a diamine such as hexamethylene diamine with a diacid such as adipic acid.

3,499,885
PYRIMIDINYL- OR DIAZEPINYL-THIOACETAMIDOPENICILLANIC ACIDS

Leonard Bruce Crast, Jr., Clay, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1968, Ser. No. 781,993
Int. Cl. C07d 99/16
U.S. Cl. 260—239.1 **3 Claims**

This invention relates to certain 6-[α-(3,4,5,6-tetrahydro-2-pyrimidinylthio)- and 6-[α-(1H-4,5,6,7-tetrahydro-1,3-diazepinyl - 2 - thio)-acetamido]-penicillanic acids and to processes for the preparation thereof. A typical example would be the reaction of 6-(α-bromoacetamido)-penicillanic acid with 2-mercapto-3,4,5,6-tetrahydropyrimidine to produce 6-[α-(3,4,5,6-tetrahydro-2-pyrimidinylthio)-acetamido]-penicillanic acid. The compounds of the invention are antibacterial agents.

3,499,886
AZO DYES OF STARCH ANTHRANILATES AND PROCESS OF PREPARING SAME

Charles L. Mehltretter, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 18, 1967, Ser. No. 654,273
Int. Cl. C08b 19/04; C13l 1/08
U.S. Cl. 260—233.5 **3 Claims**

Starch-based azo dyes are obtained by diazotizing starch anthranilate esters and coupling the diazotized intermediate with a conventional aromatic coupling agent. Dispersions of the predominantly red high molecular weight dyes also contribute significant viscosity effects.

ERRATUM

For Class 260—239 see:
Patent No. 3,499,806

3,499,887
POLYMERIZATION CATALYSTS FOR EPISULPHIDES

Wilfrid Cooper, Aldridge, George Vaughan, Sutton Coldfield, and Reginald T. Wragg, Tamworth, England, assignors to The Dunlop Company Limited, London, England, a British company

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,476
Claims priority, application Great Britain, May 13, 1966, 21,239/66
Int. Cl. C07d 23/00; C07f 3/06, 3/08
U.S. Cl. 260—239 **4 Claims**

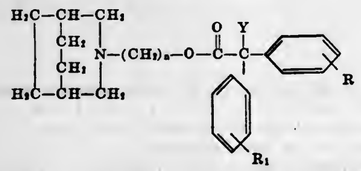
Organometallic compounds suitable as catalyst for the polymerization of episulphides, in which at least one of the valency states of the metal is satisfied by the grouping —SR where R represents an organic radical containing at least one other atom which is chemically bonded to the metal or which is associated with the metal by means of a co-ordination bond, are prepared by reacting a salt of the metal with the appropriate thiol compound.

3,499,888
3-AZABICYCLO[3.2.2]NONANE-3-ETHYL BENZILATE

Jack Bernstein, New Brunswick, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 251,763, Jan. 16, 1963. This application July 12, 1965, Ser. No. 471,386
Int. Cl. C07d 41/04
U.S. Cl. 260—239 **1 Claim**

This invention relates to novel esters of 3-aza-bicyclo [3.2.2]nonane of the general formula



and salts thereof, which have antihistaminic and antispasmodic properties.

3,499,889
PENICILLIN DERIVATIVES

Peter Baumann, Fullinsdorf, Basel-Land, and Markus Zimmermann, Riehen, near Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,827
Claims priority, application Switzerland, Sept. 21, 1964, 12,256/64
Int. Cl. C07d 99/22; A61k 21/00
U.S. Cl. 260—239.1 **3 Claims**

2,6-diaminophenyl penicillin and monobasic salts thereof are antibacterial agents.

3,499,890
CERTAIN OCTAHYDRO-1,12-TRIMETHYLENE-INDOLO[2,3-a]QUINOLIZINES

Robert Norman Schut, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 2, 1967, Ser. No. 643,065
Int. Cl. C07d 41/00; A61k 27/00
U.S. Cl. 260—239.3 **10 Claims**

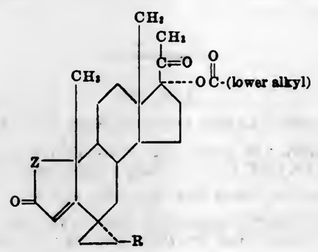
A series of hexahydro- and octahydro-1,12-trimethyleneindolo[2,3-a]quinolizines that are useful as analgesics and monoamine oxidase inhibitors. The process for preparing the compounds includes the addition of α,β-unsaturated aldehydes or β,γ-unsaturated α-ketoesters to a suitable quinolizine to form an intermediate adduct. The intermediate adduct is then hydrogenated to prepare the octahydro form.

3,499,891
SPIRO(STEROIDAL-6,1'-CYCLOPROPANES) AND PROCESS

Frank B. Colton, Evanston, and Robert T. Nicholson, Glenview, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

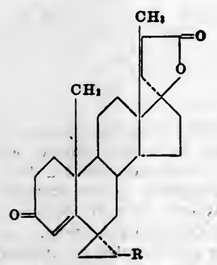
No Drawing. Continuation-in-part of application Ser. No. 389,183, Aug. 12, 1964. This application Aug. 24, 1964, Ser. No. 391,759
Int. Cl. C07d 7/06; C07c 169/24, 173/00
U.S. Cl. 260—239.57 **10 Claims**

3. A compound of the formula



wherein R is selected from the group consisting of hydrogen and a lower alkyl radical, and Z is a member of the class consisting of ethylene and vinylene radicals.

7. A compound of the formula



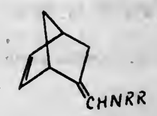
wherein R is a member of the class consisting of hydrogen and a lower alkyl radical.

3,499,892
HETEROCYCLIC ENAMINES OF 5-NORBORNENE-2-CARBOXALDEHYDE

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Original application Oct. 16, 1963, Ser. No. 316,520. Divided and this application Dec. 27, 1967, Ser. No. 725,967
Int. Cl. C07d 23/00
U.S. Cl. 260—240 **8 Claims**

The compounds of this invention are enamines of the formula



wherein NRR is a cyclic amino group. The compounds of this invention yield polycyclicaminosulfones when condensed with methanesulfonyl chloride or chloromethanesulfonyl chloride. These latter compounds have anti-inflammatory activity.

3,499,893
PYRIMIDINYL- OR DIAZEPINYLTHIOACETAMIDOCEPHALOSPORANIC ACIDS

Leonard Bruce Crast, Jr., Clay, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1968, Ser. No. 781,994
Int. Cl. C07d 99/24
U.S. Cl. 260—243 **9 Claims**

This invention relates to certain 7-[α-(3,4,5,6 - tetrahydro - 2 - pyrimidinylthio)- and 7-[α(1H - 4,5,6,7-tetrahydro - 1,3 - diazepinyl - 2 - thio) - acetamido]cephalosporanic acids and to processes for the preparation thereof. A typical example would be the reaction of 7-(α-bromoacetamido)-cephalosporanic acid with 2-mercapto-3,4,5,6 - tetrahydropyrimidine to produce 7-[α-(3,4,5,6-tetrahydro - 2 - pyrimidinylthio) - acetamido]-cephalosporanic acid. The compounds of the invention are antibacterial agents.

3,499,894
SUBSTITUTED 3,4 - DIHYDRO - 2H - (1)-BENZOTHIENO - (3,2-b) - PYRAN-2-YL-AMINE COMPOUNDS AND METHOD OF PREPARATION THEREOF

Earl R. Bockstahler, Acton, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 3, 1966, Ser. No. 569,837
Int. Cl. C07d 87/46, 29/34, 63/18
U.S. Cl. 260—247.1 **6 Claims**

Substituted 3,4 - dihydro - 2H - (1) - benzothieno - (3,2-b)-pyran-2-yl-amine compounds, such as 1-(7-chloro-3-ethyl - 3,4 - dihydro - 4 - propyl - 2H - (1) - benzothieno (3,2-b)-pyran-2-yl)-piperidine and 4-(4-ethyl-3,4-dihydro-3 - methyl - 2H - (1) - benzothieno(3,2 - b) - pyran - 2-yl)morpholine, are prepared by the reaction of a substituted benzo(b)-thiophen-3-(2H)-one with an aliphatic

aldehyde and an amine. The compounds are useful as pesticides for the control of insects, plants, bacteria and fungi.

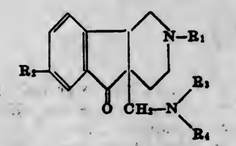
3,499,895

5H-INDENO[1,2-c]PYRIDINE-5-ONES

Ernst Jucker, Ettingen, Anton Ebnother, Reinach, Basel-Land, and Jean-Michel Bastian, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed June 21, 1967, Ser. No. 647,626
Claims priority, application Switzerland, June 23, 1966, 9,127/66; Feb. 28, 1967, 2,910/67
Int. Cl. C07d 87/38, 39/00, 27/04
U.S. Cl. 260—247.5 7 Claims

The present invention provides compounds of formula:



in which R_1 is lower alkyl, R_2 is hydrogen, chlorine or lower alkyl, and each of R_3 and R_4 is lower alkyl, or together with the nitrogen they are 1-pyrrolidinyl, piperidino, morpholino or 4-methyl-1-piperazinyl, and a pharmaceutically acceptable acid addition salt thereof. The compounds exhibit pronounced analgesic effects, and furthermore have certain sedative properties and exhibit a pronounced blood pressure lowering effect on hypertonic animals. The production of these compounds is furthermore described.

3,499,896

TRIAZINYL-ANTHRAQUINONE DYESTUFFS

Rutger Nesdl, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 8, 1967, Ser. No. 644,475
Claims priority, application Germany, June 15, 1966, F 49,473
Int. Cl. C07d 55/20
U.S. Cl. 260—249 10 Claims

Anthraquinone dyestuffs containing an α-amino-triazine substituent wherein the triazine ring is substituted by alkoxy, aralkoxy, alkenyloxy, aralkenyloxy, or cyclohexoxy groups, are useful for dyeing synthetic fiber materials.

3,499,897

1,4-DIHYDRO-4-OXO-2-QUINAZOLINEPROPIONIC ACID ESTERS

Stanley C. Bell, Penn Valley, and Peter H. L. Wei, Upper Darby, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No. Drawing. Filed Dec. 8, 1967, Ser. No. 688,984
Int. Cl. C07d 51/48
U.S. Cl. 260—251 4 Claims

This invention concerns esters of 1,4-dihydro-4-oxo-2-quinazolinepropionic acids which are pharmacologically active as mydriatic agents.

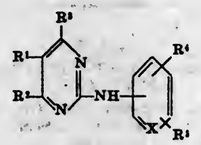
3,499,898

2-AMINOPHENYL AND 2-AMINOPYRIDYL PYRIMIDINES HAVING AN AMINO OR AMIDO GROUP IN THE 5-POSITION

Walter von Bebenburg and Kurt Thiele, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Nov. 7, 1967, Ser. No. 681,095
Claims priority, application Germany, Nov. 9, 1966, D 51,494
Int. Cl. C07d 51/42
U.S. Cl. 260—256.4 2 Claims

Substituted amino pyrimidines having valuable anti-inflammatory and anti-pyretic properties which are of the formula



wherein:

R^1 is $—NH_2$, —NHCO-lower alkyl, —NHCO-lower alkenyl or —NHCOO-lower alkyl;

Each of R^2 and R^3 taken individually is H, NH_2 or OH;

R^4 is H, —NH-phenyl, —NH-phenyl-CF_3, $—CF_3$, lower alkyl, lower alkoxy or halogen;

R^5 is H, lower alkyl, lower alkoxy or halogen; and X is =CH— or =N—.

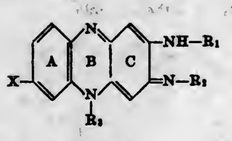
3,499,899

NOVEL PHENAZINE COMPOUNDS AND PROCESS

André Girard and André Ray, Paris, France, assignors to Roussel UCLAF, Paris, France, a corporation of France

No Drawing. Filed Oct. 21, 1968, Ser. No. 769,383
Claims priority, application France, Oct. 24, 1967, 125,628; Jan. 24, 1968, Ser. No. 137,288
Int. Cl. C07d 51/80
U.S. Cl. 260—267 14 Claims

Novel 3,5-dihydrophenazines of the formula



(IA)

wherein X is selected from the group consisting of hydrogen and halogen, R_1 is an aromatic radical substituted with an aliphatic group containing a dialkyl amino chain and which is connected to the aromatic nucleus by a carbon atom, oxygen atom or nitrogen atom, R_2 is an aliphatic radical containing a primary or secondary hydroxy and R_3 is a substituted or unsubstituted aromatic radical and their nontoxic, pharmaceutically acceptable acid addition salts which have an important antibacillus activity and to a novel process for the preparation of 2-amino-3-imino-3,5-dihydrophenazines of Formula IB and to novel intermediates formed therein.

3,499,900

PROCESS FOR PREPARATION OF PIPERAZYL ALKYL DERIVATIVES OF TETRAZOLES

Robert Norman Schut, Edwardsburg, Mich., and Herbert John Havera, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed May 3, 1967, Ser. No. 635,699
Int. Cl. C07d 51/70
U.S. Cl. 260—268 5 Claims

A process for the synthesis of piperazylalkyl derivatives of tetrazoles having beneficial pharmacological properties. Generally the synthesis involves the acylation of a piperazine with a suitable haloalkanoyl halide, substitution of the resulting ω-haloalkanoylpiperazine by cyanide ion, closing of the ring on the resulting ω-cyanoamide with azide ion to form an ω-tetrazolylamide and reduction of the amide to the desired amine.

3,499,901

PARTIALLY HYDROGENATED PHENANTHRIDINES

Joseph Hellerbach, Basel, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 23, 1966, Ser. No. 559,739
Claims priority, application Switzerland, June 30, 1965, 9,168/65
Int. Cl. C07d 39/02
U.S. Cl. 260—286 7 Claims

1,2,3,4,4a,10b - hexahydro- and 1,2,3,4,4a,5,6,10b-octahydrophenanthridines substituted in the 9-position with hydroxy lower alkoxy, hydroxy-substituted lower alkoxy or lower alkoxy-substituted lower alkoxy and whose 10b-carbon atom is quaternized with lower alkyl, lower cycloalkyl-alkyl or lower alkenyl, are described. The end products are useful as analgesic agents.

3,499,902

ORGANIC HYDRAZONE COMPOUND CONTAINING AZO COUPLER MOIETY

Robert F. Coles, East Oakdale Township, Washington County, and Richard A. Miller, White Bear Lake, Minn., and Vsevolod Tulagin, Rochester, N.Y., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 181,809, Mar. 22, 1962. This application Aug. 9, 1967, Ser. No. 659,322
Int. Cl. C07d 91/46, 49/38
U.S. Cl. 260—287 6 Claims

Normally stable organic hydrazones are provided which contain azo coupler moieties and undergo spontaneous coupling under oxidative conditions to produce azo dye color-bodies of unexpectedly dark shades.

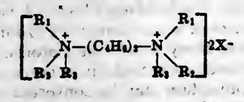
3,499,903

QUATERNARY AMMONIUM HALIDES AND PROCESS FOR THE PREPARATION THEREOF

Francesco Minisci, Milan, and Remo Galli, Torricella del Pizzo, Cremona, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,654
Claims priority, application Italy, Nov. 15, 1965, 25,271/65
Int. Cl. C07c 87/02, 87/30
U.S. Cl. 260—293 7 Claims

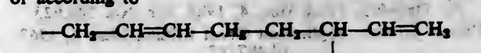
Described are quaternary ammonium halides of the formula



wherein R_1 and R_2 are alkyl of from 1 to 4 carbon atoms which when taken together may form a piperidino radical; R_3 is cetyl or benzyl; X is chlorine or bromine; the two units C_4H_6 are bound according to



or according to



These compounds have a high disinfectant activity.

3,499,904

METHOD FOR PREPARING YNAMINES

Laurence I. Peterson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 24, 1967, Ser. No. 662,911
Int. Cl. C07c 87/24, 103/12
U.S. Cl. 260—293 8 Claims

In the process of preparing ynamines by reacting by contacting a phenylacetylene with a primary or secondary amine and molecular oxygen, in the presence of a source of copper ions, to produce the ynamines, the improvement comprises adding a reducing agent to the reaction, thereby greatly increasing the ynamine yields.

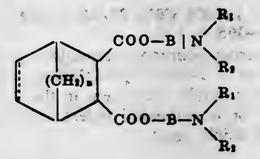
3,499,905

DERIVATIVES OF BICYCLIC DICARBOXYLIC ACIDS

Heinrich Koch, Westbahnstrasse 38, Vienna VII, Austria, and Johannes Kotlan, Wiedner Hauptstrasse 40, Vienna IV, Austria

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,858
Claims priority, application Austria, Dec. 11, 1963, A 9,937/63
Int. Cl. C07d 29/24; C07c 97/00; A61k 27/00
U.S. Cl. 260—294.3 14 Claims

Derivatives of bicyclic dicarboxylic acids of the formula



wherein R_1 and R_2 are each selected from the group consisting of lower alkyl groups and said lower alkyl groups combined to form an alkylene chain of 4 or 5 carbons, B is a straight or branched chain lower alkylene groups and *n* is 1 or 2 and quaternary salts of said derivatives.

3,499,906

5,9-DIETHYL-2'-HYDROXY-2-SUBSTITUTED-6,7-BENZOMORPHANS

Franklin M. Robinson, Ambler, Paul S. Anderson, North Wales, and James A. Nicholson, Philadelphia, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 20, 1966, Ser. No. 551,534
Int. Cl. C07d 39/00
U.S. Cl. 260—293.4 6 Claims

This invention concerns novel 5,9-diethyl-2'-hydroxy-2-substituted-6,7-benzomorphan derivatives and the isomers thereof and processes for the preparation of the same. The novel 5,9-diethyl-2'-hydroxy-2-substituted-6,7-benzomorphan derivatives have analgesic and pain-relieving activity as well as being non-addicting and non-narcotic.

3,499,907

2-IMINO-5-NITROTHIAZOLINE COMPOUNDS

Peter John Islip, Hampton, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,923
Claims priority, application Great Britain, Mar. 6, 1967, 10,497/67
Int. Cl. C07d 91/26
U.S. Cl. 260—293.4 6 Claims

2-imino-5-nitrothiazolines, in which the 2-imino group is lower alkanoylimino, cycloalkylcarbonylimino, benzoylimino, lower alkoxycarbonylimino, or phenoxycarbonylimino, and the 3-position is substituted by an unsubstituted or a mono- or di-lower alkyl or benzyl-substituted carbamoylalkyl grouping, by a heterocyclic aminocarbonylalkyl grouping, or by a lower alkoxycarbonylalkyl grouping; and their production by reacting a 5-nitrothiazole compound, in which the 2-position is substituted by lower alkylcarboxamido, cycloalkylcarboxamido, benzamido, lower alkoxycarboxamido, or phenoxycarboxamido, and the 3-position is unsubstituted, with a suitably substituted α-haloacetamide or α-halopropionamide, or with an α-haloacetate ester or α-halopropionate ester, in the presence of a base that is preferably an alkali metal hydride. The products are useful schistosomacides and trichomonacides.

3,499,908

PRODUCTION OF 1,3-BIS-(HETEROCYCLOIMINO)-ISOINDOLINES FROM 3-IMINOISOINDOLENINES AND HETEROCYCLIC AMINES

Heinrich Vollmann, Leverkusen, and Heinrich Leister, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,679
Claims priority, application Germany, Nov. 24, 1965, F 47,746
Int. Cl. C07d 27/48, 91/34
U.S. Cl. 260—305 15 Claims

1,3-bis-(heterocycloimino)-isoindolines are prepared by the reaction of a 3-imino-isoindolenine, which contains an easily exchangeable substituent in the 1-position, with a primary 5- or 6-membered heterocyclic amine in the presence of an acidic agent.

3,499,909

PROCESS FOR PRODUCTION OF 6-AMINOPENICILLANIC ACID

Helmut Wilhelm Otto Weisenburger, Rijswijk, and Marcelus Gijsbertus van der Hoeven, Den Haag, Netherlands, assignors to Koninklijke Nederlandsche Gisten Spiritusfabriek N.V., Delft, Netherlands, a corporation of the Netherlands

No Drawing. Continuation-in-part of application Ser. No. 622,907, Mar. 14, 1967. This application Nov. 6, 1967, Ser. No. 681,002
Claims priority, application Netherlands, May 18, 1966, 6606872; Aug. 7, 1967, 6710835; Oct. 11, 1967, 6713809
Int. Cl. C07d 91/14
U.S. Cl. 260—306.7 10 Claims

A novel process for the preparation of a compound selected from the group consisting of 6-amino-penicillanic acid and its derivatives and 7-amino-cephalosporanic acid and its derivatives in high yields by chemical removal of the acyl radical of the corresponding 6-acylamino-penicillanic or 7-acylamino-cephalosporanic compounds which are useful intermediates.

3,499,910

MONOHALOPHENYLTHIAZOLYL UREAS

Patrick Robert Driscoll, Fords, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 8, 1967, Ser. No. 636,589
Int. Cl. C07d 91/34; A01n 9/22
U.S. Cl. 260—306.8 1 Claim

Monohalophenylthiazolyl ureas are new compounds that are effective for the control of plant parasitic nematodes and are not phytotoxic to plants. A particularly effective material is 1-methyl-3-[4-(p-chlorophenyl)-2-thiazolyl] urea.

3,499,911

STABILIZATION OF A CYCLIC SULFITE AND COMPOSITION

Jonathan E. Zakary, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 1, 1967, Ser. No. 642,732
Int. Cl. C07d 89/30
U.S. Cl. 260—327 9 Claims

This invention relates to the discovery of a new stabilizing agent, which may be employed with the polycyclic sulfite known by the chemical nomenclature of 6,7,8,9,10,10 - hexachloro - 1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxa thiepin-3-oxide, to retard the decomposition of the polycyclic sulfite into chlorendic diol and chlorendic ether. The stabilizing agent also may be employed with the chlorendic diol resulting from the degradation of the polycyclic sulfite, in a process of reconstituting the chlorendic diol into the polycyclic sulfite by reaction with thionyl halide. In such a reconstitution process, in the absence of the newly discovered stabilizing agent, a large proportion of the chlorendic diol is converted into chlorendic ether. Because chlorendic ether is a stable product, its formation substantially reduces the yield of the polycyclic sulfite resulting from the above reconstitution process.

The stabilizer of this invention is typically a phosphorus trichloride or a phosphorus thiotrichloride.

3,499,912

PROCESS FOR THE PREPARATION OF 5-OXO-11α-HYDROXY - 3,5 - SECO-A-NOR-PREGNAN-3-OIC ACID - 3,11 LACTONES AND DERIVATIVES THEREOF

Milan Radoje Uskokovic, Upper Montclair, and Thomas Henry Williams, Passaic, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Oct. 20, 1965, Ser. No. 499,094. Divided and this application June 17, 1968, Ser. No. 737,351
Claims priority, application Switzerland, Nov. 6, 1963, 13,632/63; Republic of South Africa, Mar. 16, 1965, 65/1,408
Int. Cl. C07d 9/00; C07c 171/00, 167/02
U.S. Cl. 260—343.2 3 Claims

This invention is directed to a process for the preparation of 11α-hydroxy-3,5-seco-A-nor-androstan-3-oic acid-3,11-lactones and 11α-hydroxy-3,5-seco-A-nor-pregnan-3-oic acid 3,11-lactones which comprises ozonizing the corresponding 11α-hydroxy-4-en-3-one steroids. These intermediate compounds prepared in accordance with the process of this invention may be converted to steroids of the 9β,10α-series which are pharmacologically useful as anabolic and progestational agents.

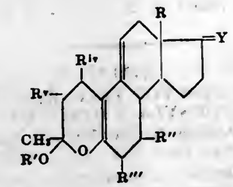
3,499,913

4-OXA STEROIDS AND PROCESS

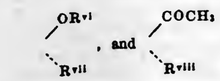
Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Jean Jolly, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing Filed Jan. 3, 1968, Ser. No. 695,364
Claims priority, application France, Jan. 6, 1967, 90,264, 90,265
Int. Cl. C07d 101/00; C07c 167/02, 169/10
U.S. Cl. 260—345.2 25 Claims

This invention relates to a 4-oxa steroid of the formula



where R and R' represent lower alkyl, R'' and R''' represent a member selected from the group consisting of hydrogen, α-lower alkyl and β-lower alkyl, R^{IV} and R^{V} represent a member selected from the group consisting of hydrogen, α-methyl and β-metyhl, Y represents a member selected from the group consisting of O,



wherein R^{VI} represents a member selected from the group consisting of hydrogen, lower alkyl and the acyl of an organic carboxylic acid having 1 to 7 carbon atoms, R^{VII} represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkylnyl and lower haloakynyl, and R^{VIII} represents a member selected from the group consisting of hydrogen and methyl. These compounds are useful as intermediates in the preparation of known physiologically active steriods, particularly due to the stability of the A ring allowing chemical reactions to be performed on the C and D rings.

3,499,914

BENZOFURAN DERIVATIVES SUITABLE AS UV-ABSORBENTS

Rainer Klink and Karl-Heinz Baron, Darmstadt-Eberstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany

No Drawing. Filed May 16, 1967, Ser. No. 638,762
Claims priority, application Germany, May 20, 1966, M 69,570
Int. Cl. C07d 5/40; A61l 23/00; C08k 1/26
U.S. Cl. 260—346.2 5 Claims

2-(2,4-dimethylphenyl)-benzofuran and 5-, 6-, or 7-methyl derivatives thereof suitable for absorbing UV-radiation of 290–320 mμ, and particularly useful as oil-soluble active ingredients for sun tan preparations and the like.

3,499,915

SULFONATED 1 - ALKYLAMINO - 4 - ACYLAMINO-METHYLARALKYLAMINO-ANTHRAQUINONES

Hans Rudolf Schwander, Unterm Schellenberg, Anton Zenhausern, Reinach, and Peter Hindermann, Bottmingen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 514,692, Dec. 17, 1965. This application June 12, 1967, Ser. No. 645,514
Claims priority, application Switzerland, June 17, 1966, 8,841/66
Int. Cl. C09b 1/36
U.S. Cl. 260—372 10 Claims

1,4-diamino-anthraquinone dyes which are substituted at the amino nitrogen in 1-position by a secondary alkyl, or in certain cases by a cycloalkyl group, and which are substituted at the amino nitrogen in 4-position by an arylenealkyl substituent the aryl moiety of which is substituted by $—SO_3H$, or by a fiber-reactive grouping especially of the $—CCl=CH_2$ or $—CH_2Cl$ type, which fiber-reactive grouping is linked to the said aryl moiety via a —CO—NH—CH_2— type (Einhorn) bridge, or by a non-fiber-reactive, unsubstituted alkyl, a cycloalkyl, alkoxy or cycloalkoxy radical or a non-fiber-reactive aryl radical linked to the above-mentioned aryl moiety via the aforesaid —CO—NH—CH_2—bridge; these dyestuffs being useful as substantive, and as far as they possess fiber-reactive groupings, as reactive polyamide dyes.

3,499,916

BASIC DYES OF THE 1-(SUBSTITUTED AMINO)-4-AMINOETHOXYETHYLAMINOANTHRAQUINONE SERIES

Berthold Gertisser, Munchenstein, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Jan. 13, 1967, Ser. No. 609,011
Claims priority, application Switzerland, Jan. 21, 1966, 864/66; Jan. 25, 1966, 1,006/66; Dec. 22, 1966, 18,386/66
Int. Cl. C09b 1/16
U.S. Cl. 260—379 8 Claims

This invention relates to basic anthraquinone dyes their production and use for dyeing polyacrylonitrile polymers or copolymers, containing a hydrazinium, ammonium or cycloimmonium radical.

3,499,917

PROCESS FOR PREPARING HIGH MOLECULAR CONTENT ESTER OF PROPYLENE GLYCOL

John David Brandner and George Joseph Steckburger, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 454,737, May 10, 1965. This application Nov. 8, 1967, Ser. No. 681,567
Int. Cl. C11c 3/00
U.S. Cl. 260—410.6 10 Claims

Process for preparing propylene glycol monoester products whereby the formation of propylene glycol monoester is favored and the formulation of propylene glycol diester, polypropylene glycol, and esters of polypropylene glycol are substantially suppressed. The process comprises reacting propylene oxide with fatty acid in the presence of sufficient amount of potassium hydroxide, potassium salts of weak organic acids, potassium alcohol alkoholates, or mixtures thereof to furnish at least about 1% of KOH equivalent based on the weight of fatty acid, until the

acid number decreases to less than about 10, venting the unreacted propylene oxide and neutralizing the catalyst before the acid number has decreased to less than about 1 with an acid that forms a potassium salt which is insoluble in the reaction product, and separating the potassium salt from the reaction product. For high monoester content, the temperature used will desirably depend upon the propylene oxide pressure used. The temperature is from about 100° C. to about 160° C. at oxide pressures of at least 2 atmospheres, and the temperature is from about 100° C. to 147° C. at oxide pressures of less than 2 atmospheres. The novel product is a complex mixture comprising propylene glycol monoester, propylene glycol diester, polypropylene glycol, and esters of polypropylene glycol. The product is suitable for use as a food emulsifier.

3,499,918
MANUFACTURE OF HIGHLY PURE ALUMINUM ALCOHOLATE

Hiroshi Hasegawa, 77 Shindencho, and Mikio Sato, 38 Konakadaicho, both of Chibashi, Chiba-ken, Japan, and Tuneo Yano, 2300 Kizuki-Isecho, Kawasakishi, Kanagawa-ken, Japan

No Drawing. Continuation-in-part of application Ser. No. 332,908, Dec. 23, 1963. This application Dec. 16, 1966, Ser. No. 602,177

Claims priority, application Japan, Dec. 25, 1962, 37/57,491

Int. Cl. C07f 5/06

U.S. Cl. 260—448 12 Claims

In the production of aluminum alcoholate by the oxidation of an aluminum hydrocarbon compound having the general formula AlR_3 where R may be same or different and represents hydrocarbon radicals with molecular oxygen in the presence of an inert solvent followed by the stripping of the reaction mixture, the improvement which comprises adding dry ammonia to a reaction mixture at any time from the start of the oxidation to the end of the stripping in an amount of 0.01 to 10 mols per mole of the starting aluminum hydrocarbon compound thereby to obtain a highly pure aluminum alcoholate.

3,499,919
4 - ALKYL AND CYCLOHEXYL ALKYL DICYCLOHEXYL PEROXYDICARBONATES

Hans G. Gerritsen, Deventer, Hendrik Hansma, Schalkhaar, and Hans Jaspers, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,775

Claims priority, application Great Britain, Feb. 28, 1966, 8,714/66

Int. Cl. C07c 73/00, 69/00; C08f 1/60

U.S. Cl. 260—453 6 Claims

The present invention relates to 4-substituted dicyclohexylperoxydicarbonates capable of use, for example, in the polymerization of polymerizable unsaturated monomers; the invention also relates to a process for preparing the 4-substituted dicyclohexylperoxydicarbonates and to polymerizable compositions consisting essentially of a polymerizable monomer and a 4-substituted dicyclohexylperoxydicarbonate. The 4-substituent is a cyclohexyl radical or an alkyl radical or a cyclohexylalkyl radical, said alkyl or cyclohexylalkyl radical having up to 10 carbon atoms.

3,499,920
PROCESS FOR PREPARING N-METHYLGLYCINONITRILE

David A. Daniels, Catonsville, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,293

Int. Cl. C07c 121/42, 101/04

U.S. Cl. 260—465.5 10 Claims

In abstract, this invention is directed to a process for preparing N-methylglycinonitrile by; (a) forming a first mixture by mixing methylamine and hydrogen cyanide at about 0–25° C. and in a mole ratio of about 1–2:1; (b) adding an aqueous formaldehyde solution analyzing about 25–50% HCHO to the first mixture while maintaining the temperature thereof at about 0–25° C.; and (c) recovering the thus formed product, all as recited hereinafter.

3,499,921
PROCESS FOR PREPARING DIPHENYLACETONITRILE

Mark Crosby Whiting, Oxford, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Jan. 22, 1960, Ser. No. 4,018, now Patent No. 3,361,780, dated Jan. 2, 1968. Divided and this application Sept. 13, 1967, Ser. No. 695,534

Int. Cl. C07c 121/02

U.S. Cl. 260—465 2 Claims

The reaction of aromatic compounds with chromium hexacarbonyl is facilitated by use of polar solvents such as dioxane and dimethylformamide. Electron repelling substituents such as dimethylamine on the aromatic ring also facilitate the reaction.

The characteristic properties of functional groups appended to the aromatic ring are generally preserved in aromatic Group VI–B metal tricarbonyls. However, the aromatic moiety undergoes nucleophilic substitution more readily than the parent compound. Regeneration of the aromatic moiety occurs by thermal decomposition or chemical displacement. Fluoro-substituted aromatic Group VI–B metal tricarbonyls undergo nucleophilic displacement very readily.

3,499,922
DIMERIZATION PROCESS

Julian Feldman and Bernard A. Saffer, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 271,463, Apr. 8, 1963. This application Mar. 2, 1965, Ser. No. 436,650

Int. Cl. C07c 121/30

U.S. Cl. 260—465.8 3 Claims

1. The process for the production of 2-methyleneglutaronitrile which comprises dimerizing acrylonitrile in the presence of a polymerization inhibitor and in the presence of a catalytic amount of tricyclohexylphosphine.

3,499,923
POLYCHLOROALKYLPHOSPHONIC ACID SALTS

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,541

Int. Cl. C07c 69/40, 69/52, 69/60

U.S. Cl. 260—485 6 Claims

Polychloroalkylphosphonic acid salts of the condensation products of dialkanol amines and polycarboxylic acids or anhydrides, suitable for use as oxidation inhibitors.

3,499,924
PROCESS FOR THE MANUFACTURE OF ANHYDROUS SOLUTIONS OF PERACETIC ACID

Kurt Sennewald, Wilhelm Vogt, and Lothar Strie, Knapsack, near Cologne, and Heinrich Rohberg, Hermülheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,159

Claims priority, application Germany, Jan. 19, 1966, K 58,177

Int. Cl. C07c 73/12

U.S. Cl. 260—502 9 Claims

Explosion-proof process for making anhydrous solutions of peracetic acid by the oxidation, with thorough mixing, of an acetaldehyde solution with at least the equivalent quantity of oxygen at elevated temperatures and under pressure. The peracetic acid solutions are obtained in improved yields within short reaction periods.

3,499,925
PROCESS FOR THE PRODUCTION OF TRANS-4-AMINOMETHYLCYCLOHEXANE - 1 - CARBOXYLIC ACID

Takeo Naito, Ichikawa-shi, Atsuji Okuno, Tokyo, Takaaki Aoyagi, Fujisawa-shi, Tesaku Miki, Tokyo, Shizuo Kadoya, Yokohama-shi, Masato Inaoka, Funabashi-shi, and Motonori Shindo, Tokyo, Japan, assignors to Daiichi Seiyaku Company Limited, Nihonbashi, Tokyo, Japan, and Mitsubishi Chemical Industries Limited, Chiyoda-ku, Tokyo, Japan, both corporations of Japan

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,074

Claims priority, application Japan, Mar. 23, 1964, 39/15,791; July 6, 1964, 39/38,521

Int. Cl. C07c 51/00, 61/08, 101/04

U.S. Cl. 260—514 12 Claims

Cis-4-aminomethylcyclohexane-1-carboxylic acid or a mixture of cis- and trans-4-aminomethylcyclohexane-1-carboxylic acid is heated at a temperature of between 160° C. and 250° C. in the presence of an alkaline agent in a solvent to produce trans-4-aminomethylcyclohexane-1-carboxylic acid, and trans-4-aminomethylcyclohexane-1-carboxylic acid is recovered from the reaction mixture.

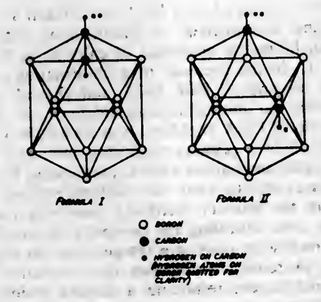
3,499,926
POLYMERS OF META-CARBORANE ACYL CHLORIDES

Roy P. Alexander, Killingworth, and Hansjuergen A. Schroeder, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

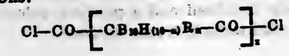
Filed Jan. 24, 1966, Ser. No. 522,639

Int. Cl. C07c 51/58; C07d 107/02

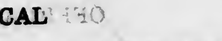
U.S. Cl. 260—544 2 Claims



Polymers of the formula useful in solid propellant compositions:



where x is 2 to about 30, n is an integer of from 0 to 10 and R is halogen or alkyl are prepared by reacting phosgene with the compound:



in the presence of toluene and at a temperature between about 0° and about 40° C.

3,499,927
GUANIDINO DERIVATIVES OF POLYALKYLENE POLYAMINES

George Gerald Badcock, New Brighton, and Wilfred James Cecil Dyke, Upton-by-Chester, England, assignors to Evans Medical Limited, Liverpool, England, a British company

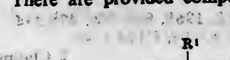
No Drawing. Filed Aug. 19, 1965, Ser. No. 481,122

Claims priority, application Great Britain, Aug. 24, 1964, 34,530/64

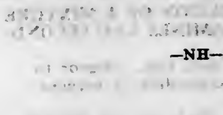
Int. Cl. C07c 129/12

U.S. Cl. 260—564 12 Claims

There are provided compounds of the formula



and their physiologically acceptable acid addition salts, where R^1 and each group R^2 which may be the same or different are hydrogen, an alkyl group, or an N-substituted alkyl group e.g. an alkyl group substituted with a further guanidino group G^3, R^2, and group R^1 and R^2 which may be the same or different are each a straight or branched alkylene group separating adjacent nitrogen atoms by at least two carbon atoms, the total number of carbon and nitrogen atoms in the straight chain between the two groups $G^1$and G^2 excluding branching groups, being always greater than 12, n is an integer from 0–4, G^1, G^2 and each group G^3 which may be the same or different have the formula



where R^3 and R^4 which may be the same or different are hydrogen atoms or aliphatic groups having 1–4 carbon atoms and R^5 is a hydrogen atom, an aliphatic group having 1–4 carbon atoms or an amino or acyl group. The compounds exhibit antifungal and antibacterial activity.

3,499,928
PREPARATION OF YNAMINES

Laurence I. Peterson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 24, 1967, Ser. No. 662,865

Int. Cl. C07c 87/28, 103/20

U.S. Cl. 260—570.5 4 Claims

A method for preparing ynamines and phenylacetamides comprises contacting phenylacetylenes with primary or secondary amines in the presence of cooper and molecular oxygen to produce the ynamine, and then treating the crude mixture with aqueous acid to produce phenylacetamide. When secondary amines are used in the preceding reaction, the ynamines can be isolated and recovered.

3,499,929

D(—)-AND L(+)-THREO-1-p-NITROPHENYL-2-N,N-DIMETHYLAMINO-PROPANE 1,3 - DIOLS AND THE SALTS THEREOF

Georges Muller, Nogent-sur-Marne, Gaston Amiard, Thorigny, Andre Poitevin, Les Lilas, and Vesperto Torelli, Maisons-Alfort, France, assignors to Roussel Uclaf, Paris, France, a corporation of France

No Drawing. Filed Jan. 19, 1967, Ser. No. 610,219
Claims priority, application France, Jan. 26, 1966, 47,305
Int. Cl. C07c *91/16*
U.S. Cl. 260—570.6 3 Claims

Optical isomers of 1-p-nitrophenyl-2-N,N-dimethylamino-propane-1,3-diol and acid addition salts thereof, useful for the separation of racemic compounds and preparation thereof.

3,499,930

TERTIARY AMINE OXIDES

Reginald L. Wakeman, Philadelphia, Pa., and Zdzislaw J. Dudzinski, Hasbrouck Heights, N.J., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,334
Int. Cl. C07c *93/04, 85/04;* C11d *1/40*
U.S. Cl. 260—584 2 Claims

A tertiary amine oxide having the formula:

wherein R is selected from the group consisting of an alkyl and alkenyl radicals having 16 to 22 carbon atoms; R′ and R″ are selected from alkyl radicals having 1 to 4 carbon atoms; and wherein the oxygen atom is linked to the nitrogen by a semi-polar bond useful as detergents.

3,499,931

PROCESS FOR THE SEPARATION OF A MIXTURE OF PRIMARY ALKANOLAMINES AND SECONDARY ALKANOLAMINES

John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Oct. 13, 1967, Ser. No. 675,046
Int. Cl. C07c *89/04*
U.S. Cl. 260—584 6 Claims

A process for the separation of a mixture of primary alkanolamines and secondary alkanolamines by reacting the mixture with an alkyl nitrite to form, as new compositions, N-substituted nitrosoalkanolamines, separating the primary alkanolamine by distillation, and recovering the secondary alkanolamine from the nitrosoalkanolamine by hydrogenation or utilizing the latter to produce the corresponding alkanol-hydrazine.

3,499,932

HYDROFORMYLATION OF POLYCYCLIC DIOLEFINS

Roy L. Pruett, Charleston, W. Va., and Kenneth O. Groves, Midland, Mich., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 15, 1967, Ser. No. 646,182
Int. Cl. C07c *45/02, 47/38*
U.S. Cl. 260—598 7 Claims

Process involving the dihydroformylation of well-defined polycyclic non-conjugated diolefins which contain two alicyclic ethylenic bonds using a complex catalyst consisting essentially of rhodium in complex combination with carbon monoxide and a triarylphosphine.

3,499,933

HYDROFORMYLATION OF CYCLIC OLEFINS

Roy L. Pruett, Charleston, W. Va., and Kenneth O. Groves, Midland, Mich., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 15, 1967, Ser. No. 646,183
Int. Cl. C07c *45/02, 47/38*
U.S. Cl. 260—598 11 Claims

Process involving the dihydroformylation of well-defined polycyclic non-conjugated diolefins which contain two alicyclic ethylenic bonds using a complex catalyst consisting essentially of rhodium in complex combination with carbon monoxide and a triarylphosphite ligand.

3,499,934

TRIHALO TRIFORMYL BENZENES

William J. Pyne, Painesville, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Feb. 1, 1967, Ser. No. 613,122
Int. Cl. C07c *47/52;* A01n *9/24*
U.S. Cl. 260—599 2 Claims

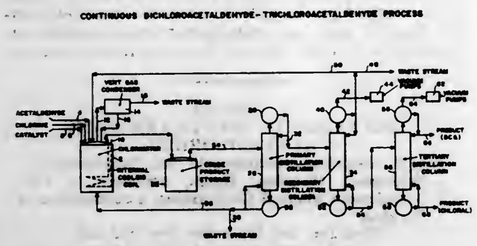
Trihalo triformyl benzenes are disclosed along with their preparation by the acid hydrolysis of corresponding tris-(dihalomethyl)-trihalo benzenes. The compounds herein disclosed are active as fungicides, nematocides, bactericides, and herbicides.

3,499,935

PRODUCTION OF DICHLOROACETALDEHYDE AND TRICHLOROACETALDEHYDE

William R. King, Nixon, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed July 2, 1965, Ser. No. 469,278
Int. Cl. C07c *47/06*
U.S. Cl. 260—601 4 Claims



Product streams of pure DCA and chloral are obtained by reacting acetaldehyde or paraldehyde with at least about stoichiometric quantities of chlorine at from about 50–110° C. in the presence of a chlorination catalyst to obtain a mixture of both DCA and chloral containing substantially no monochloroacetaldehyde, in which the weight ratio of DCA to chloral is at least 0.06:1, distilling said mixture in a primary rectifying zone at a temperature no higher than about 180° C., separating high-boiling impurities as residue from the mixture, passing the overhead from the primary rectifying zone into a secondary rectifying zone, distilling the overhead stream from said primary rectifying zone at a temperature no higher than 120° C. to remove impurities more volatile than dichloroacetaldehyde, removing a second residue stream from said secondary rectifying zone and distilling this second residue stream in a tertiary rectifying zone at a pressure no higher than 0.25 and a temperature no higher than 50° C. to remove a purified dichloroacetaldehyde product stream overhead and a purified, chloral, residue stream from said tertiary rectifying zone.

3,499,936

OXIDATION OF ISOBUTYLENE TO METHACRYLALDEHYDE OVER COMPLEX VANADIUM OXIDE CATALYSTS

Donald M. Coyne, Prairie Village, and Roger P. Cahoy, Merriam, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 247,307, Dec. 26, 1962. This application Apr. 12, 1966, Ser. No. 542,118
Int. Cl. C07c *45/04;* B01j *11/84, 11/32*
U.S. Cl. 260—604 1 Claim

1. A process for converting isobutylene to methacrolein comprising reacting isobutylene at a temperature within the range of 350 to 525° C. in the presence of oxygen and an oxide composition, the empirical formula of which lies within the limits

$$Cu_{9+1}Te_{1.5+0.2}P_{1.1+0.1}V_{12}O \text{ approx. } 45$$

said oxide composition being produced by heating an intimate mixture of the oxides to a temperature at least as high as that employed in converting isobutylene to methacrolein and being on the surface of a refractory solid which is essentially non-reactive to the metal oxide composition and possesses a surface area of less than about 10 square meters per gram.

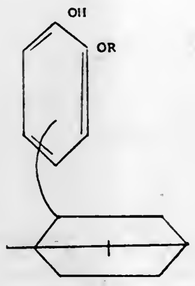
3,499,937

POLYCYCLIC ALCOHOL, COMPOSITIONS CONTAINING SAME AND PROCESS THEREFOR

Julian Dorsky, Rockaway, and William M. Easter, Jr., Hasbrouck Heights, N.J., assignors to The Givaudan Corporation

No Drawing. Filed June 9, 1961, Ser. No. 115,928
Int. Cl. C07c *35/22;* C11b *9/00*
U.S. Cl. 260—617 4 Claims

1. A process for making the polycyclic alcohol, $C_{16}H_{28}O$, which comprises alternately introducing hydrogen into a material having the formula:



wherein R is a member of the group selected from the group consisting of lower aliphatic hydrocarbon radicals having up to 5 carbon atoms, and aromatic and cycloaliphatic hydrocarbon radicals having up to 2 carbon atoms in the side chain, in the presence of a catalyst selected from the group consisting of nickel hydrogenating catalysts and copper chromite, at an elevated temperature and pressure suitable for hydrogenation, and venting the reaction mixture to remove formed volatile undesirable by-products, the alternate introduction of hydrogen and the venting being repeated until from about 4 to 5 moles of hydrogen per mole of said material are absorbed, and said polycyclic alcohol is distilled from the reaction mixture in substantially pure form.

3,499,938

CONVERSION OF KETONES TO CARBINOLS

Yu-Tang Hwang, Crystal Lake, William A. Krewer, Arlington Heights, and Walter J. Sandner, Crystal Lake, Ill., assignors to Union Oil Company of California, Union Oil Center, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,955
Int. Cl. C07c *29/00*
U.S. Cl. 260—617 4 Claims

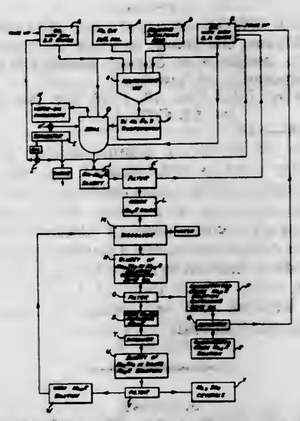
Hydrogenation of ketones to their corresponding alcohols using a rhodium oxide and an alkali metal hydrogenation catalyst impregnated in an inert carrier.

3,499,939

PROCESS FOR PRODUCTION OF DIALKALI METAL RESORCINATE

John Thomas Stephan, Longview, Wash., and Archie L. Lomax, Kelso, Wash., assignors to Stepan Chemical Company, Northfield, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 268,259, Mar. 27, 1963. This application July 18, 1966, Ser. No. 565,791
Int. Cl. C07c *37/04, 37/00*
U.S. Cl. 260—628 5 Claims



Dialkali metal resorcinate production by fusion reaction of an aqueous alkali metal hydroxide and an alkali metal benzene disulfonate in the presence of a hydrocarbon oil characterized by a boiling point range providing that an initial fraction of the hydrocarbon oil progressively codistills with at least some of the solvent water and with the reaction water evolved when the disulfonate and hydroxide react to form dialkali metal resorcinate, the codistillation of hydrocarbon oil and water taking place on an uninterrupted basis and in the presence of a substantial fraction of nondistilling, higher boiling point hydrocarbon oil remaining after the dialkali metal resorcinate forming reaction is essentially complete. The resulting oil suspension of molten dialkali metal resorcinate is cooled and stirred to form an oil slurry containing solid, finely divided resorcinate particles which are then separated from the oil as by filtering in a substantially oxygen-free atmosphere, the separated resorcinate particles then being washed with an aqueous solution to form a slurry of particulate inorganic alkali metal salts in an aqueous medium in which the resorcinate is dissolved. The inorganic salts are then separated from the resorcinate containing solution, followed by the removal of the residual hydrocarbon oil therefrom. Continuous presence of codistilling oil during progressive removal of solvent water and reaction water,

and the existence of the disulfonate as a water-in-oil suspension of very finely divided particles avoids so-called "bumping" during the fusion reaction.

3,499,940
FLUORINATED DIOLS
Atsuo Katsushima, Fuse-shi, Iwao Hisamoto, Suita-shi, and Shoshin Fukui, Takaishi Kato, and Masayuki Nagai, Osaka-fu, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,575
Claims priority, application Japan, Apr. 7, 1965, 40/20,654; May 20, 1965, 40/29,978, 40/29,979
Int. Cl. C07c 31/34
U.S. Cl. 260—633 4 Claims

Fluorinated diols of the formula

$$R_fCH_2CH(OH)CH_2OH$$

wherein R_f is a perfluoroalkyl group of 5 to 15 carbon atoms suitable for treating solid materials to render them oil-repellent but hydrophilic.

3,499,941
PRODUCTION OF ORGANIC HALIDES
Edwin N. Givens, Glassboro, and Lyle A. Hamilton, Pitman, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,076
Int. Cl. C07c 17/36
U.S. Cl. 260—648 15 Claims

A process for producing organic halides which comprises effecting reaction of an alcohol, e.g., ethyl alcohol, and a hydrogen halide, e.g., hydrogen chloride, at a temperature from about 0° to about 300° C. in the presence of a catalyst comprising an alumino-silicate containing active cation sites within an ordered internal structure, said ordered internal structure having a uniform pore size of from about 5 A. to about 15 A., e.g., a rare earth exchanged faujasite, and recovering an organic halide product, e.g., ethyl chloride.

3,499,942
METHOD OF PREPARING FLUOROAROMATIC COMPOUNDS
Oleg Matveevich Nefedov, Ulitsa Shukhova, 5/7, kv. 15, and Anna Akimovna Ivashenko, Belyaevo-Bogorodskoe, kvartal 46, korp. 43, kv. 77, both of Moscow, U.S.S.R.
No Drawing. Filed May 26, 1967, Ser. No. 641,501
Claims priority, application U.S.S.R., June 11, 1966, 1,083,107; Aug 1, 1966, 1,096,749
Int. Cl. C07c 25/04
U.S. Cl. 260—649 1 Claim

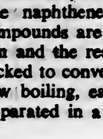
Carbocyclic mono- and di-fluorinated aromatic compounds are prepared by pyrolyzing, at 300°–800° C. a mixture of a conjugated diene and a fluorine containing polyhalide.

3,499,943
PROCESS FOR PREPARING CHLOROFLUOROMETHANES
Ferenc M. Pallos, Concord, and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,190
Int. Cl. C07c 17/00
U.S. Cl. 260—653 3 Claims

A process for preparing chlorofluoromethanes, such as, dichlorodifluoromethane by reacting the inorganic fluorochloro complex $[AsCl_4]^+[AsF_6]^-$ or $[SbCl_4]^+[SbF_6]^-$ with carbon disulfide, preferably at autogenous pressure and at a temperature between about 100° and 300° C. and isolating the chlorofluoromethanes.

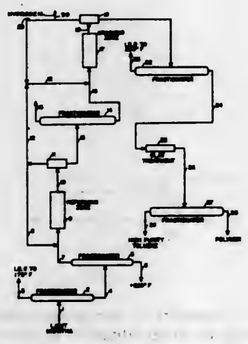
3,499,944
HYDROCARBON SEPARATION PROCESS
Alan Goldup, West Byfleet, and Michael Thomas Westaway, Ashford, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England
No Drawing. Filed June 12, 1967, Ser. No. 645,503
Claims priority, application Great Britain, Sept. 8, 1966, 40,186/66
Int. Cl. C07c 7/02
U.S. Cl. 260—666 33 Claims

Mixtures of alicyclic or non-cyclic hydrocarbon components having different degrees of branching and/or different numbers of carbon atoms per molecule, but having the same degree of saturation are separated by contacting them in vapour or liquid form with a compound having the basic nuclear structure:



to form a complex with one or more of the components and recovering the mixture depleted in these components and the components from the complex.

3,499,945
PRODUCING HIGH PURITY TOLUENE FROM PETROLEUM NAPHTHA
Merritt C. Kirk, Jr., Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed June 14, 1967, Ser. No. 646,000
Int. Cl. C07c 5/22, 15/06
U.S. Cl. 260—674 9 Claims

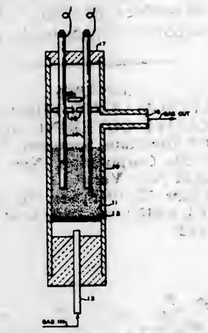


The specification discloses a method of producing nitration grade toluene. The method comprises fractionating a petroleum naphtha to produce a C_7 naphthenic containing fraction which is then subjected to reforming to substantially convert the naphthenes to toluene. Unconverted naphthenic compounds are removed from the reformate by distillation and the resulting toluene concentrate is thermally cracked to convert olefins and paraffins in the fraction to low boiling, easily removable hydrocarbons which are separated in a final distillation.

3,499,946
METHOD FOR SEPARATING m- AND p-XYLENE FROM A MIXTURE OF XYLENES
Tamotsu Ueno, Takashi Nakano, and Kazuo Okamoto, Niigata-shi, Japan, assignors to Japan Gas-Chemical Company, Inc., Chiyoda-ku, Tokyo, Japan
Filed Aug. 15, 1967, Ser. No. 660,805
Claims priority, application Japan, Sept. 1, 1966, 41/57,774
Int. Cl. C07c 7/10, 7/14
U.S. Cl. 260—674 24 Claims

A process for the separation of m-xylene and p-xylene individually from a xylene mixture containing ethylbenzene, o-xylene, m-xylene and p-xylene, said process being characterized by adding to the xylene mixture hydrogen fluoride, boron fluoride and a eutectic crystal-forming compound with p-xylene while maintaining said mixture at a temperature ranging from 0 to —60° C., whereby said mixture is separated into three phases consisting of a solid phase of eutectic crystal consisting of p-xylene and the eutectic crystal-forming compound, a liquid phase of extract containing hydrogen fluoride, boron fluoride and m-xylene, and a liquid phase of hydrocarbon containing xylene raffinate and the eutectic crystal-forming compound, by virtue of specific gravity difference.

3,499,947
ELECTROTHERMIC FLUIDIZED BED PROCESS
Paul H. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,665
Int. Cl. C07c 5/18; B01j 9/22; C10g 11/18
U.S. Cl. 260—680 5 Claims



Catalytic reactions are conducted in an electrothermic fluidized bed apparatus by adding a catalyst having same "fluidization" characteristics as the conductive material to a fluidized bed of electrically conductive material.

3,499,948
COATING MATERIALS FROM POLYEPOXIDES, DIGLYCIDYL ETHERS OF DIHYDROXYPOLYURETHANES AND AN EPOXY CURING AGENT
Karl Jellinek, Duisburg-Meiderich, and Udo Post, Angermund, Germany, assignors to Bataverwerke und Teerverwertung Aktiengesellschaft, Frankfurt am Main, Germany
Filed Feb. 21, 1967, Ser. No. 617,667
Claims priority, application Germany, Feb. 25, 1966, R 42,684
Int. Cl. C08g 45/12, 45/08, 45/10
U.S. Cl. 260—830 2 Claims

Elastic molded articles and coatings exhibiting very low absorption of water are prepared by reacting 70 parts by weight of a diglycidylether of an α,ω-dihydroxypolyurethane and 30 parts by weight of a diglycidylether of bis(4-hydroxyphenyl)-dimethylmethane, and 11 parts by weight of N-amino-ethylpiperazine at ordinary room temperature for 24 hours and subsequent after-annealing, and molding or applying the resulting products. The molded products and the coatings thus prepared are particularly useful in the electro-industry as well as in the art of building and in model and tool construction.

3,499,949
REACTION OF PEROXIDES WITH BLENDS OF POLYSTYRENE, RESINOUS BLOCK COPOLYMER, AND RUBBERY POLYMER OF AN OXIRANE
Clifford W. Childers and Jerry T. Gruver, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 29, 1967, Ser. No. 671,559
Int. Cl. C08f 41/10, 41/12
U.S. Cl. 260—876 10 Claims

High impact polymer compositions formed by blending polystyrene, a resinous block copolymer of a monovinyl substituted aromatic compound and a conjugated diene, a rubbery polymer of an oxirane compound, a peroxy oxygen-containing material, and heating the blend to decompose the peroxy oxygen-containing material.

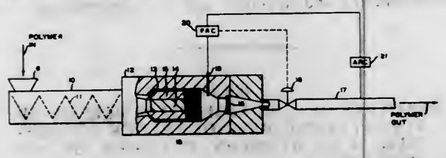
3,499,950
ANTISTATIC THERMOPLASTIC COPOLYMERS
Hans Weltzel and Harold Ebneth, Leverkusen, Karl Dinges, Odenthal, and Harry Röhr, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 13, 1967, Ser. No. 608,955
Claims priority, application Germany, Mar. 5, 1966, F 48,595
Int. Cl. C08f 41/12
U.S. Cl. 260—876 9 Claims

Antistatic moulding compositions comprising (a) a graft copolymer of a mixture of styrene and acrylonitrile or alkyl derivatives thereof grafted onto a diolefin polymer, (b) optionally a copolymer of styrene and acrylonitrile or alkyl derivatives thereof, (c) copolymers of a conjugated diolefin with esters and/or nitriles of ethylenically unsaturated carboxylic acids wherein a portion of the esters or nitriles may be replaced by acrylic acid or methacrylic acid and (d) polypropylene glycols whose terminal hydroxyl groups are optionally etherified or esterified.

3,499,951
O-ALKYL, S,S-DIARYL DITHIOPHOSPHATES
Gerhard Schrader, Wuppertal-Cronenberg, Karl Maurer, Cologne, Stammheim, and Hans Scheinpflug, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Aug. 5, 1966, Ser. No. 570,436
Claims priority, application Germany, Aug. 26, 1965, F 46,992
Int. Cl. C07f 9/16; A01n 9/36
U.S. Cl. 260—951 8 Claims

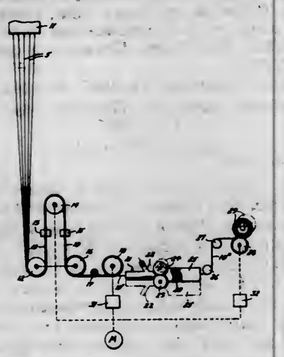
O-(alkyl, alkenyl, alkynyl, and haloalkyl)-S,S-di(phenyl and mono and di-halo, nitro, alkyl and alkoxy substituted-phenyl)-dithiolphosphoric acid triesters which possess fungicidal properties.

3,499,952
PRESSURE REGULATION IN VISBREAKING EXTRUDER
Samuel J. Kolner and Edward J. Kosinsky, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,422
Int. Cl. B29f 3/06; B29b 1/04
U.S. Cl. 264—40 4 Claims



The melt index of a visbroken poylmer is controlled by correlating melt index with pressure and setting the set point of a pressure controller communicating with a pressure sensing element mounted on the extruder head and a valve located in the conduit removing the visbroken polymer from the shearing and extrusion zones. In an alternate embodiment, the set point of the controller is reset automatically by installing a melt index analyzer in the visbroken polymer removal conduit downstream from the aforementioned valve.

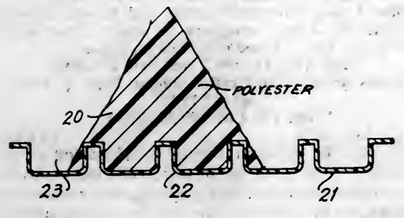
3,499,953
STRAND TREATMENT
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1966, Ser. No. 540,379
Int. Cl. D01d 5/22, 5/12; D01f 7/06
U.S. Cl. 264—168 7 Claims



Textile strands are strung up and treated in a continuous drawing and crimping process. When the process is started up the initial rate of withdrawal of the strand from the crimping zone equals the rate of feed thereinto, followed by reduction in withdrawal rate and in corresponding windup rate to a fixed lower operating rate.

3,499,954
METHOD OF MOLDING AND FORMING BUTTONS AND OTHER SMALL DISC-LIKE MOLDED ARTICLES
George Trojan, 4 Seville Lane, and Lawrence Brandt, 157 Sycamore Circle, both of Stony Brook, N.Y. 11790
Filed Mar. 23, 1967, Ser. No. 625,373
Int. Cl. B29d 19/02
U.S. Cl. 264—77 7 Claims

The present disclosure relates to a process of forming plastic disc-like molded articles useful for buttons by stirring and heating a polyester liquid until its viscosity increases to a point well below the maximum viscosity

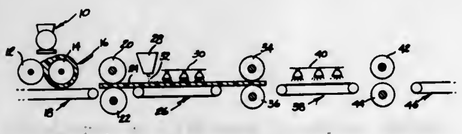


point and before gelation and adding pearl essence during this process, then chilling and deaerating and molding.

3,499,955
REINFORCED MOLDABLE COMPOSITION AND PROCESS OF PRODUCING THE SAME
Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 544,825, Nov. 3, 1955. This application Dec. 9, 1963, Ser. No. 329,312
Int. Cl. B28b 21/14, 1/08
U.S. Cl. 264—102 9 Claims

A method of producing a body reinforced by glass in both fibrous and flake or platelet form and which is substantially free of entrapped vapors. The method includes the steps of admixing a binder and glass flakes and glass fiber reinforcement in a predetermined ratio, treating the mixture to remove entrapped vapors, and thereafter curing the binder to produce the reinforced body. Also covered is the reinforced body made by the process described.

3,499,956
PROCESS FOR MAKING THERMOPLASTIC DECORATIVE COVERING MATERIAL
George Robert Mountain, Somerset, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,659
Int. Cl. B44f 1/06; B29c 9/00, 3/00
U.S. Cl. 264—112 7 Claims

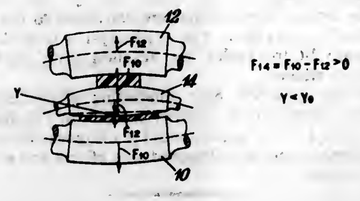


Small hard particles are encased in chips of thermoplastic material having a degree of transparency such that the particles are readily discernible through the chips as discrete particles. The chips are fused to the surface of a thermoplastic base to form a thermoplastic tile resembling ceramic tile.

3,499,957
METHOD FOR PRODUCING SUBSTANTIALLY UNIFORM CALENDERED MATERIAL
Fred H. Ancker, Bound Brook, N.J., assignor to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 398,182, Sept. 22, 1964. This application Sept. 11, 1968, Ser. No. 759,013
Int. Cl. B29d 7/14
U.S. Cl. 264—175 12 Claims

Method for producing calendered thermoplastic material of substantially improved thickness uniformity

which comprises: passing the material through a calendering system comprised of at least three coplanar rolls, the penultimate roll of said coplanar rolls being substantially more flexible than the other of said coplanar rolls, maintaining equidistance in the gauging nip formed between



said penultimate roll and the ultimate roll by crowning at least one of the rolls forming said gauging nip to provide equidistance in said gauging nip at the maximum roll separating force, and maintaining equidistance in said gauging nip for lesser roll separating forces through commensurate adjustment of the clearance between said rolls.

3,499,958
PROCESS FOR OBTAINING X-SHAPED FILAMENTS
Rene Stuchlik, Villeurbanne, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate
Filed Oct. 31, 1966, Ser. No. 590,711
Claims priority, application France, Nov. 8, 1965, 37,664
Int. Cl. D01d 3/00, 5/04
U.S. Cl. 264—177 1 Claim



Dry-spinning process for cellulose acetate and cellulose triacetate wherein X-shaped filaments are obtained. The spinneret is perforated with square holes, each of which is aligned so that the diagonal coincides approximately with the radius of the spinneret face passing through the center of the hole. The drying conditions will then be identical on two adjacent sides of each square hole.

3,499,959
THERAPEUTIC TETRACYCLINE PREPARATION HAVING DELAYED THERAPEUTIC ACTION AND PROCESSES FOR THE PRODUCTION OF SAID PREPARATION
Murray E. Corn, Massapequa, N.Y., assignor to Chemical and Pharmaceutical Patent Holding Ltd., Neugnase, Switzerland
No Drawing. Filed July 5, 1966, Ser. No. 562,516
Int. Cl. A61k 9/00, 21/00, 27/12
U.S. Cl. 424—22 6 Claims

A slow release pharmaceutical preparation comprising tetracycline or a derivative thereof, an agent such as polyvinylpyrrolidone which permits only slow and uniform release of the tetracycline, and a carboxylic acid of relatively low solubility.

3,499,960
PALATABLE COATED PARTICLES OF AN ANION EXCHANGE RESIN
Thomas J. Macek, Jenkintown, Clyde E. Shoop, Lansdale, and Dennis R. Stauffer, Prospectville, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,930
Int. Cl. A61k 27/00
U.S. Cl. 424—33 2 Claims

The gritty, astringent taste of a polystyrene-divinylbenzene copolymer anion exchange resin to be swallowed in finely divided form is overcome by coating the particles with an acrylic polymer cross-linked with allylsucrose.

3,499,961
DIMETHYL SULFOXIDE-ENHANCED ASTRINGENT ALUMINUM, ZINC OR ZIRCONIUM ANTIPERSPIRANT SALT COSMETICS
Richard L. Dobson, Portland, and Stanley W. Jacob, Oswego, Oreg., and Robert J. Herschler, Camas, Wash., assignors, by direct and mesne assignments, to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,265
Int. Cl. A61k 7/00
U.S. Cl. 424—68 17 Claims

5. A method for reducing perspiration in cutaneous areas which includes topically contacting the area with a composition including an antiperspirant metallic salt with astringent properties, wherein the antiperspirant metallic salt is selected from the group consisting of zirconium antiperspirant salts, zinc antiperspirant salts or aluminum antiperspirant salts, in an effective amount, and an amount effective to enhance the antiperspirant properties of said metallic salt up to about 50% by weight of dimethyl sulfoxide, and a cosmetically acceptable carrier.

6. An antiperspirant composition comprising an effective amount of a metallic salt antiperspirant having astringent action, wherein the antiperspirant metallic salt is selected from the group consisting of zirconium antiperspirant salts, zinc antiperspirant salts and aluminum antiperspirant salts, an amount effective to enhance the antiperspirant properties of said metallic salt up to about 50% by weight of dimethyl sulfoxide, and a cosmetically acceptable carrier.

3,499,962
ENCAPSULATION OF WATER INSOLUBLE MATERIALS
Otto B. Wurzburg, Whitehouse Station, Paolo C. Trubiano, Somerville, and William Herbst, Watchung, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 24, 1967, Ser. No. 662,858
Int. Cl. A61j 3/07; A61k 15/02
U.S. Cl. 424—35 4 Claims

Discrete particles comprising a water insoluble material enveloped or encapsulated in a protective matrix derived from an amylose product. A method for preparing such particles which comprises the steps of dissolving an amylose product in water, admixing the resulting solution with a water insoluble material so as to form a

homogenized emulsion, and thereafter drying the emulsion by any suitable means in order to form dry, discrete particles. Depending upon the nature of the particular material which is being encapsulated, such particles may be used in food, cosmetic, detergent and pharmaceutical applications, etc.

3,499,963

CODRIED ALUMINUM HYDROXIDE-ALUMINUM CHELATE ANTACID

Andrew M. Rubino, New Providence, N.J., assignor to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,135

Int. Cl. A61k 27/00; C07f 5/06

U.S. Cl. 424—157 20 Claims

An antacid composition comprising the codried mixture of an aluminum chelate of an aluminum-chelating water soluble and polyhydric alcohol soluble organic acid selected from the group consisting of alpha hydroxyaliphatic carboxylic acids and beta hydroxyaliphatic carboxylic acids, and of moist aluminum hydroxide gel in a weight ratio $Al(OH)_3$:aluminum chelate within the range from about 0.3:1 to about 1.5:1, and process for making same.

3,499,964

COMBATTING INSECT PESTS WITH NITRILE AMIDE PHOSPHATES AND PHOSPHONATES

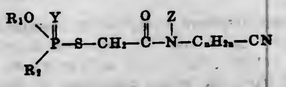
Peter E. Newallis, Morris Plains, and Pasquale Lombardo, East Hanover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application June 30, 1965, Ser. No. 468,583, now Patent No. 3,420,919, dated Jan. 7, 1969. Divided and this application Sept. 25, 1968, Ser. No. 812,484

Int. Cl. A01n 9/36

U.S. Cl. 424—210 6 Claims

A method of combatting a wide variety of insect pests by contacting them with an effective amount of a phosphate or phosphonate or the formula



wherein Y is oxygen or sulfur, R_1 is an alkyl radical from 1 to 6 carbon atoms, R_2 is an alkyl or an alkoxy radical and having from 1 to 6 carbon atoms, Z is an aryl radical, and n is an integer from 1 to 6.

3,499,965

7α - LOWER ALKYLTHIO - 17β - HYDROXY - 17α-METHYL - 5α - ANDROSTANO[3,2 - c]PYRAZOLE AND NOVEL INTERMEDIATES USEFUL IN THE PREPARATION THEREOF

Hidehiko Kaneko and Yuzuru Yamato, Minoo-shi, Osaka-fu, and Keiji Nakamura, Amagasaki-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Continuation-in-part of application Ser. No. 528,809, Feb. 21, 1966. This application Nov. 1, 1966, Ser. No. 591,134

Claims priority, application Japan, Mar. 3, 1965, 40/12,294; Sept. 30, 1966, 41/64,704

Int. Cl. C07c 173/10; A61k 17/06

U.S. Cl. 424—241 8 Claims

7α - lower alkylthio - 17β - hydroxy-17α-methyl-5α-androstano[3,2-C] pyrazoles are prepared by reduction of a 7α - lower alkylthio - 17β-hydroxy-17α-methyl-4 androstan-one with lithium in liquid ammonia thereby producing a 7α - lower alkylthio - 17β-hydroxy-17α-methyl-5α-androstan-3-one. These novel intermediates are reacted with an alkyl formate in the presence of a strong base in a non-polar solvent with the production of 7α-alkylthio-17β - hydroxy - 2 - hydroxymethylene - 17α - methyl - 5α-androstan-3-ones.

These second intermediates are converted to the corresponding 7α - alkylthio - 17β - hydroxy-17α-methyl-5α-androstano[3,2-C]pyrazoles by reaction with hydrazine hydrate in ethanol.

The final products have interesting pharmacological properties, with anabolic activity superior to 17β-hydroxy-17α - methyl - 5α - androstano[3,2 - C]pyrazole and 17-methyltestosterone with lessened side effects and lowered acute toxicity.

3,499,966

QUATERNARY AMMONIUM SALTS OF SUBSTITUTED PHENANTHROLINES AS BACTERICIDES AND FUNGICIDES

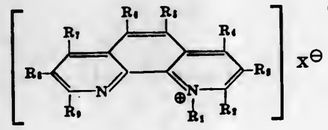
Francis Patrick Dwyer, deceased, late of Griffith, Australian Capital Territory, Australia, by Lola Mary Dwyer, executrix, 4 Jimaz Crescent, Griffith Australian Capital Territory, Australia; and Roy Douglas Wright, 97 Royal Parade, Parkville, Victoria, Australia; and Albert Shulman, 226 Punt Road, Prahran, Victoria, Australia

No Drawing. Application May 24, 1963, Ser. No. 283,110, now Patent No. 3,338,906, dated Aug. 29, 1967, which is a continuation-in-part of application Ser. No. 84,533, Jan. 24, 1961. Divided and this application May 1, 1967, Ser. No. 649,387

Int. Cl. A61k 27/00; A01n 9/22

U.S. Cl. 424—258 8 Claims

Bactericidal composition and method of use of the quaternary ammonium salt of a substituted phenanthroline of the formula:



wherein R_1 is alkyl or benzyl; R_2, R_3, R_8, and R_9 is methyl or hydrogen; R_4, R_5, R_6 and R_7 is methyl, phenyl, tolyl or hydrogen.

3,499,967

COMPOSITIONS FOR COMBATTING *TRICHOMONAS VAGINALIS* INFECTIONS CONTAINING 1-METHYL-5-ISOPROPYL-2 NITROIMIDAZOLE

Giancarlo Lancini, Pavia, and Ettore Lazzari, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Continuation-in-part of application Ser. No. 496,184, Oct. 14, 1965. This application Aug. 1, 1967, Ser. No. 657,514

Claims priority, application Great Britain, Aug. 12, 1964, 32,843/64

Int. Cl. A61k 27/00, 21/00

U.S. Cl. 424—273 6 Claims

The application discloses the exceptionally high activity of 1-methyl-5-isopropyl-2-nitroimidazole against infections from *Trichomonas vaginalis* and related microorganisms. In this respect the compound is superior to all known 2-nitro-imidazole derivatives.

3,499,968

COMPOSITION AND METHOD FOR COMBATTING POULTRY COCCIDIOSIS WITH 3,6-DICHLORO-BENZAMIDE

Edward F. Rogers, Middletown, and Robert L. Clark, Woodbridge, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 319,656, Oct. 29, 1963. This application Nov. 1, 1968, Ser. No. 774,573

Int. Cl. A61n 27/00

U.S. Cl. 424—324 2 Claims

Anticoccidial compositions are described wherein the essential anticoccidial ingredient is 2,6-dichloro-4-nitro-benzamide.

3,499,969

MOSQUITO CONTROL OIL PROMOTED WITH POLYETHOXYLATED 2,4-DINONYL PHENOL AND METHOD OF USING IT

Gilbert V. Chambers, 705 Idlewood, Baytown, Tex. 77520

Continuation-in-part of application Ser. No. 604,790, Dec. 27, 1966. This application July 17, 1968, Ser. No. 653,659

Int. Cl. A01n 9/24, 9/02, 9/04

U.S. Cl. 424—341 25 Claims

The effectiveness of mosquito control oils is enhanced by the inclusion of at least about 0.2 weight percent (and up to an upper limit of about 3.75 weight percent) of a promoter, ethoxylated 2,4-dinonyl phenol, wherein the ethoxylated substituent contains from about 6 to about 14 ethoxy units.

ELECTRICAL

3,499,970

BUS CONDUCTOR SYSTEM FOR A THREE-PHASE ELECTRIC FURNACE

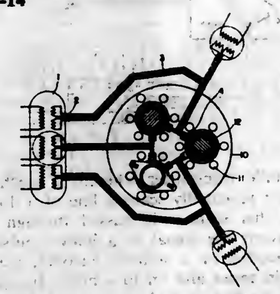
Yoshinosuke Tada and Makoto Horie, Nagoya, and Katsuya Fukuoka, and Yasunobu Hosoi, Chita District, Japan, assignors to Yahagi Seitetsu Kabushiki Kaisha, Nagoya, Japan, a corporation of Japan

Filed June 26, 1968, Ser. No. 740,237

Claims priority, application Japan, July 3, 1967, 42/42,328

Int. Cl. H05b 7/10

U.S. Cl. 13—14 1 Claim



A bus conductor system for a three-phase electric furnace, whereby the length of one-way bus conductors of each phase is minimized and equalized, comprising multiple both-way bus conductors, rearranging points of said multiple both-way bus conductors into one-way conductors located at equidistant and proximate positions from adjacent terminal rings, the terminal rings being supported around each electrode concentrically, groups of flexible conductors being suspended by suspending rings around each electrode in an inverse U-shape and the suspending rings being movable vertically according to the movement of electrodes.

3,499,971

ELECTRICAL MUSICAL INSTRUMENT WITH KEY GUIDE PLATE ELASTICALLY CONNECTED TO KEYBOARD FRAME PERMITTING TRANSVERSE VIBRATORY MOTION OF PLATE TO ACHIEVE SPECIAL EFFECTS

Junji Ohno, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan

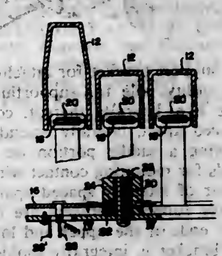
Filed Apr. 22, 1968, Ser. No. 722,907

Claims priority, application Japan, Apr. 26, 1967, 42/34,746; Dec. 27, 1967, 43/103,599, 43/103,600

Int. Cl. G01b 3/06, 1/04

U.S. Cl. 84—1.17 3 Claims

A keyboard device for an electronic musical instrument which comprises a keyboard frame, keys supported on said frame, a key building plate having key guides each engaging with one of the keys to guide the vertical movement thereof and elastic members elastically connecting said key guiding plate to said keyboard frame so that the key



guiding plate can be slightly moved in the transverse direction, permitting a player of the electronic musical instrument to vibrate the key to the right and the left while depressing the same. This vibrating movement of the key can be utilized to produce certain special musical effect.

3,499,972

CONNECTOR AND CONNECTION FOR SHEATH CABLE SHIELD

Donald J. Smith, Canoga Park, Calif., assignor to Smith-Schroyer & Assoc., Inc., a corporation of California

Filed Feb. 13, 1967, Ser. No. 615,718

Int. Cl. H02g 15/08

U.S. Cl. 174—88 11 Claims



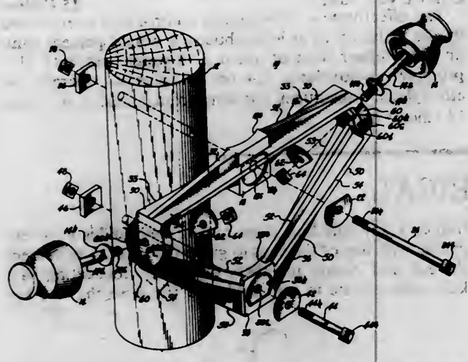
This invention relates to apparatus and method for protecting a splice bundle for a cable comprising numerous wires and also for providing a continuous electrical circuit for the electrical shield for said cable.

3,499,973

SUPPORT BRACKET FOR STANDOFF INSULATORS AND THE LIKE

Jocelyn T. Barnes, Charlevoix, Mich., assignor to Lexalite Corporation, Charlevoix, Mich., a corporation of Michigan

Filed July 11, 1968, Ser. No. 744,018
Int. Cl. E04b 12/24; E01b 17/00; H02g 7/20
U.S. Cl. 174—149 9 Claims



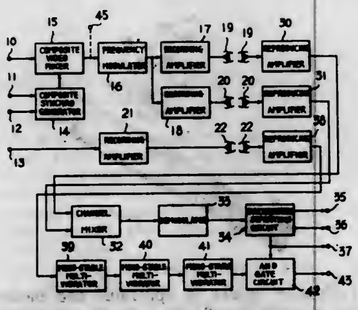
An integral support bracket for attachment to the side of an upright utility pole for supporting standoff insulators, and the like, laterally thereof, comprising upper and lower spaced apart, laterally extending cross members, each having a saddle portion on one side intermediate its ends for mounting contact with the surface of the pole. A pair of laterally spaced apart, upwardly extending insulator support members are integrally joined to the opposite ends of the upper and lower cross members, and the bracket is integrally molded of dielectric, plastic material, such as a polycarbonate resin, which may include a dielectric filler, such as glass fibers.

3,499,974

FIELD SEQUENTIAL COLOR VIDEO SIGNAL RECORDING AND REPRODUCING SYSTEM WITH COLOR FIELD SYNCHRONIZING SIGNAL

Yasuaki Watanabe, Chigasaki, Tadanori Ohtsu, Yokohama, and Masahiko Nagano, Tokyo, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan, a Japanese corporation

Filed Jan. 10, 1966, Ser. No. 519,781
Claims priority, application Japan, Jan. 14, 1965, 40/578
Int. Cl. H04n 1/46, 9/12
U.S. Cl. 178—5.2 10 Claims



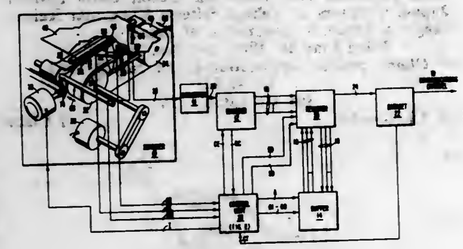
A magnetic recording system for recording and reproducing a field sequential color video signal. This signal is a composite of a color video information signal, a vertical synchronizing signal, a horizontal synchronizing signal, and a color synchronizing signal. This composite signal is recorded on a first portion of a magnetic medium. A color synchronizing signal is recorded on a second portion of the magnetic medium which is separate from the first portion. When the composite signal is played back, a pulse signal is produced from the reproduced color synchronizing signal and the reproduced composite signal. These pulses recur as a reproduced color synchronizing signal, in pulse repetition rate and in phase with the reproduced vertical synchronizing signal.

3,499,975

REPEATED SCAN DIGITALLY CODED FACSIMILE TRANSMISSION

Ronald B. Arps, Dallas, Tex., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 12, 1966, Ser. No. 600,995
Int. Cl. H04n 1/36
U.S. Cl. 178—6 6 Claims



A facsimile transmitter wherein a mechanical flying spot scanner repeatedly scans a line of a document. The output of this scanner is passed through a converter which converts the signal to a bilevel pulse train. This train is encoded by a suitable encoder, passed through a register in series and on to a buffer in series. This information is then passed in parallel from the buffer through the register and is read out of the register in series to a data set. The only addressing pulses required in the scheme would be the margin indicators. This is made possible by the encoder not receiving line information until the buffer is capable of handling a full line. At this time, the encoder accepts information from the scanner to thereby encode a full line of information and pass it into the buffer.

3,499,976

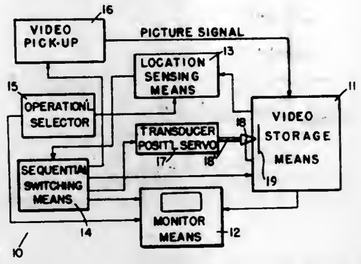
MAGNETIC RECORDING APPARATUS AND METHOD FOR MOVING A TRANSDUCER INTO ENGAGEMENT WITH A SELECTED PORTION OF A RECORD

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 142,748, Aug. 28, 1961, which is a division of application Ser. No. 515,417, June 14, 1955, which in turn is a continuation-in-part of application Ser. No. 225,173, Aug. 27, 1962, which is a continuation-in-part of application Ser. No. 668,348, June 27, 1957. This application Oct. 2, 1964, Ser. No. 401,064
Int. Cl. H04n 5/78; G11b 5/54, 21/12
U.S. Cl. 178—6.6 4 Claims

A magnetic recording apparatus and method are provided employing one or more transducers which are operative for the purpose of generally reproducing selected

information from or recording signals onto selected portions of a magnetic recording member such as a tape but not the whole length of the tape during a single operation. Signal transducing is effected by sliding engagement of the transducer with a surface of the tape which results in erosion of both the tape and the transducers. To reduce said erosion or wear on the transducing means and tape,



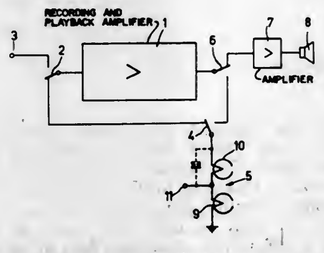
automatic means are provided to effect engagement of the two only when substantially the selected portion of the tape is aligned with the transducing means. The movement of the tape and transducing means into and out of engagement with each other is controlled by electrical signals which are generated when selected portions of the tape pass the transducing means.

3,499,977

DUAL MAGNET HEAD ARRANGEMENT ELECTRICALLY CONNECTED TOGETHER FOR BOTH RECORDING AND PLAYBACK

Herman Kasper Adriaan de Lange, Klosterneuburg, Austria, assignor, by mesne assignments to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,114
Int. Cl. G11b 5/12; H04n 5/76
U.S. Cl. 178—6.6 10 Claims



A magnet head arrangement of two heads, one for record and one for playback connected with the playback first in the direction of scan of the record carrier. The heads are connected together electrically and each receive both record and playback signals.

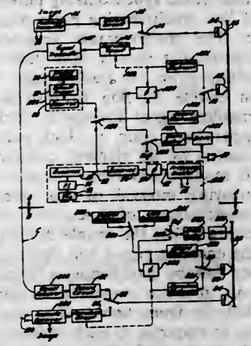
3,499,978

FACSIMILE SYSTEM WITH MAGNETIC TAPE STORAGE HAVING SELECTIVELY SYNCHRONIZED DRIVES

Peter Amass, Camarillo, and Paul Leeke, Ventura, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 13, 1967, Ser. No. 645,820
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 13 Claims

A facsimile system operates with two facsimile transmit-receive units coupled indirectly to each other by magnetic tape units which communicate directly with each other. The tape units have drives controlled differently



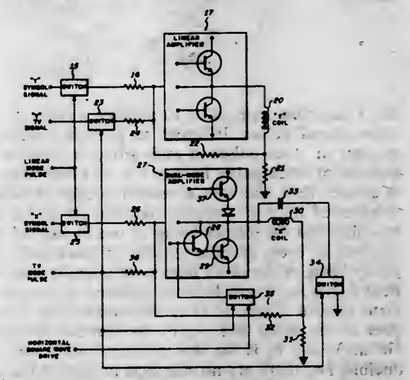
when communicating with the respective facsimile unit or the respective other tape unit.

3,499,979

APPARATUS FOR SUPERIMPOSING SYMBOLS ON A CATHODE RAY TUBE DISPLAY

Ali A. Florietta, Jamaica, and Raymond Winfield, Wantagh, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,270
Int. Cl. H04n 3/16
U.S. Cl. 178—6.8 11 Claims



The superposition of symbols on a TV display by utilizing one of the yoke driver deflection amplifiers in a dual mode. During the vertical sweep of the TV raster, the amplifier is utilized in a fly-back resonant mode. During the vertical retrace time of the raster, the amplifier is switched to linear operation.

3,499,980

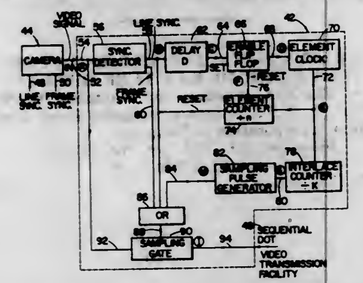
SEQUENTIAL DOT INTERLACE SYSTEM AND METHOD FOR TELEVISION

Edward S. Smierciak, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed May 4, 1967, Ser. No. 636,060
Int. Cl. H04n 3/00, 3/16; H04l 7/00
U.S. Cl. 178—6.8 30 Claims

A sequential dot interlace system for raster-type television apparatus which employs a time-based video signal having recurrent line and frame synchronizing pulses, there being a predetermined number of lines in each frame and the video signal including an information-conveying portion which has a predetermined minimum

duration interval between line synchronizing pulses, i.e., a predetermined tolerance in the line frequency. The incoming line and frame synchronizing pulses are detected, each detected line synchronizing pulse triggering a delay multivibrator. The multivibrator generates a delayed pulse which terminates shortly after termination of the line synchronizing pulse, the trailing edge of the delayed pulse sets an enable flip-flop to provide an enabling signal. The enabling signal actuates a clock pulse generator which generates a train of clock pulses. The clock pulses are counted by an element counter and when a predetermined number has been reached during the information-conveying interval of the video signal, i.e., within the predetermined tolerance limit before the next line synchronizing pulse, the enable flip-flop is reset thus terminating the enabling signal and deactuating the clock pulse generator thereby establishing a "quasi line" having D elements. An interlace counter also counts the clock pulses cumulatively from line to line and generates a sampling pulse in response to each successive group of a predetermined number of clock pulses. The line and frame synchronizing pulses and the sampling pulses actu-



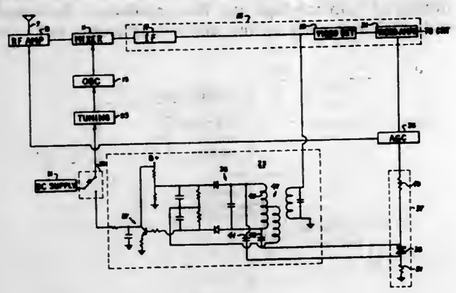
ate a sampling gate so as to provide a train of sampled video signal pulses. In order to provide interlacing, the number of clock pulses in each group is divisible into the number of clock pulses in each line by a first integer which is greater than one with a second integer remainder, the number of lines in a frame, the number of clock pulses in a line and the integer being of one numerical quantity, i.e., odd or even, and the number of clock pulses in each group being of the other numerical quantity, and the quotient LD/n_1n_2, where L is the number of lines in a complete picture (frame), D is the number of elements or dots in the quasi line, n_1 is the vertical interlace ratio (if any), and n_2 is the dot interlace ratio, must be irreducible, i.e., there are no common factors of the products LD and n_1n_2. Thus, in a television system having 525 lines per frame, there may be 381 clock pulses per line and 4 clock pulses in each group, the number of pulses in each group (4) thus being divisible into the number of pulses in each line (381) by the integer 95 with a remainder of one. The ratio of the number of clock pulses in a group to the respective sampling pulse, which may be for example 4 to 1, 8 to 1, 16 to 1, or 32 to 1, is the dot interlace ratio, and indicates that all of the information normally transmitted in a single frame is transmitted in four, eight, sixteen or thirty-two frames.

3,499,981
AFC SYSTEM FOR TELEVISION RECEIVER

Charles Bailey Neal, Batavia, and Doug W. Rhee, Williamsville, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 18, 1966, Ser. No. 722,367
Int. Cl. H04n 5/50
U.S. Cl. 178—7.3 6 Claims

In a television receiver automatic frequency control (AFC) system wherein means are provided for developing and applying an error signal for automatically shifting an oscillator developed carrier signal to provide an intermediate carrier signal at the tuned intermediate frequency, a weak signal optimizing circuit coupled to the

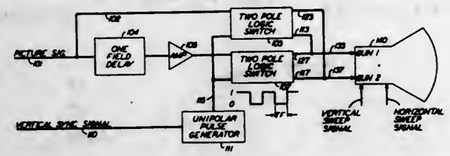


error signal developing means for shifting the frequency of the intermediate carrier signal in accordance with the magnitude of a received picture carrier signal whereby the signal-to-noise ratio of the picture signal is enhanced.

3,499,982
TELEVISION RECEIVER TO PRODUCE A SEQUENTIALLY DISPLAYED PICTURE FROM A CONVENTIONAL INTERLACED VIDEO SIGNAL

John B. O'Neal, Jr., Matawan, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 15, 1966, Ser. No. 572,294
Int. Cl. H04n 3/16, 5/44
U.S. Cl. 178—7.5 3 Claims



A television signal receiver system reproduces a sequential picture display from a transmitted interlaced television signal. The various fields of the interlaced signal are delayed by a delay medium and repeatedly applied to an assigned electron gun until the field has completely traversed the delay medium. The extent of the delay medium is sufficient to allow each field to be repeatedly displayed for a number of times equal to the number of fields in each frame. Hence the fields of each frame are displayed simultaneously with each other resulting in a sequential picture display.

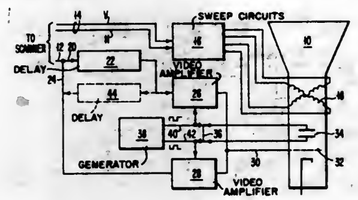
3,499,983
VIDEO SCANNING SYSTEM WITH HIGH INTERLACE RATIO

Charles T. Masters, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 28, 1966, Ser. No. 582,748
Int. Cl. H04n 3/30
U.S. Cl. 178—7.5 3 Claims

A cathode ray display system having a set of deflecting coils which tend to deflect the electron beam in a conventional manner. In addition two beam deflecting plates are employed which deflect the beam between two

adjacent scan lines. A square wave is applied to the deflecting plates so that as the beam scans horizontally it alternately scans a first line and then a second line a plurality

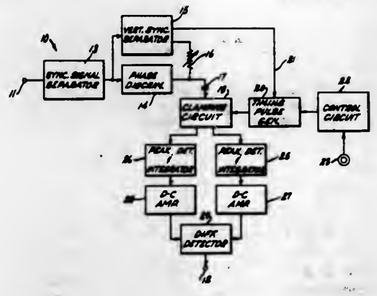


of times during a single sweep of a horizontal scan. This effects scanning of two lines during one horizontal scan period.

3,499,984
TIMING ERROR DETECTING SYSTEM

Yuzuru Inoue, Tokyo, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan

Filed Aug. 15, 1966, Ser. No. 572,576
Claims priority, application Japan, Aug. 17, 1965, 40/50,047
Int. Cl. H04n 5/21
U.S. Cl. 178—69.5 11 Claims



The invention provides for detecting timing errors, in a video tape recorder. These errors are of a type caused by changed operating conditions or tape tension, or by stretched or shrunken tape, or the like. The error detector provides a first error signal responsive to the video or horizontal signals and a second error signal responsive to the vertical synchronizing signals. The first and second signals are combined to correct the error. A clamping circuit limits the time interval during which the second or vertical synchronizing signals can take effect.

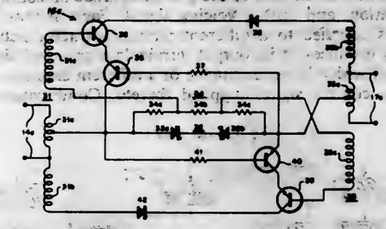
3,499,985
TWO-WAY PULSE REPEATER

Richard O. Rowlands and Edward L. Rohm, State College, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 2, 1967, Ser. No. 621,101
Int. Cl. H04l 25/20, 25/52, 15/00
U.S. Cl. 178—70 10 Claims

A two-way pulse communications system for communication between two remotely located stations by coded pulse trains over a single transmission path including bidirectional pulse repeater networks spaced periodically along the length of the transmission line for regeneration of the coded pulses in both amplitude and time. The bi-

directional regeneration is accomplished by a complementary arrangement of two pulse amplifier circuits in

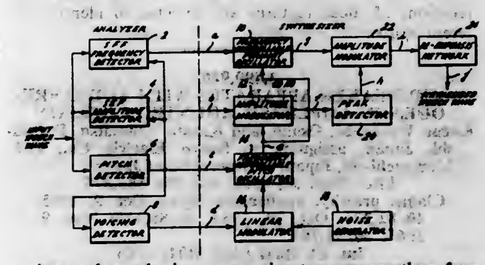


an arrangement whereby only one of the two amplifiers is operative at any one time.

3,499,986
SPEECH SYNTHESIZER

Louis R. Focht, Huntingdon Valley, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 582,573
Int. Cl. H04m 1/60
U.S. Cl. 179—1 6 Claims



A speech synthesizer responsive to no more than four input control signals transmitted thereto to synthesize a speech wave. Said control signals include a signal representative of the single equivalent formant frequency of a sound and a signal representative of the single equivalent formant amplitude of that sound. The single equivalent formant is a time-varying signal the amplitude of which is directly dependent on the peak amplitude of the first major oscillation occurring after each pitch pulse, of the electrical signal representative of the speech wave, and the frequency of which is approximately equal to the frequency of said first major oscillation after preemphasis of high-frequency components of that electrical signal. The synthesizer includes apparatus for generating a signal representative of the single equivalent formant frequency of the sound and apparatus for amplitude modulating that signal in accordance with a signal representative of the single equivalent formant amplitude of the sound.

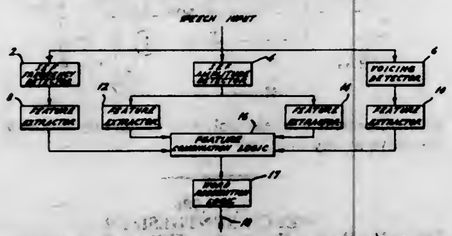
3,499,987
SINGLE EQUIVALENT FORMANT SPEECH RECOGNITION SYSTEM

Louis R. Focht, Huntingdon Valley, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,293
Int. Cl. H04m 3/40
U.S. Cl. 179—1 4 Claims

A speech recognition system which produces, in response to an electrical signal representative of a speech wave, control signal consisting of (i) a first signal representative at any given time of the period of the first major oscillation of the electrical signal occurring after

that pitch pulse of said speech wave which immediately precedes said given time, (ii) a second signal representative at said given time of the peak amplitude of said major oscillation, and (iii) a voicing signal. Each of those signals is supplied to a different feature extractor network which produces at its output terminals a group of signals each of which is representative of a different characteristic of the control signal supplied thereto. Combinations of

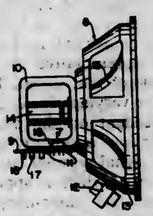


the output terminals of the feature extractor networks are connected to inputs of gating networks which produce an output signal only when an appropriate signal is present at each of said inputs. Hence such an output signal indicates that the speech wave has a specified combination of features characteristic of a word. Different combinations of those features are detected to identify different words.

3,499,988
LOUDSPEAKER APPARATUS WITH AUDIO FREQUENCY AMPLIFIER MOUNTED THEREON

Kazuo Watanabe, Osaka, and Katsuo Tamaribu, Daitoh-shi, Japan, assignors to Sanyo Electric Co., Ltd., Moriguchi-shi, Japan, a corporation of Japan

Filed Sept. 30, 1966, Ser. No. 583,377
Claims priority, application Japan, Oct. 8, 1965, 40/82,226; Oct. 20, 1965, 40/86,127; Nov. 9, 1965, 40/91,201
Int. Cl. H01l 1/02; H04r 9/06
U.S. Cl. 179—1 1 Claim



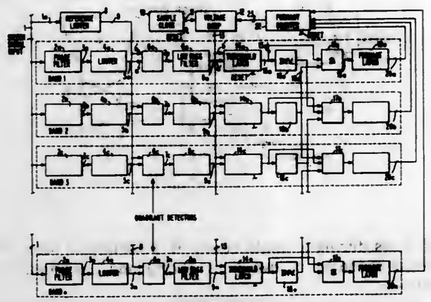
An audio frequency system having a loudspeaker in which the audio amplifier is mounted directly to the speaker to form a unitary structure with a heat generating component of the amplifier mounted to use the speaker as a heat sink.

3,499,989
SPEECH ANALYSIS THROUGH FORMANT DETECTION

Howard W. Cottaniaux, Gaithersburg, Md., and John H. King, Jr., Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 14, 1967, Ser. No. 667,661
Int. Cl. G10l 1/00
U.S. Cl. 179—1 8 Claims

A stable logic circuit combined with phase shift filters which are all-pass networks having a transfer function with constant magnitude and frequency dependent phase. The input speech wave is applied to both a reference limiter which supplies a square wave output and a plurality of phase filter and limiter combinations which supply phase shifted square wave outputs. The output of the reference limiter and the output of an individual phase filter and limiter combination are supplied to a distinct

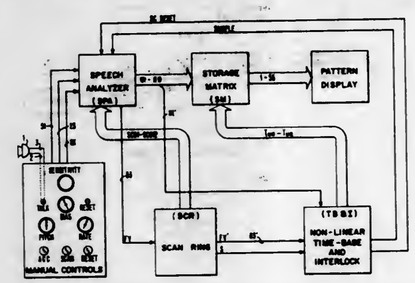


quadrant detector. The resultant outputs of the plurality of quadrant detectors are a function of the frequency phase relationship.

3,499,990
SPEECH ANALYZING SYSTEM

Genung L. Clapper, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 7, 1967, Ser. No. 666,169
Int. Cl. G10l 1/00
U.S. Cl. 179—1 9 Claims



The present invention is concerned with speech analysis and utilizes a system employing a time transformation base of real time to a non-linear time base that essentially compresses information having uncertain time measurements. Formant transitions in speech, for example, tend to occur at widely separate time intervals for word endings but are rather consistent at the beginning of words. The extraction of information representing speech sounds over a linear time base results in an accumulation of information which includes unmeaningful data. The system also utilizes unvoiced sounds as time reference points providing a finer sampling resolution for voiced sounds following the termination of unvoiced consonants. Moreover, the system lends itself to the encoding of fricative and sibilant sounds.

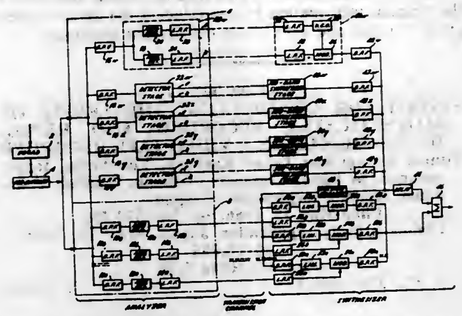
3,499,991
VOICE-EXCITED VOCODER

Lawrence E. Cassel, Norristown, and Joseph A. Sosnowski, Conshohocken, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 1, 1967, Ser. No. 657,661
Int. Cl. H04m 1/19
U.S. Cl. 179—1 7 Claims

A "voice-excited" vocoder in which a substantial replica of the "base band" portion of the input speech wave is

reconstructed at the synthesizer from a plurality of slowly varying signals representative of the frequency-vocal en-

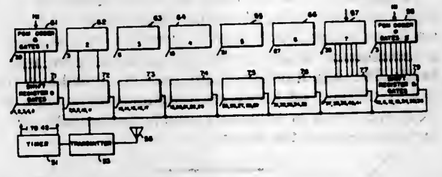


ergy distribution of adjacent portions of the "base band" of the input speech wave.

3,499,992
HIDDEN CHANNEL COMMUNICATIONS SYSTEM

Victor G. Robatino, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 5, 1962, Ser. No. 185,791
Int. Cl. H04m 3/16
U.S. Cl. 179—1.5 10 Claims



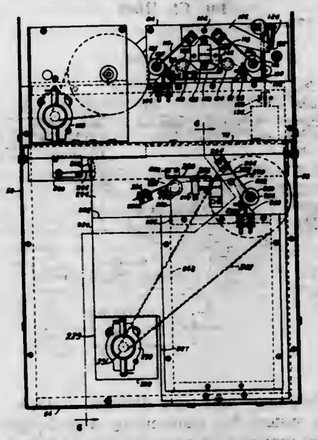
1. A digital code signal system comprising:
means to encode each of a first plurality of ordinary analog information samples as a second plurality of digital elements of progressively varying significance, accompanied by an extra element of apparently least significance;
means to encode further information to be concealed as a third plurality of said extra elements corresponding to said first plurality of analog information samples;
and means to transmit the combined output of both said encoding means;
whereby ususal receivers responsive to the encoding of the ordinary information but not the concealed information merely combine such extra elements as elements of least significance of said ordinary information, apparently randomly but imperceptibly varying the decoded values of said ordinary information to avoid revealing the presence of the concealed information.

3,499,993
TELEPHONE ANSWERING DEVICE

James R. Owen, Costa Mesa, Calif., and Henry Replin, Denver, Colo., assignors to Phonemaster, Inc., a corporation of Texas

Filed Sept. 28, 1965, Ser. No. 490,947
Int. Cl. H04m 11/10
U.S. Cl. 179—6 21 Claims

Telephone answering apparatus utilizes an endless recording tape system for recording and playing back messages to a caller, and recording and receiving messages from the caller. Acoustical and magnetic couplers interface with a standard telephone hand receiver, and means are provided for monitoring incoming calls without answering the telephone itself. Circuit means responsive to the ringing of the phone actuates an announcement portion, the end of which actuates a tape for recording messages from the caller. Playback and re-playback of received

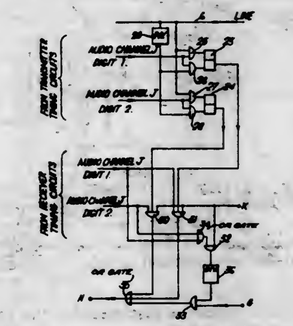


messages may be effected remotely by use of an extraneous tone signal. Switching means responsive to the amount of recording medium available for utilization by the record and playback means prevent breakage of the recording medium, and also prevent operation of the apparatus in the event sufficient tape medium is not available for recording of messages.

3,499,994
MULTIPLEX TRANSMISSION SUPERVISORY SYSTEM USING A PRESELECTED SIGNALLING CHANNEL

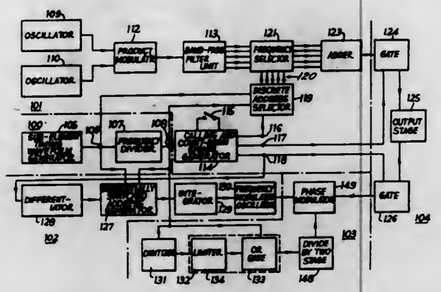
Michael Robert Lord, Basildon, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y.

Filed Jan. 12, 1967, Ser. No. 608,890
Claims priority, application Great Britain, Feb. 2, 1966, 4,572/66
Int. Cl. H04j 3/14
U.S. Cl. 179—15 8 Claims



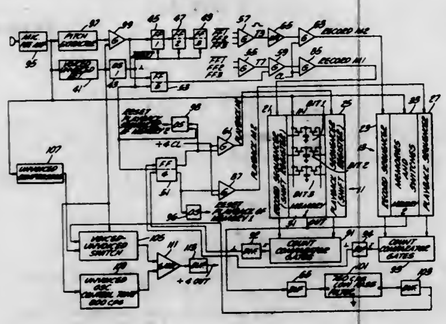
In lieu of a pilot signal, a pulse code modulated tone is transmitted to a distant office over a selected PCM channel if the channel is idle. At the distant office, an alarm is given when the received demodulated tone is either absent or diminished below a certain value.

3,499,995
FREQUENCY AND TIME DIVISION MULTIPLEX SIGNALLING SYSTEMS USING SUCCESSIVE CHANGES OF FREQUENCY BAND AND TIME SLOT
Adrian P. Clark, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company
Filed June 22, 1966, Ser. No. 559,470
Int. Cl. H04j 3/02
U.S. Cl. 179—15 21 Claims



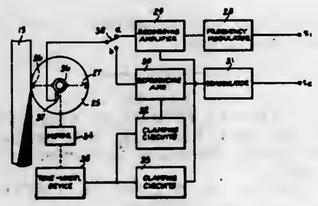
In a frequency and time division multiplex electrical signalling system for transmitting digital signals, a predetermined sequence of combinations of frequency bands and time slots is employed. The combination of frequency bands and time slots used by a particular channel is changed after a period of time indicated by the message being transmitted, for example after transmission of each digit. The changes in frequency band and time slot combinations for the various channels are not synchronised with each other.

3,499,996
BANDWIDTH COMPRESSOR AND EXPANDER
Arnold I. Klayman, Marina del Rey, and Leonard J. Genest, Inglewood, Calif., assignors to Octronix, Inc., a corporation of California
Filed Dec. 30, 1966, Ser. No. 606,432
Int. Cl. H04b 1/66
U.S. Cl. 179—15.55 8 Claims



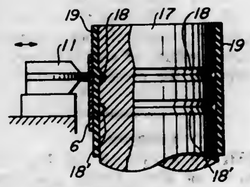
An electronic system is disclosed for the transmission of high-bandwidth intelligence over a low-bandwidth communication channel by means of frequency compression and expansion. The bandwidth compressor and expander circuits utilize two basic parts or systems, namely a voiced system and an unvoiced system. In recognition of the fact that there is much redundancy in voiced information in normal speech, the voiced system reduces the information to the minimum redundancy level by sampling every Nth pitch cycle and transmitting all of the frequency components associated with that basic pitch cycle at a reduced frequency. The expander circuit reproduces the original information by reproducing the divided pitch cycle N times and at N times the divided frequency.

3,499,997
SYSTEM FOR CONTROLLING THE LEVELS OF MAGNETICALLY RECORDED AND REPRODUCED SIGNALS IN A VIDEO TAPE RECORDER
Tsuneo Kosugi and Takeo Kanbara, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed Mar. 15, 1966, Ser. No. 534,500
Claims priority, application Japan, Mar. 19, 1965, 40/16,025
Int. Cl. H04n 5/78
U.S. Cl. 179—100.2 9 Claims



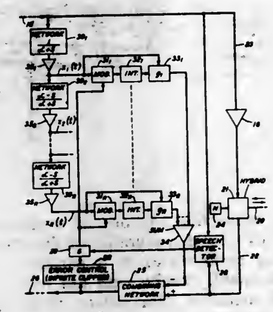
A magnetic tape recorder for color television signals uses a plurality of heads which sequentially scan oblique tracks on a tape. Each head is identified by a segment on a commutator which rotates in synchronization with the heads. The output of the commutator is applied to a clamp circuit to raise or lower the amplitude of signals to or from the heads in a manner which compensates for differences between the heads.

3,499,998
MAGNETIC TRANSDUCING APPARATUS HAVING TRANSDUCER-ENGAGING DRIVE CAPSTAN WITH ELASTIC TIRE
Shizuhiko Tanigawa, Moriguchi-shi, Toshio Shimizu and Mitsuru Ieki, Daito-shi, and Yutaka Higashida, Nishinomiya-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 22, 1967, Ser. No. 669,902
Claims priority, application Japan, Sept. 26, 1966, 41/63,949; July 6, 1967, 42/58,958, 42/58,959; July 7, 1967, 42/60,388; July 17, 1967, 42/62,369
Int. Cl. G11b 5/02
U.S. Cl. 179—100.2 4 Claims



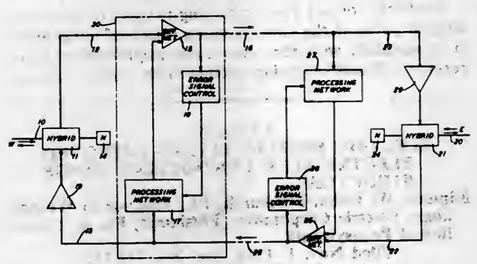
A magnetic recording and reproducing apparatus having a motor-driven cylindrical tape guide which is covered with a layer of non-transitional, adhesive elastic material so that a magnetic head forced against a magnetic tape along a Ω-like path about the tape guide is elastically withstood by the elastic material layer which acts as a cushion pad for the magnetic head. In the apparatus, the frictional force developed between the elastic material layer and the magnetic tape is principally utilized for driving the magnetic tape for thereby ensuring smooth travel of the magnetic tape in both the normal and reverse directions.

3,499,999
CLOSED LOOP ADAPTIVE ECHO CANCELLER USING GENERALIZED FILTER NETWORKS
Man M. Sondhi, Princeton, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,583
Int. Cl. H04b 3/20; H04m 9/08
U.S. Cl. 179—170.2 15 Claims



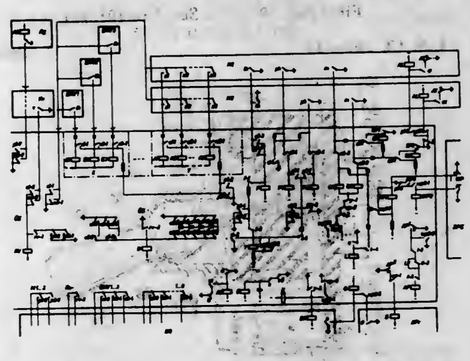
Operation of a closed-loop echo cancellation system for use in a two-way communication circuit is improved by employing an adjustable generalized filter network. Signals incoming to a four-wire to two-wire junction are supplied to the generalized filter network which, under control of an error signal derived from signals in the outgoing path, develops a replica of an undesired echo. The replica signal is subtracted from outgoing signals and the differential is used for the derivation of a new error signal.

3,500,000
SELF-ADAPTIVE ECHO CANCELLER
John L. Kelly, Jr., deceased, late of Berkeley Heights, N.J., by Myldred P. Kelly, executrix, Berkeley Heights, and Benjamin F. Logan, Jr., Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 591,382
Int. Cl. H04b 3/20; H04m 9/08
U.S. Cl. 179—170.2 19 Claims



Conventional echo suppressors generally combat echoes generated at hybrid junctions in long distance telephone connections by interrupting the return path according to some decision scheme based upon the relative levels of the outgoing and return signals. In contrast, the self-adaptive echo canceller described herein cancels the echo without interrupting the return path. A replica of the echo is synthesized and subtracted from the return signal. The replica is synthesized by means of a filter which, under control of a feedback loop, adapts to the transmission characteristic of the echo path and tracks variations of the path that may occur during a conversation.

3,500,001
METHOD TO SUPERVISE ESTABLISHING OF A CONNECTION IN A CROSSPOINT ARRANGEMENT, CENTRALLY CONTROLLED THROUGH MARKERS
Nikolaus Lowen, Tamm, and Klaus Nigge, Korntal-Wurttemberg, Germany, assignors to International Standard Electric Corporation
Filed July 14, 1966, Ser. No. 565,193
Claims priority, application Germany, July 17, 1965, St 24,153
Int. Cl. H04m 3/28
U.S. Cl. 179—175.2 19 Claims

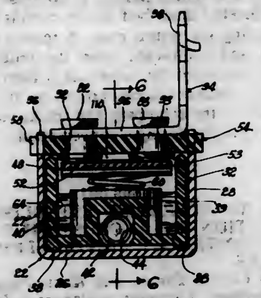


A telephone switching system has a plurality of common control markers for controlling the switching network. Associated with the markers is a supervising storage facility for storing information identifying equipment being used to complete a call. Means are provided for detecting fault conditions arising during the operation of the network and means for indicating these fault conditions. Thereupon, the supervisory storage is interrogated for the identity of the possible faulty equipment. This reduces the marker holding time hitherto required to make the identification.

3,500,002
ELECTRICAL SWITCHES WITH PRECISE LOCATING MEANS BETWEEN THE CARRIAGE AND CONTACTOR
Michael F. Bedocs, Wilmette, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Jan. 29, 1968, Ser. No. 701,321
Int. Cl. H01h 15/24
U.S. Cl. 200—16 9 Claims

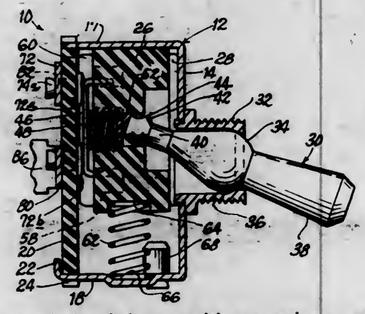
An electrical switch having a casing, an insulating carriage movable in said casing, an insulating wall on said casing, a plurality of contacts mounted on said wall, a contactor movable with said carriage and engageable with said contacts, and spring means biasing said contactor toward said contacts, said contactor being plate-like and

having opposite edge portions formed with a pair of locating notches, said carriage having a pair of opposed



lugs closely received in said notches and locating said carriage for precise movement therewith.

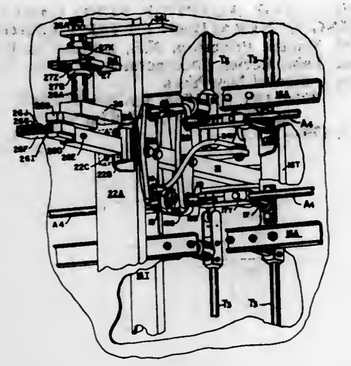
3,500,003
PLURAL BREAK ELECTRICAL SWITCH
William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Jan. 29, 1968, Ser. No. 701,324
Int. Cl. H01h 15/06
U.S. Cl. 200—16 2 Claims



An electrical switch, comprising a casing, a carriage movable therein, first and second pairs of contacts, first and second contactors movable with said carriage between first and second positions, each contactor when in said first position being engageable with both contacts of the corresponding pair, each contactor being movable out of engagement with the first contact while remaining in engagement with the second contact of the corresponding pair when the contactor is moved to said second position, a first terminal conductor secured between the first contacts of both pairs, and a second terminal conductor secured between the second contacts of both pairs, said contactors being movable substantially simultaneously out of engagement with both of said first contacts, whereby the wear and erosion due to arcing are distributed between said first contacts.

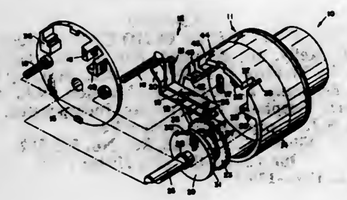
3,500,004
SWITCH PLUNGER OPERATING MECHANISM WITH MICROSWITCH ACTUATING CAM ROLLERS AND LOST MOTION MEANS
Stephen W. Kershner, Falls Church, and Kenneth Owen, Springfield, Va.; said Owen assignor to Delta Electronics, Inc., Alexandria, Va.
Filed Apr. 4, 1967, Ser. No. 628,591
Int. Cl. H01h 3/32
U.S. Cl. 200—18 5 Claims

A switch system using a plurality of multi-contact reciprocating switch plungers to selectively connect any one of a plurality of multi-conductor lines running in one direction to any one of a plurality of multi-conductor lines running in a transverse direction with each plunger switch unit and its cooperating contacts being made in a module whereby a switch system of any number of switches can be readily assembled, particularly for the



purpose of connecting any one of a plurality of transmitters to any one of a plurality of directional antennas for directing radio waves in a particular direction as required. Rotatable cranks, with lost motion means and microswitch actuating cam rollers, reciprocably operate the switch plungers.

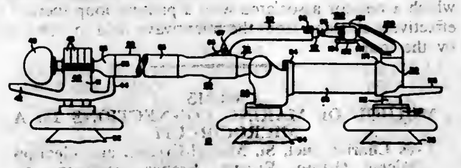
3,500,005
VARIABLE CIRCUIT TIMER
William Ray Brown, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Oct. 4, 1967, Ser. No. 672,879
Int. Cl. H01h 7/08
U.S. Cl. 200—38 11 Claims



Electrical contact blade retaining means are formed as integral parts of the timer housing. The retaining means in conjunction with the timer cam programming means permits different switching circuits to be readily obtained.

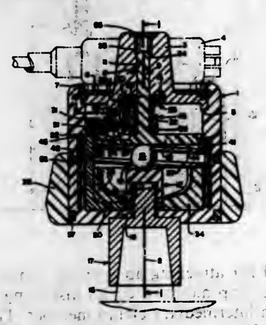
3,500,006
ELECTRIC SWITCH HAVING IMPROVED ELECTRICALLY CONDUCTING HINGE STRUCTURE
Edmund W. Kuhn, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 1, 1968, Ser. No. 772,715
Int. Cl. H01h 31/00
U.S. Cl. 200—48 9 Claims

An electric switch comprising a switch blade movable between open and closed positions with respect to a relatively stationary contact means and supported by a hinge type conducting structure for rotational movement about



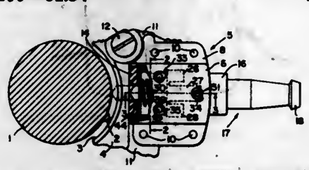
its own axis and pivotal movement about an axis generally perpendicular to the switch blade.

3,500,007
INERTIA-SENSITIVE CIRCUIT BREAKER
Nelis N. Koomen, Phoenix, Ariz., and John T. Greenslade, Torrance, Calif., assignors to Talley Industries, Inc., Mesa, Ariz., a corporation of Delaware
Filed Jan. 31, 1968, Ser. No. 702,080
Int. Cl. H01h 35/02; G08b 21/00
U.S. Cl. 200—61.45 10 Claims



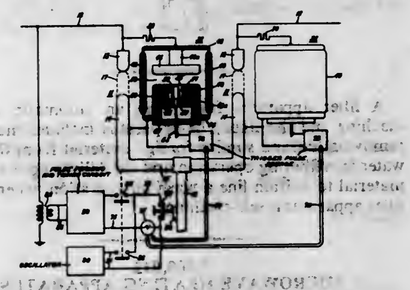
An inertia-sensitive circuit breaker suitable as an automotive safety device is provided which is compact and constructed to be directly mountable on an automobile storage battery, and wherein actuation of the device is effected by the release of an intertial ball when it is subject to a force component in any direction in a given plane. The ball does not form part of the electrical circuit broken by the device. Reset means are provided for conveniently and reliably resetting the ball to its initial position. Two pairs of electrical terminals are provided in one embodiment of the device for disconnecting both the storage battery and the generator from the automobile electrical system.

3,500,008
LATCHABLE RECIPROCABLE SWITCH CONSTRUCTION
Gerald L. McClure, Warren, Mich., assignor to Essex International, Inc., a corporation of Michigan
Filed Feb. 20, 1968, Ser. No. 706,836
Int. Cl. H01h 9/02
U.S. Cl. 200—61.54 13 Claims



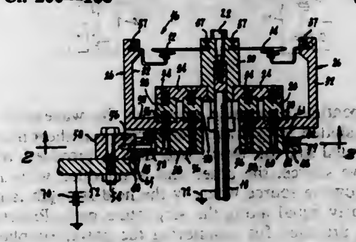
A switch having a casing provided with fixed contacts engageable and disengageable by a movable conductor having spring contact fingers supported on a reciprocable operator mounted in the casing for movement between two positions in the first of which one end of the operator extends beyond the casing and in the second of which the opposite end of the operator extends beyond the casing for engagement by a movable cam. A biasing spring exerts a force on the operator urging it constantly toward the first position, the force of the spring being overcome when the operator is in its second position by the reaction between the spring contact fingers and the fixed contacts and by a resilient latch which lies athwart the operator and yieldably engages detents on the operator. The biasing spring also acts on the latch and maintains it in an operative position. Upon engagement of the cam with the operator the latching forces acting on the operator are overcome and the spring is enabled to return the operator to its first position.

3,500,009
HIGH VOLTAGE CIRCUIT BREAKER WITH MEANS FOR PREINSERTING RESISTORS DURING CLOSING
Christy W. Bell, Berwyn, Pa., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1967, Ser. No. 618,405
Int. Cl. H01h 33/00
U.S. Cl. 200—144 15 Claims



A high voltage circuit breaker comprising a plurality of sets of separable contacts electrically connected in series. Paralleling each set of contacts is the series combination of a voltage-controlling resistor and a triggered gap device. During circuit-breaker closing, the resistors are preinserted in parallel with the contacts by simultaneously triggering the gap devices into a conductive state, thus simultaneously preinserting all the resistors.

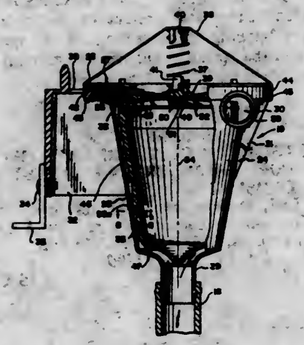
3,500,010
ELECTROMECHANICAL SWITCH
Abraham Harel, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,746
Int. Cl. H01h 1/04, 1/34, 3/02
U.S. Cl. 200—166 6 Claims



An electromechanical switch for use where resilient materials may not be practicable has a relatively hard

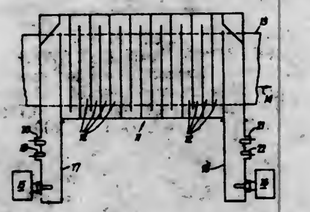
contact, a malleable contact, and a device for re-shaping the malleable contact prior to each of its engagements with the hard contact.

3,500,011
FILTER APPARATUS
William R. Rickel, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 11, 1967, Ser. No. 652,618
Int. Cl. B01d 35/22, 33/02
U.S. Cl. 210—386 10 Claims



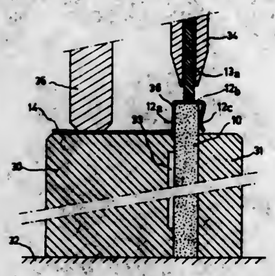
A filter apparatus for use in an automatic washing machine and the like. The apparatus includes means for removing lint and similar foreign material from the wash water in a filtering operation and for delivering the filtered material to a drain line a wash-off operation, whereby the filter apparatus is self-cleaning.

3,500,012
MICROWAVE HEATING APPARATUS
Kenneth Hilton, 16 Ridgeside, Three Bridges, Crawley, Sussex, England
Filed Mar. 6, 1968, Ser. No. 710,894
Claims priority, application Great Britain, Mar. 7, 1967, 10,592/67
Int. Cl. H05b 5/00, 9/06
U.S. Cl. 219—10.61 16 Claims



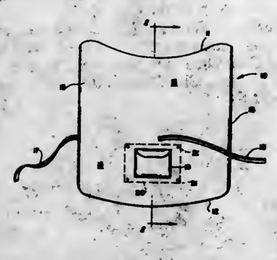
A serpentine waveguide of which the waveguide sections are slotted for passage therethrough of sheet material to be heated and of which one end is provided with a microwave source, the other end is provided with a second microwave source whereby the field strength is made more nearly equal along the serpentine path. Preferably, means is provided for monitoring the power supplied by and incident on each source and for shutting both sources down if the power incident on either source becomes too great compared with the power supplied by it. A directionally-selective microwave-sensitive device suitable for incorporation in such monitoring means is provided, in which a resistor associated with a pick-up loop thereof is effectively shielded from the microwave field to be sensed by the loop.

3,500,013
METHOD OF MAKING CONNECTIONS TO A MICROCIRCUIT
Yves Charles Snel, St. Michel-Evreux, and Georges Michel Ortine, Evreux, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,545
Claims priority, application France, July 7, 1966, 68,569
Int. Cl. B23k 1/04
U.S. Cl. 219—85 9 Claims



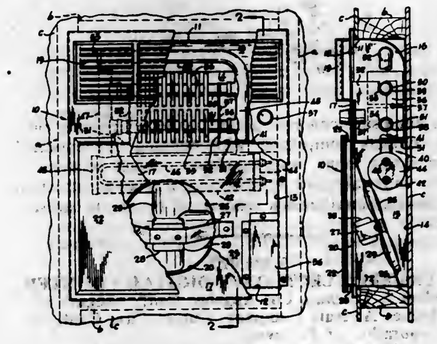
A method for attaching an external connecting wire to a conductive strip mounted on an insulating carrier plate and using an intermediary clamp member. Three separate and consecutive current pulses of different magnitude and duration are applied to the clamp member to selectively fuse the external connecting wire to the clamp member, the clamp member to the conductive strip, and to remove excess portions of the forming strip of which the clamp member is an intregal part thereof.

3,500,014
ELECTRICALLY HEATED ARTICLES
Santo Longo, 391 Roosevelt Ave., Freeport, N.Y. 11520
Filed Dec. 6, 1967, Ser. No. 688,396
Int. Cl. H05b 1/00
U.S. Cl. 219—211 3 Claims



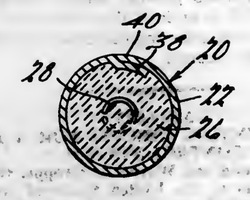
An electrically heated cloth article such as a blanket or scarf for covering and warming a given portion of the human body, including a battery operated electric heating element strategically located so that a small heating element is operative to warm the entire portion of the body covered by the article.

3,500,015
ELECTRIC HEATER ADAPTED FOR VERTICAL INSTALLATION AND UTILIZING HEATED WATER AND FORCED AIR CIRCULATION
Jean Y. Barbier, Richmond Heights, and Elizabeth J. Papke, St. Louis, Mo., assignors to Intertherm Inc., a corporation of Missouri
Continuation-in-part of application Ser. No. 539,989, Apr. 4, 1966. This application Oct. 10, 1968, Ser. No. 766,562
Int. Cl. F24h 3/08, 3/10
U.S. Cl. 219—341 5 Claims



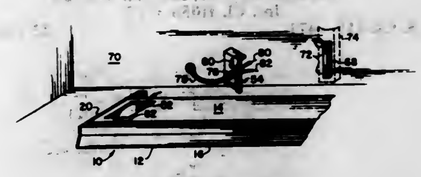
An electrical heater, suited for installation within walls of rooms, has a water heating chamber including a resistance heater unit, finned convector tubes, and an expansion tube arranged progressively above each other within a shallow cabinet having a lower air inlet and an upper air outlet. A fan baffle adjacent to the inlet and positioned on a steep slant within the shallow cabinet, serves as the inlet to a plenum chamber which confines air impelled by the fan to exit along the finned length of the upper convector tube.

3,500,016
HEATER ASSEMBLY
John Karuzahn, 3776 11th St., Wyandotte, Mich. 48192
Filed Oct. 9, 1967, Ser. No. 673,764
Int. Cl. H05b 3/02, 3/50; F28f 1/24
U.S. Cl. 219—365 8 Claims



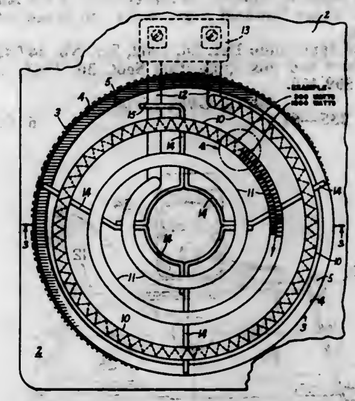
A heater constructed of a press fit assembly including a plurality of spaced sheets formed with tubular projections disposed in nested relationship defining a conduit in which a heating element enclosed within a circumferentially expandable and contractable tubular sleeve is disposed in heat conductive contact therewith.

3,500,017
ELECTRIC HEATING APPARATUS AND ENCLOSURE THEREFOR
Bohdan Zabavlerick, Newark, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed June 22, 1967, Ser. No. 647,976
Int. Cl. F24h 9/02
U.S. Cl. 219—366 5 Claims



An electric heater of the type commonly installed against a wall along the baseboard including one section containing an elongated heating element and a small end section for terminal connections. Access to the terminal section is gained through a removable cover front to meet customary requirements. Avoiding the usual need for time-consuming disassembly of the front covers when connection is to be made from the rear, a separate cover is removable from the rear of the terminal box and has rear-accessible fastening means.

3,500,018
ELECTRIC HEATER APPARATUS
Paul Stiller, Scarsdale, N.Y., assignor to Teledyne Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,249
Int. Cl. H05b 3/68
U.S. Cl. 219—443 9 Claims

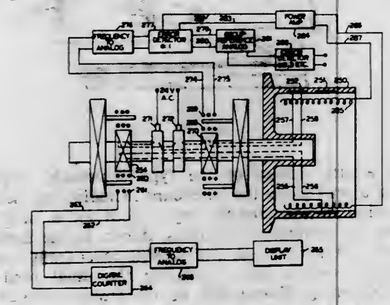


Electric surface heater apparatus having particular utility with one-piece stove top apparatus is provided in accordance with an embodiment of this invention wherein the convolute portions thereof exhibit a select temperature differential whereby the inner portions thereof radiate rather intense heat while the outer portions thereof have a reduced heat output to thereby increase the efficiency of the heater apparatus and protect the finish of any surface mount provided therefor.

3,500,019
APPARATUS FOR DEVELOPING TEMPERATURE INDICATIVE SIGNALS FROM STATIONARY OR ROTATING HEATERS OR DRUMS AND FURTHER FOR DEVELOPING CONTROL SIGNALS FROM THE TEMPERATURE

Bobby B. Childress, Charlotte, N.C., assignor to Coltron Industries, Inc., Charlotte, N.C., a corporation of North Carolina

Filed Jan. 18, 1968, Ser. No. 698,784
Int. Cl. H05b 3/02
U.S. Cl. 219—471 25 Claims

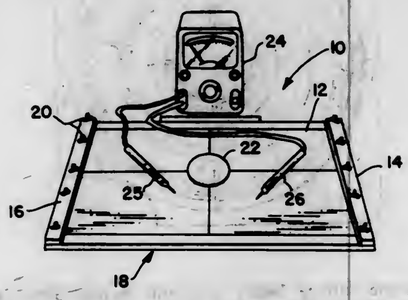


A temperature indication and control means in a drum heater in which a temperature sensor is provided to supply a signal to a control circuit which in turn supplies a signal to the heater arrangement. The temperature sensor is in circuit with an oscillator which connects the sensor output to a pulse train output proportional to the temperature of the sensor or a pulse train output frequency which is a precise analog of the sensor bulb temperature.

3,500,020
MINIMUM INDUCED DRAG AIRFOIL BODY

Clarence D. Cone, Jr., Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Original application Dec. 26, 1962, Ser. No. 247,423. Divided and this application Sept. 30, 1965, Ser. No. 509,460
Int. Cl. G06k 15/00
U.S. Cl. 235—61.6 6 Claims

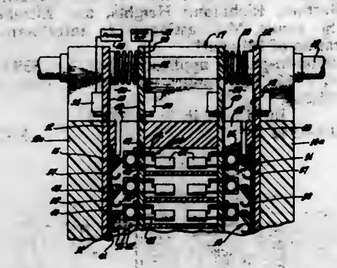


This relates to a method and apparatus for measuring the induced drag of a wing form by providing an electric analog of the fluid flow pattern by setting up an electric field in a conductive sheet, and forming a nonconductive void in the sheet shaped like the wing form and taking measurements of potential differences between points on opposite sides of the void.

3,500,021
CARD READER

Stanley R. Jones, Santa Ana, and Brian H. Long, Orange, Calif., assignors to Astrodata Inc., Anaheim, Calif., a corporation of California

Filed July 27, 1966, Ser. No. 568,263
Int. Cl. G06k 7/00; H01h 43/08
U.S. Cl. 235—61.11 12 Claims

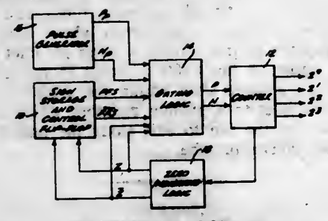


The disclosure concerns a card reader employing electrical contacts comprising wire defining pre-tensioned torsion spring loops, with cantilever contact portions to register with tab card symbol zones. The construction also enables simultaneous reading of two such cards.

3,500,022
REVERSIBLE ELECTRONIC DIGITAL COUNTER

Esteban J. Toscano, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 24, 1966, Ser. No. 560,294
Int. Cl. G06f 7/38; G06g 7/00
U.S. Cl. 235—92 1 Claim



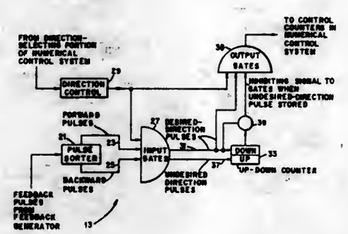
A binary coded decimal FLIP-FLOP counter for counting pulses occurring at different times from two different sources in which gate circuits having fast recovery output circuits intercouple the FLIP-FLOPS in a counter configuration which always counts up from zero. The gate circuits provide parallel pulse coupling to the FLIP-FLOPS in an individual decade and alleviate the need for delaying pulse inputs during the pulse ripple period through the counter.

3,500,023
STUTTER COUNTING CIRCUIT FOR A DIGITAL CONTROL SYSTEM

Joseph L. Arrowood and Wayne A. Groppe, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 9, 1966, Ser. No. 593,660
Int. Cl. G06m 3/12
U.S. Cl. 235—92 4 Claims

A stutter counting circuit has been provided for use in a digital positioning control system in which command pulses from a computer are stored in a counter, and the counter, in turn, controls a drive means attached to a device to be positioned. A feedback generator associated with the device to be positioned feds back pulses to the counter, through the stutter counting circuit. The stutter

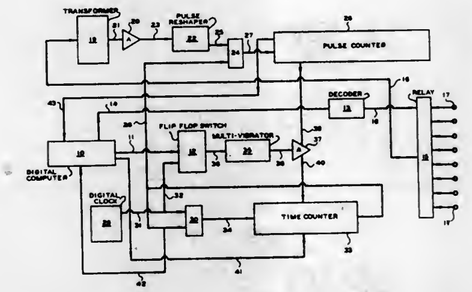


counter operates upon the feedback signal before it is received by the counter to remove stutter pulses from the feedback signal, thus giving the counter true-position-indication feedback signals.

3,500,024
DIGITAL DATA INPUT SYSTEM

Galen D. Stacy, Bartlesville, Okla., and Robert G. Carleton, Saxonville, Mass., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 1, 1967, Ser. No. 613,201
Int. Cl. G06f 7/38; G06g 7/00
U.S. Cl. 235—92 5 Claims



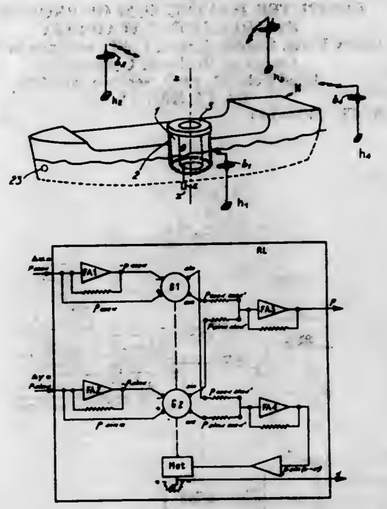
A digital data input system for a digital computer is provided wherein signal pulses from any one of a series of process measuring instruments are converted to digital form and counted over a preselected time period. At the end of the selected time period the computer will be automatically interrupted to receive the counted data.

3,500,025
AUTOMATIC DYNAMIC POSITIONING SYSTEM

Pierre Moulin, Montesson, and Pierre Aubel, Rueil-Malmaison, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Haute-de-Seine, France

Filed Dec. 28, 1966, Ser. No. 605,263
Claims priority, application France, Jan. 6, 1966, 45,095
Int. Cl. B63h 25/42; G06g 7/14
U.S. Cl. 235—150.27 4 Claims

An automatic system for maintaining in a reference position a floating installation having a central annular element freely rotatable with respect to the rest of the installation comprises two propulsion units fixed to the annular element and having thrust axes symmetrical with respect to a diametral plane of said element. A detection device delivers first and second electrical voltages related respectively to the amplitude and to the direction of drift

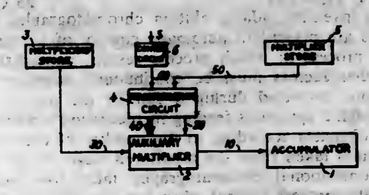


of the installation from its reference position. Means are provided to control by said first voltage the magnitude of the resulting thrust of the propulsion units, and to control by said second voltage the orientation of said resulting thrust.

3,500,026
MULTIPLICATION APPARATUS UTILIZING EITHER A POSITIVE OR A NEGATIVE MULTIPLIER WHEREIN FORM CONVERSION AT EACH INTERFACE OF THE MULTIPLYING UNIT IS UNNECESSARY

Zdeněk Pokorný, Prague, Czechoslovakia, assignor to Vyzkumny ustav Matematickych Stroju, Prague, Czechoslovakia, a corporation

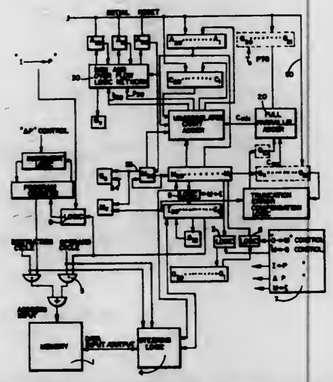
Filed Sept. 7, 1966, Ser. No. 577,641
Claims priority, application Czechoslovakia, Sept. 10, 1965, 5,582/65
Int. Cl. G06f 7/38
U.S. Cl. 235—160 3 Claims



An arithmetic logic unit forms the product of a multiplicand and an N-digit multiplier representative of either a positive or a negative number by algebraically adding a sequence of partial products of the multiplicand and each of the first N ones of a succession of control factors determined by each successive multiplier digit plus any carries from a previous digit. To accomplish this, the unit is provided with facilities for suppressing the $(N+1)^{th}$ control factor normally associated with a carry from the Nth digit order of a multiplier representative of a negative number in complement form. The resulting suppression of a finite constituent of the product of the multiplicand

and a negative multiplier causes the negative final product to be also directly expressed as a quantity representative of a negative number in complement form.

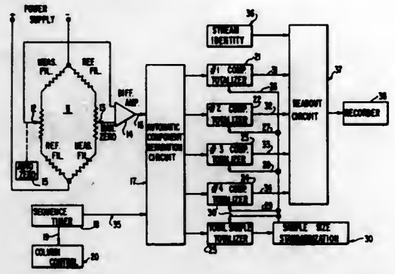
3,500,027
COMPUTER HAVING SUM OF PRODUCTS INSTRUCTION CAPABILITY
Henry Wyle, Garden Grove, Calif., assignor to North American Rockwell Corporation
Filed Feb. 27, 1967, Ser. No. 618,599
Int. Cl. G06f 15/06
U.S. Cl. 235—164 4 Claims



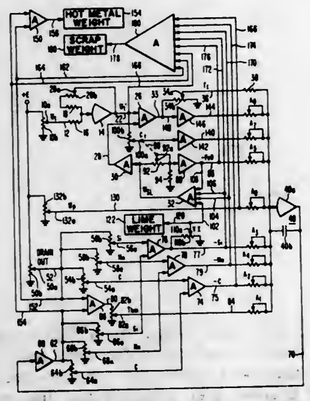
A computer system for adding a plurality of computed multiplication products by replacing one function of the accumulator register with a separate register and logic during the computation of arithmetic products after a first product is computed and stored in the accumulator register of the computer. Each bit of a product being computed is added to the sum of previous products in the accumulator. As a result, when all the products have been computed, the sum is contained in the accumulation register.

3,500,028
AUTOMATIC CHROMATOGRAPHY SYSTEM
Charles R. Killian, Baton Rouge, La., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,609
Int. Cl. G06g 7/18, 7/48; G06f 15/20
U.S. Cl. 235—183 23 Claims

This invention adapts elution chromatography where isomers are present to automatic control of a manufacturing process in which process results, concentrations, and other factors must be continuously measured and variations corrected during a run by the use of chromatographic apparatus feeding in succession a number of signal channels according to the number of components in samples taken from the monitored stages of the process. Conventional chromatography takes too long for automatic process control when isomers are present and peak readings are not reliably accurate. A method of shortening the elution time for the successive components in the several stages employs detection of a minimum in a chromatographic signal occurring between successive component elutions and shifts the integration from one channel to another in accordance with the predominant component then eluted. Elution by a carrier gas is speeded up according to this invention to provide sometimes overlapping component signals while separating component integration signals by result rather than by time. A minimum detector utilizes change of sign responsive apparatus to switch integration control between registering channels which are otherwise controlled to a time schedule. Standardization of samples injected for elution is effected by integrating a signal representative of all sample components throughout the time of elution and comparing this integrated total with a standard voltage value while at the same time attenuating signals presentative of the several components to the same time constant.

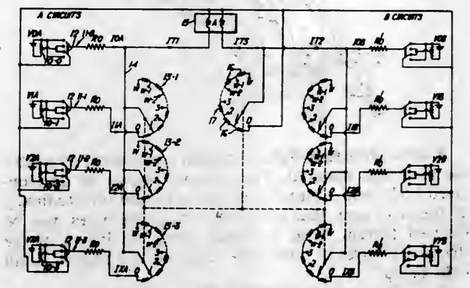


3,500,029
CHARGE COMPUTER FOR BASIC OXYGEN FURNACE
John W. Schwartzenberg, Maple Glen, Frank C. Luxl, Line Lexington, and Bernard Blum, Philadelphia, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1967, Ser. No. 661,423
Int. Cl. G06g 7/32
U.S. Cl. 235—184 10 Claims



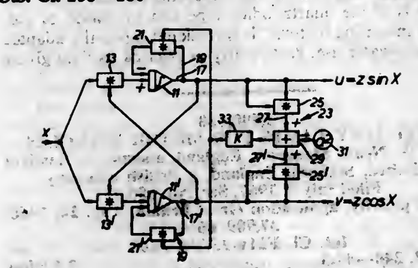
An analog charge computer for computing the hot metal weight, scrap weight and lime weight for a charge in a basic oxygen furnace from set values for the tap temperature, tap carbon, pellet weight and initial carbon, silicon and manganese analysis of the hot metal. The hot metal weight signal is modified until the sum of the signal representing the heat supplied due to the temperature of the hot metal and the signals representing the heat supplied as the heat of reaction of each of the impurities is equal to the signal representing the computed value for the heat required to provide the set tap temperature. The scrap weight is obtained by subtracting from the sum of signals representing the tap weight and the weight of the impurities a signal equal to the sum of the sum of the signals representing the hot metal weight and the weight of the pellets. The lime weight is obtained from the product of the silicon weight and the basicity ratio.

3,500,030
ELECTRIC ANALOGUE CALCULATOR FOR THE DETERMINATION OF CAPITAL INVESTMENT PROFITABILITY
Vaughan Richard Clarke, Newport Pagnell, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Oct. 11, 1965, Ser. No. 494,361
Claims priority, application Great Britain, Oct. 12, 1964, 41,600/64
Int. Cl. G06g 7/48, 7/16
U.S. Cl. 235—184 7 Claims



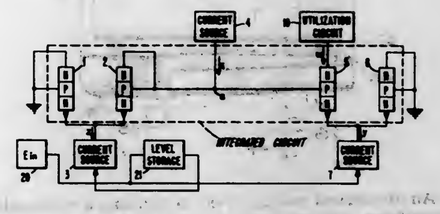
The invention provides an electric analogue calculator for solving the accounting problem of calculating the average rate of compound interest that a capital investment may be expected to earn, after the yearly cash flows have been estimated. A plurality of circuit branches represent consecutive future years and each can be fed with an analogue voltage adjustable to represent the cash flow in the respective year. Each circuit branch includes a potentiometer of the rotary stepping type with its resistance chosen so as to introduce into the circuit selected factors of present worth based on different rates of compound interest that the investment may earn. All these potentiometers are ganged together so that a single control adjusts each circuit branch for the same interest rate at the same time. All circuit branches feed a common summing circuit, and by adjusting the potentiometers until condition of zero current is achieved in the summing circuit the desired forecast of compound interest rate that will be earned by the investment is achieved.

3,500,031
FUNCTION GENERATORS
Alfred John Alexander, Geoffrey Stanley Bishop, Andrew Francis Vincent Leat, and Michael John Tooze, London, England, assignors to Elliott Brothers (London) Limited, London, England, a British company
Filed Dec. 5, 1967, Ser. No. 688,061
Claims priority, application Great Britain, Dec. 9, 1966, 55,288/66
Int. Cl. G06g 7/22
U.S. Cl. 235—186 16 Claims



A function generator for producing a sine and cosine output of an angle in response to a time rate change of angle input, includes feedback means responsive to the function generator output to control at least one of the signal parameters of amplitude and phase of the sine and cosine outputs.

3,500,032
ANALOG MULTIPLIER, DIVIDER, VARIABLE GAIN ELEMENT
Frederick Buckley, Vestal, N.Y., and Lawrence P. Fitzgerald, Warrenton, Va., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 9, 1968, Ser. No. 704,457
Int. Cl. G06g 7/16
U.S. Cl. 235—195 9 Claims



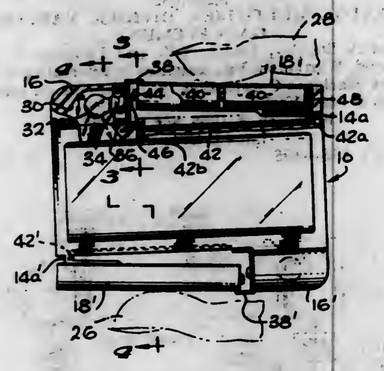
A circuit arrangement particularly adapted for fabrication by common monolithic techniques alternatively provides the functions of multiplying, dividing or variable gain. A first pair of matched transistors have their base-collector electrodes short-circuited and their emitter electrodes connected to a first current source. One of the base electrodes is connected to a reference potential and the other base electrode is coupled to a second current source. A second pair of matched transistors have their emitter electrodes connected to a third current source. The base-collector electrodes of one of the latter transistors are short-circuited and connected to the reference potential, and the base electrode of the other latter transistor is connected to the second current source. Current flowing in the collector electrode of the other latter transistor is directly proportional to the second and third current source levels and inversely proportional to the first current source level.

3,500,033
CHEMILUMINESCENT EMERGENCY LIGHTING DEVICE
William T. Cole, Jr., Bridgeport, and Benjamin K. Daubenspeck, Stratford, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Dec. 28, 1967, Ser. No. 694,229
Int. Cl. F21v 9/16
U.S. Cl. 240—2.25 10 Claims



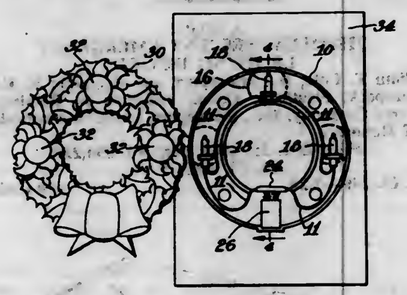
An emergency lighting device comprising a flexible envelope containing a filler adapted to chemiluminesce when exposed to air and apparatus adapted to admit air to the flexible envelope under various emergency conditions.

3,500,034
ILLUMINATED READING DEVICE
Herbert D. Bissell, Los Angeles, Calif.
(17220 Osborne St., Northridge, Calif. 91324)
Filed Dec. 29, 1967, Ser. No. 694,568
Int. Cl. F21v 33/06; G02b 27/02
U.S. Cl. 240—6.4 11 Claims



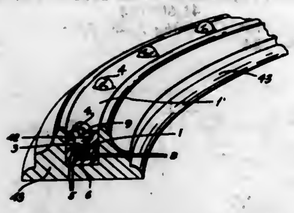
An illuminated reading device comprising a rectangular magnifying glass mounted in a frame having a pair of cylindrical lamp housings incorporated along opposite edges thereof. A pair of cylindrical battery shells are pivotally mounted to the frame. When pivoted into coaxial alignment, the shells and the housing together form protruding, light-containing supports for the magnifier, and batteries contained by the shells are electrically connected to bulbs within the housings. Light from the bulbs is directed through passageways interior of the frame toward slanted longitudinal edges of the glass which reflect and/or refract the light downward toward the page being read.

3,500,035
ELECTRIFIED PACKAGING ORNAMENT
Charles Franc, 1501 1st Ave.,
New York, N.Y. 10021
Filed Mar. 17, 1967, Ser. No. 623,933
Int. Cl. F21p 1/02; F21v 7/00; A47g 33/16
U.S. Cl. 240—10 6 Claims



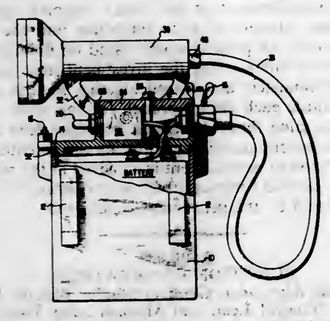
A substantially flat illuminated ornament for a package has a flat support member and a plurality of miniature bulbs detachably secured to the member. An ornamental cover is detachably disposed over the support member and lamps with light transmitting regions over each of the lamps. A battery is mountable through an access hole and is electrically connected to a detachable battery connector which is connected with the lamps. Reflectors behind the lamps reflect their light through the light transmitting regions.

3,500,036
DECORATIVE STRIP LIGHTING
Istvan S. Szentveri, 110 Fairlawn, Dollard des Ormeaux, Quebec, Canada
Filed June 14, 1966, Ser. No. 557,500
Int. Cl. F21p 1/02; A47g 33/16; A47f 13/10
U.S. Cl. 240—10 8 Claims



A decorative strip lighting system constructed of a flexible dielectric material. The system consists of an elongated body with a plurality of slits arranged longitudinally of the strip such that electrical conducting wires may be inserted therein. Also arranged along the length of the strip are a series of blind bores open on one face to admit light bulbs.

3,500,037
UNDERWATER HAND LIGHT
Walter A. Starck II, P.O. Box 592,
Big Pine Key, Fla. 33043
Filed Mar. 14, 1968, Ser. No. 713,114
Int. Cl. F21v 31/00; F21l 7/00
U.S. Cl. 240—10.63 6 Claims

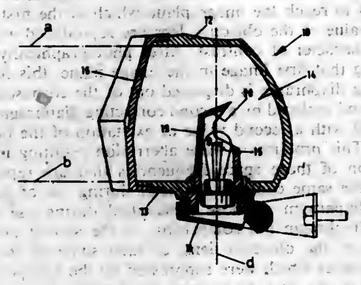


An electric hand-type light especially adapted for underwater use. The lamp has a light source which is adapted to be slidably positioned relative to its co-operating reflector; and, it is also easily slidably removable from its reflector association for independent use. The light source is of the quartz-iodide type and by reason of particular mounting features, it is rendered especially adapted for underwater use, particularly as regards its light-giving life.

3,500,038
AUXILIARY LAMPS FOR MOTOR VEHICLES
David W. Neale, Shoreport, England, assignor to Raydyot Limited, Stafford, England, a British company
Filed July 3, 1967, Ser. No. 650,967
Claims priority, application Great Britain, Aug. 24, 1966, 37,909/66
Int. Cl. F21v 13/04, 7/00
U.S. Cl. 240—41.3 3 Claims

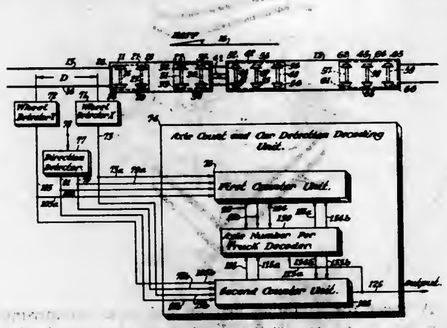
A vehicle lamp having a body, a lens over the open end thereof and a light source disposed between the body and lens and towards the bottom of the body. The inner

surface of the rear wall of the body is shaped and treated to form a parabolic reflector. The body also has a pair of forwardly extending parallel planar surfaces which are nonreflective. The light source is surrounded by a shield which is apertured to permit emission of light



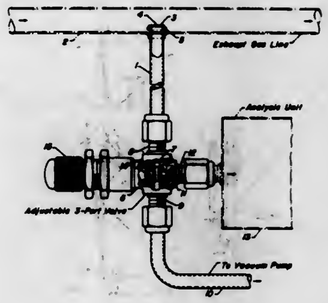
towards the reflector only. The shield extends through the bottom surface of the body and the exterior surface of the shield is shaped to form a mount for an attachment device which is used for mounting the lamp on a vehicle.

3,500,039
CAR PRESENCE DETECTION SYSTEM
Ralph Kortyna, Turtle Creek, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1968, Ser. No. 759,422
Int. Cl. B61l 1/16; G06f 15/48; G06g 7/76
U.S. Cl. 246—77 13 Claims



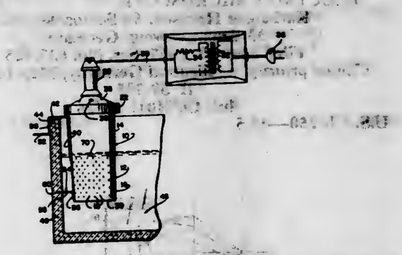
This invention relates to a train car presence detection system where the train cars have wheel carrying multiplex axle trucks of varying numbered axles per truck. It includes a pair of wheel detectors positioned apart along the wayside; the distance between the wheel detectors always being less than the distance between the nearest two axles on consecutive trucks on any one given vehicle and less than the distance between a first axle and a last axle on any given truck having more than two axles, the distance between the wheel detectors also being greater than the distance between consecutive wheels on any given truck. The wheel detectors are effective to produce signals indicative of the number of axles passing the wheel detectors. An axle count and car detection decoding unit is electrically coupled to the pair of wheel detectors and has an output indicative of the passing of each of the train cars having the varying number multiple axle trucks.

3,500,040
SAMPLE INTRODUCTION SYSTEM FOR MASS SPECTROMETER ANALYSIS
Frank G. Padula, Bellwood, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 654,773, July 20, 1967. This application Sept. 28, 1967, Ser. No. 671,467
Int. Cl. H01j 39/31
U.S. Cl. 250—41.9 5 Claims



A sample introducing system for a mass spectrometer utilizing a short length of tubing with a molecular leak inlet section of a thin diaphragm having central opening means of the order of about .004" in diameter and an adjustable splitter valve member providing two outlet means from the tubing. One outlet is adapted to connect with a vacuum pump and the other to cause a fractional portion of the withdrawn gaseous sample stream to be shunted to the mass spectrometer.

3,500,041
APPARATUS FOR INACTIVATING DISEASE ORGANISMS
Glenn M. Kenner, 5814 Foley St.,
Alexandria, Va. 22303
Filed Feb. 15, 1967, Ser. No. 616,376
Int. Cl. G01n 21/26
U.S. Cl. 250—43 9 Claims



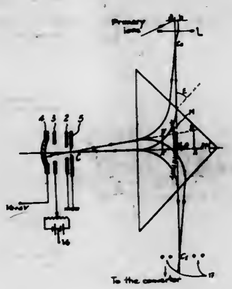
This invention is concerned with the inactivation of disease organisms in a tank by the use of ultraviolet light, where exposure of the entire contents of the tank to the ultraviolet light is undesirable. In order to treat the liquid in the tank, a housing is provided having a portion having a side wall or walls perforated for the flow of water or other liquid in the tank, with the perforations small enough to exclude fish or other objects in the tank from entering the container and becoming exposed to the ultraviolet light. The ultraviolet light source is contained in the upper portion of the housing and the housing as an entirety is suitably suspended to the desired depth in the tank.

3,500,042

IONIC MICROANALYZER WHICH INCLUDES A CONVEX MIRROR AS AN ION ENERGY FILTER

Raymond Castaing and Georges Slodzian, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Feb. 7, 1966, Ser. No. 525,447
Claims priority, application France, Feb. 9, 1965, 4,833
Int. Cl. H01j 37/26
U.S. Cl. 250—49.5 4 Claims



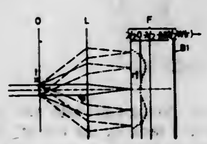
In an ionic microanalyzer, wherein an electronic mirror receives from a magnetic prism a beam of ions, said beam providing a virtual image of the surface of a sample inside said prism, and said mirror eliminating from the beam those ions having an energy higher than a predetermined threshold and reflecting back the other ions toward the prism, this mirror is a convex mirror whose center and apex are so located as to allow, on the one hand, a better selection of the ions as to their momentum-to-charge ratio and, on the other hand, a substantial achromatically of the selective ion image provided by the beam after it has crossed the prism for the second time.

3,500,043

METHOD FOR HIGH CONTRAST IMAGING OF PHASE OR AMPLITUDE OBJECTS IN A CORPUSCULAR RAY DEVICE, SUCH AS AN ELECTRON MICROSCOPE

Karl-Josef Hanssen, 64 Salzbacherstr., 33 Braunschweig, Germany

Filed May 10, 1967, Ser. No. 637,425
Claims priority, application Germany, May 13, 1966, H 59,395
Int. Cl. H01j 37/26
U.S. Cl. 250—49.5 6 Claims



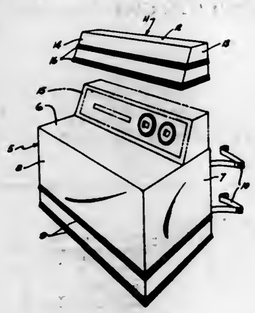
A method for high contrast imaging of phase or amplitude objects in a corpuscular ray device, particularly in an electron microscope. The corpuscular ray device has an objective lens capable of producing wave aberration. Correcting diaphragms are successively situated in the corpuscular ray path. Each correcting diaphragm has, next to each other, regions or zones which are alternately permeable and non-permeable to the corpuscular rays. These zones of the correcting diaphragms are arranged in such a way that only those space frequencies of the object reproduced with positive contrast or only those reproduced with negative contrast reach the image plane. At a first value of excitation of the objective lens a first correcting diaphragm is introduced into the corpuscular ray path such that only those space frequencies are allowed to reach the image plane which at the first excitation value of the objective lens are reproduced with only one character of contrast. After photographically reproducing that first image in the image plane, this first correcting diaphragm is displaced out of the corpuscular ray path and replaced by a second correcting diaphragm which is used with a second value of excitation of the objective lens. This produces a wave aberration resulting in transmission of those space frequencies that are represented with the same contrast character during use of said second diaphragm as those transmitted during use of said first diaphragm but comprising, at the second excitation value of the objective lens, at least some of the space frequencies which were suppressed by the non-permeable zones of the first diaphragm, so that the image derived by way of the first correcting diaphragm is at least partially completed by way of that derived with the second correcting diaphragm.

3,500,044

COVER FOR CLOTHES WASHER AND DRYER

Edward W. Treadway, % Kustom Kover Shops, 76 Miami Ave., Hamilton, Ohio 45011

Filed Apr. 9, 1968, Ser. No. 719,969
Int. Cl. D06f 39/14
U.S. Cl. 150—52 4 Claims



A cover for a clothes washer and dryer comprising a cap that is to be slipped down over the consol of the washer and dryer and another separate portion which fits over the body of the washer and dryer and is held on by straps.

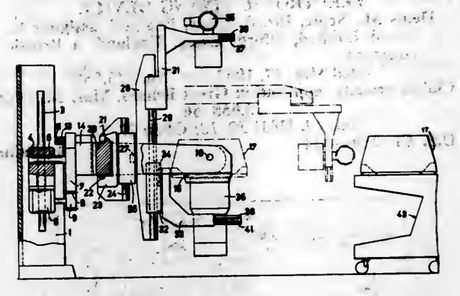
3,500,045

TILTABLE X-RAY TABLE SUPPORTING AN X-RAY TUBE AND DETECTOR FOR DISPLACEMENT AND ROTATION IN TWO DIRECTIONS RELATIVE TO THE TABLE

Guido Rossi, Milan, Italy, assignor to Generay-Generale Radiologica S.p.A., Monza, Milan, Italy, a company of Italy

Filed Sept. 20, 1966, Ser. No. 580,761
Claims priority, application Italy, Sept. 21, 1965, 9,250
Int. Cl. G01n 23/04
U.S. Cl. 250—57 7 Claims

A first fork member of an X-ray table receives a patient-carrying board and it is tiltable through 180 degrees about a horizontal axis, the first fork member supporting a second fork member for rotation about an axis perpendicular to the axis of rotation of the first fork member, the second fork member in turn supporting a carriage which is transversely displaceable between the arms of the fork members and on which carriage is rotatably mounted a swingable assembly for movement about an axis perpendicular to the axis of rotation of the second fork member with respect to the first fork member. On the swingable assembly are displaceable support arms for an X-ray source and a detector.

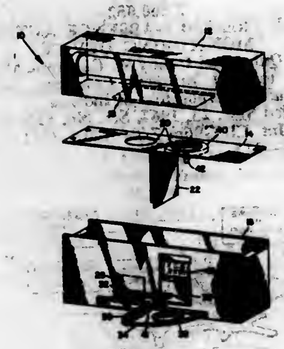


3,500,046

TESTER FOR FREE WATER IN HYDROCARBONS

Donald A. Caldwell, Mountainside, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 21, 1966, Ser. No. 559,139
Int. Cl. G01n 21/38, 21/16
U.S. Cl. 250—71 1 Claim



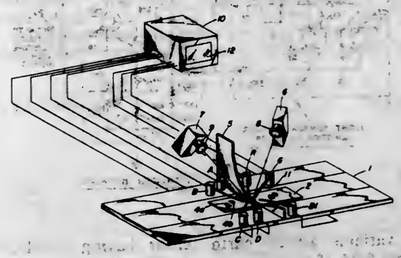
A method and apparatus for determining the amount of water above the saturation value in a hydrocarbon liquid such as jet fuel includes passing a known quantity of liquid having an unknown quantity of undissolved water through a test element having a sensitive area which will fluoresce in the presence of ultraviolet light in proportion to the amount of undissolved water collected by the sensitive area. The test element and a standard element having a known fluorescent intensity are subjected to ultraviolet light, whereupon the intensity of the ultraviolet light striking the surface of one of the elements is varied to match its fluorescent intensity with the reflected fluorescent intensity of the other element. The intensity level of the varied fluorescent light is correlated to a known predetermined quantity of undissolved water in the liquid.

3,500,047

SYSTEM FOR ENCODING INFORMATION FOR AUTOMATIC READOUT PRODUCING SYMBOLS HAVING BOTH PHOTOLUMINESCENT MATERIAL AS CODING COMPONENTS AND VISIBLE MATERIAL, AND ILLUMINATING WITH BOTH VISIBLE AND ULTRAVIOLET LIGHT

John William Berry, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 9, 1966, Ser. No. 526,192
Int. Cl. G01n 21/16, 21/38, 23/00
U.S. Cl. 250—71 10 Claims



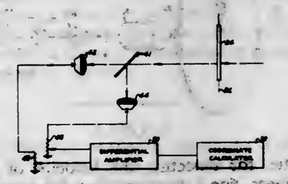
A coded ink system in which coding is by the presence or absence of both photoluminescent components which photoluminesce under ultraviolet light and components which selectively reflect in the visible. Readout is effected by illuminating the symbol with both visible and ultraviolet light, either illuminating part of the symbol with one light and part with the other or by sequential illumination first with one light and then the other. The selective reflectance and the photoluminescence is detected by individual detectors corresponding to the luminescence for each component, and detector signals are read out to give an output corresponding to a particular symbol.

3,500,048

SIGHTING DEVICE AND METHOD FOR DETERMINING A LINE OF SIGHT TO A TARGET AND THE POSITION OF AN OBJECT RELATIVE TO THE LINE OF SIGHT

Joseph F. Menke, Heidelberg, Germany, assignor to Eltro G.m.b.H. & Co., Heidelberg, Germany

Filed Sept. 8, 1964, Ser. No. 395,645
Claims priority, application Germany, Sept. 17, 1963, E 25,529
Int. Cl. G01j 1/20
U.S. Cl. 250—83.3 10 Claims



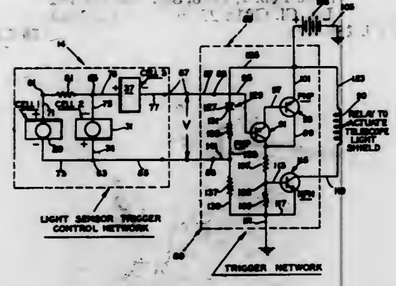
To determine the coordinates of a missile relative to a target, a sight is provided to locate the target and at the same time collect radiation from the missile. The collected energy is divided into a visually receivable image and into energy which is used to determine the position of the missile relative to a line of sight to the target.

3,500,049

VARIABLE ALBEDO EARTH SENSOR OF A RELATIVELY NARROW ANGULAR EFFECTIVE FIELD OF VIEW

George Edwin Noyes, Hasbrouck Heights, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,469
Int. Cl. H01j 39/12
U.S. Cl. 250—209 12 Claims



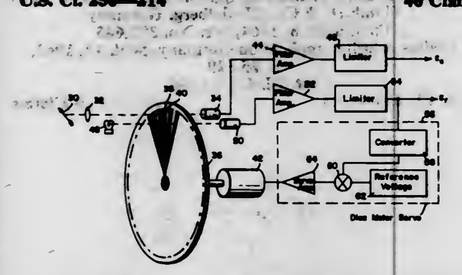
A variable albedo earth sensor having a relatively narrow field of view so as to be operative within specific angular tolerances to a wide variation of incoming light intensity and less sensitive to earth albedo area variations caused by eclipsing and relatively insensitive to temperature variations over a wide operating range. This is accomplished by incorporating in the sensor a relatively short focal length lens, together with a focal plane stop to increase the sensitivity of the device to a predetermined critical angle of the incoming albedo light rays, while other light stops are provided to limit the exposed photovoltiac cell areas that may be subject to the incoming light rays so as to balance the energy densities impinging on the three voltaic cells and increase the sensitivity of the device to the criticality of the angle of the incoming light rays.

3,500,050

IMAGE MOTION DETECTOR AND STABILIZER

Murray J. Hillman, West Covina, Calif., assignor to Hycon Mfg. Company, Monrovia, Calif.

Filed Jan. 30, 1967, Ser. No. 612,448
Int. Cl. H01j 39/12
U.S. Cl. 250—214 46 Claims



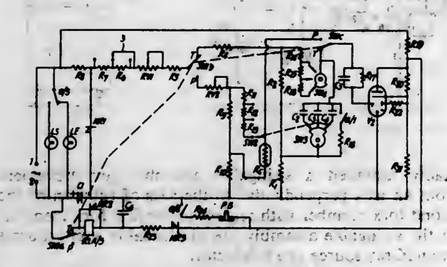
Apparatus for detecting the velocity of unstabilized optical images, for extracting related information therefrom, and for stabilizing optical images. An image signal is heterodyned with a high frequency carrier signal corresponding to a generated reference signal, and an electrical signal representative of image velocity is consequently generated through phase lock techniques, whereby the rate of phase variation of the heterodyned signal is compared to the phase of the reference signal. The resulting image velocity signal may be utilized in a servo loop for image stabilization, for driving image motion compensation apparatus, and for supplying information for application in aeronautical navigation.

3,500,051

ELECTRONIC TIMING DEVICE

Denis M. Neale, Ilford, Essex, England, assignor to Ilford Limited, Ilford, Essex, England, a British company

Filed Mar. 17, 1967, Ser. No. 623,969
Claims priority, application Great Britain, Mar. 24, 1966, 13,058/66
Int. Cl. H01j 39/12; G03b 27/78
U.S. Cl. 250—214 4 Claims



Electronic timing relays controlling exposure to light of photographic materials wherein linear adjustment of a variable resistance provides substantially logarithmic adjustment of the timed interval.

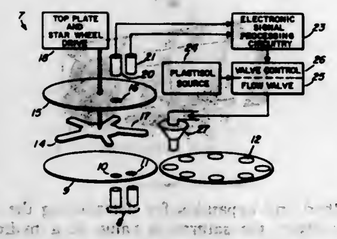
This invention relates to electronic timing relays and in particular to relays controlling exposure to light of photographic materials.

3,500,052

ARTICLE PRESENCE-ABSENCE AUTOMATIC MONITORING DEVICE

Richard M. Quinn and Donny W. Cangioto, Muncie, Ind., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Filed Mar. 23, 1967, Ser. No. 625,350
Int. Cl. G06m 7/04; H01j 39/12
U.S. Cl. 250—223 7 Claims



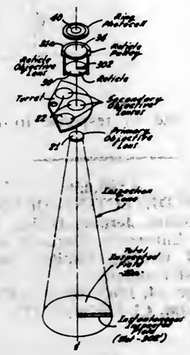
An electronic device for monitoring presence and absence of a container closure being fed to a work station where gasket material is supplied to form a gasket on the closure. The device includes a photocell to sense the absence of a closure to change the state of a bistable multivibrator so that the output signal precludes supplying of gasket material until after a second photocell senses the absence of a closure at a predetermined later time to cause the bistable multivibrator to re-assume the original state. Timing is achieved by a plate with an aperture therein that is moved along with the closures to mask the photocells except at predetermined timed intervals.

3,500,053

CONTAINER INSPECTION DEVICE WITH TRANSVERSE DUAL SCAN UTILIZING ROTATING RETICLE AND PLURALITY OF CONCENTRIC PHOTOCELLS

Fredrick L. Calhoun, Torrance, Calif., assignor to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Filed June 4, 1968, Ser. No. 734,422
Int. Cl. G06m 7/04
U.S. Cl. 250—223 15 Claims



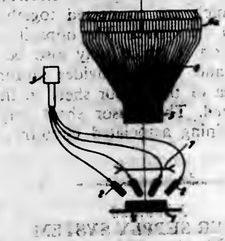
As an example for a container inspection apparatus, there is disclosed a device in which the bottom of a container is observed by a concentrical ring-shaped photocell and through a rotating reticle with a radial spoke. The photocells are sequenced at a high rate, and the modulation of a common output at that frequency is detected.

3,500,054

CONTROLLED UNIFORM ILLUMINATION AND SENSING OF OBJECTS HAVING DIFFERENTIAL LIGHT REFLECTIVITY

Michel Marie Joseph Lasalle, L'Haye-les-Roses, and Gérard Charles Maurice Jourdan, Paris, France, assignors to Societe Anonyme: Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique Alcatel, Paris, France, a corporation of France

Filed Nov. 27, 1967, Ser. No. 685,899
Claims priority, application France, Nov. 25, 1966, 85,079
Int. Cl. H01j 5/16, 39/12; G02b 5/14
U.S. Cl. 250—227 6 Claims



The object of the invention consists of a document or image analysis device comprising a light transmitting bundle formed of light conductors constituted by glass fibres or of strands of glass fibres, cooperating with a light receiving bundle, likewise composed of light conductors, so as to form in the immediate proximity of the plane of said document or image to be studied a rigid block of glass fibres or strands of glass fibres perpendicular to the surface of the document or image, the light conductors converging towards said block from a light source, while the receiving conductors diverge from said block towards an equal number of photosensitive cells as there are glass fibres or glass fibre strands, the number of which corresponds to the desired analysis definition.

3,500,055

MULTITRACK OPTICAL GRATING FOR PROVIDING PHASE-DISPLACED WAVEFORMS INDICATIVE OF THE POSITION OF A MOVABLE OBJECT

Alexander Russell and Leonard A. Sayce, East Kilbride, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British corporation

Filed Nov. 30, 1966, Ser. No. 597,966
Claims priority, application Great Britain, Dec. 2, 1965, 51,258/65
Int. Cl. H01j 3/14, 39/12
U.S. Cl. 250—237 14 Claims



An arrangement for providing a numerical indication of the absolute position of an object, such as a machine tool, relative to a fixed datum position which comprises a multitrack optical grating and associated photoelectric reading means, the different tracks having respective grating divisions of decimally related dimensional units, and the individual reading means for each track providing a plurality of phase displaced alternating electric signals with each alternation cycle thereof corresponding to object movement equal to one grating division of the related track, a separate multitaped potentiometer network for each track and supplied with plural phase displaced signals obtained therefrom to derive, for each track, at least one family of signals which each alternate in polarity with each cycle corresponding to object movement by the distance of one division of the related grating track, the respective signals of each family being so phase-displaced that the instants of passage of the respective signals through a zero datum level of amplitude ing logical signal sensing means supplied with different combinations of the related family of signals to provide outputs for controlling a numerical indication of the position of the object within each of the unit divisions of correspond to displacement positions of the object which are equally spaced over one division of the related grating track and with the distance between each of such displacement positions equal to the dimensional unit allotted to the numerical indication digit which is of the next lower order of magnitude than the digit related to the particular track and for each track decoder means includ- each of said grating tracks.

3,500,056

ELECTRICAL WIRING SYSTEM AND COMPONENTS THEREFOR

George Albert Riley, Bridgeport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut

Filed Apr. 27, 1965, Ser. No. 451,295
Int. Cl. H02j 3/00
U.S. Cl. 307—13 14 Claims

A multiple voltage wiring system wherein all receptacles in the system are substantially identical, each receptacle being wired to all conductors of the system. The connector caps which are wired to the loads differ in

configuration to match the requirements of the load. Each cap can be inserted into any receptacle but only in a position determined by its configuration. This position

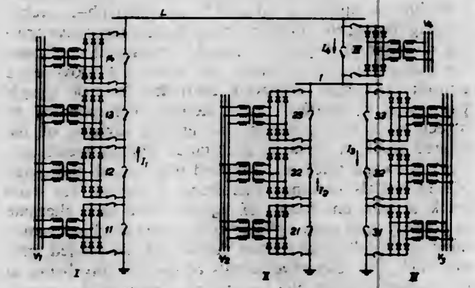


determines the supply conductors to which the load is connected and thereby selects the proper voltage for the load.

3,500,057
DIRECT CURRENT POWER TRANSMISSION BETWEEN A NUMBER OF CONVERTER STATIONS

Hans A. Stackegård, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Continuation of application Ser. No. 388,188, Aug. 7, 1964. This application Nov. 22, 1968, Ser. No. 778,349
Claims priority, application Sweden, Aug. 15, 1963, 8,919/63; Oct. 25, 1963, 11,734/63; Jan. 8, 1964, 146/64
Int. Cl. H02j *1/00*
U.S. Cl. 307—82 4 Claims



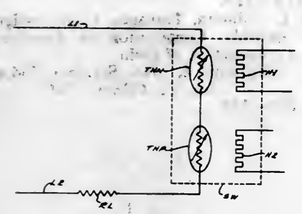
A high-voltage direct-current power transmission system for connection of at least three A.C. networks; each A.C. network is connected to the D.C. system over a converter station with a number of converters which are series-connected on their D.C. sides, and the number of series-connected converters is not the same in all stations. Stations with the same number of series-connected converters are connected to a common D.C. line in parallel to each other and two stations with different nuber of series-connected converters are connected to each other by taps on the station with the higher number of converters so that the station with the lower number of converters over its D.C. line is connected in parallel to a part of the station with the higher number of converters.

3,500,058
ELECTRO-THERMAL SWITCH

Hans G. Hirsbrunner, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 9, 1968, Ser. No. 743,398
Int. Cl. H01h *37/02*
U.S. Cl. 307—117 2 Claims

Apparatus is disclosed in which a pair of thermistors of opposite temperature coefficient types are interconnected for regenerative self-heating thereby to function as a bistable switch for controlling the energization

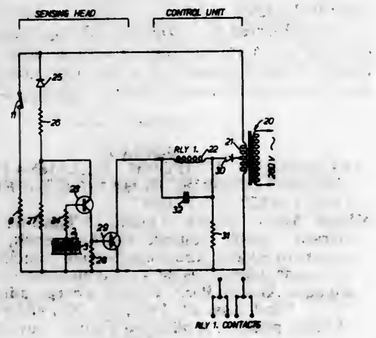


of an electrical load in response to thermal control signals.

3,500,059
RAIN DETECTING DEVICE

Eric Fielding, Cosham, Jerome O'Hea, Chichester, and Brian M. Cole, Emsworth, England, assignors to Colt Ventilation and Heating Limited, Surbiton, Surrey, England, a British company

Filed Apr. 14, 1967, Ser. No. 630,903
Int. Cl. H01h *35/42*
U.S. Cl. 307—118 10 Claims



Rain sensor comprising an electrically insulating sheet having interdigitated conducting foil electrodes formed on one surface which are connected together by raindrops impinging on the surface. The opposite surface has a heating element on it which may also be formed as a conducting foil and which provides uniform heating over the whole area of the sensor sheet so that the rain is rapidly evaporated. The sensor sheet may form the lid of a box containing associated circuitry, thermostat for the heater etc.

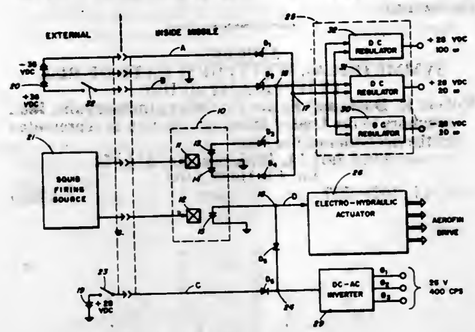
3,500,060
POWER SUPPLY SYSTEM

Thomas B. Cook, Wheaton, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 23, 1967, Ser. No. 678,483
Int. Cl. H02m *7/00*
U.S. Cl. 307—151 6 Claims

A primary inflight electrical and mechanical power supply providing electro-mechanical power as well as D.C. and A.C. power to a guided missile having a power transfer network which eliminates undesirable transients and

synchronization losses in power transfer from an external source to an internal source. A power converter net-

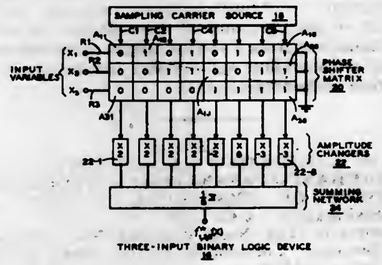


work providing regulated D.C. power, electro-mechanical power, and 3 phase A.C. power from a D.C. source.

3,500,061
UNIVERSAL LOGIC DEVICES

Luther D. Rudolph, Manlius, N.Y., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York

Filed June 22, 1967, Ser. No. 647,987
Int. Cl. H03k *19/20*
U.S. Cl. 307—210 33 Claims



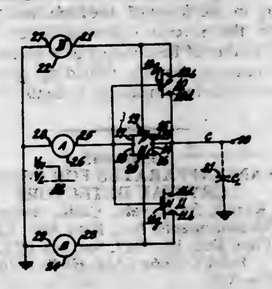
There is disclosed a logic device for performing a logic operation on a plurality of logic variables in an *l*-level logic system wherein the values of the logic variables are represented by signals having amplitudes related to the *l*-levels of the logic system. The device includes an input transformation means in the form of a matrix of signal phase shifters. Carrier signals are fed columnwise through the phase shifters and signals representing the input variables control respective rows of the phase shifters. The phase shifters change the phase of the carrier signals passing therethrough in accordance with the amplitudes of logic-variable-representing signals. From the matrix, the carrier signals are fed via phase amplitude changers (fixed for the specific device) to a signal summing network. The output of the summing network indicates the result of the logic operation on the particular values of the input logic variables.

3,500,062
DIGITAL LOGIC APPARATUS

Joseph E. Annis, South Weymouth, Mass., assignor to RCA Corporation, a corporation of Delaware

Filed May 10, 1967, Ser. No. 637,413
Int. Cl. H03k *19/20*
U.S. Cl. 307—216 7 Claims

Signal powered logic circuit comprised of an insulated gate field-effect transistor (IGFET) inverter and transmission gate for performing INCLUSIVE OR or EXCLUSIVE OR operations and requiring only three input

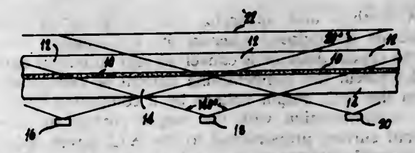


signals, one of which is a complement and which circuit is capable of fabrication as an integrated circuit.

3,500,063
SCANNING LASER OBSTRUCTION DETECTION SYSTEM UTILIZING A RETROREFLECTIVE STRIP

Charles William Reno, Haddonfield, N.J., and Richard James Tarzaiski, Philadelphia, Pa., assignors to RCA Corporation, a corporation of Delaware

Filed June 10, 1968, Ser. No. 735,756
Int. Cl. G02f *1/28*; B64b *1/06*
U.S. Cl. 250—217 10 Claims

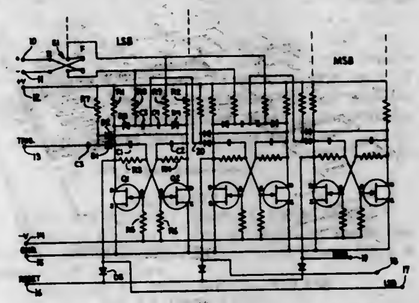


A system for detecting an obstruction in a given area utilizing a laser beam is disclosed. A laser beam is scanned over the area towards a retro-reflective target strip and returned to a receiver located proximately to the transmitter. If an obstruction is detected in the area, a signal is produced giving notice of the obstruction.

3,500,064
FIELD EFFECT TRANSISTOR DIGITAL FORWARD AND REVERSE COUNTING CIRCUIT

Harold Y. Wong, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 22, 1966, Ser. No. 546,134
Int. Cl. H03k *21/00*
U.S. Cl. 307—222 6 Claims



A digital counting circuit utilizing field effect transistor (FET) bistable multivibrator circuits as bit counting

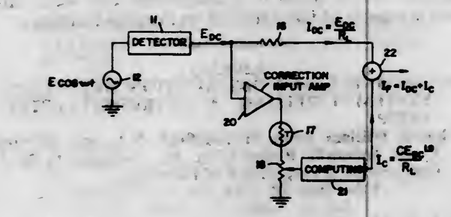
stages which are interconnected with steering diodes and polarity reversing bias control means to provide addition by counting in the forward direction and subtraction by counting in the reverse direction. The FET counting stages are capable of functioning in a severe nuclear radiation environment thereby providing reliable performance in defense countermeasures systems including digital radar.

3,500,065

METHOD AND APPARATUS FOR COMPENSATING CRYSTAL DETECTORS

James H. Kerins, Sunnyvale, Calif., assignor to Pacific Measurements, Inc., Palo Alto, Calif.

Filed Dec. 18, 1967, Ser. No. 691,378
Int. Cl. G06g 7/24; H04b 1/10
U.S. Cl. 307—229 14 Claims



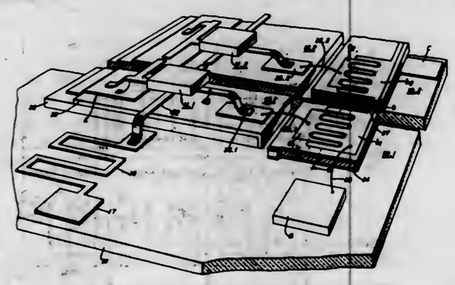
A method and apparatus for compensating crystal detectors is disclosed wherein the D.C. output voltage of the crystal detector is converted into an output current and wherein the compensating current is also generated from the D.C. output voltage by a computing operation for re-combination with the output current to provide a final current proportional to the A.C. power input to the crystal detector over a wide range of power inputs. Absolute power level temperature compensation is provided for the final signal.

3,500,066

RADIO FREQUENCY POWER TRANSISTOR WITH INDIVIDUAL CURRENT LIMITING CONTROL FOR THERMALLY ISOLATED REGIONS

Robert L. Pritchett, Stirling, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Jan. 10, 1968, Ser. No. 696,956
Int. Cl. H03k 5/20
U.S. Cl. 307—235 13 Claims



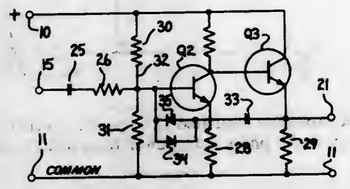
A radio frequency power transistor circuit: A plurality of power transistor cells are mutually in parallel, with each cell individually in series with a separate current limiter including a resistor, a separately biased control transistor, and a diode; thereby providing individual cell bias control.

3,500,067

SYMMETRICAL WAVEFORM RATE-OF-RISE CLIPPER AMPLIFIER

Robert K. Davis and Foster B. Nolley, Indianapolis, Ind., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 11, 1966, Ser. No. 564,452
Int. Cl. H03k 5/08
U.S. Cl. 307—237 1 Claim



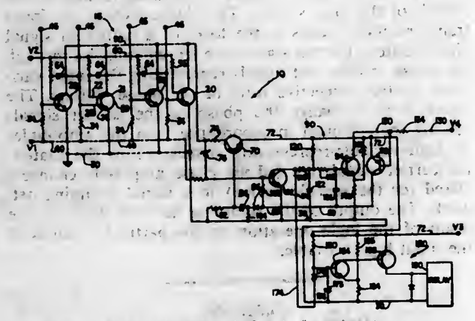
A symmetrical waveform rate-of-rise clipper class A amplifier having a pair of collector-to-base coupled transistors, the second in the series being in emitter follower output with a feedback through reversely oriented diodes to the base input of the first in the series of transistors. The input to the base electrode of the first in the series of transistors is through an isolation means, such as a resistor or amplifier, and this base electrode is stabilized in voltage bias from a voltage divider circuit to minimize amplifier output jitter and to insure fast rise rate for short rise time of the output signals.

3,500,068

PULSE GENERATING AND REGISTERING CIRCUIT HAVING MEANS FOR CONTROLLING THE TIMING OF REGISTERING A COUNT AND GENERATING A COUNT

George E. Holz, North Plainfield, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 3, 1967, Ser. No. 606,709
Int. Cl. H03k 23/30, 21/36, 51/00
U.S. Cl. 307—225 6 Claims



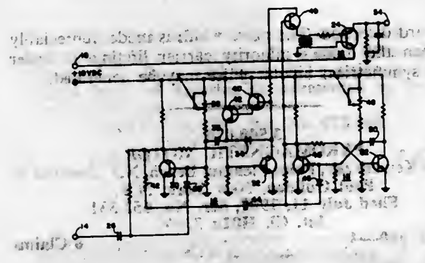
The circuit includes a series of semiconductor switching devices connected so that each can register a count and so that, as each turns off after registering a count, the next device in the series automatically turns on. The outputs of the switching devices are connected through a common output bus to a first circuit having a first time constant for registering a count in a counter, and to a second circuit having a second time constant and adapted to cause the switching devices to switch from one to the next after the first circuit has caused the counter to register a count.

3,500,069

PULSE REPETITION FREQUENCY DISCRIMINATOR

Robert R. Johns, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 12, 1966, Ser. No. 587,374
Int. Cl. H03k 17/00
U.S. Cl. 307—247 2 Claims



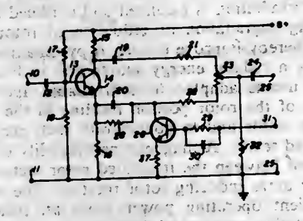
A pulse repetition frequency discriminator that will permit remote control of the selection of a desired video pulse repetition frequency in the presence of unwanted pulse trains. A pulse train is fed to a coincidence gate in synchronism with normalized trigger pulses delayed in a predetermined manner.

3,500,070

PHASE-SPLIT, BALANCED-BRIDGE, PULSED AC SIGNAL GATE CIRCUIT

Robert L. Adams, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 6, 1966, Ser. No. 556,808
Int. Cl. H03k 17/00, 17/60
U.S. Cl. 307—254 8 Claims



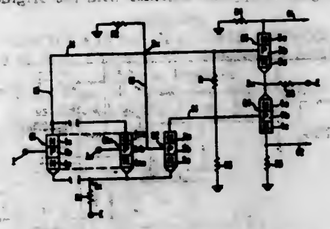
An AC input signal is amplified and split in phase to produce two outputs of identical amplitude but opposed one hundred eighty degrees in phase. The amplified and phased-opposed signals are each impressed upon an arm of a symmetrical bridge to produce substantially total mutual cancellation at the output of the bridge. One of the arms of the bridge is connected through a normally nonconductive control means to ground potential. When the control means is gated to become conductive, the signal in that arm is diverted to ground producing an amplified, pulsed output from the bridge for the duration of the gating signal.

3,500,071

FEEDBACK CURRENT SWITCH WITH LOAD-LINE DEPLACING NETWORK

Teh-Sun Jen, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 4, 1965, Ser. No. 495,826
Int. Cl. H03k 17/00
U.S. Cl. 307—254 10 Claims



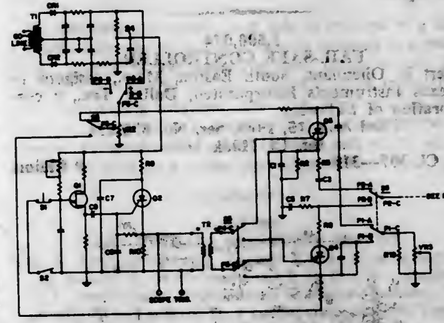
A current switch having positive feedback so as to selectively present either a first or a second load line operating level to the collector terminals of the input switching transistors.

3,500,072

CIRCUIT FOR GENERATING SHORT-TIME-DURATION PULSES OF EITHER POSITIVE OR NEGATIVE POLARITY

James W. Hoke, San Jose, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 25, 1966, Ser. No. 597,135
Int. Cl. H03k 1/12
U.S. Cl. 307—262 1 Claim



A circuit for producing pulses of either polarity and with a time duration of between one and one-half and two microseconds, the rise time of each pulse being as short as 250 nanoseconds. The circuit employs a trigger generator incorporating a low-power SCR which functions as a switch to "dump" to charge across a resistor to produce a pulse. This pulse is applied to a pair of transient generators which respectively develop positive and negative "spikes" the width of which is controllable as well as the individual rise and fall times.

3,500,073

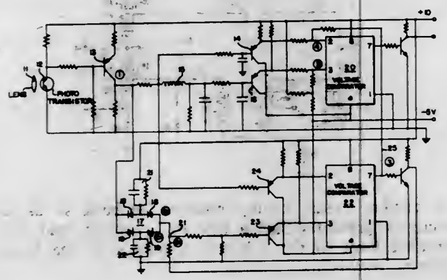
ANALOG TO BINARY SIGNAL PROCESSOR

Roy G. Salamini, Newark, Calif., assignor, by mesne assignments, to Pneumocyn, Inc., Wilmington, Del., a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,890
Int. Cl. H03k 5/00
U.S. Cl. 307—268 2 Claims

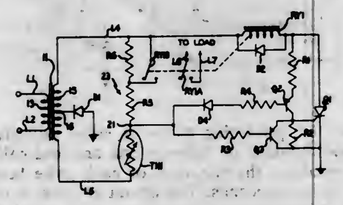
An analog to binary processor for input signals having transitions representing change of state information, in

nals superposed on a fluctuating baseline has a high frequency and low frequency responsive circuit with the output of the processor being controlled by the low frequency circuit in conjunction with the high frequency circuit. Each circuit has a voltage comparator and the low frequency circuit is also provided with a detector and gate circuit to yield an output voltage approximately centered between the input signal peak-to-peak amplitude, which centered signal is applied together with the original input



signal to the low frequency voltage comparator to produce a binary control waveform. The control waveform is combined with the original input signal to form one input for the high frequency voltage comparator, while the other input of the later comparator is a time delayed version of the original input signal, whereby the output of the high frequency comparator is a binary signal representing both large and small transitions in the original input signal.

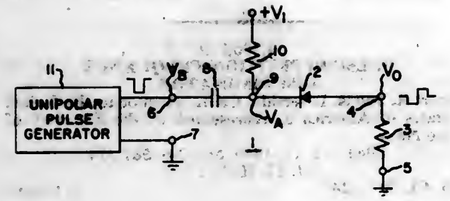
3,500,074
FAIL-SAFE CONTROLLER
Robert E. Obenhaus, South Easton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,318
Int. Cl. H03k 1/00
U.S. Cl. 307—310 9 Claims



A fail-safe controller selectively energizes a load in response to variations in the resistance of a sensor within a given range and deenergizes the load when the sensor resistance goes outside of the given range.

3,500,075
BIPOLAR PULSE GENERATING CIRCUITS
Ying-Chen Hwang, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 2, 1966, Ser. No. 591,484
Int. Cl. H03k 3/26
U.S. Cl. 307—319 7 Claims

A bipolar pulse generator employing a single charge storage diode, a backward bias means normally applied to said diode and means for applying a unipolar pulse for overcoming said backward bias and causing brief forward conduction and upon termination brief conduction in the



backward direction. The pulse width is made appreciably less than the diode's minority carrier lifetime in order that a symmetrical bipolar pulse may be generated.

3,500,076
PYROMAGNETIC MOTOR
Miklos Kemenczky, Point Pleasant Beach, N.J., assignor to Paul Gulden, New York, N.Y.
Filed July 11, 1967, Ser. No. 652,531
Int. Cl. H02n 7/00
U.S. Cl. 310—4 6 Claims

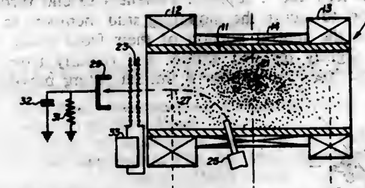


A pyromagnetic motor wherein ferromagnetic rotor heating by irradiation is localized and confined to restrict the resulting degradation or reduction of rotor permeability and thereby improve torque. A pyromagnetic motor operated by a radiant energy source and including rotor irradiating means adapted to controllably apply energy to a sector of the rotor portion residing in the magnetic field of the stator and to concentrate such energy upon the irradiated sector. A magnetic permeability differential is established between the irradiated rotor sector and adjacent rotor areas inducing rotor rotation. The motor derives sufficient operating power from an incandescent lamp for rotating ornamental devices.

3,500,077
METHOD AND APPARATUS FOR ACCELERATING IONS OUT OF A HOT PLASMA REGION
Richard F. Post, Walnut Creek, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 19, 1967, Ser. No. 691,861
Int. Cl. H02k 45/00
U.S. Cl. 310—11 9 Claims

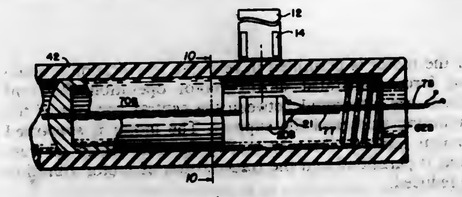
Acceleration of ions from a magnetically confined hot plasma by introducing neutral particles through magnetic

field regions near the plasma, at energies and along directed beam paths at which the particles are ionized and



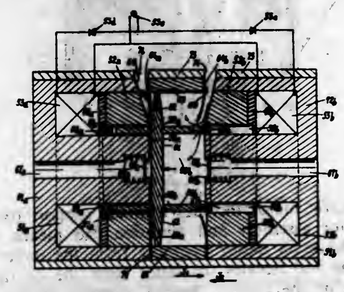
electrostatically accelerated out of the plasma, whereupon the accelerated ions may be directly converted to an electric current.

3,500,078
ELECTRICAL PULSE GENERATORS
Rudolf Buser, Wall, Gerhart K. Gaule, Elberon, and Raymond L. Ross, Oakhurst, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 3, 1967, Ser. No. 672,658
Int. Cl. H02k 35/06
U.S. Cl. 310—13 7 Claims



A generator of pulses of high energy level and current wherein a strong magnetic field emanating from a superconducting magnet is interrupted by explosively driving a coil or other electrically conductive member past said magnetic field. One or more load coils in which the high energy pulses are to appear may be driven across the superconductor magnetic field, or a flux displacer can be driven so as to alter suddenly the magnetic field flux from the superconducting magnet passing through a stationary load coil or coils.

3,500,079
ELECTROMAGNETIC MACHINES
Maurice Barthalon, 78 Avenue Henri Martin, Paris XVI, France
Filed Nov. 14, 1966, Ser. No. 594,191
Claims priority, application France, Nov. 17, 1965, 38,798
Int. Cl. H02k 33/00, 35/00
U.S. Cl. 310—15 12 Claims



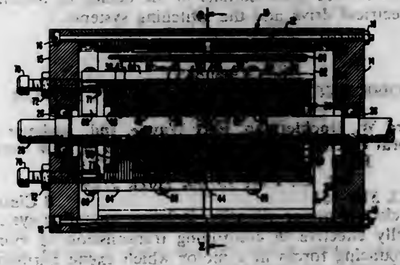
A reciprocating electric motor comprises at least one magnetic circuit including a fixed core part which includes

3,500,080
OSCILLATING ELECTRIC MOTOR
Ahmet K. Bey, Chicago, Ill., assignor of one-half to Frances Bodrock
Filed Sept. 18, 1967, Ser. No. 668,326
Int. Cl. H02k 33/00, 35/00
U.S. Cl. 310—29 6 Claims



An alternating magnetic flux field is induced in a magnetizable stator structure by a winding coupled to a source of AC energy. A permanent magnet forms a part of a vibrator rotor which oscillates about a pivot in response to the alternating magnetic flux field. The rotor includes a pair of magnetizable elements which surround the stator member to improve the magnetic flux path of the motor in order to produce a cooler operating motor.

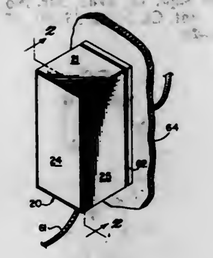
3,500,081
LOW INERTIA STEPPING MOTOR
John E. Drejza, Endwell, Eugene T. Kenel, Binghamton, and Robert E. Pelkie and Joseph E. Wallace, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 26, 1968, Ser. No. 779,161
Int. Cl. H02k 37/00
U.S. Cl. 310—49 7 Claims



In a stepping motor, a low inertia rotor is provided by mounting a pair of laminated rotor sections on a shaft in predetermined spaced apart relation, with a cylindrical permanent magnet element located therebetween and

supported in stationary relation thereto by adjustable support means for centering the magnet relative to the rotor sections.

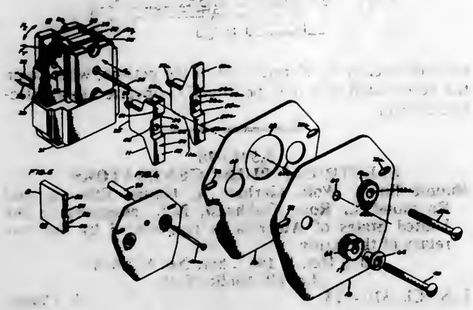
3,500,682
DRIVE UNIT FOR FLEXIBLE SHAFTS
Manuel J. Tolegian, Los Angeles, Calif.
(3960 Glouridge Drive, Sherman Oaks, Calif. 91403)
Filed Aug. 15, 1967, Ser. No. 660,729
Int. Cl. H02k 7/14
U.S. Cl. 310—50 14 Claims



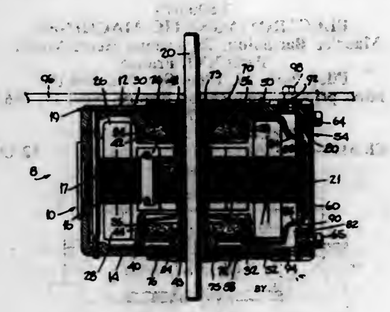
A drive unit for flexible shafts which has a hermetically sealed, electrically isolated and fluid isolated electrical drive and switching system. An electric drive motor and control switches are housed in a hermetically sealed chamber, or in a chamber wherein appropriate seals prevent the entrance of any fluids. The torque is transmitted from the motor to the flexible drive shaft by a magnetic drive wherein the drive magnets are separated by dielectric means. This may be by an air gap, by a diaphragm of dielectric material, or ceramic magnets may be used, the dielectric qualities of the magnets providing electrical isolation. The control switch for the electric motor is located completely within the sealed housing. Actuation of the switch is accomplished either by tilting the housing, or by magnetic couplings wherein the switch arm as moved by the hands of the operator is completely isolated from the electrical portion of the switching system. This drive unit has particular utility where a flexible drive shaft is to be operated in an environment having present large quantities of water, water vapor, or chemically active or explosive gases. Personnel using the appliance are protected against shock hazards due to dielectric breakdown in the electrical system, and fluids such as water, water vapor and chemically active and explosive gases are prevented from entering the electrical system. In addition to the broad concepts involved, the structure presents certain modifications in the details of handling the electrical drive and the switching systems.

3,500,683
NOISE EXCITATION SUPPRESSION MOTOR MOUNTING SYSTEM
Richard W. Dochterman, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1968, Ser. No. 787,104
Int. Cl. F16f 15/08; H02k 5/24
U.S. Cl. 310—51 8 Claims

An electric motor vibration isolation mounting system especially effective in controlling transmission of vibration-producing forces in a motor which excite harmonic vibration in the motor surroundings. The rear faces of first and second mounting studs are each secured to the same side of the stator core of a motor. The front faces of the mounting studs are each formed with radial legs extending from a central portion. The legs have regions resting against a flat sheet of resilient material which in turn is disposed in a non-binding relationship between the radial legs and a support. Fasteners extend through the support to secure the mounting stud members to the support at the central portion of their front faces. The legs are slightly inclined axially and radially from the elastomeric material so that a limited tilting movement of the motor is permitted in response to vibration-producing forces generated during motor operation. Resilient means are interposed between the central portions of the mounting studs and the support. The motor is supported so that limited vibratory motion in each degree of freedom is permitted and the transmission of motor vibration is reduced.

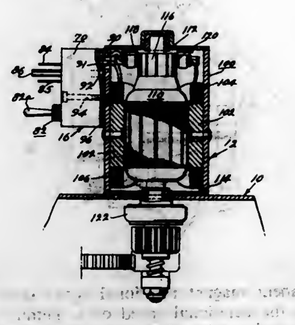


3,500,684
ELECTRIC MOTOR WITH SUPPORT FRAME AND VIBRATION SUPPRESSORS
Sachio Ito and Seiichi Hirano, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Mar. 26, 1968, Ser. No. 716,076
Claims priority, application Japan, Mar. 27, 1967, 42/25,157; 42/25,158; 42/25,159
Int. Cl. H02k 5/24
U.S. Cl. 310—51 13 Claims



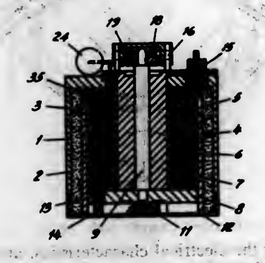
An electric motor includes a motor support frame, a main motor assembly and vibration pad means which support the main motor assembly from the motor support frame and isolates the latter from the operational vibrations of the former. Spaced, opposed surface portions of said main motor assembly and said support frame are provided and are operative, upon deviation of the former relative to the latter, to limit the extent of said deviation to the extent of the spaces between the said opposed surface portions and prevent extreme loading of said vibration pad means.

3,500,685
ELECTRIC MOTOR AND RECTIFIER ASSEMBLY
James W. Smith, Lavonia, Ga., assignor to AMBAC Industries, Incorporated, Columbus, Miss., a corporation of New York
Continuation of application Ser. No. 562,765, July 5, 1966. This application Feb. 26, 1969, Ser. No. 805,104
Int. Cl. H02k 11/00
U.S. Cl. 310—68 8 Claims



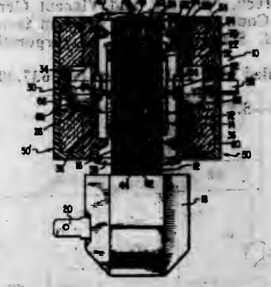
A motor and rectifier assembly for use in starting machinery is provided including a direct current motor and rectifier means responsive to alternating current voltage for providing a direct voltage output to the motor. Switch means having an actuator is employed, the actuator being adapted to close contacts and provide an electrical connection through the switch means to the rectifier means. Housing means is provided for embedding and sealing the rectifier means and switch means therein and permitting the actuator to be operatively actuatable.

3,500,686
MAGNETO - ELECTRIC PULSE GENERATOR ESPECIALLY FOR IGNITING GAS-OPERATED DEVICES
Max Baermann, 506 Bensberg Wulfshof, Bezirk, Cologne, Germany
Filed Feb. 1, 1967, Ser. No. 613,227
Claims priority, application Germany, Feb. 5, 1966, B 85,683
Int. Cl. H02k 35/06; H03k 3/45
U.S. Cl. 310—69 9 Claims



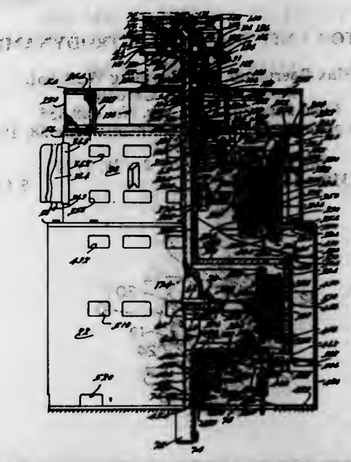
A magneto-electric pulse generator having a magnetic circuit design which enables obtaining maximum voltage pulses with a minimum physical size and relatively cheap plastic bound permanent magnet material.

3,500,687
DETACHABLE LUBRICANT RESERVOIR FOR DYNAMOELECTRIC MACHINE
Michael E. Wendt, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Nov. 4, 1968, Ser. No. 772,914
Int. Cl. H02k 5/16
U.S. Cl. 310—90 7 Claims



A pair of deflectable, hooked projection means carried on the apertured plates of a lubricant retaining reservoir assembly for insertion in aligned slots of a dynamoelectric machine end frame for detachably coupling the lubricant reservoir in bearing receiving position thereon.

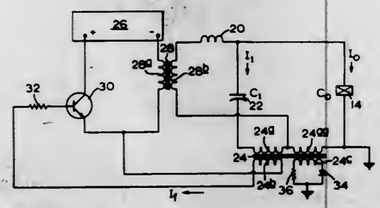
3,500,688
MOTOR SYSTEM WITH EDDY-CURRENT COUPLING
Carl E. Gelb, Jr., Lima, Ohio, assignor to The Ideal Electric and Manufacturing Company, Mansfield, Ohio
Continuation of application Ser. No. 228,987, Oct. 8, 1962. This application May 11, 1966, Ser. No. 549,403
Int. Cl. H02k 7/10
U.S. Cl. 310—98 33 Claims



An electrical drive system comprising an electric motor having a rotor member and a stator member, a clutch comprising a field member and an inductor member, an output shaft having the motor and clutch members spaced axially therealong, means mounting one of the clutch members on the output shaft for rotation therewith, a sleeve rotatably mounted circumjacent the output

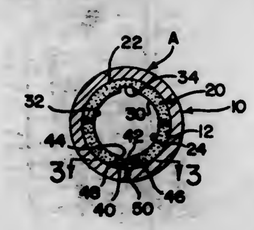
shaft, means mounting the other of the clutch members on the sleeve for rotaton therewith, means mounting the rotor member on the sleeve for rotation therewith, and bearing means for the sleeve and the output shaft spaced axially outwardly beyond the mounting means for the rotor and clutch members.

3,500,089
ULTRASONIC CLEANING APPARATUS
Kilian H. Brech, Norwalk, and Vincent Gerald Krenke, Fairfield, Conn., assignors to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed May 9, 1967, Ser. No. 637,301
Int. Cl. H01v 7/02
U.S. Cl. 310—8.1 18 Claims



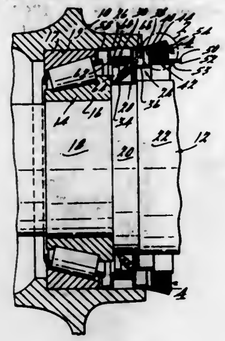
An oscillatory circuit for an ultrasonic cleaning system which avoids the condition of current peaks in the transducer branch normally caused by resonance load conditions. The circuit, because of a feedback signal which decreases in amplitude as the current through the transducer branch increases, shifts the oscillator frequency in a manner to reject sharp resonance conditions. Additionally, the circuit is operated at a frequency above that of transducer antiresonance, minimizing the change of impedance versus frequency, thus enabling the parallel connection of transducers and cleaning tanks under different load conditions.

3,500,090
STATOR UNIT FOR AN ELECTRODYNAMIC DEVICE
Max Baermann, 506 Bensberg Wulfshof, Bezirk, Cologne, Germany
Filed June 26, 1967, Ser. No. 648,655
Claims priority, application Germany, June 28, 1966, B 87,752
Int. Cl. H02k 21/26, 21/38, 1/12
U.S. Cl. 310—154 5 Claims



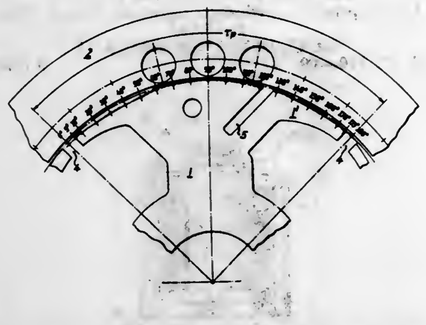
A stator unit is provided for an electrodynamic device which unit includes a cylindrical, magnetic casing and an internal, cylindrical permanent magnet member having spaced, axially extending poles. The magnet member is resilient and includes a longitudinal slot so that the magnet may be deformed and then placed into the casing after which the magnet is expanded into a tight fit with the casing to provide a rigid unit.

3,500,091
ELECTRICAL ROTATIONAL SPEED SENSING DEVICE
Malcolm D. Jones, Belleville, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 18, 1968, Ser. No. 722,230
Int. Cl. H02k 3/00, 19/26, 5/16
U.S. Cl. 310—168 9 Claims



A permanent magnet rotational speed sensing device for sensing the rotational speed of a member including rotor and stator members being of a toothed construction for providing a varying reluctance about a coil as the rotor and stator are relatively rotated whereby a speed signal is induced in the coil and such a device constructed in combination with a seal for mounting on the wheel of an automotive vehicle or the like.

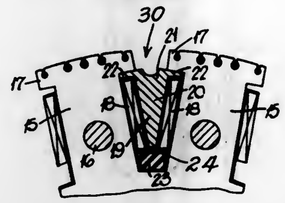
3,500,092
AIRGAP FOR SMALL ASYNCHRONOUS MOTORS
Heinz Hellmann, Joseph Lademann, and Siegfried Tillner, Oldenburg, Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany
Filed June 30, 1967, Ser. No. 650,298
Claims priority, application Germany, July 1, 1966, L 53,956
Int. Cl. H02k 17/02
U.S. Cl. 310—172 6 Claims



Improving the electrical characteristics, and particularly the excitation field waveform, in asynchronous salient pole motors by analytically determining the airgap configuration required to correct for harmonic components of the field so as to create an excitation field whose flux density varies across each pole in the same manner as

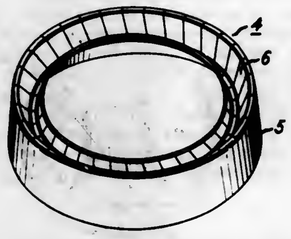
the flux density resulting from the fundamental component of the excitation field, and giving the motor airgap such a configuration.

3,500,093
DYNAMOELECTRIC MACHINE SALIENT POLE ROTOR WITH COIL SUPPORTS
Eddie Wharton, Beaconsfield, and Fred Garnet Cutler, Fareham, England, assignors to Rotax Limited, London, England
Filed Feb. 5, 1968, Ser. No. 703,037
Int. Cl. H02k 3/48
U.S. Cl. 310—214 2 Claims



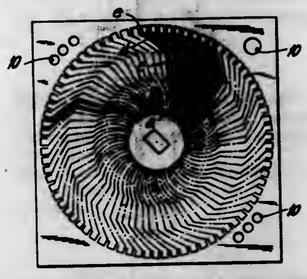
A dynamoelectric machine having a salient pole rotor in which the tips of the pole pieces extend circumferentially, the pole pieces having windings thereabout and including retaining members disposed in the slots defined between adjacent pole pieces, the retaining members having a wedge portion and an integral retaining portion the latter defining ears which bear against the ledges of the adjacent pole pieces and also including a wedge piece which is located between the retaining member and the base of the slot. The wedge piece acts to urge the ears into contact with the ledges and also urges the windings into contact with the ears.

3,500,094
COMPOSITE LAMINATED MICA-POLYAMIDE FIBER PAPER COMMUTATOR CONE
Philip R. Gilbert, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 6, 1967, Ser. No. 628,944
Int. Cl. H01r 39/04; H02k 13/04
U.S. Cl. 310—236 1 Claim



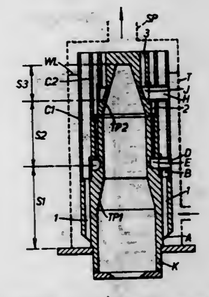
Commutator cone for dynamoelectric machines is built up of alternate layers of micaceous material and uncalendered polyamide material containing isophthaloyl and metaphenylene diamine units. The micaceous material imparts good electrical characteristics and the polyamide material provides a cushioning effect which permits uniform distribution of resin impregnant throughout the cone. This cushioning effect also eliminates hard spots or crushed areas due to the relative nonuniformity of the micaceous layer.

3,500,095
MULTILAYER DISC ARMATURE FOR DYNAMO ELECTRIC MACHINE
Raymond J. Keogh, Huntington, N.Y., assignor to Printed Motors, Inc., New York, N.Y., a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,139
Int. Cl. H02k 1/22, 3/04
U.S. Cl. 310—268 10 Claims



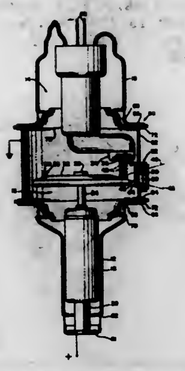
A rotating electrical machine including a four-layer armature. Winding segments in two of the layers are interconnected to form a first closed series arrangement, winding segments in the other two layers are interconnected to form a second closed series arrangement; and the series arrangements are interconnected at regularly spaced intervals to form a parallel-wave armature winding.

3,500,096
ELECTRON BEAM TUBES
Clan Noel O'Loughlin, Chelmsford, and Noel Edward Bones, Fairford, England, assignors to English Electric Valve Company Limited, London, England, a British company
Filed May 18, 1967, Ser. No. 639,399
Claims priority, application Great Britain, May 31, 1966, 24,062/66
Int. Cl. H01j 7/24, 61/52
U.S. Cl. 313—32 4 Claims



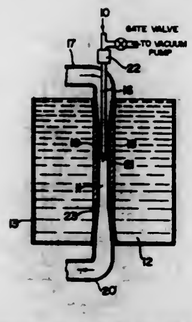
An electron beam tube having a vapour cooled collector is formed with a number of cooling pipes, all extending parallel to the tube axis, arranged in sets with each set in a ring of different diameter, Each set extends over a different part of the length of the collector and has a water inlet at the same corresponding end. The pipes of each set open into a water and steam outlet chamber extending in line with the pipes.

3,500,097
X-RAY GENERATOR
John T. Perry, Melrose Park, and Robert M. Gager, Elmhurst, Ill., assignors to Dunlee, Corp., Bellwood, Ill., a corporation of Illinois
Filed Mar. 6, 1967, Ser. No. 620,969
Int. Cl. H01j 35/10
U.S. Cl. 313—59 1 Claim



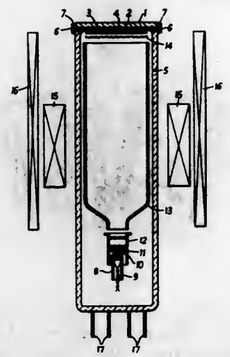
A rotating anode X-ray tube provided with a cylindrical metal center section and a window assembly depending from the center section, such window assembly including an X-ray diaphragm disposed in close proximity to the rotating anode. The center section is electrically grounded while the tube's anode and cathode may be at high positive and negative voltages with respect to ground. The center section is welded to metal sleeves which are in turn sealed to glass envelope portions at either end of the tube.

3,500,098
INTENSE NEUTRON GENERATOR
John S. Fraser, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Oct. 22, 1965, Ser. No. 501,623
Int. Cl. H01j 39/32
U.S. Cl. 313—61 5 Claims



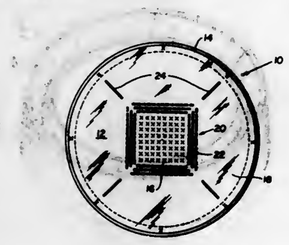
An intense neutron generator including a beam tube with an end opening into a target area of liquid metal. A stream of protons is directed against the liquid metal causing a nuclear cascade and producing a high neutron flux. The liquid metal flows past the open end of the beam tube to create a cavitation bubble and form a windowless vacuum seal. The liquid metal is also circulated through a heat exchanger to reject heat generated during proton bombardment. The preferred liquid metal is a lead bismuth alloy and the most preferred is the eutectic.

3,500,099
LEAD OXIDE PHOTOCONDUCTIVE MEMBERS AND METHOD OF PRODUCING SUCH MEMBERS
Stanley Taylor, Sunbury-on-Thames, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed Mar. 28, 1968, Ser. No. 714,682
Claims priority, application Great Britain, Mar. 31, 1967, 14,900/67
Int. Cl. H01j 31/26
U.S. Cl. 313—65 3 Claims



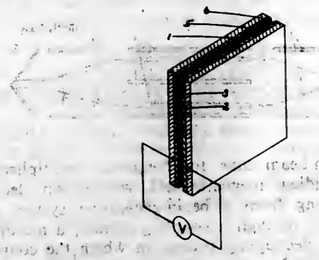
This specification describes the manufacture of a lead oxide photoconductive member in which a first thin layer of lead oxide is vapour deposited in a vacuum on a signal plate and a second thicker layer of lead oxide is vapour deposited onto the first layer in an atmosphere including oxygen and water vapour. A pick-up tube using the photoconductive member as a target is also described.

3,500,100
MATRIX FOR A CHARACTER DISPLAY TUBE COMPLIANT AREA OUTSIDE INDICIA AREA TO MINIMIZE DISTORTION
Clayton E. Murdock, San Diego, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Continuation of application Ser. No. 452,679, May 3, 1965. This application Aug. 2, 1967, Ser. No. 658,009
Int. Cl. H01j 29/46
U.S. Cl. 313—86 4 Claims



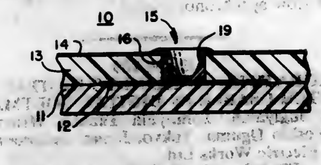
A matrix for cathode-ray display tubes having a central area providing a plurality of charactedshaped apertures and a flexible, easily distorted area outside of and immediately surrounding said central area, which latter area may be provided as a plurality of lines of apertures, a plurality of concentric lines of accordion pleats or the equivalent.

3,500,101
PHOTOCAPACITIVE ELECTROLUMINESCENT LIGHT AMPLIFIER
Laurence Burns, Swampscott, Mass., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed Feb. 2, 1955, Ser. No. 485,857
Int. Cl. H01j 1/62, 39/12
U.S. Cl. 313—108 12 Claims



1. An electroluminescent unit comprising an electroluminescent device and a photocapacitive device in series.

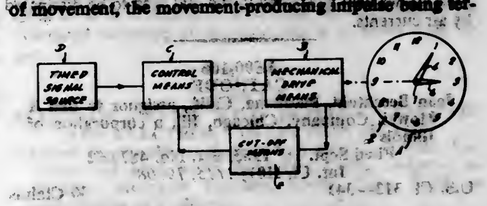
3,500,102
THIN ELECTRON TUBE WITH ELECTRON EMITTERS AT INTERSECTIONS OF CROSSED CONDUCTORS
Munsey E. Crost, Allenhurst, N.J., Kenneth Shoulders, Woodside, Calif., and Mortimer H. Zinn, West Long Branch, N.J., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 15, 1967, Ser. No. 639,928
Int. Cl. H01j 1/62, 63/04
U.S. Cl. 313—109 2 Claims



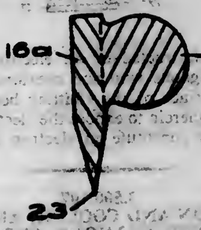
The thin electron tube is made possible by providing a cathode of an extensive surface area having a large number of densely packed electron emitters spread over the area. A grid of conductors is provided on the cathode for selectively exciting predetermined ones of said emitters. Pulses applied to the conductors of the grid will cause emission at the emitters located at the points of crossing where a coincidence of pulses occur. The cathode is scanned by the pulses thereby eliminating the need for a deflecting beam to produce scanning of a target. An anode is provided at the target to impart a velocity to the emitted electrons in the direction of the target.

3,500,103
ELECTRIC TIMEPIECE DRIVE WITH CUT-OFF
Roger S. Swain, Wolcott, and Gerald R. Wootton, Thomaston, Conn., assignors to Bearns Corporation, a corporation of Delaware
Filed Dec. 7, 1966, Ser. No. 599,860
Int. Cl. H02p 7/00
U.S. Cl. 313—138 19 Claims

An electric drive for a timepiece or the like in which sequential signals sequentially cause step-by-step movement of the timepiece part, the movement-producing signals normally lasting for a period of time greater than that required for the moving part to make a given step of movement, the movement-producing impulse being terminated after the desired degree of movement has been produced even though the movement-initiating signal is still present.

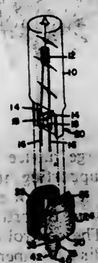


3,500,104
ELECTRON EMITTER TIPS AND METHOD
Paul Darrell Ownby, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed June 23, 1967, Ser. No. 648,373
Int. Cl. H01j 19/06
U.S. Cl. 313—311 11 Claims



Boron is deposited on the (110) plane facet at the center of a tungsten electron emitter tip by chemical vapor deposition of boron trifluoride. The emission current density is greatest in the center of the emitting area (FIG. 2).

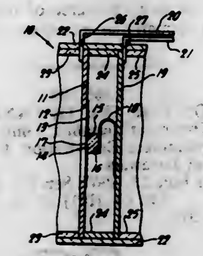
3,500,105
INCANDESCENT LAMP HAVING A CERAMIC SCREW TYPE BASE
Arnold E. Westlund, Jr., Gloucester, and Robert M. Griffin, Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,299
Int. Cl. H01j 5/48, 5/50
U.S. Cl. 313—318 5 Claims



A screw base arrangement for a lamp having a press-seal at one end. The arrangement includes an enlarged cylindrical ceramic holder having a small screw shell centered on an extension projecting from the base portion of the holder. The holder is provided with a pair of vertical intersecting relief slots extending short of the full length of the holder. One slot is narrower in width and utilized

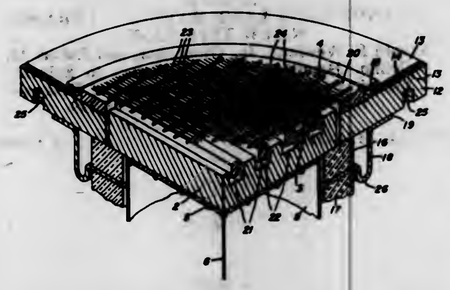
to hold the lamp while the other intersecting slot provides a relief area junctured at the seal of the lamp. This relief area allows heat generated in the seal area to be dissipated by air currents.

3,500,106
CATHODE
Jean Berchtold, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 10, 1965, Ser. No. 487,652
Int. Cl. H01j 1/15, 19/08
U.S. Cl. 313—341 30 Claims



A cathode constructed of an electron emitting body and a foil contiguous with and coextensive with at least a portion of surface of the emitting body, the foil having an aperture therein to expose the electron emitting material to thereby constitute an electron source.

3,500,107
CONSTRUCTION AND COOLING ARRANGEMENT FOR GROOVED CATHODE AND ASSOCIATED ELECTRODES
James E. Boggs, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 28, 1967, Ser. No. 671,425
Int. Cl. H01j 1/45, 19/28
U.S. Cl. 313—348 10 Claims



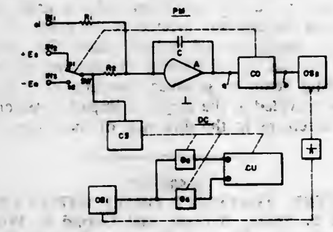
An electron discharge device of the planar electrode type has a single supporting insulator upon which a grooved cathode and a control electrode rest with freedom to move to prevent distortion from unequal coefficients of expansion. The control electrode which consists of a large mass ring-like member with large bars that fit into the cathode grooves encircles the cathode and provides an external connection for cooling fine grid wires bonded across the large bars either by direct thermal conduction from the electrode ring to an external circuit, or by passing cooling fluid through interconnected passageways in the ring and bars. The bars and electrode ring are formed of a material having high thermal conductivity.

3,500,108
ELECTRON-BEAM TUBE FOR FREQUENCY MULTIPLICATION
Klaus Poeschl, Deisenhofen, and Werner Veith, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 29, 1967, Ser. No. 664,833
Claims priority, application Germany, Aug. 31, 1966, S 105,618
Int. Cl. H01j 23/16, 29/96
U.S. Cl. 315—3 9 Claims



An electron-beam tube for frequency multiplication with a longitudinal magnetic field, wherein an electron beam emanating from a beam-generating system successively passes through a coupling system, a multiplier system, and a decoupling system, in which the coupling system is designed as a synchronous wave coupler and the multiplier system is a multipole comprising at least six rectilinear electrodes extending parallel to the axis of the magnetic field, which are symmetrically arranged around the axis of the magnetic field and alternately loaded in circumferential direction of the multipole, according to the arrangement, with equal electrical potentials of opposite polarity, in which the longitudinal magnetic field increases progressively and constantly along the length of the multipole from a magnitude existing at the end of the multipole facing the beam-generating system, and in an embodiment of which the coupling system may comprise two delay lines facing each other and extending parallel to the axis of the magnetic field which, cooperably, and synchronously with the speed of the electron beam, carry an electrical alternating field diagonally directed with respect to the axis of the magnetic field, so that the electron beam undergoes a modulation with the rapid as well as with the slow synchronous wave.

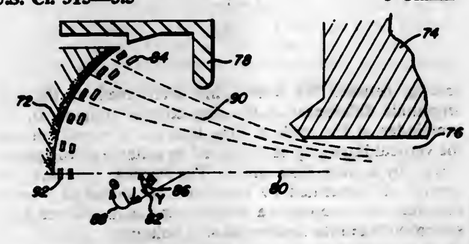
3,500,109
INTEGRATING ANALOG-TO-DIGITAL CONVERTER USABLE IN DIGITAL VOLTMETERS
Takashi Sugiyama, Tomoyuki Tanabe, Hisao Nakane, and Yoshio Oguma, Tokyo, Japan, assignors to Yokogawa Electric Works Ltd.
Filed Sept. 7, 1967, Ser. No. 666,099
Claims priority, application Japan, Sept. 12, 1966, 41/60,255
Int. Cl. G01r 17/06
U.S. Cl. 324—99 6 Claims



A digital voltmeter is provided with a pulse width modulator including an addition integrator adapted to add a pair of positive and negative reference voltages which are alternately supplied and an input voltage and to integrate the sum of the voltages, a reference signal oscillator to generate a signal of a constant recurring

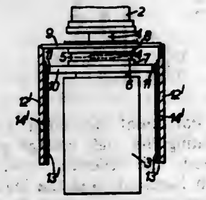
frequency, and a voltage comparator adapted to compare the output from said integrator with the output from said reference signal oscillator to generate an output which operate to switch said pair of reference voltages so that the mean value of the sum of the voltages impressed upon the input terminal of the integrator becomes zero whereby the pulse width modulator generates a pulse width modulated signal proportional to the value of the input signal. The digital voltmeter is also provided with a digital measuring circuit for the pulse width which repeatedly and digitally measures the pulse width of the output pulse from the pulse width modulator.

3,500,110
NONCURRENT INTERCEPTING ELECTRON BEAM CONTROL ELEMENT
Donald L. Winsor, Wakefield, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,766
Int. Cl. H01j 25/34
U.S. Cl. 315—3.5 5 Claims



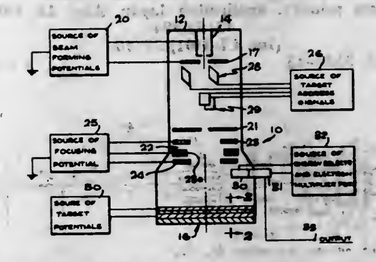
An electron transparent beam control structure including a grid electrode and shadow mask of such configuration that substantially ideal registration is attained to prevent any electrons emitted by a cathode electrode from impinging on the grid control element and consuming power. High perveance high convergence ratio Pierce type electron guns utilized in high power electron discharge devices are described as a selected illustrative embodiment of the invention.

3,500,111
MICROWAVE ELECTRON BEAM TUBES
Cian Noel O'Loughlin, Chelmsford, and Geoffrey Thomas Clayworth, Great Baddow, England, assignors to English Electric Valve Company Limited, London, England, a British company
Filed May 1, 1967, Ser. No. 635,070
Claims priority, application Great Britain, Mar. 31, 1967, 20,403/66
Int. Cl. H01j 23/20, 23/02
U.S. Cl. 315—5.52 6 Claims



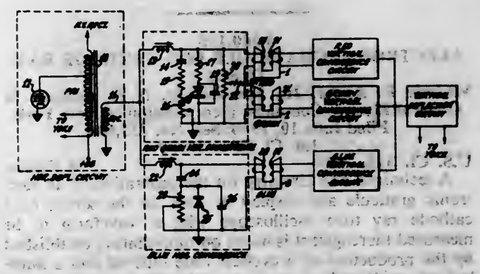
A microwave electron beam tube of the kind in which the high frequency inter-action section is insulated from the collector section by a gap, between the sections, in a tubular member through which the electric beam passes is provided with a metallic member which tncircles the tube in neighbourhood of the gap. This metallic member is electrically connected to the tubular member on one side of the gap and a second metallic member is provided similarly encircling the tube, but connected to the tubular member on the other side of the gap. The metallic members sandwich between them a member of dielectric material so as to constitute a condenser which is outside the evacuated envelope of the tube and is in shunt with the gap.

3,500,112
ELECTRON DEVICE WITH IMPROVED SECONDARY ELECTRON COLLECTION MEANS
Kenneth R. Shoulders, Redwood, Kendal T. Rogers, Los Altos, and John Kelly, Palo Alto, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed May 9, 1968, Ser. No. 727,912
Int. Cl. H01j 29/41
U.S. Cl. 315—12 10 Claims



A method and arrangement are disclosed for reading out information on or regarding the features of a target by using certain energy selection arrangements and configurations to selectively detect secondary electrons, produced on the target with a secondary emission producing electron beam, and in particular, reading out data on a data storing target of a storage tube. A focusing arrangement is used with the electron beam, and the electrostatic field which extends through the final lens electrode of the focusing arrangement toward the target is used, in conjunction with an electrostatic energy selector, and/or an electron multiplier, to admit only electrons in a selected energy range. The potentials of the energy selector and/or multiplier and the field magnitude are chosen to inhibit electrons outside the selected energy range from reaching the electron multiplier.

3,500,113
SIMPLIFIED HORIZONTAL DYNAMIC CONVERGENCE CIRCUIT
John K. Allen, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,073
Int. Cl. H01j 29/50, 29/70
U.S. Cl. 315—13 10 Claims



A horizontal convergence circuit for color television receivers has a pair of series connected horizontal con-

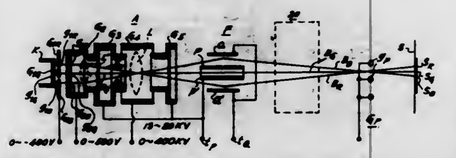
vergence windings which are driven from a source providing a sawtooth voltage at the horizontal line deflection frequency. The parameters of the circuit are such that the inductance of the windings integrate the sawtooth voltage from the source to provide a parabolic current therethrough. The same source develops a sawtooth of current across a potentiometer, a portion of the sawtooth current being injected at the junction between the two windings to differentially shift the phase of the parabolic current flowing through the two windings.

3,500,114

CONVERGENCE SYSTEM FOR A COLOR PICTURE TUBE

Masahide Sawai, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Aug. 19, 1968, Ser. No. 753,694
Claims priority, application Japan, Aug. 24, 1967, 42/53,984
Int. Cl. H01j 29/50
U.S. Cl. 315—13 6 Claims



In a color picture tube of the single-gun, plural-beam type in which the beams originate in a common horizontal or vertical plane and are passed through the optical center of an electron lens by which they are focussed on the color phosphor screen, and in which two of the beams emerge from the lens along paths that are divergent with respect to the path of a central beam and are to be converged with the latter by passage between convergence deflecting plates having a voltage difference applied thereto; the misconvergence of the beams at the beam selecting grid or mask that may result from spherical aberration of the deflection yoke provided for causing the beams to scan the screen is corrected by including in the voltage applied to the convergence deflecting plates a dynamic convergence voltage varied with the sweep signal applied to the yoke for deflecting the beams in the direction of the common plane in which the beams originate to eliminate the component of the misconvergence parallel to such plane, and the component of the misconvergence in the direction at right angles to that plane is eliminated by providing the deflection yoke with a suitable non-uniform magnetic field for deflecting the beams in the last mentioned direction.

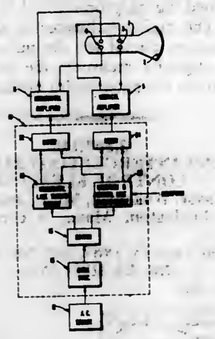
3,500,115

ELECTRONIC GRATICULE FOR CATHODE RAY TUBES

Medaric E. Auger, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 16, 1968, Ser. No. 735,648
Int. Cl. H01j 29/70
U.S. Cl. 315—18 4 Claims

A technique and circuitry for the generation of an electronic graticule and display of such on the screen of a cathode ray tube oscilloscope with a waveform to be measured thereagainst is based on time-sharing established by the production of a cyclical time interval and a number of smaller time intervals within for the display of vertical lines, horizontal lines and the waveform or waveforms in any permutation. In one embodiment, the cyclical time interval is established by counting from a 60 Hz. signal and the smaller time intervals by energization of a switch by a signal having the cyclical time interval. The horizontal lines may be generated by sweeping the outputs of modified ring counters stepped by an oscillator, the



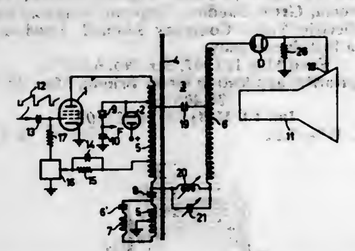
spacing between the lines being determined by the step amplitude differences in the ring counter outputs. In the remainder of the cyclical time interval, a waveform and the vertical lines may be displayed by suitable gating means driven by a time base circuit. The vertical lines may be repetitively generated by sweeping the output of a peak detector which converts a series of spikes modulated by a sweep voltage into a series of step voltages.

3,500,116

DEFLECTION CIRCUIT FOR REGULATING THE HIGH VOLTAGE LOAD

Jan Joost Rietveld and Anthonie Jannis Moggre, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 16, 1968, Ser. No. 768,013
Claims priority, application Netherlands, Oct. 31, 1967, 6714750
Int. Cl. H01j 29/70
U.S. Cl. 315—22 11 Claims



A television horizontal deflection system including means for regulating the high voltage generated during the fly-back period. The deflection system is preferably tuned to the fifth harmonic and the leakage inductance and capacitance are arranged so that the frequency ratio δ/α lies between the limits of

$$.95\sqrt{\frac{\gamma^2}{\alpha^2}+\frac{\gamma}{\alpha}+1} \text{ and } 2\sqrt{\frac{\gamma^2}{\alpha^2}+\frac{\gamma}{\alpha}+1}$$

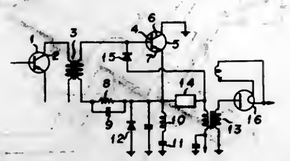
The system is further improved by winding the secondary winding of the output transformer so that it approximates a triangular configuration.

3,500,117

PROTECTIVE DEVICE FOR TRANSISTORS FOR USE IN HORIZONTAL DEFLECTION CIRCUITS

Takao Matsui, Kofu, Tetsuo Saito, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed July 3, 1968, Ser. No. 743,451
Claims priority, application Japan, July 14, 1964, 39/39,092
Int. Cl. H01j 29/70
U.S. Cl. 315—27 3 Claims



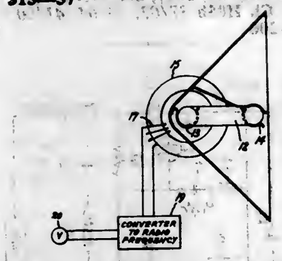
A protective device for a transistor for use in a horizontal deflection circuit wherein a voltage drop in case of a high voltage in an output circuit is produced in an impedance element, and when said voltage drop exceeds a predetermined value, a semiconductor element connected to a base electrode of said transistor is conducted so as to control an input of said transistor.

3,500,118

ELECTRODELESS GASEOUS ELECTRIC DISCHARGE DEVICES UTILIZING FERRITE CORES

John M. Anderson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 17, 1967, Ser. No. 653,749
Int. Cl. H01j 7/44, 13/46
U.S. Cl. 315—57 9 Claims



A gaseous discharge light source includes a non-conducting light transmissive hermetically sealed envelope in the form of a closed loop containing an ionizable gas. Envelope is electromagnetically coupled to a source of R.F. energy, generating power at a frequency, preferably of 100 kc. to 500 kc., by a ferrite core. Energy source comprises a low cost solid state oscillator circuit producing a relatively low voltage. Envelope may be coated on the interior thereof with a fluorescent phosphor emitting visible light when irradiated by excited specie of the ionizable gas. Instantaneous starting is achieved by inducing a high starting voltage into the envelope by a step-up secondary winding on the ferrite core.

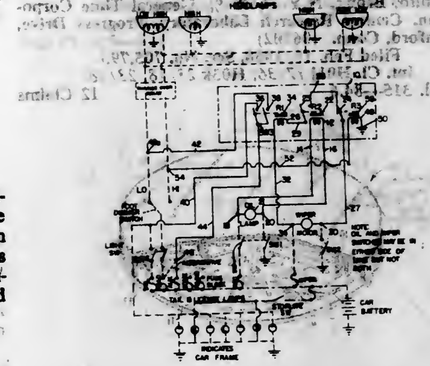
3,500,119

AUTOMATIC HEADLIGHT CONTROL SYSTEM INCLUDING WINDSHIELD WIPER MOTOR

Kenneth Price, 7301 6th Ave. N., St. Petersburg, Fla. 33710

Filed Jan. 31, 1967, Ser. No. 612,924
Int. Cl. B60q 1/02
U.S. Cl. 315—82 7 Claims

The disclosed embodiment of the present invention is an automatic headlight switching circuit for an automobile electrical system which is responsive to the operation of the wiper motor, the ignition switch, and the headlight dimmer switch for controlling the energization of the low beam headlights and tail lights. The disclosed switching circuit includes a switching relay which is connected in a series circuit with a normally open contact and a normally closed contact, which series circuit is connected



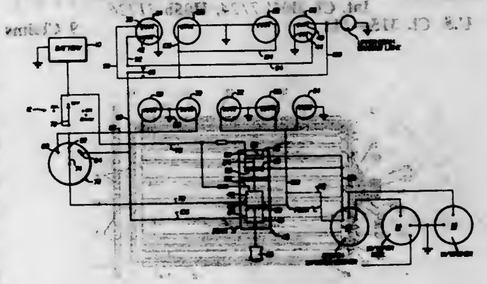
in parallel with the wiper motor. The normally open contact is operated by a relay connected to the ignition switch and the normally closed contact is operated by a relay connected to the dimmer switch. The switching relay includes a first normally opened contact connected between the automobile battery and the low beam headlight circuit and a second normally opened contact connected between the battery and the tail light circuit.

3,500,120

SAFETY AUTOMOTIVE LIGHTING CIRCUITS

Rudd Schmitz, 611 SE. 10th Ave., Pompano Beach, Fla. 33060

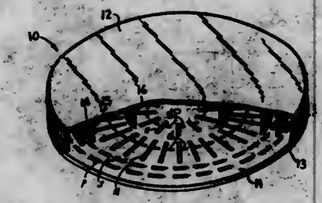
Filed Sept. 9, 1968, Ser. No. 758,372
Int. Cl. B60q 1/02; A47f 1/00; B60n 1/02
U.S. Cl. 315—82 20 Claims



In automatic vehicle, an interlock circuit for preventing the windshield wipers of the vehicle from being turned on, when the vehicles' ignition is on, without also turning on the head lamps of the vehicle. Preferably, the interlock circuit also includes switching means associated with the ignition switch and the light switch of the vehicle so that

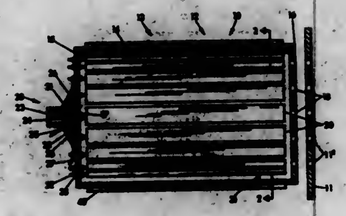
if the light switch is in its parking lamp activating position and the ignition switch is in its on position, the head lamps of the vehicle are turned on rather than the parking lamps thereof.

3,500,121
ELECTRONIC COUNTING OR TIMEKEEPING SYSTEM USING GLOW DISCHARGE TUBE WITHOUT PERMANENT ANODE
Heinz A. de Kesel, Stamford, Conn., and Michael J. Ingenito, Bronx, N.Y. (both % General Time Corporation, Control Research Laboratory, Program Drive, Stamford, Conn. 06902)
Filed Feb. 15, 1968, Ser. No. 705,795
Int. Cl. H01j 17/36; H03k 23/18, 23/38
U.S. Cl. 315—84.6 12 Claims



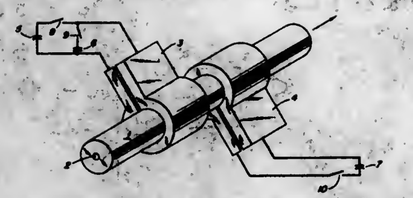
An electronic counting or timekeeping system including a glow discharge tube having a series of spaced internal electrodes for counting successive electrical input signals. The electrodes are connected in two operative groups, with at least one electrode of each group being located between each pair of successive electrodes in each other group. Electrical control means are connected to the two electrode groups for applying a transfer potential across successive pairs of adjacent electrodes in response to the input signals so as to step the glow discharge along successive electrodes in the series with each electrode functioning alternately as cathode and anode, so that no permanent anode is required.

3,500,122
GAS DISCHARGE ION SOURCE WITH MULTIPLE ANODE STRUCTURE AND A.C. SUPPLY MEANS
Gordon Sohl, Pasadena, Calif., assignor, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,156
Int. Cl. H01j 7/24; H05b 31/26
U.S. Cl. 315—111 9 Claims



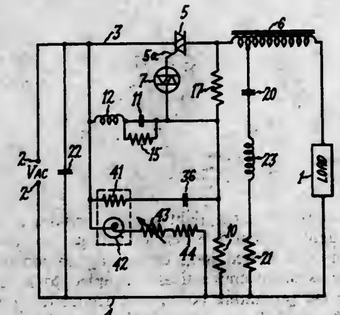
A gas discharge ion source having a chamber containing an ionizable gas, a cathode, and at least two anodes with an alternating current power source connected between them and a constant magnetic field adapted to increase the length of the electron path between them.

3,500,123
PLASMA EJECTION SYSTEM INCLUDING BREECH AND MUZZLE THETA-PINCH COILS
Robert Turner, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 7, 1967, Ser. No. 645,098
Int. Cl. H01j 1/50, 3/20, 7/24
U.S. Cl. 315—111 5 Claims



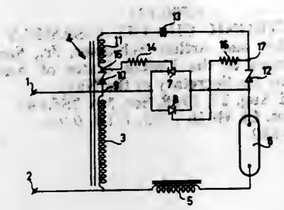
A theta-pinch plasma gun having two independent coils which ionizes and compresses an injected gas creates plasma when capacitor banks are discharged through the coils. An additional capacitor bank is discharged through one of the coils to eject the plasma from the gun.

3,500,124
DISCHARGE LAMP CONTROL CIRCUIT WITH SEMICONDUCTOR ACTUATING MEANS THEREFOR
Robert E. Babcock, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed June 19, 1967, Ser. No. 646,871
Int. Cl. H05b 37/02, 39/04, 41/00
U.S. Cl. 315—200 3 Claims



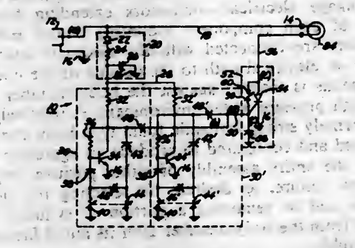
Control circuit for starting and operating gas discharge lamps from a source of alternating current includes a bidirectional semiconductor controlled switch having a single control electrode and connected between the alternating current source and the lamp, and an actuating circuit connected to the alternating current source and to the control electrode for applying a control signal to the control electrode at a predetermined time in each alternating current cycle, the actuating circuit including a capacitor and resistor connected in series and a solid state bilateral voltage sensitive switch connected to the capacitor and the control electrode in series discharge relation therewith for triggering the controlled switch into conduction in opposite direction on alternate half cycles.

3,500,125
STARTING AND OPERATING CIRCUIT FOR GAS DISCHARGE LAMPS
Jozef Cornelis Moerkens and Antonius Johannes van den Bogaart, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,410
Claims priority, application Netherlands, Nov. 25, 1966, 6616599
Int. Cl. H05b 37/02, 41/14
U.S. Cl. 315—205 6 Claims



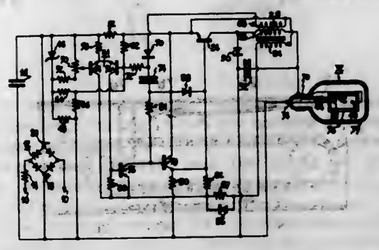
A starting circuit for a gas discharge tube which provides higher reignition voltage during each operating cycle. A pair of oppositely polarized, parallel connected controlled rectifiers is connected in series with the primary coil of an auto-transformer. Each of a pair of Zener diodes connected in series with the high-voltage secondary of the transformer senses tube ignition during a different half cycle of input voltage, and in response causes an associated controlled rectifier to conduct, thereby connecting the tube to the primary coil of the transformer.

3,500,126
APPARATUS FOR SIMULATING A FLAME
Michael T. Ford, Box 1266, South Lake Tahoe, Calif. 95705
Filed Nov. 19, 1968, Ser. No. 776,978
Int. Cl. H05b 39/02, 39/04, 41/02
U.S. Cl. 315—209 20 Claims



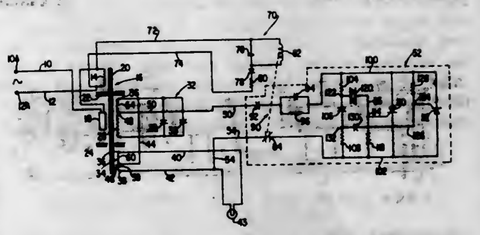
Apparatus according to the present disclosure comprises input attachment means adapted to be connected to a supply of alternating current and output attachment means adapted to support and connect to an incandescent lamp. Converter means is connected to the input means to convert alternating current to direct current, and oscillator means is connected to the converter means to supply an alternating signal having a frequency which is different from the frequency of the alternating current and any harmonic thereof. Switch means, such as an SCR, is connected between the input and the output means and has its control electrode connected to the oscillator means. An incandescent lamp connected to the output means will fluctuate between 3 and 30 c.p.s. to simulate the flicker of a flame.

3,500,127
SWITCHING TYPE VOLTAGE AND CURRENT REGULATOR AND LOAD TERMINATOR
Peter Achatz, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,163
Int. Cl. H05b 37/02, 39/04
U.S. Cl. 315—224 9 Claims



A switching type of voltage regulator including a series switching element and a voltage comparator is disclosed in which the drive current for the series switching element is derived by transformer coupling to the load and in which the voltage across the load, which is to be regulated, is measured by and is applied to the voltage comparison means by transformer coupling to the load. Also, a voltage which is the measure of the current flowing into the load is applied to the voltage comparator whereby the regulator provides a negative voltage to current output characteristic which causes proper operation of a load of the mercury arc lamp type.

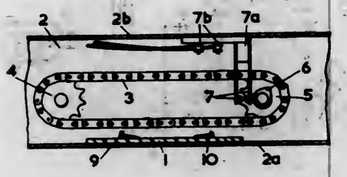
3,500,128
HIGH PRESSURE METALLIC VAPOR LAMP CIRCUIT
Hugo Liepins, Berwyn, Ill., assignor to Sola Basic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 21, 1967, Ser. No. 692,552
Int. Cl. H05b 41/16, 41/24
U.S. Cl. 315—278 10 Claims



A starting and operating circuit for compact high pressure metallic vapor lamps of the sodium vapor type in which a portion of a ferro-resonant winding on a constant voltage high leakage reactance transformer is connected to a portion of the output winding of the transformer

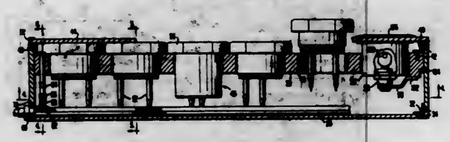
through a pulse switch starting means to provide the output winding with high voltage ignition pulses by autotransformer action.

3,500,129
METHOD AND MEANS FOR REDUCING HAZARDS DUE TO LOOSE STRAY CONDUCTIVE OR ATTRACTABLE OBJECTS
Peter Frederick Hewitt, Farnborough, and Frederick Hardy, Aldershot, assignors to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Feb. 1, 1966, Ser. No. 524,163
Claims priority, application Great Britain, Feb. 2, 1965, 4,428/65
Int. Cl. H02h 7/00, 1/00; B32b 7/10
U.S. Cl. 317—9 5 Claims



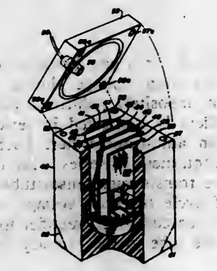
A structure for supporting or a compartment for containing movable or electrically live elements has fixed thereto, in at least one strategic position to receive and retain a stray object accidentally on its way to jam or electrically link the elements, a trap in the form of a layer of material having its underside adhesively attached to the structure or compartment and an exposed surface which can yield or deform under the weight or impact of a stray object and is sticky so that it tends to retain such an object by adhesion. The exposed surface of the trapping layer may be formed of foam or sponge plastics material, or of long hair or a heavy velvet-like pile, so treated as to render it sticky, and may be recessed to present sticky pockets for receiving objects. The underside of the trapping layer may comprise a reinforcing fabric backing strip having an adhesive surface for securing the trap in the desired position.

3,500,130
MODULAR TYPE INSTRUMENT PANEL
George C. Aument, Wayne E. Radcliffe, and Robert E. Fickes, Lancaster, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 29, 1968, Ser. No. 709,452
Int. Cl. H02b 1/08, 9/00, 1/04
U.S. Cl. 317—120 11 Claims



The modular type instrument panel comprises a housing having sides, top and bottom and end walls screw fastened one to the other so that the screw heads are exposed only within the housing. A mounting plate is secured adjacent the top of the housing and has a plurality of spaced openings providing access within the housing. An electrical circuit board is mounted within the housing opposite the mounting plate. Instruments are inserted into the openings and have prongs extending from their rear faces for making electrical contact with the circuit board. The contacts on the circuit board are configured so that the instruments are interchangeable for insertion through any one of the openings. A face plate is locked to the housing and overlies the faces of the instruments to lock the latter to the housing, the face plate covering the exposed screw heads whereby the housing is tamperproof and cannot be disassembled by unauthorized personnel.

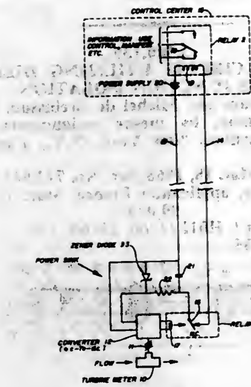
3,500,131
ELECTRONIC CIRCUIT ASSEMBLY
Robert L. Seeley and Arthur Schlosser, Jr., San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 27, 1968, Ser. No. 755,643
Int. Cl. H02b 1/08, 1/04, 9/00
U.S. Cl. 317—120 5 Claims



An electronic circuit assembly accommodates a plurality of electronic component mounting boards which may be of the printed circuit type. A comparatively thick-walled syntactic foam body member has its internal sidewalls grooved to receive and support the electronic component mounting boards. At the bottom of the cavity in the syntactic foam body member electrical connectors are supported upwardly, preferably in a nonconductive potting material, and are so arranged and configured to slidingly engage electrical connectors extending from the bottom of each component mounting board. Electrical conductors are connected with the electrical connectors to form an electrical path to the outside of the body and cover means is sectured against the body member to exclude high pressure water environment. A relatively light and extremely strong syntactic foam type body can be dimensioned and configured to produce an aggregate buoyancy to the entire assembly of either positive, negative, or neutral nature, as desired, by selecting the sidewall thickness and/or removing a portion of syntactic foam material from the body member after its initial fabrication and assembly.

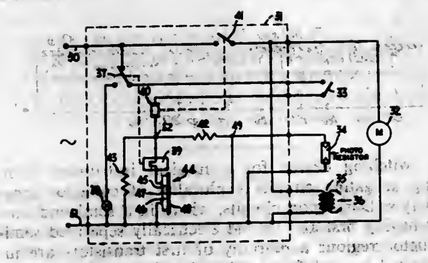
3,500,132
ELECTRIC CIRCUIT FOR TRANSMISSION OF POWER AND INFORMATION BY COMMON LINES
Sheryl W. Garrett, Tulsa, Okla., assignor to Combustion Engineering Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,971
Int. Cl. H01h 47/00
U.S. Cl. 317—123 4 Claims

A turbine meter with an electro-magnetic transducer, as a source of relatively low A.C. signal, is connected to an A.C.-to-D.C. converter. A power source at a control center is connected to the converter over lines which are



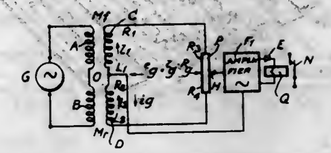
disconnected from the converter for transmission of the converter output to the center.

3,500,133
ELECTRICALLY CONTROLLED SWITCH AND SWITCHING ARRANGEMENT
Arne Jensen, Ala, and Hans Mundorff, Langsø, Denmark, assignors to Danfoss A/S., Nordborg, Denmark, a company of Denmark
Continuation of application Ser. No. 426,741, Jan. 21, 1965. This application Dec. 11, 1968, Ser. No. 785,041
Claims priority, application Germany, Jan. 21, 1964, D 43,398, D 43,401
Int. Cl. H01h 47/24, 47/32, 47/28
U.S. Cl. 317—130 2 Claims



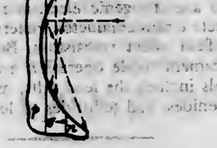
Electrically controlled switch and switching arrangement usable as an electrical burner safety control for connection across a power supply line. The safety control comprises a pair of voltage-responsive elements which change their resistance from a high resistance value to a low resistance value when a predetermined switching threshold voltage thereacross is exceeded. The sum of the switching threshold voltage of both elements is more than the potential of the power supply. A voltage divider is connected across the elements having a variable resistor therein as a radiation sensitive element which varies in resistance in the presence of a flame. The voltage-responsive elements are switched "on" when a starting potential is derived from the voltage source by the voltage divider.

3,500,134
ELECTRIC CONTROL SYSTEM FOR AN ELECTRICALLY ADJUSTABLE CONVEYING PLANT
Jørgen Marcher, Ragvaard, Denmark, assignor to H. Nielsen & Son, Maskinfabrik A/S, Mariebomvej, Denmark
Filed Apr. 14, 1967, Ser. No. 631,070
Claims priority, application Denmark, Apr. 15, 1966, 1,956/66
Int. Cl. H01h 47/36; G01r 33/12; G08b 13/00
U.S. Cl. 317—153 7 Claims



Two coaxial, coreless, and non-inductively associated coil pairs, each having inductively coupled primary and secondary windings, are disposed adjacent to a predetermined point in a conveyor path. One of the coil pairs (a sensor coil pair) is closer to the conveyor path than the other coil pair (a reference coil pair). The coil pairs form legs in a bridge circuit which is balanced when there is no magnetically energizable body at the predetermined point of the conveyor path. The presence of such a body near the sensor coil pair causes the bridge circuit to become unbalanced and initiates a change in the movement of the body on the conveyor.

3,500,135
SURFACE-CONTOURED, ENERGY-TRANSFORMING SOLID-STATE DEVICE
Chou H. Li, 379 Elm Drive, Roslyn, N.Y. 11576
Continuation-in-part of application Ser. No. 490,955, Sept. 28, 1965. This application Feb. 25, 1969, Ser. No. 802,018
Int. Cl. H01l 15/02
U.S. Cl. 317—234 22 Claims

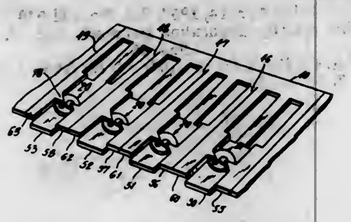


The invention relates to improving the performance of energy-transforming solid-state device by differentially expanding the peripheral surface of the junction region and nearby cooperative, optoelectrically active region into special geometrical shape so as to turn a significant portion of parallel light rays thereon into non-parallel reflected rays convergent onto selected location on the light-collecting junction region surface thereby achieving both device surface stabilization and efficiency enhancement.

3,500,136
CONTACT STRUCTURE FOR SMALL AREA CONTACT DEVICES
Gerhard Fischer, Redondo Beach, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Jan. 24, 1968, Ser. No. 700,093
Int. Cl. H01l 1/14
U.S. Cl. 317—234 5 Claims

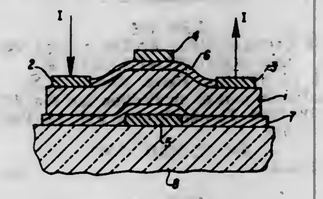
An elongated contact spring is transversely segmented into a plurality of parallel segments, each consisting of three separate elements which have free, detectable rods.

A semiconductor wafer is placed on the center element of each of the groups of three elements and inwardly projecting tangs from the sides of the outer two elements are pressed into engagement with a main electrode and control electrode, respectively, on the upper surface of



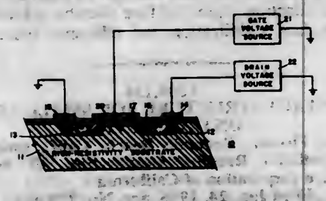
the respective wafers. The strip is then placed in a furnace and the wafers are soldered to their respective elements. The wafer portions are then encapsulated, and the groups of three elements for each wafer are separated from one another.

3,500,137
CRYOGENIC SEMICONDUCTOR DEVICES
Walter H. Schroen, Dallas, and Joe T. Pierce, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,906
Int. Cl. H01l *1/00*; H03k *3/38*
U.S. Cl. 317—235 5 Claims



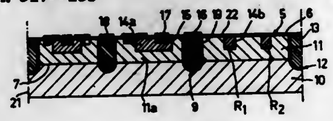
Disclosed are cryogenic electronic devices comprising superconductive semiconductor material analogous in operation to field effect transistors. Both depletion mode and enhancement mode operation are described. Preferred materials include the lead salts, more particularly the sulfides, selenides, and tellurides of lead.

3,500,138
BIPOLAR MOS FIELD EFFECT TRANSISTOR
Paul Richman, Bayside, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware
Filed Aug. 31, 1967, Ser. No. 664,778
Int. Cl. H01l *11/00, 11/14*
U.S. Cl. 317—235 8 Claims



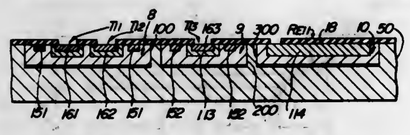
A bipolar metal-oxide-semiconductor (MOS) transistor having a high resistivity substrate and low resistivity source and drain regions is provided with an insulated gate structure which has a substantial overlap of the source region. The overlapping by the gate electrode results in the breakdown of a reverse biased PN junction formed within the source region during operation thereby permitting the transistor to be operated as either a P channel or an N channel device.

3,500,139
INTEGRATED CIRCUIT UTILIZING DIELECTRIC PLUS JUNCTION ISOLATION
Jean-Claude Frouin and Michel de Brebisson, Calvados, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,662
Claims priority, application France, Mar. 16, 1967, 99,074
Int. Cl. H01l *11/00, 15/00, 5/00*
U.S. Cl. 317—235 6 Claims



An integrated circuit in which islands containing circuit elements are isolated from one another partly by a p-n junction between an epitaxial layer and a substrate, and partly by polycrystalline semiconductor filled grooves, offering the advantages of comparatively simple manufacture yet comparatively good isolation.

3,500,140
MULTICHANNEL INTEGRATED DEVICES CONSISTING OF DARLINGTON CIRCUITS
Tsuguo Makimoto, Kodaira-shi, Yuichi Terasiaki, Akishima-shi, and Tsuyuki Watanabe, Kunitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed June 5, 1968, Ser. No. 734,765
Claims priority, application Japan, June 19, 1967, 42/38,848
Int. Cl. H01l *11/00*; H03k *3/00, 3/26*
U.S. Cl. 317—235 7 Claims

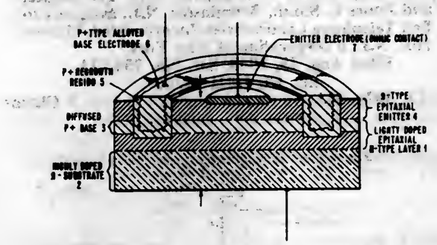


A switching device for a musical instrument comprising as gating circuits a plurality of collector separated type Darlington circuits, where in a semiconductor body having first and second electrically separated semiconductor regions a plurality of first transistors are incorporated in said first semiconductor region with their collectors connected in common and a plurality of second transistors are formed in said second semiconductor region with their collectors connected in common.

3,500,141
TRANSISTOR STRUCTURE
Leo Esaki, Chappaqua, and Robert A. Laff, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 13, 1964, Ser. No. 403,538
Int. Cl. H01j *3/00*
U.S. Cl. 317—235 15 Claims

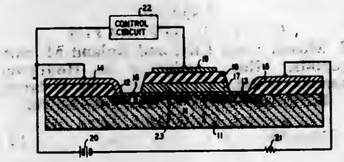
The present invention relates to an improved transistor structure wherein the majority carrier mobility in the emitter is greater than the majority carrier mobility in the base

and, also, the emitter is doped less heavily than the base so as to reduce emitter capacitance C_e. Since the emitter is doped less heavily than the base, an alloyed-in contact is effected through the emitter so as to contact the base



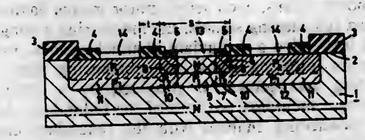
whereby base resistance r_b is reduced. In prior art transistor structures wherein the emitter is doped more heavily than the base, alloyed-in base contacts are not feasible because of heavy leakage, or even tunneling, current across the emitter-base junction.

3,500,142
FIELD EFFECT SEMICONDUCTOR APPARATUS WITH MEMORY INVOLVING ENTRAPMENT OF CHARGE CARRIERS
Dawon Kahng, Somerville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 5, 1967, Ser. No. 643,659
Int. Cl. H01l *11/14, 3/12*
U.S. Cl. 317—235 10 Claims



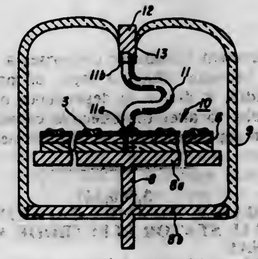
A field effect transistor is provided with a gate electrode assembly comprising a sandwich of a metallic layer between two insulating films of appropriate characteristics for the entrapment of charge carriers in the metallic layer. Such entrapment provides memory whereby an induced electric field can be maintained in the semiconductive element even after the field inducing force is removed.

3,500,143
HIGH FREQUENCY POWER TRANSISTOR HAVING DIFFERENT RESISTIVITY BASE REGIONS
Jack Stewart Lamming, Watford, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,218
Claims priority, application Great Britain, July 25, 1966, 33,426/66
Int. Cl. H01l *3/00, 5/00, 7/00*
U.S. Cl. 317—235 17 Claims



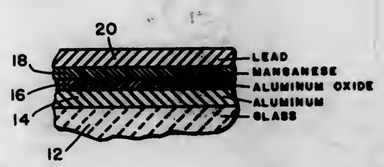
A high frequency, high power transistor of the planar type wherein the base region underlying the emitter comprises a first central part of higher resistivity and a second outer part of lower resistivity which extends to the surface and to which the base contact is made. The result, through the use of current crowding, is to reduce the effective emitter width while permitting a relatively wide emitter contact thereby improving the high frequency performance of the device. In another embodiment, interdigital emitter and base contacts are arranged, and the active base region is surrounded by a deeper diffused peripheral region.

3,500,144
RANDOM WHISKER CONTACT METHOD FOR SEMICONDUCTOR DEVICES
Lin C. Wetteran, Jr., Dallas, and Robert B. Owen, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,570
Int. Cl. H01l *5/04, 3/00, 7/00*
U.S. Cl. 317—236 11 Claims



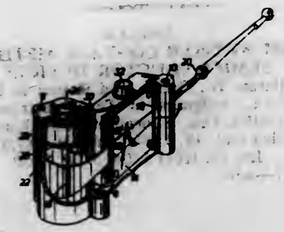
A Schottky-barrier type diode is described in which a whisker contact orientation makes random contact to one of many diode components on a semiconductor substrate. The improved method eliminates the need for microscopically positioning the whisker contact.

3,500,145
THIN VAPOR-DEPOSITED METAL FILM VOLTAGE REGULATOR
Robert D. Hitchcock, Ventura, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 1, 1967, Ser. No. 620,214
Int. Cl. H01l *3/00, 5/00, 7/00*
U.S. Cl. 317—238 1 Claim



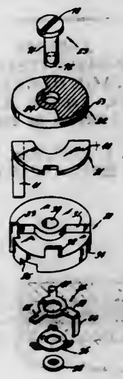
The invention is a thin film voltage regulator and its method of manufacture comprising a sandwich of aluminum, aluminum oxide, manganese and lead. The thickness of the regulator is of the order of 10^{-4} cm. The manufacture comprises vaporizing and depositing the aluminum, manganese and lead at a pressure of only 10^{-6} torr with an oxidation step after the depositing of aluminum. A double mask arrangement facilitates ease of manufacture.

3,500,146
LINEAR DISPLACEMENT TRANSDUCER
Raymond W. Sargent, Bristol, Vt., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Oct. 18, 1967, Ser. No. 676,227
Int. Cl. H01g 7/00, 5/00
U.S. Cl. 317—246 9 Claims



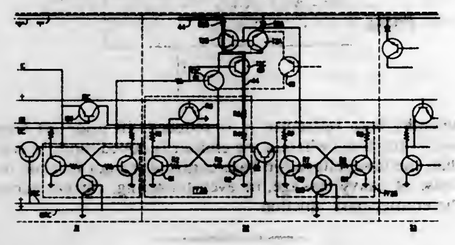
A displacement transducer comprises a pair of capacitor plates between which a tape, of progressively increasing width, is drawn in dependence on the displacement whereby to alter the effective capacitance between the plates in dependence on the displacement.

3,500,147
DISK VARIABLE TRIMMER CAPACITOR HAVING INTEGRAL STATOR ELECTRODE AND STATOR TERMINAL
Herz Hirschberg, New York, N.Y., assignor to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 751,825
Int. Cl. H01g 5/06
U.S. Cl. 317—249 5 Claims



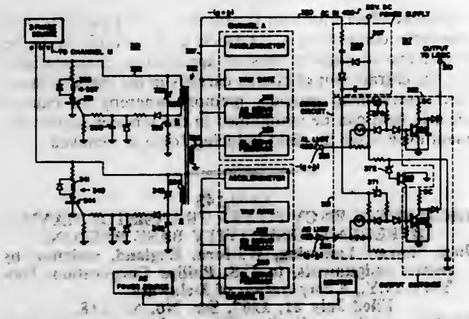
A miniature ceramic disk trimmer capacitor stator construction in which the upper surface of the stator has a semicircular depression which receives a semicircularly-shaped stator electrode form. The stator electrode form has a downwardly bent terminal lug portion which extends to below the lower surface of the stator. The stator electrode form is suitably secured to the upper surface of the stator body as by cementing or soldering, and the upper surface of the stator is thereafter polished to form a smooth, continuous upper surface for the stator.

3,500,148
MULTIPURPOSE INTEGRATED CIRCUIT ARRANGEMENT
Ronald V. Gunther, Cranford, Reginald A. Kennel, Chatham, Martin P. Lepselter, New Providence, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Aug. 28, 1968, Ser. No. 756,873
Int. Cl. H01l 19/00
U.S. Cl. 307—303 9 Claims



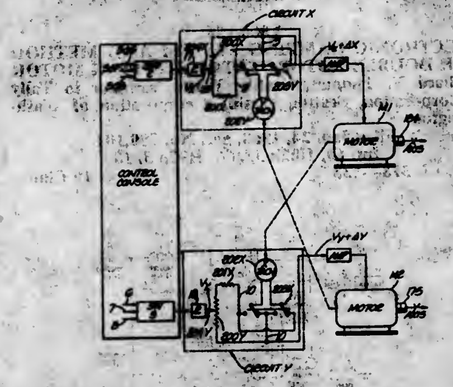
An integrated circuit can be made to serve a plurality of different functions if the internal logic of the circuit is organized so that internal paths of the circuit can be short-circuited or open-circuited permanently thus selecting prescribed paths for later operation. The tailoring of a multipurpose integrated circuit for serving functions such as sequence detection is described.

3,500,149
CONTROL APPARATUS
Adrian J. Moses, Rush City, and Roland M. Samuelson, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,088
Int. Cl. H02p 5/52
U.S. Cl. 318—18 12 Claims



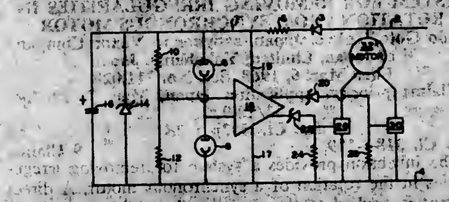
A monitoring arrangement for condition control apparatus having redundant channels each with closed loop servo motor means, each servo motor means having initiating and rebalancing signals, the monitoring arrangement renders ineffective a redundant channel upon a malfunction in its initiating signal or rebalancing signal. The monitoring arrangement is provided by a comparison arrangement including portions of the redundant channels and a monitoring channel with the redundant channels energized through a summing-inverting transformer from two phases of a three-phase AC supply and the monitor channel being energized from the third phase of the AC supply so that the redundant channels are energized from one source of AC and the monitoring channel is energized from another source of AC but the two sources are alike in phase and magnitude. The feedback or rebalancing signals are derived from signal generators energized from the one AC source and the circuit continuity of the feedback generators are also monitored.

3,500,150
TOOL RADIUS OFFSET CONTROL FOR A CLOSED LOOP MULTIAXES NUMERICAL CONTROL SYSTEM
Vincent F. Foster, New Rochelle, N.Y., assignor to Industrays Corporation, Carson City, Nev., a corporation of Nevada
Filed Oct. 24, 1965, Ser. No. 504,512
Int. Cl. H02p 1/54, 5/46; G05b 23/02
U.S. Cl. 318—18 7 Claims



A tool radius offset control for a machine tool system wherein separate command signals are provided for each of two axes for directing a tool according to a program. For each axis, a device such as a tachometer or transformer supplies a tool radius offset signal which is a function of the component of velocity of the tool in the other axis. The offset signal is combined algebraically with the command signal for the corresponding axis. When the tool is moving at constant velocity, the control offsets the tool path perpendicular to the programmed path by an amount equal to the difference in radii of the tool actually used and the tool programmed for use. Further, the control provides gradual cutter offset as the tool is started or stopped.

3,500,151
SEARCH PREVENTATIVE SERVOAMPLIFIERS
Marvin C. Burk, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,458
Int. Cl. H02p 1/22
U.S. Cl. 318—18 3 Claims



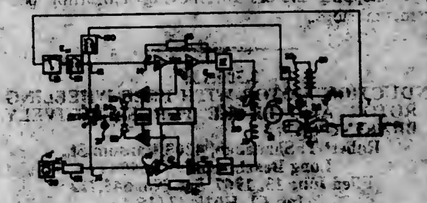
Oscillatory searching effects in servomechanism applications are prevented by utilization of servoamplifiers which require a minimum threshold activation signal in order to allow them to transmit power to a servomechanism.



3,500,152
REMOTE CONTROL [illegible]
[illegible]
[illegible] 1967, Ser. No. 693,842
Int. Cl. H02p 7/00
U.S. Cl. 318—16 4 Claims

Radio-controlled D.C. motor in which a tone-modulated R.F. carrier wave is amplified and demodulated by a superregenerative detector, the recovered tone modulation being selectively passed by a narrow band amplifier, rectified, filtered, and amplified to drive the motor. The rectifier incorporates a threshold circuit to prevent spurious operation of the motor by noise.

3,500,153
CONTROLLER INCLUDING AN AMPLIFIER SYSTEM
Alan J. Werner, Jr., Brighton, N.Y., assignor to Sybron Corporation, a corporation of New York
Filed Apr. 24, 1967, Ser. No. 633,060
Int. Cl. H02p 1/54, 5/46; G05b 11/00
U.S. Cl. 318—18 6 Claims



Up to *n* amplifiers are connected in tandem to form an *n*-fold system. Feedback is taken from the output of each amplifier but the one driving the motor signal, to (*n*—1) summing [illegible] the input signal [illegible] the amplifiers driving thereon. The summing [illegible] to the next amplifier, [illegible] to the next most [illegible] to on. At a given value of input signal [illegible] amplifier saturation, at a higher value, [illegible] at still higher intensities, and so on, to as the [illegible] one after the other. When any given amplifier saturates, the unsaturated amplifier nearest it has a sharp increase in its output signal until it also saturates. [illegible] allowed two-fold increase provides a [illegible] a valve by switching a motor on to drive the valve to close the valve, or off to hold the valve in position.

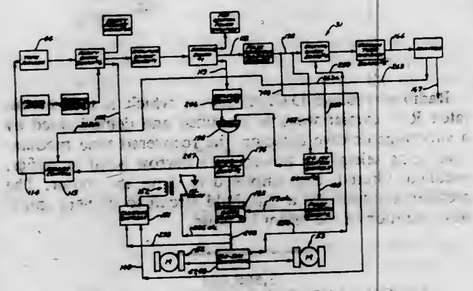
The inputs to the system are connected by the high resistance of a field effect transistor. The amplifiers more remote from the inputs are set to saturate when one input signal is higher than the other by more than enough to switch the motor on. If such saturation occurs, one of the less remote amplifiers sharply increases its output and thereby causes the field effect transistor to present a low resistance shunting the inputs and therefore limiting the difference between the signals applied to the inputs.

3,500,154

DIGITAL CONTROL FOR A STEPPING MOTOR DRIVE USED IN AN AUTOMATIC DRAFTING MACHINE

Leon J. Arp, 1305 Highland Ave., Blacksburg, Va. 24060, and Wayne C. Dowling, 2909 Summit St., Sioux City, Iowa 51104

Filed May 9, 1967, Ser. No. 637,153
Int. Cl. G05b 11/01
U.S. Cl. 318—18 2 Claims



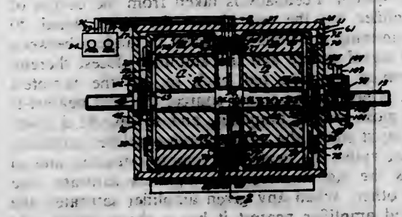
This invention pertains to the electrical circuitry for an automatic drafting machine, wherein the path and components interposed therein, either in block and/or specific form, are described for translating command signals from a tape reader, or the like into energization pulses for a pair of stepping motors for moving a drafting pen in incremental steps.

3,500,155

INDUCTION MOTOR WITH FREE WHEELING ROTOR AND BRAKE FOR SELECTIVELY BRAKING SAME

Robert T. Shanahan, 4208 Ransom St., Long Beach, Calif. 90804

Filed June 13, 1967, Ser. No. 645,722
Int. Cl. H02k 17/36
U.S. Cl. 318—48 11 Claims



A reversible motor comprising a stationary housing having a horizontal drive shaft journaled therein. A pair of armatures are carried on and keyed to the shaft, one armature being wound in one direction and the second being wound in the opposite direction. A pair of cooperating squirrel cages are carried freely rotatable on the shaft and have their proximate ends spaced apart for defining a brake receiving space. An electromagnetic brake ring is disposed in the brake receiving space. A set of roller bearings made of ferromagnetic material is interposed between one of the squirrel cages and the electromagnetic brake ring and means is provided for controlling current flow through such brake ring to vary the polarity of the bearings thereby controlling their resistance to rolling.

ERRATUM

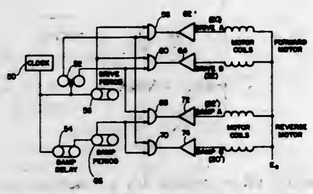
For Class 318—138 see:
Patent No. 3,500,103

3,500,156

ELECTRONIC DAMPING SYSTEM AND METHOD FOR DOUBLE ROTOR-STATOR STEPPING MOTOR

Richard V. Thomas, Seattle, Wash., assignor to Tally Corporation, Seattle, Wash., a corporation of Washington

Filed Jan. 24, 1968, Ser. No. 700,101
Int. Cl. H02k 37/00; H02p 3/10
U.S. Cl. 318—138 10 Claims



Electronic damping system for both bidirectional and unidirectional stepping motors having rotors that require no windings. Since separate pole pieces and windings are provided for both forward and reverse operation of the stepping motor, operation of a motor in a given direction idles the coils required to drive the motor in the opposite direction. Rotative step movement is produced by a drive pulse to the forward windings and a damping pulse to the idle reverse coils to absorb oscillatory energy at the termination of an incremental rotative step movement of the rotor. The damping pulse to the reverse coils is delayed with respect to the drive pulse supplied to the forward coils. Unidirectional motors are damped in the same way by the provision of an additional rotor segment having its own pole pieces and windings.

3,500,157

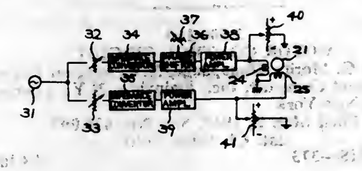
SYSTEM FOR REMOVING IRREGULARITIES IN ROTATION FROM SYNCHRONOUS MOTOR

Kunio Goto, Tokyo, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan

Filed Mar. 6, 1968, Ser. No. 711,028
Claims priority, application Japan, Mar. 7, 1967, 42/13,922
Int. Cl. H02p 5/28
U.S. Cl. 318—179 9 Claims

The invention provides a system for removing irregularities in the rotation of a synchronous motor. A direct current is applied to the armature in addition to an alternating current, and these currents cause rotational irregularities in rotation to develop in the synchronous motor. The polarity and the value of the direct current

is varied so that unwanted irregularities in rotation originally existing in the synchronous motor can be com-



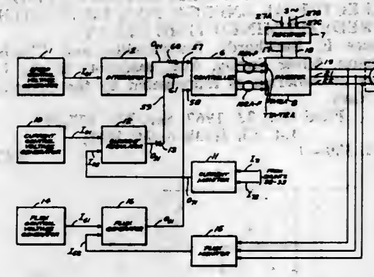
pensated by irregularities in rotation which are intentionally caused to develop.

3,500,158

COMBINED SPEED CONTROL AND OVERLOAD PROTECTION FOR ASYNCHRONOUS THREE-PHASE MOTORS

Ioan D. Landau and Stefan Gavat, Bucharest, Romania, assignors to Ministerul Industriei Constructiilor de Masini, Bucharest, Romania, a firm

Continuation-in-part of application Ser. No. 580,329, Sept. 19, 1966. This application Oct. 30, 1968, Ser. No. 771,842
Claims priority, application Romania, Sept. 30, 1965, 50,327
Int. Cl. H02p 5/34, 5/40
U.S. Cl. 318—227 13 Claims



An asynchronous three-phase motor driven by a regulatable thyratron-like inverter is provided with open-loop speed control so long as the current drawn by the motor load is below a preset overload value. When overload occurs, a threshold device responsive to the motor current is cut in to automatically reduce the motor speed until the load reaches equilibrium at the preset value. Closed-loop facilities are additionally provided for maintaining the motor flux constant at a desired value irrespective of changes in the motor speed and current.

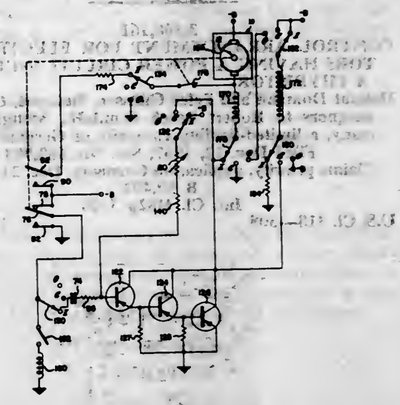
3,500,159

ELECTRONIC CONTROL FOR WINDSHIELD WIPERS

Robert W. Kearns, Detroit, Mich., assignor, by mesne assignments, to Terra Company, Detroit, Mich., a partnership of Michigan

Original application Dec. 1, 1964, Ser. No. 414,973, now Patent No. 3,351,836, dated Nov. 7, 1967. Divided and this application Sept. 1, 1967, Ser. No. 665,103
Int. Cl. H02p 3/16, 1/18
U.S. Cl. 318—247 6 Claims

A transistorized electronic circuit for controlling a wiper motor of a windshield cleaning system in a manner to provide three modes of operation, an intermittent mode with dwell periods at the end of each wiping cycle, a continuous mode of operation wherein the wiper blades operate continuously, and an off mode of operation where-



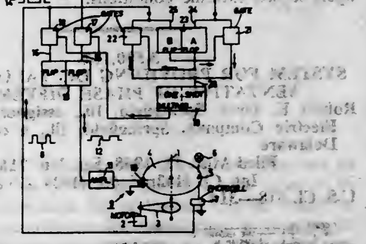
in the wiper blades are operated until they reach a depressed park position at which point they are deactivated.

3,500,160

ARRANGEMENT FOR BRINGING A ROTATING SYSTEM CONTROLLED BY MEANS OF A SERVO-SYSTEM INTO PHASE AND KEEPING IT IN PHASE

Friedrich Sommer, Vienna, Austria, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

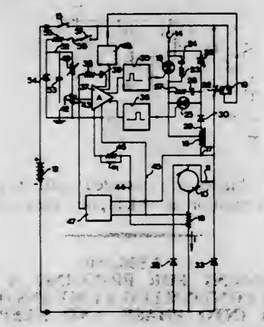
Filed Apr. 22, 1968, Ser. No. 722,845
Claims priority, application Austria, Apr. 26, 1967, A 3,935/67
Int. Cl. H02p 5/04
U.S. Cl. 318—302 3 Claims



A system for synchronizing and regulating the speed of a rotating member comprises a source of reference pulses and a source of control pulses of a frequency proportional to the shaft speed. The reference and control pulses are alternately applied to the inputs of a first bistable device via first and second gates that are controlled by a one-shot multivibrator. The output of the bistable device is used to regulate the shaft speed. The reference and control pulses are applied to the input of the one-shot multivibrator via third and fourth gates. The reference and control pulses are alternately applied to the input of a second bistable device which controls the condition of the third and fourth gates to prevent the passage of the reference and control pulses to the one-shot multivibrator so long as they are of the same frequency. A change in speed changes the frequency of the control pulses so that the one-shot multivibrator is triggered. The output of the one-shot multivibrator controls the first and second gates so

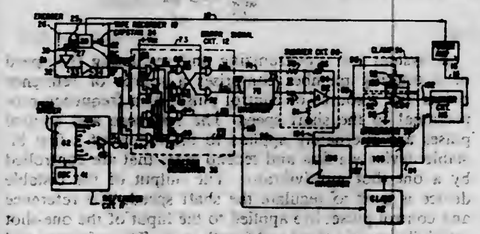
as to alter the periods of the first bistable device, which in turn readjusts the shaft speed to bring same into synchronism.

3,500,161
CONTROL ARRANGEMENT FOR ELECTRIC MOTORS HAVING A POWER CIRCUIT INCLUDING A THYRISTOR
Helmut Domann and Peter Gessner, Stuttgart, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany
Filed Dec. 12, 1967, Ser. No. 689,968
Claims priority, application Germany, Dec. 21, 1966, B 90,402
Int. Cl. H02p 5/06
U.S. Cl. 318—308 19 Claims



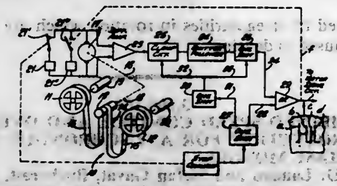
Average current through the motor is sensed, and a corresponding signal is compared with a power command signal; motor speed is sensed, and an "on-off" control has its on-off time for the thyristor modified in accordance with sensed motor speed; the modification may for example result in the current through the thyristor to be effective current, rather than average current to enable maximum loading of the thyristor or, limit motor speed upon sensed extreme conditions.

3,500,162
SYSTEM FOR PROVIDING DC VALUES REPRESENTATIVE OF PHASE DIFFERENCE
Robert E. Dyer, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Mar. 27, 1968, Ser. No. 716,625
Int. Cl. H02p 5/06; H02k 27/20
U.S. Cl. 318—314 12 Claims



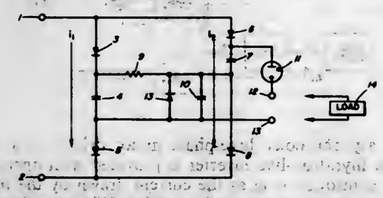
Phase detection circuit for use in speed control of tape recorder, which circuit compares the phase of a reference and a comparison signal to provide an instantaneous average value of the phase difference with substantially zero time delay. The reference and comparison signals are changed to four digital signals from which the average value of the input signal information is extracted on a continuous basis by a series of linear amplifier operations and provided as a DC potential output having a magnitude proportional to the phase error of the two input signals.

3,500,163
MOTOR CONTROL CIRCUIT
Frederick G. Moritz, Hauppauge, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Mar. 2, 1967, Ser. No. 620,097
Int. Cl. H02p 3/10
U.S. Cl. 318—373 3 Claims



In a magnetic tape transport, the tape driving motor is started and stopped by the application of a current pulse. In stopping the motor, a signal proportional to the motor speed is used to charge the timing capacitor of a monostable multivibrator which determines the pulse width of the current pulse used to bring the motor to a final stop.

3,500,164
METHOD AND APPARATUS FOR PROVIDING ELECTRICAL ENERGY TO A LOAD WITH A PREDETERMINED TIME DELAY
Lawrence E. Burkhardt, Bartonsville, and Charles H. Johnson, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 23, 1967, Ser. No. 677,295
Int. Cl. H03k 6/04; H02j
U.S. Cl. 320—1 5 Claims

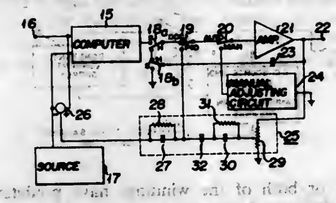


A circuit having an input capacitor is charged to an input voltage. A second capacitor is also charged to the full input voltage and discharges into a third capacitor in an RC timing arrangement. When the sum of the first and third capacitor voltages build up to the strike voltage of a threshold device, current flows thereby discharging electrical energy stored in the capacitors into a load.

3,500,165
COMPUTER CONTROL DEVICE
Keisuke Takada and Ryōsei Kimura, Tokyo, Japan, assignors to Tokyo Keiki Seizo Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 21, 1967, Ser. No. 647,856
Claims priority, application Japan, June 24, 1966, 41/40,645
Int. Cl. H02j 9/04
U.S. Cl. 320—1 7 Claims

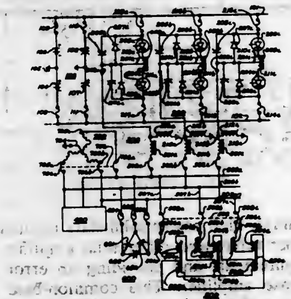
A direct digital control system wherein a single digital computer is employed instead of a number of conventional analog controllers to sample and compute the manipulated variables in a plurality of control loops by time sharing and to drive or automatically control an

actuator by its output. The resultant output computed by the computer is memorized by a hold amplifier consisting of an operational amplifier and a hold condenser, and such memorized value is stored until the next sampling period in the computer and the output signal from



the computer continues to be supplied to the actuator through the hold amplifier, until the next sampling period. When the digital computer malfunctions, the function of the system is backed up by an analog R-C network which is provided separately of the operational amplifier and which forms a PID controller.

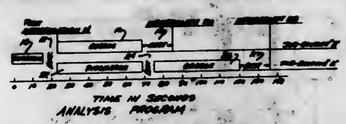
3,500,166
INTEGRATED THREE PHASE INVERTER SYSTEM
Lee Orland Meisenhimer, Lakewood, and Thomas W. Granneman, Rocky River, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio
Filed May 23, 1968, Ser. No. 731,426
Int. Cl. H02m 1/18, 7/22; G02f 1/68
U.S. Cl. 321—11 10 Claims



A polyphase, ferroresonant regulated inverter system comprising one or more polyphase inverter modules. Each inverter module includes phase generating and ferroresonant regulating component groups and circuitry for electrically disconnecting failed ones of the latter component groups in order that the non-failed component groups in each inverter module may coact with all other non-failed component groups in all other inverter modules to substantially maintain the rated output power of the system when a failure occurs in less than all component groups of a given type, suitable circuit means being provided to compensate for the electrical disconnection of one or more of the phase generating component groups.

3,500,167
BATTERY CONDITION ANALYZER
Merlin J. Applegate and William R. Dufendach, Grand Rapids, and Floyd Brewer, Jenison, Mich., assignors to Vari-Tech Company, Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 12, 1966, Ser. No. 600,891
Int. Cl. H02j 7/00
U.S. Cl. 320—14 15 Claims

A programmed electronic device having a programmer provides timed signals representative of a predetermined battery analysis program and initiates its sequencing. The program causes the battery to be charged and discharged in a predetermined sequence. A function generator produces criterion signals at predetermined points in the analysis program while other circuitry senses the battery output voltage at given points in the charging and discharg-

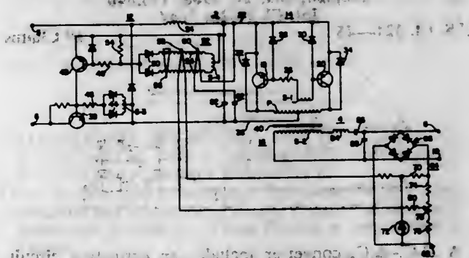


ing sequence. Comparator logic compares the sensed battery output voltages with the generated criterion values and provides an output indicative of the comparison. A visual readout means driven by the comparator is also provided for indicating the condition of the battery.

ERRATUM

For Class 321—11 see:
Patent No. 3,500,166

3,500,168
SELF-DRIVEN INVERTER
Stanley Y. Merritt, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed May 3, 1967, Ser. No. 635,788
Int. Cl. H02m 7/48
U.S. Cl. 321—18 4 Claims

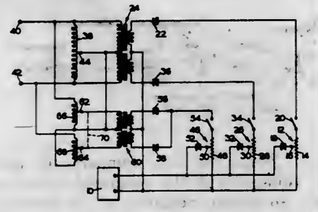


An inverter of the saturating transformer type has its output supplied to a filter producing a sine wave at its output. To compensate for of leading current from the filter, a gap is provided in the transformer to increase its lagging magnetizing current. In order to maintain constant frequency, the input voltage is controlled by a series regulator comprising a main series transistor, normally biased on; an auxiliary transistor, normally biased off, and a magnetic amplifier, the control winding of which is energized from the output of the inverter.

3,500,169
DIMMER CONTROL FOR THEATRICAL LIGHTING EQUIPMENT
Gene C. Rand, Portland, Oreg., assignor to Stagecraft Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Mar. 27, 1968, Ser. No. 716,632
Int. Cl. H05b 7/04
U.S. Cl. 321—27 10 Claims

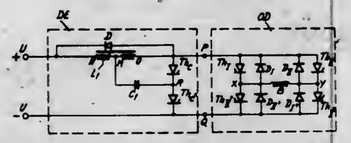
A voltage-controlled light dimmer is connected through a pair of preset fader control potentiometers and blocking diodes to opposite ends of the center tapped secondary of a low voltage transformer, the center-tapped primary of

which is connected to a first autotransformer. The dimmer also is connected through a third potentiometer and a pair of blocking diodes to opposite ends of the center tapped secondary of another low voltage transformer, the center-tapped primary of which is connected to a second autotransformer. The primary of the first autotransformer



has a variable center tap connected to a fixed center tap on the second autotransformer which also has a pair of variable taps one on each side of its fixed center tap. The pair of variable taps are ganged together for simultaneous movement in the same direction relative to the associated fixed center tap.

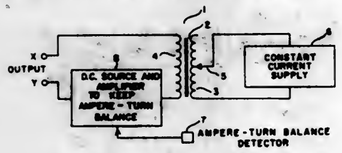
3,500,170
D.C.-A.C. CONVERTERS
Jean Pierre Charrin, Boulogne, Jacques Hermier, Nanterre, and Michel George E. Lalanda, le Vesinet, France, assignors to La Telemecanique Electrique Nanterre, Hauts-de-Seine, France, a company of France
Filed Nov. 18, 1968, Ser. No. 776,459
Claims priority, application France, Nov. 20, 1967, 128,826; Oct. 22, 1968, 170,840
Int. Cl. H02m 7/44
U.S. Cl. 321—45 19 Claims



A D.C.-A.C. converter includes an extinction circuit co-operating with an inverter network. The extinction circuit includes a series inductor in the supply lead to the inverter and a co-operating capacitor. The cut-off capacity of the extinction circuit is increased by providing the series inductor with at least one intermediate tapping so that the capacitor, one terminal of which is connected to the inductor or a tapping, charges and discharges respectively through different portions of the inductor defined on either side of the tapping to which the capacitor is connected.

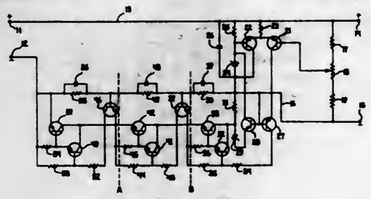
3,500,171
SELF-BALANCING CURRENT COMPARATOR FOR PRECISE VOLTAGE LEVELS AND POTENTIOMETER USAGE
Norbert L. Kusters and Malcolm P. MacMartin, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Nov. 9, 1967, Ser. No. 681,779
Claims priority, application Canada, Jan. 6, 1967, 979,753, Patent 804,155
Int. Cl. G05f 1/50; G01r 17/02; H02j 1/04
U.S. Cl. 323—6 7 Claims

Apparatus for providing a stepped series of precise direct current or voltage levels in which a direct current comparator which has its primary connected to a source of constant direct current incorporates a detector for detecting zero flux in the core of the comparator and controlling a variable source of direct current connected to the secondary to provide the correct current value to give ampere turn balance at the comparator. The primary or



secondary or both of the windings have predetermined tapping points to give a series of current levels directly related to the primary current in the secondary. To achieve a potentiometer device, the secondary is connected to a resistor having a constant resistance value and providing across its terminals a series of stepped voltage levels.

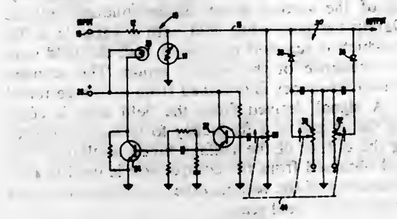
3,500,172
HIGH VOLTAGE, HIGH POWER SERIES REGULATOR
Royal W. Eckstein, Jr., Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 21, 1967, Ser. No. 648,535
Int. Cl. G05f 1/10
U.S. Cl. 323—9 4 Claims



A high voltage, high power solid-state regulator circuit, having a Zener referenced differential amplifier for sensing load requirements and providing an error signal to a common-base amplifier. This common-base amplifier is coupled to a first pair of transistors arranged in a Darlington configuration which are, in turn, coupled to a plurality of load sharing regulating sections, each section including a pair of transistors in a Darlington configuration coupled to a third transistor which acts as an error sensor and D.C. amplifier. These load sharing regulating sections are coupled to one another and to a resistive divider network in such manner that the error sensing third transistor within each section causes its associated Darlington pair to assume its proportionate share of the load; a small current through the resistive divider network controls the division of voltages between the load sharing sections, thereby increasing the stand-off voltage capability of the overall regulator circuit and decreasing the power dissipation per load sharing section, in direct proportion to the number of such sections utilized.

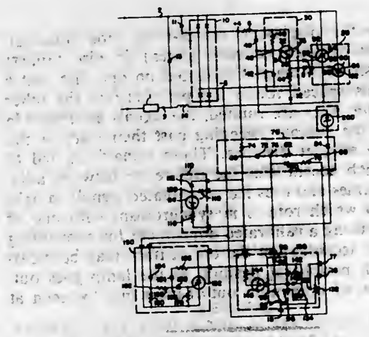
3,500,173
COMBINED PHOTO-SENSITIVE ATTENUATOR AND CLIPPER
William Ross Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022
Filed Mar. 14, 1967, Ser. No. 622,948
Int. Cl. G05f 1/40
U.S. Cl. 323—21 3 Claims

A voltage limiter arrangement which consists of a signal responsive, adjustable attenuator and independent from the attenuator a voltage limiting diode clipper connected directly to the output line of the arrangement. The attenuator is preferably of the type employing a photo-sensitive resistance element, a source of radiations arranged to excite said resistance element and circuit means connected between the output line of the arrangement and the source of radiations for controlling the intensity of the source of radiations in response to an excessively strong input signal so as to limit the strength of the signal appearing



in the output line of the arrangement to a pre-set voltage level. The clipper is arranged to clip the signal appearing in the output line of the attenuator at a slightly higher voltage level than the compression level to which the attenuator is set. Thus, in the event of a sudden and/or significant increase in the strength of a signal supplied to the input means of the attenuator, the signal supplied by the output line of the arrangement is rapidly compressed to said pre-determined level without noticeable distortions.

3,500,174
SOFT START AND SOFT STOP OF AN A.C. VOLTAGE
Karl H. Ellerbeck, 2815 46th Ave. W., Seattle, Wash. 98199
Filed Feb. 21, 1968, Ser. No. 707,161
Int. Cl. G05f 3/02
U.S. Cl. 323—24 7 Claims



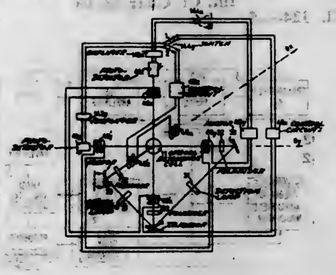
In an electrical device connected in an A.C. circuit between a power source and a load wherein a capacitive pulse generator is employed to trigger silicon-controlled rectifiers into conducting states to supply A.C. voltage to the load, a resistance-capacitance timing control network is employed to control the charging rate of the capacitive pulse generator such that the silicon-controlled rectifiers are switched to the conducting state at earlier or later line voltage phase angles such that voltage application to the load may be automatically and gradually increased, or decreased, or both.

3,500,175
ELECTROMAGNETIC PROSPECTING APPARATUS UTILIZING VLF RADIO FIELDS
Valno Ronka, Don Mills, Ontario, Canada, assignor to Geonics Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Apr. 21, 1967, Ser. No. 632,656
Claims priority, application Canada, June 9, 1966, 962,480
Int. Cl. G01v 3/00, 3/12
U.S. Cl. 324—3 12 Claims



A portable electromagnetic prospecting apparatus utilizing existing very low frequency (VLF) transmitters as sources of primary field. The apparatus includes a receiving coil, a reference coil orthogonal to the receiving coil, and a sensitive receiver tuned to the frequency of a particular VLF transmitter. The receiving coil is tilted from the vertical unit a null is observed, and then a measured percentage of the output of the reference coil, after being phase shifted 90°, is fed into the receiver to balance any voltage induced in the receiving coil due to quadrature components. The tilt angle of the receiving coil is a measure of the vertical real component of the secondary field, and the measured percentage of the phase shifted reference coil output is a measure of the vertical quadrature component of the secondary field.

3,500,176
METHOD AND APPARATUS FOR CONTROLLING A MAGNETIC FIELD EMPLOYING OPTICALLY PUMPED NUCLEAR RESONANCE
Alfred Kastler and Jean-Claude Lehmann, Paris, France, assignors to Etablissement Public Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed Aug. 16, 1966, Ser. No. 572,949
Claims priority, application France, Aug. 16, 1965, 28,453
Int. Cl. G01n 27/00
U.S. Cl. 324—.5 6 Claims



Methods and apparatus are disclosed for measuring the ambient magnetic field in a region of space. An optical resonance gas cell in the space is irradiated by optical pumping and detection beams. Three sets of magnetic

field producing coils are arranged adjacent the cell on mutually perpendicular axes. The absorption of the pumping and detection beams is utilized to control the current in the coils. Measurement of the current provides an indication of the strength of the ambient magnetic field.

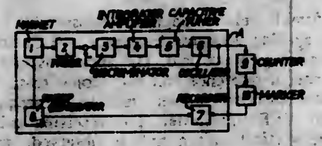
This invention relates to a method for controlling a magnetic field at zero value and/or for measuring the field thus compensated in intensity, orientation and direction, and to an apparatus for carrying this method into effect.

3,500,177

APPARATUS PRODUCING CALIBRATION MARKS FOR A SWEPT MAGNETIC FLUID

Horst Winterhoff, Berlin, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Sept. 14, 1966, Ser. No. 579,246
Claims priority, application Germany, Sept. 14, 1965, 1,281,577
Int. Cl. G01n 27/00
U.S. Cl. 324—5 8 Claims



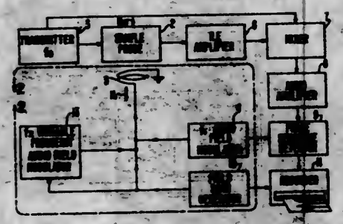
Apparatus which measures magnetic fields and produces calibration marks indicative of changing magnetic fields. The frequency of a variable frequency oscillator is changed in accordance with the strength of the field being measured. A counting means is combined with such oscillator to receive a series of electrical signal combinations, which indicate the frequency of the oscillator. A logic circuit responsive to the signal combinations from the oscillator is also provided; such logic circuit pulses at intervals determined by the oscillator. The intervals between pulses represent magnetic field strength and means are provided for correlating the pulses with time to produce an indication of magnetic field strength.

3,500,178

FIELD SCANNED GYROMAGNETIC RESONANCE SPECTROMETER EMPLOYING FIELD TRACKED DOUBLE RESONANCE

Ronald M. Pabish, Los Altos, and John F. Moran, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 12, 1967, Ser. No. 645,391
Int. Cl. G01r 33/08
U.S. Cl. 324—5 5 Claims



A gyromagnetic resonance spectrometer is disclosed which employs magnetic field scan and a field tracked frequency second resonance excitation. The spectrometer employs a fixed frequency radio frequency transmitter for irradiating the sample under analysis with a radio frequency carrier magnetic field. A fixed audio frequency field modulator modulates the polarizing magnetic field to excite resonance of the sample at a first fixed frequency sideband of the carrier frequency. A magnetic field scan causes resonance of the sample to be scanned through the fixed frequency of the first sideband for producing the output spectrum of the sample.

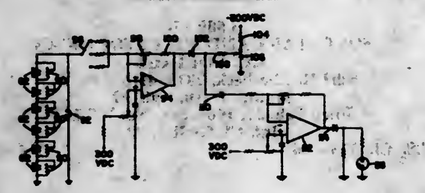
Double resonance experiments are performed by exciting resonance of a second chemically shifted group within the sample by a second sideband of the carrier frequency. Resonance of the second group is continuously excited by modulating the polarizing field with a variable audio frequency which is scanned in concert with the field scan to sustain resonance of the second group. The scanned variable audio frequency is obtained from a voltage tuned oscillator. A signal derived from the field scan is compared with the output of a frequency to voltage converter measuring the output of the voltage tuned oscillator. The error signal obtained from the comparison is used to correct the frequency of the voltage tuned oscillator to obtain a precise track of the field scan.

3,500,179

SYSTEM FOR DISPLAYING OUT-OF-TRAM MEASUREMENTS IN DISC REFINERS

William D. May, Hampstead, Quebec, Canada, assignor to Pulp and Paper Research Institute of Canada, Pointe Claire, Quebec, Canada, a non-profit corporation of Canada

Filed July 17, 1967, Ser. No. 653,708
Int. Cl. G01r 33/02
U.S. Cl. 324—34 12 Claims



A system for displaying out-of-tram (the misalignment of and distance between plates) in disc refiners which consists of a magnet mounted on one disc and a series of coils spaced round the periphery of the other disc. When the discs are rotated, the signals generated in the coils by the magnet sweeping past them vary as the local coil to magnet distance. These signals are fed to a circuit which accentuates the difference between adjacent signal values and uses the accentuated signals to light a neon lamp which rotates in synchronism with one of the discs. By using a calibrated adjustment for controlling the degree of accentuation the out-of-tram may be measured for each peripheral position as the lamp goes out, and the plane of maximum out-of-tram may be seen at a glance.

3,500,180

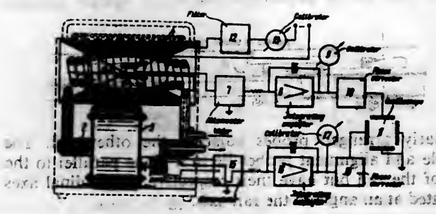
FERROMETER FOR OSCILLOGRAPHIC MEASUREMENT OF MAGNETIC CHARACTERISTICS

Vasily Mefodievich Matveyev, Tikhie Gaystye 17, kv. 39, Novosibirsk, U.S.S.R.

Filed Mar. 12, 1968, Ser. No. 712,865
Int. Cl. G01r 33/00
U.S. Cl. 324—34 3 Claims

A ferrometer for oscillographic measurement of the magnetic characteristics of bar-type test samples of ferromagnetic materials being magnetized in complex fields, the ferrometer including a magnetization device in the form of a confocal ellipsoidal winding and a winding in

the form of a body of rotation limited externally by a cylindrical surface and at its ends by conical surfaces. An optimal homogeneity of this field is achieved by selecting



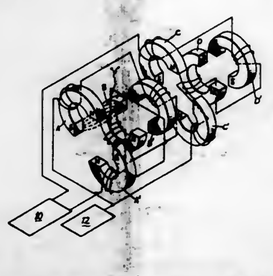
a particular ratio of the geometrical parameters of the windings. The field pick-up is a toroidal coil with identical sections whose function is that of an attenuator.

3,500,181

EDDY CURRENT FLOW DETECTION APPARATUS UTILIZING A PLURALITY OF CIRCUMFERENTIAL SENSORS

James F. Jackson, Franklin, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Apr. 21, 1967, Ser. No. 632,652
Int. Cl. G01r 33/12
U.S. Cl. 324—37 11 Claims



This invention relates to a system for the detection of flaws in the entire surface of electrically conductive bodies such as wire, rods, cylinders or other elongated shapes. More particularly, the invention is concerned with the use of a transducer which comprises a plurality of spaced apart curved di-polar wound cores. The transducer in the system generates an electromagnetic field about the conductive body, which in turn induces eddy currents in said body disposed in close proximity to the wound cores. The system is arranged such that in its operative condition, it detects and responds to changes in the electrical impedance of the transducer caused by flawed region moving in relationship to said transducer.

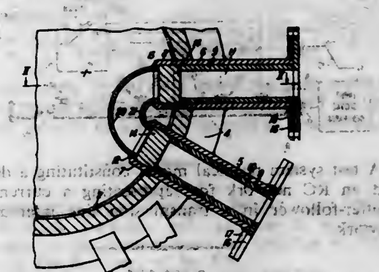
3,500,182

APPARATUS FOR AND A METHOD OF HIGH FREQUENCY ELECTROMAGNETIC MOISTURE MEASUREMENT IN HIGHLY VISCOUS PASTES AND SIMILAR MATERIALS

William C. Bass, Whitley Bay, and [illegible], Newcastle-upon-Tyne, England, assignors to The Rank Organisation Limited, London, England, a company of Great Britain and Northern Ireland

Filed July 21, 1966, Ser. No. 567,165
Claims priority, application Great Britain, June 28, 1965, 27,148/65
Int. Cl. G01r 27/04
U.S. Cl. 324—58.5 11 Claims

The moisture content of a flow of viscous material is measured by passing high frequency electromagnetic signals therethrough, the material being constrained to flow through a chamber or conduit which has a part of its cross-sectional area subdivided by a pair of opposed boundary plates extending edgewise in the direction of material movement and which form a confining guide path for the signals that are led to and from the path through end boundary means impervious to the flowing material.



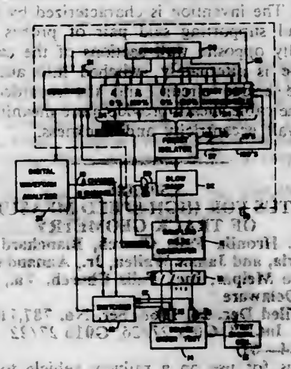
the signals being evaluated after traversing the material in said path to determine the moisture content thereof. An apparatus thereof and a method thereof are described. The signal path as defined by these boundary plates has a length independent of the cross-sectional area provided for the fluid flow whereby the degree of anticipated signal attenuation can be controlled.

3,500,183

PRESETTABLE SAMPLING SYSTEM

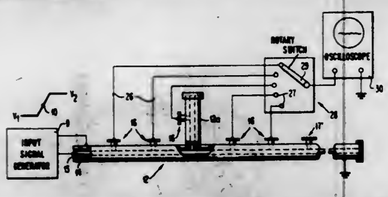
Samuel R. McCutcheon, Saratoga, William F. Boggs, Fremont, and William H. Ewin, Los Altos, Calif., assignors to Automated Measurements Corporation, Los Gatos, Calif., a corporation of California

Filed Dec. 12, 1966, Ser. No. 600,830
Int. Cl. G01r 27/04, 23/10, 27/02
U.S. Cl. 324—57 1 Claim



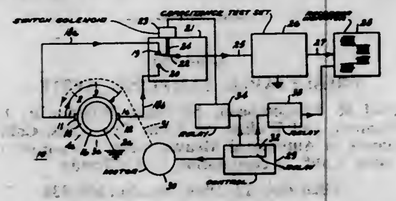
A sampling system for sampling periodic test waveforms from an electronic device under test in which a single sampling pulse may be produced at a predetermined time to sample a single recurrence of the test waveform at any desired portion.

3,500,184
TRANSMISSION LINE SIMULATION
Irving T. Ho, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,589
Int. Cl. G01r 31/11, 27/04; G06g 7/26
U.S. Cl. 324—57 13 Claims



A test system physical model constituting a delay line and an RC network for representing a current switch emitter-follower in a transmission line interconnection network.

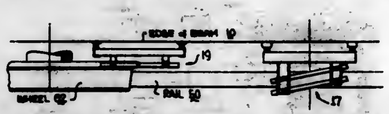
3,500,185
ELECTRODE PROBE SYSTEM MONITORING DIAMETRICALLY OPPOSED CONDUCTOR CABLE SECTIONS TO MEASURE SHEATH THICKNESS AND ECCENTRICITY
Walter Trowbridge Eppler, Cranford, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 21, 1967, Ser. No. 647,745
Int. Cl. G01r 27/26
U.S. Cl. 324—61 4 Claims



An electrode probe system has a pair of electrode probes held in operative contact on advancing cable for monitoring the capacitance between the probes and a metal jacket underlying the insulator sheath on which the probes are positioned. The invention is characterized by a single indexing head supporting said pair of probes to contact diametrically opposite wall sections of the cable sheath. Each probe is alternately switched into and out of a capacitance bridge circuit, and the recorded measurements of the cable sheath provide more meaningful values of cable wall eccentricity and thickness.

3,500,186
APPARATUS FOR HIGH-SPEED MEASUREMENT OF TRACK GEOMETRY
Richard H. Hronik, Falls Church, Blanchard D. Smith, Alexandria, and James Wallen, Jr., Annandale, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Dec. 26, 1968, Ser. No. 787,110
Int. Cl. G01r 27/26; G01n 27/22
U.S. Cl. 324—61 4 Claims

Apparatus for use on a railway vehicle to determine track geometry as the vehicle moves along the track includes rail proximity sensors in the form of capacitive probes mounted on a rigid baseline member attached to the undercarriage of the vehicle for positioning of the probes adjacent a rail of the track. The probes are mounted along the baseline member or beam in a set of three, two at either end and one at the midpoint of the beam, above the rail, and a further probe is mounted adjacent the side of the rail, the former set used to measure profile and alignment and the latter single probe for measurement of track gauge, in conjunction with other



similarly arranged probes adjacent the other rail. The profile and alignment probes lie in a plane parallel to the top of the rail but have their respective longitudinal axes oriented at an angle to the rail axis.

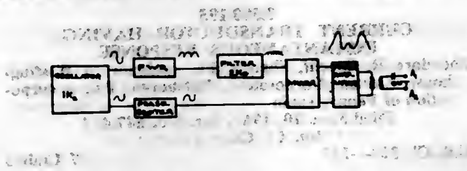
3,500,187
PROBE FOR APPARATUS MAKING TEMPERATURE COMPENSATED RESISTANCE MEASUREMENTS OF A MOVING BED OF HIGHLY ABRASIVE MATERIAL
Lloyd V. Fegan, Jr., Lebanon, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Continuation of application Ser. No. 548,751, May 9, 1966. This application Mar. 20, 1969, Ser. No. 809,054
Int. Cl. G01r 27/02
U.S. Cl. 324—65 3 Claims



A probe is provided having an elongated tubular metal body and an abrasion-resistant operating end opposite a terminal end. Full-, half- and two quarter-cylindrical resistance sensing electrodes are disclosed in association with a cylindrical high-density refractory insulator which surrounds the body at the operating end. In this same end is a thermocouple for generating a signal representing the temperature of material whose resistance is sensed. The operating end has smooth non-clogging exterior surfaces and is adapted for continuous insertion into a moving bed of highly abrasive granular material. Also disclosed are probe assemblies having pivotal support members with optional biasing means for maintaining uniform contact pressure in undulating beds of moving material.

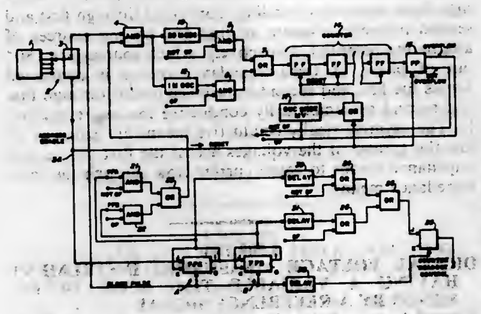
3,500,188
METHOD AND MEANS FOR MEASURING CONSTRICTION RESISTANCE BASED ON NONLINEARITY
James Hayward Whitley, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 519,869, Jan. 11, 1966. This application June 2, 1966, Ser. No. 554,887
Int. Cl. G01r 27/14
U.S. Cl. 324—64 16 Claims

Method and apparatus are disclosed for measuring electrical connection resistance in terms of nonlinearity produced by constriction resistance in a nondestructive manner. An input AC signal nonsymmetrical about its zero axis and having a waveform amplitude providing an average DC current level of zero is applied to members joined forming the contact resistance being measured. The constriction voltage component developed across said mem-



bers as a result of the input signal is then measured to determine constriction resistance of the interface between each member as a measure of contact resistance. In one embodiment an input signal waveform producing a third harmonic component is used with the measurement being made only of the third harmonic voltage component.

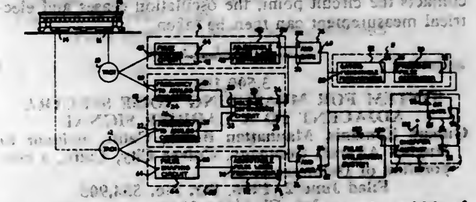
3,500,189
AUTOMATIC SCALING SYSTEM FOR A TIME DEVICE
Richard L. Gowan, Coronado, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 8, 1967, Ser. No. 614,748
Int. Cl. G04f 9/00, 11/08
U.S. Cl. 324—68 4 Claims



In an interval timer, with the pulses of an oscillator gated into a counter, the frequency of oscillations must be high in the interest of high resolution but must not overflow the counter during the longest expected time interval. Here, when the counter overflows, a lower frequency oscillator is switched in, and the counting process is repeated.

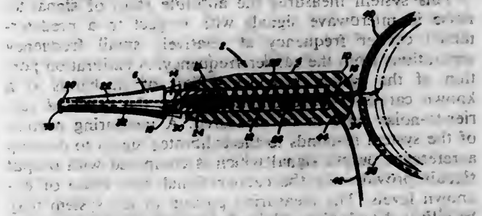
3,500,190
VEHICLE VELOCITY MEASURING SYSTEM EMPLOYING ADJUSTABLE WIDTH PULSE GENERATING SYSTEM
Gerald J. Michon, Waterford, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 23, 1967, Ser. No. 648,494
Int. Cl. G01p 3/56
U.S. Cl. 324—69 9 Claims

Signals from each of the pair of tachometers coupled to vehicle axles are used to trigger separate adjustable pulse generators to provide a pair of adjustable width output pulses. A precision width pulse generator is triggered by the trailing edge of the adjustable width pulse generated in response to the tachometer having the highest output frequency. A gating circuit responds to the triggered adjustable width pulse and to a precision width pulse to provide a highly accurate output signal having



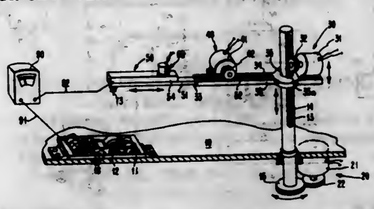
an adjustable pulse width. As a result, the pulse width of a series of output signals can retain a prescribed relationship to the velocity of a vehicle in spite of vehicle wheel wear.

3,500,191
MICROCIRCUIT TEST PROBE WITH GRAPPLER
Eugene E. Gick, Rockville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 7, 1967, Ser. No. 688,729
Int. Cl. G01r 31/02
U.S. Cl. 324—72.5 5 Claims



The present invention provides a simple device for testing microelectronic components without causing breakage or short circuits. The invention is a test probe by the use of which one may hook onto or into a circuit, particularly a microcircuit, without discontinuing the current flow within the circuit. A tapered plug which normally is spring biased into abutment with a hook portion of the contact end of the test probe is manually withdrawn to expose the hook portion for enabling engagement with the circuit.

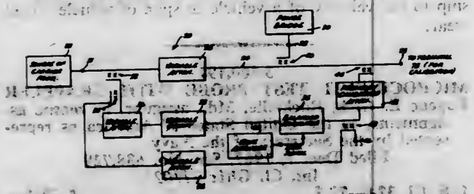
3,500,192
OSCILLATORY PROBE SYSTEM FOR CONTACTING AND TESTING A CIRCUIT POINT THROUGH A HIGH DENSITY OF WIRES
Charles J. Donaher, Sunnyvale, and James J. Stepanko, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,436
Int. Cl. G01r 31/02
U.S. Cl. 324—72.5 5 Claims



A system for testing a circuit board that utilizes an electrical probe that is automatically moved in two di-

rections over a circuit point on the circuit board. The probe is then lowered toward the circuit point through a high density of wires. While it is being lowered, the probe is oscillated in a circular motion. When the probe contacts the circuit point, the oscillation ceases and electrical measurement can then be taken.

3,500,193
SYSTEM FOR MEASURING NOISE SPECTRA ADJACENT TO A CARRIER SIGNAL
Gunary Kaufmann, Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 2, 1966, Ser. No. 554,905
Int. Cl. G01r 23/16
U.S. Cl. 324—77 8 Claims

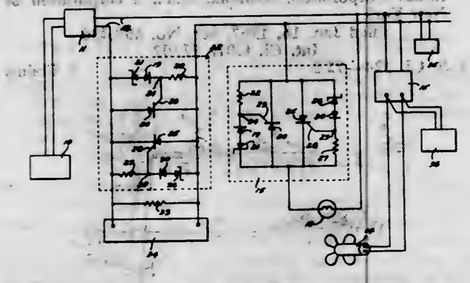


This system measures the absolute ratio of signal-to-noise in microwave signals with respect to a predetermined carrier frequency at relatively small frequency separations from the carrier frequency. A calibration portion of the system provides a pair of sidebands at a known carrier-to-sideband ratio above the expected carrier-to-noise ratio to be measured. A measuring portion of the system responds to the calibrated signal to develop a reference output signal which is compared with output signals provided by the carrier signal with noise of unknown levels. The measuring portion of the system may be adjusted to indicate the noise levels over a wide range of frequency separation from the carrier frequency.

ERRATUM

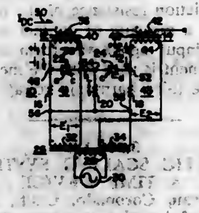
For Class 324—99 see:
Patent No. 3,500,109

3,500,194
METHOD AND MEANS FOR DETECTING UNAUTHORIZED USE OF ELECTRIC POWER
Harold A. Smith, Plainfield, N.J., assignor to Devesco Incorporated, New York, N.Y., a corporation of New York
Filed June 21, 1965, Ser. No. 465,949
Int. Cl. G01r 1/00, 31/02
U.S. Cl. 324—110 6 Claims



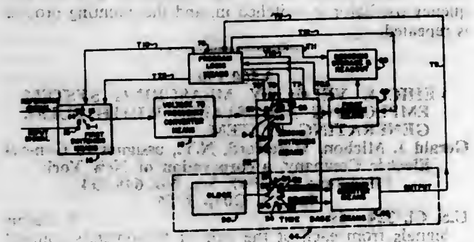
Power line monitoring system includes switch means in series with each authorized load for instantaneously disconnecting and then reconnecting all the loads, simultaneously, and at regular intervals. Current flowing in power line measured during period of load disconnection. Switch may be a silicon controlled rectifier activated via a Zener diode.

3,500,195
CURRENT TRANSDUCTOR HAVING INSTANTANEOUS RESPONSE
Theodore R. Specht, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1967, Ser. No. 647,447
Int. Cl. G01r 33/00
U.S. Cl. 324—117 7 Claims



A current transductor for providing an electrical quantity responsive to the magnitude of a direct current flowing in a circuit, without metallic contact to the circuit first and second transformers, using a conductor carrying the direct current to be measured as their primary windings, have secondary windings connected through first and second impedance means to first and second sources of alternating potential, respectively, which sources are 180° out of phase. A third impedance means is connected across the first and second impedance means through first and second asymmetrically conductive means, respectively. The asymmetrically conductive means are poled to allow the greater of the voltages across the first and second impedance means to cause current flow through the third impedance means.

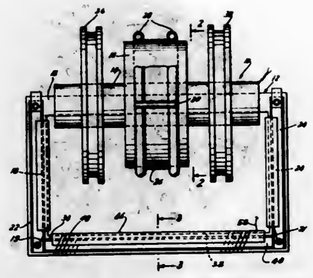
3,500,196
DIGITAL VOLTAGE MEASURING INSTRUMENT HAVING A VARIABLE TIME BASE DETERMINED BY A REFERENCE SIGNAL
Edward Cooper, Palo Alto, Calif., assignor, by mesne assignments, to Systron-Donner, Concord, Calif., a corporation of California
Filed Mar. 20, 1967, Ser. No. 624,466
Int. Cl. G01r 19/26, 1/02; H03k 13/20
U.S. Cl. 324—120 3 Claims



This invention relates to an instrument, and in particular, to a digital instrument such as employed for measuring a voltage. The instrument employs a controlled time

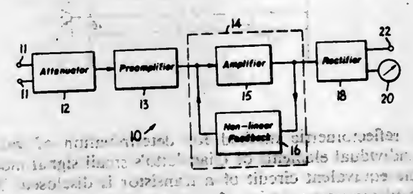
base wherein this time base is arrived at by the processing of a reference signal through a processing channel. This channel is at least partly employed during the measuring of an unknown signal along with the determined time base.

3,500,197
INTEGRATED HIGH VOLTAGE TRANSFORMER AND CAPACITOR DIVIDER
James M. Constable, Flushing, N.Y., assignor to Del Electronics Corporation, Mount Vernon, N.Y., a corporation of New York
Filed Apr. 29, 1968, Ser. No. 725,070
Int. Cl. G01r 19/00; H01f 27/36
U.S. Cl. 324—127 12 Claims



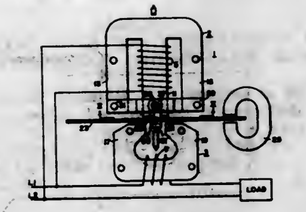
A first corona shield is disposed on and insulated from the core of a high voltage transformer, thereby to form a first capacitance with another corona shield arranged about the secondary winding and to form a second capacitance with the transformer core, these capacitances being connected in series to define a capacitive voltage divider, an external meter being connected across said second capacitor so as to measure a predetermined portion of the transformer output voltage.

3,500,198
APPARATUS AND METHOD FOR MEASURING THE LOGARITHM OF THE ROOT-MEAN-SQUARE VALUE OF A SIGNAL
Arthur Kaiser, Trumbull, and Henry W. Mahler, Newtown, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 2, 1966, Ser. No. 598,827
Int. Cl. G01r 15/10; G06g 7/24
U.S. Cl. 324—132 18 Claims



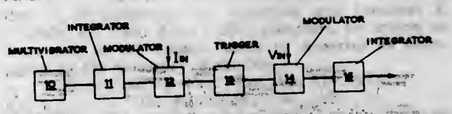
A signal measuring method and apparatus which generates a signal that is proportional to the logarithm of the root-mean-square value of the input signal to be measured by generating a signal proportional to the logarithm of the input signal, and then generating a signal proportional to the peak-to-peak value of the logarithmic signal.

3,500,199
INDUCTION METER HAVING SATURABLE PATH FOR WORKING VOLTAGE MAGNETIC FLUX
James E. Rooney, Jr., Raleigh, N.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1967, Ser. No. 648,905
Int. Cl. G01r 11/02
U.S. Cl. 324—138 9 Claims



The voltage winding of an induction meter directs a voltage magnetic flux through the armature of the meter and through a magnetic path having a reluctance which depends on the magnitude of the voltage applied to the voltage winding. Part of this path is incorporated in phasing means for controlling the phase relationship between the voltage magnetic flux and the voltage applied to the voltage winding.

3,500,200
ELECTRONIC WATTMETERS UTILISING AN AMPLITUDE AND WIDTH MODULATED PULSE TRAIN
Peter Woodhead, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Jan. 10, 1968, Ser. No. 696,510
Claims priority, application Great Britain, Jan. 10, 1967, 1,241/67
Int. Cl. G01r 7/00, 11/32; G06g 7/16
U.S. Cl. 324—142 6 Claims

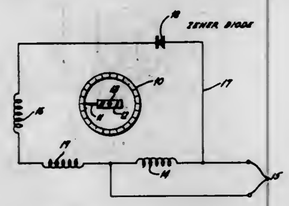


This invention relates to a wattmeter in which the power consumed in a circuit is represented by a train of pulses whose height and width are modulated in accordance with the voltage and current in that circuit, the time integral of these pulses thus being representative of the average power consumed in the circuit.

3,500,201
EXTENDED RANGE METER HAVING MOVING MAGNET
Robert E. Mumaw, Southampton, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,762
Int. Cl. G01r 1/20, 11/02
U.S. Cl. 324—146 4 Claims

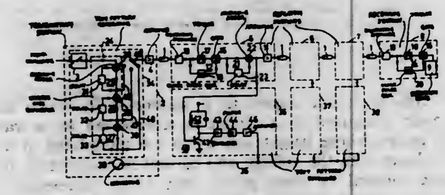
An extended range meter comprising a rotatable permanent magnet element, a first coil connected across a

pair of terminals, and a series circuit including second and third coils and a Zener diode, connected in shunt with the first coil. The second coil is disposed in 90° relation to the first coil and the third coil is wound so that its magnetic flux opposes that of the first coil. When the voltage applied across the terminals is less than the breakdown voltage of the Zener diode, the Zener diode inhibits current flow in the series circuit and only the first coil is energized to rotate the permanent magnet element of the meter. When the voltage applied across the terminals equals or exceeds the breakdown voltage of



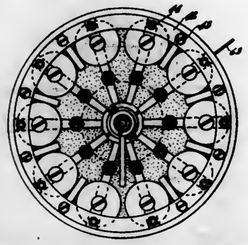
the Zener diode, the diode becomes conductive and current flows through the second and third coils. Because the magnetic flux developed by the third coil bucks that developed by the first coil, the permanent magnet element is rotated primarily or entirely by the flux developed by the second coil. Because the second coil is disposed at right angles to the first coil, its flux may turn the magnet element through angles through which the flux of the first coil cannot turn it, thereby extending the range of the meter beyond the range attainable by use of only the first coil.

3,500,202
TESTING SYSTEM FOR PULSE REPEATER SYSTEMS USING CODE CONVERTERS
Leo Edward Zegers, Eindhoven, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,092
Claims priority, application Netherlands, Apr. 30, 1966, 6605881
Int. Cl. H04b 1/60; H04l 1/16, 3/00
U.S. Cl. 325—13 9 Claims



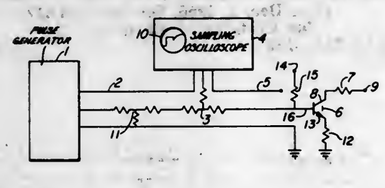
A pulse transmission system has a transmitter, a receiver, and a plurality of intermediate stations. At least some of the intermediate stations include code converters, in order to reduce time marking fluctuations, and the transmitter or receiver includes inverse code converters so that the received signal is the same as the transmitted signal. In order to test the code converters, the output of each converter is detected in a separate test pattern detector, and the outputs of the detecors are returned by a common line to an indicator. The transmitter includes a test pattern generator, and a plurality of inverse code converters which can be selectively connected in cascade to apply the test pattern to the transmission path.

3,500,203
MOVING COIL-TYPE ELECTRICAL MEASURING INSTRUMENT HAVING MULTIPLE FIELD POLES EACH PROVIDED WITH AN ADJUSTABLE ROTARY MAGNET AND A VERNIER SLUG FOR CALIBRATION OF THE INSTRUMENT AT MULTIPLE POINTS ON THE SCALE
John W. Waterloo, Sr., 217 Richard Road, Chester, Pa. 19014
Filed Dec. 4, 1967, Ser. No. 687,581
Int. Cl. G01r 1/08
U.S. Cl. 324—151 7 Claims



This invention is essentially concerned with an electrical measuring device wherein a plurality of angularly spaced pole pieces are provided with respective adjustably locatable magnets for selectively varying the pattern of magnetic forces to calibrate a centrally mounted movable coil.

3,500,204
EQUIVALENT CIRCUIT DETERMINATION BY PULSE REFLECTOMETRY WITH COMPENSATION FOR PARTICULAR IMPEDANCES
Edgar Georg Stromer, Mannedorf, Zurich, Switzerland, assignor to SCM Corporation, a corporation of New York
Filed Oct. 13, 1966, Ser. No. 586,543
Int. Cl. G01r 27/04
U.S. Cl. 324—158 14 Claims

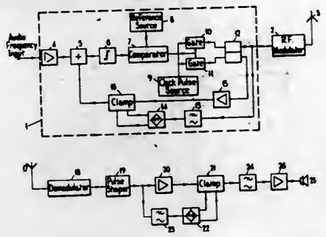


A reflectometric method for determination of values for individual elements of Giacoletto's small signal model of the equivalent circuit of a transistor is disclosed. The method requires a series of measurements with the transistor terminating different transmission lines having particular impedances. From the measurements there are established the base spreading resistance, β cut-off frequency, collector-base depletion capacitance, and (after separate, non-reflectometric determination of the base-emitter resistance), the base-emitter capacitance in Giacoletto's model.

ERRATUM

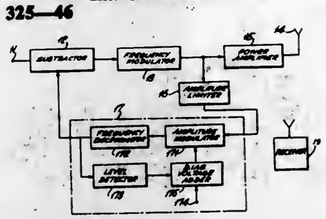
For Class 325—13 see:
Patent No. 3,500,202

3,500,205
COMMUNICATION SYSTEMS EMPLOYING CODE MODULATION
Ronald Llewelyn Trevor Tuzin-Owen, Emsworth, England, assignor to General Electric Company Limited, London, England, a British company
Filed Aug. 3, 1966, Ser. No. 570,000
Int. Cl. H04b 7/00, 1/62
U.S. Cl. 325—38 4 Claims



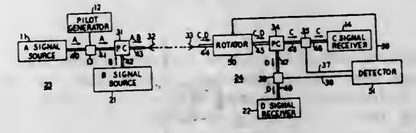
A transmitter for use in a Delta-Sigma modulation communication system wherein the dynamic range of the modulating signal which can be transmitted is increased by varying the amplitude of the pulses fed back to the differencing arrangement with and in the same sense as the level of the modulating signal as represented by the encoded signal. A receiver for use in a system using the transmitter is also disclosed.

3,500,206
ANGLE MODULATION SIGNAL COMPANDING SYSTEM
Hisashi Kaneko and Atsushi Tomonawa, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Mar. 1, 1967, Ser. No. 619,657
Claims priority, application Japan, Mar. 4, 1966, 41/13,310
Int. Cl. H04b 1/62
U.S. Cl. 325—46 4 Claims



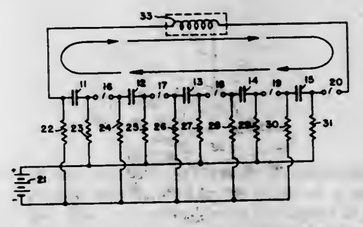
A signal transmission system including a transmitter having a frequency modulator for producing a frequency-modulated carrier wave modulated in response to the low frequency analogue signals to be transmitted. A local demodulator is provided for non-linearly expanding the low frequency analogue signal component contained as the modulating signal component in such a manner that the large amplitude component may be expanded relative to the small amplitude component, and for feeding back the expanded signal in reversed phase to the analogue signal input terminal of the frequency modulator. The local demodulator circuit comprises an amplitude modulator, a frequency discriminator, a level detector, a bias-voltage adder which negatively feeds back the low frequency analogue signal component contained as the modulating component in the modulated carrier signal after subjecting the analogue signal component to nonlinear expansion so that the high level component may be expanded and the amplitude expansion may be performed as a whole.

3,500,207
AUTOMATIC ROTATION CORRECTION FOR CROSS-POLARIZED MICROWAVE RECEPTION
Clyde L. Ruthroff, Holmdel, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Sept. 22, 1967, Ser. No. 669,795
Int. Cl. H04b 1/62, 7/10; H04l 1/08
U.S. Cl. 325—60 8 Claims



Apparatus for correcting polarization alignment with the receiving station in a microwave system in which intelligence signals are transmitted in two cross-polarizations. A pilot signal transmitted in one of the cross-polarizations is detected as an error signal in the other polarization at the receiving station and fed back to a polarization rotator which rotates the entire received signal to minimize the error. Continuous alignment of the received signal with the polarization selective components of the receiving station is maintained.

3,500,208
SPARK TRANSMITTER
Arthur F. Wickersham, Jr., Atherton, and Lambert T. Dolphin, Jr., Palo Alto, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 28, 1967, Ser. No. 619,985
Int. Cl. H04b 1/04
U.S. Cl. 325—106 2 Claims

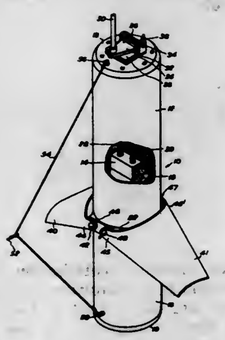


A spark transmitter having a plurality of storage capacitors and spark gaps arranged in series and in a straight line where the spark gaps are alternately positioned between the capacitors. A low inductance outer cylindrical conductor and conducting end plates enclose

and electrically connect the line of capacitors and spark gaps to provide a low inductance return current path.

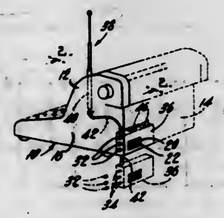
A longitudinally extending half-wave dipole is disposed between the inner and outer conductors and the opposite ends of the dipole extend through and beyond the end plates so that the outer conductor and the dipole together form a half-wave radiator of the generated power.

3,500,207
STABILIZED RADIO RESCUE BEACON
Gordon William Fletcher and Kenneth William Lee-Kemp, both of Riverside Works, Erith, Kent, England
Filed Nov. 24, 1965, Ser. No. 509,529
Claims priority, application Great Britain, Nov. 27, 1964, 48,440/64
Int. Cl. H04b *1/02*
U.S. Cl. 325—116 6 Claims



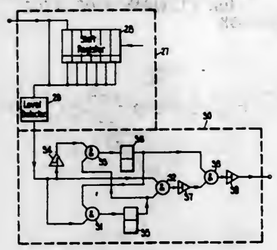
A buoyant radio rescue beacon having a battery with a transmitter powered thereby, with the transmitter and battery housed in an elongated buoy, forming a part of the beacon and a substantially rigid antenna mounted to project from the buoy. The body of the buoy is provided with stabilizing means comprising at least two paddles which are adapted to swing outwardly from the body of the buoy to full open position when the buoy falls in the water.

3,500,210
COMBINED RADIO-TYPEWRITER
Melcon Tushini, 215 E. 64th St., New York, N.Y. 10021
Filed Oct. 28, 1966, Ser. No. 596,344
Int. Cl. H04b *1/06*
U.S. Cl. 325—310 1 Claim



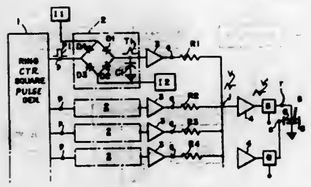
A typewriter-radio combination is disclosed in which means are provided for mounting a radio to a typewriter so that the radio can be heard and operated from externally of, but is completely housed internally of, the typewriter housing.

3,500,211
PULSE RECEIVER WHOSE OUTPUT DOES NOT RESPOND TO SIGNAL DISTORTION EXISTING DURING SHORT, INTERMITTENT PERIODS
Colin Michael Clarke, London, England, assignor to The General Electric Company Limited, London, England, a British company
Filed Mar. 29, 1966, Ser. No. 538,382
Claims priority, application Great Britain, Mar. 30, 1965, 13,834/65
Int. Cl. H04b *1/10*
U.S. Cl. 325—323 5 Claims



An apparatus for correcting errors in an electric signal in which information is conveyed by the occurrence during successive periods of nominally equal duration of one or another of two or more discrete states of an electric variable comprising: a majority vote detector arrangement and a further circuit producing an output signal which follows the output of the majority vote detector but whose output signal is inhibited from changing with the output of the majority vote detector for a predetermined period after each change in the output signal of the further circuit except those changes which occur as the result of the ending of a period of inhibition.

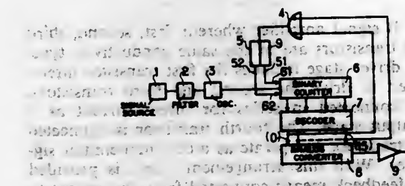
3,500,212
ELECTRICAL SIGNAL GENERATOR
Nephi Edward Berg, Peabody, Mass., assignor, by mesne assignments, to Hendrix Electronics Inc., Milford, N.H., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,583
Int. Cl. H03b *19/00*
U.S. Cl. 328—14 9 Claims



A generator of deflection waveforms for tracing the sloped traverses of alphanumeric characters on a cathode ray tube comprises a ring counter generating a plurality of equal square waveforms successively occurring at constant frequency. In each of a plurality of channels from the generator each square wave is converted by a diode bridge into a triangular pulse overlapping the successive triangular pulse in another channel. All the triangular pulses overlap a preceding or succeeding pulse by an equal interval of time. Further in each channel an attenuator network modifies the amplitude of each triangular pulse. The modified triangular pulses are all combined at a

summing junction to form the several traverses of a composite waveform which produces the horizontal or vertical deflection voltage which causes the cathode ray to trace a character on the screen of the tube.

3,500,213
SINEWAVE SYNTHESIZER FOR TELEGRAPH SYSTEMS
Albert Ameau, Paris, France, assignor to C.I.T.—Compagnie Industrielle des Telecommunications, Paris, France
Filed June 5, 1967, Ser. No. 643,525
Claims priority, application France, June 3, 1966, 64,071
Int. Cl. H03b *19/00*
U.S. Cl. 328—14 8 Claims

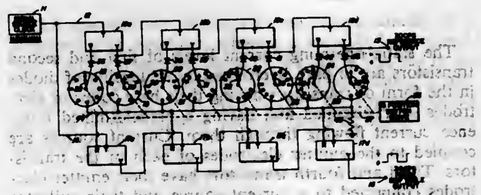


A device for synthesizing a quasi-sinusoidal wave having a frequency F comprising a pulse generator with a rate of occurrence kF, a pulse counter of which numerical content is converted by a digital-analog converter to voltages as

$$\sin \frac{2\pi}{k} i;$$

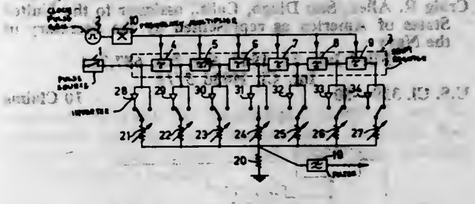
i being an integer between O and k. Practically, $k=2n$, with a counter of $(n-1)$ capacity, or $k=4p$, with a counter of $(p-1)$ capacity, cooperating with an appropriate logic.

3,500,214
REFERENCE SIGNAL AND DIGITAL SWITCH-VARIED SIGNAL GENERATOR
Samuel L. Broadhead, Jr., Huntsville, Ala., and Jerry A. Martin, Cedar Rapids, and Howard B. Rooks, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 12, 1966, Ser. No. 601,230
Int. Cl. H03k *21/32, 5/18*
U.S. Cl. 328—48 6 Claims



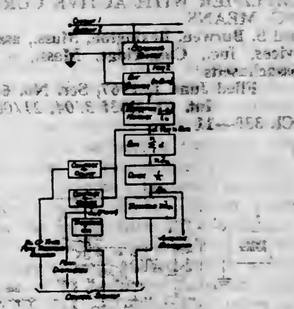
A variable phase signal generator dividing an input signal down to two output signals with a plurality of dividing flip-flop circuits in each signal path, a reference frequency path and a phase varied signal path, and with state outputs of flip-flops in the reference frequency path being switch selected for reset cycling of the phase varied signal path once each operational cycle and desired phase setting of the phase variable output relative to the reference signal output.

3,500,215
FILTER FOR DIVALENT PULSE SIGNALS
Peter Lenderink, Nootdorp, Switzerland, and Petrus Johannes van Gerwen, Hummelo, Gelderland, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 594,615
Claims priority, application Netherlands, Nov. 16, 1965, 6514831
Int. Cl. H03k *1/00*
U.S. Cl. 328—61 12 Claims



A pulse filter is described, having a pulse source coupling pulses to a shift register, each stage of the shift register being shifted by a control generator connected to the shift register. The control generator has a shift period smaller than the minimum duration of a pulse derived from a pulse source. The shift register stages each include an output attenuation network commonly connected to a device for combining the pulse signals shifted from each shift stage, the output of the combining device being the output of the pulse filter.

3,500,216
COMMUNICATION CIRCUIT MONITORING
Norman E. Petersen and Ernest E. Courchene, Jr., Norwalk, Conn., assignors to Digitech, Inc., South Norwalk, Conn., a corporation of Connecticut
Continuation of application Ser. No. 525,714, Feb. 7, 1966. This application June 10, 1969, Ser. No. 834,217
Int. Cl. H04j *11/08*
U.S. Cl. 328—163 4 Claims



A circuit for monitoring a group of communication circuits carrying information in the form of a series of pulses or bits. The monitoring circuit is coupled in passive fashion to the operating circuits for monitoring them during their regular operation without interfering with normal communication. The monitoring means includes a scanning switch that couples it successively to each of the several circuits. While connected to a circuit, the monitoring system measures the distortion of the lengths of a series of pulses. The distortion measurement may include

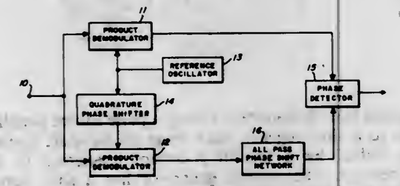
an average distortion for the group of pulses or an indication of the number of times the measured distortion for a group of pulses exceeds a predetermined amount or it also may include a measurement of the highest distortion for a pulse in the group of pulses measured. The distortion measures are connected through threshold means so that a control or alarm is operated when a preset threshold of distortion is exceeded.

3,500,217

FREQUENCY DISCRIMINATOR EMPLOYING QUADRATURE DEMODULATION TECHNIQUES

Craig R. Allen, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1967, Ser. No. 657,734
Int. Cl. H03d 3/18
U.S. Cl. 329—50 10 Claims



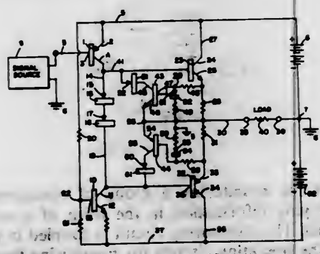
A frequency discriminator using first and second product demodulators develops first and second frequency difference signals between the input signal and a known frequency signal. A quadrature phase shift is generated between the known frequency signal received by one of the product demodulators and that received by the other product demodulator. A phase detector produces a signal as a function of phase variation between the two signals and an all-pass phase shifting means impresses a phase shift on at least one of the input signals to the phase detector commensurate with the desired response of the frequency discriminator.

3,500,218

TRANSISTOR COMPLEMENTARY PAIR POWER AMPLIFIER WITH ACTIVE CURRENT LIMITING MEANS

Richard S. Burwen, Lexington, Mass., assignor to Analog Devices, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 1, 1967, Ser. No. 642,813
Int. Cl. H03f 3/04, 21/00
U.S. Cl. 330—11 5 Claims



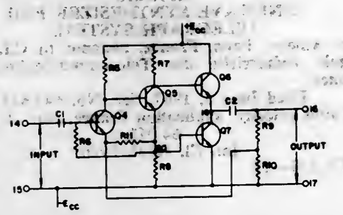
In a transistor power amplifier using a complementary pair of transistors, load current is limited by a second pair of transistors which sense the load current and clamp the input to the power transistors whenever the load current exceeds a predetermined level.

3,500,219

AUDIO AMPLIFIER

Junior L. Rhodes, Lynchburg, Va., assignor to General Electric Company, a corporation of New York

Filed Aug. 15, 1966, Ser. No. 572,464
Int. Cl. H03f 3/04
U.S. Cl. 330—14 5 Claims



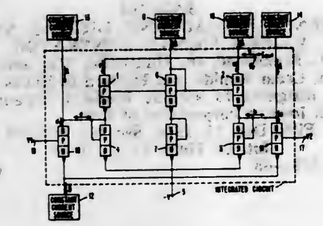
A Class B signal amplifier wherein first, second, third and fourth transistors are of the same conductivity type. A Class A driver stage includes the first transistor directly connected to drive the second and third transistors, which are connected in series for direct current as a Class B output stage. The fourth transistor is connected to the first transistor to operate as a common-emitter signal amplifier. With this arrangement, there is provided a negative feedback means connected from the output to the base of the fourth transistor. The negative feedback means stabilizes gain and improves the linearity of the amplifier.

3,500,220

SENSE AMPLIFIER ADAPTED FOR MONOLITHIC FABRICATION

Frederick Buckley, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 17, 1968, Ser. No. 698,565
Int. Cl. H03f 3/42
U.S. Cl. 330—19 7 Claims



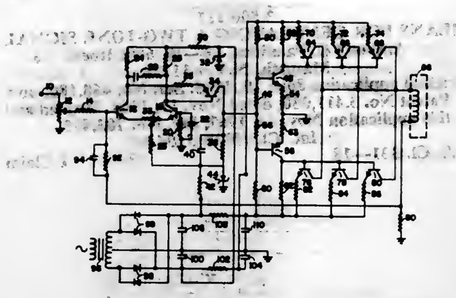
The static operating current levels of first and second transistors are in part determined by a plurality of diodes in the form of transistors having their base-collector electrodes short-circuited and having a predetermined reference current flowing through them. Current sources are coupled to the emitter electrodes of each of the transistors. Third and fourth transistors have their emitter electrodes connected to a current source and their collector electrodes connected to respective emitter electrodes of the first and second transistors. Differential input signals to the third and fourth transistors produce variations in the collector currents in the first and second transistors. The collector currents of the first and second transistors and the additional reference current source are coupled to a single output node. When a predetermined positive or negative input signal level has been exceeded, the current in the output node reverses itself to produce an output signal.

3,500,221

FAST RESPONSE CURRENT AMPLIFIER

Ernest C. Mercier, Rockville, Md., assignor to Singer-General Precision, Inc., a corporation of Delaware

Filed Jan. 16, 1968, Ser. No. 698,307
Int. Cl. H03f 3/18, 3/68
U.S. Cl. 330—17 2 Claims



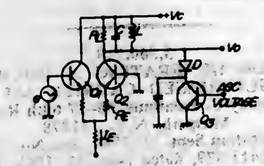
A high current output direct coupled amplifier for small signal operation in the frequency range of between D.C. and one megahertz and a large signal risetime of 12 microseconds is particularly suited for use as a cathode ray tube magnetic deflection yoke amplifier. The amplifier uses a simple nonregulated power supply and achieves linearity and stability through voltage and current feedback and compensation techniques.

3,500,222

SEMICONDUCTOR AMPLIFIER GAIN CONTROL CIRCUIT

Tokinori Kozawa, Kokubunji-shi, and Ichiro Miwa, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Sept. 13, 1967, Ser. No. 667,516
Claims priority, application Japan, Sept. 19, 1966, 41/61,390
Int. Cl. H03f 3/30
U.S. Cl. 330—29 2 Claims



This specification discloses a gain control circuit for a semiconductor amplifier, wherein a variable load impedance such as transistor, diode or the like is inserted in the load circuit of the amplifier, and said impedance is controlled by means of an AGC signal, thereby controlling the gain of the amplifier without changing various active element parameters.

3,500,223

VARIABLE GAIN AMPLIFIER CIRCUITS

Duncan P. Thurnell, 66 Hornsey Rise, London, N. 19, England

Filed Dec. 8, 1967, Ser. No. 689,180
Claims priority, application Great Britain, Dec. 15, 1966, 56,239/66
Int. Cl. H03f 3/68, 1/34
U.S. Cl. 330—30 5 Claims

A variable-gain operational amplifier circuit in which a differential amplifier provided with variable feedback impedances has its two input terminals respectively connected through two input impedances to two circuit input terminals, and a balanced capacitive bridge is so connected between the circuit-input terminals and the differential amplifier input terminals that the bridge does not pass any signal applied to both circuit-input terminals to the differential amplifier.

3,500,224

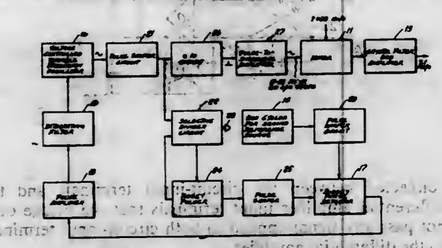
DIFFERENTIAL AMPLIFIER AND BIAS CIRCUIT ADAPTED FOR MONOLITHIC FABRICATION

James C. Greeson, Jr., Woodstock, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 17, 1968, Ser. No. 698,650
Int. Cl. H03f 3/68, 3/14
U.S. Cl. 330—30 11 Claims

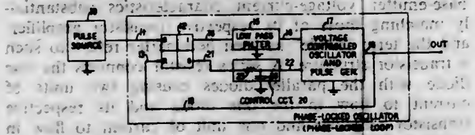
The static operating D.C. (direct current) levels in a transistor differential amplifier are determined by first and second current sources for both emitter electrodes and one of the collector electrodes respectively. The first current source includes a transistor amplifier with one diode across its base-emitter electrodes. The second current source includes a transistor amplifier with two parallel diodes across its base-emitter electrodes. Each diode must be in the form of a transistor with its base-collector electrodes short-circuited and with its base-emitter voltage-current characteristics substantially matching those of its respective transistor amplifier; and the term "diode" as used hereinafter refers to such a transistor structure. A series resistor connects the one diode with the parallel diodes causing two units of current to flow in the one diode and its respective transistor amplifier and one unit of current to flow in each parallel diode and their respective transistor amplifier. With two units of current supplied to the emitter electrodes of the differential amplifier and one unit of current supplied to said one collector electrode of the differential amplifier, one unit of current will also flow in the other collector electrode of the differential amplifier.

3,500,225
SYNTHESIZER FOR STEP OR VERNIER OPERATION
Raymond J. Rogers and Thomas B. Michaels, Rochester, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 16, 1967, Ser. No. 683,512
Int. Cl. H03b 3/04
U.S. Cl. 331—8 1 Claim



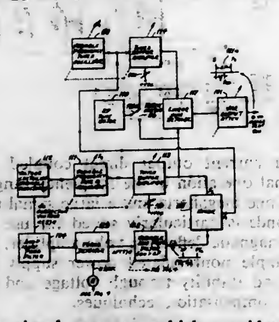
A synthesizer for use in high frequency single sideband radio equipment that is operable for tuning among several very small frequency steps of a very narrow band at very high frequency, for example, tuning among several consecutive frequency steps 100 cycles apart at about 7.1 megacycles per second and to lock in at the selected frequency step and in the alternate to tune continuously over a band of somewhat wider limits. The synthesizer includes an oscillator that is voltage tunable over a band about 10 kilocycles wide, for example, 110–119 kilocycles and is of the type that includes voltage variable capacitor means for tuning within the band. The voltage for tuning the oscillator is delivered by a flip-flop phase detector which compares a reference pulse train of one kilocycle per second, for example, and a pulse train of pulse repetition frequency that is continuously equal to the oscillator frequency divided by a selected one of several consecutive whole number division factors so as to equal one kilocycle per second. Oscillator tuning voltage coupled from the phase detector to the oscillator operates to tune and lock the frequency of the pulse train input to the flip-flop phase detector that derives from the oscillator to the frequency of the reference pulse train. The sinusoidal output of the voltage tuned oscillator is divided by ten, then mixed with a constant frequency, for example, 7.089 megacycles per second. A filter selects the sum frequency for the synthesizer output.

3,500,226
APPARATUS FOR REDUCING THE STATIC OFFSET IN A PHASE-LOCKED OSCILLATOR
Barry E. Eisenberg, Manasquan, N.J., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 17, 1968, Ser. No. 730,042
Int. Cl. H03b 3/04
U.S. Cl. 331—15 4 Claims



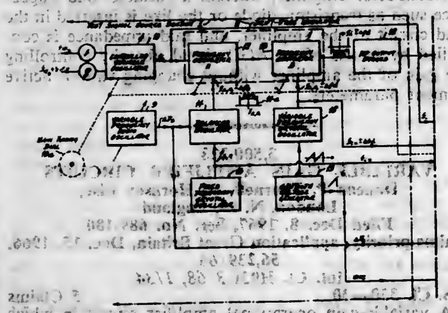
A phase-locked oscillator is disclosed having a second control path from the phase comparator to the voltage controlled oscillator. By adding a simple control circuit consisting of a resistor and a capacitor in the second path, the static offset required to match the frequency of the voltage controlled oscillator with the input frequency is reduced by a factor of two without the use of an amplifier. The only requirement is that the signal in the second path be the complement of the signal in the first path from the phase comparator so that both signals may be added by placing them across opposite ends of the control element in the voltage controlled oscillator.

3,500,227
MEANS FOR GENERATING A TWO-TONE SIGNAL
Anthony C. Palatiano, 63—17 60th Road, Maspeth, N.Y. 11378
Original application June 29, 1965, Ser. No. 468,186, now Patent No. 3,411,080, dated Nov. 12, 1968. Divided and this application Nov. 14, 1967, Ser. No. 703,495
Int. Cl. H03b 3/04
U.S. Cl. 331—18 1 Claim



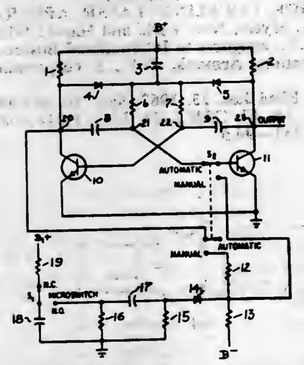
A two tone signal generator which provides auxiliary signals for a stable translation control and audio tuning operation for an intermodulation test system. The two tone test signal generator is set to have its frequency separation phase locked with respect to a reference audio frequency difference source. This reference source also generates a timed triggering signal and a fundamental signal of one-half audio frequency difference value, along with odd harmonics thereof. The trigger signal selects within a RF to IF translation, while the one-half frequency difference signal and its odd multiples are sequentially applied in a tuning process for the selective measurement of intermodulation distortion.

3,500,228
MEANS FOR GENERATING A DOUBLE SIDEBAND SUPPRESSED CARRIER AM WAVE
Anthony C. Palatiano, 63–17 60th Road, Maspeth, N.Y. 11378
Original application Sept. 11, 1964, Ser. No. 395,965, now Pat. No. 3,411,079, dated Nov. 12, 1968. Divided and this application Nov. 9, 1967, Ser. No. 704,197
Int. Cl. H03b 21/02, 23/00
U.S. Cl. 331—39 3 Claims



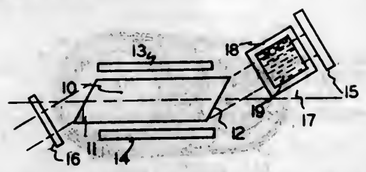
A varying signal generation arrangement that provides an RF two tone swept-in-step signal of constant audio frequency separation between the frequency varying tones. A selectable audio frequency separation is produced by the process of single tone double sideband suppressed carrier amplitude modulation. Utilizing a drift-free modulator and selection of the suppressed carrier frequency there follows a linear variation with time due to the transfer of a swept frequency excursion about its selected location.

3,500,229
MULTIMODE TRANSISTOR MULTIVIBRATOR
Douglas E. Haggan, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 22, 1967, Ser. No. 685,084
Int. Cl. H03k 3/29, 3/282
U.S. Cl. 331—59 8 Claims



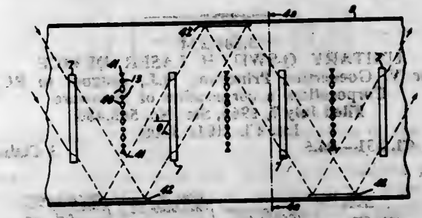
A two transistor circuit operates as either a monostable one-shot multivibrator or an astable multivibrator. In the monostable mode a source of pulses triggers the monostable multivibrator from its stable state to its astable state, and when the capacitor in the base circuit of the transistor charges sufficiently the multivibrator returns to its stable state to complete the cycle. By the addition of switch means to eliminate the source of pulses the multivibrator can also operate in the free-running or astable mode. By utilizing this invention various functions such as testing counter and logic circuits may now be performed both at high speed and manually at low speed without the necessity of building two test generators.

3,500,230
LIQUID BLEACHABLE FILTER FOR Q-SPOILING A LASER CAVITY
Peter Kafalas, Sudbury, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 30, 1965, Ser. No. 452,413
Int. Cl. G02f 1/28, 1/36; H01s 3/00
U.S. Cl. 331—94.5 1 Claim



This invention related to a Q-spoiled laser cavity utilizing a solvent having dissolved therein specific chemical compounds which are bleachable when subjected to a given level of electromagnetic wave radiation and after that are virtually transparent.

3,500,231
BREWSTER ANGLE ORIENTED END SURFACE PUMPED MULTIPLE DISC LASER DEVICE
Kiyo Tomiyasu, Scotia, and Joseph C. Almasi, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed June 29, 1965, Ser. No. 467,941
Int. Cl. H01s 3/02, 3/05, 3/09
U.S. Cl. 331—94.5 3 Claims

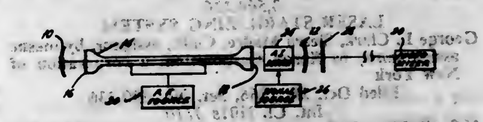


A body of solid laser material having a pair of oppositely disposed parallel and relatively large, flat end surfaces and a short longitudinal dimension is supported within a housing having a reflective inner surface with the longitudinal axis of the laser body angularly displaced from the axis of electromagnetic radiation therefrom by the Brewster angle. At least one lamp is supported within the housing for optically pumping the laser body through the end surfaces. A plurality of the laser bodies may be positioned in spaced apart relationship along the longitudinal axis of the housing, each laser body at the Brewster angle, to obtain a series circuit of the laser bodies and a resultant high energy laser beam issuing from the housing upon optical pumping of the both end surfaces of each laser body. The Brewster angle orientation substantially eliminates the air-dielectric interface reflection losses at the laser bodies.

3,500,232
SOLID STATE LASER
Joseph E. Geusic, Berkeley Heights, Leo F. Johnson, Bedminster, and Le Grand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 1, 1966, Ser. No. 539,461
Int. Cl. H01s 3/16; C09k 1/04, 1/68
U.S. Cl. 331—94.5 9 Claims

The emission intensities of fluorescent compositions containing thulium are enhanced by the incorporation therewith of ytterbium ions alone or in combination with chromium ions. Additionally, solid state lasers utilizing rare earth aluminum or gallium garnet, doped with ytterbium and thulium are found to be capable of CW room temperature operation.

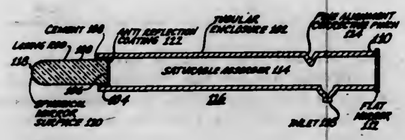
3,500,233
FREQUENCY MODULATED LASER DEVICE
Walter M. Doyle, Laguna Beach, and Matthew B. White, Newport Beach, Calif., assignors to Philco-Ford Corporation, a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,757
Int. Cl. H01s 3/00
U.S. Cl. 331—94.5 8 Claims



A laser system comprising a discharge tube shaped so as to permit generation of a plurality of oscillation sig-

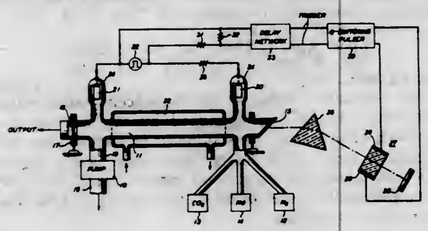
nals which have respectively different frequencies and different planes of polarization, and a light transmissive device which exhibits a signal-controlled anisotropy and through which light generated within the discharge tube (i.e., the oscillation signals) is passed. The light transmissive device, which can be a test sample, is responsive to an input signal to change the difference in the respective frequencies of the differently polarized oscillation signals exiting the laser.

3,500,234
UNITARY Q-SWITCH LASER DEVICE
Peter V. Goedertier, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed July 7, 1966, Ser. No. 563,486
Int. Cl. H01s 3/00
U.S. Cl. 331—94.5 3 Claims



The entire laser, with the exception of the pumping means, is made in the form of a single unitary structure having only one interface between materials of different indices of refraction. This makes for a more accurate, efficient laser; in addition to providing mechanical stability without a heavy base and providing complete prealignment of the laser.

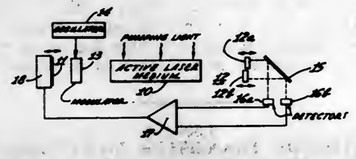
3,500,235
Q-SWITCHED MOLECULAR LASER
Chandra K. N. Patel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 22, 1966, Ser. No. 581,312
Int. Cl. H01s 3/09, 3/11, 3/22
U.S. Cl. 331—94.5 1 Claim



A pulsed single-frequency molecular laser is disclosed in which an increased rate of pulsing is provided by modulating the loss of the resonator with a period of the order of the thermalizing constant of the rotational energy levels of the molecular medium.

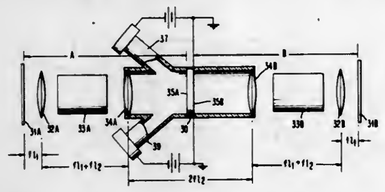
3,500,236
LASER STABILIZING SYSTEM
George L. Clark, Sierra Madre, Calif., assignor, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,336
Int. Cl. H01s 3/10
U.S. Cl. 331—94.5 9 Claims

Two pairs of reflectors cooperating with a laser active material establish two laser cavities of differing lengths. They are mode-locked to intermode frequency separation corresponding to the average value of the two lengths.



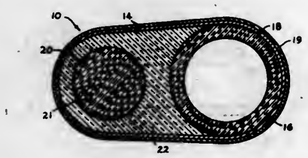
The output of the two cavities are compared and any difference is used to vary the length of the two cavities in unison.

3,500,237
MODE COUPLING LASER APPARATUS
Robert A. Myers, New York, and Harold Wieder, Mahopac, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,049
Int. Cl. G02f 1/28, 1/36; H01s 3/00
U.S. Cl. 331—94.5 4 Claims



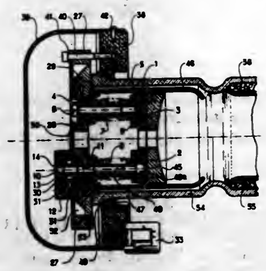
Through localized control (by means of an electron beam) over the index of refraction of an electro-optic crystal, such as KDP, fabricated into an etalon, small volumes thereof may be selectively rendered transmissive or reflective. When the etalon forms an end mirror of an angularly degenerate flat-field laser cavity the cavity gain necessary to support stimulated emission may be angularly oriented along any one of many possible axes so as to produce a flying spot generator. By interposing the etalon, which is itself a resonant cavity, between two laser cavities, for which the reflecting surfaces of the etalon act as end mirrors, the two cavities may be selectively mode coupled.

3,500,238
LASER ASSEMBLIES AND THE LIKE
Wilfred P. Bazinet, Jr., Webster, Mass., and Charles Gilbert Young, Sturra, Conn., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,704
Int. Cl. H01s 3/00
U.S. Cl. 331—94.5 2 Claims



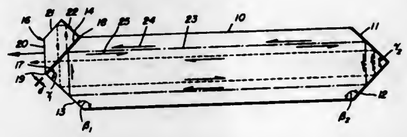
Laser assembly employing rod-like component of laser glass embedded within cladding glass which partially surrounds flash tube and providing high operating efficiencies and good heat conductivity and dissipation.

3,500,239
HEAD FOR GASEOUS FLUX MOLECULAR LASER
Charles Frappard, Verrieres-le-Buisson, Maurice Roulot, Orsay, and Albert Brule, Issy-les Moulineaux, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed Aug. 17, 1967, Ser. No. 661,296
Claims priority, application France, Aug. 19, 1966, 73,626
Int. Cl. H01s 3/22
U.S. Cl. 331—94.5 10 Claims



A head for a gas laser including a thick plate supporting an annular electrode, a mirror surrounded by the electrode and adjusting means for the mirror operable from the external side of the plate. In the interior of the plate there is provided an annular cavity for circulating cooling fluid, and a channel which may be connected to a gas supply.

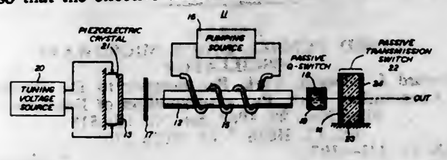
3,500,240
SIMPLE TRAVELING WAVE LASER USING TOTAL-INTERNAL-REFLECTION RESONATOR
Bernard V. Kessler, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 30, 1964, Ser. No. 414,924
Int. Cl. H01s 3/05
U.S. Cl. 331—94.5 6 Claims



An optical maser system which utilizes a total-internal-reflection resonator in which oscillation begins in circulatory counter-rotating modes and in which energy is coupled from one such mode into a competing, oppositely rotating mode such that the former has less gain and the latter more gain per round trip, with the result that only the mode with greater gain appears in the output of the system.

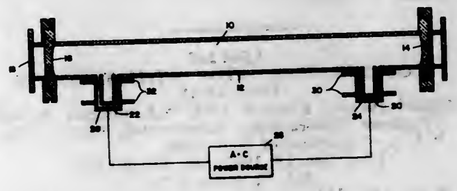
3,500,241
ARRANGEMENT FOR PASSIVE TRANSMISSION PULSING OF A Q-SWITCHED LASER
John E. Bjorkholm, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,270
Int. Cl. H01s 3/16
U.S. Cl. 331—94.5 3 Claims

There is disclosed a Q-switched laser including passive means, including a saturable absorber, for pulsing the output transmission of the laser after a Q-switched pulse has started. The transmission pulsing means, or transmission switch, disposes the saturable absorber between a pair of closely spaced reflectors, one of which is a reflector of the primary laser resonator. The other is disposed to feed back coherent light in interfering phase relationship at the reflective surface of the first reflector so that the effective transmission of the two reflectors in



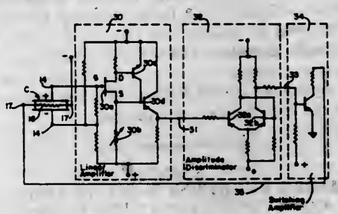
combination is higher than the transmission of the first reflector. The destructively-interfering feedback does not begin to build up until just before a Q-switched pulse reaches its maximum intensity because of the properties of the saturable absorber in the passive transmission switch.

3,500,242
STATIC CO_2 GAS LASER
Donald S. Young, Windham, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,321
Int. Cl. H01s 3/02, 3/09
U.S. Cl. 331—94.5 3 Claims



A sealed gas chamber spaced from the chamber wall a distance less than the mean free path of the gaseous ions of the lasing material to thereby reduce the sputtering of electrode material onto the chamber walls. Alternatively, a magnetic field is applied to the electrodes to deflect any ions which may be sputtered back toward the electrodes.

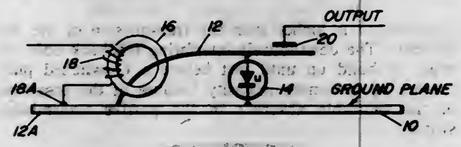
3,500,243
THERMODIELECTRIC OSCILLATOR
Herbert S. Polin, 1255 Veyrier, Geneva, Switzerland
Filed Apr. 26, 1968, Ser. No. 724,464
Int. Cl. H03b 5/12, 19/14
U.S. Cl. 331—107 9 Claims



An oscillator is provided operative to produce a precise, relatively low frequency signal. The oscillator comprises a cell containing a solid dielectric material associated with a controllable heat source adapted to cycle

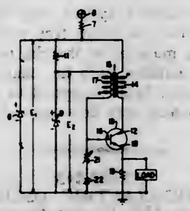
the dielectric material between a solid state and a liquid or intermediate state. The changes in the physical state of the dielectric produce a varying electric charge across the cell, and the charge modification is coupled to an electronic circuit operative to control the cell heat source.

3,500,244
PULSED TUNNEL DIODE MICROWAVE OSCILLATOR
Edward J. Gleason, York, Pa., assignor to The Bendix Corporation, York, Pa., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,518
Int. Cl. H03b 7/14; H01p 3/08
U.S. Cl. 331—107 6 Claims



A pulsed tunnel diode microwave oscillator without dropping or bias resistors for use with stripline circuits. A resonant line center strip is returned to ground through a ferrite toroid having several turns of wire to form a step-down transformer. The tunnel diode is connected between the resonant line and ground. Driving pulses delivered to the toroid transformer will cause the electrical oscillations to appear on the resonant line at its resonant frequency.

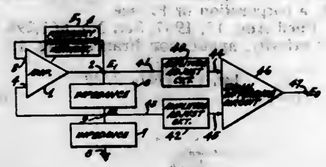
3,500,245
BLOCKING OSCILLATOR WITH MINIMUM OFF TIME
Michael Parente, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 19, 1967, Ser. No. 691,806
Int. Cl. H03k 3/30
U.S. Cl. 331—112 3 Claims



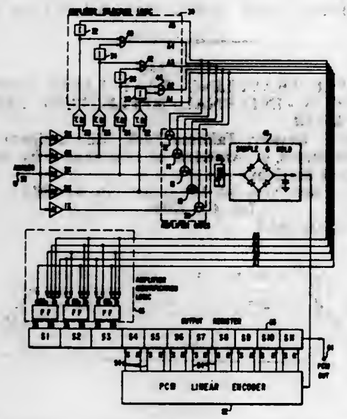
In a blocking oscillator, a Zener diode is connected in the oscillator driving network to provide a constant voltage which opposes the voltage induced in the base winding of the oscillator transformer during the transistor's cut-off interval to enable the reduction of this interval to a minimum duration. The series combination of a diode and a resistor completes a reset path for the base winding current during the cut-off interval to allow separate adjustment of the cut-off interval duration.

3,500,246
VARIABLE FREQUENCY OSCILLATOR WITH CONSTANT AMPLITUDE OUTPUT
Richard E. Werner, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed July 26, 1968, Ser. No. 747,909
Int. Cl. H03b 3/02, 5/26
U.S. Cl. 331—140 10 Claims

A technique for providing a substantially constant amplitude output voltage over the entire frequency range of a variable frequency oscillator of the type having an automatic gain control feedback circuit. The constant output voltage is obtained by adjusting the relative magnitudes of voltage signals derived from the oscillator output and from the gain control feedback circuit and differentially combining the adjusted signals to form the output voltage.



3,500,247
NON-LINEAR PULSE CODE MODULATION WITH THRESHOLD SELECTED SAMPLING
Tadahiro Sekimoto, Tokyo, Japan, and William G. Schmidt, Rockville, Md., assignors to Communications Satellite Corporation, a corporation of Washington, D.C.
Filed Jan. 8, 1968, Ser. No. 696,185
Int. Cl. H03k 7/00
U.S. Cl. 332—11 7 Claims

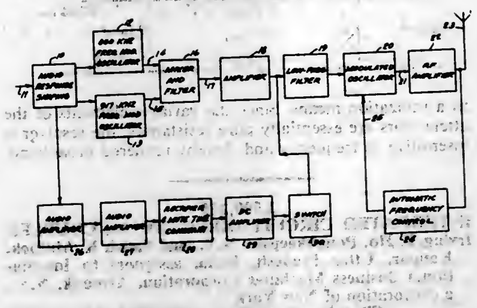


A pulse code modulator having a plurality of parallel amplification channels with sequentially increasing gains. The output of the amplifier having the highest gain not exceeding a predetermined maximum is gated to a sample and hold circuit whose output feeds a linear PCM encoder. Bits identifying the selected amplifier channel are added to the encoder output.

3,500,248
LOW FREQUENCY MODULATION NETWORK
Hardin G. Strattman, Quincy, Ill., assignor to Gates Radio Company, Quincy, Ill., a corporation of Illinois
Filed Mar. 8, 1967, Ser. No. 621,605
Int. Cl. H03c 3/00
U.S. Cl. 332—23 10 Claims

An FM exciter having an audio driver circuit connected in a push-pull manner to two high frequency oscillators, each of said oscillators being preset to a center frequency, such that the difference frequency between the

oscillators is the desired sub-carrier frequency, and wherein the push-pull driver circuit modulates the two oscillators, one in a positive direction for increasing the frequency thereof, and the other in a negative direction for decreasing the frequency thereof, and wherein the



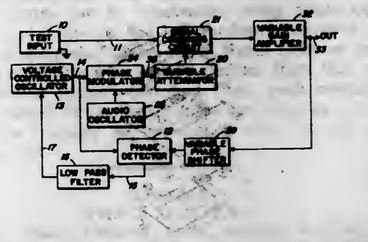
output of the two modulators are combined in a mixer network for generating sum and difference frequencies, and wherein means are provided to recover the difference frequency and utilize that signal as the desired modulated sub-carrier signal.

3,500,249
FREQUENCY MODULATED SIGNAL GENERATOR
Irving Kaufman, Tempe, Ariz., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 14, 1967, Ser. No. 660,277
Int. Cl. H03c 3/12
U.S. Cl. 332—29 4 Claims

A variable resonant tank circuit is connected to a modulating signal source so that the resonant frequency of the tank circuit varies as a function of the input modulating signal. A broadband filter network is connected by means of an energy storage element, such as a varactor, to the variable resonant tank circuit. The energy storage element is pumped at a pump frequency which remains substantially constant. The signal from the filter network is then equal to the difference between the pump frequency and the modulated frequency of the tank circuit.

3,500,250
CARRIER SUPPRESSION SYSTEM FOR SPECTRUM ANALYSIS
Marvin E. Frerking, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 6, 1967, Ser. No. 620,867
Int. Cl. H03c 1/52
U.S. Cl. 332—44 6 Claims

A system for enhancing spectral analysis of a composite signal of carrier and sideband energies. A regenerated equal amplitude and phase-locked carrier signal is combined with the composite input to effect cancellation of carrier signal components without affecting sideband levels. The signal resulting from the combination may be employed advantageously as feedback in a phase-locked



loop controlling the frequency of the regenerated carrier signal to effect amplitude nulling of the input and the regenerated carrier frequency components.

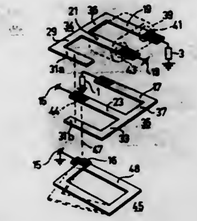
3,500,251
WIDE BAND LOG PERIODIC SLOT RF SWITCH
George M. Peace, Oak Park, Mich., assignor to Chain Lakes Research Associates, Inc., Detroit, Mich., a corporation of Michigan
Filed Sept. 12, 1967, Ser. No. 667,252
Int. Cl. H01p 5/12, 1/10
U.S. Cl. 333—7 6 Claims

A wide band RF switch for coupling a frequency independent input waveguides to either one of two frequency independent output waveguides, and having an array of log periodic resonant slots between the input waveguide and each of the output waveguides. RF switching devices, such as PIN diodes, are disposed in each slot and means are provided for turning all the switching devices of one slot array on while all the switching devices of the other slot array are turned off, and vice versa.

3,500,282
SIGNAL SPLITTER COMPRISING AN AUTOTRANSFORMER HAVING FLAT WINDINGS
Bastiaan Petrus Johannes Webster, Eindhoven, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,662
Claims priority, application Netherlands, Feb. 1, 1967, 6701517
Int. Cl. H01p 5/12
U.S. Cl. 333—8 7 Claims

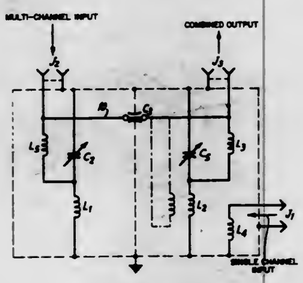
A device for coupling a high-frequency voltage source to a pair of independent loads includes first and second thin flat metal winding components each having a pair

of parallel limbs and a transverse leg interconnecting corresponding ends of the limbs. The winding components are mounted in two parallel bores in a ferrite block from opposite sides with the limbs oppositely directed



and overlapping. At least one winding component has a branch extending outside of the ferrite block and electrically interconnecting the transverse legs of the two winding components.

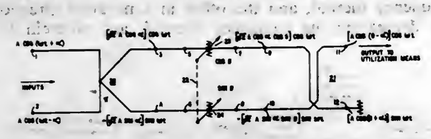
3,500,253
UHF DIRECTIONAL MIXER
Joseph G. Opryako, Philadelphia, Pa., assignor to Jerrold Electronics Corporation
Filed Jan. 23, 1968, Ser. No. 699,817
Int. Cl. H01p 5/12
U.S. Cl. 333—9 6 Claims



A two-cavity type network tunable over the UHF TV band for coupling a 6 mHz. wide UHF channel with other UHF TV signals. The first cavity which includes a resonant LC circuit tuned to reject the specific 6 mHz. signal, is fed with the other UHF signals to be mixed. The second cavity comprises an LC network tuned to band-pass the specific 6 mHz. signal and is fed with that signal. The first and second cavities are connected by a short piece of transmission line and the output signal is taken from the second cavity.

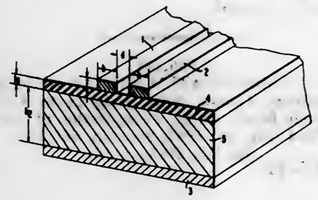
3,500,254
MICROWAVE ANGLE RESOLVER
Robert L. Mattingly, Morristown, and William W. Mumford, Parsippany-Troy Hills Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 15, 1967, Ser. No. 690,961
Int. Cl. H01p 5/14
U.S. Cl. 333—10 5 Claims

A broadband angle resolver employing directional coupler and hybrid junction devices interconnected through variable attenuators. The attenuators introduce voltage transmission coefficients proportional to functions of an arbitrary angle and when this arbitrary angle is made equal to the phase angles of alternating signals received by the resolver, the voltage at one output port of the resolver will reach a maximum while the voltage at another output port will reach a null. The output from the null port is used to automatically control the attenuators while the maximum output from the other port is applied



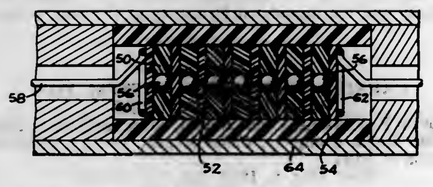
to a utilization means. Since the variable elements of the attenuators are essentially pure resistances, the resolver is insensitive to frequency and thereby rendered broadband.

3,500,255
INTEGRATED CIRCUIT DIRECTIONAL COUPLER
Irving T. Ho, Poughkeepsie, N.Y., and Satish K. Mullick, Kanpur, Uttar Pradesh, India, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 8, 1968, Ser. No. 726,269
Int. Cl. H01p 5/14
U.S. Cl. 333—10 7 Claims



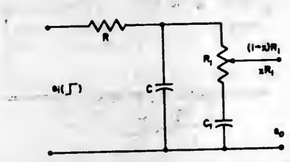
An integrated circuit directional coupler having two conducting lines separated from a semiconductor layer by an insulating coating on the semiconductor layer. A conducting ground plane is situated on the other side of the semiconductor. Coupling from one line to the other allows a small, efficient, directional coupler to be constructed based on the transmission line.

3,500,256
POWER LIMITER COMPRISING A CHAIN OF FERRITE-FILLED DIELECTRIC RESONATORS
Philip S. Carter, 221 Iris Way 94303, and Robert A. Craig, 4017 Manzana Lane 94306, both of Palo Alto, Calif.
Continuation-in-part of application Ser. No. 604,488, Dec. 23, 1966. This application Feb. 19, 1968, Ser. No. 712,319
Int. Cl. H04b 3/04
U.S. Cl. 333—17 1 Claim



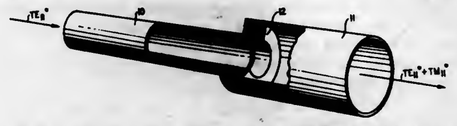
A method of and apparatus for limiting radio frequency power utilizing the absorption properties of ferrite materials wherein one or a series of ferrite spheres are exposed to the radio frequency fields intensified by dielectric materials or equivalent field intensifiers.

3,500,257
PASSIVE R-C INTEGRATOR WITH ESSENTIALLY LINEAR OUTPUT
Dean L. Mensa, 954 Ann Arbor Ave., Ventura, Calif. 93003
Filed Mar. 20, 1967, Ser. No. 624,619
Int. Cl. H03r 6/04
U.S. Cl. 333—19 1 Claim



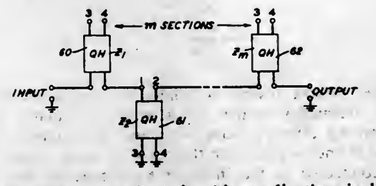
An electrical circuit for improving the linearity of response of a standard R-C network to an applied step function or square wave. By adding a potentiometer and a capacitor connected "in cascade" across the output of a conventional integrator, a signal can be obtained from the movable arm of the potentiometer which more closely approximates a linear function, especially at low output amplitudes.

3,500,258
WAVE MODE CONVERTER
Elliott R. Nagelberg, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 18, 1968, Ser. No. 784,645
Int. Cl. H01p 1/16, 5/08
U.S. Cl. 333—21 2 Claims



A straight waveguide structure is disclosed with a portion of the structure having a first inside diameter and the remainder of the structure having a second inside diameter to form a circularly symmetric discontinuity. This structure includes an annularly shaped dielectric member in the larger diameter portion immediately adjacent to the discontinuity. In use, the structure converts energy in the $TE_{11}°$ mode into energy in the $TE_{11}°$–$TM_{11}°$ dual mode.

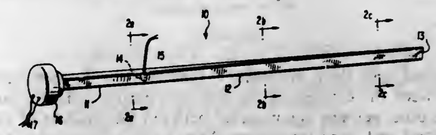
3,500,259
FILTER CIRCUITS USING ALTERNATE OPEN- AND SHORT-CIRCUITED 3 db QUADRATURE HYBRIDS
Harold Seidel, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,649
Int. Cl. H03h 5/06, 7/10
U.S. Cl. 333—26 4 Claims



The invention described in this application is based upon the recognition that an open-circuited 3 db quadrature hybrid is equivalent to one or more suitably spaced, series-connected circuits, series resonant at the 3 db coupling frequency of the hybrid, whereas a short-circuited 3 db quadrature hybrid is equivalent to one or more suitably spaced shunt-connected circuits, parallel resonant at the hybrid's 3 db coupling frequency. As such, entire filter structures can be constructed using solely open-circuited and short-circuited 3 db quadrature couplers.

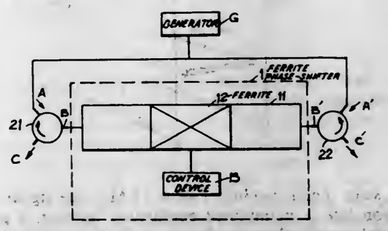
Because the phase of the output signal from an open-circuited coupler differs by 180 degrees from that of a short-circuited coupler, two dual filters, each containing an odd number of couplers, can be employed as a transformer for coupling an unbalanced signal source to a balanced load.

3,500,260
PHASE SHIFTERS
James E. White, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed June 9, 1964, Ser. No. 373,684
Int. Cl. H03h 7/30
U.S. Cl. 333—30 11 Claims



A reflecting transmission line having a taper according to the equation $k=K(\sin A)^p$ phase shifts multiple frequencies of a composite signal the same amount. The parameter, k, which is tapered is varied in accordance with the sin A where A is proportional to the distance from the reflecting end.

3,500,261
BIDIRECTIONAL FERRITE PHASE SHIFTER UTILIZING NONRECIPROCAL PHASE SHIFTING MEANS
Thai Ngo Hai, and Henri-Francois Bernadet, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Apr. 26, 1968, Ser. No. 724,339
Claims priority, application France, May 5, 1967, 105,370
Int. Cl. H03h 7/20; H01p 5/14
U.S. Cl. 333—31 1 Claim

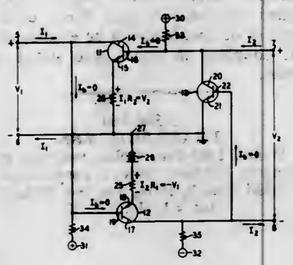


A bidirectional phase shift arrangement comprising a nonreciprocal ferrite phase shift element located within a waveguide and two three-channel circulators, whose directions of circulation are mutually opposite at the ends of the waveguide.

3,500,262
NONRECIPROCAL GYRATOR NETWORK
Richard W. Daniels, Andover, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey
Filed Oct. 15, 1968, Ser. No. 767,662
Int. Cl. H01p 1/24, 1/32
U.S. Cl. 333—80 3 Claims

A basic two-port gyrator circuit is disclosed having three transistors and two resistors. One port has one terminal

at a collector-base connection of the first and second transistors and another terminal at the emitter of the third transistor, and the other port has one terminal at a base-collector connection of the first and third transistors and another terminal at a base-collector connection of the



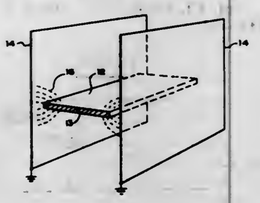
second and third transistors. One resistor is connected between the emitters of the first and third transistors, and the other resistor is connected between the emitters of the second and third transistors. The circuit arrangement disclosed is capable of simulating high quality inductors.

3,500,263

PARALLEL-PLATE PERPENDICULAR STRIP CENTER CONDUCTOR TEM-MODE TRANSMISSION LINE APPARATUS

Stephen F. Adam, Richard W. Anderson, and David R. Veteran, Los Altos, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 16, 1967, Ser. No. 661,114
Int. Cl. H01p 3/06, 3/08
U.S. Cl. 333—84 9 Claims



A strip center conductor of a TEM-mode signal transmission line is maintained equidistant between a pair of parallel ground plane conductors with the major axis of its cross section perpendicular to said ground planes and the strip conductor is selectively positionable between the conductors to serve as a delay line or switch contact element.

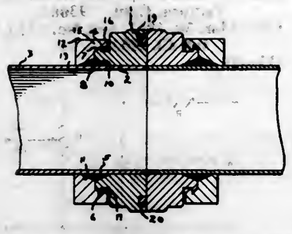
3,500,264

CONNECTION MEANS FOR WAVEGUIDE MEANS

Edwin Floyd, Jr., Lower Paxton Township, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation-in-part of application Ser. No. 429,722, Feb. 2, 1965. This application Nov. 8, 1966, Ser. No. 592,767
Int. Cl. H01p 1/04
U.S. Cl. 333—98 23 Claims

The invention relates to means for connecting together sections of tubular members, such as waveguides, without soldering, welding or brazing. Such connecting means includes clamp means which is disposed on the parts to



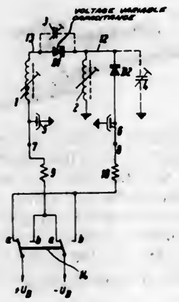
be connected, such clamp having securing means therefor and holds the members in alignment.

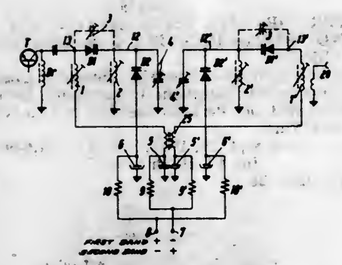
3,500,265

ELECTRICAL CIRCUIT CAPABLE OF OSCILLATING IN A PLURALITY OF DIFFERENT FREQUENCY REGIONS COMPRISING A PLURALITY OF CAPACITIVE DIODES

Ernst Klettke, Hannover, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm, Danube, Germany

Filed Oct. 27, 1967, Ser. No. 678,653
Claims priority, application Germany, Nov. 7, 1966, T 32,458
Int. Cl. H03j 3/06
U.S. Cl. 334—15 7 Claims





The present invention relates to tuning devices for large frequency ranges or separate frequency ranges, comprising capacity diodes attached to an inductor which remains unchanged when the device is being tuned. There are connected to the inductor by means of said diodes additional reactances for achieving predetermined frequency ranges so that a diode being switched to a conducting condition is shunting the relevant additional reactances whereas another diode being switched to a non

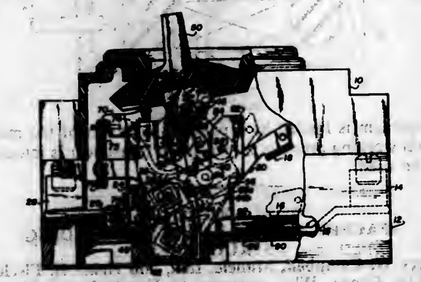
conducting condition thereby tuning a resonant circuit consisting of the inductor, the non conducting diode and additional reactances relevant to said diode. By means of a switch the conditions for said diodes are interchangeable.

3,500,266

HIGH-SPEED CIRCUIT BREAKERS

John De Torre, Albemarle, N.C., assignor to Federal Pacific Electric Company, Newark, N.J., a corporation of Delaware

Filed Aug. 1, 1968, Ser. No. 749,517
Int. Cl. H01h 75/08, 77/04
U.S. Cl. 335—16 24 Claims



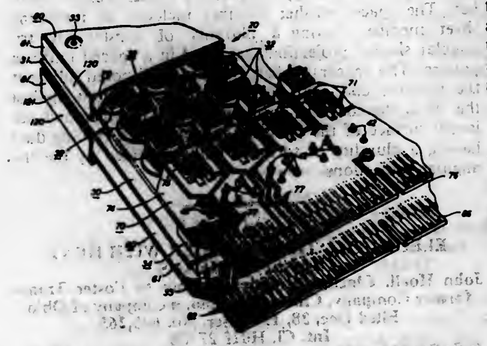
A circuit breaker wherein a moveable contact arm moves between closed and alternative open circuit positions. A releasable means supports said contact arm at one end for pivotal movement between said closed position and a first open position. A toggle pivotally connects said contact arm intermediate the ends thereof for moving said contact arm between said closed position and said first open position. Means are supplied for biasing said contact arm for pivotal movement about said toggle pivotal connection to a second open circuit position when the releasable means releases the supported end of said contact arm, said contact arm moving to said second open position without collapsing the said toggle.

3,500,267

FERREED SWITCH HAVING PRINTED CIRCUIT BOARD WIRING

Norman Wasserman, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 28, 1968, Ser. No. 732,608
Int. Cl. H01h 67/14
U.S. Cl. 335—112 20 Claims



A ferreed switch having a shunt plate assembly is wired in a standard pattern, partially assembled by simultaneously positioning all of the reed switches with a magnetic jig, and located between two printed circuit boards is housed in a protective cover and equipped with lever arms adapted to facilitate installation in an operating environment. The shunt plate assembly and printed circuit boards are assembled so that at each crosspoint a coil support in the shunt plate assembly is in register with a set of small holes in one printed circuit board and a large hole in the other. Moreover, each coil support is sealed at one end, internally divided into compartments by a separator, and perforated by a lead hole in each compartment. Finally, each reed switch in the coil supports is located in a separate compartment, has been positioned so that its airgap is in register with a magnetically conducting portion of the shunt plate assembly, has one lead extending through a lead hole in the coil support to a point of attachment in a small hole in one printed circuit board, and has the other lead extending through a large hole in the other printed circuit board to a point of attachment with a flexible locating tab.

3,500,268

CENTER STABLE RELAY STRUCTURE

Theodore M. Krimmer, Osceola, and Clayton M. Emmons, Elkhart, Ind., assignors to The Adams & Westlake Company, a corporation of Illinois

Filed Jan. 31, 1969, Ser. No. 795,651
Int. Cl. H01h 51/28, 1/66
U.S. Cl. 335—153 8 Claims



An electrical relay with the magnetic flux from magnetic circuitry arranged to hold a switch armature between and out of contact with a pair of pole pieces. A magnetic flux conductor couples magnets associated with the armature stem and pole pieces to provide good operating sensitivity and a center stable nonenergized position. Flux from an electrical coil unbalances the permanent magnet flux to cause selective contact between the armature and one or the other of the pole pieces.

3,500,269

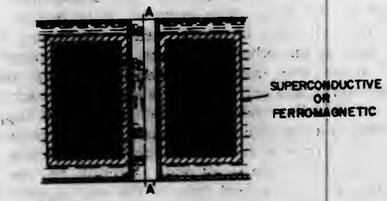
ELECTRON LENS UTILIZING SUPERCONDUCTIVE COILS FOR AN ELECTRON MICROSCOPE OR THE LIKE

Shigeo Kataoka, Kawasaki-shi, Osamu Kamiya, Kawasaki-shi, Hirokazu Kimura, Kawasaki-shi, and Tadao Doi and Hideki Kimura, Tokyo-to, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan

Filed June 9, 1967, Ser. No. 644,845
Claims priority, application Japan, June 10, 1966, 41/37,983
Int. Cl. H01j 7/00, 7/22, 1/00
U.S. Cl. 335—210 12 Claims

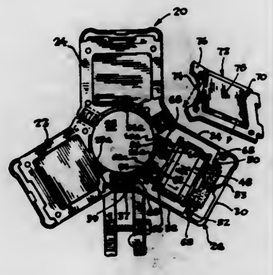
An electron lens having a construction in which plural numbers of superconductive coils are used, and at least

one of said coils is made to provide a persistent current condition, and further, the current flowing in the other



coils is controlled, thereby varying the focal length of said lens.

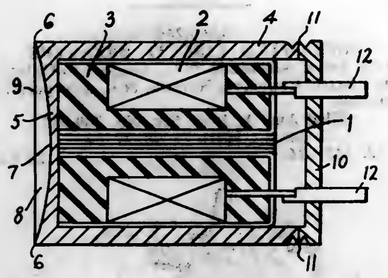
3,500,270
ADJUSTABLE MOUNTING MEANS FOR A CONVERGENCE ASSEMBLY
Albert M. Anthony, Conneaut, Ohio, assignor to Walker Kidde Company, Incorporated, Geneva, Ohio, a corporation of New York
Filed Apr. 3, 1968, Ser. No. 718,403
Int. Cl. H01j 29/70
U.S. Cl. 335—212 11 Claims



A convergence assembly having adjustable features to permit secure mounting on necks of varying diameters of cathode ray tubes. A three-part housing is used to hold the three coils normally used with a tri-gun tube. Each part is separated 120° from its adjoining parts, and the parts are separable to a limited degree to vary the diameter of a central bore defined by the inner ends of the parts. Arcuate sections project from the perimeter of the bore and are engageable with an annular member which securely clamps the convergence assembly around the neck of a given diameter of a tube. The arcuate sections and the annular member are provided with means to enhance the clamping operation.

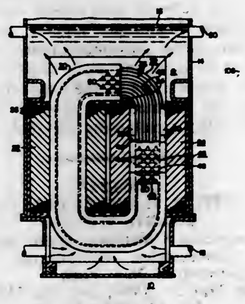
3,500,271
PRESSURE TRANSDUCERS
Heinrich Strauch, Leamington Spa, England, assignor to Associated Engineering Limited, Leamington Spa, England, a British company
Filed Jan. 12, 1968, Ser. No. 697,434
Claims priority, application Great Britain, Jan. 20, 1967, 3,091/67
Int. Cl. H01f 21/02, 27/02; G01l 9/00
U.S. Cl. 336—30 5 Claims

This invention provides a pressure transducer which produces variations in an electrical output signal in response to variations in applied pressure and of the type in which a pressure sensitive diaphragm is spaced from the active face of the transducer. According to the invention, the active face is shaped so as to be contacted by the diaphragm without rupture of the diaphragm, when said



diaphragm is loaded by a pressure in excess of the maximum working pressure at which the transducer is intended to be used.

3,500,272
SPACERS FOR ELECTRICAL WINDING STRUCTURES
Larry W. Campbell, Muncie, Ind., and Heinz G. Fischer, Elm Grove, Wis., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1968, Ser. No. 724,703
Int. Cl. H01f 27/08, 27/30
U.S. Cl. 336—60 11 Claims

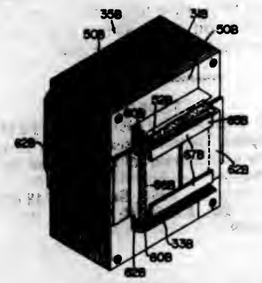


A winding structure for electrical inductive apparatus, including a pancake type coil and a spacer washer member. The spacer washer member includes an insulating sheet member having a plurality of substantially triangular shaped projections arranged in a spaced uniform pattern. The spacer washer member is disposed adjacent the pancake coil, with its triangular projections against the turns thereof. The insulating sheet member and adjacent surface of the pancake coil provide a cooling duct having a plurality of tortuous paths provided by the triangular projections.

3,500,273
ELECTRICAL TRANSFORMER WITH HEAT TRANSFER MEANS
John Hoell, Cincinnati, Ohio, assignor to Foster Transformer Company, Cincinnati, Ohio, a company of Ohio
Filed Dec. 28, 1966, Ser. No. 605,265
Int. Cl. H01f 27/08
U.S. Cl. 336—61 15 Claims

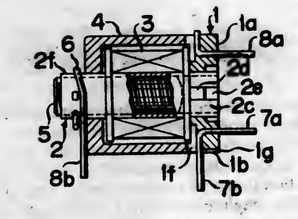
This disclosure relates to improved electrical transformer means includes a metal cone means which has

heat transfer surface means for transferring heat outwardly from within electrical coil means of such transformer means to thereby provide optimum electrical performance and to an improved method of making such transformer means and associated coil means. The electrical coil means is supported by the core means and has



a plurality of winding layers arranged outwardly of the heat transfer surface means. The coil further had slot means therein between a pair of layers and a heat transfer means in the slot means, on the heat transfer means has direct contact with the heat transfer surface means of the core.

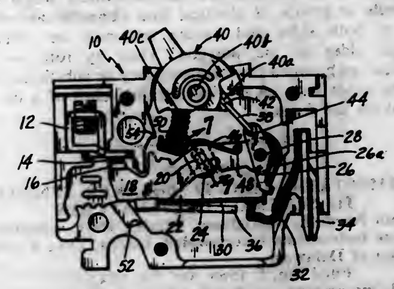
3,500,274
VARIABLE INDUCTOR
Toshiro Matsuura, Iwata-shi, and Shuji Muraki, Hamamatsu-shi, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan, a corporation of Japan
Filed Nov. 4, 1968, Ser. No. 772,950
Int. Cl. H01f 15/02
U.S. Cl. 336—65 7 Claims



A variable inductor involves a base having two mutually perpendicular faces, a plurality of L-shaped terminal members having their bent portions moulded in said base, each member having its legs projecting from said faces respectively, and two auxiliary legs disposed in a direction parallel to said first mentioned legs, the respective groups of which are positioned on each of said perpendicular faces, so that all said mutually parallel legs fixedly secure said base on a fitting panel.

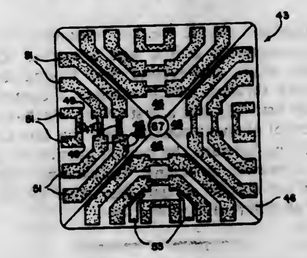
3,500,275
AUTOMATIC CIRCUIT BREAKERS
John J. Oravec, Union, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,042
Int. Cl. H01h 71/16
U.S. Cl. 337—75 8 Claims

An automatic circuit breaker having an elongated movable contact arm. A current responsive latch and an actuator are carried by the movable contact arm. One end of a resilient lever acts on the contact arm at a point between the pivot of the actuator and the main pivot of the contact arm itself. The resilient lever extends over a fulcrum; and the compression coil spring acts between the opposite end of the resilient lever and part of the operating handle. During the closing operation, the handle



and its connecting toggle link gradually approach their erect condition and the handle applies progressively increasing compression on the coil spring which in turn transmits contact-closing bias to the contact arm via the resilient lever.

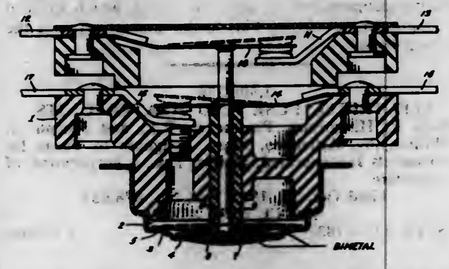
3,500,276
ELECTRICAL FUSE AND HEATER UNITS
Ashok R. Hingorany, Pawtucket, R.I., and Joseph A. Willoughby, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 678,053
Int. Cl. H01h 85/02
U.S. Cl. 337—183 2 Claims



A comparatively thick stiffening and in some cases deformable metal backing layer, which may also be thick enough to function as a substantial heat sink, has bonded thereto a comparatively thin etch-resistant electrically insulating polymer layer. Aluminum is used for the backing layer when corrosion is to be minimized. On the polymer layer is bonded a comparatively thin metal layer of conductive fuse-forming material or in the alternative conductive resistance-heating material. The prebonded layers and their bonded composite are preferably in strip or sheet form. The thin conductive layer may be adhered as a sheet or formed in situ as a sheet by plating on the insulating layer. The conductive layer in its position on the insulating layer is converted to form individual or groups of individual fuse or heater patterns as part of the composite. This is accomplished by printing etch-resistant patterns on the conductive layer by photographic, silk-screen or like printing. The conductive layer is then etched to remove all of its conductive material outside of the patterns, leaving the latter intact as fuse or heater elements. The backing and insulating layers of the composite are then segmented by shearing, cutting or the like along

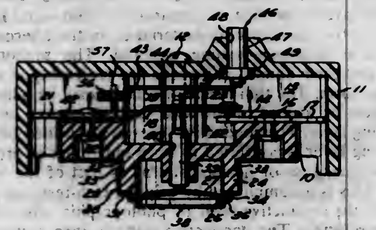
lines to form individual electrical units, each supporting one or more fuse or heater elements. The individual units may be formed into curved shapes or left flat for convenient use in making connections with line terminals or to form heater walls, as desired. The fuse units are shaped as polygons or the like and carry identical single fuse elements or groups of identical fuse elements carried on one or both sides and having terminals on different straight sides of the polygon. Thus by rotation the identical or grouped fuse elements may be substituted one for the other in a set of line terminal clips of a circuit served by the fuses.

3,500,277
THERMOSTATIC CIRCUIT BREAKER SENSITIVE TO SEVERAL TEMPERATURES
Antonio Nardulli, Marigliano, Naples, Italy, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,945
Claims priority, application Italy, July 25, 1967, 38,411/67
Int. Cl. H01h 37/74
U.S. Cl. 337—343 3 Claims



A thermostatic circuit breaker responsive to two temperatures comprising a first and a second snap acting thermostatic discs, the second disc having an opening in the center through which extends a control element between the first disc and a first switch mechanism; and a second control element coaxial with the first control element extending between the central portion of the second disc and a second switching mechanism. The thermostatic discs are chosen so that they snap to their reverse curvature at different temperatures.

3,500,278
THERMOSTAT
Edward G. Thom, Mansfield, Ohio, assignor to D-O-T, Inc., Mansfield, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 783,069
Int. Cl. H01b 37/52
U.S. Cl. 337—354 9 Claims



A thermostatic switching device is disclosed which includes a bimetallic disc operable to hold the switch open until a predetermined temperature condition is reached and is then operable to permit the switch to close. A non-thermal condition responsive mechanism is also provided to hold the switch open when it is in one condition and to allow the switch to close when it is in an operated condition. Consequently the switch actually closes only when the snap disc is in the operating condition at the same time the non-thermal responsive mechanism is in the operated condition. The structure is arranged so that the non-thermal responsive mechanism does not affect the thermostatic operation of the switch when such operation is controlled by the bimetallic snap disc.

3,500,279
EXPLODING BRIDGEWIRE OPERATED SWITCH
John B. Malaspina, Ormond Beach, Fla., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 26, 1968, Ser. No. 748,073
Int. Cl. H01h 37/76
U.S. Cl. 337—409 6 Claims



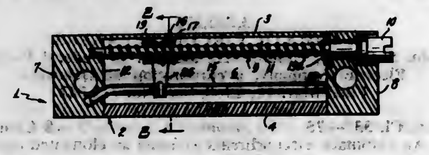
An exploding bridgewire switch comprising a bridgewire covered with a non-flammable silicone grease. Upon the explosion of the bridgewire, energy is transferred to a commutator which then closes a switch contact.

3,500,280
TEMPERATURE SENSING PROBE
John D. Ensign, Box 338, Brigham City, Utah 84117
Filed Aug. 21, 1967, Ser. No. 662,068
Int. Cl. H01c 7/00
U.S. Cl. 338—28 6 Claims



An improved probe for temperature sensing devices, particularly electronic, resistance thermometers. The probe has a wafer-type thermistor mounted in a ball tip so as to give very rapid heat sensing and it is provided with a flexible section designed to allow limited lateral bending of the otherwise longitudinally rigid probe and with a sheath retainer that is mounted for limited reciprocation, axially along the probe to allow sheaths used thereon to be tested for durability.

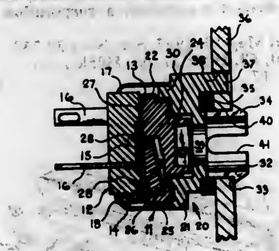
3,500,281
POTENTIOMETERS
William D. Kirkendall, Dalton, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Feb. 5, 1968, Ser. No. 702,950
Int. Cl. H01c 5/02
U.S. Cl. 338—180 16 Claims



Rectilinearly adjusted, lead screw-operated potentiometers, particularly of the miniaturized type, are provided

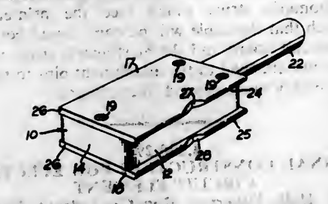
having an improved movable contact unit including a thin-walled tubular carriage member of flexible insulating material, and a spring metal movable contact member having a portion which embraces the tubular carriage member and includes a protuberance which deforms a limited area of the thin wall of the carriage member inwardly into engagement between adjacent turns of the thread of the lead screw, the balance of the tubular wall of the carriage member being supported, but not significantly distorted, by the crest of the thread of the lead screw.

3,500,282
PANEL MOUNTED, VARIABLY ADJUSTED ELECTRICAL COMPONENT
James E. Slagg, South Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 19, 1968, Ser. No. 699,262
Int. Cl. H01c 1/02
U.S. Cl. 338—197 4 Claims



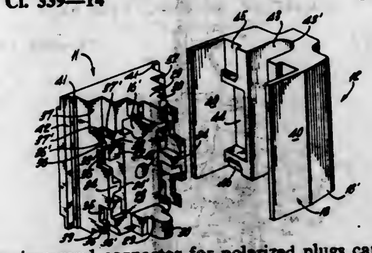
A rotatably adjustable electrical component including a rotatable member and a hollow bushing providing access to such member. The bushing has an extension for mounting directly to an apertured panel. The extension is provided with a radially compressible shoulder portion engageable with the front side of the panel upon insertion of the extension therein. A compression member is disposed between the base of the bushing and the panel to provide compressive forces between the base, the panel and the shoulder as a means of retaining the component in the panel.

3,500,283
ELECTRIC WELDING
Ronald Bishop, Alrewas, England, assignor to Bisbell Engineering Limited, Lichfield, England, a British company
Filed June 12, 1967, Ser. No. 645,220
Claims priority, application Great Britain, June 21, 1966, 27,669/66
Int. Cl. H01r 11/30
U.S. Cl. 339—12 9 Claims



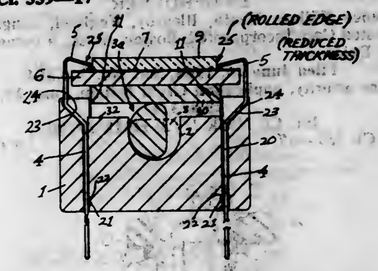
An earth return connector for electric welding comprises a ferro-magnetic body that is adapted to engage and position a ferro-magnetic part to be welded, an earth return line connection to the body, and a permanent magnet of anisotropic electrically non-conductive ferrite material contained within said body.

3,500,284
CONNECTOR
Milton Liberman, 65 Seawane Road, East Rockaway, N.Y. 11518
Filed May 3, 1968, Ser. No. 726,388
Int. Cl. H01k 3/36
U.S. Cl. 339—14 6 Claims



An improved connector for polarized plugs carrying a separate ground and having means for connecting a series of them one to the others for providing banks of outlets.

3,500,285
MULTIPLE CONTACT CONNECTOR
Edward M. Jones and Richard L. Mandernichied, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 1, 1967, Ser. No. 679,716
Int. Cl. H05k 1/00
U.S. Cl. 339—17 15 Claims

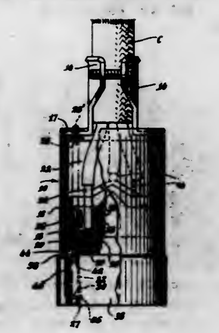


A multiple contact connector particularly suited for a photocell array but applicable for other uses wherein electrical connections are required between a plurality of contact points, the structure comprising an elongated connector body mounting a multiplicity of hook-shaped contact arms arranged in a pair of spaced apart rows with the hooked ends of the contact arms overlying a substrate having coacting contacts or electrodes, the substrate being carried on a supporting plate adapted to be inserted axially between the rows of contact arms without scraping their hooked ends, the elongated body of the connector mounting a clamping rod acting, upon rotation, to effect relative movement between the supporting plate and the hooked ends of the contact arms so as to make positive contact between the electrodes carried by the substrate and the contact arms.

3,500,286
GROUNDING MEANS FOR PROTECTIVE SHELLS OF ELECTRICAL CONNECTOR DEVICES
Ernest R. Carlson, Fairfield, and Vincent F. Zapinski, Stratford, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Mar. 14, 1967, Ser. No. 623,063
Int. Cl. H04r 3/06
U.S. Cl. 339—14 7 Claims

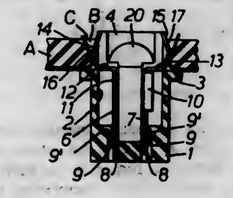
A multi-wire electrical connector device having a metal shell housing for an insulator body which carries several

contact-terminal elements one of which is a ground contact-terminal, securing screws for maintaining the insulator body in the metal shell and shell grounding shunts for



connecting the ground contact-terminal to the metal shell through two paths, one of the paths being through one of the securing screws.

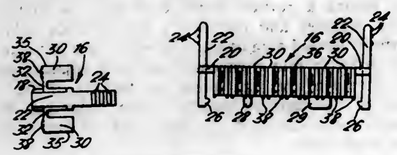
3,500,287
LAMPHOLDER
Clarence Willans Heath, Bleasby, England, assignor to United Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed June 26, 1968, Ser. No. 740,364
Claims priority, application Great Britain, June 28, 1967, 29,873/67
Int. Cl. H05k 1/12; H01k 15/00
U.S. Cl. 339—17 7 Claims



A lampholder for capless type lamps comprises a hollow body having a pair of contacts located in a lamp base receiving cavity, each contact comprising opposed resilient arms for gripping the lamp base therebetween, some of the arms have means of making electrical contact with contacts on the lamp base and some are formed with resilient fingers for snapping into an aperture in a support.

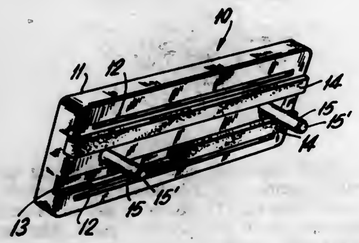
3,500,288
PRINTED CIRCUIT CONNECTOR WITH RESILIENTLY MOUNTED CONTACTS
Kenneth John Startin, Hemel Hempstead, and Norman Leonard Read, Aylesbury, England, assignors, by mesne assignments, to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
Filed May 6, 1968, Ser. No. 726,905
Claims priority, application Great Britain, May 20, 1967, 23,539/67
Int. Cl. H05k 1/00
U.S. Cl. 339—17 7 Claims

A printed circuit connector comprises a housing provided with locking projections for engaging openings in a printed circuit board. Connector supports project from a main section of the housing via resilient necks which take up irregularities in the levels of the printed con-



ductor paths of the printed circuit board with respect to the connectors in the connector supports.

3,500,289
CONNECTOR FOR SECURING FLAT CONDUCTOR CABLE TO PRINTED CIRCUIT BOARDS
Philip J. Herb, North Branch Station, N.J., assignor to Thomas & Betts Corporation, a corporation of New Jersey
Filed May 19, 1967, Ser. No. 639,738
Int. Cl. H01r 31/08; H05k 1/00
U.S. Cl. 339—17 4 Claims

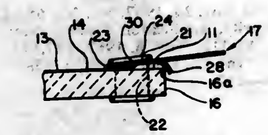


This invention relates to a connector which has particular application in fastening flat conductor cable to printed circuit boards and concomitantly aligning the individual conductors appropriately with the circuitry on the printed circuit board. Basically, the connector is comprised of a body member of dielectric material and a plurality of elastomeric strips adapted to protrude from the face of the connector body member. More particularly, the body member is provided with appropriately disposed slots adapted to accommodate the passage therethrough of flat conductor cable and pins extending therefrom to facilitate securement of the cable and fastener to the printed circuit board. Functionally, the fastener is designed to allow the passage of the flat conductor cable through the slots in such manner that the cable passes over the elastomeric strips which face the printed circuit board such that the cable will be compressed between the printed circuit board and the elastomeric strips when nut members are attached to the attachment pins to secure the entire assembly to the printed circuit board.

3,500,290
TERMINAL CONSTRUCTION FOR ELECTRICAL CIRCUIT ELEMENT
Lloyd E. Hall, Fullerton, Roy Gene Brant, Huntington Beach, and John Peter Doering, Jr., Santa Ana, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed July 1, 1968, Ser. No. 741,428
Int. Cl. H05k 1/08
U.S. Cl. 339—17 6 Claims

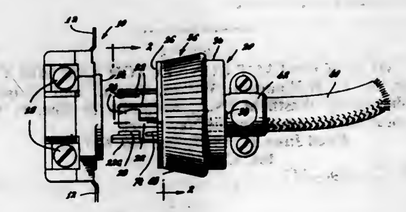
A terminal structure for use with a substrate having an electrical circuit network thereon including a conductive

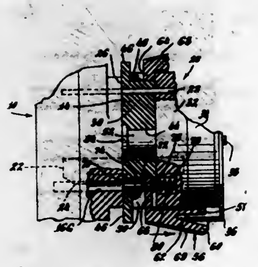
portion adjacent a free edge of the substrate. The terminal comprises a strip of electrically conductive spring material having a hole therein adapted to mate with a hole in the substrate and adjacent the edge of the substrate. The terminal is retained on the substrate by clamping means, such as an eyelet or rivet, which retains the forward edge of the terminal in electrical contact with



the conductive network. A resilient tab extending downwardly from the terminal engages the substrate and forces the rearward portions of the terminal upwardly against the pressure of the clamping means, thereby forcing the forward edge of the terminal against the conductive material and producing a space between the rearward portions of the terminal and the substrate for expansion of the substrate.

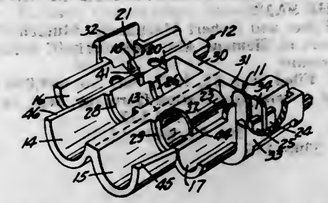
3,500,291
LOCKING ELECTRICAL CONNECTOR
Harvey Hubbell, Southport, and Ernest R. Carlson, Fairfield, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Jan. 29, 1968, Ser. No. 701,149
Int. Cl. H01r 13/54
U.S. Cl. 339—91 10 Claims





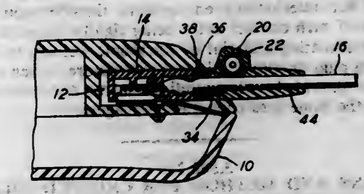
A rotatable electrical connector cap having supplementary locking means in the form of a retractable locking pin normally extendable outwardly of the face of the connector cap and having retracting means in the form of a reciprocal annular sleeve encircling the connector cap, which may be manually grasped to retract the locking pin, to rotate the connector cap and to draw it axially from the mating connector body.

3,500,292
WIRE-CONNECTOR
Dennis J. Enright, St. Paul, and Richard D. Kahabka, Burnsville Village, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,422
Int. Cl. H01r 9/08
U.S. Cl. 339—97 3 Claims



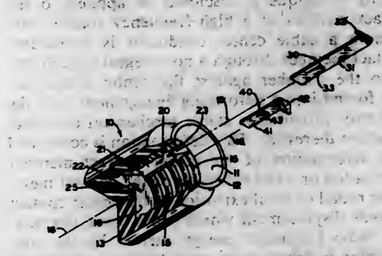
A wire-connector, having a spring-metal contact element including a cylindrical socket and a bifurcate wire-receiving plate within a folding plastic insulative body, for application to an insulated wire in providing a plug-and-socket tap connection therewith.

3,500,293
CONNECTOR INCLUDING A VISUAL INDICATOR
Eugene R. Cocco, Baltimore, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 12, 1968, Ser. No. 736,491
Int. Cl. H01r 3/00; G01s 1/72
U.S. Cl. 339—113 5 Claims



A lamp is incorporated into the flexible grommet of the plug of a plug-in cord for a telephone handset. The lamp is molded within a rigid transparent support that includes a dome portion and a base portion, and the major portion of the lamp resides within the dome portion while the grommet is molded about the base portion.

3,500,294
INTEGRAL RUBBER LAMPHOLDER
Larry L. Shroyer, Wolcottville, Ind., assignor to Lyall Electric, Inc., Albion, Ind., a corporation of Indiana
Filed Feb. 16, 1968, Ser. No. 706,024
Int. Cl. H01r 31/06, 33/94
U.S. Cl. 339—170 7 Claims



A lampholder is molded of rubber as an internal structure having threads for receiving a lamp base and having

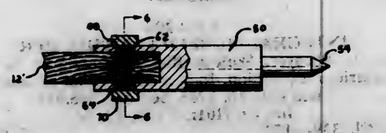
grooves and slots for receiving contact terminals. The contact terminals are inserted into the slots and held by the cooperating configuration of the grooves, slots, and contact terminals.

3,500,295
PLUG-AND-SOCKET CONNECTOR PARTICULARLY MINIATURIZED ELECTRICAL STRUCTURES AND METHOD OF MAKING THE SAME
Walter Faber and Robert Machaczek, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Sept. 22, 1967, Ser. No. 669,894
Claims priority, application Germany, Sept. 26, 1966, S 106,112
Int. Cl. H01r 13/50
U.S. Cl. 339—176 7 Claims



A plug-and-socket connector, particularly for printed circuits and the like, having a socket-type contact strip and a plug-type terminal strip insertable therein, in which respective contact strips are fabricated by the punching of the contact elements from strip material and embedding thereof in a strip of thermoplastic synthetic material by an injection-molding operation, said strips having means thereon for interlocking engagement therebetween, one or more of such contact strips being rigidly mounted in a body of insulating material by ultrasonic welding to form a unitary plug or cooperable socket structure, which structures are provided with mounting means, and means for guiding the same into cooperable engagement.

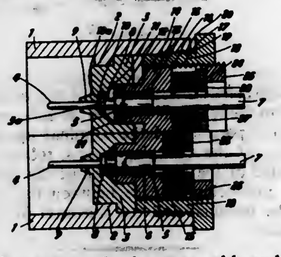
3,500,296
MEANS AND METHOD FOR CRIMPED HIGH FREQUENCY CONNECTORS
Michael Francis O'Keefe, Mechanicsburg, and Edgar Wilmont Forney, Jr., Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed May 15, 1967, Ser. No. 638,381
Int. Cl. H01r 17/18
U.S. Cl. 339—177 10 Claims



A crimping technique is disclosed as applied to the center contact member of a high frequency coaxial connector wherein a cable center conductor is terminated to such contact member through a nonintegral plug driven radially into the member against the center conductor. The plug is forced into a deforming engagement with the center conductor providing a stable mechanical and electrical connection therewith. This deformation is controlled to preclude deformation of the center contact member and prevent radial or axial extrusion of the contact member. Limiting radial or axial extrusion of the center contact member avoids displacement which could cause degradation in the radio frequency energy carried by the connector. The plug is driven flush with the outer surface of the contact member to eliminate discontinuities at the crimp site.

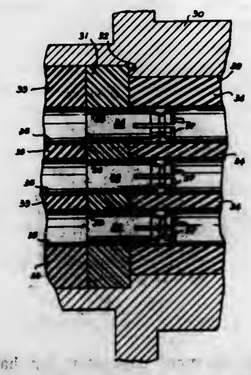
Embodiments are taught for plugs of circular and wedge shaped configuration and for plugs of soft and hard materials, and a method of manufacturing a preferred plug embodiment is disclosed.

3,500,297
ELECTRICAL CONTACT MEMBER
Fernand Georges Bac, 18 Rue du Mont Cenis, Paris, France
Filed Nov. 24, 1967, Ser. No. 685,424
Claims priority, application France, Nov. 29, 1966, 85,312; Nov. 6, 1967, 127,112
Int. Cl. H01r 13/54, 13/58
U.S. Cl. 339—217 14 Claims



In an electric connector having removable and lockable contact members slidably mounted in bores provided in an insulating block, the locking of each contact member is obtained by means of a radially contractile locking ring which engages a shoulder of said contact member when forced axially in a tapered section of the corresponding bore in said insulating block, said forcing being obtained by means of a second insulating block having an extension adapted to enter said tapered section, means being provided to press said second insulating block against said first block, thereby compressing said locking ring within said tapered section.

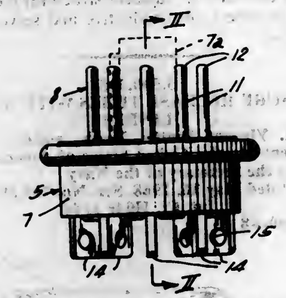
3,500,298
MULTICONTACT CONNECTOR ASSEMBLY
John B. P. Williamson, Wilton, Conn., and Ralph L. Sherwood, Westfield, N.J., assignors to Burndy Corporation, a corporation of New York
Filed June 21, 1967, Ser. No. 647,750
Int. Cl. H01r 9/08
U.S. Cl. 339—217 5 Claims



The following disclosure relates broadly to snap-in connectors comprising, a housing, a multi-layered block of dielectric material bonded to the housing and having at least one connector hole passing coaxially through the block. The multi-layered block is formed of a rigid resin-impregnated wafer having bonded to each face thereof a sub-member of elastomeric material. A retainer member

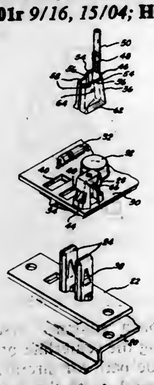
of spring material is positioned in at least one connector hole and is secured to the wafer, the retainer being formed with a cylindrical sleeve portion and a plurality of spring fingers projecting therefrom, the sleeve portion being fitted snugly within the connector hole in the wafer and being bonded thereto with the projecting spring fingers thereof extending into one of said elastomeric sub-members.

3,500,299
ELECTRICAL PLUG AND PIN STRUCTURE
Albert P. DeVito, Niles, Ill., assignor, by mesne assignments, to Conalco Metals, Inc., a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,329
Int. Cl. H01r 9/08
U.S. Cl. 339—220 10 Claims



An electrical plug of the quick detachable type has pin structures which are metal stampings each of which has a body of rectangular transverse cross-section closely received within a complementary hole in the plug casting. On one end of the body is a shoulder engaging a face of the casting and providing a solder lug eye. Extending from the opposite end of the body and of the casting is a contact pin. Also on such opposite end of the body is a bendable integral locking lug which is bent over from original general alignment with one edge of the body into locking opposition to the shoulder and to a portion of the casting engaged by and between the shoulder and the locking lug.

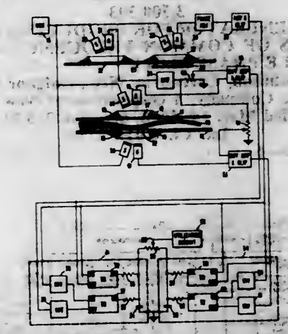
3,500,300
ELECTRICAL INTERCONNECTING SYSTEM AND PARTS
Robert Graham Lundergan, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 671,061, Sept. 27, 1967. This application Jan. 29, 1968, Ser. No. 701,366
Int. Cl. H01r 9/16, 15/04; H05k 1/12
U.S. Cl. 339—258 4 Claims



An interconnection system is provided wherein two successive components of the system are capable of act-

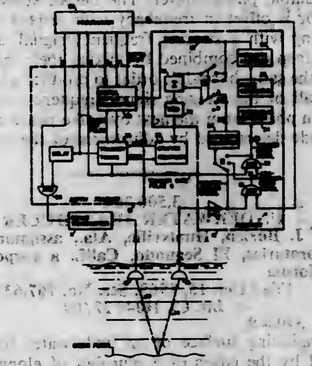
ing in a dual manner as both plug and receptacle. A U-shaped receptacle member is provided and utilizes a spring action type of contact force for engaging one of the dual type components.

3,500,301
SONIC DETECTION APPARATUS
Johann H. Meier, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,156
Int. Cl. G01s 9/66
U.S. Cl. 340—1 5 Claims



Apparatus for detecting changes in surface position in which sonic sensing and reference signals are directed respectively at a pathway for a reflective surface and a pathway without a reflective surface. Signals reflected from the pathway alone are used to counter the pathway structure where the surface is located so that only surface reflective signals result. These signals are then phase-compared with standard reference signals to indicate any change in location of the reflective surface relative to the standard reference.

3,500,302
SONAR BATHYMETRY SYSTEM TRANSMIT-RECEIVE SEQUENCE PROGRAMMER
George J. Moss, Jr., Bethesda, and Robert W. Havey, Jr., Suitland, Md., and John M. Saunders, Alexandria, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 13, 1969, Ser. No. 790,686
Int. Cl. G01s 9/68
U.S. Cl. 340—3 4 Claims



Depth information from a sonar system in the form of a plurality of digital outputs, each representing a 400 fathom depth increment, is coupled to an AND logic

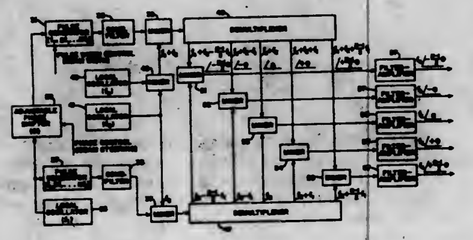
bank. The AND logic bank also receives the output from a shift register which functions as a memory circuit for sonar pulses transmitted by the sonar system. The output of the AND logic bank is a signal indicative of when a return echo from the bottom of the ocean is expected. This signal is fed to the programmer logic bank which analyzes the received information and, upon keying by a timing pulse from the sonar system, sends out a signal which will actuate either the sonar receiver or the sonar transmitter so that the minimum echo misinterpretation error and the maximum depth information will be provided.

3,500,303

SIGNAL GENERATOR FOR PRODUCING A SET OF SIGNALS OF COMMON FREQUENCY AND ADJUSTABLE PHASE SLOPE

Major A. Johnson, Cazenovia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 14, 1968, Ser. No. 713,217
Int. Cl. G01v 1/28
U.S. Cl. 340—6 6 Claims



This disclosure describes a signal generator for producing a family of signals of common frequency and of uniformly stepped phase progression with the rate of progression or phase slope adjustable. Signal sets of this character find application for control of beam direction in electronically steered array radiators of radar, sonar and communications systems, and in frequency selective filters of the kind tunable to scan through a band of frequencies. The signal generator as described comprises a reference harmonic spectrum generator and a steering harmonic spectrum generator provided with basic frequency inputs of common frequency value but with a phase difference made adjustable as by coupling one such input through an adjustable phase shifter. The output spectrum of one generator is offset in frequency with respect to the other by mixing with a steering frequency signal, and the two spectra then are combined by mixing their respective signals of the same harmonic order to produce a set of output signals all of the steering signal frequency and each displaced in phase from the next by a like phase difference of magnitude determined by adjustment of the phase shifter.

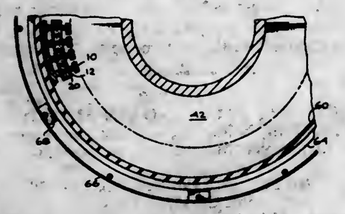
3,500,304

UNDERWATER TRANSDUCER

Daniel J. Bozich, Huntsville, Ala., assignor to Wyle Laboratories, El Segundo, Calif., a corporation of California

Filed Oct. 15, 1968, Ser. No. 767,637
Int. Cl. H04r 17/00
U.S. Cl. 340—9 6 Claims

The radiating surface of an underwater transducer is provided by the edges of a plurality of elongated structural members which are placed adjacent to one another. Each structural member has a plurality of electrostrictive elements placed on both sides of the web portion thereof and which are spaced therealong. A conductive sheet serving as a first electrode is placed between each two adjacent structural members so that it is contacted by elec-



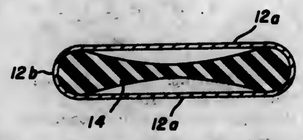
trostrictive elements on adjacent structural members. The structural members are conductive and serve as the second electrode.

3,500,305

PRESSURE RELEASE TUBES WITH RUBBER LINERS

Gordon A. Vincent, Seattle, Wash., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 16, 1968, Ser. No. 729,594
Int. Cl. H04r 1/44
U.S. Cl. 340—8 2 Claims



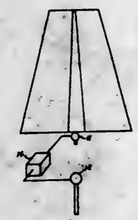
The yieldable walls of metal or fiberglass tubes comprise the pressure release backing for a transducer vibrating diaphragm. To prevent collapse and destruction of the tubes at deep submergence, the tubes are each provided with a core for supporting the tube wall at the points where the walls would collapse and fracture.

3,500,306

APPARENT MOTION GUIDANCE SYSTEM FOR AIRCRAFT

Richard E. Wienke, 7136 Belldale Ave. 45424, and William C. Steedman, 250 E. Hillcrest Ave. 45405, both of Dayton, Ohio

Filed Mar. 4, 1966, Ser. No. 534,294
Int. Cl. G08g 5/00
U.S. Cl. 340—25 5 Claims



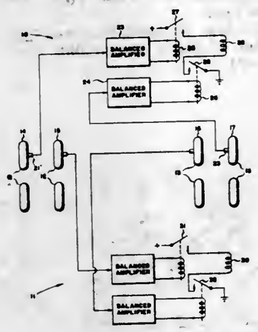
A landing approach guidance system has two light sources located along the centerline of the runway in line with the desired glide path for aircraft. The light sources are flashed intermittently with the time duration between the flashing of the light closer to the aircraft and the flashing of the light further from the aircraft being substantially longer than the time duration between the flashing of the light further from the aircraft and the light closer to the aircraft. In one embodiment intermittently illuminated mirrors are substituted for the lights.

3,500,307

AIRCRAFT TOUCHDOWN DETECTION APPARATUS

Edward N. Lide, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Feb. 10, 1966, Ser. No. 526,469
Int. Cl. G08g 5/02
U.S. Cl. 340—27 3 Claims



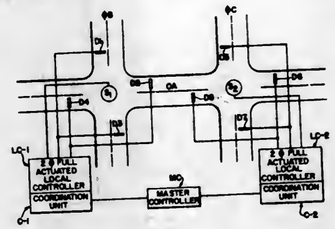
Apparatus positively indicating aircraft touchdown onto a landing surface to provide a signal for spoiler operation or fore other purposes. Signals produced by transducers associated with both the left and the right landing gear assemblies are supplied by balanced lines to corresponding balanced amplifiers. Signals from the transducers cause the respective balanced amplifiers to produce output signals, whereas a spurious input signal that is not isolated from electrical ground causes the balanced amplifier to produce no output signal. The touchdown detection apparatus produces an output signal only upon the concurrent presence of transducer signals indicating touchdown by both the left landing gear and the right landing gear.

3,500,308

COORDINATION OF FULL ACTUATED TRAFFIC CONTROLLERS

Ralph M. Riddle, Jr., Moline, Ill., and Loren F. Puck, Davenport, Iowa, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,328
Int. Cl. G08g 1/08
U.S. Cl. 340—35 19 Claims



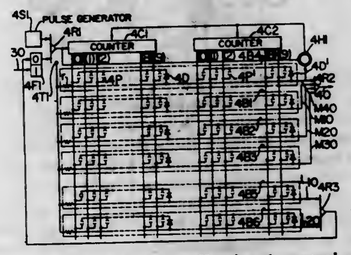
There is disclosed a coordination unit for coordinating the operation of a full actuated traffic controller in an interconnected signalized system wherein the controller serves to control a traffic signal which displays go, caution and stop intervals to at least two traffic phases each having associated therewith traffic detector means for detecting traffic in that phase and registering traffic demand with the controller. Also, the controller includes go interval termination means associated with each phase for terminating, when energized a go interval display to the associated phase. The coordination unit includes a coordination dial for cyclically timing a background cycle having a predetermined time duration; key means for dividing the background cycle into at least two successively timed intervals associated with each of the traffic phases; and, circuit means each being associated with one of the traffic phases and being responsive to one of the timed intervals to thereby terminate a go signal displayed to that associated phase.

3,500,309

LOCAL TRAFFIC SIGNAL CONTROLLER

Hiroo Watanabe, Masatake Yamamoto, and Tadao Endo, Kyoto, Japan, assignors to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan

Filed Sept. 9, 1966, Ser. No. 578,402
Int. Cl. G08g 1/08; H03k 21/32
U.S. Cl. 340—37 7 Claims



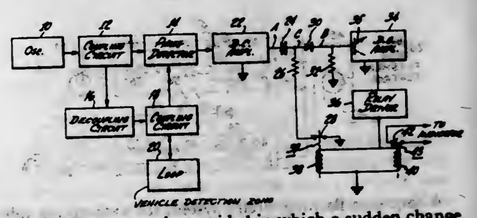
This invention relates to a traffic signal control system and more particularly to a local traffic signal controller adapted to be located at an individual street intersection. The system includes a fixed-time control unit for actuating traffic signals on a predetermined cycle basis; a traffic actuated control unit to cause the cycle time at a given intersection to be controlled by the traffic; and a coordinated control unit for controlling a number of intersections on a coordinated basis to facilitate through traffic movement. A simplified system using a memory device such as a bistable circuit for integrating the various operations to minimize the number of counters required in the system is disclosed. Overall system diagrams as well as specific circuit details are provided.

3,500,310

TRUE PRESENCE VEHICLE DETECTOR INCLUDING MEANS TO DISTINGUISH BETWEEN SLOW AMBIENT CHANGES AND CHANGES DUE TO THE PRESENCE OF A VEHICLE

Eugene J. Marciniewicz, Northville, Mich., assignor to RCA Corporation, a corporation of Delaware

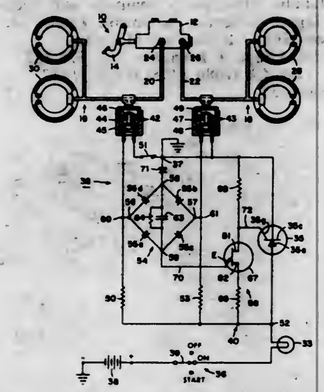
Filed Mar. 29, 1966, Ser. No. 538,256
Int. Cl. G08g 1/01
U.S. Cl. 340—38 8 Claims



A vehicle detector is provided in which a sudden change of voltage, which is due to the presence of a vehicle in

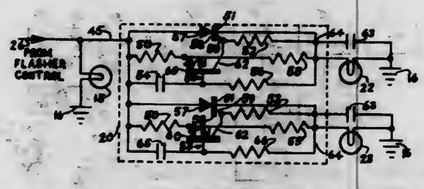
a detection zone, is stored in a storage element and the discharge circuit for the storage element is disabled. The discharge circuit for the storage element is enabled in the presence of a slow change of voltage, which may be due to a change of ambient conditions, being applied to the storage element.

3,500,311
VEHICLE DUAL BRAKE CONDITION RESPONSIVE INDICATING SYSTEM
Michael L. Bishop, St. Ann, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed May 9, 1967, Ser. No. 637,114
Int. Cl. B60q 1/44
U.S. Cl. 340—52 22 Claims



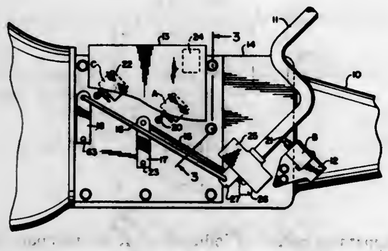
An indicating circuit for producing a signal in response to the occurrence of a pressure failure in either of a pair of branches of a fluid pressure system including a signal lamp connected in series with a solid state switch that is fired into conduction by a switching device responsive to a predetermined value of voltage on a capacitor in a time constant circuit that is charged to the predetermined value whenever either of a pair of switches that are respectively responsive to the fluid pressures in the branches fails to become actuated in a preselected amount of time after the fluid pressure system has been operated, and a switch arranged to simulate a fluid pressure failure for testing the operativeness of the indicating circuit.

3,500,312
SEQUENCE FLASHING SYSTEM FOR AUTOMOTIVE LAMPS
Donald Stankovich, 6921 Corona Ave., Bell, Calif. 90201
Filed Apr. 8, 1966, Ser. No. 541,164
Int. Cl. B60q 1/00, 1/46; H03k 17/00
U.S. Cl. 340—67 11 Claims



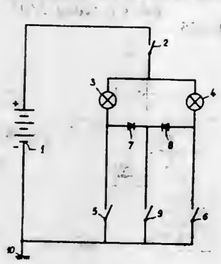
A sequence flashing circuit system for automotive vehicles is disclosed in which the circuits are installable into existing multiple lamp circuits or adaptable to new equipment. Each of the circuits includes semiconductor switching means and a switching control circuit for timing the occurrence of the on-off operation of the circuits in a sequence following the occurrence of an initial operation of the directional indicator control lever. Means are also described in connection with a sequence control system to provide simultaneous operation of the lamps by-passing the sequence operation when the brake is operated.

3,500,313
VEHICLE GEAR DOWNSHIFTING WARNING INDICATOR
Albert C. Nolte, Jr., Oyster Bay Cove, N.Y., assignor to Elton Industries Inc., New York, N.Y., a corporation of New York
Filed Feb. 11, 1966, Ser. No. 526,773
Int. Cl. B60q 1/26; G08b 21/00
U.S. Cl. 340—71 9 Claims



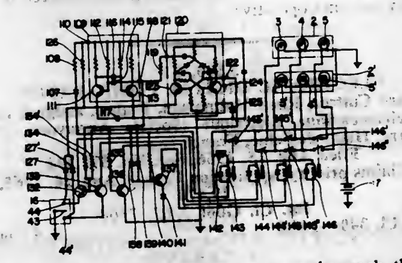
In a motor vehicle, a series circuit consisting of at least one unidirectional first switch means normally in open position and closed by downshifting in a gear shift mechanism of said vehicle, a second switch means normally in a closed position and opened by a speed acceleration actuation means, electrical indication means, and electrical power supply means.

3,500,314
VEHICLE SIGNAL CONTROL CIRCUITRY
Jean Pineau and Francois Peroy, Billancourt, France, assignors to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 27, 1967, Ser. No. 626,213
Claims priority, application France, Apr. 8, 1966, 57,161
Int. Cl. B60q 1/26; G08b 5/00
U.S. Cl. 340—74 1 Claim



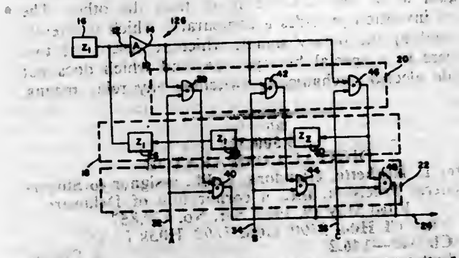
A device for controlling a plurality of elements, circuits or the like, comprising a plurality of branch circuits connected in parallel to the terminals of a source of unidirectional current. Each branch circuit comprises two component elements in series, namely, a signal means and a contact responsive to one of the elements to be controlled. At least two signal means are put in parallel by connecting each conductor common to the two component elements of one of said branch circuits through a unidirectional conducting element disposed in the passing direction, to the same point, and that said common point is connected to the other terminal of the source of current through an auxiliary contact.

3,500,315
AUTOMOTIVE VEHICLE SIGNALING SYSTEM
Hisashi Shimada, Hot-gun, Aichi-ken, Japan, assignor to Nippon Denso Kabushiki Kaisha, Kariya-shi, Aichi-ken, Japan
Filed Oct. 20, 1967, Ser. No. 676,921
Claims priority, application Japan, Oct. 24, 1966, 41/70,114, 41/70,115
Int. Cl. B60q 1/46, 1/00
U.S. Cl. 340—82 2 Claims



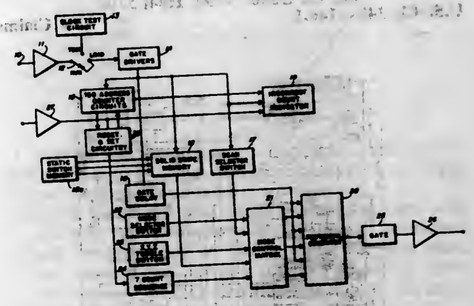
Left and right turn signal lamps comprise each three light sources which are illuminated for different durations in a cyclical manner. For this purpose three time relays each having a capacitor and two coils are so arranged that the operation of one relay is relayed to the next relay after a delay time determined by the capacity of the capacitor and the resistance of the relay coils and so on. Three sets of turn signals having different durations can also be obtained by combination of an astable multivibrator, a flip-flop circuit, an or— circuit and an and— circuit. The signal generating circuit also is so arranged that the signal lamps can be used as stop lamps, tail lamps or emergency stop lamps.

3,500,316
VARIABLE GAIN AMPLIFIER
Stewart C. Brown, Los Angeles, Calif., assignor, by mesne assignments, to Digital Data Systems, Inc., Houston, Tex., a corporation
Filed Aug. 22, 1967, Ser. No. 662,513
Int. Cl. H03f 1/36
U.S. Cl. 330—86 5 Claims



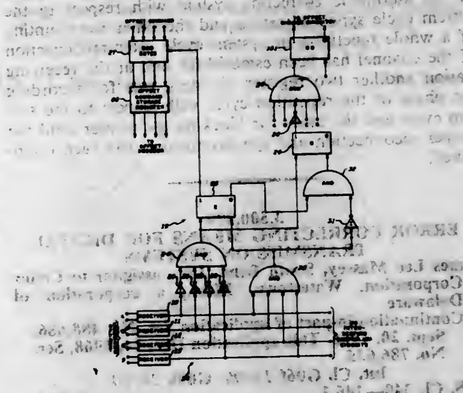
A variable gain amplifier is described which includes a gain regulating feedback loop that selectively includes or excludes increments of feedback impedance for changing the overall gain of the amplifier in steps according to a pre-selected scaling system.

3,500,317
MULTIFREQUENCY PULSE-ENCODED MODULATION SYSTEM
Lester J. Kinkel and Robert P. McManus, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 30, 1965, Ser. No. 517,867
Int. Cl. G06f 11/00; G08d 29/00; G08c 1/00
U.S. Cl. 340—146.1 6 Claims



A multi-frequency, pulse encoded modulation system capable of encoding a transmission signal with code sequences which are so conceived and generated as to be readily distinguishable from each other at the point of reception even though one or more of the discrete code elements which comprise a particular code sequence may have been attenuated or lost in transmission. The encoded transmissions are made at each of a plurality of preselected frequencies to determine the relative desirability of transmission characteristics of the frequencies.

3,500,318
PLURAL COMMUNICATION CHANNEL TEST CIRCUIT
David Arlen, Jericho, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 680,175
Int. Cl. G06f 11/00; G08b 29/00
U.S. Cl. 340—146.1 4 Claims



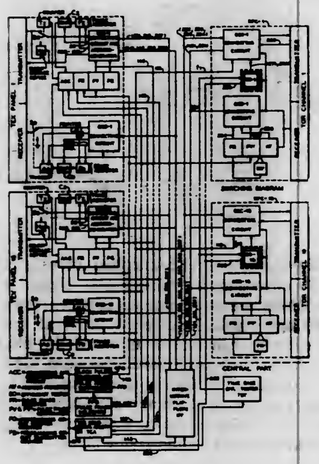
A plural communication channel test circuit for testing plural binary transmission channels by utilizing test signals representative of both possible states wherein one group of signals is representative of a failure condition and the other group of signals is representative of a normal operating condition.

3,500,319

APPARATUS TO PREVENT LOSS OF INFORMATION IN AUTOMATIC CHANNEL SWITCHING DEVICE

Hendrik Cornelis Anthony van Deuren, Wassenaar, and Herman da Silva and Wilhelm Fredrik Brok, Voorburg, Netherlands, assignors to De Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-General der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Dec. 6, 1967, Ser. No. 688,555
Int. Cl. G08b 29/00; H04l 5/00
U.S. Cl. 340—146.1 4 Claims



An improvement in a multi-channel switching device for a multi-channel automatic error correcting system cycle synchronized telecommunication system, for preventing the loss of signals when an abrupt and prolonged disconnection of a channel occurs, comprising a second or dummy storage device for the signals at the transmitting station together with two register counters, one for recording the phase of the start of the repetition cycle of the automatic correcting system with respect to the system cycle synchronization and the other for counting of a whole repetition or system cycle after reconnection of the channel has been established; and at the receiving station another two register counters, one for recording the phase of the repetition cycle with respect to the system cycle and the other for blocking the printer until the proper reconnection and synchronization has been established.

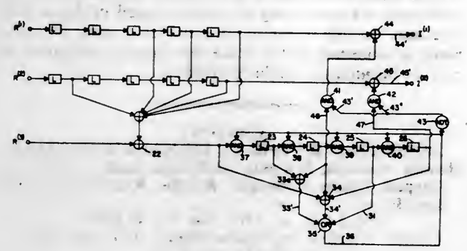
3,500,320

ERROR CORRECTING MEANS FOR DIGITAL TRANSMISSION SYSTEMS

James Lee Massey, South Bend, Ind., assignor to Codex Corporation, Watertown, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 488,686, Sept. 20, 1965. This application Dec. 24, 1968, Ser. No. 786,635
Int. Cl. G06f 11/00; G08b 29/00
U.S. Cl. 340—146.1 5 Claims

Bursts of errors in convolutionally coded messages are corrected by a decoder in which a parity checking circuit determines whether selected syndrome digits which lie within the constraint length of the code form a codeword in a linear block code having as its codewords the set of all patterns of said selected syndrome digits that are consistent with any error burst pattern confined to the beginning of said constraint length, and upon the presence



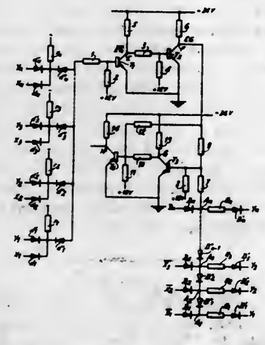
of such a codeword, error detecting and correcting circuitry becomes operative.

3,500,321

ELECTRONIC DIGITAL COMPARATOR

Gérard Cottrez, Rueil-Malmaison, France, assignor to La Telemecanique Electrique (Societe Anonyme), Nanterre, Hauts-de-Seine, France

Filed Aug. 15, 1966, Ser. No. 572,394
Claims priority, application France, Aug. 26, 1965, 29,470
Int. Cl. G06f 7/02, 7/04
U.S. Cl. 340—146.2 5 Claims



The invention broadly relates to electronic comparators for indicating whether one of two coded members is equal to or less than or more than the other. The instant invention provides a comparator which is directly operated by the binary signals which represent the two numbers in a special binary code, and which does not include electro-mechanically switching any relay means.

3,500,322

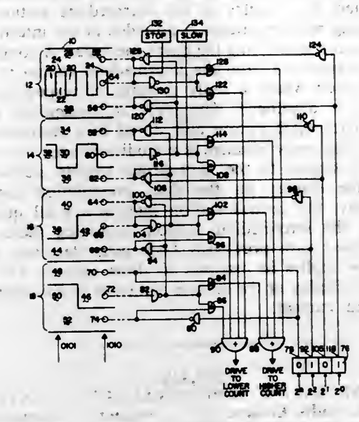
DIGITAL COMPARATOR

Walter L. Rochette, Glendora, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware

Filed May 19, 1967, Ser. No. 639,857
Int. Cl. H04l 3/00; G06f 7/02; H03k 13/00
U.S. Cl. 340—146.2 6 Claims

A digital comparator for detecting the approach to coincidence, and coincidence between a binary input signal and the mechanical movement of a coded member having a plurality of binary weighted switching tracks. Circuitry responsive to both the input signal and the existing

position of the coded member produces electrical signals that indicate both the required direction for movement



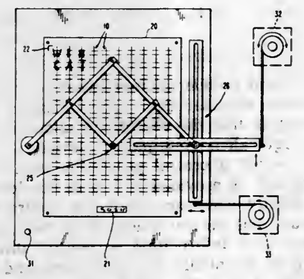
of the member to achieve coincidence, and the approach to coincidence.

3,500,323

HANDWRITTEN CHARACTER RECOGNITION APPARATUS

Howard L. Funk and Stanley F. Kambic, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 6, 1965, Ser. No. 511,816
Int. Cl. G06k 9/00
U.S. Cl. 340—146.3 10 Claims



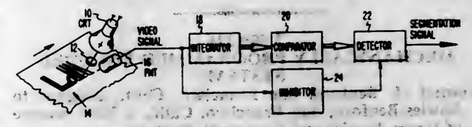
Hard copy stationery with preprinted constraint lettering guide patterns is aligned on a writing table over which a pantograph and resolver is moved in response to forming the characters with a writing instrument in the prescribed sequence of line crossings of the lettering guide patterns. Horizontal and vertical shaft position encoders produce impulses upon each crossing of the line of the constraint lettering guide patterns. Through circuitry and geometry of the emitter various densities (1; ¼; 1/16; 1/6) of printing forms may be employed. Recognition is achieved by assigning ternary weights to each of the lines in a three line constraint pattern (or quaternary weights for a four line pattern, etc.) and shifting one ternary order for each successive line crossing, and adding the values of the respective ternary weights to produce a decimal number definitive of each separate character.

3,500,324

ANALOG SEGMENTATION APPARATUS

George G. Gorbatenko and Gerald D. Miller, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 27, 1966, Ser. No. 568,271
Int. Cl. G06k 9/00
U.S. Cl. 340—146.3 9 Claims



1. Analog segmentation apparatus for separating touching characters to facilitate the recognition of characters in a character recognition system comprising:

scanning means for scanning a line of characters with multiple scans transverse to the line of characters and for generating an analog signal for each scan, the analog signal having a different amplitude when the scanning means is crossing a portion of the character than when crossing background;

integrating means for integrating separately analog signals from separate scans and for storing the integrated values of the scans until reset to receive analog signals from additional scans;

comparing means responsive to said integrating means for comparing the integrated values from successive scans and for generating comparison signals indicative of whether the integrated values are increasing or decreasing;

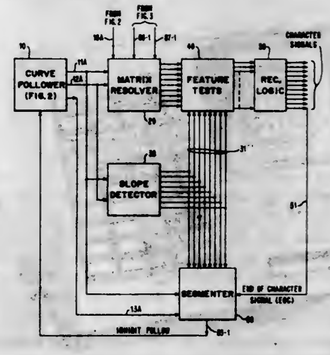
detecting means responsive to said comparison means for detecting from the comparison signals a pattern of decreasing integrated values followed by increasing integrated values and for thereupon generating a segmentation signal.

3,500,325

APPARATUS FOR SEPARATING CLOSELY SPACED CHARACTERS IN A CHARACTER RECOGNITION MACHINE

Evon C. Greanias, Chappaqua, and Donald J. Lem, Peekskill, N.Y., and Philip F. Meagher, Los Angeles, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 19, 1966, Ser. No. 521,703
Int. Cl. G02b 27/22
U.S. Cl. 340—146.3 10 Claims



In machine recognition of characters, a problem arises when two characters are closely adjacent or touching. It

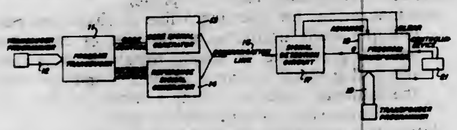
is necessary to establish a boundary between them so that each may be analyzed separately. This system in a first analysis of the touching characters identifies a zone within which the boundary lies and then examines details of those portions of both characters lying within the zone to determine precisely where the boundary should be. Once the boundary is established, the system is inhibited from considering the character portions beyond the boundary when analyzing a character.

3,500,326

MECHANICALLY PROGRAMMED ENCODER SYSTEM

Konrad H. Benford, San Francisco, Calif., assignor to Bowles-Benford, San Francisco, Calif., a joint venture of Henry Bowles and Konrad H. Benford

Filed Aug. 17, 1965, Ser. No. 480,449
Int. Cl. H04q 3/00
U.S. Cl. 340—147 15 Claims



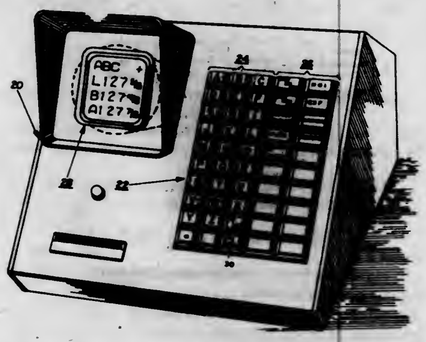
A mechanically programmed encoder system for selective control and/or identification wherein a transmitting portion of the system operates when activated to transmit an electrical signal which is the analog of a code represented mechanically on a programmer, to a receive portion of the system which is operatively associated with a device to be controlled and which responds to receipt of a code to operate such device if and only if the code which is received matches the code mechanically represented on a programmer operatively associated with the receive portion of the system.

3,500,327

DATA HANDLING APPARATUS

Richmond D. Belcher, Thornwood, and Robert J. Duggan, Bronx, N.Y., and George B. Ellis, Trumbull, Robert H. Esslinger, Wilton, and William Frederick Gouldyear, Westport, Conn., Joseph C. Marshall, Chappaqua, N.Y., and Thomas R. Mascuo, Stamford, Conn., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 370,323, May 26, 1964. This application June 1, 1965, Ser. No. 460,117
Int. Cl. H04q 1/18
U.S. Cl. 340—154 13 Claims



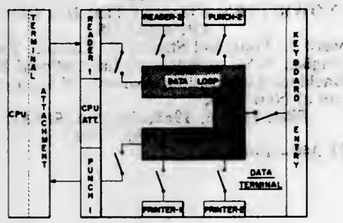
A system for receiving queries from data entry means at a plurality of remote stations and for sending replies from a central station having data storage and data processing means to the appropriate remote station to be displayed on a data presentation means such as a cathode ray tube. The queries at the remote stations are interrogated by circuitry at an intermediate station. A recirculating memory means is provided at the intermediate station for assembling the query messages. A complete query is transmited from the intermediate station to the central station where a reply message corresponding to the query is developed. The reply is transmitted back to the intermediate station and stored in a recirculating memory. The reply message is periodically sent as a succession of signals to the appropriate remote station to control the display on the data presentation means. Periodically, the central station interrogates all queries stored at the intermediate station, including those for which replies have previously been generated, and generates new replies in response to these queries. The information display at the remote station is in this manner maintained current.

3,500,328

DATA SYSTEM MICROPROGRAMMING CONTROL

Donald E. Wallis, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 20, 1966, Ser. No. 558,882
Int. Cl. G06f 3/00, 3/04
U.S. Cl. 340—172.5 5 Claims



A direct and unique microprogram control of one or more remote terminal data communication systems in such a manner that the controlling microprogram simulates an equivalent multiplexor device with standard hardware within a central processing unit. The central processing unit is provided with a device level interface that is directly connected with the controlling microprogram and has the equivalent of channel, control unit and device level information in control directly accessible to it at essentially the same time and assumes a double role of both channel and control unit. The remote terminal microprograms transform all input status and sense information to the central processing unit into a format compatible with that produced by a normal multiplexor. The remote terminal microprograms accept standard I/O instructions and formats and execute direct device level control.

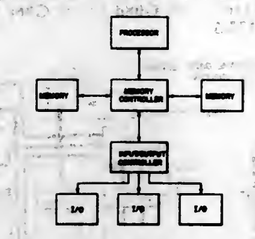
3,500,329

DATA PROCESSING SYSTEM

John F. Couleur, Richard L. Ruth, and William A. Shelly, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York

Filed Oct. 6, 1966, Ser. No. 584,801
Int. Cl. G11b 13/00; G06f 1/00, 7/00
U.S. Cl. 340—172.5 10 Claims

A data processing system providing selective access with a memory thereof for a plurality of data processors and input/output controllers, wherein access to the memory is initiated when any one of said processors or input/output controllers supplies interrupt, address, and memory command signals to a memory controller of the system,



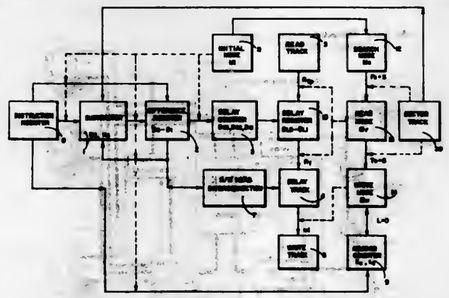
and wherein the memory controller recognizes the interrupt signals and provides access to the memory according to predetermined priorities allocated to the processors and input/output controllers.

3,500,330

VARIABLE DELAY SYSTEM FOR DATA TRANSFER OPERATIONS

Theodore M. Hertz, Whittier, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,344
Int. Cl. G06f 1/00, 7/00, 15/00; G11b 13/00
U.S. Cl. 340—172.5 4 Claims



A storage device having a plurality of logically spaced and interconnectable transducers disposed about a storage medium for delaying the transfer of data between nonrandom access storage devices, including logic for determining the transducer interconnections for achieving the required delay.

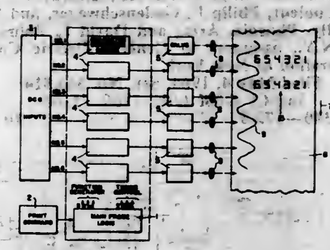
3,500,331

ELECTRICAL APPARATUS

Ivars P. Breikss, Littleton, Colo., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,185
Int. Cl. G11b 13/00; G06f 1/00; G08b 23/00
U.S. Cl. 340—172.5 5 Claims

A circuit is utilized to operate on coded signals, for example binary coded decimal signals, to generate other signals which are decimal coded signals. A control circuit selectively supplied the various coded signal, at a predetermined time, to an output device which causes the printing of a selected character.

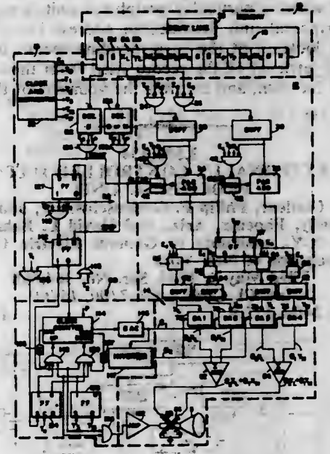


3,500,332

CURVE GENERATOR FOR OSCILLOGRAPHIC DISPLAY

Michael K. Vosbury, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 10, 1967, Ser. No. 615,094
Int. Cl. G11b 13/00; G08b 23/00
U.S. Cl. 340—172.5 27 Claims

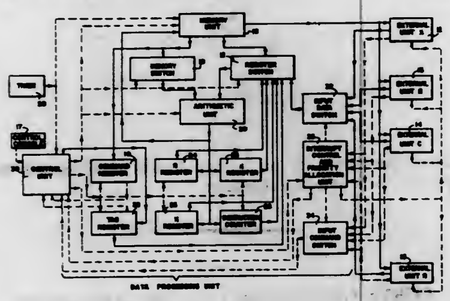


A curve generator includes a reference voltage generator which develops a pair of reference signals which sweep with time between maximum and minimum values. A pair of digital-to-analog converters modify these reference signals in accordance with the initial and terminal coordinates of each segment of a line to be traced so as to develop a pair of electrical analogs of these coordinates which vary with time between maximum and minimum values. The electrical analogs are then summed to provide a single time-varying deflection signal which is applied to a symbol tracer. The symbol tracer in turn traces the line segment in response to the deflection signal.

3,500,333
DATA PROCESSING UNIT FOR PROVIDING MEMORY STORAGE OF COMMUNICATION STATUS OF EXTERNAL APPARATUS

John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, Phoenix, Ariz., and David L. Bahrs, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 4, 1964, Ser. No. 364,514
Int. Cl. G06f *1/00, 7/00, 15/00*
U.S. Cl. 340—172.5 10 Claims

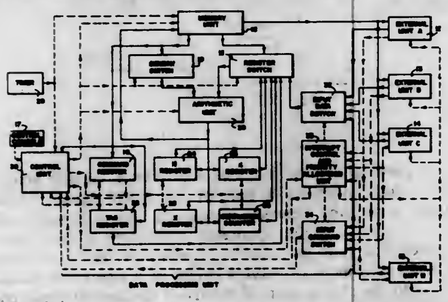


Apparatus for freeing a data processing unit of the burden of maintaining records of the statuses of the respective communications provided between the associated peripheral units and the memory; wherein there is stored in the memory for each peripheral unit a record item comprising a tally identifying the number of times a particular operation has been executed for the respective peripheral unit and an address identifying the next memory location to be employed by the peripheral unit; and wherein when a particular peripheral unit is recognized, such peripheral unit provides an address identifying the memory location of the corresponding record item, controls the retrieval of the record item from the addressed memory location, and controls the updating of the record item.

3,500,334
EXTERNALLY CONTROLLED DATA PROCESSING UNIT

John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, Phoenix, Ariz., and David L. Bahrs, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 4, 1964, Ser. No. 364,598
Int. Cl. G06f *1/00, 7/00, 15/00*
U.S. Cl. 340—172.5 10 Claims

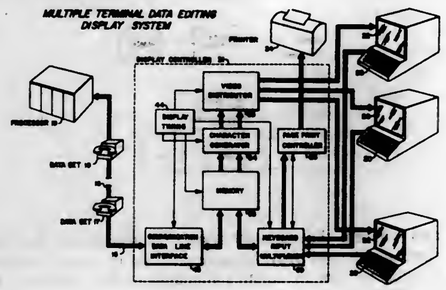


A data processing system including a data processing unit for the execution of a variety of different operations, a memory and at least one data handling unit external to the data processing unit further includes the means to effect the operation of the data processing unit in response to signals received from the data handling unit.

3,500,335
RANDOM ACCESS-DATA EDITING COMMUNICATION NETWORK

Allen B. J. Cuccio, Oklahoma City, Okla., assignor to General Electric Company, a corporation of New York

Filed Aug. 25, 1967, Ser. No. 663,410
Int. Cl. G11b *13/00*; G08d *23/00*; G06f *1/00*
U.S. Cl. 340—172.5 19 Claims

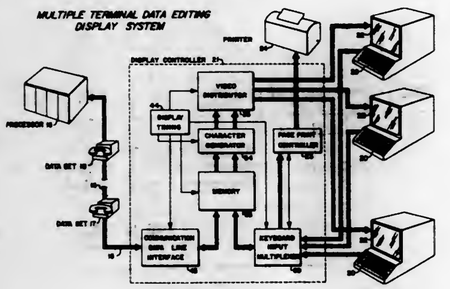


A network system utilizing a data processor and a plurality of remotely located visual display terminals for random access and data editing display of coded information.

3,500,336
MEANS FOR EXTRACTING SYNCHRONIZING SIGNALS FROM TELEVISION VIDEO SIGNALS

Allen B. J. Cuccio, Oklahoma City, Okla., assignor to General Electric Company, a corporation of New York

Filed Aug. 29, 1967, Ser. No. 664,056
Int. Cl. G11b *13/00*; G08b *23/00*; G06f *1/00*
U.S. Cl. 340—172.5 13 Claims



A network system utilizing a data processor and a plurality of remotely located visual display terminals for random access and data editing display of coded information.

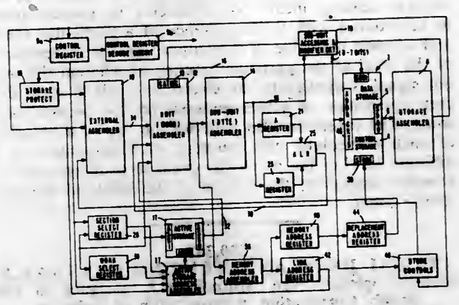
3,500,337
DATA HANDLING SYSTEM EMPLOYING A FULL WORD MAIN MEMORY TRANSFER WITH INDIVIDUAL INDIRECT BYTE ADDRESSING AND PROCESSING

Karl K. Womack, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 27, 1967, Ser. No. 670,918
Int. Cl. G06f *1/00*; G11b *13/00*
U.S. Cl. 340—172.5 7 Claims

The present invention is directed toward a novel combination of elements for the plural manipulation of address indicia and is employed for effecting improved

computer operation in processing incoming data. More specifically, the instant invention comprises a plurality of address registers which, taken collectively, are employed to store the current address of the next data to be processed. However, when taken individually, each of

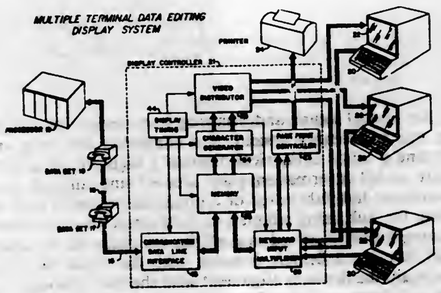


these addresses contains a portion of the current address, which portion is employed for a special purpose function. Each of the registers is responsive to certain circuitry which causes the updating of the address indicia held in the respective address register.

3,500,338
PARTY LINE USE AND SUPERVISORY CONTROL OF MULTIPLE TERMINAL DATA EDITING DISPLAY SYSTEMS

Allen B. J. Cuccio and Dean C. Bowman, Oklahoma City, Okla., assignors to General Electric Company, a corporation of New York

Filed Sept. 11, 1967, Ser. No. 666,890
Int. Cl. G11b *13/00*; G06f *1/00*
U.S. Cl. 340—172.5 21 Claims



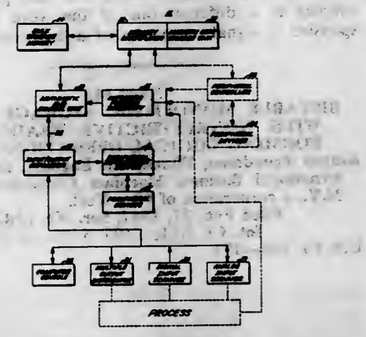
A network system utilizing a data processor and a plurality of remotely located visual display terminals for random access and data editing display of coded information.

3,500,339
BINARY COUNTER APPARATUS IN A COMPUTER SYSTEM

Emery A. White, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed June 21, 1967, Ser. No. 647,741
Int. Cl. G11b *13/00*; G06f *7/38*; G06g *7/00*
U.S. Cl. 340—172.5 9 Claims

Apparatus in a computer system for controlling the transfer of information between memory and peripheral devices. The program interrupt unit receives program interrupt requests from peripheral channels connected to the peripheral devices and provides an output corresponding to the program interrupt request having the highest priority. A control word corresponding to each of predetermined peripheral channels is provided in memory to direct information transfers with the associated peripheral device through the selected channel. The control

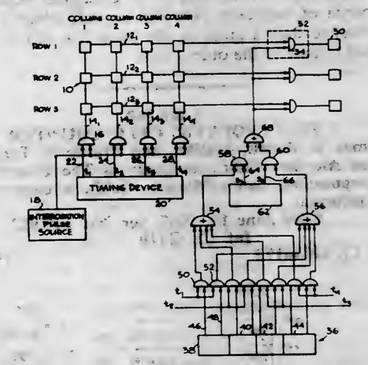


word contains a field specifying the number of information bytes in each word to be transferred. A counter responsive to this field of the control word is provided to control the shift of information words in a register to properly position the words to receive information bytes from a peripheral device or to transfer information bytes to a peripheral device.

3,500,340
SEQUENTIAL CONTENT ADDRESSABLE MEMORY

Ralph J. Koerner, Canoga Park, and Alfred D. Scarbrough, Northridge, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,816
Int. Cl. G11b *9/00, 13/00, 5/00*
U.S. Cl. 340—173 8 Claims



A content addressable memory including a plurality of memory elements arranged in a matrix of rows and columns, each row storing a different multibit data word. A plurality of word lines are provided, each coupled to the elements of a different matrix row. A timing device is provided to interrogate the columns in sequence to thus sequentially develop bit indicating signals on the word lines indicative of the states of the memory elements. A plurality of comparison device means are provided, each coupled to a different one of the word lines

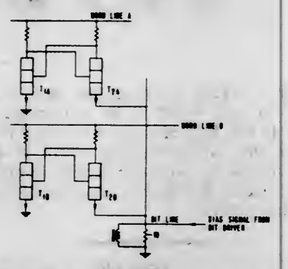
The comparison device means are all sequentially responsive to the search word bits for operating on the indicating signals successively developed on the word lines to in turn develop mismatch output signals, each indicating a mismatch between a search word bit and the corresponding data word bit. Each of the mismatch output signals includes an excursion of a first polarity. A plurality of sense elements are also provided, each coupled to a different one of the word lines and responsive to signal excursions of a first polarity.

3,500,341

BISTABLE MONOLITHIC STORAGE MATRIX WITH NONRESTRICTIVE READOUT PERFORMING LOGICAL OPERATIONS

Antony Proudman, Winchester, England, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Feb. 27, 1967, Ser. No. 618,673
Int. Cl. G11c 7/00, 5/02, 19/00
U.S. Cl. 340—173 3 Claims



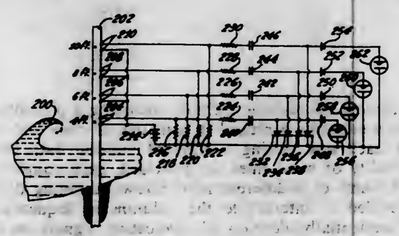
This specification describes transistor storage cells for use in monolithic memories that perform storage, associative storage and/or logical functions. These cells each comprise a pair of transistors which are coupled together to form a bistable circuit. One of the transistors connects an input line of the memory to an output line of the memory. When this transistor is conducting it permits a pulse to pass through it from the input line to the output line. The other transistor is also connected to the input line but has one of its electrodes connected to a source of reference potential so that when it is in its conductive state a pulse on the input line will not be permitted to pass to the output line.

3,500,342

ELECTROLYTIC CELL COUNTER

Thomas B. Bissett, Malibu, and Martin S. Tatch, West Los Angeles, Calif., assignors to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California

Filed June 19, 1967, Ser. No. 646,912
Int. Cl. G11b 31/00
U.S. Cl. 340—173 15 Claims



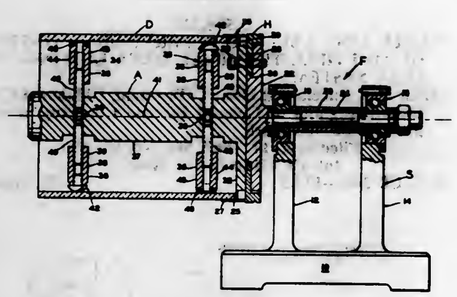
This invention relates to an electrolytic cell counter using an electrolytic cell having at least two electrodes in contact with an electrolyte. A first one of the electrodes includes at least a layer of active material and the second one of the electrodes includes at least a layer of inert material and wherein the inert material is to be plated with the active material from the first electrode through the use of the electrolyte. The plating of the active material is in representation of the count. The invention includes means for producing an output signal in accordance with the occurrence of a particular event and wherein the value of the output signal is independent of the level of the particular event and wherein the output signal is applied to the electrolytic cell to plate discrete quantities of active material on the second electrode. The invention also includes the use of a plurality of such electrolytic cell counters, each responsive to a different level of the particular event so as to provide for a representation of the pattern of the levels of the particular event.

3,500,343

OPTICAL DRUM AND SECURING HUB DEVICE

Bernard Spieker, New Milford, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Original application Apr. 27, 1964, Ser. No. 362,891. Divided and this application Sept. 14, 1967, Ser. No. 667,855
Int. Cl. G11b 7/00; G02b 17/00
U.S. Cl. 340—173 7 Claims



An optical drum and securing hub device for use in an optical memory system of a computer, the drum including a brittle cylindrical drum of a high precision optically coded information glass secured and aligned to a spindle or hub fabricated of a dissimilar material such as steel, the hub being adapted to be secured on a shaft and having fingers disposed around the periphery of the drum and forming a flexible junction with the drum so as to maintain the drum in alignment with the hub although the optical drum and securing hub device may be subjected to thermal stresses and mechanical vibrations.

3,500,344

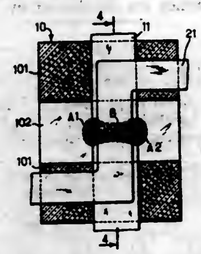
SUPERCONDUCTOR DATA STORAGE DEVICE

Serge Lacroix, Champigny-sur-Marne, France, assignor to Société Industrielle Bull-General Electric, Société Anonyme, Paris, France

Filed June 27, 1966, Ser. No. 560,552
Claims priority, application France, July 29, 1965, 26,511
Int. Cl. G11c 11/44
U.S. Cl. 340—173.1 3 Claims

In order to increase the operating reliability of a data storage device in which a datum is written in the form of persistent currents in predetermined zones of a sheet of superconductive material under the action of coincident control currents, the thickness or composition of

said sheet in any area thereof in which a return to the resistive state might disturb the operation of the device



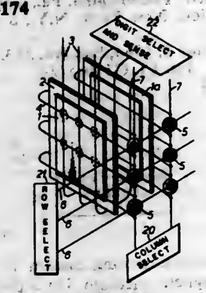
is so chosen that the critical current density of said area is superior to the critical current density of said zones.

3,500,345

INFORMATION STORAGE APPARATUS EMPLOYING MAGNETIC STORAGE ELEMENTS

John Bernard James, London, England, assignor to International Computers and Tabulators Limited

Filed Nov. 5, 1963, Ser. No. 321,469
Claims priority, application Great Britain, Nov. 8, 1962, 42,240/62
Int. Cl. G11b 5/00
U.S. Cl. 340—174 2 Claims



A thin magnetic film storage device has a number of film areas for storage of information. Magnetic fields are applied to the storage areas by means of switch cores coupled by closed loop conductors to the storage areas. The switch cores are arranged in rows and columns and are selectively switched by energisation of row and column conductors threading the cores. In order to simplify the construction of the store, the portions of the loop conductors passing through the switch cores are common to the row conductors. The cores may be mounted in apertures in the substrate which carries the thin film areas and the loop conductors and row conductors are formed by printed circuit techniques, the loop conductors embracing the substrate and passing from one face to the other face of the substrate through the hole in the core. The substrates are stacked and the column conductors threaded through the cores.

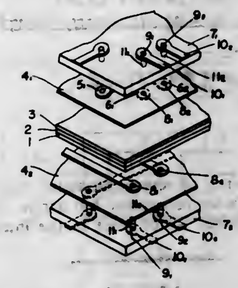
3,500,346

DRIVING PLATES FOR MAGNETIC FILMS

Koichi Takeuchi, Tokyo, Azuo Shikama, Kawasaki-shi, and Shozo Takeno, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Yokohama-shi, Japan, a corporation of Japan

Filed Aug. 13, 1964, Ser. No. 389,441
Claims priority, application Japan, Aug. 14, 1963, 38/61,105
Int. Cl. G11b 5/00; H02b 1/04, 9/00
U.S. Cl. 340—174 3 Claims

A driving plate for magnetic films comprising a base plate having a plurality of aligned driving wires extending longitudinally across but the outer ends of said driving wires not extending up to the edges of said base plate, said aligned driving wires being disposed on the opposites of said base plate, said aligned driving wires on the one of said surfaces being perpendicular to those on the other surface, a lamina upon said base plate, output terminals



on said lamina extending inwards only to the respective ends of said driving wires, perforations through the outer ends of said driving wires and through the inner ends of the output terminals of said laminated plates, and film conductors on the inner walls of said perforations so as to interconnect said driving wires and output terminals.

3,500,347

INTEGRATED DEVICE

Sigfrid Schweizerhof, Backnang, Württemberg, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Donau), Germany

Filed Jan. 27, 1965, Ser. No. 428,376
Claims priority, application Germany, Jan. 27, 1964, T 25,500
Int. Cl. G11b 5/00
U.S. Cl. 340—174 7 Claims



An integrated circuit using thin magnetic storage layers for storing, switching or logically combining information. The arrangement has a system of insulated conductors printed on a soft magnetic, highly permeable base forming interaction regions which correspond to the desired operative function. Non-magnetic layers are disposed on the conductor system in the interaction regions and thin magnetic storage layers applied thereto; the latter thus cover the non-magnetic layers and contact the soft magnetic base in the zones around the interaction regions.

3,500,348

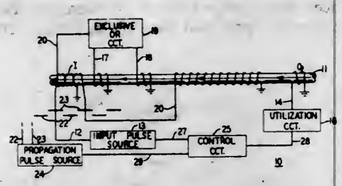
SHIFT REGISTER PULSE GENERATOR INCLUDING FEEDBACK LOOP

Robert F. Fischer, Livingston, and Raghubir A. Kansal, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 8, 1966, Ser. No. 536,170
Int. Cl. G11b 5/00; H04q
U.S. Cl. 340—174 18 Claims

A domain wall countdown circuit comprising an integrated pseudo-random "pulse" generator and a character

recognizer is disclosed. The pulse generator provides ever-changing patterns of reverse-magnetized domains at its



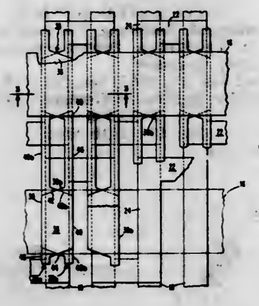
output. The patterns of reverse domains are propagated through the character recognizer but arrive at its output only if the recognizer is not reset in the interim.

3,500,349

WRITE MECHANISM FOR A THIN FILM MEMORY

Rodger L. Gamblin and Philip A. Lord, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 4, 1966, Ser. No. 570,369
Int. Cl. G11b 5/74
U.S. Cl. 340—174 4 Claims



A thin film microwave absorption memory having a looped write line. The configuration of the write line is such that certain portions of the magnetization vectors cancel out and certain portions are reinforced. This is accomplished by full width land areas in the region of the storage position and connecting portions of substantially less width contacting alternate side sections of successive land areas.

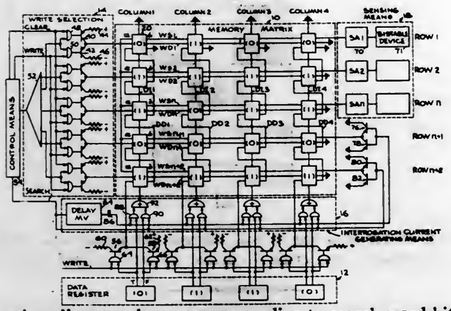
3,500,350

SEMIPARALLEL CONTENT ADDRESSABLE MEMORY

Alfred D. Scarbrough, Northridge, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Dec. 13, 1963, Ser. No. 330,396
Int. Cl. G11b 5/00
U.S. Cl. 340—174 10 Claims

A non-destructive readout content addressable memory system comprised of a magnetic core matrix defining a plurality of word locations, each location containing one core per stored information bit with all cores of the same location being traversed by a common word sense line. An all "0's" word location and an all "1's" word location are provided together with means for selectively connecting the sense lines of either of these two locations in opposition to the sense lines of all of the other locations. Semiparallel searches are conducted by initially interrogating all core columns corresponding to search word bits of a first state (e.g. "1" and subsequently interrogating all core columns corresponding to search word bits of a second state (e.g. "0").



3,500,351

MAGNETIC RECORDING MEMORY

Edward N. Schwartz, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 8, 1964, Ser. No. 373,211
Int. Cl. G11b 5/74
U.S. Cl. 340—174 18 Claims



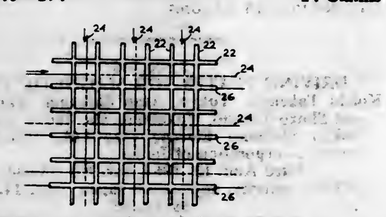
A phase modulation writing system is disclosed for recording on a magnetic medium. On a plated wire magnetic coating medium having the property of uniaxial anisotropy, a bi-polar pulse is applied to the wire during the write cycle. This stabilizes the magnetic coating and prevents the creep of information from one bit into an adjacent bit along the wire.

3,500,352

NON-DESTRUCTIVE READOUT ARRANGEMENTS FOR A WOVEN SCREEN MEMORY

John S. Davis, Glendale, and Paul E. Wells, Los Angeles, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 380,982, June 29, 1964. This application July 23, 1965, Ser. No. 474,348
Int. Cl. G11b 5/00
U.S. Cl. 340—174 14 Claims



Non-destructive readout memory apparatus utilizing grain-oriented remanently magnetic material as a storage medium in various configurations which include a

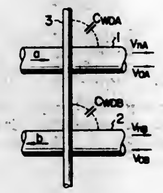
particularly oriented conductor which may be driven to disturb the stored magnetization state without destroying same.

3,500,353

MEMORY ELEMENT USING MAGNETIC THIN FILM WIRE

Yoshihiro Tohma, Minoru Takashima, and Shigetoshi Watanabe, Tokyo-to, Japan, assignors to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 5, 1966, Ser. No. 599,101
Claims priority, application Japan, Dec. 11, 1965, 40/76,153
Int. Cl. G11c 11/14
U.S. Cl. 340—174 2 Claims



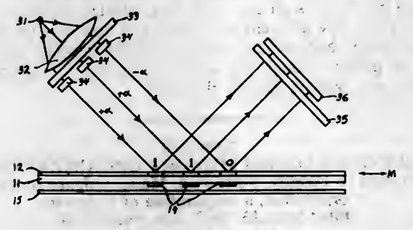
A memory element of the type provided with cylindrical magnetic thin film wire used as information lines for writing-in and reading-out information and word lines crossing the information lines has a cancellation line for mutual nullification of word noise voltages thereby improving the signal-noise ratio. The information line and the cancellation lines are combined on the same base plate. The cancellation line consists of a core wire that is coated with a film of a magnetic thin film which does not have magnetic anisotropy or a ferromagnetic material caused to have magnetic anisotropy in the wire axial direction.

3,500,354

CONTENT-ADDRESSED MEMORY USING OPTICAL INTERROGATION

Donald O. Smith, Lexington, and Kenneth J. Harte, Carlisle, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 25, 1967, Ser. No. 611,754
Int. Cl. G11c 15/00, 7/00; G02f 1/22
U.S. Cl. 340—174 5 Claims



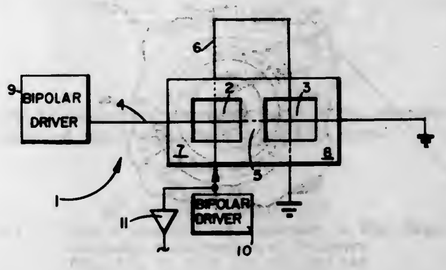
A content-addressed memory system, having a thin film magnetic memory storage array employing conventional electronic information storage methods, uses magneto- or electro-optical cells to present the interrogation word to the memory array in the form of plane-polarized interrogating light beams. The information is retrieved with nondestructive read-out by means of the longitudinal magneto-optical effect.

3,500,355

NON-DESTRUCTIVE READOUT MEMORY ELEMENT HAVING DUAL APERTURES

John A. Baldwin, Jr., Santa Barbara, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Jan. 30, 1967, Ser. No. 612,476
Int. Cl. G11c 11/08
U.S. Cl. 340—174 1 Claim



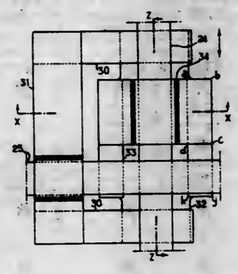
A non-destructive readout element having two conductors passing through two apertures in such a manner that when writing the flux produced by current passing through the conductors aids each other in the magnetic material surrounding one aperture and opposes each other in the magnetic material surrounding the other aperture. Before each writing, the core is cleared. Non-destructive reading is achieved by passing a current through the apertures in the same manner as the writing pulse with the stored bit being sensed on the other line in the form of a bipolar spike. The magnetic orientation of the core remains unchanged after an interrogation period.

3,500,356

FERROMAGNETIC-FILM MEMORY ELEMENTS WITH TWO FLUX CLOSURE ELEMENTS

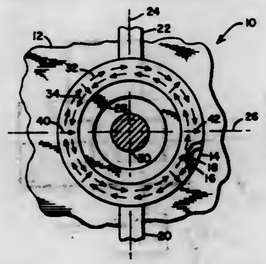
Henri Gérard Feissel, Paris, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France

Filed Dec. 15, 1967, Ser. No. 690,853
Int. Cl. G11c 11/14, 7/02; H01f 41/14
U.S. Cl. 340—174 7 Claims



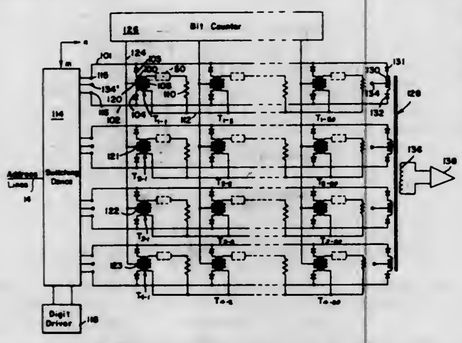
As component of a rapid matrix memory, a data storage element comprises an anisotropic magnetic film disposed at the crossing point of a first and a second conductor, two closing bridges of isotropic magnetic material applied to the same face of the said film so as each to close respectively a magnetic circuit around one of the said conductors, the second closing bridge having the form of a C disposed flat, composed of two legs and of a connecting member, permitting the use of relatively simplified deposition methods.

3,500,357
SANDWICHED MAGNETIC MEMORY ELEMENT
Edward L. Kiloger, St. Paul, and William W. Davis, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 619,838
Int. Cl. G11b 5/00
U.S. Cl. 340—174 7 Claims



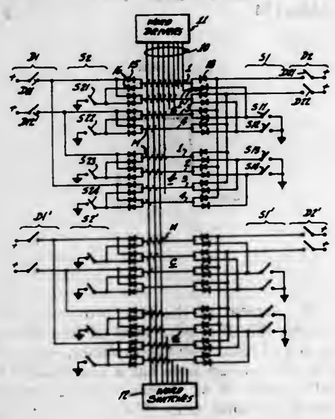
A nondestructive readout memory element comprising two superposed, closed-flux-path, thick-ferromagnetic-films sandwiching a word line of the same general form having input and output leads. An energized sense-bit line threading the central aperture sets the magnetization of the films in a first or a second and opposite polarity around the closed-flux-path corresponding to the polarity of the applied current signal. The energized word line effects the magnetization of the films inducing a bi-polar output signal in the sense-bit line, the polarity phase of which is indicative of the polarity of the films' magnetization.

3,500,358
DIGIT LINE SELECTION MATRIX
Milton G. Blenkoff and Alfred W. Seaborn, Canoga Park, and Michael Sherman, Granada Hills, Calif., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,637
Int. Cl. G11b 5/00
U.S. Cl. 340—174 7 Claims



A transformer matrix for selecting one of a plurality of magnetically plated digit lines in a woven wire memory in which each digit line contains a plurality of magnetizable zones for the storage of such binary data as is used by digital computer memories. Each transformer, when appropriately selected by matrix selection techniques, provides to its associated digit line a magnetizing current of a selected polarity, as well as providing an output device to a single output transformer and read amplifier, which are common to all digit lines.

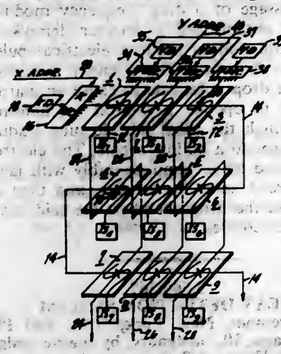
3,500,359
MEMORY LINE SELECTION MATRIX FOR APPLICATION OF READ AND WRITE PULSES
Peter K. Hoteh, Cherry Hill, and Donald H. Montgomery, Woodbury, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,750
Int. Cl. G11b 5/00
U.S. Cl. 340—174 8 Claims



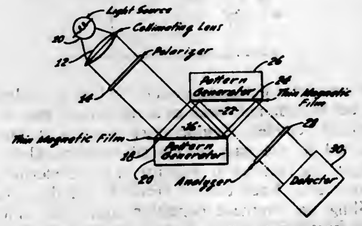
A memory line selection matrix of the type wherein both ends of many memory conductor lines are coupled to selectively-operated transistor drivers and switches. When it is desired to select one memory line for the application of a read pulse of one polarity followed by a write pulse of the opposite polarity, it is necessary according to the prior art to employ twice as many unipolar transistor drivers and switches as are needed for the application of a pulse of one polarity only. In a memory of the 2½D type where corresponding conductors in many bit arrays are selected for the application of read pulses followed by write pulses, the disclosed selection matrix accomplishes the selection with from 25 to 33 percent fewer drivers and/or switches. The selection matrix employs two driver and switch means for simultaneously applying read pulses through corresponding selected conductors in two respective adjacent bit arrays, and then uses the same two driver and switch means to apply opposite-polarity write pulses through the same conductors in transposed respective ones of the two bit arrays.

3,500,360
RANDOM-ACCESS MEMORY ORGANIZATION
Francis D. Cassidy, Townsend, Mass., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,603
Int. Cl. G11b 5/00
U.S. Cl. 340—174 6 Claims

The random-access memory organization disclosed differs from three-dimensional and two-and-a-half dimensional organizations, but possesses some features and advantages of both. There are as many bit arrays as there are bits in the words to be stored, and each bit array contains as many memory elements as there are words. A half-select current is supplied to memory elements located in the first plane through the stack, and half-select currents are applied to a plurality of orthogonal planes through the stack, to fully select the memory elements located at the intersections of the first plane with the plurality of orthogonal planes. The memory organization permits various sizes of memories to be constructed with advantageous performance and cost characteristics.



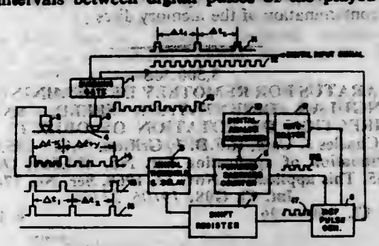
3,500,361
MAGNETO-OPTICAL CORRELATOR
Stanton H. Cushner, Los Angeles, Calif., assignor to The Magnavox Company, a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,757
Int. Cl. G11b 5/00
U.S. Cl. 340—174 25 Claims



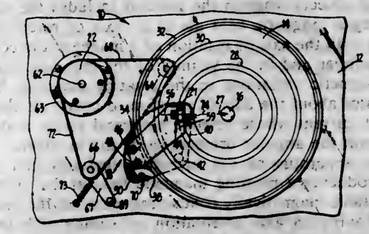
This invention relates to a magneto-optical correlator including at least first and second thin magnetic films and with each thin magnetic film containing magnetic information. The present invention also includes light energy directed to the first thin magnetic film so as to produce rotations in the direction of polarization of the light energy in accordance with the magnetic information contained on the thin magnetic film and with the rotated light energy from the first thin magnetic film directed to the second thin magnetic film for further polarization rotations in the light energy in accordance with the magnetic information contained on the second thin magnetic film so that the total polarization rotations in the light energy is in accordance with a correlation of the magnetic information on the first and second thin magnetic films.

3,500,362
METHOD AND APPARATUS FOR ELIMINATING WOW AND FLUTTER
Herbert E. Schmitz, Amherst, and Thomas E. Woodruff, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,652
Int. Cl. G11b 5/00
U.S. Cl. 340—174.1 15 Claims

Apparatus and methods are disclosed for compensating for the effects of wow and flutter in a digital recording system by indexing the signal to be recorded with a first reference signal and subsequently establishing correct time intervals between digital pulses of the played-back signal by sequentially comparing pulses of the composite reproduced signal with a second reference signal.

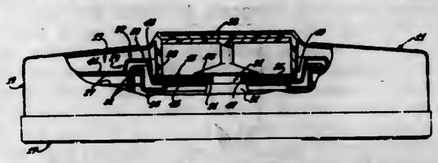


3,500,363
SCANNING APPARATUS
Karl E. Shill, Fremont, Calif., assignor to The Singer Company, a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,348
Int. Cl. G11b 5/48, 5/00
U.S. Cl. 340—174.1 6 Claims



A magnetic record disc and a transducer mounting mechanism for moving the transducer between tracks on the disc. The mounting mechanism is pivoted at a location that provides low inertia for the mechanism and provides compensation for differing signal strengths at different radially spaced tracks of the disc.

3,500,364
DISC PACK WITH CARD LABEL
Charles W. David, El Segundo, and Richard J. Penny, Playa Del Rey, Calif., assignors to Disc Pack Corporation, Hawthorne, Calif., a corporation of California
Filed Mar. 2, 1967, Ser. No. 620,009
Int. Cl. G11b 5/82
U.S. Cl. 340—174.1 6 Claims



This disclosure describes a disc pack which includes a plurality of memory discs and a supporting structure for retaining the discs in spaced, stacked generally coaxial relationship. The supporting structure includes an upwardly facing cover bezel having a recessed upper face visible from above the disc pack. A card label, which is constructed of a nonfraying material is adhered to the recessed upper face of the cover bezel by an adhesive. The card label has a writing surface thereon, which is visible from above the disc pack, and on which identifying markings can be placed. Means, such as slits, in the card label are provided for facilitating removal of the card label from

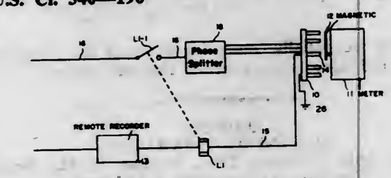
the cover bezel to permit writing on the writing surface after the card label is removed from the disc pack to present contamination of the memory discs.

3,500,365

APPARATUS FOR REMOTELY DETERMINING THE ANGULAR ORIENTATION, SPEED, AND/OR DIRECTION OF ROTATION OF OBJECTS

Charles J. Cain, R.F.D. 1, Grifton, N.C. 28530

Continuation of application Ser. No. 494,560, Oct. 11, 1965. This application Nov. 12, 1968, Ser. No. 776,310
Int. Cl. G08c 19/06, 21/00
U.S. Cl. 340—196 6 Claims



A method of and apparatus for remotely determining the angular orientation, speed, and/or direction of rotation of objects wherein the method includes the steps of rotating a magnetic field about an axis of rotation coinciding with the axis of rotation of a magnetically conducting member and in the vicinity of the member, detecting the magnetic variations in the rotating magnetic field as it rotates about the axis of rotation to create an electrical output current whose relative electrical phase is dependent upon the angular orientation of the member.

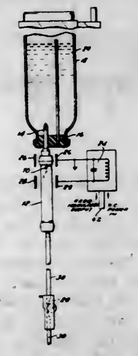
The apparatus of the invention includes first means for producing a rotating magnetic field in the vicinity of a rotatable magnetically conducting member, the magnetic field having an axis of rotation coinciding with the axis of rotation of the member; and second means for detecting variations in the rotating magnetic field as it passes the member, the second means creating an electrical output current whose relative electrical phase is dependent upon the angular orientation of the member.

3,500,366

MONITORING SYSTEM FOR FLUID FLOW IN DROP FORM

John Chesney, Roselle Park, Vincent P. Friberg, Leonia, and Richard B. Phelps, New Milford, N.J., assignors to General Instrument Corporation, Newark, N.J., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,665
Int. Cl. G05b; G08b 21/00, 13/00
U.S. Cl. 340—222 21 Claims



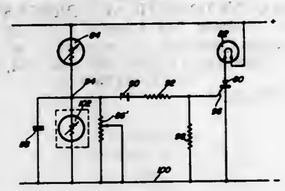
The present drop monitor is designed for use with a conventional drop chamber, the monitor comprising a radio frequency oscillator having a resonant circuit, with two electrodes spaced apart axially along the outside of the drop chamber and coupled to the resonant circuit. Downward passage of a drop frequency modulates the FM oscillator output, and a detector demodulates the frequency modulation to produce electrical pulses as a measure of the drop rate. The circuitry is responsive to an error in the drop pulse rate to cause an alarm operation, and also to operate a shut-off mechanism which stops flow through the usual flexible tube leading from the drop chamber to a hollow needle. The electrodes are preferably carried by a clamp assembly with jaws which are readily spread apart by handles, and then clamped resiliently about the drop chamber, the said jaws carrying the spaced electrodes.

3,500,367

HEAT DETECTION SYSTEM

Howard J. Fremont, New York, N.Y., and Philip N. Baron, Chicago, Ill., assignors, by mesne assignments, to Howard J. Fremont & Company, Inc., a corporation of Illinois

Continuation-in-part of application Ser. No. 466,951, June 25, 1965. This application Mar. 11, 1966, Ser. No. 533,734
Int. Cl. G08b 21/00
U.S. Cl. 340—228 7 Claims



An overheat detection system including a plurality of separate branch networks each of which has a silicon-controlled rectifier. Temperature responsive means are connected to the gate of the silicon-controlled rectifier to trigger the rectifier in response to a predetermined temperature level. Each branch network includes a lamp for signalling an overheat condition and each silicon-controlled rectifier is connected in its branch network so that it does not control other branch networks.

3,500,368

AUTOMATIC IONIC FIRE ALARM SYSTEM

Nagno Abe, Chofu-shi, Japan, assignor to Nittan Company Limited, Tokyo, Japan

Filed Aug. 18, 1966, Ser. No. 573,284
Claims priority, application Japan, Mar. 30, 1966, 41/28,133
Int. Cl. G08b 17/10
U.S. Cl. 340—237 7 Claims

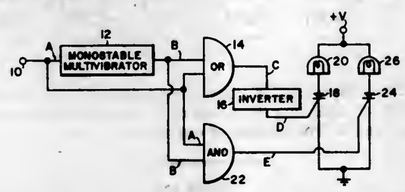
An automatic fire detecting device comprising a housing with openings communicating with the atmosphere, a dividing means within the housing for dividing the housing into an atmospheric isolated inner ion chamber and an outer ion chamber, the latter communicating with the atmosphere and isolated from the inner chamber, the dividing means including an electrode cover having an inner and outer surface communicating with the inner and outer ion chambers, respectively, an inner radioactive source disposed on the inner surface and an outer radioactive source disposed on the outer surface, an inner electrode means disposed in the inner ion chamber in spaced relationship from the inner radioactive source, and an outer electrode means disposed in the outer ion chamber spaced from the outer radioactive source, the inner and outer radioactive sources emitting radioactive rays toward the inner and outer electrode means, respectively, and circuit means for comparing the ionization conditions of the inner and outer chambers and detecting any difference therebetween caused by smoke entering the outer ion chamber, including a field effect transistor, and a constant voltage diode for conducting in response thereto and a controlling rectifier responsive to the latter.

3,500,369

PULSE WIDTH ERROR DETECTOR

Richard O. Kellam, Jr., Escondido, Calif., assignor to Singer-General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,688
Int. Cl. G08b 21/00; H03k 5/20
U.S. Cl. 340—248 2 Claims



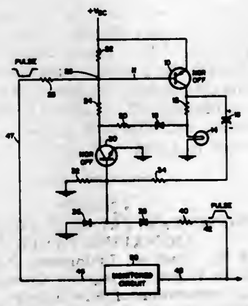
A monostable multivibrator is adjusted to produce output pulses of predetermined pulse width in response to the introduction of the leading edges of the pulses being sampled. Both the output of the multivibrator and the sampled pulses are fed as inputs to an OR gate which, in turn, is coupled to an inverter and then to a silicon controlled rectifier. The OR gate triggers the rectifier whenever the pulse width of the sample signal decreases below that of the multivibrator's output. In order to give an indication when the sampled signal pulse width exceeds that of the multivibrator output, an AND gate is provided responsive to the sample signal and the multivibrator's output and adapted to trigger a second silicon controlled rectifier whenever there is lack of coincidence between the input signals applied to the AND gate.

3,500,370

COMPLEMENTARY ONE-SHOT INDICATOR CIRCUIT

Amram Raziel and William M. Henebry, Marblehead, Mass., assignors to EG & G Inc., Bedford, Mass., a corporation of Massachusetts

Filed Apr. 3, 1967, Ser. No. 627,912
Int. Cl. G08b 5/36
U.S. Cl. 340—248 1 Claim



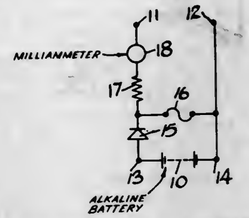
A lamp indicator circuit having two transistors connected as a monostable multivibrator with a clamping circuit connected between the transistor outputs and a lamp connected at the output of one of the transistors.

3,500,371

ACTIVATION INDICATOR FOR ALKALINE BATTERIES

Gordon John Shotton, Sheldon, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Jan. 16, 1967, Ser. No. 609,652
Claims priority, application Great Britain, Jan. 21, 1966, 2,817/66
Int. Cl. G08b 21/00
U.S. Cl. 340—249 1 Claim



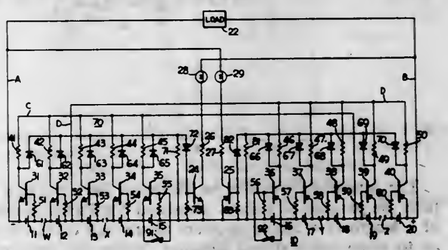
An indicator for showing when an alkaline battery is activated by pouring electrolyte into it. Current from a source separate from the battery flows through the warning device in series with a fusible link, but the current is limited to a value such that the link is not broken. When the battery is activated, an additional current flows through the link and breaks it, so that the current to the warning device is broken.

3,500,372

ELECTROCHEMICAL BATTERY MONITORING SYSTEM

Tom N. Thiele, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed July 17, 1967, Ser. No. 653,710
Int. Cl. G08b 21/00
U.S. Cl. 340—249 6 Claims



A fuel cell battery is connected to furnish power to a load. A sensing transistor is connected across each of the individual cells of the battery to sense the condition of that individual cell. The sensing transistors are connected in two banks of circuits to each control a switching transistor. Upon polarity reversal or low output voltage in any cell, the associated sensing transistor operates to turn on a switching transistor to light a lamp indicating that cell failure has occurred in the indicated portion of the battery.

3,500,373

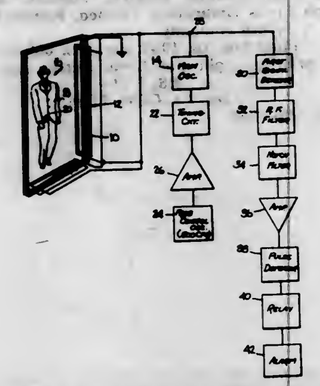
METHOD AND APPARATUS FOR ARTICLE THEFT DETECTION

Arthur J. Minasy, Woodbury, N.Y., assignor, by mesne assignments, to The National Bank of North America, as trustee, a national banking association

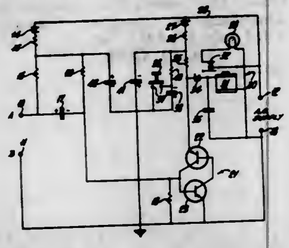
Filed May 6, 1966, Ser. No. 548,314
Int. Cl. G08b 13/00
U.S. Cl. 340—258 20 Claims

A theft detection system wherein a resonant electrical circuit affixed to articles to be protected, electromagnetic

waves are generated at a checkpoint and are caused to sweep repetitively at a given rate through a frequency range including the resonant frequency of the circuit attached to the protected articles and wherein changes in energy level which occur at the repetition rate are detected.



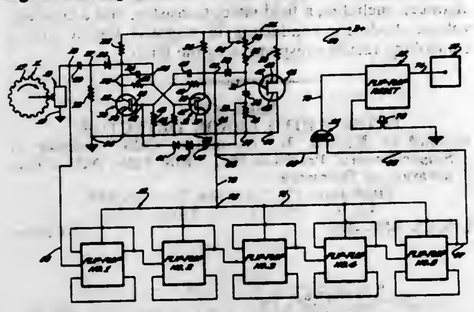
3,500,374
THREAD END DETECTOR
Carl E. Atkins, Montclair, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 630,081
Int. Cl. G08b 21/00
U.S. Cl. 340—259 8 Claims



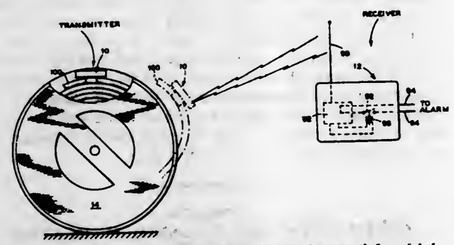
The invention provides an electrical device which detects the passage of a short metalized conductive segment of a length of a thread adjacent to the end of the thread or to some other thread distance. When the conductive portion passes two sensing terminals, a circuit is completed and a semiconductor switch is activated, lighting an indicating lamp. The lamp remains lighted until the circuit and switch are normalized by depressing a switch button.

3,500,375
DIGITAL OVERSPEED DETECTOR
Robert G. Klimo, Parma, Ohio, assignor to TRW, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 21, 1967, Ser. No. 617,683
Int. Cl. G08b 21/00
U.S. Cl. 340—268 11 Claims

An overspeed digital detection device having signal means for generating a fixed number of pulses per revolution of a toothed wheel being speed detected and having counting means for counting a number of pulses generated by the signal means. A timing means begins clocking a time interval and the timing means and the counting means, running side by side, generate output pulses at the end, respectively, of the count and of the timing intervals. If the output pulse from the counting means occurs prior in time to the output pulse from the timing means, an "and" gate is triggered to initiate an alarm signal indicating that the speed of the toothed wheel has exceeded a preset minimum. The speed being detected can be varied either by changing the count of the counting means or by varying the time interval of the timing means.



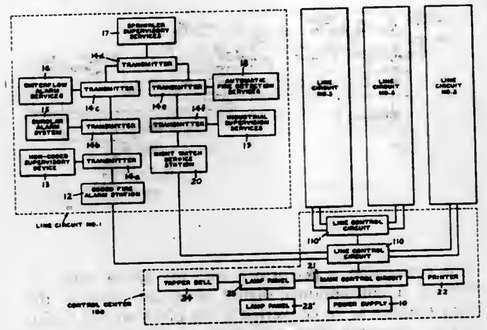
3,500,376
THEFT PROTECTION APPARATUS
Leslie A. Cooper, Garden City, N.Y. (P.O. Box 3392, Charlotte Amalie, Virgin Islands of the United States 00801)
Filed June 1, 1967, Ser. No. 646,415
Int. Cl. G08b 21/00
U.S. Cl. 340—280 8 Claims



An apparatus for preventing the theft of an article which includes an alarm transmitter received within a housing. A clamp is provided for clamping the housing in a preselected position on the article. The clamp includes an operating means which is received within the housing when the housing is oriented in the preselected position. At least one position responsive switch is connected between the transmitter and a transmitter energizing means and is adapted to connect the transmitter with the energizing means when the housing is moved from the preselected position. Additionally, a further switch is provided to connect the energizing means with the transmitter when the clamp operating means is removed from the housing. Accordingly, if the article is moved the position of the housing will change to cause an alarm signal to be transmitted to a remote receiver.

3,500,377
NONINTERFERING ELECTRICAL SIGNALING SYSTEM
Manfred W. Muehter, Livingston, N.J., assignor to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey
Filed Oct. 21, 1966, Ser. No. 588,517
Int. Cl. G08b 25/00
U.S. Cl. 340—287 4 Claims

An electrical protection system consisting of a plurality of line circuits connected to a central station, and a plurality of transmitters associated with each line circuit, in which interference between actuated transmitters on different lines is prevented by giving precedence in establishing a connection to the central station to that line which is the first to have an actuated transmitter, and by allowing all actuated transmitters on the line having precedence to complete their transmission to the central station before another line is connected to the central station. This system is also characterized by an anti-jamming circuit which provides for bypassing a stalled transmitter on a given line so that other transmitters associated with that line are given access to the line ahead of the stalled transmitter. This system is further characterized by a limiter circuit for preventing damage to the system, in which both the line current and the line voltage are limited to respective predetermined maximum levels.

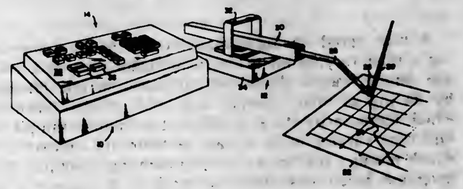


3,500,378
BATTERY-OPERATED BARRIER LIGHT HAVING RESILIENT CUSHION MOUNTING STRUCTURE
Thomas E. Pickering, % Nightflasher, Inc., 1234 San Fernando Road, Los Angeles, Calif. 90065, and Keith M. Johnson, La Habra, Calif.; said Johnson assignor to said Pickering
Filed June 21, 1965, Ser. No. 465,506
Int. Cl. G08b 5/38
U.S. Cl. 340—331 16 Claims



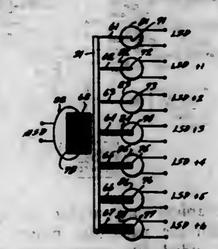
A warning light which includes a casing with a hollow lens assembly mounted on the upper wall of the casing, the casing and the lens assembly having overlapping, interengaging portions with a cushioning member therebetween. A plastic biscuit assembly including a base portion and an upwardly extending tubular portion having a lamp at the upper end thereof, is mounted in the casing with the tubular portion extending into the hollow lens assembly. Triggering means for the lamp are fitted entirely within the tubular portion of the biscuit assembly. The switching means which actuates said triggering means includes an actuator bar slidable on the base portion of the biscuit assembly between an open position and a closed position, the opposed ends of the actuator bar being adjacent opposed side walls of the casing. The opposed side walls of the casing are provided with apertures for receiving a thin tool which is engageable with an end of the actuator bar.

3,500,379
POSITION-TO-SIGNAL ENCODER
Jerry V. Gibbons, 1715 Lucile Ave., Los Angeles, Calif. 90026; Robert I. Morefield, 406 E. California, Arcadia, Calif. 91006; William E. Fletcher, 48 Bartlett St., Watertown, Mass. 02172; and David N. Keast, Los Angeles, Calif. (5331 Hinton Ave., Woodland Hills, Calif. 91364)
Filed Nov. 23, 1964, Ser. No. 420,238
Int. Cl. H04l 3/00; H03k 13/00
U.S. Cl. 340—347 10 Claims



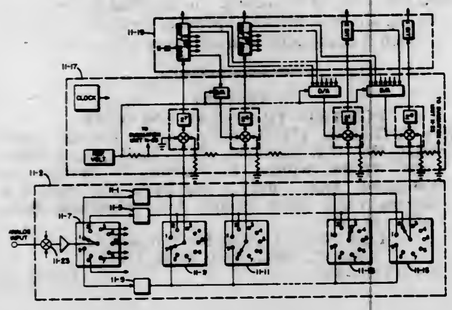
A manually operated, relative position to analog encoder, having an extensible arm which is pivotally mounted. The arm is coupled to a pair of potentiometers providing a first signal proportional to the extension of the arm and a second signal proportional to the angular rotation of the arm. These signals are digitized into binary coded signals by an analog-digital converter.

3,500,380
BINARY INPUT TORQUE MOTOR
James M. Jessee, Granada Hills, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,092
Int. Cl. H03k 13/00; H04l 3/00
U.S. Cl. 340—347 5 Claims



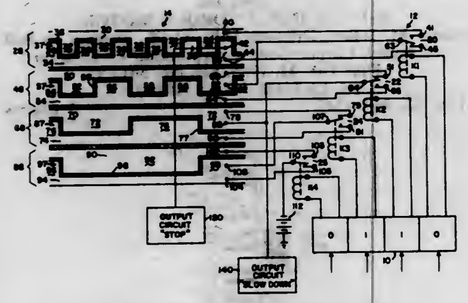
A servo valve having a torque motor capable of receiving parallel binary electrical input signals from a source thereof such as a digital computer and converting the same to an analog mechanical position which in turn is capable of positioning an actuator connected to a load. The torque motor includes a magnetically sensitive armature and a plurality of magnetically saturable pole pieces each positioned adjacent the armature thereby to apply a predetermined fixed force to the armature when the pole piece is magnetically saturated.

3,500,381
HIGH SPEED ANALOG-TO-DIGITAL CONVERTER
Patrick H. Conway, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,945
Int. Cl. H03k 13/02
U.S. Cl. 340—347 10 Claims



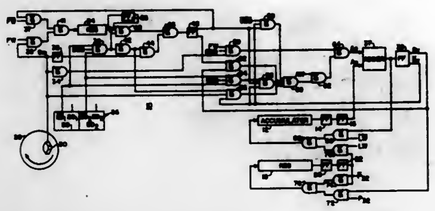
A high speed analog-to-digital converter for converting a time varying input electrical signal such as a voltage sample into a digital output signal in one bit-time by having as many sample and hold circuits (each of which temporarily stores a different amplitude sample of said time varying input signal) as there are comparators which produce the binary bits representing a sample. The invention herein described was made in the course of or under a contract or subcontract thereunder, with the Department of the Army.

3,500,382
DIGITAL COMPARATOR
Walter L. Rochette, Glendora, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,041
Int. Cl. G08c 9/08
U.S. Cl. 340—347 1 Claim



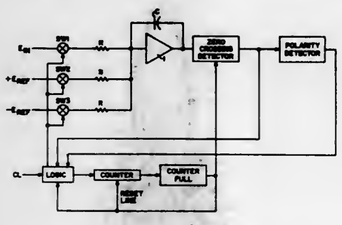
An electromechanical comparator for generating an output signal when the particular binary number read from a rotatable coded disc corresponds with a binary number of an input command signal. The binary coded disc contains a plurality of commutator tracks each containing a true and a false feed track connected to switching segments which are interlaced to form a switching track. The binary number of the command signal selects the particular true and false feed track in each commutator disc and when the rotatable disc is rotated, an output signal is produced when the code read from the disc corresponds with the command signal and there is series continuity through the selected commutator tracks.

3,500,383
BINARY TO BINARY CODED DECIMAL CONVERSION APPARATUS
John W. Pross, Jr., Newfoundland, N.J., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,567
Int. Cl. G06f 5/00
U.S. Cl. 340—347 7 Claims



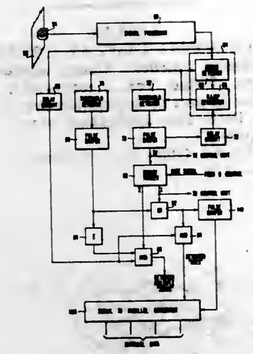
The conversion is performed with the divide logic circuitry of a conventional digital computer wherein the binary number to be converted is the dividend and a plurality of constants from a predetermined set are successively used as divisors. A first constant is used for four successive partial divisions and then a second constant is used for the next four partial divisions and so on, utilizing a different constant for each order of binary coded decimal digit whereby each partial division determines one bit of a binary coded decimal digit. The constants are judiciously selected and scaled so that each is less than one and when taken together form a geometric progression wherein constants after the first are each 1.6 times as great as the last preceding constant.

3,500,384
CHARGE GATED ANALOG-TO-DIGITAL CONVERTER
Bob N. Naydan, Oakland, N.J., and Sidney Sacks, Yonkers, N.Y., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,144
Int. Cl. H03k 13/20; G01r 17/06
U.S. Cl. 340—347 1 Claim



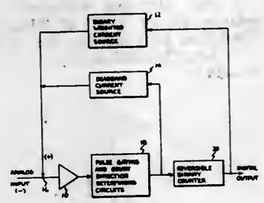
Analog to digital conversion is effected by integrating an analog input potential for an interval of time determined by a preselected count of a counter, then removing the input potential and applying a reference potential of polarity opposite to the input potential polarity and integrating this reference potential until the integral is equal to zero. The time required to bring the integral to zero is measured by the counter which is reset and re-started upon application of the reference potential and stopped at the time of zero integral. The ratio of counter count at zero crossing to the preselected count is a digital representation of the analog input potential.

3,500,385
CODED DATA STORAGE AND RETRIEVAL SYSTEM
Marco Padalino, San Jose, William F. Krajewski, Los Gatos, and Hiroshi Nagahara, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 17, 1967, Ser. No. 653,784
Int. Cl. G06f 5/00; G11b 5/06
U.S. Cl. 340—347 9 Claims



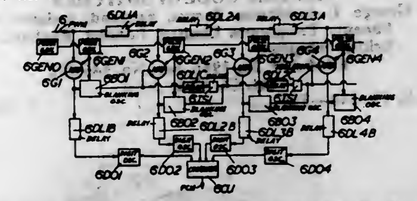
A data processing system employs a modified frequency modulation, incorporating a particular code useful for recording and detecting binary data on a storage medium, or for transmission and detection of data in a communication system.

3,500,386
COUNTER CONTROL CIRCUIT FOR AN ANALOG TO DIGITAL CONVERTER
Selby G. Venning, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed June 26, 1967, Ser. No. 648,921
Int. Cl. H03k 13/02, 21/06
U.S. Cl. 340—347 6 Claims



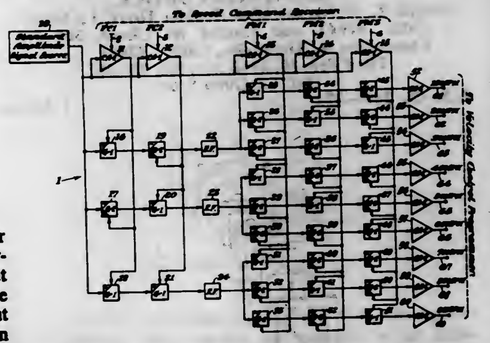
An analog to digital converter with a reversible counter controlling positive current sources. A pulse gating circuit includes shift register elements which accept an input from an amplifier in which negative analog currents are balanced with the positive currents. The amplifier output determines the state which the first element assumes when pulsed by a clock pulse. The first element's output determines the state which the second element assumes when pulsed by the inverted clock pulse. When both elements are in the same state, the counter contents change at a clock pulse rate in a direction determined by the common state. A deadband current source prevents changes in counter contents when the analog input remains constant after being balanced by the counter controlled positive current sources.

3,500,387
PTM TO PCM AND PCM TO PTM CONVERSION CIRCUITRY
George Frederick Craven and Antoni Emil Karbowiak, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,459
Claims priority, application Great Britain, Dec. 10, 1963, 48,771/63
Int. Cl. H04l 3/00; G08c 9/00, 11/00
U.S. Cl. 340—347 10 Claims



Several embodiments of a coder and decoder are described operating on time quantization (PTM to PCM and the reverse) rather than amplitude quantization. In the coder, N stages, to generate an N digit PCM signal, each include a coincidence gate, timed in successive stages by timing signals of decreasing powers of two, and delay arrangements having decreasing delays of powers of two. The coincidence gates of the stages respond to its appropriate fraction of the PTM input signal to produce the PCM signal by activating a pulse generator in each stage, whose outputs are coupled to a common combiner. In the decoders, N stages each include a coincidence gate responding to a different one of the code elements of the PCM signal, timed by decreasing powers of two, and delay elements of appropriately decreasing powers of two to produce an appropriate portion of the PTM signal from which the total PTM signal is generated.

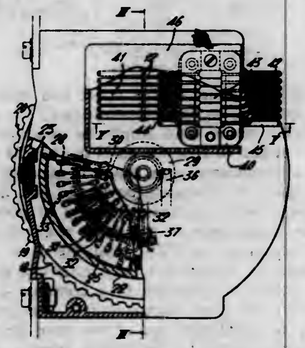
3,500,388
FAIL-SAFE LOGIC SPEED COMMAND DECODER
Donald B. Marsh, Penn Hills, and Walter W. Sauville, Eastmont, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1965, Ser. No. 506,558
Int. Cl. H03k 13/00; H04l 3/00; G06f 5/02
U.S. Cl. 340—347 25 Claims



This disclosure relates to a fail-safe information decoding network having a plurality of gated amplifiers electrically coupled to a separate one of a plurality of input signals. The network includes a logic matrix having a plurality of fail-safe gated circuits forming quasi-tree circuits. Each of the quasi-tree circuits includes a trunk and branch portions electrically interconnected with the gated amplifiers. A source of A.C. signals is electrically cou-

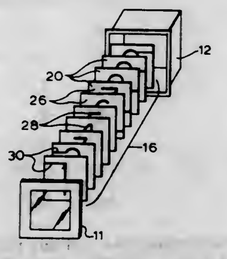
pled to each of the gated amplifiers and to each trunk portion of the quasi-tree circuits. An output amplifier is electrically coupled to the separate branch portions of the quasi-tree circuits so that a predetermined circuit path is established between one of output amplifiers and the A.C. signal source in accordance with the present of at least two of the input signals.

3,500,389
ELECTRIC CODING SWITCHES
George T. Robinson, Barnet, England, assignor to Phoenix Telephones Limited, London, England, a British company
Filed Apr. 28, 1966, Ser. No. 546,092
Int. Cl. G08c 1/00
U.S. Cl. 340—364 4 Claims



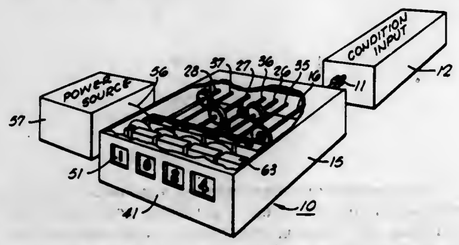
A hollow cylinder is rotatable on a support and one end face of the cylinder define concentric cam tracks. Cam followers on the support actuate switches to provide a digital output upon rotational positioning of the cylinder. A series chain of resistors is mounted in the cylinder with tapping points on the other cylinder end face and wipers on the support engage the tapping points to provide an analog output upon rotational positioning of the cylinder.

3,500,390
GASEOUS GLOW PLURAL CHARACTER PRESENTATION DEVICE
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041, and Harold W. Ulmer, 306 N. Clementine St., Oceanside, Calif. 92054
Filed Feb. 19, 1968, Ser. No. 706,282
Int. Cl. G08b 5/00
U.S. Cl. 340—378 1 Claim



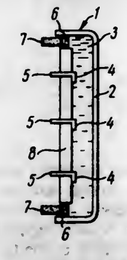
Our invention relates to a gaseous flow character presentation device using an envelope comprising a metal box supporting a light transparent window through which gaseous glow characters are viewed. The envelope contains an ionizable medium and a number of character shaped electrodes; the metal box thereof designed to serve as the anode electrode for the cathode electrodes. Character shaped cathode electrodes are supported on light transparent sheets, each being in the form of a letter, numeral, etc., and the character supporting sheets are positioned one upon the other and held in the box portion of the envelope with spring support means so that the characters may be observed through the window. Neither portion of the envelope has any sealed-off tubulation since the assembly of the device is performed very readily within a required environment of an evacuation chamber.

3,500,391
ROTATIONAL DISPLAY COUNTER
William A. Heske, Fairfield, Conn., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 565,857, July 18, 1966. This application May 1, 1968, Ser. No. 725,690
Int. Cl. G08b 5/02; G06m 1/22
U.S. Cl. 340—378 5 Claims



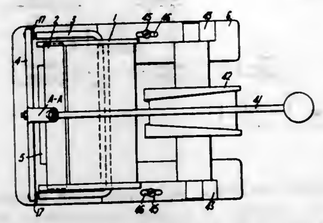
A rotational counter providing illuminated digital display of analogue input data being measured. A mechanically transduced analogue output of a remote data measuring device is operably connected to an input drive of the counter which translates the input to a correlated optically projected exterior display of digital or other alphanumeric characters.

3,500,392
INDICATOR-CONVERTER
Jury Ivanovich Maljuk, Ul. Kharkovskikh divizy, 18/1, kv. 17; Vladimir Georgievich Shidlovsky, Pr. Lenina, 24, kv. 87; and Alexander Viktorovich Zelinsky, Ul. Dzerzhinskogo, 17, kv. 2, all of Kharkov, U.S.S.R.
Filed June 14, 1966, Ser. No. 557,567
Int. Cl. G09f 9/00, 11/00
U.S. Cl. 340—381 4 Claims



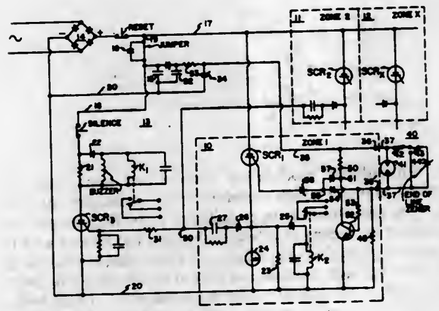
An indicator-converter for display of information in which indicating electrodes are placed in an aqueous solution of electrolyte together with at least one common electrode of a chemically inert material which electrically connects the indicating electrodes. The indicating electrodes are constituted of valve metals and have on the surface thereof an oxide layer which possesses the property of changing colors, electrical resistance and potential upon cathode-anode polarization in the electrolyte solution upon passage of electrical signals.

3,500,393
BALANCED ARMATURE MAGNETIC PERCUSSION SOUNDING DEVICE
James Samuel Paterson Roberton, Leslie Eugene Basil Dymoke-Bradshaw, and Nirmal Singh Lotay, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,357
Int. Cl. G08b 3/00
U.S. Cl. 340—392 20 Claims



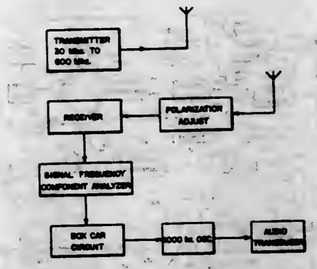
A rockable armature type telephone ringer. The armature has a centrally disposed pivotal axis. The armature is pivotally held to a support by a unique spring arrangement. The spring is shaped to hold the armature and support firmly together to thereby ensure good pivotal action even after wear occurs at the pivot points.

3,500,394
CONTROL APPARATUS
Sanford E. Egendal, Des Plaines, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,382
Int. Cl. G08b 29/00
U.S. Cl. 340—409 3 Claims



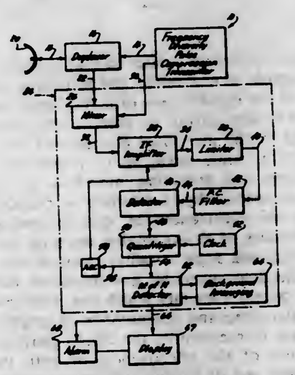
An alarm system having a central station and a remote station, the remote line connecting the two stations having a supervisory current flowing therethrough and the remote line being terminated at the remote station by an end-of-line Zener diode through which the supervisory current normally flows. An open circuit or a short circuit in the supervised line is effective to actuate alarm means at the central station.

3,500,395
FOREST TERRAIN SEARCH RADAR METHOD AND APPARATUS
George Michael Foster, 1422 Mount Hope Ave., Rochester, N.Y. 14620, and Louis Vincent Sargent, Jr., 323 Adair Court, Joppa Towne, Md. 21085
Continuation-in-part of application Ser. No. 549,626, May 12, 1966. This application Dec. 6, 1967, Ser. No. 688,537
Int. Cl. G01s 9/00
U.S. Cl. 343—5 11 Claims



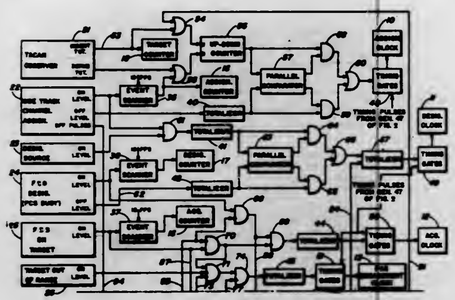
A forest terrain search radar is effective in the radio frequency range of about 30 mHz. to about 600 mHz. for detecting moving targets, and other targets having known reflecting characteristics. Forests are found to be translucent to radio transmission in the stated frequency range, which also includes the Mie frequency spectra of many objects of practical search interest, thus enabling target echo discrimination based on the phenomenon of target resonance responsively to the transmitted signal.

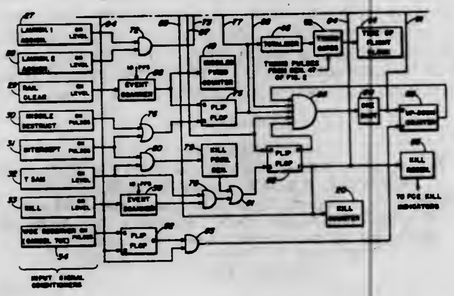
3,500,396
BACKGROUND AVERAGING SYSTEM FOR IMPROVING RADAR TARGET DETECTION
Marvin S. Lampert, Huntsville, Ala., and Richard Q. Schmidt, Huntington, N.Y., assignors, by mesne assignments, to the United States of America
Filed Dec. 23, 1968, Ser. No. 786,097
Int. Cl. G01s 9/02
U.S. Cl. 343—7 5 Claims



A threshold arrangment is disclosed that aids against contaminating radar signals, for example in an automatic digital range acquisition system, by placing equal weight on any signal which exceeds the threshold and by setting a second threshold whose level is dependent on background noise. Also, the system employs a memory arrangement allowing processing over many pulse repetition intervals so that false alarms due to clutter and jamming signals, and their effects, are greatly reduced in automatic target detection equipment.

3,500,397
RAID ANALYSIS COMPUTER
Donald E. Buchholz, Rockville, and Thomas W. Sheppard, Silver Spring, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 16, 1968, Ser. No. 759,934
Int. Cl. G01s 9/16; F41f 25/00
U.S. Cl. 343—7 **8 Claims**

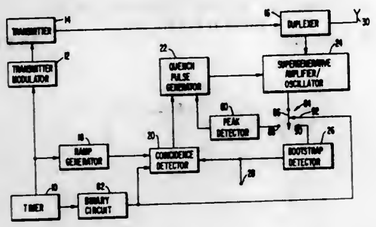




The present invention relates to raid analysis computer circuitry capable of evaluating and providing an accurate indication of the effectiveness of a shipboard guided missile weapon system during an exercise, by measuring the time utilized by the individual elements of the shipboard weapon system, while engaging or processing attacking aircraft targets, and providing immediate readout of the results. More specifically, a plurality of counters totalize the number of occurrences of specific weapon system events; a plurality of clocks totalize the time between successive events; and, logic circuitry controls the clocks to run at a rate determined by a comparison between the number of system elements which are available for use at a particular time and the number of targets then being processed. Consequently, the clocks provide an accurate indication of the effectiveness of both the overall weapon system and its various sub-system elements.

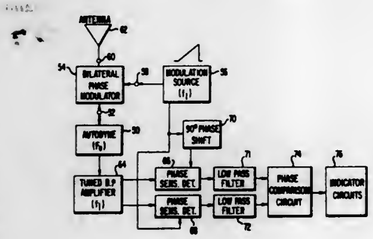
3,500,398
RADIO ALTIMETER
Charles A. Beaty, Tampa, Fla., assignor to RFD, Inc., Tampa, Fla., a corporation of Virginia
Filed July 22, 1968, Ser. No. 746,492
Int. Cl. G01s 9/04
U.S. Cl. 343—7.3 **5 Claims**

A super-regenerative amplifier/oscillator having a tunnel diode as the negative resistance device, operates in the linear mode in response to a quench pulse. The tunnel diode is biased at the valley point of its forward voltage characteristic curve. The quench pulse overcomes the bias and places the tunnel diode on the negative resistance slope of its characteristic curve thereby allowing build-up of oscillations in the super-regenera-



tive amplifier/oscillator. Automatic gain control is provided by sampling the super-regenerative amplifier/oscillator output in response to maximum signal input, and controlling the width of the quench pulse in accordance with the amplitude of the super-regenerative amplifier/oscillator output.

3,500,399
FREQUENCY TRANSLATION PROCESS AND APPARATUS THEREFOR
Russell Snyder Norris, Jr., State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 715,474
Int. Cl. G01s 9/42
U.S. Cl. 343—7.7 **12 Claims**

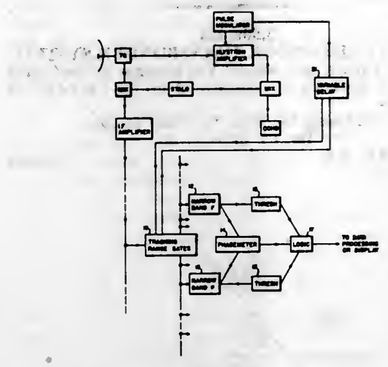


A "Phasadyne" modulation process and apparatus for electrical signals which combines the principles of the Autodyne and Homodyne circuits for providing frequency translation by means of a bilateral phase modulator which operates to cumulatively effect a 0–360° phase shift of a signal during each modulation period by causing a 0–180° phase shift of the signal which is propagated successively in both directions through the modulator during the same modulation period.

3,500,400
LOW PRF PULSE DOPPLER RADAR WITH REDUCED DOPPLER AMBIGUITIES
Hermann H. Woerrlein, Dunkirk, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 30, 1968, Ser. No. 771,794
Int. Cl. G01s 9/44
U.S. Cl. 343—9 **6 Claims**

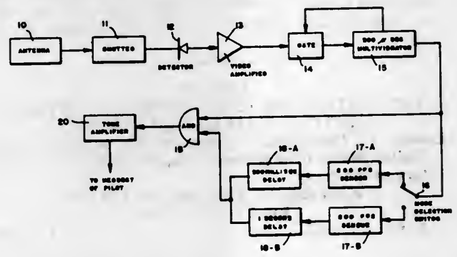
A radar system for eliminating Doppler ambiguities if unambiguous range is available. The system consists

of impressing two different modulations on one carrier, the modulations being such that they can be separated



in the receiver. The phase difference between the separated waveforms is measured to arrive at the Doppler information.

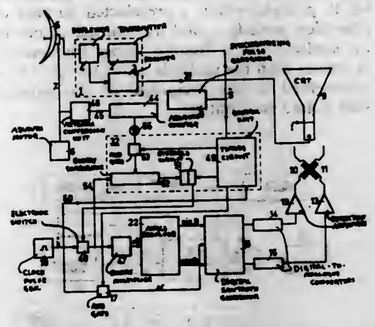
3,500,401
RADAR DETECTION DEVICE
Gerald O. Miller and Denman R. Elliott, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 15, 1968, Ser. No. 745,657
Int. Cl. H01s 7/36; H04b 1/22
U.S. Cl. 343—18 **2 Claims**



A detector for indicating the presence or absence of pulsed tracking radars wherein presence is indicated by an audible tone having a frequency proportional to the pulse repetition frequency of the tracking radar.

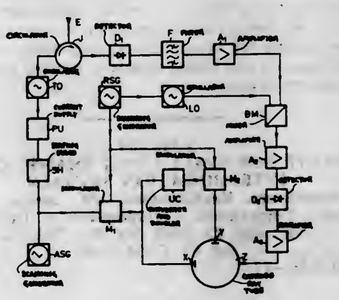
3,500,402
PPI DISPLAY SYSTEMS
Hendrik Teunis Huele and Josephus Anthonie Wijnen, Hengelo, Overijssel, Netherlands, assignors to N.V. Hollandse Signaalapparaten, Hengelo, Overijssel, Netherlands, a firm of the Netherlands
Filed Apr. 19, 1967, Ser. No. 631,965
Claims priority, application Netherlands, Apr. 20, 1966, 6605240
Int. Cl. G01s 9/06
U.S. Cl. 343—11 **6 Claims**

A radar system of the type having a PPI display develops analogue deflection signals from a digital sawtooth generator. The sawtooth generator may be in the form of a range counter having its output masked with digital sine and cosine signals in a binary multiplier and applied to X and Y counters. The sine and cosine signals are derived from registers stepped from the output of binary multipliers in which the output of an angle increment counter is cross masked with the outputs of the registers. The registers are initially set by input pulses applied during dead time, the number of pulses applied



being controlled in a comparator in accordance with the antenna position stored in an azimuth counter.

3,500,403
SHORT RANGE RADAR SYSTEM
Keith Lewis Fuller, Reigate, Surrey, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,264
Claims priority, application Great Britain, Oct. 26, 1966, 47,976/66
Int. Cl. G01s 9/23, 9/24
U.S. Cl. 343—14 **8 Claims**



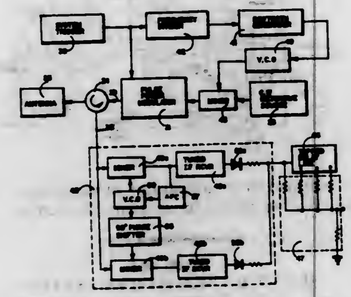
A radar system transmits a frequency modulated beam with an antenna having a frequency-dependent directional characteristic, so that the beam continuously scans a given sector. The receiver has a local oscillator that has a sweep rate much slower than the sweep rate of the transmitted beam, and the local oscillations are mixed with the received echo signals to produce a constant frequency I.F. signal.

3,500,404
RADAR SYSTEM HAVING IMPROVED RESPONSE TO SMALL TARGETS
James Orville Anderson, Fullerton, Donald D. Coleman, Garden Grove, and Brice E. Thornton, Santa Ana, Calif., assignors to North American Rockwell Corporation
Filed Feb. 3, 1965, Ser. No. 430,141
Int. Cl. G01s 7/28
U.S. Cl. 343—17.1 **10 Claims**

9. In a pulsed radar system having a pulsed transmitter and receiver means for enhancing the response of said

radar system to small targets relative to that for large targets comprising

pulse-to-pulse frequency agility means for discretely varying the carrier frequency of said pulsed transmitter to provide within a preselected number of pulse repetition periods a total transmitted carrier frequency bandwidth of n discrete carrier frequencies which is greater than the multiple $(n-1)$ of that bandwidth represented by the reciprocal of the pulsewidth of said pulsed transmitter;

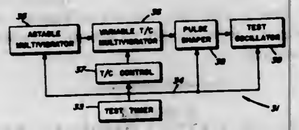


means cooperating with said receiver for processing received echoes of said pulsed transmitter energy of said total bandwidth; and

signal storage means responsive to said wide band processing means for storing said received echoes of pulsed transmitter energy received during said preselected number of pulse repetition periods and representing said total transmitted bandwidth, and

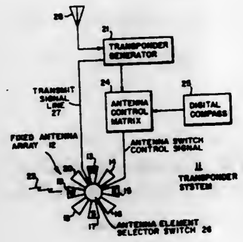
signal combining means responsive to said signal storage means for combining corresponding range-time portions of said stored signals to provide a combined range-trace signal.

3,500,405
CIRCUIT FOR SIMULATING TRANSPONDER INTERROGATION SIGNALS
Erik Rosenbaum, Randallstown, Md., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 23, 1969, Ser. No. 793,476
Int. Cl. G01s 7/40
U.S. Cl. 343—17.7 5 Claims



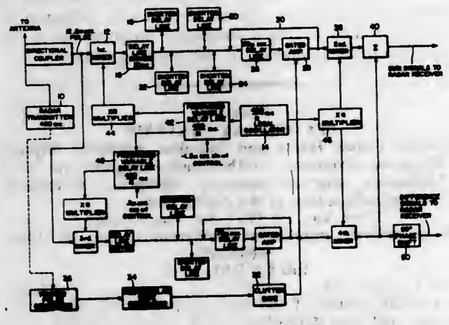
A circuit for simulating interrogation pulses for testing an ATC transponder. The circuit comprises means for generating successive pulse pairs, the pulses of each pair being separated by increasingly greater intervals so that all modes of interrogation are tested during each test cycle.

3,500,406
DIRECTIVE RESPONSE TRANSPONDER SYSTEM
Carlyle V. Parker, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1968, Ser. No. 756,243
Int. Cl. G01s 9/56
U.S. Cl. 343—6.5 7 Claims



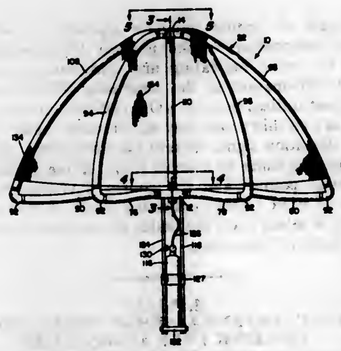
A mobile transponder system including directional antennas and a matrix-like array of AND logic gates having two sets of inputs. The first set receives a signal representative of the compass bearing of the mobile transponder, and the second set receives a signal representative of the direction of interrogation of the ground control station signal. The array automatically computes relative bearing and connects the proper antenna to the system.

3,500,407
APPARATUS FOR SIMULATING CLUTTER IN TESTING AMTI RADAR SYSTEMS
Lowell V. Thompson, Ventura, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 20, 1967, Ser. No. 615,039
Int. Cl. G01s 7/40
U.S. Cl. 343—17.7 6 Claims



The present invention relates to apparatus for testing AMTI (airborne moving target indicator) radar systems of the type employing the co-called "displaced-phase-center-antenna" concept, and which also incorporate pulse expansion and compression techniques together with a clutter-coherent double-delay canceller to reduce the amplitude of the clutter signals without materially reducing the return from moving targets. The wide beam angle utilized in such radar systems creates a problem in the canceller in that clutter signals in the antenna main beam (but off the antenna boresight axis) have Doppler frequencies different from those on the boresight axis. The antenna is consequently electrically divided into two sections so that during operation of the radar the signals from the sections are added together in a sum circuit and substracted from one another in a difference circuit. By adding a discrete fraction of the difference signals to the input of the non-delayed portion of the canceller, and a similar fraction reversed in polarity to the input of the delayed portion, pulse-to-pulse phase shifts can be introduced which compensate for the off-boresight Doppler frequencies of the clutter signals. The present invention simulates the sum and difference signals by employing a pair of variable delay lines which introduces the Doppler frequency, the later simulating the frequency normally generated by movement of the radar platform during operation of the aircraft upon which the radar equipment is installed.

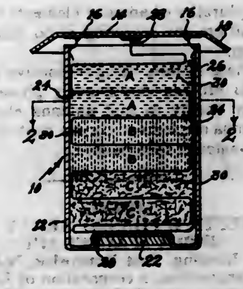
3,500,408
EXPENDABLE SEA TARGET
Raymond S. Dangheanhengh, 4601 S. B St., Oxnard, Calif. 93030
Filed Apr. 29, 1968, Ser. No. 724,886
Int. Cl. G01s 7/42; H01q 15/18
U.S. Cl. 343—18 8 Claims



A number of flexible tubes when inflated form a dome-shaped target which may be covered with a coarse radar reflective net. The target can be stored as a relatively small package in deflated or collapsed condition. When cast from a ship or plane into the sea an air flask inflates the tubes and the inflated assembly floats on the surface of the sea. The weight of the flask and its support structure provides stability to the inflated target. A check valve system prevents total loss of buoyancy due to failure of one of the tubes.

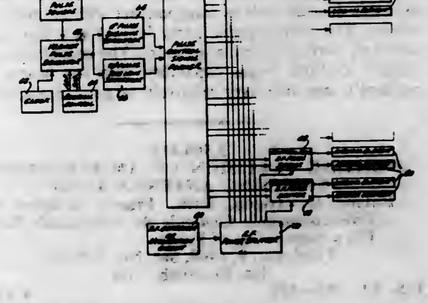
3,500,409
MEANS FOR PACKAGING AND DISPENSING CHAFF
Burns A. Cash, Madison, Wis., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 5, 1963, Ser. No. 264,466
Int. Cl. C06d 1/04; F42b 25/02; H01q 15/00
U.S. Cl. 343—18 3 Claims

A container has a weighted end and an open end. A cap with a greater periphery than the container is slideably fitted over the open end. Attached to the cap is line which is interfolded with chaff contained within the container. The air drag on the falling container and cap



pulls the cap free of the container, extending the rope from the container thus dispersing the enclosed chaff.

3,500,410
APPARATUS FOR ROTATING AN ANTENNA FIELD PATTERN
Harold R. Erhardt, Northridge, Frederick W. Frink and Gordon Gerson, Los Angeles, Donald C. Mead, Playa Del Rey, and Harold J. Pfalzer, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,655
Int. Cl. H01q 3/26
U.S. Cl. 343—100 4 Claims



1. Apparatus for rotating a directive antenna field pattern comprising:

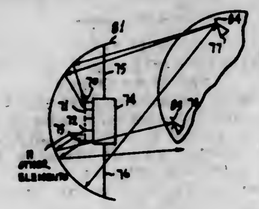
(a) a pulse generator for developing successive trains of a predetermined number of repetitive vernier pulses each of which corresponds to a different angular pointing direction of a directive antenna field pattern;

(b) a sine wave synthesizer electrically coupled to said pulse generator for converting said trains of vernier pulses into corresponding sine waves, the period of one of said sine waves corresponding to an interval during which said predetermined number of said vernier pulses is generated;

(c) a phase control signal former coupled to said sine wave synthesizer for forming said sine waves into a plurality of periodic phase control signals having successive phase displacements from each other, the period of said phase control signals being equal to the period of said sine waves;

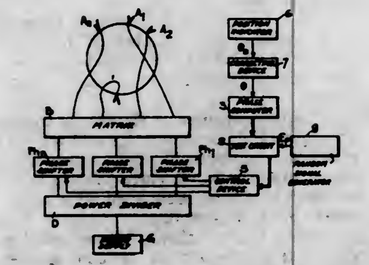
(d) a plurality of controllable radio frequency phase shifters coupled to said phase control signal former;
(e) a radio frequency energy generator coupled to said phase shifters to supply radio frequency energy thereto;
(f) and a plurality of antenna elements coupled to said phase shifters for receiving radio frequency energy therefrom;
(g) said phase shifters being responsive to said control signals to provide continuously phase shifted radio frequency energy to said antenna elements causing said antenna elements to form a continuously rotating directive antenna field pattern.

3,500,411
RETRODIRECTIVE PHASED ARRAY ANTENNA FOR A SPACECRAFT
John Donald Kiesling, East Brunswick, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 633,907
Int. Cl. H04b 7/02
U.S. Cl. 343—100 4 Claims



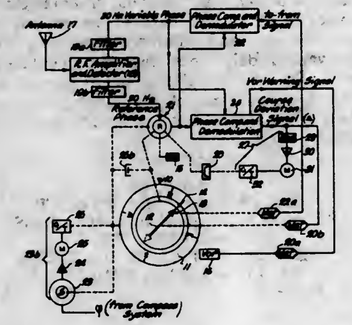
An antenna system for use in a communication satellite is described using a reflecting surface as the primary antenna aperture. Mounted with the reflector is a retrodirective phased array whose dependent elements are coupled to active devices such as transponders with amplifiers and mixers. The retrodirective array is used as a feed for the reflecting surface antenna aperture. The combination provides a multiple beam capability with the beams independently steerable over relatively large scan angles.

3,500,412
POINTING PRECISION OF AN ELECTRONIC SCANNING ANTENNA BEAM
Roland G. Trigon, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Apr. 9, 1968, Ser. No. 719,862
Int. Cl. H04b 7/06
U.S. Cl. 343—100 4 Claims



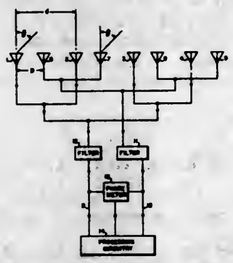
In order to overcome the drawbacks due to the quantization of the phase shifters associated to electronic scanning antennas of the so-called counter-rotative type, the phase-position law is modified and means are supplied which avoid the simultaneous jumps of the values of several phase shifters.

3,500,413
NAVIGATIONAL INSTRUMENT FOR DIRIGIBLE CRAFT
James R. Dolegeas, Overland Park, and Doyle J. Kelly, Sr., Olathe, Kans., assignors to King Radio Corporation, Inc., Olathe, Kans., a corporation of Kansas
Filed Aug. 30, 1967, Ser. No. 664,514
Int. Cl. G01s 1/08
U.S. Cl. 343—107 10 Claims



A single navigation indicator operable to alternately display information in the manual VOR mode, or to utilize the same indicating and computing elements to present information in the automatic VOR mode. This instrument utilizes manual VOR (HSI or lateral deviation indicator) circuitry and may additionally make use of the course deviation signal therein by modulating, amplifying and applying same to a servo loop for the positioning of the course pointer and the course deviation bar in an automatic VOR (RMI) operating mode. A clutch operating course select knob facilitates the alternate selection of either mode of operation.

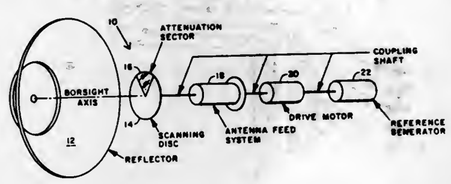
3,500,414
THINNED ANTENNA ARRAY WITH REDUCED GRATING LOBE AMBIGUITIES
Hermann Woerrlein, Dunkirk, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 25, 1968, Ser. No. 770,473
Int. Cl. G01s 5/02
U.S. Cl. 343—113 7 Claims



A receiving antenna apparatus for use in a radar system to identify grating lobes in a radiation pattern by measuring the phase difference of signals in two linear

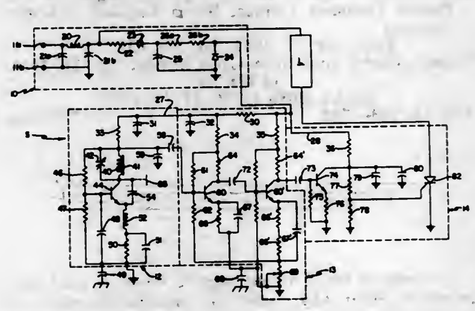
arrays displaced one from the other, the elements of one array located between adjacent elements of the second array.

3,500,415
SECTOR ATTENUATION SCANNING DEVICE FOR AUTOMATIC TRACKING ANTENNA SYSTEMS
Bruce E. Bishop, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 12, 1968, Ser. No. 774,729
Int. Cl. G01s 5/02
U.S. Cl. 343—118 5 Claims



A scanning device for an antenna tracking system utilizing a scanning disc transparent to incident RF energy except for an attenuation sector to derive a signal for sensing the pointing error of the antenna.

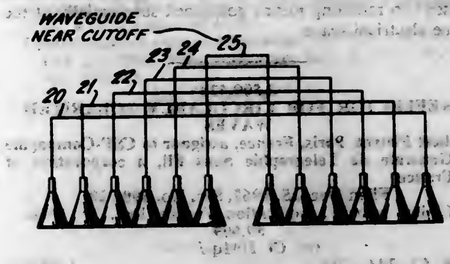
3,500,416
PROXIMITY SWITCHING DEVICE
James A. Ellsworth, 3833 Wilkes Ave., Davenport, Iowa 52806
Filed June 14, 1966, Ser. No. 558,544
Int. Cl. H04b 7/00
U.S. Cl. 343—225 9 Claims



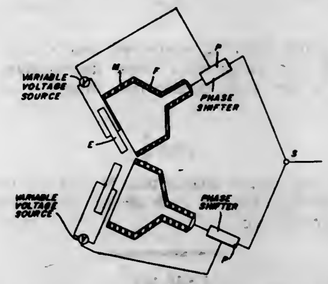
A highly sensitive superregenerative detector has a high Q tank circuit loaded by a remote actuator in the form of an external equally sensitive tank circuit which is either electromagnetically or capacitively coupled to the detector whereby to effect close accurate control over the output characteristics of the detector.

3,500,417
STEERED-CONE RETRODIRECTIVE ANTENNA
Robert T. Adams, Short Hills, N.J., assignor to Sichak Associates, Nutley, N.J., a corporation of New Jersey
Filed May 25, 1965, Ser. No. 458,586
Int. Cl. H01q 1/28
U.S. Cl. 343—705 8 Claims

A Van Atta antenna array is modified and includes dispersive transmission media, such as a waveguide near cutoff, connecting each element in the array to an element equidistant from the array center, the length of the transmission media being varied by an amount proportional to the distance between coupled elements. The resultant antenna has a radiation pattern in the form of a steerable frequency dependent hollow cone.

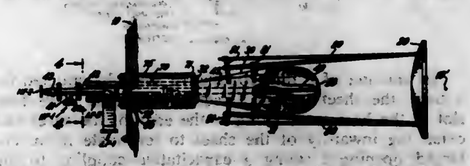


3,500,418
SATELLITE ANTENNA ARRAY WITH ELECTRICALLY ADJUSTABLE BEAM SHAPING
Hans-Dietrich Kähne and Erich Schüttlöffel, Backnang, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Aug. 29, 1966, Ser. No. 575,579
Claims priority, application Germany, Aug. 28, 1965, T 29,299, T 29,300
Int. Cl. H01q 1/28
U.S. Cl. 343—705 1 Claim



An antenna array is mounted on a satellite so as to direct the signals toward the earth in a uniform field. Each antenna in the array is angularly mounted with respect to the other and has an electrically variable dielectric means mounted at the aperture. The means are electrically adjustable by a common control system to shape the beam.

3,500,419
DUAL FREQUENCY, DUAL POLARIZED CASSEGRAIN ANTENNA
Robert T. Leitner, Norwich, Paul D. Palmer, Deansboro, and George B. Sleeper, Jr., Sherburne, N.Y., assignors to Technical Appliance Corporation, Sherburne, N.Y., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,217
Int. Cl. H01q 21/00
U.S. Cl. 343—725 17 Claims



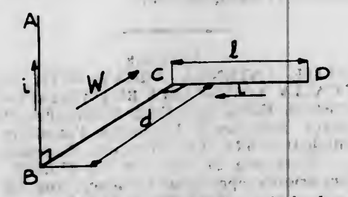
There is provided a dual frequency, dual polarized antenna having a paraboloid contour main reflector and an

hyperboloid contour subreflector. Exciter means are positioned at the near focus to transmit a pair of signals in each of two frequency bands, the exciting means comprises two radiating means positioned substantially at the same electrical space.

3,500,420
REFLECTOR FOR CIRCULARLY POLARIZED WAVES

Robert Pierrot, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Dec. 15, 1967, Ser. No. 690,920
Claims priority, application France, Dec. 30, 1966, 89,609
Int. Cl. H01q 19/00
U.S. Cl. 343—756 4 Claims



A reflector element for circularly polarized waves, comprising a conductor, the length of which is equal to

$$N\frac{\lambda}{2}$$

where λ is the operating wavelength and N is an integer. The conductor comprises a linear intermediate section parallel to the wave propagation direction, of length equal to

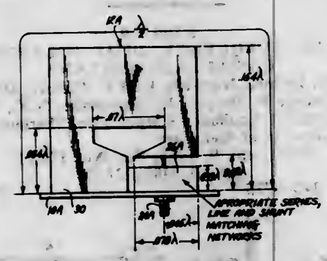
$$\frac{\lambda}{4}+n\frac{\lambda}{2}$$

where n is an integer smaller than N, and two linear end sections of equal lengths, each section being perpendicular to the other two.

3,500,421
ELECTRICALLY-SHORT CONSTANT IMPEDANCE ANTENNA

Wilfred N. Caron, Torrance, Calif., assignor to Dynalectron Corporation, Washington, D.C., a corporation of Delaware

Filed Dec. 15, 1966, Ser. No. 602,884
Int. Cl. H01q 13/10
U.S. Cl. 343—767 4 Claims

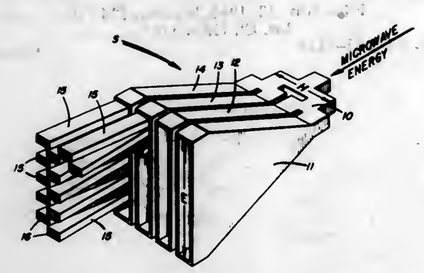


An antenna of a thin conductive sheet is mounted on a base, the sheet having a rectangular short wave feed slot at the base terminating at the edge of the sheet and extending inwardly of the sheet to terminate in an enlarged opening forming a capacitative coupling to the feed slot. An exciter conductor extends across the feed slot.

3,500,422
SUB-ARRAY HORN ASSEMBLY FOR PHASED ARRAY APPLICATION

Theodore C. Cheston, Bethesda, and Henry M. Grady, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 3, 1966, Ser. No. 591,933
Int. Cl. H01q 13/02
U.S. Cl. 343—778 9 Claims

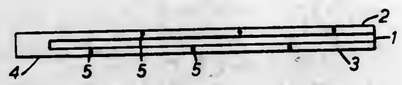


A sub-array assembly adapted for use in phase-steered antenna systems. Essentially constant power distribution is maintained throughout the sub-array for the suppression of grating lobes. The sub-array comprises a plurality of sectorial horns which are fed from a power divider assembly so as to provide equal power inputs to the horns. Each horn distributes the input energy at constant amplitude across its output mouth end for radiation by a plurality of radiating members.

3,500,423
AERIALS

Brian Andrew Church, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Apr. 17, 1967, Ser. No. 631,235
Claims priority, application Great Britain, Apr. 26, 1966, 18,298/66
Int. Cl. H01q 13/00, 11/10, 1/40
U.S. Cl. 343—785 7 Claims



An aerial in which at least part of the aerial conductor comprises electrically conducting material deposited on an electrically insulating material of elongate form, and which may comprise one or more aerial elements secured to the insulating material to form an aerial array.

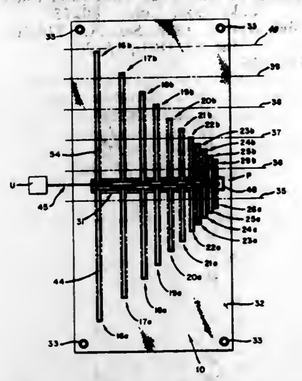
3,500,424
FURLABLE ANTENNA

Normand Barbano, Sunnyvale, and Donald L. Johnstone, Mountain View, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 30, 1967, Ser. No. 686,876
Int. Cl. H01q 11/10
U.S. Cl. 343—792.5 5 Claims

Planar conductive patterns comprising dipole radiating elements and feed lines of the antenna are formed by printed circuit techniques on the same side of a flexible nylon sheet. The feed lines have trapezoidal wave-like configurations centered about the longitudinal axis of the antenna and physically displaced relative to each other as though the waves are 180 electrical degrees out of phase with each other. In other words, each feed line has

a longitudinal series of straight sections parallel to and successively positioned on opposite sides of the axis with the successive sections electrically interconnected. The straight sections of the feed lines on the same side of the axis are axially aligned and spaced. One of its feed lines is discontinuous between successive sections thereof, and the other is electrically continuous. A flexible coaxial

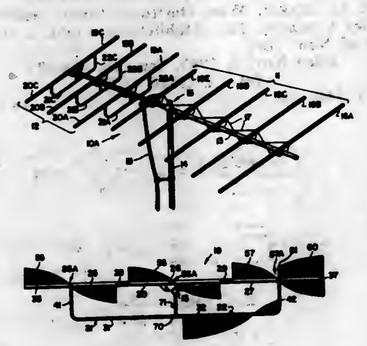


cable extends the length of the antenna and is electrically connected to and aligned with each of the straight sections of the discontinuous feed line. The center conductor of the coaxial cable is connected to the continuous feed line at the feed point of the antenna. The halves of each dipole are electrically connected to laterally adjacent sections of the respective feed lines.

3,500,425
DIRECTOR SYSTEM FOR BROADBAND ANTENNAS

Francis Kenneth Seul, Sr., Delhi, Ontario, and Edwin A. Adams, Simcoe, Ontario, Canada, assignors to Delhi Metal Products Limited, Delhi, Ontario, Canada

Filed Oct. 30, 1967, Ser. No. 678,948
Claims priority, application Canada, Sept. 20, 1967, 568
Int. Cl. H01q 21/00
U.S. Cl. 343—817 4 Claims

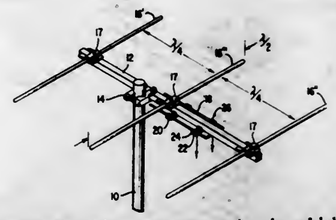


A director element for use in connection with one or more active elements forming a broadband antenna. The director element has a main section for high frequency channel defining three resonating structure in an end-to-end relationship, and two auxiliary L-shaped members each cooperating with a different one of the outer high-band resonating structures to define resonating structures for low frequency channels operation.

3,500,426
MAGNETICALLY DRIVEN ANTENNA ARRAY

Donald H. Wells, Oregon, Ohio, assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 500,931, Oct. 22, 1965. This application June 8, 1966, Ser. No. 562,041
Int. Cl. H01q 19/30
U.S. Cl. 343—819 2 Claims

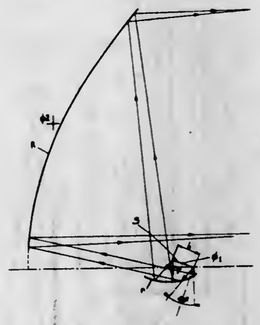


A magnetically driven antenna array in which all of the antenna dipole elements are parasitic. The array is driven by an independent means consisting of a section of transmission line. The incident plane wave of energy from the transmitter source induces currents on the parasitic dipoles of the array, establishing a secondary or reradiated field. The total electromagnetic field in the vicinity of the array is a combination of the secondary fields from all of the antenna elements and the incident field. In its simplest form, this field is a standing wave, whose vector "H" (magnetic lines of force) near the axis of the array where the driven element is placed, establishes a strong magnetic flux which links the loop formed by the section of transmission line. The time varying flux drives the transmission line by inducing voltages and currents on it that can be conveniently fed to the associated receiver.

3,500,427
STEERABLE ANTENNA SYSTEM

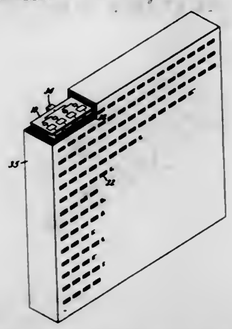
Serge Landesman and Jacques Saimon, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Nov. 28, 1966, Ser. No. 598,146
Claims priority, application France, Nov. 26, 1965, 39,946
Int. Cl. H01q 21/00
U.S. Cl. 343—836 5 Claims



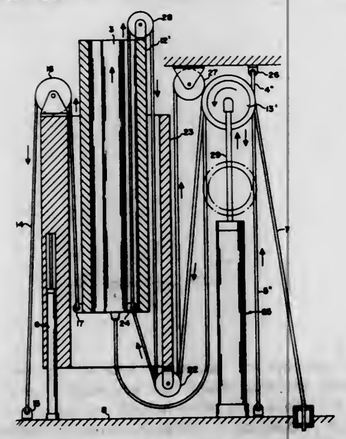
The number of necessary sources in an electronic scanning antenna system for scanning a given angular space portion with a beam having a given gain is reduced through associating a low gain scanning antenna system adapted for scanning a larger angular space portion than desired with a lower gain and an electromagnetic optical system having a high magnification ratio.

3,500,428
MICROWAVE HYBRID MICROELECTRONIC CIRCUIT MODULE
Charles C. Allen, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 30, 1967, Ser. No. 664,348
Int. Cl. H01q 3/26; H01p 3/08; H05k 1/16
U.S. Cl. 343—854 8 Claims



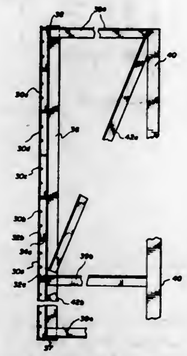
A microwave hydrid microelectronic circuit module comprises a ceramic substrate having a plurality of through holes in which circuit device chips or other circuit elements are bonded so that the upper surface of the circuit chips or elements and of the bonding material such as epoxy are flush with the top surface of the substrate. Strip transmission lines are deposited onto the top of the substrate extending across the bonding material onto terminal areas on the chip or to the top of the circuit element, and the bottom of the substrate has a continuous ground plane. Microwave input-output connections or through-pins are mounted in the substrate by the same bond-and-print technique.

3,500,429
TELESCOPING ANTENNA SYSTEM WITH TRANSLATABLE PAYOUT REEL
Charles P. Majkrzak, Frank Milazzo, and Michael Lomega, Nutley, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Sept. 8, 1966, Ser. No. 577,908
Int. Cl. H01q 1/10
U.S. Cl. 343—883 7 Claims



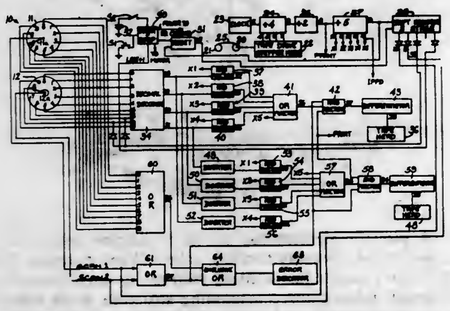
In a telescoping antenna system, a pulley is mechanically coupled to the antenna section which is lowered as the antenna is raised and raised as the antenna is lowered. An electrical cable which is connected to one end of the antenna section is placed over said pulley and is stowed or payed out to said antenna by the rotation and translation of said pulley.

3,500,430
MICROWAVE REFLECTOR
William F. Rex, 6915 Lakewood Place, Lakewood, Colo. 80215
Filed Apr. 3, 1968, Ser. No. 718,507
Int. Cl. H01q 15/20
U.S. Cl. 343—915 1 Claim



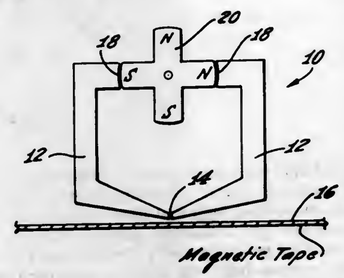
A microwave reflector or passive repeater includes an essentially flat, unobstructed reflecting surface formed of interlocking extrusions mounted on a rigid framework which is secured to a ground supported frame. The extrusions forming the reflecting surface are secured together and the rigid framework as an assembly which is mounted with lost motion connections to permit differential expansion of the components while maintaining very accurate position control of the reflecting surface. The rigid framework is secured to a ground supported frame with a means for adjusting the reflecting surface in relation to the ground supported frame but providing a strong, rigid connection therebetween.

3,500,431
MAGNETIC RECORDER SYSTEM
Robert C. Baskin, West Hartford, Conn., assignor to Ripley Company, Inc., Middletown, Conn., a corporation of New York
Filed Nov. 3, 1967, Ser. No. 684,097
Int. Cl. G01d 4/00
U.S. Cl. 346—74 14 Claims



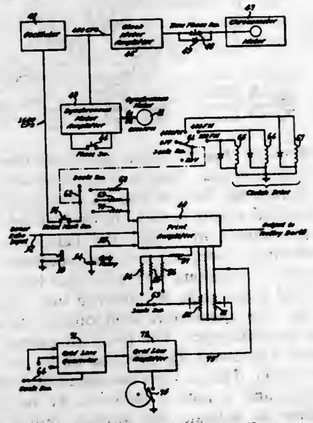
A system for recording on magnetic tape the information stored in a meter, comprising means for generating a first plurality of timing signals, a magnetic tape drive including a motor adapted to be stepped along by said first plurality of timing signals, means responsive to said plurality of timing pulses for generating a scanning signal to interrogate said meter, means responsive to said timing signals for generating a plurality of gating signals, means responsive to said timing signals for generating a plurality of print signals, and means responsive to information provided by said interrogated meter, said gating signals, said print signals and said scanning signals for writing said information on said tape as the motor is stepped.

3,500,432
INCREMENTAL RECORDER
Frederic F. Grant, Bellflower, Calif., assignor, by mesne assignments, to Astro-Science Corporation, South El Monte, Calif., a corporation of Texas
Filed Dec. 5, 1966, Ser. No. 599,266
Int. Cl. G01d 15/06
U.S. Cl. 346—74 2 Claims



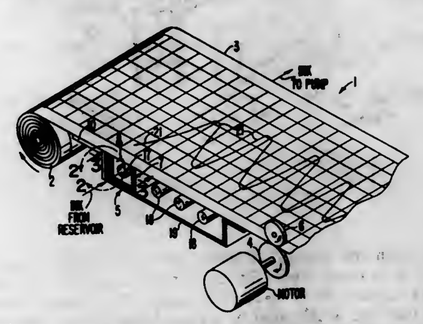
A mechanism for recording binary data on a magnetic tape, or the like, is provided which is entirely mechanical in its nature. The mechanism includes a magnetic recording head with a permanent magnet rotatably mounted in the core. The permanent magnet is movable between two limiting positions to control the direction of magnetic flux across the recording gap of the head, so that binary data may be stored on the magnetic tape.

3,500,433
PRECISION DEPTH RECORDER
Henry L. Wasilewski, Jackson Heights, N.Y., and Thomas K. De Witt, Newport, R.I.; said Wasilewski assignor to Littons Systems, Inc., Beverly Hills, Calif.
Filed Nov. 8, 1965, Ser. No. 520,539
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. G01d 9/02
U.S. Cl. 346—35 7 Claims



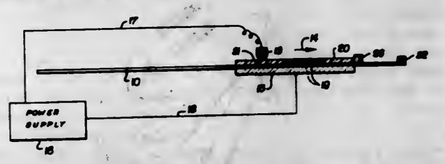
A precision depth recorder for recording sonar soundings in which the recording signal level is controlled by a limiter-amplifier stage and by a manually adjustable control connected to or a part of the scale adjustment which varies the rate of travel of the recording stylus.

3,500,434
ELECTROSTATIC WRITING EMPLOYING A TRANSLUCENT RECORDING MEDIUM WITH BACK ILLUMINATION AT THE INKING MEANS FOR IMMEDIATE READING
Renn Zaphiropoulos, Los Altos, and William A. Lloyd, San Jose, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 3, 1966, Ser. No. 583,780
Int. Cl. G01d 15/14
U.S. Cl. 346—74 2 Claims



A graphic electrostatic recorder or printer using a translucent recording medium with back illumination at the inking means for immediate reading. The back illumination is effected by a light source located in the inking slot which conveys the ink material to the selectively charged record medium.

3,500,435
PERFORATION OF TABULATING CARDS
Louis M. Ballard, Arcadia, Calif., assignor, by mesne assignments, to Rusco Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Nov. 2, 1965, Ser. No. 506,094
Int. Cl. G01d 15/06
U.S. Cl. 346—74 13 Claims

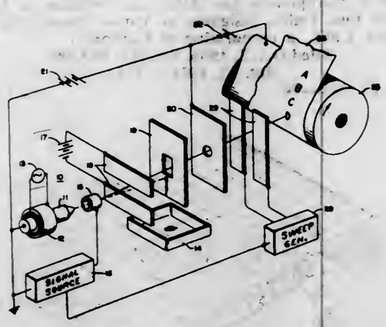


Method and apparatus for effecting electrical current flow through a sheet (such as a tabulating card or paper tape) in response to movement of an electrode relative to the sheet and current conductive channels, to effect perforation of the sheet in a pattern representative of data to be transferred to the sheet.

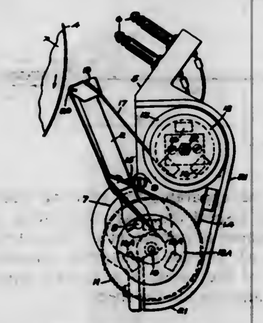
3,500,436
FLUID TRANSFER DEVICE
Robert W. Norelia, Skokie, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 696,177
Int. Cl. G01d 15/18
U.S. Cl. 346—75 8 Claims

In an electrostatic printer, uncharged ink is supplied under pressure from a nozzle vibrated by a piezoelec-

tric crystal to provide a supply of uniformly shaped ink droplets directed through a charging ring which causes a predetermined charge to be placed on selected droplets in accordance with input signals applied to the ring. The droplets then pass through a pair of vertical deflection electrodes having a D-C field applied thereacross, so that the charged droplets are deflected into a different path from the path followed by the uncharged droplets, with the charged droplets passing through an aperture in a mask while the uncharged droplets strike the mask causing them to be intercepted. The charged droplets then are accelerated by an accelerating electrode and pass between a pair of horizontal deflection electrodes supplied with sawtooth signals, causing the charged droplets to trace horizontal line segments on paper moving vertically in the path of the droplets.

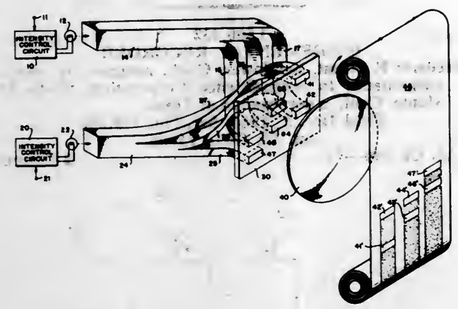


3,500,437
MARKER DEVICE
Donald R. Foerster, Portland, Maine, assignor to The Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1968, Ser. No. 719,979
Int. Cl. G01d 15/20
U.S. Cl. 346—106 **6 Claims**



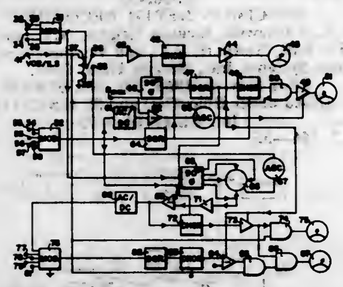
A marking device for making a mark on a moving web in response to a signal from a remote actuator such as a defect detector. A pressure transferable marking tape extends between a feed reel and a take up reel and across the striking head of an impression arm. When the arm is rotated, the striking surface carries the tape into contact with the moving web. A magnetic drag brake is provided for the marking tape.

3,500,438
OPTICAL TIME DELAY PROGRAM RECORDER
George W. Hunka, Churchville, and Jack J. Rudnick, Philadelphia, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 25, 1967, Ser. No. 612,293
Int. Cl. G01d 9/42
U.S. Cl. 346—108 **10 Claims**



Optical apparatus for time delay-programming a plurality of electrical signals including lamps for producing intensity-modulated light and fiber optical conductors for arranging the light conductors from the respective signals in a prescribed geometry and a film medium for recording the light output from the signals comprising each program.

3,500,439
SIMULATION OF RADIO NAVIGATION EQUIPMENT
George E. Mismich, Vestal, and Lynn A. Staples, Greene, N.Y., assignors to General Precision Systems Inc., Binghamton, N.Y., a corporation of Delaware
Filed May 1, 1968, Ser. No. 725,706
Int. Cl. G09b 9/00
U.S. Cl. 35—10.2 **18 Claims**

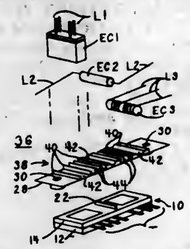


The system of this invention simulates the operation of radio navigation gear. Specifically, the system simulates a Visual Omnirange System and an Instrument Landing System. Notched square waves are used as reference and phase-shifted signals to reduce the harmonics and the required filtering. Choppers serve to modulate input signals to produce a resultant sine wave that has the desired amplitude and phase shift. A reference sine wave is phase split and the four quadrature components are combined in a linear potentiometer. The resultant output from the potentiometer represents the direction of the aircraft from the radio beacon. This is then compared with the phase-shifted signal and a null is achieved by means of the potentiometer to indicate the aircraft radial from the transmitter. The reference chopper is used in ILS mode to generate a signal representative of the heading of the runway. The variable phase chopper generates signals representative of the glide slope by using the ground range and the altitude of the aircraft. These signals are used to control an ILS chopper which produces the signals to operate aircraft type instruments.

ERRATA

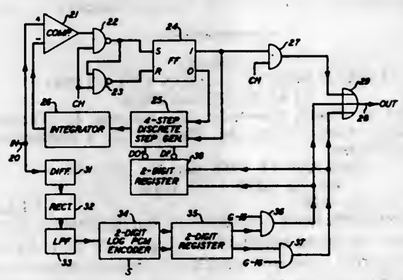
For Classes 343—10.2 through 343—814 see:
Patents Nos. 3,500,439 through 3,500,471

3,500,440
FUNCTIONAL BUILDING BLOCKS FACILITATING MASS PRODUCTION OF ELECTRONIC EQUIPMENT BY UNSKILLED LABOR
Kingsley N. Hastings, New York, N.Y., assignor to Interamericano Projects, Inc., New York, N.Y., a corporation of New York
Filed Jan. 8, 1968, Ser. No. 696,445
Int. Cl. H05k 5/02
U.S. Cl. 174—52 **15 Claims**



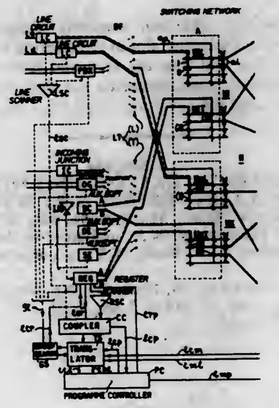
Functional building blocks for the mass production of electronic devices such as radios and the like by unskilled labor are provided and comprise compartmented housing receiving an integrated circuit chip or the like in each compartment thereof, electromagnetic shields between compartments, pre-aligned mounting means in portions of the housing and an integral indexed support for external circuit components. Each functional building block assembly further includes structure permitting simple soldered connections of external components to the circuit leads of integrated circuit chips, obviating the need for printed circuit boards and/or special terminal devices.

3,500,441
DELTA MODULATION WITH DISCRETE COMPANDING
Stephen J. Brolin, Bronx, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 12, 1967, Ser. No. 674,943
Int. Cl. H03k 13/22; H04j 3/00
U.S. Cl. 179—15 **7 Claims**



Discrete syllabic compression is provided in a delta modulator by encoding the derivative of the signal being encoded in a two-digit pulse code modulation encoder and selecting the step size of the delta modulator from four different logarithmically related levels under the control of the pulse code modulation encoder. The output of the pulse code modulation encoder is transmitted to the distant delta demodulator in time division multiplex with the encoded signal to control the step size there and provide complementary expansion.

3,500,442
TELEPHONE SWITCHING NETWORK WITH ALL AUXILIARY EQUIPMENT CONNECTED TO LINE SIDE
Bloomfield James Warman, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 1, 1966, Ser. No. 569,230
Claims priority, application Great Britain, Aug. 18, 1965, 35,437/65; Jan. 10, 1966, 1,132/66
Int. Cl. H04m 3/22
U.S. Cl. 179—18 **10 Claims**

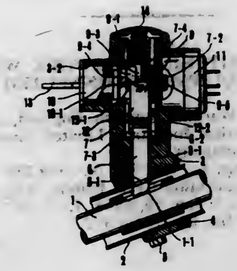


A telephone exchange switching system comprises a switching network arranged in stages and connected on one side to line terminals and on the other to link circuits. All auxiliary equipment including registers, ringing control circuits, trunk circuits etc., are connected to line terminals in the same manner as calling and called lines so that the switching network is used exclusively for establishing paths between different line terminals. Calling and called lines are interconnected by serial "short term" paths including all necessary items of auxiliary equipment and also by a "long term" path through the switching network in parallel with the short term paths. Proper set-up of all paths can then be checked by the continuity of the loop so formed.

3,500,443
COMBINED STEERING COLUMN LOCK AND IGNITION SWITCH FOR A MOTOR VEHICLE
Mitsuo Nakamura, 659-3, Daitakubo, Urawa-shi, Saitama-ken, Japan
Filed Feb. 12, 1968, Ser. No. 704,752
Claims priority, application Japan, Apr. 4, 1967, 42/21,367
Int. Cl. H01h 9/28
U.S. Cl. 200—61.54 **8 Claims**

A device for use in a motor vehicle is formed of a lock housing mounted on the steering column which contains a key cylinder interconnected with members for

operating the ignition system and for locking the steering column. A driver mechanism is coupled to the key cylinder, and when the key cylinder is rotated, the driver mechanism rotates and operates the ignition switch and also selectively positions a bolt assembly for locking the



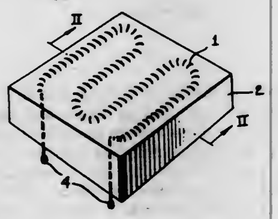
steering column. The bolt assembly includes a bolt engageable within a keeper slot in the steering column, means for biasing the bolt into the slot, and latch means which prevent the bolt from reentering the slot after it has been withdrawn until the key is removed from the key cylinder.

3,500,444

ELECTRICAL HEATING UNIT WITH AN INSULATING REFRACTORY SUPPORT

Walter Kasper Hesse, Martinsville, and Wilbur Charles Brower, Piscataway, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Jan. 16, 1968, Ser. No. 698,253
Int. Cl. H05b *3/44, 3/50, 3/10*
U.S. Cl. 219—544 7 Claims



A composite, thermally insulated electrical heating unit comprising an electrical heating element substantially embedded and secured within an insulating body of filter molded inorganic refractor fiber.

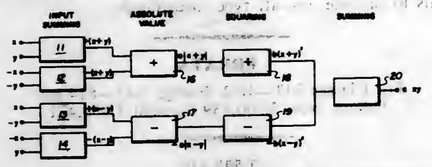
3,500,445

APPARATUS AND METHOD FOR PRODUCING SQUARE-LAW FUNCTION

Jerry M. Collings, Concord, Calif., assignor to Zeltex, Inc., a corporation of California

Filed Aug. 27, 1965, Ser. No. 483,180
Int. Cl. G06f *15/34*
U.S. Cl. 235—197 13 Claims

In an analog multiplier, method and apparatus are disclosed for generating a voltage output signal having a segmental form approximating a parabolic of squared function of an input voltage signal. The input signal is shaped by a series of non-linear electrical conversion networks into a plurality of half wave triangular voltage signals having pre-selected frequency, amplitude and symmetry



with the input voltage and thereafter all of the triangular voltage signals are electrically summated to produce the desired segmental parabolic or squared output signal.

3,500,446

SYSTEM FOR THE CONTINUOUS AND AUTOMATIC MEASUREMENT OF THE SULFUR CONTENT OF PETROLEUM FRACTIONS

Keishi Hasegawa and Takashi Onodera, Saitama, Japan, assignors to Toa Nenryo Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 518,358, Jan. 3, 1966. This application Feb. 14, 1968, Ser. No. 705,394
Int. Cl. G01n *23/12*; H01j *37/00*
U.S. Cl. 250—43.5 5 Claims



A system for continuously and automatically measuring the sulfur content of petroleum products continuously flowing through a pipe having an X-ray sample cell, a beta ray sample cell provided in association with the pipe, an X-ray source and X-ray detector on opposite sides of the X-ray sample cell, a beta ray source and a beta ray detector on opposite sides of the beta ray sample cell, a metal foil positioned between said beta ray source and said beta ray sample cell and a computer connected to said detectors for receiving separate signals therefrom indicating the transmission intensities of the sample by X-rays and beta rays, respectively, said computer being operative to provide an output signal indicative of the sulfur content of the sample and means responsive to said output signal for continuously and automatically indicating the sulfur content calculated with said computer.

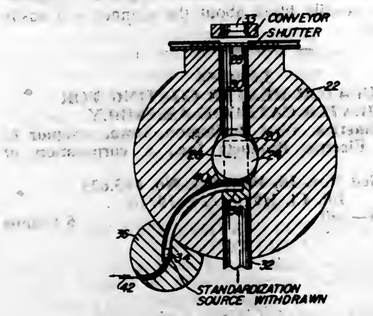
3,500,447

LIQUID SCINTILLATION COUNTING STANDARDIZATION

Richard B. Frank, Deerfield, Ill., assignor to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,644
Int. Cl. G21h *5/00*; G01t *1/20*
U.S. Cl. 250—106 6 Claims

Counting-efficiency correction or standardization measurements on liquid scintillation samples are made by use of an external standardization source placed beneath and closely adjacent to the central portion of each sample. Problem of inaccuracy due to inexactness of the level of filling, inexactness of the positioning, and similar variations in successive sample vials are greatly reduced as compared with other source placements. An automatic



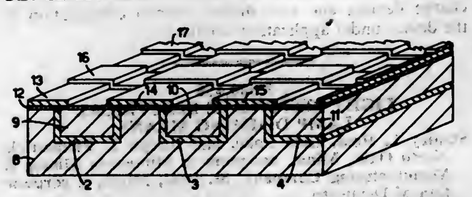
liquid scintillation system employing this location of an external-standardization gamma-ray source is described.

3,500,448

VOLTAGE THRESHOLD PHOTODIODE AND CIRCUIT ASSEMBLY COMPRISING THE SAME

Franco Forlani, Rho, Milano, and Nicola Minnaja, Milan, Italy, assignors to Olivetti-General Electric S.p.A., Caluso, Torino, Italy, a corporation of Italy

Filed Oct. 26, 1965, Ser. No. 505,274
Claims priority, application Italy, Oct. 30, 1964, 23,674/64
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 7 Claims



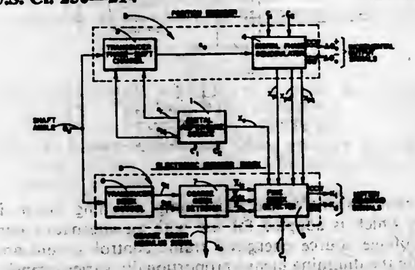
A solid state photoelectric device comprising a semiconductor and a metal layer having an insulating layer interposed therebetween is disclosed, which shows light responsiveness only if negatively biased with an applied voltage up to a threshold voltage.

3,500,449

ELECTRONIC ENCODER INDEX

Charles E. Lenz, Honolulu, Hawaii, assignor to North American Rockwell Corporation

Filed Oct. 2, 1967, Ser. No. 672,350
Int. Cl. H01j *39/12*
U.S. Cl. 250—214 14 Claims



A device for establishing an index position from which an incremental position encoder may measure absolute position. The encoder index is responsive to the angle of an input shaft and generates signals which indicate (1) the approximate displacement of the shaft from the index position, (2) the direction of rotation necessary to reach the index position with minimum motion, and (3) when the shaft is at the index position.

3,500,450

OPTICAL DEVICE FOR THE EXAMINATION OF SMOKE AND DUST LADEN GAS

Edmund James Paytost, Tadworth, Surrey, and Colin Wilson, New Malden, Surrey, England, assignors to Central Electricity Generating Board, London, England, a British body corporate

Filed June 23, 1966, Ser. No. 559,833
Claims priority, application Great Britain, June 24, 1965, 26,812/65
Int. Cl. G01n *21/26, 21/12*
U.S. Cl. 250—218 5 Claims



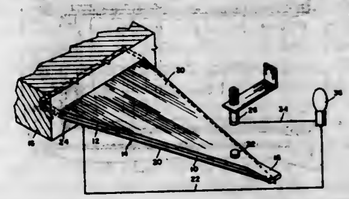
An optical device for the examination of smoke or dust-laden gases consisting of two collinear tubular portions connected together by a support member, one tubular portion containing a light source and the other containing a photo-sensitive device. The smoke or dust-laden gas is arranged to pass upwardly between the two tubular portions and thus between the light source and the photo-sensitive device. In order to prevent dust or dirt particles from being deposited either on the light source or on the photo-sensitive device baffles are inserted into each tubular portion, leaving an axial light path between the source and the photo-sensitive device, the baffles breaking up eddies in the dust carrying gas so that the dust is deposited between the baffles.

3,500,451

PIEZOELECTRIC VOLTAGE GENERATOR

Stephen Yando, Huntington, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed June 29, 1967, Ser. No. 649,990
Int. Cl. H01h *57/00*
U.S. Cl. 310—8.5 9 Claims



A piezoelectric voltage generator suitable for igniting low impedance photographic flash lamps. A cantilevered beam element is provided which consists of a sheet of piezoelectric material bonded to a flexible electrically conductive sheet. When the unsupported end of the beam is displaced and released, the beam rebounds momentarily touching an electrical contact at the point of maximum beam displacement. Energy stored in the piezoelectric sheet is transferred efficiently to a photoflash lamp connected across the piezoelectric sheet through the electrical contact.

3,500,452
INCANDESCENT LAMP WITH A SOLID GLASS BODY SERVING AS THE ENVELOPE

Henry Greber, 225 W. 86th St., Apt. 8–D, New York, N.Y. 10024

Filed Dec. 7, 1967, Ser. No. 688,872
Int. Cl. H01j 1/20
U.S. Cl. 313—9 1 Claim

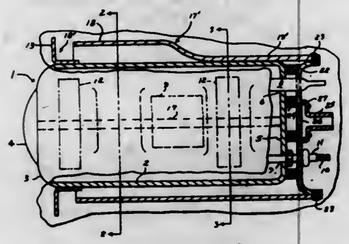


This invention is related to an incandescent lamp whose filament is surrounded with particles of thorium oxide and enclosed in an essentially spherical blob of glass, constituting an integral part of the lamp's bulb. Whereas the glass at the filament is melted at operation of the lamp, it remains solid at the surface of the blob, so that the pressure of the melted glass prevents the filament from evaporation. The thorium oxide at the filament is incandescent and thereby increases the light output of the bulb. Curved surfaces of the blob serve as reflectors. Due to enclosure of the filament in the glass blob, it may be operated at higher temperature than usual in conventional incandescent lamps, and therefore at higher efficiency. For the same reason the life span of this lamp is longer than that of any customary incandescent lamp known.

3,500,453
FIBER GLASS COOLING JACKET FOR DIRECTING AIR ACROSS AN INFRARED SCANNING TUBE

Jack F. McClelland, Derby, Kans., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 2, 1968, Ser. No. 702,614
Int. Cl. H01j 7/26; F28d 15/00
U.S. Cl. 313—22 6 Claims



The invention relates to a cooling shroud of fiber glass which surrounds the casing of an infrared scanner but spaced therefrom to leave a substantially annular space for receiving cool air. The shroud is closed at the end opposite from the viewing or forward end of the scanner except for openings for receiving the supply wires of the scanner and for introducing the cooling air. An air passageway is provided between the rear end of the scanner and the closed end of the shroud which passageway communicates with the annular space about the scanner. There is a circumferential slot between the inner surface of the forward end of the shroud and the outer surface of the scanner which slot serves as an exit for the cooling air. The shroud is made up of upper and lower halves, molded to shape, and secured together by screws so as to be readily fitted about the scanner and easily disassembled.

3,500,454
INSULATOR HEATER COATING FOR HEATER-CATHODE ASSEMBLY

Lloyd C. Emerick, West Burlington, Iowa, assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 16, 1967, Ser. No. 683,629
Int. Cl. H01j 1/24, 19/18
U.S. Cl. 313—340 6 Claims

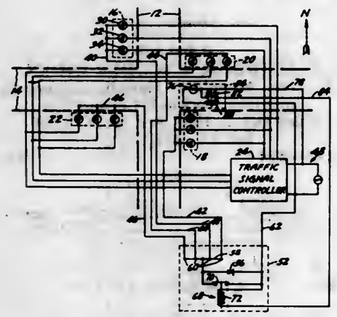


The heater of a heater-cathode assembly for an indirectly-heated electron discharge device includes a wire core, a first coating of electrical insulating material, a second coating of relatively high thermal emissivity material, and a third coating of electrical insulating material whereby the third coating tends to reduce sublimation of the second coating under adverse temperature environments occurring during the fabrication of electron discharge devices and also during normal energization of the device under application conditions.

3,500,455
LIGHT RESPONSIVE ELECTRICAL LAMP DIMMING MEANS

Stanley L. Ross, Gem Lake, and Joseph T. Fitzpatrick, North Oaks, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,627
Int. Cl. H05b 37/02, 39/04, 41/36
U.S. Cl. 315—149 22 Claims

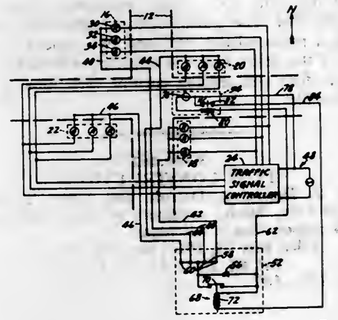


A light responsive electrical lamp dimming means is shown which is adapted for use with an alternating current voltage source energized traffic control system and wherein the dimming means proportionally varies intensity of a traffic signal lamp between a high intensity level and a predetermined low intensity level as a function of sensed background illumination. In one embodiment, a light responsive electrical lamp dimming means includes a controllable bi-directional conducting means which is controlled by a triggering means which in turn is responsive to a background illumination sensing means adapted to detect changes in background illumination in the vicinity of a lamp for controlling the triggering means which varies conduction of the bi-directional conducting means between a first state and a second state in proportion to sensed changes in background illumination between a bright level to a preselected dark level.

3,500,456
LIGHT RESPONSIVE ELECTRICAL LAMP DIMMING CIRCUIT

Stanley L. Ross, Gem Lake, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,628
Int. Cl. H05b 37/02, 39/04, 41/36
U.S. Cl. 315—149 8 Claims



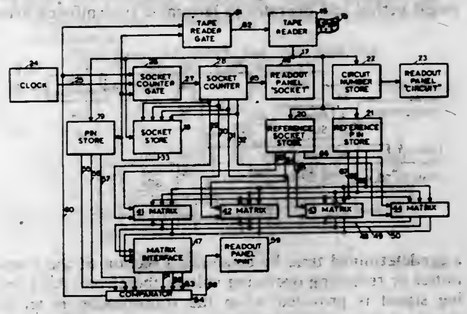
A light responsive electrical lamp dimming circuit is shown which is adapted for simultaneously controlling the intensity level of a plurality of lamps connected in parallel across an alternating current voltage source. In one embodiment, a light responsive traffic signal lamp dimming system is used with a traffic signal controller to abruptly and simultaneously dim the traffic signal lamps of the traffic signal faces of at least one phase or all of the traffic signal lamps of the entire intersection from a high intensity level to a predetermined low intensity level when the background illumination is less than a preselected level. The light responsive dimming circuit disclosed herein includes a unilaterally conducting means controlled by a switching means, such as a relay, which in turn is controlled by a light sensing means, such as for example a photocell, which senses the background illumination.

3,500,457
PROGRAMMED APPARATUS FOR AUTOMATICALLY TESTING INTERWIRED CONNECTIONS IN ELECTRONIC SYSTEMS

Paul T. Carley, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 14, 1967, Ser. No. 667,771
Int. Cl. G01r 31/02
U.S. Cl. 324—73 3 Claims

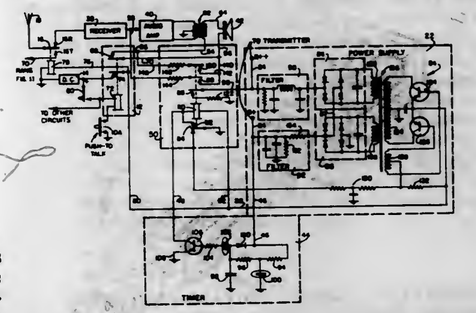
An automatic electronic apparatus is disclosed for testing the circuits represented by interconnected plug pins in the back plane of an electronic system such as a machine tool automatic control system. The apparatus tests each pin in the back plane for inclusion in each of the several circuits represented and it both identifies each pin improperly included in any particular circuit and each pin properly in a circuit but omitted therefrom.



3,500,458
TRANSMISSION TIME LIMITED TRANSMITTER

Gary A. Cassalia, Hoffman Estates, Ill., assignor to Motorola Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 31, 1966, Ser. No. 576,377
Int. Cl. H04b 1/02
U.S. Cl. 325—133 6 Claims



Timing circuit for use with transmitter to limit the maximum time of continuous transmission thereof, including charging circuit energized from transmitter power supply and having capacitor charged through high resistances, with threshold discharge device, such as neon tube, conducting in response to predetermined charge voltage to actuate transistor control circuit. The control circuit operates to de-energize the transmitter, as by disabling the power supply. The power supply includes a transistor interruptor, saturable transformer, rectifiers and a filter, and by grounding the filter the circuit is disabled. The bias may also be removed from the interruptor transistors to disable the power supply. The control circuit further actuates the audio section of the receiver to provide a signal indicating that transmission is terminated.

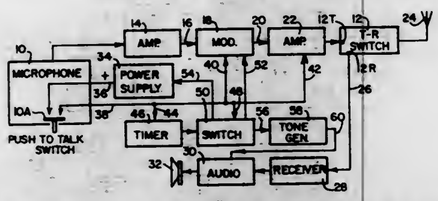
3,500,459
TIME LIMITED TRANSMISSIONS

John W. Battin, Naperville, and Jimmy Paul Counts, Oak Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 31, 1966, Ser. No. 576,474
Int. Cl. H04b 1/02
U.S. Cl. 325—133 12 Claims

Control system for limiting duration of continuous transmission of a transmitter operating with other trans-

mitters on a single channel, wherein the transmitter is actuated by operation of the push-to-talk switch. A timing unit is actuated when the transmission starts to start the timed period and operates to terminate transmission after



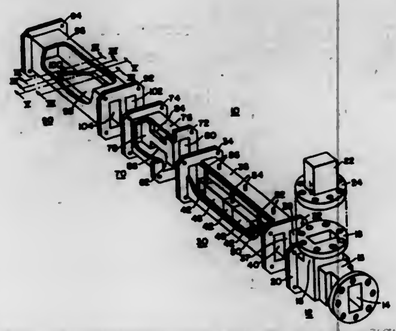
a predetermined time by disabling a section of the transmitter or removing operating voltage therefrom. An alerting signal is provided when the transmission is terminated, as by an audio tone from a receiver used with the transmitter.

3,500,460

MICROWAVE POLARIZATION SWITCH

Raymond R. Jones, San Jose, Calif., and Joseph A. Kempic, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 17, 1967, Ser. No. 639,112
Int. Cl. H01p 3/16
U.S. Cl. 333—21 8 Claims



This invention relates to a microwave polarization switching system illustratively including a magic tee for dividing the input microwave energy into two linearly microwave signals, a phase shifter having two channels disposed to receive the two microwave signals and including a plurality of ferrite bits for shifting the phase of the microwave signals, and a tapered fin polarizer for converting the linearly polarized microwave signals into circularly polarized microwave signals.

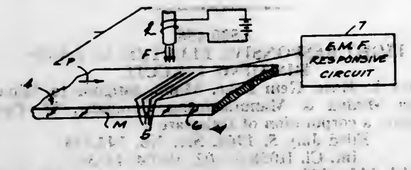
3,500,461

KINETOMAGNETIC, PIEZOELECTRIC AND PIEZORESISTIVE TAPPING TECHNIQUES FOR NON-MAGNETIC DELAY LINES

Max Epstein, Highland Park, David Fryberger, Chicago, Robert J. Serafin, Highland Park, and Anthony P. van den Heuvel, Homewood, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit Illinois corporation

Filed Mar. 16, 1967, Ser. No. 623,674
Int. Cl. H03b 7/30
U.S. Cl. 333—30 19 Claims

A new and improved means and method for tapping non-magnetic delay lines at desired intervals. Three specific techniques are taught and are designated the kinetomagnetic, piezoelectric and piezoresistive techniques. Each technique involves a means for detecting mechanical surface waves on a solid without distorting the wave or removing significant energy therefrom. The kinetomagnetic technique consists of depositing film conductors on the surface of a solid perpendicular to the direction of propagation of the surface wave and inserting the delay line in a magnetic field. The movement of each conductor in the magnetic field as a wave passes induces an E.M.F. in



the conductor which is detected by known means. The piezoelectric technique consists of depositing a film of piezoelectric material and two conductors on the delay line and detecting the voltage generated when a wave strains the film. The piezoresistive technique consists of applying a piezoresistive film and two conductors to the surface of the delay line and applying a constant voltage across the film and sensing current variations as a wave strains the film.

3,500,462

FUSE CONSTRUCTION

Anthony J. Tsormpatzis, Detroit, and James T. Gregory, Garden City, Mich., assignors to Essex International, Inc., a corporation of Michigan

Filed July 26, 1967, Ser. No. 656,111
Int. Cl. H01h 85/08, 85/48
U.S. Cl. 337—187 9 Claims



A fuse which also acts as a terminal connector molded from a non-conducting plastic material. The fuse is U-shaped with a bridge connecting the legs of the U. The legs and bridge of the U are plated with a layer of electrically conductive material. The size of the bridge, as well as the thickness of the plating on the bridge, determines the amperage rating of the fuse. The plating on the bridge section of the fuse melts, breaking the circuit when there is a current overload. The legs of the fuse fit into terminal receptacles and in some instances may support the terminals in position relative to one another.

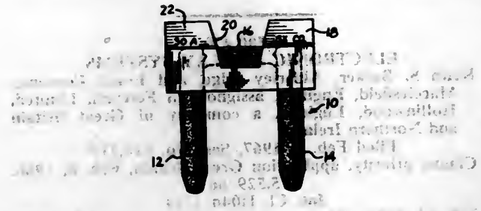
3,500,463

FUSE CONSTRUCTION OF NON-CONDUCTIVE MATERIAL WITH FUSIBLE COATING

James T. Gregory, Garden City, Mich., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan

Filed Sept. 6, 1968, Ser. No. 757,995
Int. Cl. H01h 85/04
U.S. Cl. 337—297 8 Claims

An electrical fuse construction comprises a body member formed of a non-conductive material and includes a pair of terminals and a connector member connecting the terminals together. The body member is entirely



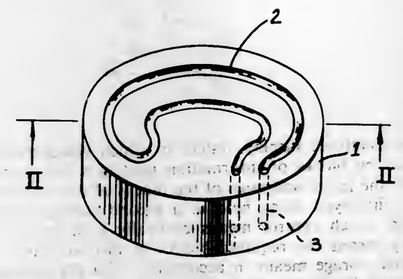
coated with a conductive material and a rigid strut member is moulded about a portion of the body member.

3,500,464

INSULATING ELECTRICAL HEATER SUPPORT

Walter Kasper Hesse, Martinsville, and Wilbur Charles Brower, Piscataway, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Jan. 16, 1968, Ser. No. 698,288
Int. Cl. H01c 1/02
U.S. Cl. 338—321 7 Claims



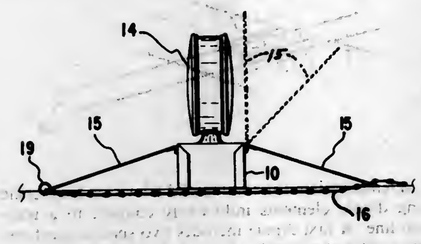
An electrical and thermal insulating supporting base for electrical heating elements comprising a composite body of inorganic refractory fiber integrated into an intermeshed low density, uniform and continuous mass by filter molding, and of the ultimate product configuration.

3,500,465

PORTABLE ELECTRICALLY ACTUATED ROADSIDE WARNING LIGHT

Harvey R. Brekke, 615 SW. 4th St., Madison, S. Dak. 57042

Filed Mar. 13, 1968, Ser. No. 712,712
Int. Cl. B60q 7/00
U.S. Cl. 340—119 1 Claim



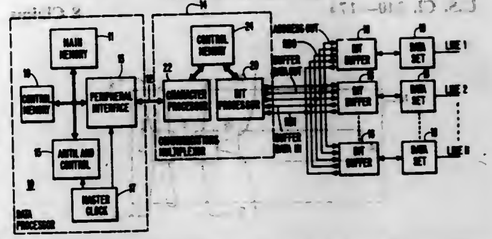
An emergency light having hinged protectors for the lights which can be folded down and held in a lower position to provide a stable base for the light.

3,500,466

COMMUNICATION MULTIPLEXING APPARATUS

Robert G. Casleton, Needham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Sept. 11, 1967, Ser. No. 666,726
Int. Cl. H04j 3/00
U.S. Cl. 340—172.5 11 Claims



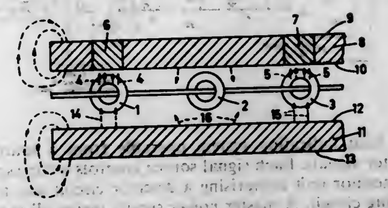
Communication multiplexor apparatus for connecting a plurality of digital communication lines each adapted to supply and receive information a bit at a time to and from a data processor. The multiplexor apparatus includes a bit processor for effecting a transfer of information a bit at a time to and from the communication lines and a character processor which is operative to effect a transfer of assembled characters to and from the data processor. A control memory which stores data and control information pertinent to he processing of data from each of the lines is time multiplexed between the two processors on an alternate cycle basis. The character processor is operative only upon the recognition of one or more special control characters from a particular line, previously conditined for receiving data by the data processor, to transfer to the date processor further assembled data characters from that line by the bit processor to the processing. Communications between the two processors of the multiplexor apparatus is established indirectly through a shared common segment of memory thereby permitting each processor to operate independently.

3,500,467

MAGNETIC INFORMATION STORAGE MATRICES

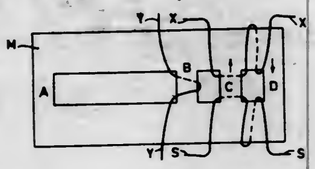
Allen Henry Ellson, Whyteleaf, Surrey, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,736
Claims priority, application Great Britain, May 24, 1963, 20,793/63
Int. Cl. G11b 17/00
U.S. Cl. 340—174 9 Claims



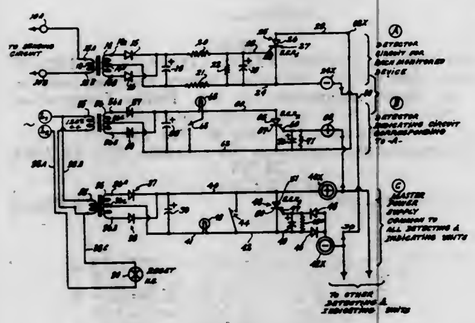
A non-destructive core memory in which each core selected for permanent storage is saturated with a permanent magnetic field. The field is generated by placing a permanently magnetized plate with mutually opposite poles on its two major surfaces adjacent to a core matrix and by replacing a section of plate material adjacent to the selected core with a material having a substantially higher magnetic permeability than air and a magnetic remanence substantially less than that of the plate.

3,500,468
ASSOCIATIVE MEMORY DEVICES
Hermanes Johannes Maria de Haan, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,342
Claims priority, application Netherlands, Oct. 8, 1964, 6411685
Int. Cl. G11b 5/00
U.S. Cl. 340—174 8 Claims



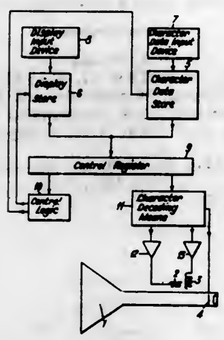
An associative memory element constructed of a block of magnetic material having one long flux path and three shorter flux paths. A first coincident pulse couples one of the flux paths for a first direction flux, a second coincident pulse couples the second and third flux path in mutually opposite directions. The elements are arrayed in rows and columns to form a matrix.

3,500,469
FAULT INDICATING SYSTEM FOR A PLURALITY OF MONITORED DEVICES
Ronald F. Plambeck, Chicago, and Richard F. Mandock, Schiller Park, Ill., assignors to Protection Controls, Inc., Skokie, Ill., a corporation of Illinois
Filed Feb. 11, 1966, Ser. No. 526,889
Int. Cl. G08b 29/00; G08b 19/00; H04q 3/00
U.S. Cl. 340—213 21 Claims



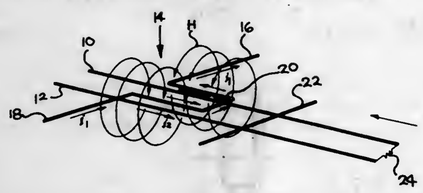
A fault indicating system operable from a source of monitor signals. Each signal source controls a corresponding monitor unit comprising a detector circuit and an indicating circuit. A master power supply serves all monitor units in a group, and individual power supplies energize tell-tale unit-indicators in each monitor unit. Triggerable or gated electron-control devices in the detector indicating and master power supply circuits are arranged in such manner that master current flows in a triggered detector circuit responsive to a monitor signal, and this current triggers the corresponding indicator control devices followed closely by triggering of the master power control device, to actuate a master failure indicator and shut off master power to all monitor units, the tell-tale indicator of the first unit to fail remaining in operation along with the master indicator until the system is reset.

3,500,470
ELECTRONIC DISPLAY SYSTEMS
Keith S. Barker, Alderley Edge, and Frank Fensome, Macclesfield, England, assignors to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland
Filed Feb. 8, 1967, Ser. No. 614,717
Claims priority, application Great Britain, Feb. 8, 1966, 5,529/66
Int. Cl. H04n 1/24
U.S. Cl. 340—324 12 Claims



An electronic display system in which characters are defined by blocks of information held in a first storage means the initial addresses of the blocks of the characters to be displayed being held in a second storage means, and in which control means cyclically read into a decoding means the required blocks of information from the first storage means in accordance with the addresses contained in the second storage means to cause the display of the desired characters on a cathode-ray tube.

3,500,471
ANTENNA HAVING DIPOLES INDUCTIVELY COUPLED TO TRANSMISSION LINE
Donald H. Wells, Oregon, Ohio, assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio
Filed June 9, 1966, Ser. No. 556,453
Int. Cl. H01q 21/12
U.S. Cl. 343—814 1 Claim



An antenna system for commercial television frequencies utilizing dipole elements inductively coupled to a transmission line. A first dipole includes two spaced-apart conductors electrically coupled by a U-shaped stub. A second dipole is spaced from the first dipole to establish a standing wave which is inductively coupled to the transmission line to energize a load.

216,765
SAFETY CAP
Dario DalPiaz, % Euroamerican Safety Center,
Via Boffalora 71/A, Milan, Italy 20143
Filed Sept. 16, 1968, Ser. No. 13,549
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—231



216,766
HAT
Stewart D. Hicks, P.O. Box 15246,
Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,955
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



216,767
HAT
Stewart D. Hicks, P.O. Box 15246,
Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,956
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



216,768
HAT
Stewart D. Hicks, P.O. Box 15246,
Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,961
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



216,769
HAT
Stewart D. Hicks, P.O. Box 15246,
Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,965
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



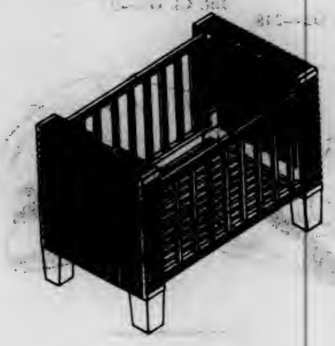
216,770
HAT
Stewart D. Hicks, P.O. Box 15246,
Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,966
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



216,771
HAT
Stewart D. Hicks, P.O. Box 15246, Sarasota, Fla. 33579
Filed Apr. 30, 1969, Ser. No. 16,967
Term of patent 14 years
Int. Cl. D2—03
U.S. Cl. D2—248



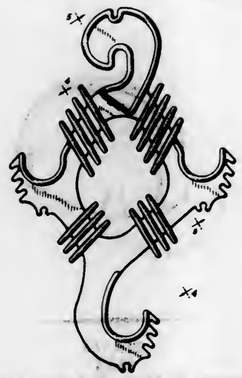
216,772
BABY CRIB
Lynn M. Cary, P.O. Box 2051 84110, and Roland G. Apgood, 3598 South 27th East 84109, both of Salt Lake City, Utah
Filed Mar. 10, 1969, Ser. No. 16,142
Term of patent 14 years
Int. Cl. D6—01
U.S. Cl. D5—5



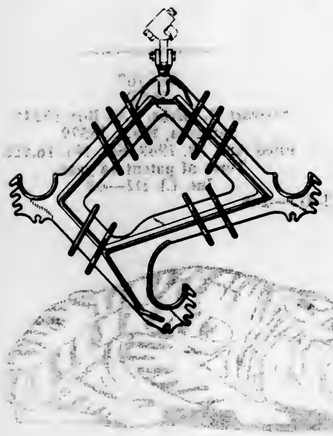
216,773
EMERGENCY CUTTING TOOL FOR RESCUE OR THE LIKE
Clarence W. Daniels, P.O. Box 837, Vacaville, Calif. 95688
Filed Feb. 10, 1969, Ser. No. 15,710
Term of patent 14 years
Int. Cl. D8—02
U.S. Cl. D8—89



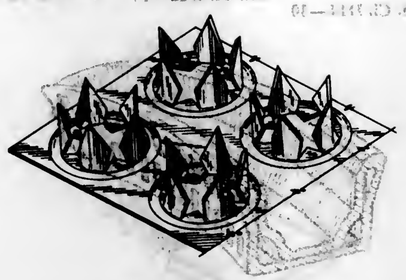
216,774
COMBINED AERIAL CABLE SUPPORT AND SPACER, OR SIMILAR ARTICLE
James P. Markham, Webster St., Milford, N.H. 03055
Filed Apr. 21, 1969, Ser. No. 16,819
Term of patent 14 years
Int. Cl. D6—03
U.S. Cl. D6—230



216,775
AERIAL CABLE SUPPORT, OR SIMILAR ARTICLE
James P. Markham, Webster St., Milford, N.H. 03055
Filed Apr. 21, 1969, Ser. No. 16,827
Term of patent 14 years
Int. Cl. D2—03
U.S. Cl. D6—230



216,776
GUSSET PLATE
Justin D. Allman, P.O. Box 113, Colorado Springs, Colo. 80901
Filed May 17, 1969, Ser. No. 16,290
Term of patent 14 years
Int. Cl. D8—04
U.S. Cl. D8—266



216,777
SQUEEZE BOTTLE OR SIMILAR ARTICLE
Daniel D. Nelson, Jamaica, NY., assignor to Grow Chemical Corporation, New York, N.Y., a corporation of New York
Filed Feb. 5, 1969, Ser. No. 15,636
Term of patent 14 years
Int. Cl. D9—01
U.S. Cl. D9—2



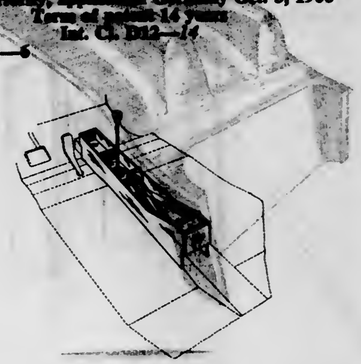
216,778
COMBINED DECANTER AND CLOSURE THEREFOR
Russell V. Stone, Stanisburg, N.Y., assignor to Schenley Industries Inc., New York, N.Y., a corporation of New York
Filed Nov. 14, 1968, Ser. No. 14,453
Term of patent 14 years
Int. Cl. D9—01
U.S. Cl. D9—170



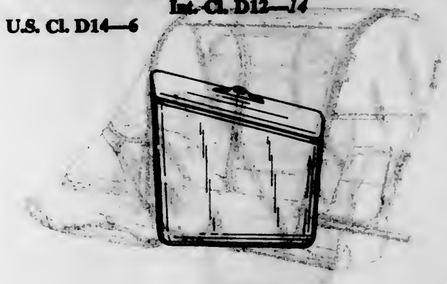
216,779
AUTOMOBILE
Piergiorgio Trouville, Bellevue, Germany, and Pio Manza, Turin, Italy, assignors to Deutsche Fiat Aktiengesellschaft, Baden-Wurttemberg, Germany, a corporation of Germany
Filed Mar. 29, 1968, Ser. No. 16,400
Claims priority, application Germany Oct. 3, 1968
Term of patent 14 years
Int. Cl. D12—08
U.S. Cl. D14—3



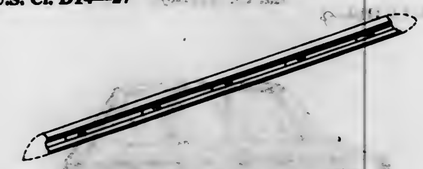
216,780
AUTOMOBILE CONTROL CONSOLE
Piergiorgio Trouville, Bellevue, Germany, and Pio Manza, Turin, Italy, assignors to Deutsche Fiat Aktiengesellschaft, Baden-Wurttemberg, Germany, a corporation of Germany
Filed Mar. 27, 1969, Ser. No. 16,492
Claims priority, application Germany Oct. 3, 1968
Term of patent 14 years
Int. Cl. D12—14
U.S. Cl. D14—6



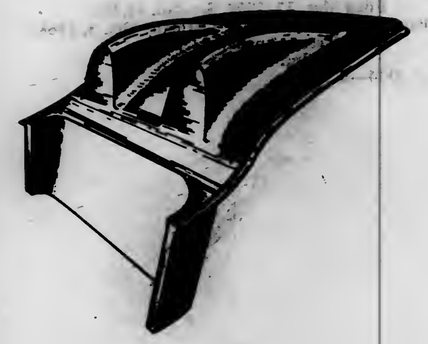
216,781
DESK FOR INSTALLATION IN MOTOR VEHICLES
Christopher Robin, Vinegut Black, Hambledon Mill, Mill End, Henley-on-Thames, England
Filed Jan. 8, 1968, Ser. No. 16,077
Claims priority, application Great Britain July 8, 1967
Term of patent 7 years
Int. Cl. D12—14
U.S. Cl. D14—6



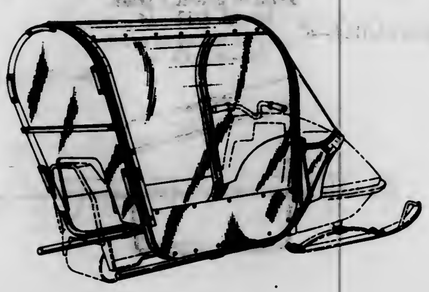
216,782
SIDE RAIL FOR AN AUTOMOBILE LUGGAGE RACK
James Stephen, Royal Oak, Mich., assignor to Heim Design & Manufacturing, Inc., Detroit, Mich., a corporation of Michigan
Filed July 26, 1968, Ser. No. 12,926
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



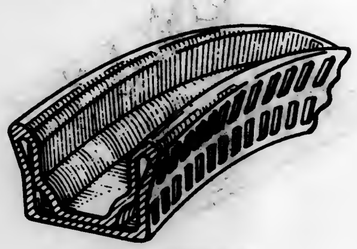
216,783
TONNEAU COVER FOR DUNE BUGGIES
Henry C. Arnoldy, 30417 J. Caris, and William C. Stanko, 30233 J. Caris, both of Roseville, Mich. 48066
Filed Dec. 3, 1968, Ser. No. 14,760
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



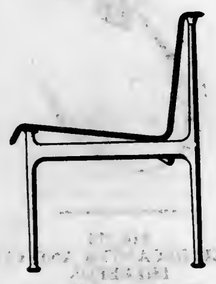
216,784
SNOWMOBILE CAB
Werner W. Martinussen, 835 10th Ave. NW., Watertown, S. Dak. 57201
Filed Jan. 21, 1969, Ser. No. 15,405
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



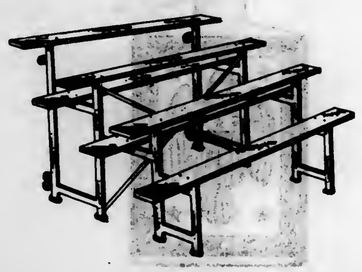
216,785
RIM FOR BICYCLE WHEEL
Kotaro Hata, Nara, Nara, and Toshikazu Fujii, Yao, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Apr. 16, 1969, Ser. No. 16,785
Claims priority, application Japan Oct. 18, 1968
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—30



216,786
CHAIR
Moses Richard Schultz, Reeto, Pa., assignor to Art Metal-Knoll Corporation, a corporation of Delaware
Original design application Nov. 8, 1965, Ser. No. 88,044. Divided and this application Oct. 4, 1967, Ser. No. 9,350
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



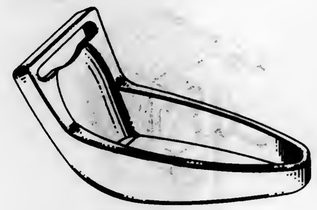
216,787
BLEACHER
Bill W. Sorenson, Jefferson, Iowa, assignor to American Athletic Equipment Co., a corporation of Iowa
Continuation-in-part of design application Ser. No. 9,822, Dec. 18, 1967. This application Feb. 14, 1968, Ser. No. 10,570
Term of patent 14 years
Int. Cl. D25—*99*
U.S. Cl. D15—8



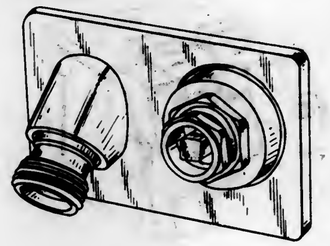
216,788
PORTABLE LOUNGE SEAT
David J. Peterson, Tacoma, Wash. (1206 Thomas Lane No. 251, Renton, Wash. 98055), and Bruce S. Martin, 2224 N. Puget Sound, Tacoma, Wash. 98406
Filed Apr. 2, 1968, Ser. No. 11,258
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—8



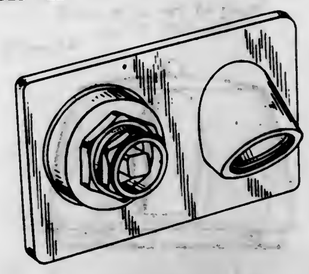
216,789
RIFLE BUTT HOLDER
Charles M. Marr, 135 Henley Road, Overbrook Hills, Pa. 19151
Filed Dec. 5, 1968, Ser. No. 14,821
Term of patent 14 years
Int. Cl. D22—*02*
U.S. Cl. D22—13



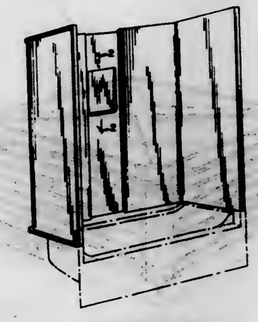
216,790
WALL HYDRANT
Joseph C. Woodford, Spring Lake, Mich., assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 21, 1968, Ser. No. 13,228
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—12



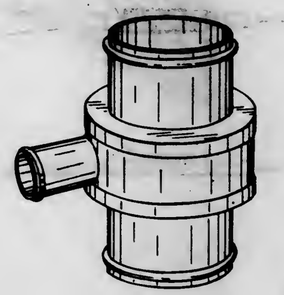
216,791
WALL HYDRANT
Joseph C. Woodford, Spring Lake, Mich., assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 21, 1968, Ser. No. 13,229
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—12



216,792
BATHTUB ENCLOSURE
William H. Armstrong and Norbert T. Knypers, Bloomfield Hills, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 14,567
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—49



216,793
WATER LINE HEATER FOR VEHICLES OR THE LIKE
John H. Klanckie, Minneapolis, Minn., assignor to Puratronics Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 14, 1969, Ser. No. 16,241
Term of patent 3½ years
Int. Cl. D23—*03*
U.S. Cl. D23—86

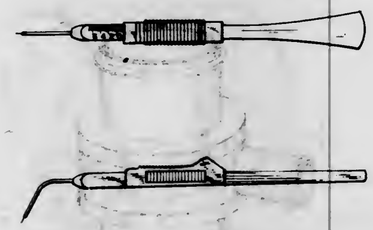


216,794
OZONE GENERATOR
John J. Patrick, Brookline, Mass., assignor to Biozonics Corporation, Natick, Mass., a corporation of Massachusetts
Filed Feb. 17, 1969, Ser. No. 15,807
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—150

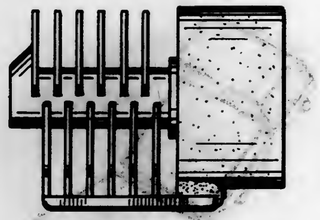


216,795
ROOF VENTILATOR
Thomas R. Field, Indianapolis, Ind., assignor to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana
Filed May 20, 1969, Ser. No. 17,244
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—153

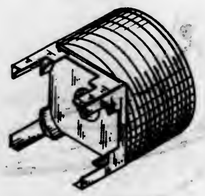
216,796
DENTAL DEPTH GAUGE
Bernard Weinman, 304 Ashland Place, Brooklyn, N.Y. 11217
Filed June 9, 1969, Ser. No. 17,593
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D24—1



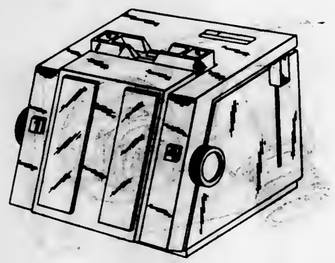
216,797
VARIABLE CAPACITOR
Jack L. Bowen and James H. Ryan, Waseca, Minn., assignors to E. F. Johnson Company, Waseca, Minn., a corporation of Minnesota
Filed Aug. 22, 1968, Ser. No. 13,239
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—1



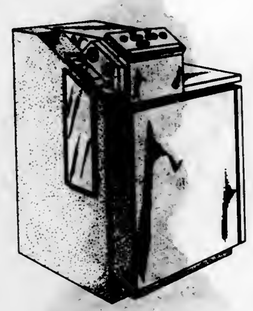
216,798
COAXIAL CONNECTOR
John Cappon, Willowdale, Ontario, Canada, assignor to Benco Television Associates (Division of Rediffon) (Canada) Limited
Original design application Aug. 1, 1967, Ser. No. 8,116, now Patent No. 211,175, dated May 28, 1968. Divided and this application Apr. 3, 1968, Ser. No. 17,142
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—1



216,799
DATA ENTRY STATION
Henry Kapper, Raleigh, N.C., and Dino M. Savio, New Canaan, Conn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1969, Ser. No. 15,316
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



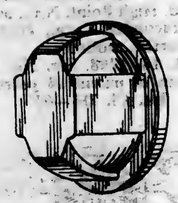
216,800
CASSETTE TRANSPORT
Darrell S. Staley, Santa Clara, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 22, 1969, Ser. No. 16,850
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



216,801
SAFETY START-STOP CONTROL SWITCH
William L. Callendar, 8241 Cottage St., Vienna, Va. 22180
Filed June 17, 1966, Ser. No. 2,715
Term of patent 14 years
Int. Cl. D13—*03*; D8—*03*
U.S. Cl. D26—13



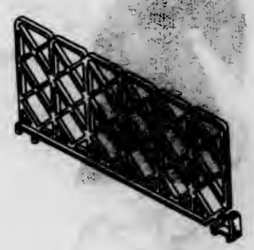
216,802
HEADPHONE EARPIECE
Donald L. Kliewer, Minneapolis, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 6, 1968, Ser. No. 14,822
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



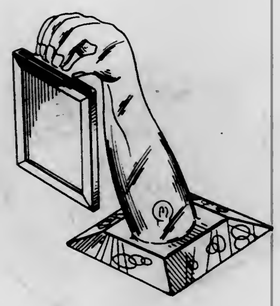
216,803
BASE OF A TELEPHONE SET
Henry Dreyfuss, South Pasadena, Calif., and Robert E. Wirsching, Greenfield, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Continuation-in-part of design application Ser. No. 11,857, May 9, 1968. This application May 9, 1969, Ser. No. 17,539
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



216,804
PARTITION
David M. Moore, Pittsburgh, Pa., assignor to Armstrong Store Fixtures Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 23, 1968, Ser. No. 12,058
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D28—1



216,805
COMBINED PICTURE FRAME AND ILLUMINABLE SUPPORT THEREFOR
Carl D'Amato, 8784 23rd Ave., Bronx, N.Y. 11232
Filed Dec. 12, 1968, Ser. No. 14,942
Term of patent 14 years
Int. Cl. D6—*06*
U.S. Cl. D29—20



216,806
STATUETTE OR SIMILAR ARTICLE
Alba W. Hicks and John W. Hicks, both of 6107 Dunleer Court, Bethesda, Md. 20034
Filed Mar. 26, 1969, Ser. No. 16,467
Term of patent 7 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



216,807
STATUETTE OR SIMILAR ARTICLE
Alba W. Hicks and John W. Hicks, both of 6107 Dunleer Court, Bethesda, Md. 20034
Filed Mar. 26, 1969, Ser. No. 16,468
Term of patent 7 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



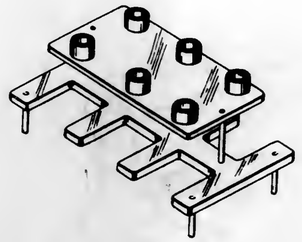
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STATUETTE OR SIMILAR ARTICLE
Alba W. Hicks and John W. Hicks, both of 6107 Dunleer Court, Bethesda, Md. 20034
Filed Mar. 26, 1969, Ser. No. 16,469
Term of patent 7 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



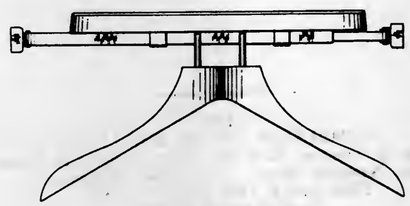
216,809
FURNITURE PANEL OR SIMILAR ARTICLE
Herman W. Bernard, High Point, N.C., assignor to Casard Furniture Manufacturing Corp., High Point, N.C., a corporation of North Carolina
Filed Oct. 16, 1968, Ser. No. 14,014
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—1



216,810
BOTTLE DRAINER
Herbert Pullman, New York, N.Y., assignor to Fill-A-Mate, Incorporated, New York N.Y.
Filed Oct. 28, 1968, Ser. No. 14,209
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D33—3



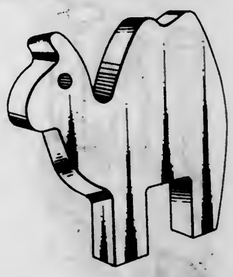
216,811
VALET RACK OR SIMILAR ARTICLE
Daniel Thomas Hallahan, New York, N.Y., assignor to Sanjo Utility Mfg. Co., Inc., Brooklyn, N.Y.
Filed Oct. 14, 1968, Ser. No. 13,956
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D33—8



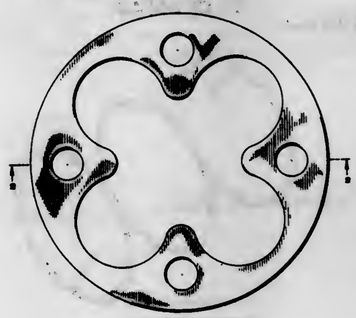
216,812
GIRAFFE FIGURE FOR PLAYGROUND APPARATUS
John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172, and Joseph E. Hill, 221 Mount Auburn St., Cambridge, Mass. 02139
Filed July 24, 1968, Ser. No. 12,883
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—2



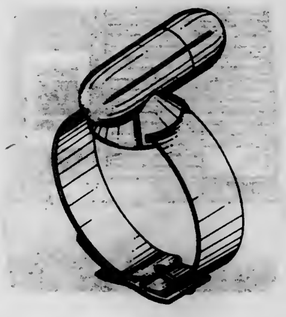
216,813
CAMEL FIGURE FOR PLAYGROUND APPARATUS
John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172, and Joseph E. Hill, 221 Mount Auburn St., Cambridge, Mass. 02139
Filed July 24, 1968, Ser. No. 12,876
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—2



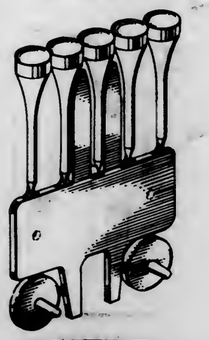
216,814
CIRCULAR RING TOSS TOY OR SIMILAR ARTICLE
Lee Triplett, 2878 South 8600 West, Salt Lake City, Utah 84115
Filed July 26, 1968, Ser. No. 12,917
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—5



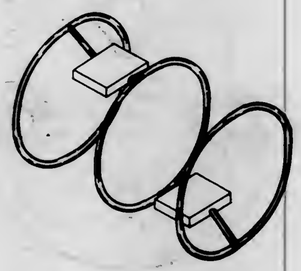
216,815
GOLFER'S TIMING AID
George Gunn, Jr., Seattle, Wash., assignor to Golf Pauz, Inc., Seattle, Wash., a corporation of Washington
Filed Oct. 15, 1968, Ser. No. 13,999
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



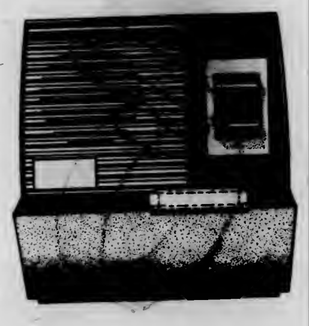
216,816
GOLFER'S ACCESSORY KIT
Robert A. Bennett, 36 Falmouth Drive, Shelton, Conn. 06484
Filed Jan. 15, 1969, Ser. No. 15,359
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



216,817
PEDAL-OPERATED ROLLING DEVICE OR SIMILAR ARTICLE
Vernon Gerald Purdy, 59 Clark St., Manjimup, Western Australia, Australia
Filed May 2, 1969, Ser. No. 16,990
Claims priority, application Australia Dec. 2, 1968
Term of patent 14 years
Int. Cl. D21—*04*
U.S. Cl. D34—5



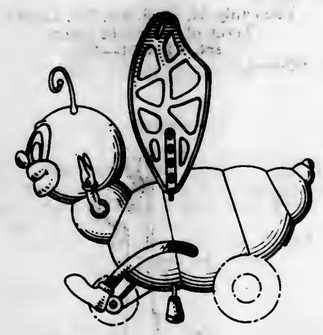
216,818
TOY TAPE RECORDER
Robert L. Lindsay, Hamilton, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 14,472
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



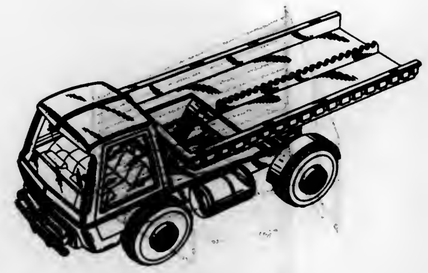
216,819
CURVE SCRIBING TOY
Lawrence W. Goodridge, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 3, 1968, Ser. No. 14,759
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



216,820
BUMBLEBEE TOY OR THE LIKE
George W. Dunbar, Nashville, Tenn., assignor to Knsan, Inc., Nashville, Tenn., a corporation of Kentucky
Filed Dec. 9, 1968, Ser. No. 14,839
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



216,821
TOY TRUCK
Leslie Furlanes, Jr., Topanga, Calif., assignor to Creative Industries, Inc., New York, N.Y., a corporation of New York
Filed Mar. 12, 1969, Ser. No. 16,264
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



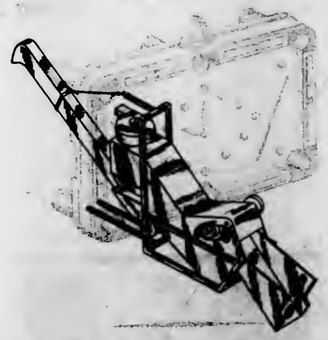
216,822
PLOW
Ted L. Cline, P.O. Box 38, Rush Springs, Okla. 73082
Filed Jan. 9, 1969, Ser. No. 15,283
Term of patent 14 years
Int. Cl. D15—*03*
U.S. Cl. D35—2



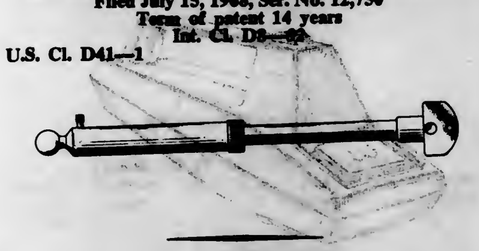
216,823
FLOWER RECEPTACLE
Raymond G. Lankowitz, 4700 W. 32nd Ave., Denver, Colo. 80212
Filed Nov. 8, 1968, Ser. No. 14,355
Term of patent 14 years
Int. Cl. D11—*02*
U.S. Cl. D35—3



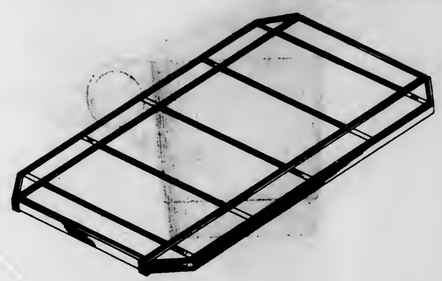
216,824
SWEET CORN PICKER
George H. Webster, [illegible], Le Sueur, Le Center, Minn., assignors to Webster Equipment and Mfg., Inc., Le Center, Minn., a corporation of Minnesota
Filed [illegible], Ser. No. 12,209
Term of patent 14 years
Int. Cl. D15—*03*
U.S. Cl. D40—1



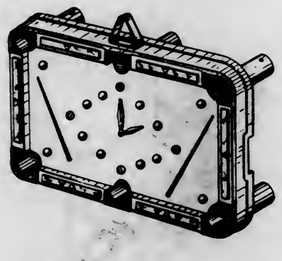
216,825
EXTENSIBLE STRUT FOR VEHICLE STRAIGHTENING AND REPAIR SYSTEMS
Wayne E. Hunnicutt, Big Bend, and Peter G. Rossbach, Waukesha, Wis., assignors to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 12,750
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D41—1



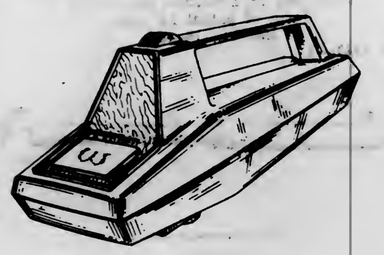
216,826
PLATFORM FOR AUTOMOBILE BODY AND FRAME REPAIR SYSTEM
Wayne E. Hunnicutt, Big Bend, and Peter G. Rossbach, Waukesha, Wis., assignors to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 12,782
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D41—1



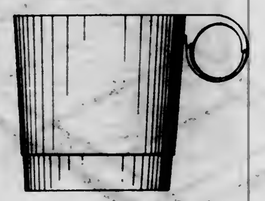
216,827
CLOCK
Frank L. Welsh, 8236 Geava Ave., Buena Park, Calif. 90620
Filed May 9, 1969, Ser. No. 17,100
Term of patent 14 years
Int. Cl. D10—*01*
U.S. Cl. D42—7



216,828
FOOD MIXER POWER UNIT
Monte L. Levin, New York, N.Y., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Jan. 29, 1969, Ser. No. 15,549
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D44—1



216,829
COFFEE CUP
Albert E. Colato, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 14,296
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—9



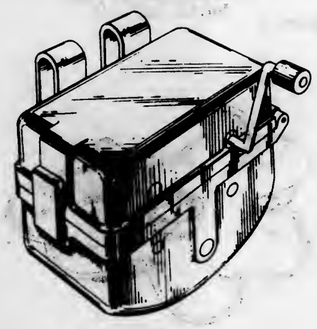
216,830
WALL-MOUNTED LIGHT FIXTURE
Albert C. McNamara, Jr., Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1969, Ser. No. 16,667
Int. Cl. D26—*02*
Term of patent 14 years
U.S. Cl. D48—4



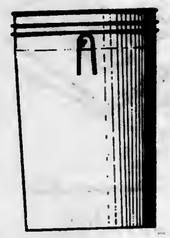
216,831
CIGARETTE LIGHTER
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Saitama-ken, Japan
Filed Jan. 7, 1969, Ser. No. 15,237
Term of patent 7 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



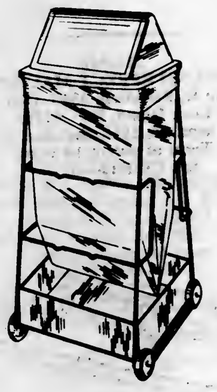
216,832
GOLF BALL WASHER
Dominick J. Juarez, 2803 Belfast Drive 46805, and Jack L. Stark, 1006 W. Wildwood Ave. 46807, both of Fort Wayne, Ind.
Filed Nov. 5, 1968, Ser. No. 14,319
Term of patent 7 years
Int. Cl. D15—*06*; D7—*06*
U.S. Cl. D49—1



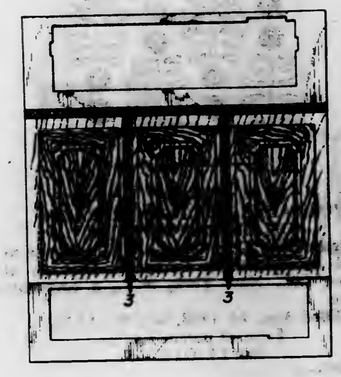
216,833
BUCKET
George Yates, Jr., Glendale, Calif., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware
Filed Sept. 27, 1968, Ser. No. 13,761
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—29



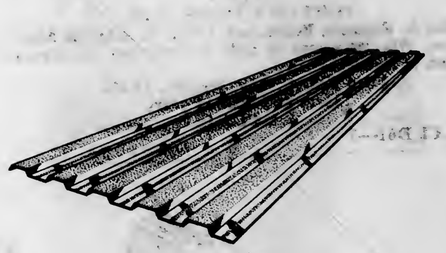
216,834
COMBINATION TRASH RECEPTACLE AND HOLDING CART
Thomas Ferarra, 1154 Webster Ave., New Rochelle, N.Y. 10804
Filed Dec. 6, 1968, Ser. No. 14,832
Term of patent 14 years
Int. Cl. D12—*14*; D7—*06*
U.S. Cl. D49—32



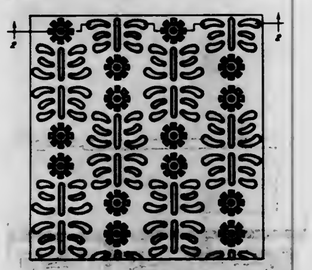
216,835
FRONT PANEL FOR CIGARETTE DISPENSING MACHINES
Donald A. Young, 14532 Vanowen St., Van Nuys, Calif. 91504, and David S. Zipp, Van Nuys, Calif.; said Zipp assignor to Sara B. Young, doing business as Don Young Co., Van Nuys, Calif.
Filed Jan. 6, 1969, Ser. No. 15,218
Term of patent 14 years
Int. Cl. D20—*01*
U.S. Cl. D52—3



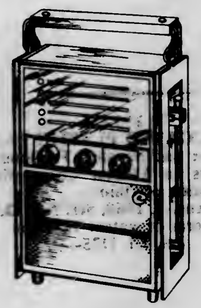
216,836
CORRUGATED PLASTIC PANEL
Lloyd N. Faulkner and Suzanne Faulkner, Los Angeles, Calif., assignors to Vistron Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 1, 1968, Ser. No. 12,992
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D54—2



216,837
EMBOSSED METAL FOIL
Edward Swallow, Bridgeville, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of design application Ser. No. 6,269, Mar. 17, 1967. This application Sept. 4, 1968, Ser. No. 13,391
Term of patent 14 years
Int. Cl. D5—*03*; D25—*01*
U.S. Cl. D54—2



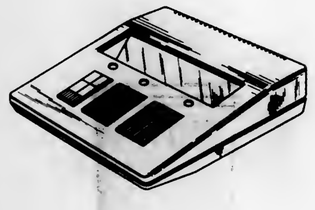
216,838
PORTABLE MULTI-BAND RADIO OR SIMILAR ARTICLE
Victor Reichenstein, Great Neck, N.Y., assignor to Consolidated Merchandising Company, Division of U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 14, 1968, Ser. No. 13,132
Term of patent 7 years
Int. Cl. D14—*03*
U.S. Cl. D56—4



216,839
PORTABLE PROJECTOR
Nolan K. Rhoades, Beloit, and Arthur R. Schmidt, Madison, Wis., assignors to ESB Incorporated, a corporation of Delaware
Filed Feb. 4, 1969, Ser. No. 15,621
Term of patent 14 years
Int. Cl. D16
U.S. Cl. D61—1



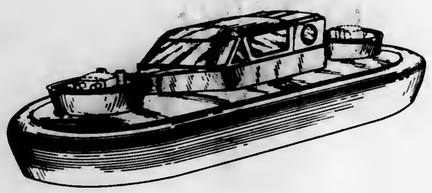
216,840
CALCULATING MACHINE
Georg Joseph, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Dec. 26, 1968, Ser. No. 15,111
Claims priority, application Germany Oct. 7, 1968
Term of patent 14 years
Int. Cl. D18—*01*
U.S. Cl. D64—11



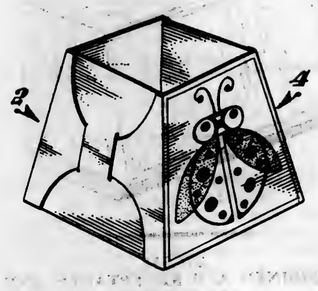
216,841
HAND OPERATED SEWING MACHINE
Edmund A. Kustusch, 581 Fluke Drive, Detroit, Mich. 48214
Filed Mar. 28, 1969, Ser. No. 16,494
Term of patent 14 years
Int. Cl. D15—*09*
U.S. Cl. D70—1



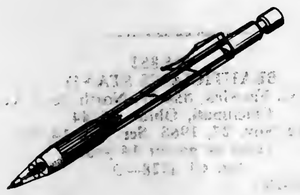
216,842
GROUND EFFECT MACHINE
William R. Bertelsen, 4343 18th Ave., Rock Island, Ill. 61201
Filed Sept. 24, 1968, Ser. No. 13,688
Term of patent 14 years
Int. Cl. D12—*07, 08*
U.S. Cl. D71—1



216,843
WRITING IMPLEMENT CONTAINER
Wing G. Lew, Los Angeles, Calif., assignor to Decolage, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 2, 1969, Ser. No. 15,172
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



216,844
WRITING INSTRUMENT
Shoji Shimada, Tokyo, Japan, assignor to Iwasaki Kinzoku Kogyo Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 30, 1968, Ser. No. 15,152
Claims priority, application Japan Dec. 21, 1968
Term of patent 14 years
Int. Cl. D19—*06*
U.S. Cl. D74—17



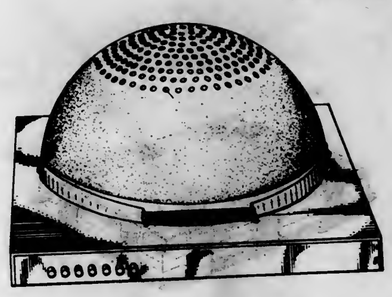
216,845
SPACER FOR A GARMENT HANGER HOOK
Raymond Ralph Wheeler, 514 Elk Drive, Riverton, Wyo. 82501
Filed May 9, 1968, Ser. No. 11,906
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D80—8



216,846
STORAGE CABINET
Wayne E. Hamilcutt, Big Bend, and Peter G. Rombach, Waukesha, Wis., assignors to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 12,776
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—11



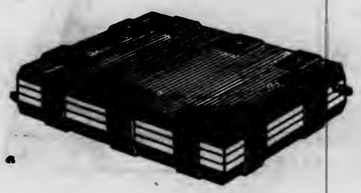
216,847
MICROWAVE OVEN
Per Gunnar Brynge, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed Feb. 4, 1968, Ser. No. 10,408
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D61—4



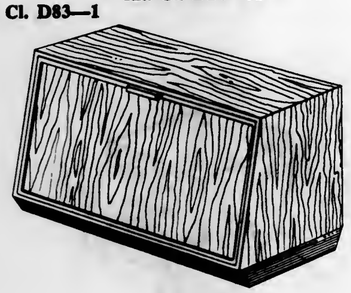
216,848
HEMODIALYSIS APPARATUS
Anthony J. Carsello, Rolling Hills, Calif., assignor to Western Gear Corporation, Lynwood, Calif., a corporation of Washington
Filed Apr. 21, 1969, Ser. No. 16,817
Term of patent 14 years
Int. Cl. D24—*02*; D6—*01*
U.S. Cl. D83—1



216,849
DIALYZER APPARATUS
Anthony J. Carsello, Rolling Hills, Calif., assignor to Western Gear Corporation, Lynwood, Calif., a corporation of Washington
Filed Apr. 21, 1969, Ser. No. 16,826
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



216,850
HEMODIALYSIS FLUID CONDITIONING AND MONITORING APPARATUS
Anthony J. Carsello, Rolling Hills, Calif., assignor to Western Gear Corporation, Lynwood, Calif., a corporation of Washington
Filed Apr. 21, 1969, Ser. No. 16,831
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



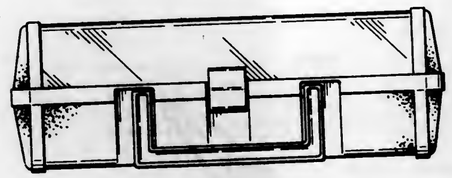
216,851
COMBINED ASH RECEPTACLE AND AIR PURIFIER
John E. Gilbertson, 3209 Douglass, Des Moines, Iowa 50310, and Erwin W. Parr, 1345 McKinley, Des Moines, Iowa 50315
Filed May 19, 1969, Ser. No. 17,199
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



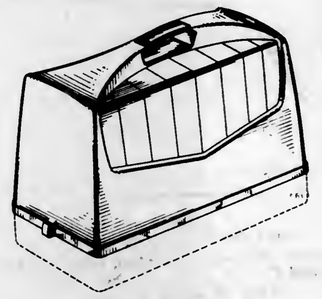
216,852
BEAUTICIAN'S STAND
Robert M. Farwick, 854 W. North Bend Ave., Cincinnati, Ohio 45244
Filed Nov. 27, 1968, Ser. No. 14,708
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



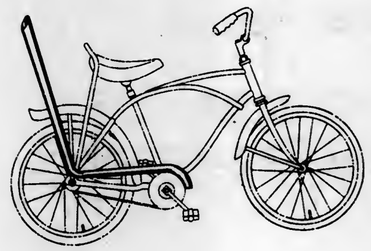
216,853
COMBINED CARRYING AND STORAGE CASE
Peter T. Schurman, Woodbridge, Conn., assignor to The Plastic Forming Company, Inc., Woodbridge, Conn.
Filed July 1, 1968, Ser. No. 12,586
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



216,854
SEWING MACHINE CARRYING CASE OR SIMILAR ARTICLE
Joseph J. Ramondetta, Vernon, Sebastian L. Ramondetta, Wethersfield, Richard Borruso, Woodbridge, and Angelo Barba, Old Lyme, Conn., assignors to Tennglad Industries, Inc., East Hampton, Conn., a corporation of Tennessee
Filed July 22, 1968, Ser. No. 12,843
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



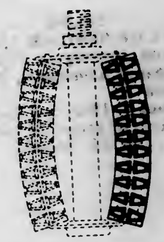
216,855
BICYCLE CHAIN GUARD
Michael G. Black, 8401 Wheatland, Sun Valley, Calif. 91352
Filed Feb. 17, 1969, Ser. No. 15,802
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—5



216,856
BICYCLE
Michael G. Black, 8401 Wheatland, Sun Valley, Calif. 91352
Filed Feb. 17, 1969, Ser. No. 15,801
Term of patent 14 years
Int. Cl. D12—*11*
U.S. Cl. D90—8



216,857
CYCLE PEDAL TREAD BLOCK
Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Oct. 18, 1968, Ser. No. 14,057
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



216,858
CYCLE PEDAL TREAD BLOCK
Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Oct. 18, 1968, Ser. No. 14,073
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



216,859
CHAIN SPROCKET FOR A BICYCLE
Keizo Shimano and Norio Sato, both % Shimano Industrial Co., Ltd., 77 3-cho, Oimatsucho, Sakai, Japan
Filed Apr. 11, 1969, Ser. No. 16,684
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—17

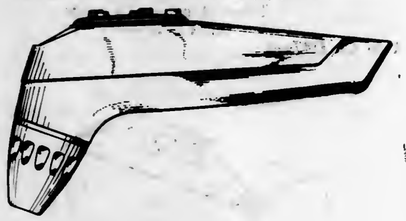


216,860
TOWEL OR SIMILAR ARTICLE
Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,447
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26

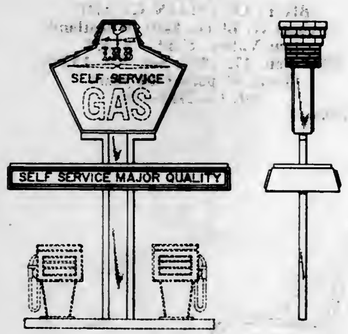


216,861
BEVERAGE DISPENSER HEAD
Heiko T. de Man, Moraga, Calif., assignor to Electronic Dispensers International, Oakland, Calif., a corporation of California
Filed Jan. 6, 1969, Ser. No. 15,226
Term of patent 7 years
Int. Cl. D15—*12*
U.S. Cl. D94—3





216,862
FILLING STATION SIGN
Dwight A. Harrison, Hampton, Iowa 50441
Filed Oct. 17, 1968, Ser. No. 14,038
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



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TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF MARCH, 1970

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Anderson, John M., to General Electric Company. Electrodeless gaseous electric discharge devices utilizing ferrite cores. 3,500,118, Cl. 315-057.

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Anthes, John A., and Martinson, Albert M., to Dravo Corporation. Kort nozzle. 3,499,412, Cl. 115-042.

Anthony, Albert M., to Kidde, Walter Company, Incorporated. Adjustable mounting means for a convergence assembly. 3,500,270, Cl. 335-212.

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Artin, Joseph. Minnow bucket irrigating valve. 3,499,243, Cl. 043-056.

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Batenina, Natalia Vladimirovna: *See—*
Nesmeyanov, Alexandr Nikolaevich, Rogozhin, Sergei Vasilievich, Slonimsky, Grigory Lvovich, Misjurev, Vladimir Ivanovich, Tolstoguzov, Vladimir Borisovich, Malakhov, Vladimir Ilich, Batenina, Natalia Vladimirovna, Ershova, Vera Alexandrovna, Dzyavgo, Vladimir Sigzmundovich, and Grekov, Vladimir Ivanovich 3,499,379.

Battelle Development Corporation, The: *See—*
Ownby, Paul Darrell, 3,500,104.

Battin, John W., and Combs, Jimmy Paul, to Motorola, Inc. Time limited transmissions. 3,500,459, Cl. 325-133.

Bauer, Michael Joe: *See—*
Fitzgerald, Arthur Ernest, Fitzgerald, Arthur A., Bauer, Michael Joe, and Geci, Lawrence Anton 3,499,501.

Baumann, Ludwig, and Schutze, Benno. Ventilating fan unit. 3,499,378, Cl. 098-033.

Baumann, Peter, and Zimmermann, Markus, to Geigy Chemical Corporation. Penicillin derivatives. 3,499,889, Cl. 260-239.1

Baumgartner, William E.: *See—*
Hansen, Donald H., and Baumgartner, William E. 3,499,715.

Bayer, Wolfgang, Rangger, Herbert, and Kieber, Hartwig, to Hilti Aktiengesellschaft. Explosive actuated fastener setting means for use with a cartridge magazine. 3,499,590, Cl. 227-010.

Baynham, Alexander Chrisopher, and Rees, Huw David, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Government of the. Travelling spot display device. 3,499,705, Cl. 350-161.

Bazinet, Wilfred P., Jr., and Young, Charles Gilbert, to American Optical Company, mesne. Laser assemblies and the like. 3,500,238, Cl. 331-094.5

Beaty, Charles A., to RFD, Inc. Radio altimeter. 3,500,398, Cl. 343-007.3

Beck, George C.: *See—*
Clark, Kendall, Beck, George C., Creighton, Eugene J., DeTurris, Frank L., Drop, Joseph G., Godat, Jean J. L., Larsen, Arne H., Rajac, Thomas J., Santillo, George R., Jr., and Schueike, Walter J. 3,499,203.

Becker, Kurt, to Heyes, Hermann, Firma. Cutting arrangement. 3,499,356, Cl. 083-355.

Beckman Instruments, Inc.: *See—*
Hall, Lloyd E., Brant, Roy Gene, and Doering, John Peter, Jr., 3,500,290.

Beckwith, Walter C., to Hackett, Clarence A., Inc. Slag pot carrying vehicle. 3,499,561, Cl. 214-313.

Bedocs, Michael F., to Indak Manufacturing Corporation, Electrical switches with precise locating means between the carriage and contactor. 3,500,002, Cl. 200-016.

Beggs, James E., to General Electric Company. Construction and cooling arrangement for grooved cathode and associated electrodes. 3,500,107, Cl. 313-348.

Belcher, Richmond D., Duggan, Robert J., Ellis, George R., Eslinger, Robert H., Goodyear, William Frederick, Marshall, Joseph C., and Masone, Thomas R., to Bunker-Ramo Corporation, The. Data handling apparatus. 3,500,327, Cl. 340-154.

Belk, Wilber C., Robbins, Robert P., and Toodman, Donald C., to FMC Corporation. Fruit feeding apparatus. 3,499,519, Cl. 198-030.

Bell Aerospace Corporation: *See—*
Jessee, James M., 3,500,380.

Bell, Christy W., to General Electric Company. High voltage circuit breaker with means for preinserting resistors during closing. 3,500,009, Cl. 200-144.

Bell & Howell Company: *See—*
Berchtold, Jean, 3,500,106.
Schneider, Robert A., 3,499,214.

Bell, Stanley C., and Wei, Peter H. L., to American Home Products Corporation. 1,4-Dihydro-4-oxo-2-quinazolinepropionic acid esters. 3,499,897, Cl. 260-251.

Bell Telephone Laboratories, Incorporated: *See—*
Bjorkholm, John E., 3,500,241.
Brolin, Stephen J., 3,500,441.
Cocco, Eugene R., 3,500,293.
Daniels, Richard W., 3,500,262.
Eisenberg, Barry R., 3,500,226.
Fischer, Robert F., and Kaenel, Reginald A., 3,500,348.
Geusic, Joseph E., Johnson, Leo F., and Van Uitert, Le Grand G., 3,500,232.
Gunther, Ronald V., Kaenel, Reginald A., Lepselter, Martin P., and Smith, James L., 3,500,148.
Kahng, Dawon, 3,500,142.
Kelly, John L., Jr., and Logan, Benjamin F., Jr., 3,500,000.
Mattingly, Robert L., and Mumford, William W., 3,500,254.
Nagelberg, Elliott R., 3,500,258.
O'Neal, John B., Jr., 3,499,982.
Parente, Michael, 3,500,245.
Patel, Chandra K. N., 3,500,235.
Pritchett, Robert L., 3,500,066.
Ruthroff, Clyde L., 3,500,207.
Seidel, Harold, 3,500,259.
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Wasserman, Norman, 3,500,267.

Beller, Albert: *See—*
Erdmann, Hans, Beuchle, Friedrich, and Beller, Albert 3,499,509.

Beloit Corporation: *See—*
Salomon, Salomon M., 3,499,528.

Bendix Corporation, The: *See—*
Abel, Donald J., 3,499,333.
Gleeson, Edward J., 3,500,244.
Nutz, George Kaspar, 3,500,049.
Rosenbaum, Erik, 3,500,405.
Spieker, Bernard, 3,500,343.
Thomson, Millard R., 3,499,607.

Bendler, Hellmut: *See—*
Stadler, Hans, Gawlick, Heinz, and Bendler, Hellmut 3,499,386.

Benford, Konrad H., to Bowles-Benford. Mechanically programmed encoder system. 3,500,326, Cl. 340-147.

Benitez, Mamerto, Jr., and O'Neal, Douglas, to Hardman Aerospace, mesne. Human restraint system. 3,499,681, Cl. 297-385.

Bennett, Harold E., to United States of America, Navy. Wide range absolute reflectometer. 3,499,716, Cl. 356-209.

Bennett Industries, Inc.: *See—*
Yates, George, Jr., 3,499,574.

Benrus Corporation: *See—*
Swain, Roger S., and Wootton, Gerald R., 3,500,103.

Bent, John H., to Air Instruments, Inc., mesne. Surgical aspirator. 3,499,393, Cl. 103-263.

Bentholm, Svend Asger Rud, Hoogendoorn, Hendrik, de Jong, Eltan Joachim, Koenen, Wilhelm Engelinus, and Polderman, Jacobus, to Organon Inc. Process for rendering powders free flowing and the thus obtained powders. 3,499,784, Cl. 117-100.

Berchtold, Jean, to Bell & Howell Company. Cathode. 3,500,106, Cl. 313-341.

Berczynski, Frank A., to A. E. Construction Corporation. Slide valve casing. 3,499,462, Cl. 137-340.

Berg, Nephi Edward, to Hendrix Electronics Inc., mesne. Electrical signal generator. 3,500,212, Cl. 328-014.

Bernadet, Henri-Francois: *See—*
Hai, Thai Ngo, and Bernadet, Henri-Francois 3,500,261.

Berney, Sheldon, to Reliance Products Ltd. Plastic container and package. 3,499,582, Cl. 222-183.

Bernhard, Ernst, to AB Internavia. Ship, in particular for the transportation of containers. 3,499,409, Cl. 114-072.

Bernstein, Jack, to Squibb, E. R., & Sons, Inc., mesne. 3-Azabicyclo[3.2.]nonane-3-ethyl benzilate. 3,499,888, Cl. 260-239.

Berry, John William, to American Cyanamid Company. System for encoding information for automatic read- out producing symbols having both photoluminescent material as coding components and visible material and illuminating with both visible and ultraviolet light. 3,500,047, Cl. 250-071.

Berz, Gerhard, to Electroglas, Inc. Chuck assembly for automatic wafer die sort machine. 3,499,640, Cl. 269-021.

Bespak Industries Limited: *See—*
Warren, William Edward, 3,499,584.

Best, Albert M., and Kline, Charles M., to Sperry Rand Corporation. Harvester and baler combination. 3,499,381, Cl. 100-100.

Bethlehem Steel Corporation: *See—*
Fegan, Lloyd V., Jr., 3,500,187.

Beuchle, Friedrich: *See—*
Erdmann, Hans, Beuchle, Friedrich, and Beller, Albert 3,499,509.

Bey, Ahmet K., 1/2 to Budreck, Frances. Oscillating electric motor. 3,500,080, Cl. 310-029.

Beyer, Ralph E.: *See—*
May, Patrick L., and Beyer, Ralph E. 3,499,552.

Bianchi, Vittorio, Louis, Achille. Machine-tool. 3,499,336, Cl. 074-029.

Bidder, Gerhard: *See—*
Burkhardt, Walter, Hansgen, Klaus, and Bidder, Gerhard 3,499,343.

Bienhoff, Milton G., Sanborn, Alfred W., and Sherman, Michael, to Singer-General Precision, Inc. Digit line selection matrix. 3,500,358, Cl. 340-174.

Biggar, Frank M., Jr. Machine for folding webs of indefinite length. 3,499,643, Cl. 270-079.

Bilbrough, Jack: *See—*
Reed, William C., and Bilbrough, Jack 3,500,182.

Bilbrough, Jack, to Rank Organisation Limited, The, mesne. Weighing of materials with microwave testing of moisture content. 3,499,499, Cl. 177-064.

Bisbell Engineering Limited: *See—*
Bishop, Ronald, 3,500,283.

Bishop, Bruce E., to United States of America, Navy. Sector attenuation scanning device for automatic tracking antenna systems. 3,500,415, Cl. 343-118.

Bishop, Geoffrey Stanley: *See—*
Alexander, Alfred John, Bishop, Geoffrey Stanley, Leat, Andrew Francis Vincent, and Tooze, Michael John 3,500,031.

Bishop, Michael L., to Wagner Electric Corporation. Vehicle dual brake condition responsive indicating system. 3,500,311, Cl. 340-052.

Bishop, Ronald, to Bisbell Engineering Limited. Electric welding. 3,500,283, Cl. 339-012.

Bissell, Herbert D. Illuminated reading device. 3,500,034, Cl. 240-006.4

Bissell, William S., to Lockheed Aircraft Corporation. Interlaminar tank sealing. 3,499,814, Cl. 156-349.

Bissett-Berman Corporation, The: *See—*
Bissett, Thomas B., and Tatch, Martin S., 3,500,342.

Bissett, Thomas B., and Tatch, Martin S., to Bissett-Berman Corporation, The. Electrolytic cell counter. 3,500,342, Cl. 340-173.

Bittles, James A., to McDonnell Douglas Corporation. Production of ion exchange membrane. 3,499,537, Cl. 210-510.

Biysett-Berman Corporation, The: *See—*
Sturges, James T., 3,499,323.

Bjorkholm, John E., to Bell Telephone Laboratories, Incorporated. Arrangement for passive transmission pulsing of a Q-switched laser. 3,500,241, Cl. 331-094.5

Bjorn, Thomas E., to Stewart-Warner Corporation. Mechanical wheel balancer. 3,499,329, Cl. 073-458.

Bjorn, Thomas E., and Dopp, David S., to Stewart-Warner Corporation. Mechanical balancers. 3,499,330, Cl. 073-458.

Black, James A. Drying chamber for continuous web stock. 3,499,233, Cl. 034-155.

Blackwood, John: *See—*
Greulich, Robert G., Mack, Alfred H., and Blackwood, John 3,499,406.

Blake, Donald E. Apparatus and reamer for working pipe. 3,499,178, Cl. 010-107.

Blankenship, Vernon L., and Ertle, Marion E., to Anchor Hocking Corporation. Air and water cooling of glassware forming machines. 3,499,746, Cl. 065-265.

Blease Anaesthetic Equipment Limited: *See—*
Manley, Roger E. W., 3,499,438.

Bliss, E. W., Company: *See—*
Riddle, Ralph M., Jr., and Puck, Loren F., 3,500,308.

Blohm & Voss A.G.: *See—*
Sandmann, Fritz, and Votteler, Arno, 3,499,251.

Blum, Bernard: *See—*
Schwartzenberg, John W., Luxl, Frank C., and Blum, Bernard 3,500,029.

Bockstahler, Earl R., to Dow Chemical Company, The. Substituted 3,4-dihydro-2H-(1)-benzothieno- (3,2-b)-pyran-2-yl-amine compounds and method of preparation thereof. 3,499,894, Cl. 260-247.1

Boehm, Julius, to Standard Oil Company, The (Ohio). Amine-stabilized iodine-containing lubricants. 3,499,839, Cl. 252-033.4

Boehringer, Wilfred E., Kramer, Louis T., and Little, Jane, to McDonnell Douglas Corporation. Torque linkage damper. 3,499,621, Cl. 244-103.

Boeing Company, The: *See—*
Baier, Robert J., 3,499,691.
Harding, David G., 3,499,500.

Bogdanov, Vladimir Vladimirovich, Glagovsky, Boris Aronovich, Moskovenko, Igor Borisovich, Nesmashny, Evgeny Vasilievich, Pigulevsky, Evgeny Dmitrievich, and Rybakov, Vladimir Alexeevich. Apparatus for determining the toughness of abrasive articles. 3,499,318, Cl. 073-067.2

Boggs, William F.: *See—*
McCutcheon, Samuel R., Boggs, William F., and Ewin, William H. 3,500,183.

Bohmer, Einar, and Aarefjord, Tore, to Papirindustriens Forskningsinstitutt. Mechanical system for manufacturing pigment-coated paper. 3,499,419, Cl. 118-206.

Bois, Anthelme, to Automobiles M. Berliet. Exhaust gas purifying devices. 3,499,269, Cl. 055-309.

Boller, Hans. Massage device. 3,499,439, Cl. 128-049.

Bones, Noel Edward: *See—*
O'Loughlin, Cian Noel, and Bones, Noel Edward 3,500,096.

Bonnotte, Paul, to Societe Anonyme de Vehicules Industriels et d'Equipments Mecaniques Saviem. Hydropneumatic suspension systems of vehicles. 3,499,639, Cl. 267-064.

Borden Company, The: *See—*
Roberts, Victor Isaac, and Riddell, Maynard Harry, 3,499,314.

Borgman, Arthur C.: *See—*
Nesslinger, Fritz J., and Borgman, Arthur C. 3,499,565.

Bosch, Hans, to Chemische Werke Munchen, Otto Barlocher GmbH. Method of making a vulcanizable rubber composition with reaction products of sulfur and organic amines. 3,499,865, Cl. 260-041.5

Bosch, Robert G.m.b.H.: *See—*
Domann, Helmut, and Gunsser, Peter, 3,500,161.

Boucherle, Robert H.: *See—*
Mentzer, Everett K., and Boucherle, Robert H. 3,499,649.

Bouhot, Marcel Pierre Alexis. Torque responsive roller clutch. 3,499,511, Cl. 192-056.

Bourgeois, Yves: *See—*
Roussos, Michel, Bourgeois, Yves, and Jasse, Bruno 3,499,868.

Bowditch, Hoel L.: *See—*
Williams, George F., and Bowditch, Hoel L. 3,499,464.

Bowen, Richaid L., Jr. Mixing device. 3,499,633, Cl. 259-095.

Bowles-Benford: *See—*
Benford, Konrad H., 3,500,326.

Bowman, Dean C.: *See—*
Cuccio, Allen B. J., and Bowman, Dean C. 3,500,338.

Bozich, Daniel J., to Wyle Laboratories. Underwater transducer. 3,500,304, Cl. 340-009.

Braid, Milton, to Mobil Oil Corporation. Reaction product of diorganophosphorodithioates and diorganocarbodiimides. 3,499,838, Cl. 252-032.7

Brandner, John David, and Stockburger, George Joseph, to Atlas Chemical Industries, Inc. Process for preparing high molecular content ester of propylene glycol. 3,499,917, Cl. 260-410.6

Brandt, Lawrence: *See—*
Trojan, George, and Brandt, Lawrence 3,499,954.

Branson Instruments, Incorporated: *See—*
Brech, Kilian H., and Krenke, Vincent Gerald, 3,500,089.
Obeda, Edward G., 3,499,808.

Brant, Roy Gene: *See—*
Hall, Lloyd E., Brant, Roy Gene, and Doering, John Peter, Jr. 3,500,290.

Braun, Ernst, and Braun, Gert, to Halbuch & Braun. Mine excavator-conveyor assembly. 3,499,683, Cl. 299-034.

Braun, Gert: *See—*
Braun, Ernst, and Braun, Gert 3,499,683.

Brech, Kilian H., and Krenke, Vincent Gerald, to Branson Instruments, Incorporated. Ultrasonic cleaning apparatus. 3,500,089, Cl. 310-008.1

Breikss, Ivars P., to Honeywell Inc. Electrical apparatus. 3,500,331, Cl. 340-172.5

Brekke, Harvey R. Portable electrically actuated roadside warning light. 3,500,465, Cl. 340-119.

Brennan, James H., to Emhart Corporation. Refrigeration system. 3,499,295, Cl. 062-081.

Bridges, Thomas F.: *See—*
Field, Sheldon B., and Bridges, Thomas F. 3,499,410.

Briggs, Hartwell L.: *See—*
Amariti, Lugigi, and Briggs, Hartwell L. 3,499,760,

Bristol-Myers Company: *See—*
Crast, Leonard Bruce, Jr., 3,499,885.
Crast, Leonard Bruce, Jr., 3,499,893.

British Aluminium Company Limited, The: *See—*
Pearson, William Kenneth Jamieson, 3,499,306.

British Petroleum Company Limited, The: *See—*
Goldup, Alan, and Westaway, Michael Thomas, 3,499,944.

British Telecommunications Research Limited: *See—*
Clark, Adrian P., 3,499,995.

Broadhead, Samuel L., Jr., Martin, Jerry A., and Rooks, Howard B., to Collins Radio Company. Reference signal and digital switch-varied signal genesator. 3,500,214, Cl. 328-048.

Broberg, Leonard E., to Smith, A. O., Harvestore Products, Inc. Hydraulic unloading mechanism for a storage structure. 3,499,556, Cl. 214-017.

Brock, Klaus, to Schloemann Aktiengesellschaft. Adjustable pouring nozzle for a ladle or tundish. 3,499,587, Cl. 222-526.

Brody, Donald Earl: *See—*
Cain, Clifford William, Jr., and Brody, Donald Earl 3,499,778.

Brohm, David Malcolm: *See—*
Waring, Raymond Hugh, and Brohm, David Malcolm 3,499,457.

Brok, Wilhelm Fredrik: *See—*
Van Duuren, Hendrik Cornelis Anthony, Da Silva, Herman, and Brok, Wilhelm Fredrik 3,500,319.

Brolin, Stephen J., to Bell Telephone Laboratories, Incorporated. Delta modulation with discrete companding. 3,500,441, Cl. 179-015.

Bromell, Raymond J., and Lynch, Paul E., to Kendrick Cattle Company, mesne. Pipe racking and transfer assembly. 3,499,498, Cl. 175-085.

Brooks, Charles G., to United States of America, Air Force, mesne. Process for deep etching a silicon wafer. 3,499,805, Cl. 156-013.

Brooks, Durward L. Collapsible food and beverage service tray. 3,499,595, Cl. 229-028.

Brouwer, Floyd: *See—*
Applegate, Merlin J., Dufendach, William R., and Brouwer, Floyd 3,500,167.

Brower, Wilbur Charles: *See—*
Hesse, Walter Kasper, and Brower, Wilbur Charles 3,500,444.
Hesse, Walter Kasper, and Brower, Wilbur Charles 3,500,464.

Brown, Donald: *See—*
Meininger, James L., and Brown, Donald 3,499,599.

Brown, Jesse J., Jr., and Van Noy, Bryce W., to Sylvania Electric Products, Inc. Cathodoluminescent phosphors. 3,499,843, Cl. 252-301.4

Brown, Pierce B.: *See—*
Hullhorst, William B., Brown, Pierce B., and Mosier, William H. 3,499,261.

Brown, Ronald E.: *See—*
Zernow, Louis, and Brown, Ronald E. 3,499,384.

Brown, Stewart C., to Digital Data Systems, Inc., mesne. Variable gain amplifier. 3,500,316, Cl. 330-086.

Brown, William Ray, to Mallory, P. R., & Co., Inc. Variable circuit timer. 3,500,005, Cl. 200-038.

Brueckner, Hubert U., to Minnesota Mining and Manufacturing Company. Photographic projection apparatus. 3,499,707, Cl. 353-090.

Brule, Albert: *See—*
Frappard, Charles, Roulot, Maurice, and Brule, Albert 3,500,239.

Bruns, Edward C.: *See—*
Wiatt, James G., and Bruns, Edward C. 3,499,355.

Brunswick Corporation: *See—*
Huck, William F., Wyatt, James B., Albrecht, Alexander J., and Gautraud, Michael G., 3,499,648.
Mentzer, Everett K., and Boucherle, Robert H., 3,499,649.

BTR Industries Limited: *See—*
Gutkowski, Janusz, 3,499,415.

Buchholz, Donald E., and Sheppard, Thomas W., to United States of America, Navy, mesne. Raid analysis computer. 3,500,397, Cl. 343-007.

Buckley, Frederick, to International Business Machines Corporation. Sense amplifier adapted for monolithic fabrication. 3,500,220, Cl. 330-019.

Buckley, Frederick, and Fitzgerald, Lawrence P., to International Business Machines Corporation. Analog multiplier, divider, variable gain element. 3,500,032, Cl. 235-195.

Bucyrus-Erie Company: *See—*
Reischl, Karl E., 3,499,286.

Budd, Richard Edgar: *See—*
Ferris, Thomas George, Budd, Richard Edgar, Easterling, Robert Eugene, and Wright, William Joseph 3,499,833.

Budreck, Frances: *See—*
Bey, Ahmet K., 3,500,080.

Bullough, Vaugh L.: *See—*
McMinn, Curtis J., and Bullough, Vaugh L. 3,499,831.

Bunker-Ramo Corporation, The: *See—*
Belcher, Richmond D., Duggan, Robert J., Ellis, George R., Esslinger, Robert H., Goodyear, William Frederick, Marshall, Joseph C., and Masone, Thomas R., 3,500,327.
Davis, John S., and Wells, Paul E., 3,500,352.
Griff, William, and Kitaguchi, Tome, 3,499,219.
Koerner, Ralph J., and Scarbrough, Alfred D., 3,500,340.
Scarbrough, Alfred D., 3,500,350.

Burgess, Joseph Wesley, Jr., and Segal, Clifford E. Apparatus for playing a game of stock speculation. 3,499,646, Cl. 273-001.

Buriks, Rudolf S.: *See—*
Mange, Franklin E., Buriks, Rudolf S., and Fauke, Allen R. 3,499,847.

Burk, Marvin C., to Phillips Petroleum Company. Search preventative servoamplifiers. 3,500,151, Cl. 318-018.

Burkhardt, Lawrence E., and Johnson, Charles H., to United States of America, Navy. Method and apparatus for providing electrical energy to a load with a predetermined time delay. 3,500,164, Cl. 320-001.

Burkhardt, Walter, Hansgen, Klaus, and Bidder, Gerhard, to Lohmann & Stollerfoht Aktiengesellschaft. Two-step reduction gear transmission. 3,499,343, Cl. 074-411.

Burkholder, Harvey Z.: *See—*
Voran, Willis R., and Burkholder, Harvey Z. 3,499,674.

Burndy Corporation: *See—*
Williamson, John B.P., and Sherwood, Ralph L., 3,500,298.

Burns, Erwin. Releasing collar. 3,499,664, Cl. 285-002.

Burns, Laurence, to Sylvania Electric Products, Inc., mesne. Photocapacitive electroluminescent light amplifier. 3,500,101, Cl. 313-108.

Burroughs Corporation: *See—*
Haggan, Douglas E., 3,500,229.
Holz, George E., 3,500,068.

Burwen, Richard S., to Analog Devices, Inc. Transistor complementary pair power amplifier with active current limiting means. 3,500,218, Cl. 330-011.

Busch, Richard E., to Addmaster Corporation. Control mechanism for calculating machines. 3,499,603, Cl. 235-145.

Buschfort, Heinz G.: *See—*
Hundere, Alf, and Buschfort, Heinz G. 3,499,310.

Buser, Rudolf, Gaule, Gerhart K., and Ross, Raymond L., to United States of America, Army. Electrical pulse generators. 3,500,078, Cl. 310-013.

Butler, De Forrest D., to Square D Company. Cover assembly for a junction box of an underfloor electrical wiring system. 3,499,570, Cl. 220-003.3

Byrd, Carl: *See—*
Stanley, Peter Paul, and Byrd, Carl 3,499,263.

C.I.T.-Compagnie Industrielle des Telecommunications: *See—*
Ameau, Albert, 3,500,213.

Cagna, Bruno A.: *See—*
Cotton, Simeon H., Jr., and Cagna, Bruno A. 3,499,240.

Cain, Charles J. Apparatus for remotely determining the angular orientation, speed, and/or direction of rotation of objects. 3,500,365, Cl. 340-196.

Cain, Clifford William, Jr., and Brody, Donald Earl, to Johns-Manville Corporation. Diatomaceous silica pigments and the like. 3,499,778, Cl. 106-288.

Caldwell, Donald A., to Esso Research and Engineering Company. Tester for free water in hydrocarbons. 3,500,046, Cl. 250-071.

Calgon Corporation: *See—*
Schlamb, Kermit F., 3,499,767.

Calhoun, Fredrick L., to Automatic Sprinkler Corporation of America. Container inspection device with transverse dual scan utilizing rotating reticle and plurality of concentric photocells. 3,500,053, Cl. 250-223.

Callon, Floyd R.: *See—*
Daniels, Lawrence E., and Callon, Floyd R. 3,499,677.

Calmusky, John E. Tool retainer. 3,499,656, Cl. 279-019.1

Caloric Corporation: *See—*
Kemp, Wayne T., 3,499,430.

Cambria, Emanuel F.: *See—*
Hobbins, James F., and Cambria, Emanuel F. 3,499,345.

Cameron, Donald D.: *See—*
Rockwell, Paul E., and Cameron, Donald D. 3,499,435.

Campbell, Larry W., and Fischer, Heinz G., to Westinghouse Electric Corporation. Spacers for electrical winding structures. 3,500,272, Cl. 336-060.

Canadian Patents and Development Limited: *See—*
Kusters, Norbert L., and MacMartin, Malcolm P., 3,500,171.

Candioto, Donny W.: *See—*
Quinn, Richard M., and Candioto, Donny W. 3,500,052.

Cannalte, Gary A., to Motorola, Inc. Transmission time limited transmitter. 3,500,458, Cl. 325-133.

Canrad Precision Industries, Inc.: *See—*
Chilowsky, Constantin, 3,499,801.

Capadalis, Custer E. Material handling means. 3,499,659, Cl. 280-047.2

Cappotto, Samuel D., to SMC Corporation. Typewriter ribbon spool cover. 3,499,517, Cl. 197-186.

Carey, Thomas Francis. Retractable swimming pool cover. 3,499,174, Cl. 004-172.14

Carleton, Robert C.: *See—*
Stacy, Galen D., and Carleton, Robert C. 3,500,024.

Carleton, Robert G., to Honeywell Inc. Communication multiplexing apparatus. 3,500,466, Cl. 340-172.5

Carlson, Ernest R.: *See—*
Hubbell, Harvey, and Carlson, Ernest R. 3,500,291.

Carlson, Ernest R., and Lipinski, Vincent F., to Harvey Hubbell Incorporated. Grounding means for protective shells of electrical connector devices. 3,500,286, Cl. 339-014.

Carlson, Ronald H., to Hooker Chemical Corporation. Metal sequestrant. 3,499,842, Cl. 252-180.

Caron, Wilfred N., to Dynalectron Corporation. Electrically-short constant impedance antenna. 3,500,421, Cl. 343-767.

Carp, Ralph W., Howard, Donald W., and Eppley, Dewey W. Anti-skid system. 3,499,689, Cl. 303-021.

Carrier Corporation: *See—*
Murray, Philip A., and Geary, Carl H., Jr., 3,499,503.
Osborne, William T., 3,499,296.

Carter, Philip S., and Craig, Robert A. Power limiter comprising a chain of ferrite-filled dielectric resonators. 3,500,256, Cl. 333-017.

Casablancas Limited: *See—*
Noguera, John Michael, 3,499,191.

Cash, Burns A., to United States of America, Air Force. Means for packaging and dispensing chaff. 3,500,409, Cl. 343-018.

Cassel, Lawrence E., and Sosnowski, Joseph A., to Philco-Ford Corporation. Voice-excited vocoder. 3,499,991, Cl. 179-001.

Cassidy, Francis D., to RCA Corporation. Random-acess memory organization. 3,500,360, Cl. 340-174.

Castaing, Raymond, and Slodzian, Georges, to CSF-Compagnie Generale de Telegraphie Sans Fil. Ionic microanalyzer which includes a convex mirror as an ion energy filter. 3,500,042, Cl. 250-049.5

Cataphote Corporation: *See—*
Searight, Charles Edwin, Ryan, John Robert, and Davis, Bernie Joseph, 3,499,857.

Caterpillar Tractor Company: *See—*
Bailey, John M., 3,499,426.

Krause, Harold R., Dogget, George A., and Zimmerman, Robert B., 3,499,227.
Celayan, Genaro G. Smog-control equipment for internal combustion engines, incinerators and boilers. 3,499,282, Cl. 060-030.
Cerco Corporation: *See—*
Murray, John M., 3,499,398.
Ceskoslovenska Akademie ved: *See—*
Wichterle, Otto, 3,499,862.
Chadbourn Inc.: *See—*
Matthews, Robert M., and Lathem, James M., 3,499,196.
Chain Lakes Research Associates, Inc.: *See—*
Peace, George M., 3,500,251.
Chambers, Gilbert V. Promoted mosquito control oil with polyethoxylated 2,4-dinonyl phenol and method of using it. 3,499,969, Cl. 424-341.
Champion Spark Plug Company: *See—*
Rea, Robert F., 3,499,634.
Chao, Wu Wai, Stephan, Robert W., and Zoya, Walter J., to Sperry Rand Corporation. Power transmission. 3,499,391, Cl. 103-162.
Charbonnages de France: *See—*
Letort, Maurice J. A., and Fleureau, Bernard, 3,499,871.
Charrin, Jean Pierre, Hermier, Jacques, and Lalande, Michel George E., to La Telemecanique Electrique. D.C.-A.C. converters. 3,500,170, Cl. 321-045.
Chemical and Pharmaceutical Patent Holding Ltd.: *See—*
Corn, Murray E., 3,499,959.
Chemical Construction Corporation: *See—*
Newman, Daniel J., and Matta, Jorge M., 3,499,734.
Chemical Products Corporation: *See—*
Franz, Arvel O., 3,499,724.
Chemische Werke Munchen, Otto Barlocher GmbH: *See—*
Bosch, Hans, 3,499,865.
Cherny, Anatoly Alexeevich: *See—*
Grachev, Vladimir Alexandrovich, Cherny, Anatoly Alexeevich, Marienbakh, Lev Mikhailovich, and Kurbatsky, Ivan Lukich 3,499,637.
Chesney, John, Friberg, Vincent P., and Phelps, Richard B., to General Instrument Corporation. Monitoring system for fluid flow in drop form. 3,500,366, Cl. 340-222.
Cheston, Theodore C., and Grady, Henry M., to United States of America, Navy. Sub-array horn assembly for phased array application. 3,500,422, Cl. 343-778.
Childers, Clifford W., and Gruver, Jerry T., to Phillips Petroleum Company. Reaction of peroxides with blends of polystyrene, resinous block copolymer, and rubbery polymer of an oxirane. 3,499,949, Cl. 260-876.
Childress, Bobby B., to Coltron Industries, Inc. Apparatus for developing temperature indicative signals from stationary or rotating heaters or drums and further for developing control signals from the temperature. 3,500,019, Cl. 219-471.
Chilowsky, Constantin, deceased (by Seward, W. Saxton, executor), to Canrad Precision Industries, Inc. Heat-cutting method. 3,499,801, Cl. 148-009.
Chirco, Peter R., to Huck Manufacturing Company. Portable power supply with valve for dual tool operations. 3,499,466, Cl. 137-624.18
Chivas, Norman J.: *See—*
Mojden, Wallace W., and Chivas, Norman J. 3,499,199.
Church, Brian Andrew, to Plessey Company Limited, The. Aerials. 3,500,423, Cl. 343-785.
Ciba Limited: *See—*
Nikles, Erwin, and Ebner, Ludwig, 3,499,749.
Cincinnati Butchers' Supply Company: *See—*
Lambert, Robert W., and Cook, Frank M., 3,499,394.
Cincinnati Milling Machine Co., The: *See—*
Curley, Paul T., 3,500,457.
Haggerty, William Andrew, and Foertmeyer, Charles Evans, 3,499,830.
Wiatt, James G., and Bruns, Edward C., 3,499,355.
Cioni, Philip Thomas: *See—*
Mays, Robert K., and Cioni, Philip Thomas 3,499,779.
Clapper, Genung L., to International Business Machines Corporation. Speech analyzing system. 3,499,990, Cl. 179-001.
Clark, Adrian P., to British Telecommunications Research Limited. Frequency and time division multiplex signalling systems using successive changes of frequency band and time slot. 3,499,995, Cl. 179-015.
Clark, George L., to Xerox Corporation, mesne. Laser stabilizing system. 3,500,236, Cl. 331-094.5
Clark, Kendall, Beck, George C., Creighton, Eugene J., DeTurris, Frank L., Drop, Joseph G., Godat, Jean J. L., Larsen, Arne H., Rajac, Thomas J., Santillo, George R., Jr., and Schueike, Walter J., to International Business Machines Corporation. Chip positioning machine. 3,499,203, Cl. 029-203.
Clark, Robert L.: *See—*
Rogers, Edward F., and Clark, Robert L. 3,499,968.
Clarke, Colin Michael, to General Electric Company Limited, The. Pulse receiver whose output does not respond to signal distortion existing during short, intermittent periods. 3,500,211, Cl. 325-323.
Clarke, Dennis I., to Dunlop Rubber Company Limited. Production of microporous flexible materials. 3,499,811, Cl. 156-176.
Clarke, John F., to Texas Instruments, Incorporated. Heat treatment of clad wire or the like. 3,499,804, Cl. 148-127.
Clarke, Vaughan Richard, to National Research Development Corporation. Electric analogue calculator for the determination of capital investment profitability. 3,500,030, Cl. 235-184.
Clayworth, Geoffrey Thomas: *See—*
O'Loughlin, Cian Noel, and Clayworth, Geoffrey Thomas 3,500,111.
Clecak, Nicholas J., and Cox, Robert J., to International Business Machines Corporation. Bis phenols as high opacity diazotype couplers. 3,499,763, Cl. 096-091.
Cleff, Peter Herbert. Means for generating involute gears. 3,499,252, Cl. 051-123.
Clegg, Hardeman Lee. Conveyor belt skirt board. 3,499,523, Cl. 198-204.
Cocco, Eugene R., to Bell Telephone Laboratories, Incorporated. Connector including a visual indicator. 3,500,293, Cl. 339-113.
Codex Corporation: *See—*
Massey, James Lee, 3,500,320.
Cohen, David, to Whirlpool Corporation. Filter apparatus. 3,499,536, Cl. 210-391.
Cohen, Raymond. Extrusion screw as well as extrusion machines provided with a screw in accordance with or similar to the invention. 3,499,187, Cl. 018-012.
Cole, Brian M.: *See—*
Fielding, Eric, O'Hea, Jerome, and Cole, Brian M. 3,500,059.
Cole, William T., Jr., and Daubenspeck, Benjamin K., to Remington Arm Company, Inc. Chemiluminescent emergency lighting device. 3,500,033, Cl. 240-002.25
Coleman, Donald D.: *See—*
Anderson, James Orville, Coleman, Donald D., and Thornton, Brice E. 3,500,404.
Coleman Engineering Company, Inc.: *See—*
Swift, William R., 3,499,376.
Coles, Robert F., Miller, Richard A., and Tulagin, Vsevolod, to Minnesota Mining and Manufacturing Company. Organic hydrazone compound containing azo coupler moiety. 3,499,902, Cl. 260-287.
Colgate-Palmolive Company: *See—*
Rockefeller, Winston G., 3,499,575.
Collings, Jerry M., to Zeltex, Inc. Apparatus and method for producing square-law function. 3,500,445, Cl. 235-197.
Collins Radio Company: *See—*
Broadhead, Samuel L., Jr., Martin, Jerry A., and Rooks, Howard B., 3,500,214.
Frerking, Marvin E., 3,500,250.
Peterson, John R., 3,499,641.
Shockley, William L., 3,499,782.
Colombo, Umberto, Mini, Iti, and Sironi, Giuseppe, to Montecatini Edison S.p.A. Process for purifying pyrite cinders by removal of nonferrous metals. 3,499,754, Cl. 075-001.
Colt Ventilation and Heating Limited: *See—*
Fielding, Eric, O'Hea, Jerome, and Cole, Brian M., 3,500,059.
Colton, Frank B., and Nicholson, Robert T., to Searle, G. D., & Co.Sprio(steroidal-6,1'-cyclopropanes) and process. 3,499,891, Cl. 260-239.57
Coltron Industries, Inc.: *See—*
Childress, Bobby B., 3,500,019.
Columbia Broadcasting System, Inc.: *See—*
Kaiser, Arthur, and Mahler, Henry W., 3,500,198.
Combs, Jimmy Paul: *See—*
Battin, John W., and Combs, Jimmy Paul 3,500,459.
Combustion Engineering Inc.: *See—*
Garrett, Sheyrl W., 3,500,132.
Commercial Affiliates, Inc.: *See—*
Davis, Arthur A., and Leibowitz, Martin L., 3,499,554.
Commercial Solvents Corporation: *See—*
Tindall, John B., 3,499,931.
Commissariat a l'Energie Atomique: *See—*
Madier, Pierre, Regipa, Robert, and Pannetier, Raymond, 3,499,326.
Communications Satellite Corporation: *See—*
Sekimoto, Tadahiro, and Schmidt, William G., 3,500,247.
Compagnie de Saint-Gobain: *See—*
Fanica, Louis, and Pons, Andre H., 3,499,743.
Compagnie des Ateliers et Forges de la Loire, (St. Chamond-Firminy, St. Etienne-Jacob Holtzer): *See—*
Robert, Henri Marcel, 3,499,735.
Compagnie Generale d'Electricite: *See—*
Frappard, Charles, Roulot, Maurice, and Brule, Albert, 3,500,239.
Conalco Metals, Inc.: *See—*
DeVito, Albert P., 3,500,299.
Cone, Clarence D., Jr., to United States of America, National Aeronautics and Space Administration. Minimum induced drag airfoil body. 3,500,020, Cl. 235-061.6
Conley, Russell H., Jr., 95% to Quality Food Machinery, Inc., mesne, and 5% to Minder, Clyde A., trustee. Confectionery dispenser. 3,499,586, Cl. 222-482.
Conrad, Martin B., to Schlumberger Technology Corporation. Releasable coupling for use in well bores. 3,499,665, Cl. 285-003.
Consolidated Controls Corporation: *See—*
Leonard, George Hamlin, 3,499,610.
Consolidated Kinetics Corporation: *See—*
Sweeney, Patrick M., and Eberhart, Laurence L., 3,499,255.
Constable, James M., to Del Electronics Corporation. Integrated high voltage transformer and capacitor divider. 3,500,197, Cl. 324-127.

Continental Can Company, Inc.: *See—*
Foley, Francis H., Jr., and Adams, Vincent A., 3,499,598.
Ruekberg, Herbert S., 3,499,572.
Control Electricity Generating Board: *See—*
Payton, Edmund James, and Wilson, Colin, 3,500,450.
Conway, Patrick H., to Sperry Rand Corporation. High speed analog-to-digital converter. 3,500,381, Cl. 340-347.
Cook, Frank M.: *See—*
Lambert, Robert W., and Cook, Frank M. 3,499,394.
Cook, Thomas B., to United States of America, Navy. Power supply system. 3,500,060, Cl. 307-151.
Cooper, Edward William, to Gary Industries, Inc. Fastener base assembly machine. 3,499,592, Cl. 227-089.
Cooper, Edward, to Systron-Donner, mesne. Digital voltage measuring instrument having a variable time base determined by a reference signal. 3,500,196, Cl. 324-120.
Cooper Industries, Inc.: *See—*
Zelnick, Charles, 3,499,612.
Cooper, Leslie A. Theft protection apparatus. 3,500,376, Cl. 340-280.
Cooper, Wilfrid, Vaughan, George, and Wragg, Reginald T., to Dunlop Company Limited, The. Polymerization catalysts for episulphides. 3,499,887, Cl. 260-239.
Cope, Geoffrey W., and Skinner, George C., to Dresser Industries, Inc. Automatic electric coupler. 3,499,545, Cl. 213-001.3
Coppel, Georges. Large size container with frame. 3,499,694, Cl. 312-035.
Corn, Murray E., to Chemical and Pharmaceutical Patent Holding Ltd. Therapeutic tetracycline preparation having delayed therapeutic action and processes for the production of said preparation. 3,499,959, Cl. 424-022.
Cornell, Dudley E., III, and Evans, James L. Device for educational purposes. 3,499,235, Cl. 035-009.
Cornine, Floyd C.: *See—*
Pitel, Irving, Cornine, Floyd C., and Silverman, Richard S. 3,499,576.
Corning Glass Works: *See—*
Dahlman, Frederick A., and Scholl, John J., 3,499,747.
Cotta, Ezio D., to Polaroid Corporation. Photographic apparatus. 3,499,373, Cl. 095-013.
Cotterman, Howard W., and King, John H., Jr., to International Business Machines Corporation. Speech analysis through formant detection. 3,499,989, Cl. 179-001.
Cotton Silk and Man-Made Fibres Research Association, The: *See—*
Roberts, Maldwyn Hugh, 3,499,229.
Cotton, Simeon H., Jr., and Cagna, Bruno A., to United States of America, Navy, mesne. Illuminated grid for back lighted plotting boards. 3,499,240, Cl. 040-130.
Cottrez, Gerard, to La Telemecanique Electrique (Societe Anonyme). Electronic digital comparator. 3,500,321, Cl. 340-146.2
Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L., to General Electric Company. Data processing unit for providing memory storage of communication status of external apparatus. 3,500,333, Cl. 340-172.5
Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L., to General Electric Company. Externally controlled data processing unit. 3,500,334, Cl. 340-172.5
Couleur, John F., Ruth, Richard L., and Shelly, William A., to General Electric Company. Data processing system. 3,500,329, Cl. 340-172.5
Courchene, Ernest E., Jr.: *See—*
Peterson, Norman E., and Courchene, Ernest E., Jr. 3,500,216.
Courtaulds Limited: *See—*
Baker, Bernard Stuart, 3,499,321.
Cox, Robert Bruce, to United States of America, Interior, mesne. Distillation plant. 3,499,827, Cl. 202-173.
Cox, Robert J.: *See—*
Clecak, Nicholas J., and Cox, Robert J. 3,499,763.
Coyne, Roger P., to Gulf Research & Development Company. Oxidation of isobutylene to methacrylaldehyde over complex vanadium oxide catalysts. 3,499,936, Cl. 260-604.
Craft Corporation: *See—*
Fitzgerald, Arthur Ernest, Fitzgerald, Arthur A., Bauer, Michael Joe, and Geci, Lawrence Anton, 3,499,501.
Craig, Robert A.: *See—*
Carter, Philip S., and Craig, Robert A. 3,500,256.
Crane Packing Company: *See—*
Gardner, James F., 3,499,653.
Crast, Leonard Bruce, Jr., to Bristol-Myers Company. Pyrimidinyl-or diazepinyl- thioacetamidopenicillanic acids. 3,499,885, Cl. 260-239.1
Crast, Leonard Bruce, Jr., to Bristol-Myers Company. Pyrimidinyl- or diazepinylthioacetamidocephalosporanic acids. 3,499,893, Cl. 260-243.
Craven, George Frederick, and Karbowiak, Antoni Emil, to International Standard Electric Corporation. PTM to PCM and PCM to PTM conversion circuitry. 3,500,387, Cl. 340-347.
Creighton, Eugene J.: *See—*
Clark, Kendall, Beck, George C., Creighton, Eugene J., DeTurris, Frank L., Drop, Joseph G., Godat, Jean J. L., Larsen, Arne H., Rajac, Thomas J., Santillo, George R., Jr., and Schueike, Walter J. 3,499,203.
Cressman, Homer W. J., and Tuite, Robert J., to Eastman Kodak Company. Photographic elements comprising novel U.V.-absorbing optical brightening agents. 3,499,762, Cl. 096-082.
Crist, Earl E., and Furry, Lyman B. Dryer and conveyer apparatus for coated materials. 3,499,221, Cl. 034-156.
Crompton & Knowles Corporation: *See—*
Gurney, Gordon Taylor, and Hall, Kenneth Jeurit, 3,499,472.
Croon, Ingemar Liss-Albin, and Samuelsson, Lars-Gunnar, to Mo Och Domsjo Aktiebolag. Method of inhibiting the formation of fiber-knots in paper pulp and product. 3,499,823, Cl. 162-158.
Crost, Munsey E., Shoulders, Kenneth, and Zinn, Mortimer H., to United States of America, Army, mesne. Thin electron tube with electron emitters at intersections of crossed conductors. 3,500,102, Cl. 313-109.
Crown Zellerbach Corporation: *See—*
Dobson, Richard L., Jacob, Stanley W., and Herschler, Robert J., 3,499,961.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
Castaing, Raymond, and Slodzian, Georges, 3,500,042.
Hai, Thai Ngo, and Bernadet, Henri-Francois, 3,500,261.
Landesman, Serge, and Salmon, Jacques, 3,500,427.
Pierrot, Robert, 3,500,420.
Trigon, Roland G., 3,500,412.
Cuccio, Allen B. J., to General Electric Company. Random access-data editing communication network. 3,500,335, Cl. 340-172.5
Cuccio, Allen B. J., to General Electric Company. Means for extracting synchronizing signals from television video signals. 3,500,336, Cl. 340-172.5
Cuccio, Allen B. J., and Bowman, Dean C., to General Electric Company. Party line use and supervisory control of multiple terminal data editing display systems. 3,500,338, Cl. 340-172.5
Cullen, Roy H., Elliott, Charles H., Aker, Jimmie R., and Mohr, Harvey O., to Youngstown Sheet and Tube Company, The. Pipe. 3,499,668, Cl. 285-149.
Curley, Paul T., to Cincinnati Milling Machine Co., The. Programmed apparatus for automatically testing interwired connections in electronic systems. 3,500,457, Cl. 324-073.
Curry, Herbert L.: *See—*
Etherington, Theodore L., and Curry, Herbert L. 3,499,780.
Cushner, Stanton H., to Magnavox Company, The. Magneto-optical correlator. 3,500,361, Cl. 340-174.
Custer, George M., to Hennessy Products, Inc. Trailer hitch lubricator. 3,499,624, Cl. 248-119.
Cutler, Fred Garnet: *See—*
Wharton, Eddie, and Cutler, Fred Garnet 3,500,093.
Cyba, Henryk A., to Universal Oil Products Company. Polychloroalkylphosponic acid salts. 3,499,923, Cl. 260-485.
Czermak, Leo R. Lift and delivery pump. 3,499,392, Cl. 103-171.
Czernik, Daniel E., and Kapps, Marion H., to Victor Manufacturing & Gasket Company. Elastomeric grommet for gaskets. 3,499,655, Cl. 277-235.
Dadura, James G.: *See—*
Kivelevich, Doris, Dadura, James G., and Eckert, George W. 3,499,742.
Daendliker, Gustav, to Starch, Hermann C., mesne. Process for the preparation of tantalum powder. 3,499,753, Cl. 075-000.5
Dahlgren, Victor F., Tally, Sidney K., and Stearns, Thomas H., to Electro-Mechanisms, Inc. Multi-layer circuit boards and methods of making the same. 3,499,218, Cl. 029-624.
Dahlman, Frederick A., and Scholl, John J., to Corning Glass Works. Split mold operating and clamping apparatus. 3,499,747, Cl. 065-307.
Daiichi Seiyaku Company Limited: *See—*
Naito, Takeo, Okano, Atsuji, Aoyagi, Takaaki, Miki, Tosuku, Kadoya, Shizuo, Inaoka, Masato, and Shindo, Motonori, 3,499,925.
Daikin Kogyo Kabushiki Kaisha: *See—*
Katsushima, Atsuo, Hisamoto, Iwao, Fukui, Shoshin, Kato, Takahisa, and Nagai, Masayuki, 3,499,940.
Dainippon Pharmaceutical Co., Ltd.: *See—*
Kaneko, Hidehiko, Yamato, Yuzuru, and Nakamura, Keiji, 3,499,965.
Danfoss A/S: *See—*
Jensen, Arne, and Mungard, Hans, 3,500,133.
Daniels, David A., to Grace, W. R., & Co. Process for preparing N-methylglycinonitrile. 3,499,920, Cl. 260-465.5
Daniels, Lawrence E., and Callon, Floyd R., to Ward Manufacturing, Inc. Camping trailer. 3,499,677, Cl. 296-023.
Daniels, Richard W., to Bell Telephone Laboratories, Incorporated. Nonreciprocal gyrator network. 3,500,262, Cl. 333-080.
Darrah, Percy A. Magnetically attached ironworker tool. 3,499,225, Cl. 033-089.
Dashio, John C. Posts for highway safety rails. 3,499,630, Cl. 256-013.1
Da Silva, Herman: *See—*
Van Duuren, Hendrik Cornelis Anthony, Da Silva, Herman, and Brok, Wilhelm Fredrik 3,500,319.
Daubenspeck, Benjamin K.: *See—*
Cole, William T., Jr., and Daubenspeck, Benjamin K. 3,500,033.
Daughenbaugh, Raymond S. Expendable sea target. 3,500,408, Cl. 343-018.
David, Charles W., and Penny, Richard J., to Disc Pack Corporation. Disc pack with card label. 3,500,364, Cl. 340-174.1
Davis, Arthur A., and Leibowitz, Martin L., to Commercial Affiliates, Inc. Stacker crane and warehouse system and method for stacking and storing rolls of material. 3,499,554, Cl. 214-016.4

Davis, Bernie Joseph: *See—*
Searight, Charles Edwin, Ryan, John Robert, and Davis, Bernie Joseph 3,499,857.

Davis, Charles L.: Pattern cutting device and indexing system. 3,499,360, Cl. 083-451.

Davis, John S., and Wells, Paul E., to Bunker-Ramo Corporation, The. Non-destructive readout arrangements for a woven screen memory. 3,500,352, Cl. 340-174.

Davis, Robert K., and Nolley, Foster B., to United States of America, Navy. Symmetrical waveform rate-of-rise clipper amplifier. 3,500,067, Cl. 307-237.

Davis, William W.: *See—*
Krieger, Edward L., and Davis, William W. 3,500,357.

Day, Bert O.: *See—*
Kottle, Sherman, and Day, Bert O. 3,499,712.

Daymon, Robert C. Inclined conveyor controls for sod rolling machine. 3,499,492, Cl. 172-019.

Dayton Reliable Tool & Mfg. Company: *See—*
Eickenhorst, Franklin C., 3,499,312.

DCA Food Industries Inc.: *See—*
Kaufman, Harold B., Jr., and Spiel, Albert, 3,499,396.

De Bitetto, Dominick John, to U.S. Philips Co., Inc. Radiation beam positioning apparatus. 3,499,703, Cl. 350-160.

de Brebisson, Michel: *See—*
Frouin, Jean-Claude, and de Brebisson, Michel 3,500,139.

de Carbon, Christian Bourcier. Elastic shock-absorbing suspension. 3,499,505, Cl. 184-006.

de del Pozo, Carolina Marx, to Genhal, S.A. de C.V. Controlling the growth of bacteria in milk. 3,499,771, Cl. 099-213.

Deering Milliken Research Corporation: *See—*
Wethington, Charles A., 3,499,195.

De Haan, Hermanes Johannes Maria, to U.S. Philips Corporation, mesne. Associative memory devices. 3,500,468, Cl. 340-174.

de Jong, Elkan Joachim: *See—*
Bentholm, Svend Asger Rud, Hoogendoorn, Hendrik, de Jong, Elkan Joachim, Koenen, Wilhelm Engelnus, and Polderman, Jacobus 3,499,784.

de Koster, Heinz A., and Ingenito, Michael J. Electronic counting or timekeeping system using glow discharge tube without permanent anode. 3,500,121, Cl. 315-084.6

De La Rue Frigister Limited: *See—*
Barton, Donald Moore, and Smith, Anthony George, 3,499,294.

Delaney, Edward Axel: *See—*
Nundenberg, Walter, Merrifield, Dudley B., and Delaney, Edward Axel 3,499,882.

de Lange, Herman Kasper Adriaan, to U.S. Philips Corporation, mesne. Dual magnet head arrangement electrically connected together for both recording and playback. 3,499,977, Cl. 178-006.6

DeLaval Separator Company, The: *See—*
Nelson, Kurt, 3,499,422.

Del Electronics Corporation: *See—*
Constable, James M., 3,500,197.

Delhi Metal Products Limited: *See—*
Saul, Francis Kenneth, Sr., and Adams, Edwin A., 3,500,425.

Delmore, Paul J., to Eastman Kodak Company. Magnetic recording element. 3,499,789, Cl. 117-235.

Delta Electronics, Inc.: *See—*
Kershner, Stephen W., and Owen, Kenneth, 3,500,004.

DeLuxe Laboratories, Inc.: *See—*
Hanson, Everett L., and Hall, Jack P., 3,499,706.

Demag A.G.: *See—*
Walzel, Leopold, 3,499,557.

Denley, Robert W., and Grohoski, Raymond J., to United States Time Corporation. Watch crown. 3,499,281, Cl. 058-090.

Denyszyn, Jean,, to Glamorgan Pipe & Foundry Co. Centrifugal pipe casting apparatus. 3,499,479, Cl. 164-302.

Dersch, Fritz, and Paniccia, Sally L., to GAF Corporation. Silver halide emulsions containing alkyl esters of benzimidazole carbamic acid anti-fogging agents. 3,499,761, Cl. 096-066.5

Dessulniers, Charles W., to Grace, W. R., & Co. Self-supporting laminate of polymeric films with an intermediate layer of mineral filler particles. 3,499,820, Cl. 161-162.

Design for Learning, Inc.: *See—*
Malina, Rudolph F., 3,499,234.

De Soto, Inc.: *See—*
Sekmakas, Kazys, and Ragas, Frank, 3,499,849.

de Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-General der Posterijen Telegrafie en Telefonie: *See—*
Van Duuren, Hendrik Cornelis Anthony, Da Silva, Herman, and Brok, Wilhelm Fredrik, 3,500,319.

De Torre, John, to Federal Pacific Electric Company. High-speed circuit breakers. 3,500,266, Cl. 335-016.

DeTurris, Frank L.: *See—*
Clark, Kendall, Beck, George C., Creighton, Eugene J., DeTurris, Frank L., Drop, Joseph G., Godat, Jean J. L., Larsen, Arne H., Rajac, Thomas J., Santillo, George R., Jr., and Schueike, Walter J. 3,499,203.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
von Bebenburg, Walter, and Thiele, Kurt, 3,499,898.

Devenco Incorporated: *See—*
Smith, Harold A., 3,500,194.

DeVito, Albert P., to Conalco Metals, Inc., mesne. Electrical plug and pin structure. 3,500,299, Cl. 339-220.

DeVittorio, Joseph M., to Sherwin-Williams Company, The. Reconstituting electrocoating baths. 3,499,828, Cl. 204-181.

De Witt, Thomas K.: *See—*
Wasilewski, Henry L., and De Witt, Thomas K. 3,500,433.

De Woody, Charles M., to Ace Glass Incorporated. Flexible pressure-type joint for rigid tubing. 3,499,670, Cl. 285-355.

Dexion Limited: *See—*
Sunasky, Joseph, 3,499,672.

Diamond Shamrock Corporation: *See—*
Pyne, William J., 3,499,934.

Dietze, Manfred: *See—*
Kuehne, Heinz, Dietze, Manfred, and Hauer, Franz 3,499,873.

Dietzgen, Eugene, Company: *See—*
Amariti, Lugigi, and Briggs, Hartwell L., 3,499,760.

Digital Data Systems, Inc.: *See—*
Brown, Stewart C., 3,500,316.

Digitech, Inc.: *See—*
Peterson, Norman E., and Courchene, Ernest E., Jr., 3,500,216.

Dilg, Walter C., to Hydra-Cushion, Incorporated. Hydraulic cushion device. 3,499,546, Cl. 213-043.

Dinges, Karl: *See—*
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Disc Pack Corporation: *See—*
David, Charles W., and Penny, Richard J., 3,500,364.

D-O-T, Inc.: *See—*
Them, Edward G., 3,500,278.

Dobson, Richard L., Jacob, Stanley W., and Herschler, Robert J., to Crown Zellerbach Corporation, mesne. Dimethyl sulfoxide-enhanced astringent aluminum, zinc or zirconium antiperspirant salt cosmetics. 3,499,961, Cl. 424-068.

Dochterman, Richard W., to General Electric Company. Noise excitation suppression motor mounting system. 3,500,083, Cl. 310-051.

Doering, John Peter, Jr.: *See—*
Hall, Lloyd E., Brant, Roy Gene, and Doering, John Peter, Jr. 3,500,290.

Dogget, George A.: *See—*
Krause, Harold R., Dogget, George A., and Zimmerman, Robert B. 3,499,227.

Dohogne, James R., and Kelly, Doyle J., Sr., to King Radio Corporation. Navigational instrument for dirigible craft. 3,500,413, Cl. 343-107.

Dohr, Manfred: *See—*
Jakobi, Gunter, Dohr, Manfred, and Gotte, Ernst 3,499,841.

Doi, Toshio: *See—*
Katagiri, Shinjiro, Ozasa, Susumu, Kimura, Hirokazu, Doi, Toshio, and Kimura, Hiroshi 3,500,269.

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Domann, Helmut, and Gunsser, Peter, to Bosch, Robert G.m.b.H. Control arrangement for electric motors having a power circuit including a thyristor. 3,500,161, Cl. 318-308.

Domel, Edwin A.: *See—*
Lands, Larry G., McCleese, Sam S., Jr., and Domel, Edwin A. 3,499,213.

Donaher, Charles J., and Sterantko, James J., to International Business Machines Corporation. Oscillatory probe system for contacting and testing a circuit point through a high density of wires. 3,500,192, Cl. 324-072.5

D'Ooge, Charles L., to United States of America, Navy. Apparatus for submerged launching of missiles. 3,499,364, Cl. 089-001.81

Dopp, David S.: *See—*
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Dorsky, Julian, and Easter, William M., Jr., to Givaudan Corporation. Polycyclic alcohol, compositions containing same and process therefor. 3,499,937, Cl. 260-617.

Douda, Bernard E., to United States of America, Navy. Aircraft parachute flare. 3,499,385, Cl. 102-035.

Dow Chemical Company, The: *See—*
Bockstahler, Earl R., 3,499,894.
Havens, Carl B., and Marx, Heinz U., 3,499,817.
Kottle, Sherman, and Day, Bert O., 3,499,712.
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Dow Corning Corporation: *See—*
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Nicholls, James A., 3,499,285.

Doyle, Walter M., and White, Matthew B., to Philco-Ford Corporation. Frequency modulated laser device. 3,500,233, Cl. 331-094.5

Dravo Corporation: *See—*
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Drawert, Manfred: *See—*
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Dreisin, Alexander, to Allis-Chalmers Manufacturing Company. Nozzle holder. 3,499,605, Cl. 239-086.

Drejza, John E., Kozat, Eugene T., Petkie, Robert E., and Wallace, Joseph E., to International Business Machines Corporation. Low inertia stepping motor. 3,500,081, Cl. 310-049.

Dresser Industries, Inc.: *See—*
Cope, Geoffrey W., and Skinner, George C., 3,499,545.
Heske, William A., 3,500,391.
Wyant, Reece R., and Van Dyke, Orien, 3,499,491.

Dreyling, Alfred P., and Dreyling, Lewis L., to Quigley Company, Inc. Process for producing substantially dead burned magnesia with high density and low porosity having decreased effective crystal surfaces for refractory or ceramic purposes. 3,499,777, Cl. 106-060.

Dreyling, Lewis J.: *See—*
Dreyling, Alfred P., and Dreyling, Lewis J. 3,499,777.

Drigert, Leonard E., and Drigert, Thomas E. Powered underwater weed cutter. 3,499,271, Cl. 056-008.

Drigert, Thomas E.: *See—*
Drigert, Leonard E., and Drigert, Thomas E. 3,499,271.

Driscoll, Patrick Robert, to Mobil Oil Corporation. Monohalophenylthiazolyl ureas. 3,499,910, Cl. 260-306.8

Drop, Joseph G.: *See—*
Clark, Kendall, Beck, George C., Creighton, Eugene J., DeTurris, Frank L., Drop, Joseph G., Godat, Jean J. L., Larsen, Arne H., Rajac, Thomas J., Santillo, George R., Jr., and Schueike, Walter J. 3,499,203.

Drop, Joseph G., to International Business Machines Corporation. Electrical control system for a chip positioning machine. 3,499,204, Cl. 029-203.

Drum Fire, Inc.: *See—*
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Dubuc, Rene A., to Texas Instruments, Incorporated. Metal inlay and method for making the same. 3,499,211, Cl. 029-480.

Dudzinski, Zdzislaw J.: *See—*
Wakeman, Reginald L., and Dudzinski, Zdzislaw J. 3,499,930.

Dufendach, William R.: *See—*
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Duggan, Robert J.: *See—*
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Dumers, Dewey M.: *See—*
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Dunlee Corporation: *See—*
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Dunlop Company Limited, The: *See—*
Cooper, Wilfrid, Vaughan, George, and Wragg, Reginald T., 3,499,887.

Dunlop Rubber Company Limited: *See—*
Clarke, Dennis L., 3,499,811.

Du Pont de Nemours, E. I., and Company: *See—*
Maloney, Daniel Edwin, 3,499,791.
Mehra, Vinodkumar, and Wolfe, William R., Jr., 3,499,798.
Wagle, Dinkar Ganpat, 3,499,810.

Durand, Pierre, to Richier. Assembled steel structure sections. 3,499,258, Cl. 052-637.

Durkoppwerke G.m.b.H.: *See—*
Nicolay, Karl, 3,499,404.

Durnan, William E., and Reeve, Paul H., to Auto Research Corporation. Lubricant distributing system and accumulator used therein. 3,499,506, Cl. 184-007.

Durrell, William S., and Suryanarayana, Yelagondahally S., to Geigy Chemical Corporation. Method and apparatus for sparging chlorine into a reactor for producing cyanogen chloride. 3,499,737, Cl. 023-359.

Dwyer, Francis Patrick, deceased (by Dwyer, Lola Mary, executrix), Wright, Roy Douglas, and Shulman, Albert. Quaternary ammonium salts of substituted phenanthrolines as bactericides and fungicides. 3,499,966, Cl. 424-258.

Dwyer, Lola Mary: *See—*
Dwyer, Francis Patrick, Wright, Roy Douglas, and Shulman, Albert 3,499,966.

Dyer, Robert E., to Sangamo Electric Cmpany. System for providing DC values representative of phase difference. 3,500,162, Cl. 318-314.

Dyke, Wilfred James Cecil: *See—*
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Dynamit Nobel Aktiengesellschaft: *See—*
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Dzyavgo, Vladimir Sigzmundovich: *See—*
Nesmeyanov, Alexandr Nikolaevich, Rogozhin, Sergei Vasilievich, Slonimsky, Grigory Lvovich, Misjurev, Vladimir Ivanovich, Tolstoguzov, Vladimir Borisovich, Malakhov, Vladimir Ilich, Batenina, Natalia Vladimirovna, Ershova, Vera Alexandrovna, Dzyavgo, Vladimir Sigzmundovich, and Grekov, Vladimir Ivanovich 3,499,379.

Early, Billy J.: *See—*
Armstrong, Olen R., Early, Billy J., Matlock, Donald W., McWaters, Jay W., and Pruitt, Charles E. 3,499,513.

Easter, William M., Jr.: *See—*
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Eastman Kodak Company: *See—*
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Delmore, Paul J., 3,499,789.
Lappie, Gerald R., and Newland, Gordon C., 3,499,869.

Eberhardt, Harry A., to Hale Fire Pump Company. Centrifugal pump. 3,499,388, Cl. 103-103.

Eberhart, Laurence L.: *See—*
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Ebner, Ludwig: *See—*
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Ebneth, Harold: *See—*
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Ebnother, Anton: *See—*
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Eckert, George W.: *See—*
Kivelevich, Doris, Dadura, James G., and Eckert, George W. 3,499,742.

Eckstein, Royal W., Jr., to Industrial Electronics, Inc. Remote control receiver for operating a motor with a superregenerative detector, bandpass amplifier and DC motor drive amplifier. 3,500,152, Cl. 318-016.

Eckstein, Royal W., Jr., to United States of America, Navy. High voltage, high power series regulator. 3,500,172, Cl. 323-009.

Edelman, Alfred E.: *See—*
Linkow, Leonard I., and Edelman, Alfred E. 3,499,222.

Edwards, James W., to Monsanto Company. Pellucid laminate with interference filter multilayer and monolayer. 3,499,697, Cl. 350-001.

EG & G, Inc.: *See—*
Rasiel, Amram, and Henesby, William M., 3,500,370.

Egeadal, Sanford E., to Honeywell Inc. Control apparatus. 3,500,394, Cl. 340-409.

Eickenhorst, Franklin C., to Dayton Reliable Tool & Mfg. Company. Sensing apparatus. 3,499,312, Cl. 073-037.5

Eisenberg, Barry R., to Bell Telephone Laboratories, Incorporated. Apparatus for reducing the static offset in a phase-locked oscillator. 3,500,226, Cl. 331-015.

Ekman, Frank O., to National Dust Collector Corporation. Method and apparatus for controlling fume and dust emissions from cupola furnaces and the like. 3,499,264, Cl. 055-090.

Electric & Musical Industries Limited: *See—*
Taylor, Stanley, 3,500,099.

Electric Reduction Company of Canada, Ltd.: *See—*
Maunsell, Richard M. O., 3,499,729.

Electric Shop Development Limited: *See—*
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Electro-Mechanisms, Inc.: *See—*
Dahlgren, Victor F., Tally, Sidney K., and Stearns, Thomas H., 3,499,218.

Electroglas, Inc.: *See—*
Berz, Gerhard, 3,499,640.
Schellenberg, Hans Albert, 3,499,714.

Eller, Harold E., to Hays Corporation, The. Methods and means for continuously gauging the cross section of elongated stock. 3,499,313, Cl. 073-037.7

Ellerbeck, Karl H. Soft start and soft stop of an A.C. voltage. 3,500,174, Cl. 323-024.

Elliott Brothers (London) Limited: *See—*
Alexander, Alfred John, Bishop, Geoffrey Stanley, Leat, Andrew Francis Vincent, and Tooze, Michael John, 3,500,031.

Elliott, Charles H.: *See—*
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Elliott, Denman R.: *See—*
Miller, Gerald O., and Elliott, Denman R. 3,500,401.

Ellis, George R.: *See—*
Belcher, Richmond D., Duggan, Robert J., Ellis, George R., Esslinger, Robert H., Goodyear, William Frederick, Marshall, Joseph C., and Masone, Thomas R. 3,500,327.

Ellis, Robert G., to Atlas Pacific Engineering Company. Apparatus for feeding fruit to a conveyor from a bulk supply. 3,499,687, Cl. 302-014.

Ellson, Allen Henry, to U.S. Philips Corporation, mesne. Magnetic information storage matrices. 3,500,467, Cl. 340-174.

Ellsworth, James A. Proximity switching device. 3,500,416, Cl. 343-225.

Elton Industries, Inc.: *See—*
Nolte, Albert C., Jr., 3,500,313.

Eltro G.m.b.H. & Co.: *See—*
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Emerick, Lloyd C., to Sylvania Electric Products, Inc. Insulator heater coating for heater-cathode assembly. 3,500,454, Cl. 313-340.

Emhart Corporation: *See—*
Brennan, James H., 3,499,295.

Emmons, Clayton M.: *See—*
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Endo, Tadao: *See—*
Watanabe, Hiroo, Yamamoto, Masatake, and Endo, Tadao 3,500,309.

Engel, William T.: *See—*
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Engelhard Minerals & Chemicals Corporation: *See—*
Langley, Robert C., Lindenthal, John W., Myers, Herbert, and Straschil, Heinrich K., 3,499,265.
Engelmann, Alfred B., to Sperry Rand Corporation. Magnetostriction monitor for continuous vapor deposition processor. 3,499,790, Cl. 117-238.
English Electric Company Limited, The: *See—*
Woodhead, Peter, 3,500,200.
English Electric Valve Company Limited: *See—*
O'Loughlin, Cian Noel, and Bones, Noel Edward, 3,500,096.
O'Loughlin, Cian Noel, and Clayworth, Geoffrey Thomas, 3,500,111.
Enright, Dennis J., and Kahabka, Richard D., to Minnesota Mining and Manufacturing Company. Wire-connector. 3,500,292, Cl. 339-097.
Ensign, John D. Temperature sensing probe. 3,500,280, Cl. 338-028.
Entwicklungsring Sud GmbH: *See—*
Haberkorn, Joseph A. Erich, Sturm, Rolf G., and Weidinger, Hans, 3,499,620.
Eppler, Walter Trowbridge, to Western Electric Company, Incorporated. Electrode probe system monitoring diametrically opposed conductor cable sections to measure sheath thickness and eccentricity. 3,500,185, Cl. 324-061.
Eppley, Dewey W.: *See—*
Carp, Ralph W., Howard, Donald W., and Eppley, Dewey W. 3,499,689.
Epstein, Max, Fryberger, David, Serafin, Robert J., and van den Heuvel, Anthony P., to ITT Research Institute. Kinetomagnetic piezoelectric and piezoresistive tapping techniques for nonmagnetic delay lines. 3,500,461, Cl. 333-030.
Erard, Raoul-Henri. Winding and setting pinions mounted in case independent of movement. 3,499,280, Cl. 058-063.
Erdmann, Hans, Beuchle, Friedrich, and Beller, Albert, to Teves, Alfred, G.m.b.H. Disk brake caliper mounting and adjusting means. 3,499,509, Cl. 188-073.
Erhardt, Harold R., Frink, Frederick W., Gerson, Gordon, Mead, Donald C., and Pfiffner, Harold J., to Hughes Aircraft Company. Apparatus for rotating an antenna field pattern. 3,500,410, Cl. 343-100.
Ershova, Vera Alexandrovna: *See—*
Nesmeyanov, Alexandr Nikolaevich, Rogozhin, Sergei Vasilievich, Slonimsky, Grigory Lvovich, Misjurev, Vladimir Ivanovich, Tolstoguzov, Vladimir Borisovich, Malakhov, Vladimir Ilich, Batenina, Natalia Vladimirovna, Ershova, Vera Alexandrovna, Dzyavgo, Vladimir Sigzmundovich, and Grekov, Vladimir Ivanovich 3,499,379.
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Esaki, Leo, and Laff, Robert A., to International Business Machines Corporation. Transistor structure. 3,500,141, Cl. 317-235.
ESB Incorporated: *See—*
Port, Frederick J., 3,499,228.
Esses, Max F. Artwork production system. 3,499,377, Cl. 095-085.
Essex International, Inc.: *See—*
Gregory, James T., 3,500,463.
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Esso Research and Engineering Company: *See—*
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Olsen, Robert N., 3,499,289.
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Etablissement Public Centre National de la Recherche Scientifique: *See—*
Kastler, Alfred, and Lehmann, Jean-Claude, 3,500,176.
Etherington, Theodore L., and Curry, Herbert L., to General Electric Company. Method of making a coated aluminum reflector. 3,499,780, Cl. 117-035.
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Whiting, Mark Crosby, 3,499,921.
Etoh, Kuniomi: *See—*
Nakamura, Naofumi, Hotta, Yasufusa, Murakami, Tadayoshi, Shimpo, Yoshiharu, Etoh, Kuniomi, and Shirasaki, Yoshikazu 3,499,867.
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Evans, Wilbur F.: *See—*
Wood, Thomas F., and Evans, Wilbur F. 3,499,751.
Evers, William J., to Geigy Chemical Corporation. Method and apparatus for producing cyanogen chloride using a modified oldershaw reaction column. 3,499,738, Cl. 023-359.
Ewell, Harvey A. Machine for cutting obround holes. 3,499,353, Cl. 077-065.
Ewin, William H.: *See—*
McCutcheon, Samuel R., Boggs, William F., and Ewin, William H. 3,500,183.
Faber, Walter, and Machaczek, Robert, to Siemens Aktiengesellschaft. Plug-and-socket connector particularly minaturized electrical structures and method of making the same. 3,500,295, Cl. 339-176.
Fabriques de Produits Chimiques de Thann et de Mulhouse: *See—*
Portes, Pierre J., Mas, Robert Jean, and Richerd, Jacques Hugues, 3,499,730.
Fachini, Robert M., to International Harvester Company. Cotton picker spindle slat bar structure. 3,499,273, Cl. 056-044.
Fairchild Hiller Corporation: *See—*
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Falcone, Anthony, Jr.: *See—*
Falcone, Joseph R., and Falcone, Anthony, Jr. 3,499,825.
Falcone, Joseph R., and Falcone, Anthony, Jr. Petri dish. 3,499,825, Cl. 195-139.
Fanica, Louis, and Pons, Andre H., to Compagnie de Saint-Gobain. Method and apparatus for the manufacture of glass utilizing floating molten alkali metal sulfate. 3,499,743, Cl. 065-027.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
Neeff, Rutger, 3,499,896.
Schrader, Gerhard, Mannes, Karl, and Scheinpflug, Hans, 3,499,951.
Thoma, Wilhelm, Rinke, Heinrich, and Oertel, Harald, 3,499,872.
Vollman, Heinrich, and Leister, Heinrich, 3,499,908.
Weitzel, Hans, Ebneth, Harold, Dinges, Karl, and Rohr, Harry, 3,499,950.
Zirngibl, Hans, Heine, Heinz, and Gerken, Rudolf, 3,499,728.
Fauke, Allen R.: *See—*
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Feasel, Ray E., to Industrial Service Company, Inc. Cyclonic separation devices. 3,499,531, Cl. 210-114.
Federal-Mogue Corporation, Inc.: *See—*
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Federal Pacific Electric Company: *See—*
De Torre, John, 3,500,266.
Oravec, John J., 3,500,275.
Zahaykevich, Bohdan, 3,500,017.
Fegan, Lloyd V., Jr., to Bethlehem Steel Corporation. Probe for apparatus making temperature compensated resistance measurements of a moving bed of highly abrasive material. 3,500,187, Cl. 324-065.
Feissel, Henri Gerard, to Societe Industrielle Bull-General Electric (Societe Anonyme). Ferromagnetic-film memory elements with two flux closure elements. 3,500,356, Cl. 340-174.
Feldhoff, Heinrich: *See—*
Schmid, Hans, Feldhoff, Heinrich, Hahn, Edelfried, and Martin, Wolfgang 3,499,276.
Feldman, Julian, and Saffer, Bernard A., to National Distillers and Chemical Corporation. Dimerization process. 3,499,922, Cl. 260-465.8
Fend, Heinrich, and Nemethy, Ferenc V., to Werkzeugmaschinenfabrik Oerlikon Buhrle & Co. Jacquard machine with electromagnetically controlled healds. 3,499,473, Cl. 139-059.
Fensome, Frank: *See—*
Barker, Keith S., and Fensome, Frank 3,500,470.
Fergason, Rector C. Cotton harvester. 3,499,274, Cl. 056-044.
Ferguson, Alan C.: *See—*
Markham, Odell C., and Ferguson, Alan C. 3,499,623.
Fernholz, James A., and White, Lyall B., to White, L. B., Company, Inc. Wheeled hand truck. 3,499,658, Cl. 280-047.2
Fernseh G.m.b.H.: *See—*
Ort, Werner, and Frank, Kurt, 3,499,197.
Ferranti Limited: *See—*
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Ferris, Thomas George, Budd, Richard Edgar, Easterling, Robert Eugene, and Wright, William Joseph. Electrophoresis device. 3,499,833, Cl. 204-299.
Ferro Manufacturing Corporation: *See—*
Pickles, Joseph, 3,499,344.
Fetterolf, Harry D., and Tindal, Beuford E., to General Electric Company. Capacitive fixed memory system. 3,499,215, Cl. 029-604.
Fickes, Robert E.: *See—*
Aument, George C., Radcliffe, Wayne K., and Fickes, Robert E. 3,500,130.
Field, Nathan D., and Williams, Earl P., to GAF Corporation. Novel anhydride interpolymers. 3,499,876, Cl. 260-078.5
Field, Sheldon B., and Bridges, Thomas F., to McMullen, John J., Associates, Incorporated. Stabilization system for liquid cargo ships. 3,499,410, Cl. 114-125.
Fielding, Eric, O'Hea, Jerome, and Cole, Brian M., to Colt Ventilation and Heating Limited. Rain detecting device. 3,500,059, Cl. 307-118.
Figueroa, Carlos G., to Industrial Nucleonics Corporation. Fatigue determination by radioactive gas. 3,499,319, Cl. 073-088.
Finch, Richard D., and Mathews, Carl G., to Kaiser Aluminum & Chemical Corporation. Flex raise machine. 3,499,205, Cl. 029-203.
Fingerett, Joseph A., McGann, Laurence, and Turnblade, Richard C., to United States of America, Navy. Control system for an inertial platform. 3,499,332, Cl. 074-005.6
Fiorletta, Ali A., and Winfield, Raymond, to Sperry Rand Corporation. Apparatus for superimposing symbols on a cathode ray tube display. 3,499,979, Cl. 178-006.8
Fischer, Gerhard, to International Rectifier Corporation. Contact structure for small area contact devices. 3,500,136, Cl. 317-234.
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Campbell, Larry W., and Fischer, Heinz G. 3,500,272.

Fischer, Robert F., and Kaenel, Reginald A., to Bell Telephone Laboratories, Incorporated. Shift register pulse generator including feedback loop. 3,500,348, Cl. 340-174.
Fisher, James Glenn, to NVF Company. Movable support means. 3,499,539, Cl. 211-049.
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Fitzgerald, Arthur Ernest, Fitzgerald, Arthur A., Bauer, Michael Joe, and Geci, Lawrence Anton, to Craft Corporation. Stair climbing apparatus. 3,499,501, Cl. 180-008.
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Fitzhugh, Edward F., Jr., and Seidel, Don C., to Republic Steel Corporation. Recovery of metallic tin from aqueous solution of tin salt. 3,499,756, Cl. 075-109.
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Flaque, Juan Prunа. Knitted fabric linking machines. 3,499,403, Cl. 112-025.
Fleetwood Systems, Inc.: *See—*
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Fletcher, Gordon William, and Lee-Kemp, Kenneth William. Stabilized radio rescue beacon. 3,500,209, Cl. 325-116.
Fletcher, William E.: *See—*
Gibbons, Jerry V., Morefield, Robert I., Fletcher, William E., and Keast, David N. 3,500,379.
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Flora, Elvis C.: *See—*
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Flynn, John H. Port-forming ribbon assembly and ribbons thereof. 3,499,720, Cl. 431-349.
FMC Corporation: *See—*
Belk, Wilber C., Robbins, Robert P., and Toothman, Donald C., 3,499,519.
Fry, Horace P., Jr., 3,499,786.
Kibbel, William H., Jr., and Shepherd, John A., 3,499,844.
King, William R., 3,499,935.
Looker, Olin L., 3,499,272.
Focht, Louis R., to Philco-Ford Corporation. Speech synethesizer. 3,499,986, Cl. 179-001.
Focht, Louis R., to Philco-Ford Corporation. Single equivalent formant speech recognition system. 3,499,987, Cl. 179-001.
Foerster, Donald R., to Scott Paper Company, The. Marker device. 3,500,437, Cl. 346-106.
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Forlani, Franco, and Minnaja, Nicola, to Olivetti-General Electric S.p.A. Voltage threshold photodiode and circuit assembly comprising the same. 3,500,448, Cl. 250-211.
Forman, Harold M. Method of incorporating a cutter in overwrapped packages and related apparatus. 3,499,260, Cl. 053-014.
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Garratt, Raymond L. Device for introducing spray into air treatment systems. 3,499,579, Cl. 222-054.
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Gibbs, Alan, Cleaning device. 3,499,440, Cl. 128-066.
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Girard, Andre, and Ray, Andre, to Rousell UCLAF. Novel phenazine compounds and process. 3,499,899, Cl. 260-267.
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Glav, Ola. Method in the manufacture of an exchanger packing for two fluids. 3,499,812, Cl. 156-210.
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Hanssen, Karl-Josef. Method for high contrast imaging of phase or amplitude objects in a corpuscular ray device, such as an electron microscope. 3,500,043, Cl. 250-049.5
Harada, Eiji, to Nippon Gakki Seizo Kabushiki Kaisha. Pin and rail assembly. 3,499,362, Cl. 084-434.
Harano, Seiichi: *See*—
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Benitez, Mamerto, Jr., and O'Neal, Douglas, 3,499,681.
Harel, Abraham, to RCA Corporation. Electromechanical switch. 3,500,010, Cl. 200-166.
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Hartlapp, Gerhard, Klee, Helmut, and Koch, Josef, to Knapsack Aktiengesellschaft. Spray drying of liquids to form particulate solids. 3,499,476, Cl. 159-004.
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Hasegawa, Hiroshi, Sato, Mikio, and Yano, Tuneo. Manufacture of highly pure aluminum alcoholate. 3,499,918, Cl. 260-448.
Hasegawa, Keishi, and Onodera, Takashi, to Toa Nenryo Kogyo Kabushiki Kaisha. System for the continuous and automatic measurement of the sulfur content of petroleum fractions. 3,500,446, Cl. 250-043.5
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Hastings, Kingsley N., to Interamericano Projects, Inc. Functional building blocks facilitating mass production of electronic equipment by unskilled labor. 3,500,440, Cl. 174-052.
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Havens, Carl B., and Marx, Heinz U., to Dow Chemical Company, The. Apparatus for the formation of seals in thermoplastic film. 3,499,817, Cl. 156-498.
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Heard, Robert W. Road markers. 3,499,413, Cl. 116-063.
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Hector, Nils Folke. Flexible universal joint. 3,499,299, Cl. 064-015.
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Heirn, Frank I., Jr. Electroplating rack. 3,499,832, Cl. 204-297.
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Hesse, Walter Kasper, and Brower, Wilbur Charles, to Johns-Manville Corporation. Insulating electrical heater support. 3,500,464, Cl. 338-321.
Hever, Keith O., and Kummer, Joseph T., to Ford Motor Company. Solid state energy storage device. 3,499,796, Cl. 136-083.
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Hilton, Kenneth. Microwave heating apparatus. 3,500,012, Cl. 219-010.61
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Ho, Irving T., and Mullick, Satish K., to International Business Machines Corporation. Integrated circuit directional coupler. 3,500,255, Cl. 333-010.
Hobbins, James F., and Cambria, Emanuel F., to Hurst-Cambell, Inc. Gearshift mechanism. 3,499,345, Cl. 074-473.
Hoell, John, to Foster Transformer Company. Electrical transformer with heat transfer means. 3,500,273, Cl. 336-061.

Hof, Richard, to Smith, A. O.,-Inland Inc., mesne. Filament winding apparatus. 3,499,815, Cl. 156-431.
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Holtz, James W., to United States of America, Navy, mesne. Circuit for generating short-time-duration pulses of either positive or negative polarity. 3,500,072, Cl. 307-262.
Holtz, Leonard. Fastening device. 3,499,192, Cl. 024-049.
Holz, George E., to Burroughs Corporation. Pulse generating and registering circuit having means for controlling the timing of registering a count and generating a count. 3,500,068, Cl. 307-225.
Holzer, Walter. Program selecting devices for automatic washing machines. 3,499,534, Cl. 210-144.
Honeywell Inc.: *See—*
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Kujawa, Francis M., and Stone, Jonathan A., 3,499,861.
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Hooper, Thomas N., to Texas Instruments, Incorporated. Water gas shift converter and fuel cell system therewith. 3,499,797, Cl. 136-086.
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Hsieh, Peter K., and Montgomery, Donald H., to RCA Corporation. Memory line selection matrix for application of read and write pulses. 3,500,359, Cl. 340-174.
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Huncovsky, Lois A. Comestics organizer. 3,499,540, Cl. 211-060.
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Hunka, George W., and Rudnick, Jack J., to United States of America, Navy, mesne. Optical time delay program recorder. 3,500,438, Cl. 346-108.
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Hurwitz, Paul D., to Sherman Car Wash Equipment Co. Scrubbing apparatus for vehicles. 3,499,180, Cl. 015-097.
Hutton, Andrew H., to Armco Steel Corporation. Method and apparatus for controlling the diameter of spiral pipe. 3,499,307, Cl. 072-135.
Hwang, Ying-Chen, to General Electric Company. Bipolar pulse generating circuits. 3,500,075, Cl. 307-319.
Hwang, Yu-Tang, Krewer, William A., and Sandner, Walter J., to Union Oil Company of California. Conversion of ketones to carbinols. 3,499,938, Cl. 260-617.
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Isenberg, Raymond L. Sliding door lock. 3,499,675, Cl. 292-263.

Ishida, Takuo, and Kine, Masayoshi. Indicating system of speed-changing condition for a bicycle. 3,499,346, Cl. 074-501.

Islip, Peter John, to Parke, Davis & Company. 2-Imino-5-nitrothiazoline compounds. 3,499,907, Cl. 260-293.4

Ito, Michiaki, to Nippon Electric Company Limited. Laser communication device. 3,499,713, Cl. 356-138.

Ito, Sachio, and Harano, Seiichi, to Sony Corporation. Electric motor with support frame and vibration suppressors. 3,500,084, Cl. 310-051.

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Jakobi, Gunter, Dohr, Manfred, and Gotte, Ernst, to Henkel & Cie G.m.b.H. Low foaming washing and cleansing agents. 3,499,841, Cl. 252-170.

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Jasse, Bruno: *See*—
Roussos, Michel, Bourgeois, Yves, and Jasse, Bruno 3,499,868.

Jaunarajs, Karlis Laimonis, to Johns-Manville Corporation. Waste water treatment phosphate removal by iron oxide. 3,499,837, Cl. 210-059.

Jefferys, Henry J., to Reynolds Metals Company. Step construction. 3,499,254, Cl. 052-179.

Jeffrey Galion Mfg. Co., The: *See*—
McCracken, William E., 3,499,684.

Jellinek, Karl, and Post, Udo, to Rutgerswerke und Teerverwertung Aktiengesellschaft. Coating materials from polyepoxides, diglycidyl ethers of dihydroxypolyurethanes and an epoxy curing agent. 3,499,948, Cl. 260-830.

Jen, Teh-Sen, to International Business Machines Corporation. Feedback current switch with load-line displacing network. 3,500,071, Cl. 307-254.

Jenny, Bob R.: *See*—
Squier, Wells M., and Jenny, Bob R. 3,499,224.

Jensen, Arne, and Mungard, Hans, to Danfoss A/S. Electrically controlled switch and switching arrangement. 3,500,133, Cl. 317-130.

Jensen, Doyne A. Bale accumulator. 3,499,550, Cl. 214-006.

Jensen, Elmer W., and Jacobsen, Hans R., to Geoscience Instruments Corporation. Polishing apparatus. 3,499,250, Cl. 051-109.

Jerrold Electronics Corporation: *See*—
Oprysko, Joseph G., 3,500,253.

Jessee, James M., to Bell Aerospace Corporation. Binary input torque motor. 3,500,380, Cl. 340-347.

JFD Electronics Corporation: *See*—
Hirschberg, Herz, 3,500,147.

Johns-Manville Corporation: *See*—
Cain, Clifford William, Jr., and Brody, Donald Earl, 3,499,778.
Hesse, Walter Kasper, and Brower, Wilbur Charles, 3,500,444.
Hesse, Walter Kasper, and Brower, Wilbur Charles, 3,500,464.
Heverly, Robert Owen, and Geller, Andrew Michael, 3,499,257.
Jaunarajs, Karlis Laimonis, 3,499,837.
Mountain, George Robert, 3,499,956.

Johns, Robert R., to United States of America, Navy. Pulse repetition frequency discriminator. 3,500,069, Cl. 307-247.

Johnson, Carl E., and Dumers, Dewey M., to GAF Corporation. Color oscillograph recording paper. 3,499,758, Cl. 096-022.

Johnson, Charles H.: *See*—
Burkhardt, Lawrence E., and Johnson, Charles H. 3,500,164.

Johnson, Gordon, Company: *See*—
Frederick, Henry E., and Hathorn, Jack L., 3,499,184.

Johnson, Harry W. Hydraulic control unit. 3,499,284, Cl. 060-052.

Johnson, Herbert G., to Shell Oil Company. Apparatus for forming hollow articles of cold- strengthenable materials. 3,499,188, Cl. 018-019.

Johnson, Keith M.: *See*—
Pickering, Thomas E., and Johnson, Keith M. 3,500,378.

Johnson, Keith O., and Verrow, Donald J., to Gauss Electrophysics, Inc. Movable support means. 3,499,589, Cl. 226-097.

Johnson, Leo F.: *See*—
Geusic, Joseph E., Johnson, Leo F., and Van Uitert, Le Grand G. 3,500,232.

Johnson, Major A., to General Electric Company. Signal generator for producing a set of signal of common frequency and adjustable phase slope. 3,500,303, Cl. 340-006.

Johnson, Paul H., to Phillips Petroleum Company. Electrothermic fluidized bed process. 3,499,947, Cl. 260-680.

Johnson Service Company: *See*—
Korta, Lawrence B., and Lechner, Thomas J., Jr., 3,499,458.

Johnson, Walter E., to Sonoco Products Company. Pallet. 3,499,397, Cl. 108-051.

Johnstone, Donald L.: *See*—
Barbano, Normand, and Johnstone, Donald L. 3,500,424.

Jolly, Jean: *See*—
Joly, Robert, Warnant, Julien, and Jolly, Jean 3,499,913.

Joly, Robert, Warnant, Julien, and Jolly, Jean, to Roussel-UCLAF. 4-oxa steroids and process. 3,499,913, Cl. 260-345.2

Jones, Edward M., and Manderschied, Richard L., to Baldwin, D. H., Company. Multiple contact connector. 3,500,285, Cl. 339-017.

Jones, John Leslie, to Kimberly-Clark Corporation. Integral tampon shield. 3,499,448, Cl. 128-285.

Jones, Malcolm D., to Kelsey-Hayes Company. Electrical rotational speed sensing device. 3,500,091, Cl. 310-168.

Jones, Raymond R., and Kempic, Joseph A., to Westinghouse Electric Corporation. Microwave polarization switch. 3,500,460, Cl. 333-021.

Jones, Stanley R., and Long, Brian H., to Astrodata Inc. Card reader. 3,500,021, Cl. 235-061.11

Jonnes, Nelson, and Vanstrum, Robert C., to Minnesota Mining and Manufacturing Company. Markers. 3,499,371, Cl. 094-001.5

Joseph, Michel. Pneumatic punch press. 3,499,369, Cl. 092-016.

Jourdan, Gerard Charles Maurice: *See*—
LaSalle, Michel Marie Joseph, and Jourdan, Gerard Charles Maurice 3,500,054.

Jowitt, Peter Frederick, to United Kingdom of Great Britain and Northern Ireland, Minister of Aviation in Her Britannic Majesty's Government of the. Method and means for reducing hazards due to loose stray objects or articles. 3,500,129, Cl. 317-009.

Jucker, Ernst, Ebnother, Anton, and Bastian, Jean-Michel, to Sandoz Ltd., a/k/a/ Sandoz A.G.5H-indeno[1,2-c]pyridine-5-ones. 3,499,895, Cl. 260-247.5

Kadoya, Shizuo: *See*—
Naito, Takeo, Okano, Atsuji, Aoyagi, Takaaki, Miki, Tosaku, Kadoya, Shizuo, Inaoka, Masato, and Shindo, Motonori 3,499,925.

Kaenel, Reginald A.: *See*—
Gunther, Ronald V., Kaenel, Reginald A., Lepselter, Martin P., and Smith, James L. 3,500,148.
Fischer, Robert F., and Kaenel, Reginald A. 3,500,348.

Kafalas, Peter, to United States of America, Navy, mesne. Liquid bleachable filter for Q-spoiling a laser cavity. 3,500,230, Cl. 331-094.5

Kahabka, Richard D.: *See*—
Enright, Dennis J., and Kahabka, Richard D. 3,500,292.

Kahle Engineering Company: *See*—
Napor, Carl A., Engel, William T., and Krumm, Charles G., 3,499,202.

Kahng, Dawon, to Bell Telephone Laboratories, Incorporated. Field effect semiconductor apparatus with memory involving entrapment of charge carriers. 3,500,142, Cl. 317-235.

Kaiser Aluminum & Chemical Corporation: *See*—
Altmann, Berton G., 3,499,400.
Finch, Richard D., and Mathews, Carl G., 3,499,205.

Kaiser, Arthur, and Mahler, Henry W., to Columbia Broadcasting System, Inc. Apparatus and method for measuring the logarithm of the root-mean-square value of a signal. 3,500,198, Cl. 324-132.

Kaiser, Karl B., to Ingersoll Milling Machine Company, The. Hydrostatic bearing with mechanical protection. 3,499,692, Cl. 308-009.

Kalle Aktiengesellschaft: *See*—
Maap, Herbert, Steppan, Hartmut, Messwarb, Gunter, and Luders, Walter, 3,499,759.
Schmidt, Willi J., and Seiffried, Walter, 3,499,185.

Kallianos, Andrew G., Porter, John F., and Mold, James D., to Liggett & Myers Incorporated, mesne. Tobacco compositions incorporating novel esters of polyhydroxy compounds. 3,499,452, Cl. 131-017.

Kaman Corporation: *See*—
Thurston, Franklin J., and Nazali, Joseph M., 3,499,262.

Kambic, Stanley F.: *See*—
Funk, Howard L., and Kambic, Stanley F. 3,500,323.

Kanbara, Takeo: *See*—
Kosugi, Tsuneo, and Kanbara, Takeo 3,499,997.

Kanegafuchi Kagaku Kogyo Kabushiki Kaisha: *See*—
Sassa, Nagamasa, 3,499,186.

Kaneko, Hidehiko, Yamato, Yuzuru, and Nakamura, Keiji, to Dainippon Pharmaceutical Co., Ltd. 7α-Lower alkylthio-17β-hydroxy-17α-methyl-5α- androstano[3,2-c]pyrazole and novel intermediates useful in the preparation thereof. 3,499,965, Cl. 424-241.

Kaneko, Hisashi, to Nippon Electric Company Limited. Angle modulation signal companding system. 3,500,206, Cl. 325-046.

Kanter, Spencer I., to Hanson-Whitney Company, The. Universal criss-cross container for packaging multi-sized threaded taps. 3,499,525, Cl. 206-017.

Kao Soap, Ltd.: *See*—
Funatsu, Makoto, and Terimae, Yasuhiro, 3,499,856.

Kapps, Marion H.: *See*—
Czernik, Daniel E., and Kapps, Marion H. 3,499,655.

Karbowiak, Antoni Emil: *See*—
Craven, George Frederick, and Karbowiak, Antoni Emil 3,500,387.

Karmazin, John. Heater assembly. 3,500,016, Cl. 219-365.

Kassing, Glenn M. Apparatus for inactivating disease organisms. 3,500,041, Cl. 250-043.

Kastler, Alfred, and Lehmann, Jean-Claude, to Etablissement Public Centre National de la Recherche Scientifique. Method and apparatus for controlling a magnetic field employing optically pumped nuclear resonance. 3,500,176, Cl. 324-000.5

Katagiri, Shinjiro, Ozasa, Susumu, Kimura, Hirokazu, Doi, Toshio, and Kimura, Hiroshi, to Hitachi, Ltd. Electron lens utilizing superconductive coils for an electron microscope or the like. 3,500,269, Cl. 335-210.

Kato, Seiji, to Taisei Kensetsu Kabushiki Kaisha (Taisei Construction Co., Ltd.). Method and apparatus for forming underground construction in situ. 3,499,293, Cl. 061-053.64

Kato, Takahisa: *See*—
Katsushima, Atsuo, Hisamoto, Iwao, Fukui, Shoshin, Kato, Takahisa, and Nagai, Masayuki 3,499,940.

Katsushima, Atsuo, Hisamoto, Iwao, Fukui, Shoshin, Kato, Takahisa, and Nagai, Masayuki, to Daikin Kogyo Kabushiki Kaisha. Fluorinated diols. 3,499,940, Cl. 260-633.

Katzfey, James M., and Peterson, Warren J., to American Hospital Supply Corporation, mesne. Physician's examining table. 3,499,529, Cl. 269-325.

Katzman, Abe, to Kaye, S. L., Company. Display package. 3,499,597, Cl. 229-034.

Kaufman, Harold B., Jr., and Spiel, Albert, to DCA Food Industries Inc. Apparatus for the regulated production of shaped pieces of plastic material. 3,499,396, Cl. 107-014.

Kaufman, Irving, to TRW Inc. Frequency modulated signal generator. 3,500,249, Cl. 332-029.

Kaufmann, William F. Charcoal starter. 3,499,399, Cl. 110-001.

Kawakami, Kiyoto: *See*—
Fujiwara, Shinobu, and Kawakami, Kiyoto 3,499,772.

Kaydee Metal Products Corporation: *See*—
Froedge, Lanis A., 3,499,625.

Kaye, S. L., Company: *See*—
Katzman, Abe, 3,499,597.

Kearns, Robert W., to Tann Company, mesne. Electronic control for windshield wipers. 3,500,159, Cl. 318-247.

Keast, David N.: *See*—
Gibbons, Jerry V., Morefield, Robert I., Fletcher, William E., and Keast, David N. 3,500,379.

Kellam, Richard O., Jr., to Singer-General Precision, Inc. Pulse width error detector. 3,500,369, Cl. 340-248.

Kelly, Doyle J., Sr.: *See*—
Dohogne, James R., and Kelly, Doyle J., Sr. 3,500,413.

Kelly, John: *See*—
Shoulders, Kenneth R., Rogers, Kendal T., and Kelly, John 3,500,112.

Kelly, John L., J., deceased (by Kelly, Myldred P., executrix), and Logan, Benjamin F., Jr., to Bell Telephone Laboratories, Incorporated. Self-adaptive echo canceller. 3,500,000, Cl. 179-170.2

Kelly, Myldred P.: *See*—
Kelly, John L., J., and Logan, Benjamin F., Jr. 3,500,000.

Kelsey-Hayes Company: *See*—
Jones, Malcolm D., 3,500,091.
Swift, Harvey C., 3,499,508.

Kemania, Gunars, to Hughes Aircraft Company. System for measuring noise spectra adjacent to a carrier signal. 3,500,193, Cl. 324-077.

Kemenczky, Miklos, to Guilden, Paul. Pyromagnetic motor. 3,500,076, Cl. 310-004.

Kemp, Wayne T., to Caloric Corporation. High temperature oven structure. 3,499,430, Cl. 126-021.

Kempic, Joseph A.: *See*—
Jones, Raymond R., and Kempic, Joseph A. 3,500,460.

Kendrick Cattle Company: *See*—
Bronell, Raymond J., and Lynch, Paul E., 3,499,498.

Kennametal Inc.: *See*—
Kniff, Thomas J., 3,499,685.

Kenny, Robert Anthony, and Gregorie, Bruce Murray Lionel, to Laing, John, Research and Development Limited. Analysis of unhardened concrete. 3,499,328, Cl. 073-432.

Kent, R. O., Corporation: *See*—
Kent, Stephen D., 3,499,818.

Kent, Stephen D., to Kent, R. O., Corporation. Composite branch for artificial trees protected by twig members attached by a metal clamp. 3,499,818, Cl. 161-024.

Keogh, Raymond J., to Printed Motors, Inc. Multilayer disc armature for dynamo electric machine. 3,500,095, Cl. 310-268.

Kerins, James H., to Pacific Measurements, Inc. Method and apparatus for compensating crystal detectors. 3,500,065, Cl. 307-229.

Kershner, Stephen W., and Owen, Kenneth, said Owen assor. to Delta Electronics, Inc. Switch plunger operating mechanism with microswitch actuating cam rollers and last motion means. 3,500,004, Cl. 200-018.

Kessler, Bernard V., to United States of America, Navy. Simple traveling wave laser using total- internal-reflection resonator. 3,500,240, Cl. 331-094.5

Khelghatian, Habet M.: *See*—
Poppe, Wassily, and Khelghatian, Habet M. 3,499,881.

Kibbel, William H., Jr., and Shepherd, John A., to FMC Corporation. Method of preparing an aqueous hydrogen peroxide gel. 3,499,844, Cl. 252-316.

Kidde, Walter Company, Incorporated: *See*—
Anthony, Albert M., 3,500,270.

Kieber, Hartwig: *See*—
Bayer, Wolfgang, Rangger, Herbert, and Kieber, Hartwig 3,499,590.

Kiesling, John Donald, to RCA Corporation. Retrodirective phased array antenna for a spacecraft. 3,500,411, Cl. 343-100.

Killian, Charles R., to Foster Grant Co., Inc. Automatic chromatography system. 3,500,028, Cl. 235-183.

Kimberly-Clark Corporation: *See*—
Jones, John Leslie, 3,499,448.
Mattes, William J., Olson, Virginia A., and Skora, Robert F., 3,499,447.

Kimura, Hirokazu: *See*—
Katagiri, Shinjiro, Ozasa, Susumu, Kimura, Hirokazu, Doi, Toshio, and Kimura, Hiroshi 3,500,269.

Kimura, Hiroshi: *See*—
Katagiri, Shinjiro, Ozasa, Susumu, Kimura, Hirokazu, Doi, Toshio, and Kimura, Hiroshi 3,500,269.

Kine, Masayoshi: *See*—
Ishida, Takuo, and Kine, Masayoshi 3,499,346.

King, James F., Jr., and Sloan, Donald Alfred, to Bahnson Company, The. Cleaning apparatus for rotary drum filters. 3,499,267, Cl. 055-290.

King, John H., Jr.: *See*—
Cotterman, Howard W., and King, John H., Jr. 3,499,989.

King Radio Corporation: *See*—
Dohogne, James R., and Kelly, Doyle J., Sr., 3,500,413.

King, William R., to FMC Corporation. Production of dichloroacetaldehyde and trichloroacetaldehyde. 3,499,935, Cl. 260-601.

Kinkel, Lester J., and McManus, Robert P., to United States of America, Navy. Multifrequency pulse-encoded modulation system. 3,500,317, Cl. 340-146.1

Kinzie, Richard C., Jr., to Hercules Incorporated. Vinyl chloride polymerization. 3,499,850, Cl. 260-017.

Kircher, August C., to Allied Control Company, Incorporated. Snag shield for magnetic torque yarn tension device. 3,499,615, Cl. 242-155.

Kirk, Merritt C., Jr., to Sun Oil Company. Producing high purity toluene from petroleum naphtha. 3,499,945, Cl. 260-674.

Kirkendall, William D., to Weston Instruments, Inc. Potentiometers. 3,500,281, Cl. 338-180.

Kitabayashi, Seiichi. Flame regulation valve combined with fill valve for liquefied gas lighter. 3,499,719, Cl. 431-344.

Kitaguchi, Tome: *See*—
Griff, William, and Kitaguchi, Tome 3,499,219.

Kivelevich, Doris, Dadura, James G., and Eckert, George W., to Texaco Inc. Smoke suppressant fuel composition. 3,499,742, Cl. 044-076.

Klayman, Arnold I., and Genest, Leonard J., to Octronix, Inc. Bandwidth compressor and expander. 3,499,996, Cl. 179-015.55

Klee, Helmut: *See*—
Hartlapp, Gerhard, Klee, Helmut, and Koch, Josef 3,499,476.

Klein, Rudolf: *See*—
Strole, Ulrich, Klein, Rudolf, and Weidinger, Walter 3,499,470.

Kleinert, I. B., Rubber Company: *See*—
Strell, Leo, 3,499,451.

Klettke, Ernst, to Telefunken Patentverwertungs-G.m.b.H. Electrical circuit capable of oscillating in a plurality of different frequency regions comprising a plurality of capacitive diodes. 3,500,265, Cl. 334-015.

Klimo, Robert G., to TRW Inc. Digital overspeed detector. 3,500,375, Cl. 340-268.

Kline, Charles M.: *See*—
Best, Albert M., and Kline, Charles M. 3,499,381.

Klink, Rainer, and Baron, Karl-Heinz, to Merck, E., A.G. Benzofuran derivatives suitable as UV-absorbents. 3,499,914, Cl. 260-346.2

Knapsack Aktiengesellschaft: *See*—
Hartlapp, Gerhard, Klee, Helmut, and Koch, Josef, 3,499,476.
Sennewald, Kurt, Vogt, Wilhelm, Strie, Lothar, and Rehberg, Heinrich, 3,499,924.

Kniff, Thomas J., to Kennametal Inc. Pick-type mining bit with support block having rotatable seat. 3,499,685, Cl. 299-086.

Kobayashi, Hidehko, Oizumi, Chihiro, Yamaita, Takeshi, and Okubo, Shigemasa, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for preparing polyamide. 3,499,879, Cl. 260-088.7

Kobayashi, Tatsuo, and Ueda, Hiroshi, to Minolta Camera Kabushiki Kaisha. Shutter alarm device for flash photographing. 3,499,375, Cl. 095-011.

Koch, Heinrich, and Kotlan, Johannes. Derivatives of bicyclic dicarboxylic acids. 3,499,905, Cl. 260-294.3

Koch, Josef: *See*—
Hartlapp, Gerhard, Klee, Helmut, and Koch, Josef 3,499,476.

Koenen, Wilhelm Engelinus: *See*—
Bentholm, Svend Asger Rud, Hoogendoorn, Hendrik, de Jong, Elkan Joachim, Koenen, Wilhelm Engelinus, and Polderman, Jacobus 3,499,784.

Koerner, Ralph J., and Scarbrough, Alfred D., to Bunker-Ramo Corporation, The. Sequential content addressable memory. 3,500,340, Cl. 340-173.

Kokubo, Eiichi: *See*—
Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkicki, Kokubo, Eiichi, and Osako, Kyoichi 3,499,455.

Kolner, Samuel J., and Kosinsky, Edward J., to Phillips Petroleum Company. Pressure regulation in visbreaking extruder. 3,499,952, Cl. 264-040.

Kolpe, Ragnar Olof. Suspended apparatus for hauling lumber. 3,499,544, Cl. 212-071.

Koninklijke Industrieele Maatschappij Noury & van der Lande N.V.: *See*—
Gerritsen, Hans G., Hansma, Hendrik, and Jaspers, Hans, 3,499,919.

Koninklijke Nederlandsche Gist-En Spiritusfabriek N.V.: *See*—
Weissenburger, Helmut Wilhelm Otto, and Van Der Hoeven, Marcelus Gijsbertus, 3,499,909.

Konishiroku Photo Industry Co., Ltd.: *See*—
Iwai, Issei, Yura, Yasuo, Kuwabara, Yoshimi, and Sugita, Sadao, 3,499,764.

Koomen, Nelis N., and Greenslade, John T., to Talley Industries, Inc. Inertia-sensitive circuit breaker. 3,500,007, Cl. 200-061.45

Korta, Lawrence B., and Lechner, Thomas J., Jr., to Johnson Service Company. Fluid jet modulating control. 3,499,458, Cl. 137-081.5

Kortyna, Ralph, to Westinghouse Air Brake Company. Car presence detection system. 3,500,039, Cl. 246-077.

Korzeniauskas, Eugene, to Allen, R. C., Business Machines, Inc. Electrically driven air erected gyro. 3,499,335, Cl. 074-005.43

Kosinsky, Edward J.: *See*—
Kolner, Samuel J., and Kosinsky, Edward J. 3,499,952.

Kosugi, Tsuneo, and Kanbara, Takeo, to Victor Company of Japan, Limited. System for controlling the levels of magnetically recorded and reproduced signals in a video tape recorder. 3,499,997, Cl. 179-100.2

Kotlan, Johannes: *See*—
Koch, Heinrich, and Kotlan, Johannes 3,499,905.

Kottle, Sherman, and Day, Bert O., to Dow Chemical Company, The. Refractive index analyzer using several liquid-solid interfaces. 3,499,712, Cl. 356-128.

Koutsandreas, Katherine. Disposable syringe with elastically expansible bag. 3,499,444, Cl. 128-232.

Kozawa, Tokinori, and Miwa, Ichiro, to Hitachi, Ltd. Semiconductor amplifier gain control circuit. 3,500,222, Cl. 330-029.

Kozol, Eugene T.: *See*—
Drejza, John E., Kozol, Eugene T., Pelkie, Robert E., and Wallace, Joseph E. 3,500,081.

Krajewski, William F.: *See*—
Padalino, Marco, Krajewski, William F., and Nagakura, Hiroshi 3,500,385.

Kramer, Louis T.: *See*—
Boehringer, Wilfred E., Kramer, Louis T., and Little, Jane 3,499,621.

Kratz, Philip deC., and Strasburger, Louis J., to International Flavors and Fragrances, Inc. Processes for producing strawberry flavor compositions and products. 3,499,769, Cl. 099-140.

Krause, Harold R., Dogget, George A., and Zimmerman, Robert B., to Caterpillar Tractor Company. Contour recorder. 3,499,227, Cl. 033-174.

Krause, Walter O., to Virginia Chemicals Inc. Dual salt moisture indicating composition. 3,499,316, Cl. 073-061.1

Krawczyk, Arthur J.: *See*—
Schroeder, Herbert M., and Krawczyk, Arthur J. 3,499,852.

Krenke, Vincent Gerald: *See*—
Brech, Kilian H., and Krenke, Vincent Gerald 3,500,089.

Krewer, William A.: *See*—
Hwang, Yu-Tang, Krewer, William A., and Sandner, Walter J. 3,499,938.

Krieger, Edward L., and Davis, William W., to Sperry Rand Corporation. Sandwiched magnetic memory element. 3,500,357, Cl. 340-174.

Krizman, Theodore M., and Emmons, Clayton M., to Adams & Westlake Company, The. Center stable relay structure. 3,500,268, Cl. 335-153.

Krueckel, Barbara F., to McDonnell Douglas Corporation. Process for producing multiple layer colored coating using actinic irradiation. 3,499,781, Cl. 117-038.

Krumm, Charles G.: *See*—
Napor, Carl A., Engel, William T., and Krumm, Charles G. 3,499,202.

Kruse, John H. Lifting device. 3,499,548, Cl. 214-001.

Kuehne, Heinz, Dietze, Manfred, and Hauer, Franz, to Vickers-Zummer Aktiengesellschaft Planung und Bau von Industrieanlagen. Preparation of polyethylene terephthalate by means of free falling films. 3,499,873, Cl. 260-075.

Kuhlmann, Ugine: *See*—
Petitjean, Marc, and Martin, Paul, 3,499,793.
Strassel, Albert Pierre, 3,499,858.

Kuhn, Edmund W., to Westinghouse Electric Corporation. Electric switch having improved electrically conducting hinge structure. 3,500,006, Cl. 200-048.

Kuhne, Hans-Dietrich, and Schuttloffel, Erich, to Telefunken Patentverwertungsgesellschaft m.b.H. Satellite antenna array with electrically adjustable beam shaping. 3,500,418, Cl. 343-705.

Kujawa, Francis M., and Stone, Jonathan A., to Hooker Chemical Corporation. Room temperature curing resin and foundry sand composition containing same. 3,499,861, Cl. 260-025.

Kulcke, Werner W.: *See*—
Harris, Thomas J., and Kulcke, Werner W. 3,499,700.

Kulick, Russell Joseph: *See*—
Strazdins, Edward, Kulick, Russell Joseph, and Savina, Anthony Ralph 3,499,824.

Kulwicki, Henry E., and Gugolz, Henry J., to Langston Company, The. Tab cutter. 3,499,370, Cl. 093-058.2

Kummer, Joseph T.: *See*—
Hever, Keith O., and Kummer, Joseph T. 3,499,796.

Kuny, Hans. Method of weaving velvet tapes and the like. 3,499,471, Cl. 139-021.

Kurbatsky, Ivan Lukich: *See*—
Grachev, Vladimir Alexandrovich, Cherny, Anatoly Alexeevich, Marienbakh, Lev Mikhailovich, and Kurbatsky, Ivan Lukich 3,499,637.

Kuriyama, Ryozo: *See*—
Sugiyama, Hiroshi, Kuriyama, Ryozo, Matumoto, Otohei, Imada, Kunihiko, and Matsushita, Yoshio 3,499,721.

Kusters, Norbert L., and MacMartin, Malcolm P., to Canadian Patents and Development Limited. Self balancing current comparator for precise voltage levels and potentiometer usage. 3,500,171, Cl. 323-006.

Kutch, Edward Francis, to Thiokol Chemical Corporation. Air-curable polysulfide-polyurethane sealants. 3,499,863, Cl. 260-031.6

Kutner, Abraham, to Hercules Incorporated. Purification of polyolefins using alkanoic acids. 3,499,880, Cl. 260-093.7

Kuwabara, Yoshimi: *See*—
Iwai, Issei, Yura, Yasuo, Kuwabara, Yoshimi, and Sugita, Sadao 3,499,764.

Kuwata, Ryuichi: *See*—
Takada, Keisuke, and Kuwata, Ryuichi 3,500,165.

Lacroix, Serge, to Societe Industrielle Bull-General Electric (Societe Anonyme). Superconductor data storage device. 3,500,344, Cl. 340-173.1

Laerdal, Asmund S. Pump for medical purposes. 3,499,601, Cl. 230-192.

Laff, Robert A.: *See*—
Esaki, Leo, and Laff, Robert A. 3,500,141.

Lagneborg, Rune Gunnar, to Sandvikens Jernverks Aktiebolag. Ferritic, martensitic and ferrite-austenitic chromium steels with reduced tendency to 475 C.- embrittlement. 3,499,802, Cl. 148-037.

Laing, John, Research and Development Limited: *See*—
Kenny, Robert Anthony, and Gregorie, Bruce Murray Lionel, 3,499,328.

Lalande, Michel George E.: *See*—
Charrin, Jean Pierre, Hermier, Jacques, and Lalande, Michel George E. 3,500,170.

Lambert, Robert W., and Cook, Frank M., to Cincinnati Butchers' Supply Company. Trolley advancing and spacing device. 3,499,394, Cl. 104-162.

Lamming, Jack Stewart, to U.S. Philips Corporation, mesne. High frequency power transistor having different resistivity base regions. 3,500,143, Cl. 317-235.

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Lane, Walter W., Jr. Urine collectors. 3,499,327, Cl. 073-421.

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Lankford, John L., Seigel, Arnold E., and Wilson, Robert E., to United States of America, Navy. Omnidirectional blast wave sensor. 3,499,311, Cl. 073-035.

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Laviana, Lawrence J., to Rhodes, M. H., Inc. Lock assembly. 3,499,209, Cl. 029-437.

Layman, John D., to General Electric Company. Temperature compensated control systems. 3,499,354, Cl. 083-072.

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Le Gros, Emile Albert, to Lever Brothers Company. Smooth to coarse-faced pallet transfer. 3,499,560, Cl. 214-301.

Lehmann, Herbert G., to Valve Corporation of America. Hand-held dispenser with mixing valves. 3,499,581, Cl. 222-132.

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Lendvay, Andrew T. Method of improving the flavor of baked goods and goods made by the method. 3,499,765, Cl. 099-091.

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Liberman, Milton. Connector. 3,500,284, Cl. 339-014.

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Lide, Edward N., to Lockheed Aircraft Corporation. Aircraft touchdown detection apparatus. 3,500,307, Cl. 340-027.

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Liepins, Hugo, to Sola Basic Industries, Inc. High pressure metallic vapor lamp circuit. 3,500,128, Cl. 315-278.

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Longo, Santo. Electrically heated articles. 3,500,014, Cl. 219-211.
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Loukas, Annette D. Windowgate assembly. 3,499,246, Cl. 049-169.
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Lozen, Franklin R. Grass catcher for lawn mower. 3,499,275, Cl. 056-202.
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McArthur, George, Jr., to Glenwood Range Company, mesne. Cooking range preheat and vent systems. 3,499,431, Cl. 126-039.
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McNaney, Joseph T., and Ulmer, Harold W. Gaseous glow plural character presentation device. 3,500,390, Cl. 340-378.
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Armstrong, Olen R., Early, Billy J., Matlock, Donald W., McWaters, Jay W., and Pruitt, Charles E. 3,499,513.
McWilliams, Joseph E. Apparatus for loading bagged mail from a loading dock into a highway vehicle. 3,499,551, Cl. 214-006.
Mead, Donald C.: *See—*
Erhardt, Harold R., Frink, Frederick W., Gerson, Gordon, Mead, Donald C., and Pfiffner, Harold J. 3,500,410.
Meagher, Philip F.: *See—*
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MEDIMPEX Gyogyszerkulkereskedelmi Vallalat: *See—*
Banfi, Dezso, Mlinko, Sandor, and Palagyi, Tivadar, 3,499,727.
Mehltretter, Charles L., to United States of America, Agriculture. Azo dyes of starch anthranilates and process of preparing same. 3,499,886, Cl. 260-233.5
Mehra, Vinodkumar, and Wolfe, William R., Jr., to Du Pont de Nemours, E. I., and Company. Process of producing electric current in fuel cell using chromium dioxide catalyst. 3,499,798, Cl. 136-086.
Meier, Johann H., to International Business Machines Corporation. Sonic detection apparatus. 3,500,301, Cl. 340-001.
Meininger, James L., and Brown, Donald, to Westinghouse Air Brake Company. Compressor governor having fluidic devices. 3,499,599, Cl. 230-017.
Melle-Bezons, Saint-Leger-Les Melle: *See—*
Roussos, Michel, Bourgeois, Yves, and Jasse, Bruno, 3,499,868.
Melpar, Inc.: *See—*
Hronik, Richard H., Smith, Blanchard D., and Wallen, James, Jr., 3,500,186.
Menke, Joseph F., to Eltro G.m.b.H. & Co. Sighting device and method for determining a line of sight to a target and the position of an object relative to the line of sight. 3,500,048, Cl. 250-083.3
Mensa, Dean L. Passive R-C integrator with essentially linear output. 3,500,257, Cl. 333-019.
Mentzer, Everett K., and Boucherle, Robert H., to Brunswick Corporation, mesne. Automatic scoring, totalizing and printing apparatus for bowling game. 3,499,649, Cl. 273-054.
Mentzer, Robert E., to Philco-Ford Corporation. Extended range meter having moving magnet. 3,500,201, Cl. 324-146.
Mercier, Ernest C., to Singer-General Precision, Inc. Fast response current amplifier. 3,500,221, Cl. 330-017.
Merck & Co., Inc.: *See—*
Macek, Thomas J., Shoop, Clyde E., and Stauffer, Dennis R., 3,499,960.
Robinson, Franklin M., Anderson, Paul S., and Nicholson, James A., 3,499,906.
Rogers, Edward F., and Clark, Robert L., 3,499,968.

Merck, E., A.G.: *See—*
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Merrifield, Dudley B.: *See—*
Nundenberg, Walter, Merrifield, Dudley B., and Delaney, Edward Axel 3,499,882.
Merritt, Stanley Y., to General Electric Company. Self-driven inverter. 3,500,168, Cl. 321-018.
Mesenhimer, Lee Orland, and Grasmehr, Thomas W., to Lorain Products Corporation. Integrated three phase inverter system. 3,500,166, Cl. 321-011.
Messner, Georg, Barbato, Alexander Louis, Laub, Henry William, and Loftfield, Richard Eric, to Oronzio de Nora Impianti Eleltrochimici S.A.S. Inclined plane mercury cathode electrolysis cells. 3,499,829, Cl. 204-219.
Messwarb, Gunter: *See—*
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Michaels, Thomas B.: *See—*
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Michalko, Edward, to Universal Oil Products Company. Method of catalyst preparation. 3,499,846, Cl. 252-451.
Michon, Gerald J., to General Electric Company. Vehicle velocity measuring system employing adjustable width pulse generating system. 3,500,190, Cl. 324-069.
Midwestern Securities Corporation: *See—*
Sahley, Lloyd W., 3,499,710.
Miki, Tosaku: *See—*
Naito, Takeo, Okano, Atsuji, Aoyagi, Takaaki, Miki, Tosaku, Kadoya, Shizuo, Inaoka, Masato, and Shindo, Motonori 3,499,925.
Mikkelsen, Trygve. Boom for screening in and collecting up of pollution on water. 3,499,291, Cl. 061-001.
Mikrut, Michael E., to Synergistics, Inc., mesne. Modular electrical keyboard. 3,499,515, Cl. 197-098.
Milazzo, Carl J., to Hohl Machine and Conveyor Co., Inc. Accumulating transfer conveyor. 3,499,524, Cl. 198-221.
Milazzo, Frank: *See—*
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Milborrow, Barry V.: *See—*
Barnsley, Geoffrey E., Gabbott, Peter A., and Milborrow, Barry V. 3,499,750.
Miles Laboratories, Inc.: *See—*
Schut, Robert Norman, 3,499,890.
Milewski, Victor, and Sletten, Terry L., to Valeron Corporation, The. Automatic boring bar adjustment means. 3,499,352, Cl. 077-058.
Millen, Edward. Heat stable storable, one part polythiol compositions with amine-loaded molecular sieves. 3,499,864, Cl. 260-033.8
Miller, Gerald D.: *See—*
Gorbatenko, George G., and Miller, Gerald D. 3,500,324.
Miller, Gerald O., and Elliott, Denman R., to United States of America, Navy. Radar detection device. 3,500,401, Cl. 343-018.
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Miller, Russell E.: *See—*
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Miller, William V., to TRW Inc. Fluidic accelerometer. 3,499,331, Cl. 073-515.
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Wakeman, Reginald L., and Dudzinski, Zdzislaw J., 3,499,930.
Milner, Lucy Eveline, to Wolsey Limited. Article of clothing. 3,499,172, Cl. 002-240.
Minasy, Arthur Jim, to National Bank of North America, as trustee, mesne. Method and apparatus for article theft detection. 3,500,373, Cl. 340-258.
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Mini, Iti: *See—*
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Minisci, Francesco, and Galli, Remo, to Montecatini Edison S.p.A. Quaternary ammonium halides and process for the preparation thereof. 3,499,903, Cl. 260-293.
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Landau, Ioan D., and Gavat, Stefan, 3,500,158.
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Jonnes, Nelson, and Vanstrum, Robert C., 3,499,371.
Ross, Stanley L., and Fitzpatrick, Joseph T., 3,500,455.
Ross, Stanley L., 3,500,456.
Minnich, George E., and Staples, Lynn A., to General Precision Systems, Inc. Simulation of radio navigation equipment. 3,500,439, Cl. 034-010.2
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MJB Company: *See—*
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Driscoll, Patrick Robert, 3,499,910.
Talley, William A., Jr., 3,499,266.
Williams, Albert L., 3,499,840.
Mochizuki, Mitsuaki, to Okazaki Manufacturing Company. Method of making a temperature probe. 3,499,217, Cl. 029-612.
Moehl, Reno W., to Universal Oil Products Company. Preparation of dehydrogenation catalyst. 3,499,845, Cl. 252-442.
Moerkens, Jozef Cornelis, and van den Bogaart, Antonius Johannes, to U.S. Philips Corporation, mesne. Starting and operating circuit for gas discharge lamps. 3,500,125, Cl. 315-205.
Moggre, Anthonie Jannis: *See—*
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Mogilevsky, Vitaly Moritsovich. Ferrometer for oscillographic measurement of magnetic characteristics. 3,500,180, Cl. 324-034.
Mohr, Harvey O.: *See—*
Cullen, Roy H., Elliott, Charles H., Aker, Jimmie R., and Mohr, Harvey O. 3,499,668.
Moirano, Arthur L., to Marine Colloids, Inc. Cold-set milk desserts and compositions therefor and method of making same. 3,499,768, Cl. 099-139.
Mojden, Wallace W., and Chivas, Norman J., to Fleetwood Systems, Inc. Permanent magnet roll. 3,499,199, Cl. 029-121.
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Moore, Donald. Sign pole driver. 3,499,497, Cl. 173-129.
Moore, Robert A., to Allis-Chalmers Manufacturing Company. Engaging and disengaging means for friction drive. 3,499,339, Cl. 074-191.
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Moritz, Frederick G., to Potter Instrument Company, Inc. Motor control circuit. 3,500,163, Cl. 318-373.
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Mortara, Pieraldo, to Sambonet S.p.A. Pressure cooker having a sealtight oval lid abutting the inner edge of said cooker. 3,499,571, Cl. 220-025.
Morton International, Inc.: *See—*
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Moses, Adrian J., and Samuelson, Roland M., to Honeywell Inc. Control apparatus. 3,500,149, Cl. 318-018.
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Moss, George J., Jr., Havey, Robert W., Jr., and Saunders, John M., to United States of America, Navy. Sonar bathymetry system transmit-receive sequence programmer. 3,500,302, Cl. 340-003.
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Battin, John W., and Combs, Jimmy Paul, 3,500,459.
Cannalte, Gary A., 3,500,458.
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Moulin, Pierre, and Aubel, Pierre, to Institut Francais du Petrole des Carburants et Lubrifiants. Automatic dynamic positioning system. 3,500,025, Cl. 235-150.27
Mountain, George Robert, to Johns-Manville Corporation. Process for making thermoplastic decorative covering material. 3,499,956, Cl. 264-112.
MPB Corporation: *See—*
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Muehter, Manfred W., to American District Telegraph Company. Noninterfering electrical signaling system. 3,500,377, Cl. 340-287.
Mullaney, Thomas F., to Fostoria-Fannon, Incorporated, mesne. Fast automatic infrared drying and fusing apparatus for a high melt coating on an easily combustible web. 3,499,231, Cl. 034-048.
Muller, Georges, Amiard, Gaston, Poittevin, Andre, and Torelli, Vesperto, to Roussel-UCLAF. D(-)-and L( )-threo-1-p-nitrophenyl-2-N,N- dimethylamino-propane 1,3-diols and the salts thereof. 3,499,929, Cl. 260-570.6
Muller, Ludwig. Vibrator device. 3,499,337, Cl. 074-061.
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Mumford, William W.: *See—*
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Murdock, Clayton E., to Stromberg-Carlson Corporation. Matrix for a character display tube compliant area outside indicia area to minimize distortion. 3,500,100, Cl. 313-086.
Murray, John M., to Cerco Corporation. Portable storage rack or pallet. 3,499,398, Cl. 108-053.
Murray, Philip A., and Geary, Carl H., Jr., to Carrier Corporation. Lubrication system. 3,499,503, Cl. 184-001.
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Myers, Robert A., and Wieder, Harold, to International Business Machines Corporation. Mode coupling laser apparatus. 3,500,237, Cl. 331-094.5
N.V. Hollandse Signaalapparaten: *See—*
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Nagano, Masahiko: *See—*
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Nagelberg, Elliott R., to Bell Telephone Laboratories, Incorporated. Wave mode converter. 3,500,258, Cl. 333-021.
Naito, Takeo, Okano, Atsuji, Aoyagi, Takaaki, Miki, Tosaku, Kadoya, Shizuo, Inaoka, Masato, and Shindo, Motonori, to Daiichi Seiyaku Company Limited, and Mitsubishi Chemical Industries Limited. Process for the production of trans-4- aminomethylcyclohexane-1-carboxylic acd. 3,499,925, Cl. 260-514.
Nakamura, Keiji: *See—*
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Nakamura, Mitsuo. Combined steering column lock and ignition switch for a motor vehicle. 3,500,443, Cl. 200-061.54
Nakamura, Naofumi, Hotta, Yasufusa, Murakami, Tadayoshi, Shimpo, Yoshiharu, Etoh, Kuniomi, and Shirasuki, Yoshikazu, to Toyo Boseki Kabushiki Kaisha. Stabilized polyamide composition. 3,499,867, Cl. 260-045.75
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Napor, Carl A., Engel, William T., and Krumm, Charles G., to Kahle Engineering Company. Film cartridge loading machine. 3,499,202, Cl. 029-200.
Nardulli, Antonio, to Texas Instruments, Incorporated. Thermostatic circuit breaker sensitive to several temperatures. 3,500,277, Cl. 337-343.
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National Dust Collector Corporation: *See—*
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Naujoks, Manfred, to Schulte, C. Ed., G.m.b.H. Flat keys for cylinder locks. 3,499,304, Cl. 070-406.
Naydan, Bob N., and Sacks, Sidney, to Singer-General Precision, Inc. Charge gated unalog-to-digital converter. 3,500,384, Cl. 340-347.
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Neal, Charles Bailey, and Rhee, Dong W., to Sylvania Electric Products, Inc. AFC system for television receiver. 3,499,981, Cl. 178-007.3
Neale, David W., to Raydyot Limited. Auxiliary lamps for motor vehicles. 3,500,038, Cl. 240-041.3
Neale, Denis M., to Ilford Limited. Electronic timing device. 3,500,051, Cl. 250-214.
Needham, Riley B., and Peacock, Dixon W., to Phillips Petroleum Company. Method for producing oxygenated products from oil shale. 3,499,490, Cl. 166-259.
Needham, Victor E. Router planes. 3,499,365, Cl. 090-012.
Neeff, Rutger, to Farbenfabriken Bayer Aktiengesellschaft. Triazinylanthraquinone dyestuffs. 3,499,896, Cl. 260-249.
Nefedov, Oleg Matveevich, and Ivashenko, Anna Akimovna. Method of preparing fluoroaromatic compounds. 3,499,942, Cl. 260-649.
Nelsen, Ronald N., to General Electric Company. Lubricated movable and interacting components for use in machines and a method for forming and breaking in such components. 3,499,504, Cl. 184-001.
Nelson, Floyd M., and Sedgwick, Grant O., to Ashland Oil & Refining Company. Polyurethane coatings derived from aromatic and aliphatic polyisocyanates. 3,499,783, Cl. 117-072.
Nelson, Kurt, to DeLaval Separator Company, The. Automated milking system. 3,499,422, Cl. 119-014.08
Nelson, Permil N. Railroad track construction. 3,499,604, Cl. 238-230.
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Nesslinger, Fritz J., and Borgman, Arthur C., to Harsco Corporation. Material handling apparatus. 3,499,565, Cl. 214-705.
Nestler, Max F. Aquatic recreational and educational device. 3,499,647, Cl. 272-001.
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Newallis, Peter E., and Lombardo, Pasquale, to Allied Chemical Corporation. Combatting insect pests with nitrile amide phosphates and phosphonates. 3,499,964, Cl. 424-210.
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Newell, Chester W., to Newell Associates, Inc. Tape drive power take-off system. 3,499,619, Cl. 242-209.
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Newman, Daniel J., and Matta, Jorge M., to Chemical Construction Corporation. Apparatus for nitrogen oxides absorption to produce concentrated nitric acid. 3,499,734, Cl. 023-283.
Nicholls, James A., to Dowty Hydraulic Unit Ltd. Hydraulic apparatus. 3,499,285, Cl. 060-053.
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Nicolay, Karl, to Durkoppwerke G.m.b.H. Buttonhole sewing machine with improved stopping mechanism. 3,499,404, Cl. 112-067.
Nielsen, H., & Son, Maskinfabrik A/S: *See—*
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Niilola, Armas Kalervo, and Sinervo, Into Vilho, to Oy Wartsila AB. Lock with a separate bottom plate. 3,499,301, Cl. 070-052.
Nikles, Erwin, and Ebner, Ludwig, to Ciba Limited. Herbicidal triazinyl azides. 3,499,749, Cl. 071-093.
Nilson, Carl-Goran, to Alfa-Laval AB. Centrifugal separator. 3,499,602, Cl. 233-021.
Nilsson, Vilgot Raymond, to Alfa-Laval AB. Method and apparatus for dosing powder. 3,499,577, Cl. 222-001.

Nippon Denso Kabushiki Kaisha: *See—*
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Nippon Electric Company Limited: *See—*
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Niwa, Takashi. Blind. 3,499,477, Cl. 160-166.
Noda, Koji, and Hashimoto, Masaru, to Minolta Camera Kabushiki Kaisha. Copying machine pack holder. 3,499,645, Cl. 271-061.
Noguera, John Michael, to Casablancas Limited. Top arms for textile fibre roller drafting mechanisms. 3,499,191, Cl. 019-281.
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Nordin, Robert W., to Teletype Corporation. Fluid transfer device. 3,500,436, Cl. 346-075.
Norris, Russell Snyder, Jr., to HRB-Singer, Inc. Frequency translation process and apparatus therefor. 3,500,399, Cl. 343-007.7
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Ayres, Roy J., and Priebe, John R., 3,499,699.
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Lenz, Charles E., 3,500,449.
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North, Richard J.: *See—*
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Norton, John P., to American Air Filter Company, Inc. Condenser pressure control means. 3,499,298, Cl. 062-174.
Novak, Joseph B., to United States Steel Corporation. Loading apparatus. 3,499,522, Cl. 198-088.
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Nuclear-Chicago Corporation: *See—*
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Nundenberg, Walter, Merrifield, Dudley B., and Delaney, Edward Axel, to Texas-U.S. Chemical Company. Diene polymerization process and catalyst therefor. 3,499,882, Cl. 260-094.3
Nutz, George Kasper, to Bendix Corporation, The. Variable albedo earth sensor of a relatively narrow angular effective field of view. 3,500,049, Cl. 250-209.
NVF Company: *See—*
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Obeda, Edward G., to Branson Instruments, Incorporated. Method and apparatus for securing parts together by sonic energy. 3,499,808, Cl. 156-073.
Obenhaus, Robert E., to Texas Instruments, Incorporated. Fail-safe controller. 3,500,074, Cl. 307-310.
Ocean Science and Engineering, Inc.: *See—*
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Octronix, Inc.: *See—*
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O'Hea, Jerome: *See—*
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Ohno, Junji, to Nippon Gakki Seizo Kabushiki Kaisha. Electrical musical instrument with key guide plate elastically connected to keyboard frame permitting transverse vibratory motion of plate to achieve special effects. 3,499,971, Cl. 084-001.17
Ohtsu, Tadanori: *See—*
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Oizumi, Chihiro: *See—*
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O'Keefe, Michael Francis, and Forney, Edgar Wilmont, Jr., to AMP Incorporated. Means and method for crimped high frequency connectors. 3,500,296, Cl. 339-177.
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Olander, Kemuel B. Glare shield attachment for vehicle sun visors. 3,499,679, Cl. 296-097.
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Oliver, Roy N.: *See—*
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O'Loughlin, Cian Noel, and Bones, Noel Edward, to English Electric Valve Company Limited. Electron beam tubes. 3,500,096, Cl. 313-032.
O'Loughlin, Cian Noel, and Clayworth, Geoffrey Thomas, to English Electric Valve Company Limited. Microwave electron beam tubes. 3,500,111, Cl. 315-005.52
Olsen, Robert N., to Esso Research and Engineering Company. Monopropellant in binder matrix. 3,499,289, Cl. 060-218.
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O'Neal, John B., Jr., to Bell Telephone Laboratories, Incorporated. Television receiver to produce a sequentially displayed picture from a conventional interlaced video signal. 3,499,982, Cl. 178-007.5
O'Neal, Wilbert O., to Universal Match Corporation. Beverage dispensing systems. 3,499,578, Cl. 222-056.
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Oprysko, Joseph G., to Jerrold Electronics Corporation. UHF directional mixer. 3,500,253, Cl. 333-009.
Oravec, John J., to Federal Pacific Electric Company. Automatic circuit breakers. 3,500,275, Cl. 337-075.
Orberg, Robert E. Portable compartment. 3,499,175, Cl. 005-113.
Orenstein, Philip, to Mass Art, Inc. Inflatable chair. 3,499,682, Cl. 297-456.
Organon Inc.: *See—*
Bentholm, Svend Asger Rud, Hoogendoorn, Hendrik, de Jong, Elkan Joachim, Koenen, Wilhelm Engelinus, and Polderman, Jacobus, 3,499,784.
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Messner, Georg, Barbato, Alexander Louis, Laub, Henry William, and Loftfield, Richard Eric, 3,499,829.
Ort, Werner, and Frank, Kurt, to Fernseh G.m.b.H. Image orthicon tubes. 3,499,197, Cl. 029-025.16
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Osborne, James C., to Parker-Hannifin Corporation. Flareless tube coupling. 3,499,671, Cl. 285-341.
Osborne, William T., to Carrier Corporation. Refrigerant flow control mechanism. 3,499,296, Cl. 062-115.
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Baak, Nils Tryggve E. A., and Rapp, Charles F., 3,499,776.
Petticrew, Richard W., and Simmons, George A., 3,499,773.
Ownby, Paul Darrell, to Battelle Development Corporation, The. Electron emitter tips and method. 3,500,104, Cl. 313-311.
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Padrta, Frank G., to Universal Oil Products Company. Sample introduction system for mass spectrometer analysis. 3,500,040, Cl. 250-041.9
Page, Roy L. Manure shredder. 3,499,608, Cl. 241-101.

Pattich, Ronald M., and Moran, John F., to Varian Associates. Field scanned gyromagnetic resonance spectrometer employing field tracked double resonance. 3,500,178, Cl. 324-000.5
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Palatinus, Anthony C. Means for generating a two-tone signal. 3,500,227, Cl. 331-018.
Palatinus, Anthony C. Means for generating a double sideband suppressed carrier AM wave. 3,500,228, Cl. 331-039.
Pallos, Ferenc M., and Pavlath, Attila E., to Stauffer Chemical Company. Process for preparing chlorofluoromethanes. 3,499,943, Cl. 260-653.
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Paquette, Leo A., to Upjohn Company, The. Heterocyclic enamines of 5-norbornene-2- carboxaldehyde. 3,499,892, Cl. 260-240.
Parente, Michael, to Bell Telephone Laboratories, Incorporated. Blocking oscillator with minimum off time. 3,500,245, Cl. 331-112.
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Parker, Carlyle V., to United States of America, Navy. Directive response transponder system. 3,500,406, Cl. 343-006.5
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Parsons, John S., to Stanley Works, The. Heavy duties hinges. 3,499,183, Cl. 016-136.
Patel, Chandra K. N., to Bell Telephone Laboratories, Incorporated. Q-switched molecular laser. 3,500,235, Cl. 331-094.5
Patterson, Robert J., to Texas Instruments, Incorporated. Process for preparing dense, adherent boron nitride films and certain articles of manufacture. 3,499,799, Cl. 148-006.3
Paugh, Fred E. Gas liquid receiver and liquid separator. 3,499,270, Cl. 055-337.
Paul, Mahrle F. Air cushion system for vehicles. 3,499,662, Cl. 280-124.
Pausch, Josef, to Aerodyne Machinery Corporation. Means for cleaning dust separating apparatus. 3,499,268, Cl. 055-302.
Pavlath, Attila E.: *See—*
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Payne, Richard E., to Tappan Company, The. Lift-up range top support. 3,499,433, Cl. 126-211.
Payton, Edmund James, and Wilson, Colin, to Control Electricity Generating Board. Optical device for the examination of smoke and dust laden gas. 3,500,450, Cl. 250-218.
Peace, George M., to Chain Lakes Research Associates, Inc. wide band log periodic slot RF switch. 3,500,251, Cl. 333-007.
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Pearson, Melvin A. Variable eccentricity driver. 3,499,347, Cl. 074-568.
Pearson, William Kenneth Jamieson, to British Aluminium Company Limited, The. Measurement of the shape and flatness of sheet or strip material. 3,499,306, Cl. 072-017.
Pedersen, Egil. Mobile and turnable digging machine, crane or the like. 3,499,559, Cl. 214-138.
Pedersen, Jack R.: *See—*
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Peene, Guido, to Trefileries Leon Bekaert, P. V. B. A. Packing case for sharp and oxidizable articles. 3,499,594, Cl. 229-014.
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Perl, Richard L., to Tappan Company, The. Oven heat regenerator. 3,499,429, Cl. 126-021.
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Peterson, Glen R., Jr., to Schmidt, Oscar, International, Inc. Multi-stringed musical instrument. 3,499,357, Cl. 084-285.
Peterson, John R., to Collins Radio Company. Fluid pressure actuated diaphragm work piece clamping device. 3,499,641, Cl. 269-022.
Peterson, Laurence I., to Dow Chemical Company, The. Method of preparing ynamines. 3,499,904, Cl. 260-293.
Peterson, Laurence I., to Dow Chemical Company, The. Preparation of ynamines. 3,499,928, Cl. 260-570.5
Peterson, Norman E., and Courchene, Ernest E., Jr., to Digitech, Inc. Communication circuit monitoring. 3,500,216, Cl. 328-163.
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Petitjean, Marc, and Martin, Paul, to Kuhlmann, Ugine. Process for descaling devices used in concentrating sodium aluminate solutions. 3,499,793, Cl. 134-002.
Petrolite Corporation: *See—*
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Petticrew, Richard W., and Simmons, George A., to Owens-Illinois, Inc. Semicrystalline ceramic bodies, and method. 3,499,773, Cl. 106-039.
Pfarrwaller, Erwin, to Sulzer Brothers Limited. Method and apparatus for forming selvages on cloth. 3,499,474, Cl. 139-122.
Pfeuffer, Anton. Hose clamp. 3,499,667, Cl. 285-093.
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Focht, Louis R., 3,499,987.
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Stacy, Galen D., and Carleton, Robert C., 3,500,024.
Wood, Harold V., 3,499,884.
Wood, James Q., 3,499,878.
Phillips, William N., to Leco, Inc. Airline catering vehicle. 3,499,562, Cl. 214-512.
Phlaum, Edward G., to Smith, A. O., Corporation. Liquid heaters having temperature buildup protection. 3,499,423, Cl. 122-014.
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Pickering, Thomas E., and Johnson, Keith M. Battery-operated barrier light having resilient cushion mounting structure. 3,500,378, Cl. 340-331.
Pickles, Joseph, to Ferro Manufacturing Corporation. Power recliner assembly. 3,499,344, Cl. 074-424.8
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Pietrusza, Edward W., and Pedersen, Jack R., to Allied Chemical Corporation. Novel promoters for the anionic polymerization of lactams. 3,499,875, Cl. 260-078.
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Pinckaers, Balthasar H., to Honeywell Inc. Temperature control system. 3,499,482, Cl. 165-024.
Pineau, Jean, and Peroy, Francois, to Regie Nationale des Usines Renault. Vehicle signal control circuitry. 3,500,314, Cl. 340-074.
Piper, Glenn T., to Hoover Company, The. Coating for steam iron flash boiler. 3,499,237, Cl. 038-077.83
Piros, John J., to Sinclair Research, Inc. Mixing apparatus. 3,499,632, Cl. 259-004.

Pitel, Irving, Cornine, Floyd C., and Silverman, Richard S., to Automatic Merchandising Machine Mfg., Corporation. Push button selector assembly. 3,499,376, Cl. 221-125.
Plambeck, Ronald F., and Mandock, Richard F., to Protection Controls, Inc. Fault indicating system for a plurality of monitored devices. 3,500,469, Cl. 340-213.
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Plessey Company Limited, The: *See—*
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Plumat, Emile, to Glaverbel, S.A. Method and apparatus for manufacturig small beads by centrifugal action. 3,499,745, Cl. 065-021.
Poeschl, Klaus, and Veith, Werner, to Siemens Aktiengesellschaft. Electron-beam tube for frequency multiplication. 3,500,108, Cl. 315-003.
Poittevin, Andre: *See—*
Muller, Georges, Amiard, Gaston, Poittevin, Andre, and Torelli, Vesperto 3,499,929.
Pokorny, Zdenek, to Vyzkumny ustav Matematickych Stroju. Multiplication apparatus utilizing either a positive or a negative multiplier wherein form conversion at each interface of the multiplying unit is unnecessary. 3,500,026, Cl. 235-160.
Polaroid Corporation: *See—*
Cotta, Ezio D., 3,499,373.
Polderman, Jacobus: *See—*
Bentholm, Svend Asger Rud, Hoogendoorn, Hendrik, de Jong, Elkan Joachim, Koenen, Wilhelm Engelinus, and Polderman, Jacobus 3,499,784.
Policansky, Hyman. Variable speed fishing reel with friction drive. 3,499,609, Cl. 242-084.44
Polin, Herbert S. Thermodielectric oscillator. 3,500,243, Cl. 331-107.
Pollard, Samuel, Novkov, Raymond E., and Stein, William B., to Warner & Swasey Company, The. Cutoff tool having deformable fixturing means. 3,499,198, Cl. 029-096.
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Poppe, Wassily, and Khelghatian, Habet M., to Avisun Corporation. Electroplatable polyolefins. 3,499,881, Cl. 260-093.7
Port, Frederick J., to ESB Incorporated. Method of drying electrodes in battery containers. 3,499,228, Cl. 034-022.
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Portes, Pierre J., Mas, Robert Jean, and Richerd, Jacques Hugues, to Fabriques de Produits Chimiques de Thann et de Mulhouse. Process for producing titanium dioxide by the vapor phase oxidation of titanium tetrachloride. 3,499,730, Cl. 023-202.
Post, Richard F., to United States of America, Atomic Energy Commission. Method and apparatus for accelerating ions out of a hot plasma region. 3,500,077, Cl. 310-011.
Post, Udo: *See—*
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Potter Instrument Company, Inc.: *See—*
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Potter, John T., Foley, Thomas P., and Antonucci, Carmine J., 3,499,382.
Potter, John T., Foley, Thomas P., and Antonucci, Carmine J., to Potter Instrument Company, Inc. Modular assembly for high speed chain printers. 3,499,382, Cl. 101-093.
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PPG Industries, Inc.: *See—*
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Price, Jack G.: *See—*
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Price, Kenneth. Automatic headlight control system including windshield wiper motor. 3,500,119, Cl. 315-082.
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Pritchett, Robert L., to Bell Telephone Laboratories, Incorporated. Radio frequency power transistor with individual current limiting control for thermally isolated regions. 3,500,066, Cl. 307-235.
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Pruett, Roy L., and Groves, Kenneth O., to Union Carbide Corporation. Hydroformylation of cyclic olefins. 3,499,933, Cl. 260-598.
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Publicker, Sidney. Bubbling display device. 3,499,238, Cl. 040-106.21
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Pust, Waldo H. Crop seed planting device. 3,499,495, Cl. 172-536.
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Raidel, John E. Tandem truck suspension. 3,499,660, Cl. 280-104.5
Rainer, Charles W., to Honeywell Inc. Fluid circuit. 3,499,460, Cl. 137-081.5
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Ramsey, James E., Jr., to Westinghouse Electric Corporation. Induction meter having saturable path for working voltage magnetic flux. 3,500,199, Cl. 324-138.
Randcar Corporation: *See—*
Hopkins, William J., 3,499,226.
Randol, Glenn T. Vacuum-operated brake booster device. 3,499,288, Cl. 060-054.6
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Rank Organisation Limited, The: *See—*
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Rasiel, Amram, and Henebry, William M., to EG & G, Inc. Complementary one-shot indicator circuit. 3,500,370, Cl. 340-248.
Rasmussen, Ole-Bendt. Extruded, expanded mat-like or web-like fibrillar sheet assembly and method for its production. 3,499,822, Cl. 161-169.
Rathjen, Arthur H., to Dow Corning Corporation. Pediatric size tracheal tube. 3,499,450, Cl. 128-351.
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Goldmacher, Joel E., and Heilmeier, George H., 3,499,702.
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Rhys, David Wade, to International Nickel Company, Inc., The. Oxidation resistant coated article containing iriduim, ruthenium, molybdinum or tungsten. 3,499,740, Cl. 029-198.
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Roberton, James Samuel Paterson, Dymoke-Bradshaw, Leslie Eugene Basil, and Lotay, Nirmal Singh, to International Standard Electric Corporation. Balanced armature magnetic percussion sounding device. 3,500,393, Cl. 340-392.
Roberts, Maldwyn Hugh, to Cotton Silk and Man-Made Fibres Research Association, The. Process control systems. 3,499,229, Cl. 034-023.
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Robinson, George T., to Phoenix Telephones Limited. Electric coding switches. 3,500,389, Cl. 340-364.
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Roper, Robert, to Esso Research and Engineering Company. Water-soluble polyester coatings. 3,499,855, Cl. 260-022.
Roquemore, Troy L. Garage door handle. 3,499,182, Cl. 016-112.
Rosander, Judge E. Kneeling pad. 3,499,502, Cl. 182-230.
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Rosen, Herbert J., to Hooker Chemical Corporation. Polymer recovery and purification process. 3,499,883, Cl. 260-094.7
Rosenbaum, Erik, to Bendix Corporation, The. Circuit for simulating transponder interrogation signals. 3,500,405, Cl. 343-017.7
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Ross, Stanley L., and Fitzpatrick, Joseph T., to Minnesota Mining and Manufacturing Company. Light responsive electrical lamp dimming means. 3,500,455, Cl. 315-149.
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Rowe, Luther Kemp, Jr. Lateral planing frame and bumper assembly. 3,499,661, Cl. 280-106.
Rowlands, Richard O., and Rohm, Edward L., to United States of America, Navy, mesne. Two-way pulse repeater. 3,499,985, Cl. 178-070.
Ruben, Samuel. Storage battery having electrodes comprising a supporting base of titanium nitride. 3,499,795, Cl. 136-024.
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Ruff, John D., and Wheeler, Phillip R. Variable capacity refrigeration system. 3,499,297, Cl. 062-160.
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Schiff, Peter, to RCA Corporation. Switching type voltage and current regulator and load therefor. 3,500,127, Cl. 315-224.
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Schlamb, Kermit F., to Calgon Corporation, mesne. Methods of binding large pieces of poultry. 3,499,767, Cl. 099-107.
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Schmid, Hans, Feldhoff, Heinrich, Hahn, Edelfried, and Martin, Wolfgang, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Apparatus for colling wires, filaments and the like. 3,499,276, Cl. 057-034.
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Schut, Robert Norman, to Miles Laboratories, Inc. Certain octahydro-1,12-trimethyleneindolo [2,3-α] quinolizines. 3,499,890, Cl. 260-239.3
Schut, Robert Norman, and Havera, Herbert John. Miles Laboratories, Inc. Process for preparation of piperazyl alkyl derivatives of tetrazoles. 3,499,900, Cl. 260-268.
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Schwartz, Milton. Dually adaptable drain valve with extended control rod means. 3,499,628, Cl. 251-309.
Schwartzenberg, John W., Luxl, Frank C., and Blum, Bernard, to Leeds and Northrup Company. Charge computer for basic oxygen furnace. 3,500,029, Cl. 235-184.
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Searight, Charles Edwin, Ryan, John Robert, and Davis, Bernie Joseph, to Cataphote Corporation. Thermoplastic resinous compositions, particularly using unsaturated triglycerides. 3,499,857, Cl. 260-023.7
Searle, G. D., & Co.: *See—*
Colton, Frank B., and Nicholson, Robert T., 3,499,891.
Sedgwick, Grant O.: *See—*
Nelson, Floyd M., and Sedgwick, Grant O. 3,499,783.
Seeberger, Fritz, and Wehling, Werner, to Seeberger K.G. Worm pump. 3,499,389, Cl. 103-117.
Seeberger K.G.: *See—*
Seeberger, Fritz, and Wehling, Werner, 3,499,389.
Seeley, Robert L., to United States of America, Navy. Electronic circuit assembly. 3,500,131, Cl. 317-120.
Segal, Clifford E.: *See—*
Burgess, Joseph Wesley, Jr., and Segal, Clifford E. 3,499,646.
Segel, Joseph M., to Franklin Mint, Inc., The. Bimetallic token with annular ring having different permeability than inner portion. 3,499,739, Cl. 029-191.
Seidel, Don C.: *See—*
Fitzhugh, Edward F., Jr., and Seidel, Don C. 3,499,756.
Seidel, Harold, to Bell Telephone Laboratories, Incorporated. Filter circuits using alternate open- and short- circuited 3 db quadrature hybrids. 3,500,259, Cl. 333-026.
Seifried, Walter: *See—*
Schmidt, Willi J., and Seifried, Walter 3,499,185.
Seigel, Arnold E.: *See—*
Lankford, John L., Seigel, Arnold E., and Wilson, Robert E. 3,499,311.
Sekimoto, Tadahiro, and Schmidt, William G., to Communications Satellite Corporation. Non-linear pulse code modulation with threshold selected sampling. 3,500,247, Cl. 332-011.
Sekmakas, Kazys, and Ragas, Frank, to De Soto, Inc. Copolymers of alkoxyalkylated aminotriazine transesters. 3,499,849, Cl. 260-015.
Sennewald, Kurt, Vogt, Wilhelm, Strie, Lothar, and Rehberg, Heinrich, to Knapsack Aktiengesellschaft. Process for the manufacture of anhydrous solutions of peracetic acid. 3,499,924, Cl. 260-502.
Serafin, Robert J.: *See—*
Epstein, Max, Fryberger, David, Serafin, Robert J., and van den Heuvel, Anthony P. 3,500,461.
Seward, W. Saxton: *See—*
Chilowsky, Constantin 3,499,801.
Seymour Foods, Inc.: *See—*
Willsey, Charles H., and Majors, Francis W., 3,499,520.
Shakespeare Company: *See—*
Sarah, Thomas F., 3,499,613.
Shanahan, Robert T. Induction motor with free wheeling rotor and brake for selectively braking same. 3,500,155, Cl. 318-048.
Shannon, Richard F., to Owens-Corning Fiberglas Corporation. Reinforced moldable composition and process of producing the same. 3,499,955, Cl. 264-102.
Shell Oil Company: *See—*
Barnsley, Geoffrey E., Gabbott, Peter A., and Milborrow, Barry V., 3,499,750.
Johnson, Herbert G., 3,499,188.
Spotts, Gerald W., 3,499,567.
Shelly, William A.: *See—*
Couleur, John F., Ruth, Richard L., and Shelly, William A. 3,500,329.
Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L. 3,500,333.
Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L. 3,500,334.
Shepherd, John A.: *See—*
Kibbel, William H., Jr., and Shepherd, John A. 3,499,844.
Sheppard, Thomas W.: *See—*
Buchholz, Donald E., and Sheppard, Thomas W. 3,500,397.
Sherard, David S. Hot dog holder. 3,499,538, Cl. 211-013.
Sherman Car Wash Equipment Co.: *See—*
Hurwitz, Paul D., 3,499,180.
Sherman, Michael: *See—*
Bienhoff, Milton G., Sanborn, Alfred W., and Sherman, Michael 3,500,358.
Sherwin-Williams Company, The: *See—*
DeVittorio, Joseph M., 3,499,828.
Sherwood, Ralph L.: *See—*
Williamson, John B.P., and Sherwood, Ralph L. 3,500,298.
Shidlovsky, Vladimir Georgievich: *See—*
Maljuk, Jury Ivanovich, Shidlovsky, Vladimir Georgievich, and Zelinsky, Alexandr Viktorovich 3,500,392.
Shikama, Asao: *See—*
Takeuchi, Koichi, Shikama, Asao, and Takeno, Shozo 3,500,346.
Shill, Karl E., to Singer Company, The. Scanning apparatus. 3,500,363, Cl. 340-174.1
Shimada, Hisashi, to Nippon Denso Kabushiki Kaisha. Automotive vehicle signaling system. 3,500,315, Cl. 340-082.

Shimizu, Toshio: *See—*
Tanigawa, Shizuhiko, Shimizu, Toshio, Ieki, Mitsuru, and Higashida, Yutaka 3,499,998.

Shimpo, Yoshiharu: *See—*
Nakamura, Naofumi, Hotta, Yasufusa, Murakami, Tadayoshi, Shimpo, Yoshiharu, Etoh, Kuniomi, and Shirasaki, Yoshikazu 3,499,867.

Shindo, Motonori: *See—*
Naito, Takeo, Okano, Atsuji, Aoyagi, Takaaki, Miki, Tosaku, Kadoya, Shizuo, Inaoka, Masato, and Shindo, Motonori 3,499,925.

Shirasaki, Yoshikazu: *See—*
Nakamura, Naofumi, Hotta, Yasufusa, Murakami, Tadayoshi, Shimpo, Yoshiharu, Etoh, Kuniomi, and Shirasaki, Yoshikazu 3,499,867.

Shockley, William L., to Collins Radio Company. Substrate protective oxidized coating process. 3,499,782, Cl. 117-062.

Shoop, Clyde E.: *See—*
Macek, Thomas J., Shoop, Clyde E., and Stauffer, Dennis R. 3,499,960.

Shotton, Gordon John, to Lucas, Joseph, (Industries) Limited. Activation indicator for alkaline batteries. 3,500,371, Cl. 340-249.

Shoulders, Kenneth: *See—*
Crost, Munsey E., Shoulders, Kenneth, and Zinn, Mortimer H. 3,500,102.

Shoulders, Kenneth R., Rogers, Kendal T., and Kelly, John, to Stanford Research Institute. Electron device with improved secondary electron collection means. 3,500,112, Cl. 315-012.

Shroyer, Larry L., to Lyall Electric, Inc. Integral rubber lampholder. 3,500,294, Cl. 339-170.

Shulman, Albert: *See—*
Dwyer, Francis Patrick, Wright, Roy Douglas, and Shulman, Albert 3,499,966.

Shuron/Continental Division of Textron Inc.: *See—*
McCall, Richard J., 3,499,253.

Sichak Associates: *See—*
Adams, Robert T., 3,500,417.

Siebers, Gunter, to Ardie-Werk GmbH. Fluid bearing. 3,499,690, Cl. 308-003.5

Siemens Aktiengesellschaft: *See—*
Faber, Walter, and Machaczek, Robert, 3,500,295.
Poeschl, Klaus, and Veith, Werner, 3,500,108.

Silverman, Richard S.: *See—*
Pitel, Irving, Cornine, Floyd C., and Silverman, Richard S. 3,499,576.

Simmonds Precisions Products, Inc.: *See—*
Sargent, Raymond W., 3,500,146.

Simmons, George A.: *See—*
Petticrew, Richard W., and Simmons, George A. 3,499,773.

Simon, Eli: *See—*
Hamilton, William F., and Simon, Eli 3,499,723.

Simpkins, Don L., to Thiokol Chemical Corporation. Rocket charge design. 3,499,283, Cl. 060-039.47

Simpson-Lawrence Limited: *See—*
Lyall, Gordon M., 3,499,173.

SINCAT-Societa Industriale Catanese S.p.A.: *See—*
Scarfi, Alberto, and Gugliotta, Emanuele, 3,499,725.

Sinclair Research, Inc.: *See—*
Piros, John J., 3,499,632.

Sinervo, Into Vilho: *See—*
Niilola, Armas Kalervo, and Sinervo, Into Vilho 3,499,301.

Singer Company, The: *See—*
Greulich, Robert G., Mack, Alfred H., and Blackwood, John, 3,499,406.
Shill, Karl E., 3,500,363.

Singer-General Precision, Inc.: *See—*
Bienhoff, Milton G., Sanborn, Alfred W., and Sherman, Michael, 3,500,358.
Kellam, Richard O., Jr., 3,500,369.
Mercier, Ernest C., 3,500,221.
Naydan, Bob N., and Sacks, Sidney, 3,500,384.
Pross, John W., Jr., 3,500,383.
Rochette, Walter L., 3,500,322.
Rochette, Walter L., 3,500,382.

Sironi, Giuseppe: *See—*
Colombo, Umberto, Mini, Iti, and Sironi, Giuseppe 3,499,754.

Skinner, George C.: *See—*
Cope, Geoffrey W., and Skinner, George C. 3,499,545.

Skora, Robert F.: *See—*
Mattes, William J., Olson, Virginia A., and Skora, Robert F. 3,499,447.

Slagg, James E., to Allen-Bradley, Company. Panel mounted, variably adjusted electrical component. 3,500,282, Cl. 338-197.

Sleeper, George B., Jr.: *See—*
Leitner, Robert T., Palmer, Paul D., and Sleeper, George B., Jr. 3,500,419.

Sletten, Terry L.: *See—*
Milewski, Victor, and Sletten, Terry L. 3,499,352.

Sloan, Donald Alfred: *See—*
King, James F., Jr., and Sloan, Donald Alfred 3,499,267.

Sloan, George J., Jr., to United States of America, Navy. Atmospheric determining apparatus. 3,499,325, Cl. 073-170.

Slodzian, Georges: *See—*
Castaing, Raymond, and Slodzian, Georges 3,500,042.

Slonimsky, Grigory Lvovich: *See—*
Nesmeyanov, Alexandr Nikolaevich, Rogozhin, Sergei Vasilievich, Slonimsky, Grigory Lvovich, Misjurev, Vladimir Ivanovich, Tolstoguzov, Vladimir Borisovich, Malakhov, Vladimir Ilich, Batenina, Natalia Vladimirovna, Ershova, Vera Alexandrovna, Dzyavgo, Vladimir Sigzmundovich, and Grekov, Vladimir Ivanovich 3,499,379.

Slugantz, Thomas E., to Texas Instruments, Incorporated. Dryer control. 3,499,230, Cl. 034-045.

SMC Corporation: *See—*
Cappotto, Samuel D., 3,499,517.

Smierciak, Edward S., to International Telephone and Telegraph Corporation. Sequential dot interlace system and method for television. 3,499,980, Cl. 178-006.8

Smith, A. O., Corporation: *See—*
Phlaum, Edward G., 3,499,423.

Smith, A. O., Harvestore Products, Inc.: *See—*
Broberg, Leonard E., 3,499,556.

Smith, A. O.,-Inland Inc.: *See—*
Hof, Richard, 3,499,815.

Smith, Anthony George: *See—*
Barton, Donald Moore, and Smith, Anthony George 3,499,294.

Smith, Blanchard D.: *See—*
Hronik, Richard H., Smith, Blanchard D., and Wallen, James, Jr. 3,500,186.

Smith, David F. Resorbable surgical sutures from cellulose acid ethers. 3,499,449, Cl. 128-335.5

Smith, Donald J., to Smith-Schreyer & Assoc., Inc. Connector and connection for sheath cable shield. 3,499,972, Cl. 174-088.

Smith, Donald O., and Harte, Kenneth J., to Massachusetts Institute of Technology. Content-addressed memory using optical interrogation. 3,500,354, Cl. 340-174.

Smith, Frank B. Pressure pour apparatus and component theref. 3,499,580, Cl. 222-061.

Smith, Harold A., to Devenco Incorporated. Method and means for detecting unauthorized use of electric power. 3,500,194, Cl. 324-110.

Smith, James L.: *See—*
Gunther, Ronald V., Kaenel, Reginald A., Lepselter, Martin P., and Smith, James L. 3,500,148.

Smith, James W., to AMBAC Industries, Incorporated. Electric motor and rectifier assembly. 3,500,085, Cl. 310-068.

Smith, Millard F. Floating boom. 3,499,290, Cl. 061-001.

Smith-Schreyer & Assoc., Inc.: *See—*
Smith, Donald J., 3,499,972.

Smith, Ward Alan, to Hercules Incorporated. Invert emulsion spray apparatus and method. 3,499,606, Cl. 239-304.

Societe Anonyme de Vehicules Industriels et d'Equipments Mecaniques Saviem: *See—*
Bonnotte, Paul, 3,499,639.

Societe Anonyme Francaise du Ferodo: *See—*
Maurice, Jean, 3,499,512.

Societe Anonyme: Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique: *See—*
LaSalle, Michel Marie Joseph, and Jourdan, Gerard Charles Maurice, 3,500,054.

Societe Industrielle Bull-General Electric (Societe Anonyme): *See—*
Feissel, Henri Gerard, 3,500,356.
Lacroix, Serge, 3,500,344.

Societe Rhodiaceta: *See—*
Stuchlik, Rene, 3,499,958.

Socony Mobil Oil Company, Inc.: *See—*
Givens, Edwin N., and Hamilton, Lyle A., 3,499,941.

Sohl, Gordon, to Xerox Corporation, mesne. Gas discharge ion source with multiple anode structure and A.C. supply means. 3,500,122, Cl. 315-111.

Sola Basic Industries, Inc.: *See—*
Liepins, Hugo, 3,500,128.

Soltysik, Edmund J., and Ryder, Francis E., to Illinois Tool Works, Inc. Roof decking clip. 3,499,673, Cl. 287-189.35

Sommer, Friedrich, to U.S. Philips Corporation, mesne. Arrangement for bringing a rotating system controlled by means of a servo-system into phase and keeping it in phase. 3,500,160, Cl. 318-302.

Sondhi, Man M., to Bell Telephone Laboratories, Incorporated. Closed loop adaptive echo canceller using generalized filter networks. 3,499,999, Cl. 179-170.2

Soniflow Equipment Company: *See—*
Veith, Robert D., 3,499,792.

Sonoco Products Company: *See—*
Johnson, Walter E., 3,499,397.

Sony Corporation: *See—*
Ito, Sachio, and Harano, Seiichi, 3,500,084.
Sawai, Masahide, 3,500,114.

Sorkin, Martin E.: *See—*
Hadlock, Ronald O., and Sorkin, Martin E. 3,499,870.

Sosnowski, Joseph A.: *See—*
Cassel, Lawrence E., and Sosnowski, Joseph A. 3,499,991.

Southam, Donald L., to Harris-Intertype Corporation. Dampening system for lithographic printing press. 3,499,383, Cl. 101-148.

Spain, Roy C. Cylinder lock. 3,499,303, Cl. 070-364.

Spain, Roy C., Oliver, Roy N., Flora, Elvis C., and Powell, Paul A. Cylinder lock. 3,499,302, Cl. 070-364.

Spain, Roy Clifton. Key cutting machine. 3,499,366, Cl. 090-095.

Sparta Industries, Inc.: *See—*
Schellstede, Herman J., and Sanders, Thomas M., 3,499,210.

Specht, Theodore R., to Westinghouse Electric Corporation. Current transductor having instantaneous response. 3,500,195, Cl. 324-117.

Sperry Rand Corporation: *See—*
Arlen, David, 3,500,318.
Best, Albert M., and Kline, Charles M., 3,499,381.
Chao, Wu Wai, Stephan, Robert W., and Zoya, Walter J., 3,499,391.
Conway, Patrick H., 3,500,381.
Engelmann, Alfred B., 3,499,790.
Fiorletta, Ali A., and Winfield, Raymond, 3,499,979.
Krieger, Edward L., and Davis, William W., 3,500,357.
Macek, Warren M., and Schneider, Joseph R., 3,499,701.
Schwartz, Edward N., 3,500,351.

Sperry Rand Limited: *See—*
Trott, Frederick George, and Walters, Ronald, 3,499,463.

Spieker, Bernard, to Bendix Corporation, The. Optical drum and securing hub device. 3,500,343, Cl. 340-173.

Spiel, Albert: *See—*
Kaufman, Harold B., Jr., and Spiel, Albert 3,499,396.

Spotts, Gerald W., to Shell Oil Company. Neck structure for thin-walled plastic containers. 3,499,567, Cl. 215-031.

Square D Company: *See—*
Butler, De Forrest D., 3,499,570.

Squibb, E. R., & Sons, Inc.: *See—*
Bernstein, Jack, 3,499,888.

Squier, Wells M., and Jenny, Bob R. Gunsight. 3,499,224, Cl. 033-047.

St. Joseph Lead Company: *See—*
Rose, Michael V., 3,499,800.

Staats, Willam R.: *See—*
Rosenberg, Robert B., Weil, Sanford A., and Staats, Willam R. 3,499,717.

Stackegard, Hans A., to Allmanna Svenska Elektriska Aktiebolaget. Direct current power transmission between a number of converter stations. 3,500,057, Cl. 307-082.

Stacy, Galen D., and Carleton, Robert C., to Phillips Petroleum Company. Digital data input system. 3,500,024, Cl. 235-092.

Stadler, Hans, Gawlick, Heinz, and Bendler, Hellmut, to Dynamit Nobel Aktiengesellschaft. Primer. 3,499,386, Cl. 102-086.5

Stagecraft Industries, Inc.: *See—*
Ibsen, Gene C., 3,500,169.

Stamicarbon N.V.: *See—*
Vermijs, Winfried J. W., 3,499,752.

Standard Oil Company (Indiana): *See—*
Arnold, Vernon W., and Lee, Robert J., 3,499,877.
Hook, Roy E., 3,499,317.

Standard Oil Company, The (Ohio): *See—*
Boehm, Julius, 3,499,839.

Stanford Research Institute: *See—*
Shoulders, Kenneth R., Rogers, Kendal T., and Kelly, John, 3,500,112.

Stankovich, Donald. Sequence flashing system for automotive lamps. 3,500,312, Cl. 340-067.

Stanley, Peter Paul, and Byrd, Carl, to Reichel & Drews, Inc. Wrapping machine. 3,499,263, Cl. 053-210.

Stanley, Robert K., to Techniservice Corporation. Strand treatment. 3,499,953, Cl. 264-168.

Stanley Works, The: *See—*
Parsons, John S., 3,499,183.

Staples, Lynn A.: *See—*
Minnich, George E., and Staples, Lynn A. 3,500,439.

Star Dental Manufacturing Company, Inc.: *See—*
Lieb, Nathaniel H., and Turchi, Anthony J., 3,499,223.

Star Dental Mfg., Co., Inc.: *See—*
Lieb, Nathaniel H., and Turchi, Anthony J., 3,499,223.
Lieb, Nathaniel H., and Turchi, Anthony J., 3,499,223.

Starch, Hermann C.: *See—*
Daendliker, Gustav, 3,499,753.

Starck, Walter A., II. Underwater hand light. 3,500,037, Cl. 240-010.63

Stark, Forest G., to Adams, Clark, Corporation, mesne. Filing cabinet with improved cantilever hinge type drawer support system. 3,499,696, Cl. 312-331.

Startin, Kenneth John, and Reed, Norman Leonard, to AMP Incorporated, mesne. Printed circuit connector with resiliently mounted contacts. 3,500,288, Cl. 339-017.

Stauffer Chemical Company: *See—*
Pallos, Ferenc M., and Pavlath, Attila E., 3,499,943.

Stauffer, Dennis R.: *See—*
Macek, Thomas J., Shoop, Clyde E., and Stauffer, Dennis R. 3,499,960.

Staunton, Kenneth L., to Sylvania Electric Products, Inc. Cathode ray tube screen exposure. 3,499,372, Cl. 095-001.

Stearns, Thomas H.: *See—*
Dahlgren, Victor F., Tally, Sidney K., and Stearns, Thomas H. 3,499,218.

Steedman, William C.: *See—*
Wienke, Richard E., and Steedman, William C. 3,500,306.

Stein, William B.: *See—*
Pollard, Samuel, Novkov, Raymond E., and Stein, William B. 3,499,198.

Steiner American Corporation: *See—*
Bahnsen, Erwin B., 3,499,176.

Steinmetz, William A. Undergarment. 3,499,442, Cl. 128-159.

Stephan, John Thomas, and Lomax, Archie L. Process for production of dialkali metal resorcinate. 3,499,939, Cl. 260-628.

Stephan, Robert W.: *See—*
Chao, Wu Wai, Stephan, Robert W., and Zoya, Walter J. 3,499,391.

Steppan, Hartmut: *See—*
Maap, Herbert, Steppan, Hartmut, Messwarb, Gunter, and Luders, Walter 3,499,759.

Steranko, James J.: *See—*
Donaher, Charles J., and Steranko, James J. 3,500,192.

Stevens, J. P., & Co., Inc.: *See—*
Aberle, Roy F., 3,499,249.

Stewart-Warner Corporation: *See—*
Bjorn, Thomas E., 3,499,329.
Bjorn, Thomas E., and Dopp, David S., 3,499,330.
Heinke, Walter M., 3,499,417.

Stienen, Karl Heinz. Storage system for motor vehicles or other goods. 3,499,553, Cl. 214-016.1

Stiller, Paul, to Teledyne Inc. Electric heater apparatus. 3,500,018, Cl. 219-443.

Stirling, Harold Tamplin. Smog retarder apparatus. 3,499,428, Cl. 123-196.

Stockburger, George Joseph: *See—*
Brandner, John David, and Stockburger, George Joseph 3,499,917.

Stone, Jonathan A.: *See—*
Kujawa, Francis M., and Stone, Jonathan A. 3,499,861.

Strasburger, Louis J.: *See—*
Kratz, Philip deC., and Strasburger, Louis J. 3,499,769.

Straschil, Heinrich K.: *See—*
Langley, Robert C., Lindenthal, John W., Myers, Herbert, and Straschil, Heinrich K. 3,499,265.

Strassel, Albert Pierre, to Kuhlmann, Ugine, (Societe Anonyme). Polyurethane-polyurea elastomers. 3,499,858, Cl. 260-030.2

Stratman, Hardin G., to Gates Radio Company. Low frequency modulation network. 3,500,248, Cl. 332-023.

Strauch, Heinrich, to Associated Engineering Limited. Pressure transducers. 3,500,271, Cl. 336-030.

Strazdins, Edward, Kulick, Russell Joseph, and Savina, Anthony Rulph, to American Cyanamid Company. Aqueous cationic emulsions of paper-sizing isocyanates and manufacture of paper therewith. 3,499,824, Cl. 162-164.

Strell, Leo, to Kleinert, I. B., Rubber Company. Reinforced girdle. 3,499,451, Cl. 128-539.

Strie, Lothar: *See—*
Sennewald, Kurt, Vogt, Wilhelm, Strie, Lothar, and Rehberg, Heinrich 3,499,924.

Stroebel, George J. Tarpaulin roller. 3,499,680, Cl. 296-098.

Strole, Ulrich, Klein, Rudolf, and Weidinger, Walter, to Zellstoffabrik Waldhof. Multilayer laterally expansible tube of thermoplastic material. 3,499,470, Cl. 138-170.

Stromberg-Carlson Corporation: *See—*
Murdock, Clayton E., 3,500,100.

Stromer, Edgar Georg, to SCM Corporation. Equivalent circuit determination by pulse reflectometry with compensation for particular impedances. 3,500,204, Cl. 324-158.

Stuchlik, Rene, to Societe Rhodiaceta. Process for obtaining X-shaped filaments. 3,499,958, Cl. 264-177.

Studinski, Robert A., to Lyon Metal Products, Incorporated. Drawer and compressor plate construction. 3,499,695, Cl. 312-294.

Sturges, James T., to Bivsett-Berman Corporation, The. Aircraft service computer. 3,499,323, Cl. 073-116.

Sturm, Rolf G.: *See—*
Haberkorn, Joseph A. Erich, Sturm, Rolf G., and Weidinger, Hans 3,499,620.

Sud-Aviation Societe Nationale de Constructions Aeronautiques: *See—*
Lugan, Michel Germain, and Surcin, John Guy, 3,499,622.

Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft: *See—*
Scheinost, Kurt, 3,499,726.

Suel, Yves Charles, and Ortino, Georges Michel, to U.S. Philips Corporation, mesne. Method of making connections to a microcircuit. 3,500,013, Cl. 219-085.

Sugita, Sadao: *See—*
Iwai, Issei, Yura, Yasuo, Kuwabara, Yoshimi, and Sugita, Sadao 3,499,764.

Sugiyama, Hiroshi, Kuriyama, Ryozo, Matumoto, Otohei, Imada, Kunihiko, and Matsushita, Yoshio, to Sumitomo Chemical Company, Ltd. Stabilized composition of *p*-quinonedihalomine compound. 3,499,721, Cl. 008-032.

Sugiyama, Takashi, Tanabe, Tomoyuki, Nakane, Hisao, and Oguma, Yoshio, to Yokogawa Electric Works Ltd. Integrating analog-to-digital converter usable in digital voltmeters. 3,500,109, Cl. 324-099.

Sulkowski, Theodore S., to American Home Products Corporation. Dodecahydro-2,5-benzodiazocines. 3,499,806, Cl. 260-239.

Sulzabch, Thomas L., and Ward, Dennis J. Separation process for aromatic alkylation effluent by flash distillation and partial condensation. 3,499,826, Cl. 203-027.

Sulzer Brothers Limited: *See—*
Pfarrwaller, Erwin, 3,499,474.

Sumitomo Chemical Company, Ltd.: *See—*
Sugiyama, Hiroshi, Kuriyama, Ryozo, Matumoto, Otohei, Imada, Kunihiko, and Matsushita, Yoshio, 3,499,721.

Sumitomo Metal Mining Company Limited: *See—*
Sasaki, Kuniya, 3,499,207.
Sun Oil Company: *See—*
Kirk, Merritt C., Jr., 3,499,945.
Sunasky, Joseph, to Dexion Limited. Connections between structural components. 3,499,672, Cl. 287-189.36
Surcin, John Guy: *See—*
Lugan, Michel Germain, and Surcin, John Guy 3,499,622.
Surgent, Louis Vincent, Jr.: *See—*
Forster, George Michael, and Surgent, Louis Vincent, Jr. 3,500,395.
Suryanarayana, Yelagondahally S.: *See—*
Durrell, William S., and Suryanarayana, Yelagondahally S. 3,499,737.
Swain, Roger S., and Wootton, Gerald R., to Benrus Corporation. Electric timepiece drive with cut-off. 3,500,103, Cl. 318-138.
Swartz, Elmer L., to United States of America, Army. Flueric stall sensor circuit. 3,499,459, Cl. 137-081.5
Sweeney, Patrick M., and Eberhart, Laurence L., to Consolidated Kinetics Corporation. Apparatus for isolating vibrations. 3,499,255, Cl. 052-263.
Sweeney, William M., to Texaco Inc. Pour depressant composition. 3,499,741, Cl. 044-062.
Swift & Company: *See—*
Badgley, Durward B., 3,499,527.
Swift, Harvey C., to Kelsey-Hayes Company. Disk parking brake. 3,499,508, Cl. 188-073.
Swift, William R., to Coleman Engineering Company, Inc. Removable cassette camera with film severing mechanism. 3,499,376, Cl. 095-031.
Sybron Corporation: *See—*
Werner, Alan J., Jr., 3,500,153.
Sylvania Electric Products, Inc.: *See—*
Barbano, Normand, and Johnstone, Donald L., 3,500,424.
Brown, Jesse J., Jr., and Van Noy, Bryce W., 3,499,843.
Burns, Laurence, 3,500,101.
Emerick, Lloyd C., 3,500,454.
Neal, Charles Bailey, and Rhee, Dong W., 3,499,981.
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Synergistics, Inc.: *See—*
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Szentveri, Istvan S. Decorative strip lighting. 3,500,036, Cl. 240-010.
Tada, Yoshinosuke, Horie, Makoto, Fukuoka, Katsuya, and Hosoi, Yasunobu, to Yahagi Seitetsu Kabushiki Kaisha. Bus conductor system for a three-phase electric furnace. 3,499,970, Cl. 013-014.
Taillie, Gordon P.: *See—*
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Takada, Keisuke, and Kuwata, Ryuichi, to Tokyo Shibaura Electric Co., Ltd. Computer control device. 3,500,165, Cl. 320-001.
Takahashi, Yasunobu, and Fukuoka, Yohei, to Asahi Kasei Kogyo Kabushiki Kaisha. Catalytic process for preparing poly-β-alanine. 3,499,874, Cl. 260-078.
Takeno, Shozo: *See—*
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Takenoshita, Mitsuaki: *See—*
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Tanigawa, Shizuhiko, Shimizu, Toshio, Ieki, Mitsuru, and Higashida, Yutaka, to Matsushita Electric Industrial Co., Ltd. Magnetic transducing apparatus having transducer- engaging drive capstan with elastic tire. 3,499,998, Cl. 179-100.2
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Tashian, Melcon. Combined radio-typewriter. 3,500,210, Cl. 325-310.
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Tavares, Carlos J., to Marine Space Enclosures, Inc. Method of making partially submerged structures. 3,499,292, Cl. 061-046.
Taylor, Stanley, to Electric & Musical Industries Limited. Lead oxide photoconductive members and method of producing such members. 3,500,099, Cl. 313-065.
Taylor, Thomas S., and Ling, Frederick R., to Abex Corporation. Brakes. 3,499,510, Cl. 188-153.
Technical Appliance Corporation: *See—*
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Teranishi, Katsuya, Ichiryu, Ken, and Takenoshita, Mitsuaki, to Hitachi, Ltd. Driving apparatus for moving stairways. 3,499,340, Cl. 074-229.
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Them, Edward G., to D-O-T, Inc. Thermostat. 3,500,278, Cl. 337-354.
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Thorsheim, Glayds I. Reflective safety band. 3,499,416, Cl. 116-114.
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Tipper, Maynard J. G., and Marietta, James W., Jr., to Rheem Manufacturing Company. Packaging apparatus and method. 3,499,259, Cl. 053-014.
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Tomiyasu, Kiyo, and Almasi, Joseph C., to General Electric Company. Brewster angle oriented end surface pumped multiple disc laser device. 3,500,231, Cl. 331-094.5
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Treadway, Edward W. Cover for clothes washer and dryer. 3,500,044, Cl. 150-052.
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Trigon, Roland G., to CSF-Compagnie Generale de Telegraphie Sans Fil. Pointing precision of an electronic scanning antenna beam. 3,500,412, Cl. 343-100.
Trojan, George, and Brandt, Lawrence. Method of molding and forming buttons and other small disc-like molded articles. 3,499,954, Cl. 264-077.
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Tsuneizumi, Yosoji, and Tsuneizumi, Kiyoko. Cosmetic patch. 3,499,446, Cl. 128-260.
Tucker, Sherman R., Sr. Fishing appliance. 3,499,242, Cl. 043-025.
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Turner, John W. Seal arrangement for lined tubular members. 3,499,666, Cl. 285-055.
Turner, Robert, to United States of America, Navy. Plasma ejection system including breech and muzzle, theta-pinch coils. 3,500,123, Cl. 315-111.
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Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkicki, Kokubo, Eiichi, and Osako, Kyoichi, to Tenshin Manicounting Machine Co. Coin handling apparatus in which coins are selected, counted, stacked and wrapped. 3,499,455, Cl. 133-008.
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Uhlenberg, Roy, to Varian Associates. Electrophotographic strip film devices with means for holding the film away from the photoconductor during film transport. 3,499,709, Cl. 355-003.
Ullrich, Georg, and Gaggstatter, Roland, to Hellige, Fritz, & Co., G.m.b.H. Device for measuring and/or recording intracardiac pressure and sounds. 3,499,434, Cl. 128-002.05
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Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O. G. 687.

Borden, Douglas G., J. L. R. Williams, and T. M. Laakso. Light-sensitive polymers. 872,003, 3–10–70, Cl. 96—115.

Caldwell, John R.: *See*—
McCall, Marvin A., and Caldwell. 872,001.

Ford Motor Co.: *See*—
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Laakso, Thomas M.: *See*—
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Long, Douglas C., to Ford Motor Co. Printed circuit test patch and method of nondestructive testing of the printed circuit material. 872,002, 3–10–70, Cl. 73—102.

McCall, Marvin A., and J. R. Caldwell. 4-tertiary butyl-1, 3-cyclohexanebis(methylamine). 872,001, 3–10–70, Cl. 260—563.

Verhow, Ronald, and E. B. Wyand. Photographic coating compositions containing mercapto compounds. 872,004, 3–10–70, Cl. 96—67.

Williams, Jack L. R.: *See*—
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LIST OF REISSUE PATENTEES

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Beecham Group Ltd.: *See*—
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3,500,219	3,500,174	55 : Re.26,816	3,499,320	3,499,458	3,499,658
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53 : 3,499,205	3,499,775	3,499,286	3,499,414	3,499,556	3,500,409
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Design Patents

6 : 216,773	8 : 216,776	19 : 216,851	27 : 216,793	36 : 216,834	42 : 216,837
216,800	216,823	216,862	216,797	216,838	46 : 216,784
216,803	9 : 216,816	24 : 216,806	216,802	216,860	47 : 216,820
216,821	216,853	216,807	216,824	37 : 216,799	48 : 216,830
216,827	216,854	216,808	216,829	216,809	49 : 216,772
216,833	12 : 216,766	25 : 216,794	33 : 216,774	39 : 216,818	216,814
216,835	216,767	216,812	216,775	216,819	51 : 216,801
216,836	216,768	216,813	36 : 216,777	216,852	53 : 216,788
216,843	216,769	26 : 216,782	216,778	216,857	216,815
216,848	216,770	216,783	216,796	216,858	55 : 216,825
216,849	216,771	216,790	216,805	40 : 216,822	216,826
216,850	17 : 216,842	216,791	216,810	42 : 216,786	216,839
216,855	18 : 216,795	216,792	216,811	216,789	216,846
216,856	216,832	216,841	216,828	216,804	56 : 216,845
216,861	19 : 216,787				

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

March 10, 1970 Volume 872 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 195,691 (ELECTROLUX), Electrolux Corporation, Electrically driven vacuum cleaners; **Reg. No. 266,455**, same, Consolidated Foods Corporation, Electrically driven household appliances comprising floor polishers and parts therefor; **Reg. No. 271,565** ("ELECTRO LUX" ETC. AND DESIGN), Electrolux Corporation, Electrical floor polishers and vacuum cleaners and parts therefor; **Reg. No. 284,377** (ELECTROLUX), same, Electrically operated portable vacuum cleaners and attachments therefor for blowing, filtering, and cleaning, and parts thereof; **Reg. No. 284,378** (ELECTRO LUX), same; **Reg. No. 284,977**, same, Electrically driven floor polishers and parts thereof; **Reg. No. 356,561** (ELECTROLUX AND DESIGN), same, Electric vacuum cleaners and accessories; **Reg. No. 426,617** (ELECTRO-LUX), same, Electric motors, electric converters, electric controllers therefor, and parts thereof; **Reg. No. 531,031** (ELECTROLUX), same, Non-electric floor polishers and buffers, and parts thereof, including brush and buffing elements; **Reg. No. 531,833**, same, Electric cord reels, and parts thereof; **Reg. No. 545,686**, same, Air filters for use in vacuum cleaners; **Reg. No. 557,026** (ELECTRO-LUX AND DESIGN), same, Service, maintenance and repair of vacuum cleaners and floor polishers, and accessories therefor, and for the installation of repair parts for said vacuum cleaners and floor polishers, and accessories therefor; **Reg. No. 562,427** (ELECTROLUX), same; **Reg. No. 686,520**, same, Floor waxes and furniture polish; **Reg. No. 738,077**, same, Insecticides; **Reg. No. 801,132**, same, Vacuum cleaner dust bags; **Reg. No. 801,748**, same, Toy coin banks; **Reg. No. 855,560**, same, Vacuum cleaner hose, filed Nov. 21, 1969, D.C., S.D.N.Y., Doc. 69–5157, *Consolidated Foods Corp.* v. *Aktiebolaget Electrolux*.

Reg. No. 266,455. (See Reg. No. 195,691.)
Reg. No. 271,565. (See Reg. No. 195,691.)
Reg. No. 284,377. (See Reg. No. 195,691.)
Reg. No. 284,378. (See Reg. No. 195,691.)
Reg. No. 284,977. (See Reg. No. 195,691.)
Reg. No. 356,561. (See Reg. No. 195,691.)
Reg. No. 426,617. (See Reg. No. 195,691.)
Reg. No. 531,031. (See Reg. No. 195,691.)
Reg. No. 531,833. (See Reg. No. 195,691.)
Reg. No. 545,686. (See Reg. No. 195,691.)
Reg. No. 557,026. (See Reg. No. 195,691.)
Reg. No. 562,427. (See Reg. No. 195,691.)
Reg. No. 686,520. (See Reg. No. 195,691.)
Reg. No. 738,077. (See Reg. No. 195,691.)
Reg. No. 801,132. (See Reg. No. 195,691.)
Reg. No. 801,748. (See Reg. No. 195,691.)
Reg. No. 855,560. (See Reg. No. 195,691.)

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]---------- 16,963
Date of oldest new application---------- January 28, 1969
Date of oldest amended application (filing date)---------- September 8, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-22-69	9-8-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-25-69	10-20-66
(III) C. R. FOWLER, Classes 19, 21, 22, 26, 31, 34, 35, 36	6-26-69	2-17-67
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1-28-69	10-24-66
Renewals (All Classes)	12-2-69	----------
Sec. 12(c) Publications (All Classes)	12-10-69	----------

Applications filed during the month of January 1970—2,633

Registrations Issued ----------374—No. 887,314 to No. 887,687
Renewals Issued ----------130

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $30.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 265,188. Fujiya Denki Kabushiki Kaisha, Ohta-ku, Tokyo, Japan. Filed Feb. 21, 1967.

FUJIYA

Owner of U.S. Reg. No. 740,257.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Radio-Phonographs, Portable Electric Phonographs With Transistor Radio, Pocket Transistor Radios, and Small Electric Motors (Int. Cls. 7 and 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

First use Oct. 12, 1957; in commerce May 28, 1958.

SN 273,336. Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany. Filed June 8, 1967.

Rosenthal

studio line

The term "Line" is disclaimed apart from the mark as shown.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Lighters, Ashtrays, Cigarette Boxes, and Smokers' Kits Consisting of the Foregoing (Int. Cl. 34).
First use 1959.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Table Lamps (Int. Cl. 11).
First use 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Flatware (Int. Cl. 8).
First use 1961.

Class 28—Jewelry and Precious-Metal Ware

For Sterling Silver and Silver Plate Flatware (Int. Cl. 8).
First use 1961.

Class 30—Crockery, Earthenware, and Porcelain

For Chinaware and Ceramic Ware—Namely, Dinnerware, Vases and Bowls (Int. Cl. 21).
First use 1959.

Class 32—Furniture and Upholstery

For Tables, Including Nesting Tables, Side Tables and Mirrors (Int. Cl. 20).
First use 1962.

Class 33—Glassware

For Glassware—Namely, Table Glassware, Glass Stemware, Vases and Bowls (Int. Cl. 21).
First use 1960.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candleholders and Combination Grill Tables (Int. Cls. 11 and 21).
First use 1959.

Class 50—Merchandise Not Otherwise Classified

For Figurines and Wall Plaques (Int. Cl. 20).

SN 276,496. Winston Manufacturing Corporation, Bellaire, Tex. Filed July 21, 1967.



Owner of Reg. No. 810,354.

Class 12—Construction Materials

For Prefabricated Sheet Metal Buildings and Housings for Storage and Protection of Fire-Fighting Equipment, Instruments, Analyzers, Meters, and the Like (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pipe and pump Screens and Strainers, Pipe Flanges and Blinds; and Funnels (Int. Cls. 6 and 21).

Class 31—Filters and Refrigerators

For Gas, Steam, and Air Purification Separators (Int. Cl. 11).

First use July 6, 1967; Dec. 17, 1968, as to the mounted knight and design.

SN 278,505. H. G. Lettner & Söhne, Graz, Steiermark, Austria. Filed Aug. 17, 1967.



The portrait of the man on the drawing does not depict any particular individual, but is a simulation of a painting from the 17th Century. Owner of Austrian Reg. No. 57,662, dated July 19, 1966.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Toilet Water, After Shave Lotion; Preparations for Dental Care—Namely, Toothpaste and Mouth Wash; Preparations for Hair Care—Namely, Hair Pomade, Hair Cream, Permanent Wave Preparations, Hair Coloring Preparations, Hair Bleaching Preparations, Preparations for Degreasing Hair, and Hair Tonic (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap and Hair Shampoo (Int. Cl. 3).

SN 286,864. McSorley's, Inc., Pittsburgh, Pa. Filed Dec. 14, 1967.

MCSORLEY'S

Class 46—Foods and Ingredients of Foods

For Prepared Packaged Foods—Namely, Pies, Cakes, Pastries, Cookies, Salad Dressings, Frozen Dessert Unbaked Pies; Boil-in-Bag Entrees—Namely, Goulash, Spaghetti and Sauce, Spaghetti Sauce, and Chicken a la King (Int. Cl. 30).
First use September 1967.

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).
First use 1939.

SN 288,488. Apache Flooring Company, Scottsdale, Ariz. Filed Jan. 10, 1968.

Apache



Class 12—Construction Materials

For Asphalt, Ceramic, Cement, Asbestos, and Rubber Tiles (Int. Cl. 19).

Class 20—Linoleum and Oiled Cloth

For Vinyl and Plastic Tiles (Int. Cl. 19).

First use Mar. 18, 1962.

SN 290,497. Itoka Products Co., Ltd., Minato-ku, Tokyo, Japan. Filed Feb. 7, 1968.

PALACE

Owner of Japanese Reg. Nos. 625,150 and 657,269, dated Sept. 23, 1963, and Nov. 2, 1964, respectively.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Televisions, Amplifiers, Connectors, Dry Cell Batteries, and Incandescent Lamps (Int. Cls. 9 and 11).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

SN 299,227. Gemco-Ware, Inc., Freeport, N.Y. Filed May 28, 1968.

GEMCO

Owner of Reg. Nos. 630,226, 739,978, and 741,771.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand-Operated Food Choppers (Int. Cl. 8).

Class 33—Glassware

For Servers, Having Metal or Plastic Caps and Glass Receptacles, for Condiments, Syrup, Cream, Sugar, Oil, Vinegar, Cheese, and for Horseradish (Int. Cl. 21).

First use Aug. 1, 1954.

SN 300,267. Desert Palace, Inc., Las Vegas, Nev. Filed June 12, 1968.

I, CAESAR

Class 100—Miscellaneous

For Hotel and Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Night Club Entertainment Services, Featuring Music, Dancing and Comedy, and Casino Services (Int. Cl. 41).

First use on or about Aug. 15, 1966.
Subj. to Intf. with SN 298,105.

SN 300,269. Desert Palace, Inc., Las Vegas, Nev. Filed June 12, 1968.

CAESARS PALACE LAS VEGAS-NEVADA

Applicant claims the exclusive right to the use of the words "Las Vegas, Nevada" as a part of its mark, but not otherwise.

Class 100—Miscellaneous

For Hotel and Restaurant Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Night Club Entertainment Services, Featuring Music, Dancing and Comedy, and Casino Services (Int. Cl. 41).

First use on or about Aug. 5, 1966.
Subj. to Intf. with SN 298,105.

SN 307,608. Boron Oil Company, Cleveland, Ohio. Filed Sept. 18, 1968.

STOP 50

The word "Stop" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 828,897, 828,898, and 854,864.

Class 100—Miscellaneous

For Restaurant and Lodging Services, Primarily for the Trucking Industry (Int. Cl. 42).

Class 103—Construction and Repair

For Automotive Repair and Fuel Services, Primarily for the Trucking Industry (Int. Cl. 37).

First use Dec. 1, 1967.

SN 312,944. Burwood Products Company, Chicago, Ill. Filed Nov. 25, 1968.

ARABESQUE

Owner of Reg. Nos. 665,728, 688,764, and others.

Class 26—Measuring and Scientific Appliances

For Barometers, Thermometers, and Hygrometers (Int. Cl. 9).
First use prior to Jan. 13, 1968.

Class 32—Furniture and Upholstery

For Console Tables and Room Dividers (Int. Cl. 20).
First use prior to October 1955.

Class 50—Merchandise Not Otherwise Classified

For Wall Plaques (Int. Cl. 20).
First use prior to October 1955.

SN 314,287. Richardson-Merrell Inc., New York, N.Y. Filed Dec. 12, 1968.

CLEARASIL

Owner of Reg. Nos. 593,778 and 620,540.

Class 18—Medicines and Pharmaceutical Preparations

For Therapeutic Skin Cleanser and Medicated Skin Preparations and Medicated Skin Cream (Int. Cl. 5).
First use Feb. 10, 1950.

Class 52—Detergents and Soaps

For Medicated (Int. Cl. 3).
First use Aug. 18, 1952.

SN 315,696. Cooperheat, Southport, England. Filed Dec. 2, 1968.

COOPERHEAT

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Heating Elements (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Heaters, Electric Furnaces, Thermally Insulated Electric Heaters Known as Muffles, and Parts Thereof (Int. Cl. 11).

First use January 1961.

SN 316,269. Falcon Lock Co., South Gate, Calif. Filed Jan. 10, 1969.

FALCON

Owner of Reg. No. 727,225.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Installation Tools for Locks and House Numbers (Int. Cl. 8).

Class 25—Locks and Safes

For Door Locks, Cabinet Locks, Padlocks, and Escutcheons for Locks (Int. Cl. 6).

First use Nov. 16, 1968.

SN 317,271. Bernard, Inc., Southfield, Mich. Filed Jan. 23, 1969.



Class 40—Fancy Goods, Furnishings, and Notions

For Wigs, Wiglets, Falls, Cascades, and Associated Hairpiece Goods (Int. Cl. 26).
First use Dec. 4, 1967.

Class 100—Miscellaneous

For Rendering Beauty Salon Services (Int. Cl. 42).
First use Oct. 9, 1966.

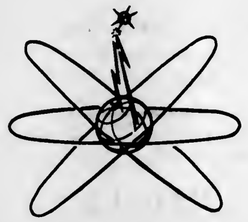
Class 101—Advertising and Business

For Establishment and Operation (Management) of Wig Outlets Which Merchandise Hairpieces, Wigs, Wiglets, Falls, Cascades, and Associated Hairpiece Goods and in the Establishment and Operation (Management) of Beauty Salons (Int. Cl. 35).
First use Oct. 9, 1966.

Class 102—Insurance and Financial

For Rendering Financing Services to Licensed Users of the Mark Engaged in the Sale and Servicing of Such Goods and Services (Int. Cl. 36).
First use Oct. 9, 1966.

SN 317,541. Facsimile Transmission Network, Inc., Santa Barbara, Calif. Filed Jan. 27, 1969.



Class 101—Advertising and Business

For Assisting in the Establishment and Operation of Facsimile Transmission Systems for Others (Int. Cl. 35).
First use Nov. 13, 1968.

Class 104—Communication

For Facsimile Transmission Services (Int. Cl. 38).
First use Jan. 15, 1969.

SN 317,542. Facsimile Transmission Network, Inc., Santa Barbara, Calif. Filed Jan. 27, 1969.

FTN

Class 101—Advertising and Business

For Assisting in the Establishment and Operation of Facsimile Transmission Systems for Others (Int. Cl. 35).
First use Nov. 13, 1968.

Class 104—Communication

For Facsimile Transmission Services (Int. Cl. 38).
First use Jan. 15, 1969.

SN 321,102. Cobe Laboratories, Inc., Denver, Colo. Filed Mar. 10, 1969.

Owner of Reg. No. 797,319.

Class 18—Medicines and Pharmaceutical Preparations

For Dialysis Concentrate for Use in Artificial Kidney Machine (Int. Cl. 5).
First use Dec. 23, 1968.

Class 26—Measuring and Scientific Appliances

For Artificial Kidney Machine Accessory Units for Mixing and Proportioning Water and Dialysis Concentrate and Monitoring Blood Pressure, Dialyzer Pressure Test Units (Int. Cl. 10).
First use Oct. 21, 1968.

Class 44—Dental, Medical, and Surgical Appliances

For Artificial Kidney Machine and Accessory Equipment (Int. Cl. 10).
First use June 1, 1964.

SN 323,124. Pilgrim Industries, Inc., New York, N.Y. Filed Mar. 28, 1969.

DIA-STAR

Class 39—Clothing

For Men's, Ladies' and Children's Beachwear, Headwear, Rainwear, Swimwear, Ski Clothes, Sleepwear, Underwear, Coats, Scarves, Gloves, Sneakers and Shoes; Ladies' and Children's Foundation Garments, Dresses, Hosiery, Slacks and Skirts; Men's and Children's Neckwear, Pants, Suits, Shirts and Shorts (Int. Cl. 25).

Class 40—Fancy Goods, Furnishings, and Notions

For Appliques (Int. Cl. 26).

First use Feb. 11, 1969.

SN 327,805. The Villager Restaurants, Inc., Omaha, Nebr. Filed May 21, 1969.

THE VILLAGER

Class 46—Foods and Ingredients of Foods

For Salad Oil, Salad Dressing; and Prepared Foods—Namely, Hamburgers, Cheeseburgers, Steak Sandwiches, Pork Tenderloin Sandwiches, Filet of Fish Sandwiches, Onion Rings, French Fries, Roast Beef Sandwiches, Corned Beef Sandwiches, Baked Ham Sandwiches, Rueben Sandwiches, Fish Sandwiches, Turnovers, Shrimp Dinners, and Chicken Dinners (Int. Cl. 29).

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).
First use June 2, 1964.

SN 331,139. American Map Company, Inc., New York, N.Y. Filed June 27, 1969.

VISILINE

Owner of Reg. No. 624,050.

Class 26—Measuring and Scientific Appliances

For Map Viewers—Namely, Magnifying Glasses; and Map Measurers—Namely, Gauges for Tracking Map Surfaces (Int. Cl. 9).
First use February 1958.

Class 37—Paper and Stationery

For Forms for Making Graphs (Int. Cl. 16).
First use March 1965.

Class 38—Prints and Publications

For Maps, Charts, and Map and Chart Transparencies for Projection (Int. Cl. 16).
First use January 1964.

Class 50—Merchandise Not Otherwise Classified

For Bulletin Boards and Chalk Boards (Int. Cl. 20).
First use January 1966.

SN 337,129. W. R. Grace & Co., Fords, N.J. Filed Sept. 5, 1969.

emilym.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Ladies' Handbags (Int. Cl. 18).

Class 26—Measuring and Scientific Appliances

For Sunglasses (Int. Cl. 9).

Class 28—Jewelry and Precious-Metal Ware

For Costume Jewelry of Semi-Precious Metals and Materials (Int. Cl. 14).

Class 39—Clothing

For Articles of Wearing Apparel, Particularly for Women and Young Women—Namely, Sweaters, Jackets, Skirts, Walk Shorts, Slacks, Blouses, Shirts, Shells, Suits (Skirt and Pants), Coats and Raincoats, Dresses, Jeans, Bathing Suits, Beach Robes and Coats, Lingerie, Hats, Head Scarves, and Hose (Int. Cl. 25).

First use May 21, 1969.

SN 337,394. Timex Corporation, Waterbury, Conn. Filed Sept. 9, 1969.

QUARTRON

Class 27—Horological Instruments

For Watches and Parts Thereof (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Wristbands and Bracelets for Watches Made Wholly or in Part or Plated With Precious Metals (Int. Cl. 14).

First use Sept. 3, 1969.

SN 339,953. United States Envelope Company, Springfield, Mass. Filed Oct. 7, 1969.

USE

Owner of Reg. Nos. 104,402, 838,588 and others.

Class 2—Receptacles

For Merchandise Envelopes, Drinking Cups, and Bags Made of Paper and Also of Transparent Film or Sheet Material (Int. Cls. 16 and 21).

Class 37—Paper and Stationery

For Correspondence and Mailing Envelopes, Writing Paper, Writing Tablets, Notebooks, and Packaged Filler and Typewriter Paper (Int. Cl. 16).

First use Jan. 1, 1899.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 314,001. Utah Supreme, Sandy, Utah. Filed Dec. 9, 1968.

UTAH SUPREME

For Mink Fur Pelts (Int. Cl. 18).
First use January 1963.

Class 2—Receptacles

SN 329,225. GTI Corporation, Tonawanda, N.Y. Filed June 5, 1969.

CLOVER "PAC"

The term "Pac" is disclaimed apart from the mark as shown.

For Packing Material—Namely, Formed Foamed Dividers (Int. Cl. 17).

First use Feb. 7, 1969.

SN 331,072. Sears, Roebuck and Co., Chicago, Ill. Filed June 26, 1969.

PERMANEX

For Refuse Containers (Int. Cl. 21).
First use in or about November 1968.

SN 332,085. Container Corporation of America, Chicago, Ill. Filed July 9, 1969.

DELCON

For Plastic Containers Such as Carboys and Drums, With and Without Overpacks (Int. Cl. 20).
First use on or before July 1, 1967.

SN 332,635. Tower Packaging Company, Wheeling, Ill. Filed July 15, 1969.

PLASTI-PEEL

For Plastic Pouches (Int. Cl. 20).
First use May 6, 1969.

SN 338,091. Poly-Genic, Inc., New York, N.Y. Filed Sept. 17, 1969.

POLY-CLEAN

For Plastic Film Garbage Bags (Int. Cl. 21).
First use Sept. 8, 1969.

SN 338,092. Poly-Genic, Inc., New York, N.Y. Filed Sept. 17, 1969.

POLY-GENIC

For Plastic Film Garbage Bags (Int. Cl. 21).
First use Sept. 5, 1969.

SN 338,093. Poly-Genic, Inc., New York, N.Y. Filed Sept. 17, 1969.

POLY-PURE

For Plastic Film Garbage Bags (Int. Cl. 21).
First use Sept. 8, 1969.

SN 339,279. Percy Harms Corporation, Skokie, Ill. Filed Sept. 30, 1969.

"ECONO-MISER"

For Extension Spout for Aerosol Containers (Int. Cl. 21).
First use as early as Jan. 6, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 311,033. The Greyhound Corporation, Chicago, Ill. Filed Oct. 31, 1968.

GREYHOUND

Owner of Reg. Nos. 541,197, 839,755, and others.
For Luggage—Namely, Tote Bags and Utility Bags (Int. Cl. 18).
First use in or about June 1959.

SN 327,396. Mayfair Plastics, Inc., Birmingham, Mich. Filed May 15, 1969.

SAF-T-SHANK

For Halter Lead Ropes (Int. Cl. 18).
First use Mar. 31, 1969.

SN 327,635. Lark Luggage Corp., New York, N.Y. Filed May 19, 1969.

THE TALISMAN

For Luggage (Int. Cl. 18).
First use Apr. 13, 1969.

SN 328,851. Herz Specialty Products, Inc., Long Island City, N.Y. Filed June 2, 1969.

LOK.R.PAK

For Carrying Bag for Toilet Articles and Small Items of Personal Wear (Int. Cl. 18).
First use May 16, 1969.

SN 329,275. Sears, Roebuck and Co., Chicago, Ill. Filed June 5, 1969.

FASHIONLITE

For Luggage (Int. Cl. 18).
First use on or about Nov. 19, 1968.

SN 329,514. J. Rudolph, Inc., New York, N.Y. Filed June 9, 1969.

Swingler

For Ladies' Pocketbooks and Handbags (Int. Cl. 18).
First use Apr. 11, 1969.

SN 329,603. Buxton, Incorporated, Agawam, Mass. Filed June 10, 1969.

SWIVELER

For Ladies' Billfolds, Purses and Pocketbooks (Int. Cl. 18).
First use May 5, 1969.

SN 330,281. Hartmann Luggage Company, Lebanon, Tenn. Filed June 17, 1969.

COUTURE

For Hand Luggage—Namely, Suit Cases (Int. Cl. 18).
First use Apr. 10, 1969.

Class 4—Abrasives and Polishing Materials

SN 313,274. Dawn Products Company, Englewood, Colo. Filed Nov. 29, 1968.

TEND

For Plastic Cleaning and Polishing Materials—Namely, Combination Cleaning, Glazing, Reconditioning, Anti-Static, and Polishing Compositions, Buffing Compounds, Buffer Pads, and Polishing Cloths for Plastic Materials (Int. Cls. 3 and 21).
First use Sept. 30, 1968.

SN 329,525. Standard Oil Company of California, San Francisco, Calif. Filed June 9, 1969.

Chevron



The drawing is lined for the colors red and blue, and applicant claims the colors red, white and blue. Owner of Reg. Nos. 656,274, 656,650, and others.
For Self-polishing Floor Wax (Int. Cl. 3).
First use June 4, 1969.

SN 332,672. Sterling Drug Inc., New York, N.Y. Filed July 16, 1969.

PRISM

For Floor Finish in the Nature of a Wax (Int. Cl. 3).
First use Aug. 14, 1968.

Class 5—Adhesives

SN 321,709. Paul F. Werler, d.b.a. Chemstar Products Company, Minneapolis, Minn. Filed Mar. 13, 1969.

CHARSTAR

For Binder for Manufacture of Briquet Products (Int. Cl. 1).
First use May 20, 1965.

SN 321,711. Paul F. Werler, d.b.a. Chemstar Products Company, Minneapolis, Minn. Filed Mar. 13, 1969.

FIBERSTAR

For Adhesive Binder Utilized in the Manufacture of Building Materials and the Manufacture of Paper To Bond Together the Fibers Thereof (Int. Cl. 1).
First use Aug. 2, 1965.

SN 321,712. Paul F. Werler, d.b.a. Chemstar Products Company, Minneapolis, Minn. Filed Mar. 13, 1969.

CORSTAR

For Cereal Binder Used in the Foundry Industry (Int. Cl. 1).
First use Dec. 22, 1965.

SN 328,524. Atlantic Gummed Paper Corporation, Brooklyn, N.Y. Filed May 28, 1969.

A-3

For Reinforced Sealing Tapes (Int. Cl. 17).
First use February 1959.

SN 328,525. Atlantic Gummed Paper Corporation, Brooklyn, N.Y. Filed May 28, 1969.

NA-3

For Reinforced Sealing Tapes (Int. Cl. 17).
First use February 1959.

SN 329,001. The Okonite Company, Passaic, N.J. Filed June 3, 1969.

PANTHER

Owner of Reg. No. 511,584.
For Friction Tapes, Plastic Tapes, and Rubber Adhesive Tapes (Int. Cl. 17).
First use December 1932.

Class 6—Chemicals and Chemical Compositions

SN 290,116. Ventron Corporation, Beverly, Mass. Filed Feb. 1, 1968.

VENTROMERS

For Metallic Compounds Used as Adhesion Promoters on Anionic Substrates, Such as Glass, Cellulose, Leather, and Plastics (Int. Cl. 1).
First use Oct. 31, 1967.

SN 294,106. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Mar. 25, 1968.

REDEEM

For Ethylene Glycol Phenyl Ether Composition Especially Suitable as an Additive for Alkaline Paint Stripper (Int. Cl. 1).
First use July 12, 1967.

SN 311,812. Atlantic Powdered Metals, Inc., New York, N.Y. Filed Nov. 12, 1968.

ETERNAGOLD

For Coated Metallic Flake Pigments Used as a Colorant for Plastics, Paints, and the Like (Int. Cl. 2).
First use Sept. 17, 1968.

SN 312,338. Sun Chemical Corporation, New York, N.Y. Filed Nov. 15, 1968.

AQUAKEM

For Chemicals To Be Used in the Manufacture of Printing Inks (Int. Cl. 1).
First use Sept. 18, 1968.

SN 324,334. Denki Kagaku Kogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 14, 1969.

DENKA

For Polychloroprene and Polyvinyl Alcohol (Int. Cl. 1).
First use Feb. 1, 1962; in commerce May 1, 1962.

SN 326,369. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 5, 1969.

RAZINE

Owner of Reg. Nos. 682,365, 719,833, and others.
For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use Apr. 11, 1969.

SN 326,869. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 9, 1969.

CARATOP

Owner of Reg. Nos. 719,834, 807,307, and others.
For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use Apr. 25, 1969.

SN 326,870. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 9, 1969.

AVIROSAN

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use Apr. 25, 1969.

SN 326,871. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 9, 1969.

IRGARESERVE

Owner of Reg. Nos. 165,426, 864,440, and others.
For Chemical Preparation Used as a Fixative for Dyes (Int. Cl. 1).
First use Mar. 14, 1966.

SN 326,872. Geigy Chemical Corporation, Ardsley, N.Y. Filed May 9, 1969.

BLOMACAN

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use Apr. 25, 1969.

SN 326,980. Baxter Laboratories, Inc., Morton Grove, Ill. Filed May 12, 1969.

FERRO-CHEK

For Diagnostic Spectrophotometric Test for Serum Iron and Serum Iron-Binding Capacity for Use in the Laboratory (Int. Cl. 1).
First use Mar. 14, 1969.

SN 327,680. Robinson-Wagner Company, Inc., Mamaroneck, N.Y. Filed May 19, 1969.

LIQUILAN

For Liquid Lanolin (Int. Cl. 4).
First use Apr. 1, 1947.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 339,289. Smith & Wesson Pyrotechnics, Inc., Jefferson, Ohio. Filed Sept. 30, 1969.

PROJECT-A-FLARE

For Signal Flare Equipment—Namely, Projectors, Cartridges, and Containers Therefor (Int. Cl. 13).
First use Aug. 8, 1969.

Class 10—Fertilizers

SN 325,969. The Flintkote Company, White Plains, N.Y. Filed Apr. 30, 1969.

GROVE

For Hydrated Lime for Agricultural Purposes (Int. Cl. 1).
First use July 1, 1875.

SN 326,907. Reiko, Inc., Amarillo, Tex. Filed May 9, 1969.

TEX-ORGANIC

For Fertilizer (Int. Cl. 1).
First use Jan. 31, 1968.

Class 12—Construction Materials

SN 306,008. Witco Chemical Corporation, New York, N.Y. Filed Aug. 26, 1968.

SEMI-PAVE

For Formulated Asphalt Road Surfacing Compositions (Int. Cl. 19).
First use July 1, 1967.

SN 309,707. White Consolidated Industries, Inc., Lakewood, Ohio. Filed Oct. 15, 1968.

"FYER-WARD"

Owner of Reg. No. 504,928.
For Sheet Steel Doors for Use in Building Construction (Int. Cl. 6).
First use January 1936.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 305,093. Monogram Industries, Inc., Los Angeles, Calif. Filed Aug. 14, 1968.

JET-O-MATIC

For Recirculating, Electrically Operated, Portable Toilet Systems for Large Scale Industrial and Public Use (Int. Cl. 11).
First use Jan. 31, 1968.

SN 315,540. Dampp-Chaser Electronics, Inc., Hendersonville, N.C. Filed Jan. 2, 1969.

PIN-PEG

For Pins for Securing Heated Rods in Pianos, Organs, Closets, Cabinets, and the Like, and for Securing Closet Poles (Int. Cl. 6).
First use on or about June 17, 1968.

SN 333,468. Westinghouse Air Brake Company, Pittsburgh, Pa. Filed July 24, 1969.

TASKMASTER

For Pneumatic Directional Control Valves (Int. Cl. 6).
First use Feb. 23, 1968.

Class 14—Metals and Metal Castings and Forgings

SN 303,327. Marketing Corporation of America, Atlanta, Ga. Filed July 22, 1968.

MARCOA

For Aluminum Sheets (Int. Cl. 6).
First use Jan. 8, 1968.

Class 15—Oils and Greases

SN 282,200. Midland Silicones Limited, Reading, England. Filed Oct. 10, 1967.

MS4

Owner of British Reg. Nos. 815,769, dated Jan. 17, 1961; and 838,663, dated Aug. 29, 1962.
For Non-Melting Silicon Grease for Waterproofing, Lubricating, and Insulating Purposes (Int. Cl. 4).

SN 319,259. American Hospital Supply Corporation, Evanston, Ill. Filed Feb. 17, 1969.

BUR DENT

For Lubricating Oil for Dental Handpieces (Int. Cl. 4).
First use in or before December 1960.

SN 326,533. Hudson Oil Co. of Missouri, Inc., Kansas City, Kans. Filed May 6, 1969.

HUDTANE

For Gasoline (Int. Cl. 4).
First use Dec. 8, 1961.

SN 327,860. Columbia Lubricants, Inc., Los Angeles, Calif. Filed May 21, 1969.

MODULE-LUBE

For Lubricating Oils and Greases (Int. Cl. 4).
First use Apr. 10, 1969.

SN 331,064. North American Aerosols, Inc., Wayne, Mich. Filed June 26, 1969.

CAN-DO

For Industrial and Commercial Bulk and Aerosol Lubricant (Int. Cl. 4).
First use June 10, 1969.

SN 332,181. Astro-Matic Lubricare, Inc., Nashville, Tenn. Filed July 7, 1969.

pit stop

The drawing is lined for the colors blue, red, and orange (Int. Cl. 4).
For Motor Oils (Int. Cl. 4).
First use Mar. 5, 1969.

SN 332,928. Eika Wachswerke Fulda Gesellschaft mit beschrankter Haftung, Fulda, Germany. Filed July 18, 1969.

EIKA

Owner of German Reg. No. 848,763, dated June 5, 1967.
For Candles (Int. Cl. 4).
First use June 5, 1967; in commerce June 7, 1967.

SN 334,386. Shell Oil Company, New York, N.Y. Filed Aug. 4, 1969.

ARGINA

For Lubricating Oil (Int. Cl. 4).
First use at least as early as Apr. 1, 1968.

SN 334,387. Shell Oil Company, New York, N.Y. Filed Aug. 4, 1969.

V.S.I.

For Circulating Oil for Lubricating and Hydraulic Use (Int. Cl. 4).
First use at least as early as August 1968.

Class 16—Protective and Decorative Coatings

SN 330,261. Eastern States Paint & Varnish Co., Philadelphia, Pa. Filed June 17, 1969.

EASTCO-TILE

Owner of Reg. No. 511,140.
For Two Component Epoxy Polyester Liquids Which, After Application, Give an Enamel Finish (Int. Cl. 2).
First use on or about Apr. 15, 1968.

SN 332,114. Madison Chemical Division of Chemtrust Industries Corp., Maywood, Ill. Filed July 9, 1969.

TRUCK-TEX

For Protective Coating for Concrete Mixing Trucks (Int. Cl. 2).
First use Feb. 21, 1963.

Class 17—Tobacco Products

SN 326,226. A. Garfinkel, Inc., Washington, D.C. Filed May 2, 1969.

ROYAL LONDON MIXTURE

For Cigarette, Cigar, and Pipe Tobacco (Int. Cl. 34).
First use Aug. 12, 1961.

SN 332,912. T. E. Brooks & Co., Red Lion, Pa. Filed July 18, 1969.

CABARET

For Cigars (Int. Cl. 34).
First use July 11, 1969.

Class 18—Medicines and Pharmaceutical Preparations

SN 295,532. Kali-Chemie Aktiengesellschaft, Hannover, Germany. Filed Apr. 12, 1968.

KALI CHEMIE

No claim is made to the exclusive right to use the word "Chemie," but applicant waives none of its common law rights in the mark as shown or any feature thereof. The word "Chemie" is the German word for "chemistry." Owner of German Reg. No. 685,526, dated Mar. 25, 1954; and U.S. Reg. Nos. 848,460 and 866,735.
For Medicines and Pharmaceutical Preparations (Int. Cl. 5).

SN 304,028. Pennwalt Corporation, Philadelphia, Pa., by merger and change of name from Wallace & Tiernan Inc., East Orange, N.J. Filed July 31, 1968.

ZAROXOLYN

For Diuretic and Anti-Hypertensive Preparations (Int. Cl. 5).
First use Feb. 1, 1968.

SN 306,288. Vanol Chemical Company, Highland Park, Mich. Filed Aug. 29, 1968.

SINOVAN TIMED

The word "Timed" is disclaimed apart from the mark as shown.
For Capsules for Colds, Hay Fever, and Similar Allergic Conditions (Int. Cl. 5).
First use June 9, 1966.

SN 306,307. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

TRICODERM

Owner of Reg. Nos. 531,808, 828,871, and others.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

SN 320,833. Medical Chemicals Corporation, Chicago, Ill. Filed Mar. 5, 1969.

MUCILAX

For Laxatives (Int. Cl. 5).
First use January 1965.

SN 321,512. Lafayette Pharmacal, Inc., Lafayette, Ind. Filed Mar. 12, 1969.

BILEVAC

For Gall Bladder Stimulant (Int. Cl. 5).
First use June 21, 1955.

SN 326,288. Carter-Wallace, Inc., New York, N.Y. Filed May 5, 1969.

WITHDRAW

For Preparation for Use as a Smoking Deterrent (Int. Cl. 5).
First use Apr. 24, 1969.

SN 336,293. Kimberly-Clark Corporation, Neenah, Wis. Filed July 24, 1969.

KOTIQUE

For Lubricant Applied to Vaginal Tampons, To Facilitate Insertion (Int. Cl. 5).
First use July 3, 1969.

SN 337,489. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 10, 1969.

AGRIVAC

For Biological Preparations for Veterinary Use (Int. Cl. 5).
First use Aug. 27, 1969.

SN 337,490. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 10, 1969.

MECADOX

For Chemotherapeutic Agent for Nutritional and Therapeutic Use in Animals (Int. Cl. 5).
First use Aug. 19, 1969.

SN 338,306. Dellen Inc., Omaha, Nebr. Filed Sept. 19, 1969.

DELCINE

For Canine Distemper Vaccine, Canine Distemper-Hepatitis Vaccine, and Canine Distemper-Hepatitis Vaccine and Leptospira Bacterin (Int. Cl. 5).
First use at least as early as November 1965.

SN 338,307. Dellen Inc., Omaha, Nebr. Filed Sept. 19, 1969.

DELVINE

For Bovine Rhinotracheitis Vaccine and Leptospira Pomona Bacterin (Int. Cl. 5).
First use at least as early as August 1967.

SN 338,308. Dellen Inc., Omaha, Nebr. Filed Sept. 19, 1969.

DELBAC

For Canine Distemper Vaccine and Leptospira Bacterin (Int. Cl. 5).
First use at least as early as December 1966.

SN 338,310. Dellen Inc., Omaha, Nebr. Filed Sept. 19, 1969.

HEPCINE

For Canine Hepatitis Vaccine (Int. Cl. 5).
First use at least as early as April 1966.

SN 338,729. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Sept. 24, 1969.

ORNEX

For Sinus Headache Preparation (Int. Cl. 5).
First use Aug. 25, 1969.

SN 339,387. Beecham Inc., Clifton, N.J. Filed Oct. 1, 1969.

PREMIOMYCINA

For Antibiotics for Veterinary Use (Int. Cl. 5).
First use Sept. 10, 1969.

SN 339,388. Beecham Inc., Clifton, N.J. Filed Oct. 1, 1969.

LACTOPEN

For Antibiotics for Veterinary Use (Int. Cl. 5).
First use Sept. 10, 1969.

Class 19—Vehicles

SN 306,481. The Greyhound Corporation, Chicago, Ill. Filed Sept. 3, 1968.

SUPERCRUISER

For Busses (Int. Cl. 12).
First use June 27, 1968.

SN 312,816. The Sierracin Corporation, Sylmar, Calif. Filed Nov. 21, 1968.

SIER

For Transparent Windshields Cut to Size for Vehicles Such as Aircraft, Marine Vessels, Land Vehicles, and Missiles (Int. Cl. 12).
First use Nov. 12, 1968.

SN 314,648. Robert R. McKnight, Jr., d.b.a. Playhouse Camper Manufacturing Co., Stanton, Calif. Filed Dec. 11, 1968.

PLAYHOUSE

For Travel Trailers, House Trailers, Pick Up Truck Campers, and Camper Bodies for Use on Trucks (Int. Cl. 12).
First use July 14, 1966.

SN 315,094. North American Rockwell Corporation, El Segundo, Calif. Filed Dec. 23, 1968.



For Airplanes and Structural Parts Therefor (Int. Cl. 12).
First use Nov. 20, 1968.

SN 324,235. Saline Manufacturing Co., Inc., Essexville, Mich. Filed Apr. 10, 1969.

BATCH-MAN

For Motor Trucks for Transportation of Bricks, Cement Blocks, and Batches of Building Materials for Use in the Erection of Buildings (Int. Cl. 12).
First use Dec. 20, 1968.

SN 325,996. S.p.A. Teodoro Carnielli & C., Vittorio Veneto, Treviso, Italy. Filed Apr. 30, 1969.

MOTO GRAZIELLA

Owner of Italian Reg. No. 224,727, dated Apr. 3, 1968.
For Motorcycles and Motorized Bicycles (Int. Cl. 12).

SN 326,216. Edgewater Corporation, Pittsburgh, Pa. Filed May 2, 1969.

SENTINEL

For Alloy Steel Railway Wheels (Int. Cl. 12).
First use Oct. 8, 1968.

SN 326,670. Mobile Manufacturing Company, Salt Lake City, Utah. Filed May 7, 1969.

Swaymaster

For Sway Control Devices for Trailers (Int. Cl. 12).
First use Mar. 24, 1969.
Subj. to Intf. with SN 332,166.

SN 332,166. Sway Masters, Inc., Phoenix, Ariz. Filed July 9, 1969.

SWAY-MASTER

For Trailer Hitch Stabilizing Devices (Int. Cl. 12).
First use Aug. 23, 1968.
Subj. to Intf. with SN 326,670.

SN 334,103. Lockheed Aircraft Corporation, Burbank, Calif. Filed July 31, 1969.

GALAXY

For Aircraft and Components and Parts Thereof (Int. Cl. 12).
First use at least as early as Mar. 2, 1968.
Subj. to Intf. with SN 318,378.

SN 335,161. Bike-A-Delic, Inc., New York, N.Y. Filed Aug. 13, 1969.

Bike-a-Delic

For Bicycle Wheel Disks (Int. Cl. 12).
First use July 30, 1969.

SN 335,709. Rubbermaid Incorporated, Wooster, Ohio. Filed Aug. 19, 1969.

PATTERNIQUE

For Automotive Mats (Int. Cl. 27).
First use on or about May 23, 1969.

SN 339,337. Mallard Coach Corporation, West Bend, Wis. Filed Sept. 30, 1969.

DRIFT WING

Owner of Reg. No. 800,609.
For Truck Campers (Int. Cl. 12).
First use Aug. 23, 1968.

Class 20—Linoleum and Oiled Cloth

SN 320,195. Van Heugten Western Hemisphere A.G., Lucerne, Switzerland. Filed Feb. 26, 1969.

HEUGATILE

For Carpeting in the Form of Regular Geometric Shapes for Use as Tiles (Int. Cl. 27).
First use Dec. 14, 1949; in commerce September 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 273,109. Railko Limited, Loudwater, High Wycombe, England. Filed June 5, 1967.

RAILKO

Owner of British Reg. Nos. 875,618 and 875,620, dated Feb. 15, 1965; and U.S. Reg. No. 650,923.
For Electrical Insulating Materials, Being Moulded or Shaped by Other Means, in the Form of Sheets, Slabs, Blocks, Rolls, Rods, Shaped Sections and Shaped Pieces, and in the Form of Flocculent Substances, All for Purposes of Electrical Insulation; and Bearings for Electrical Motors (Int. Cl. 7).

SN 281,797. George Koch Sons, Inc., Evansville, Ind. Filed Oct. 4, 1967.

ANODICOTE

For Anodic Hydrocoating Installations for Electrically Depositing an Organic Finish or Coating on Materials From a Waterbased Paint Bath (Int. Cl. 9).
First use during January 1964.

SN 281,908. Moog Inc., East Aurora, N.Y. Filed Oct. 5, 1967.

MOOG

For Servomechanism Components—Namely, Servovalves Which Produce a Fluid Output in Response to a Command Signal, Servoactuators Which Produce a Fluid Powered Displacement in Response to a Command Signal, Hot Gas Control Valves Which Control the Flow of Products of Cobustion in Response to a Command Signal, Servoinjectors Which Control in Response to a Command Signal the Flow of Fluid Injected Into a Rocket Engine for Thrust Vector Control, Servocontrollers Which Provide Electrical Control for Electrohydraulic Actuation Devices, Numerical Control Positioners of the Pneumatic-Hydraulic Type for Association With a Machine Tool for Positioning a Workpiece Relative to a Cutting Tool in Response to Manually Set or Punched Tape Controlled Commands, Servodrives Which Fluid Drives a Rotary Output Shaft in Response to a Command Signal, and Propellant Control Valves Which Control in Response to a Command Signal the Flow of Fluid Propellants Used in Rocket Engines (Int. Cl. 9).
First use April 1951.

SN 293,761. United Industrial Syndicate, Inc., Portland, Maine. Filed Mar. 20, 1968.

CHAPMAN

For Static Electric Eliminators or Neutralizers (Int. Cl. 9).
First use at least as early as Mar. 3, 1905.

SN 306,351. The Craftool Company, Wood-Ridge, N.J. Filed Aug. 30, 1968.

HIPPO-VAC

For Electric Vacuum Cleaning Machines (Int. Cl. 9).
First use May 24, 1968.

SN 310,057. Beckman Instruments, Inc., Fullerton, Calif. Filed Oct. 21, 1968.

CIRCUIT-DECK

For Electrical Switch Apparatus (Int. Cl. 9).
First use Aug. 2, 1968.

SN 312,817. The Singer Company, New York, N.Y. Filed Nov. 21, 1968.

PORCH N PATIO

For Vacuum Cleaners and Repair and Replacement Parts Therefor (Int. Cl. 9).
First use Oct. 3, 1968.

SN 319,258. ACS Industries, Inc., Van Nuys, Calif. Filed Feb. 17, 1969.

DIPSTIK

For Housing for Receiving and Holding Integrated Circuits and for Positioning and Holding Said Circuits in Place for Their Use (Int. Cl. 9).
First use Sept. 10, 1968.

SN 322,069. IMC Magnetics Corp., Westbury, N.Y. Filed Mar. 18, 1969.

CONDOR

For Electric Fans (Int. Cl. 11).
First use Feb. 3, 1969.

SN 322,588. Harco Corporation, Cleveland, Ohio. Filed Mar. 24, 1969.

HARCO

Owner of Reg. Nos. 839,479 and 847,175.
For Cathodic Protection Systems and Components Therefor for Terrestrial and Marine Use—Namely, Metal and Graphite Anodes, Anode Assemblies and Rectifiers (Int. Cl. 9).
First use on or about Feb. 12, 1969.

SN 331,672. MSI Electronics Inc., Woodside, N.Y. Filed July 2, 1969.

SUPER Q

For Semiconductor Diodes (Int. Cl. 9).
First use Aug. 29, 1968.

SN 332,379. Sunmade Electric Corp., New York, N.Y. Filed July 11, 1969.

Sunmade

For Electric Appliances—Namely, Electric Mixers and Electric Can Openers (Int. Cl. 7).
First use Nov. 18, 1968.

SN 332,391. Winpower Manufacturing Co., Newton, Iowa. Filed July 11, 1969.

WINPOWER

For Engine-Driven Generators Sets and Generators (Int. Cl. 7).
First use Feb. 15, 1969.

SN 338,101. Womack Electronics, Inc., Danville, Va. Filed Sept. 17, 1969.

WELSONIC

For Audio Speakers, Audio Amplifiers, Musical Amplifiers, Microphones, Radios, and Audio Tape Players (Int. Cl. 9).
First use July 28, 1969.

Class 22—Games, Toys, and Sporting Goods

SN 330,193. Psychoteaze, Inc., New York, N.Y. Filed June 16, 1969.

PSYCHOTEAZE

For Moveable Block Puzzle (Int. Cl. 28).
First use March 1969.

SN 330,783. James W. Strader, Fort Lauderdale, Fla. Filed June 23, 1969.

DIAMOND RATTLESUB

For Artificial Fishing Lures (Int. Cl. 28).
First use June 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 263,362. The Dominion Road Machinery Co., Limited, Goderich, Ontario, Canada. Filed Jan. 26, 1967.

DRMCO HYDRA-PLANETARY

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 12, 1966; Reg. No. 153,022, dated Sept. 8, 1967. The right to the exclusive use of the word "Hydra-Planetary" is disclaimed apart from the mark. Owner of U.S. Reg. No. 813,398.
For Automotive Transmission Systems (Int. Cl. 12).
First use Sept. 29, 1966; in commerce Sept. 29, 1966.

SN 277,934. Christian B. Rasmussen, Sanborn, Iowa. Filed Aug. 9, 1967.

PICKER UPPER

For Hardware Equipment for Gardening and the Like—Namely, a Stick-Like Device Featuring a Mechanical Gripper at the Lower End Enabling the User To Grasp Litter and Debris Without Bending or Stooping (Int. Cl. 8).
First use Oct. 14, 1966.

SN 279,382. Heinrich Wilhelm Dreyer, Wittlage, Osnabrueck, Germany. Filed Aug. 30, 1967.

DIADEM

Owner of German Reg. No. 671,549, dated June 11, 1953.
For Agricultural Machinery and Implements and Tractors Used in Agriculture (Int. Cls. 7 and 12).
First use 1911; in commerce June 14, 1966.

SN 288,544. Societe Nouvelle de Roulements, Annecy, Haute-Savoie, France. Filed Jan. 10, 1968.

SNR

Priority claimed under Sec. 44(d) on French Reg. No. 729,112, dated July 24, 1967.
For Ball and Roller Bearings, Balls and Rollers of Any Shape for Bearings, Ball and Roller Thrust Bearings, Cams for Any Use; Machines and Machine Tools Used in the Bearings Industry—Namely, Presses, Lathes, Tumbling Barrel Machines, and Grinding Machines (Int. Cl. 7).

SN 297,097. Silk City Textile Machinery Co., Paterson, N.J. Filed May 1, 1968.

SCTM

For Winding Machine—Namely, a Machine for Transferring Cloth and Film From One Roller to Another in Which Each Roller is Motor-Driven (Int. Cl. 7).
First use Jan. 2, 1968.

SN 303,805. Kugelfischer Georg Schafer & Co., Schweinfurt, Germany. Filed July 29, 1968.

CYROL

Priority claimed under Sec. 44(d) on German application filed May 2, 1968; Reg. No. 854,536, dated Feb. 7, 1969. Owner of U.S. Reg. Nos. 759,858, 776,872, and others.
For Antifriction Bearing Assemblies in the Form of Units Ready for Mounting and Including Cylindrical Roller Bearings, Particularly for Vehicles Running on Rails (Int. Cl. 12).

SN 307,860. Palmer Supply Co., d.b.a. Dupar Dynamics Division, Portland, Oreg. Filed Sept. 20, 1968.

DYNA-SET

For Remote Control for Hydraulic Cylinders for Positioning Workpieces (Int. Cl. 7).
First use May 1, 1968.

SN 308,298. Hunter Manufacturing Company, Cleveland, Ohio. Filed Sept. 26, 1968.



For Work and Material Handling and Transferring Equipment—Namely, Loaders, Stackers, Cranes, Rotatable and Movable Grip Mechanism for Use With Stackers, Pallet Trucks, Fork Lift Trucks; Implement Lifts and Three-Point Hitches (Int. Cl. 7).
First use at least as early as May 19, 1968.

SN 308,471. Dazey Products Company, Kansas City, Mo. Filed Sept. 30, 1968.

DAZEY

Owner of Reg. Nos. 147,298, 737,102, and others.
For Electric Can Openers; Electric Knife Sharpeners; Combination Electric Can Openers and Knife Sharpeners; Electric Ice Crushers; Combination Electric Can Openers and Ice Crushers; and Machines for Heat Sealing Plastic Bags (Int. Cl. 7).
First use during July 1965.

SN 308,728. The Warner & Swasey Company, Cleveland, Ohio. Filed Oct. 2, 1968.

STEELCORE

The drawing is lined for the color red, but the color is not an important feature of the mark. Applicant disclaims "Steel Core" apart from the mark as shown, without prejudice to any common law rights.
For Textile Faller Bars for Intersecting Draw Frames (Int. Cl. 7).
First use Apr. 25, 1968.

SN 310,866. Cyclo Index Corporation, Cleveland, Ohio. Filed Oct. 30, 1968.

CYCLO INDEX

For Intermittent Motion Mechanisms Which Produce Alternate Periods of Motion and Rest in Machine Operations (Int. Cl. 7).
First use October, 1968.

SN 314,580. Marvel Industries, Inc., Sturgis, Mich. Filed Dec. 16, 1968.

MARVEL

Owner of Reg. Nos. 519,907 and 545,708.
For Jacks (Int. Cl. 8).
First use on or about Feb. 13, 1968.

SN 322,878. Lear Siegler, Inc., Salem, Ill. Filed Mar. 26, 1969.

PANEL-VAC

For Automobile Body and Frame Repair Equipment—Namely, Portable Panel or Sheet Metal Pulling Devices (Int. Cl. 7).
First use Dec. 8, 1968.

SN 322,880. Lear Siegler, Inc., Salem, Ill. Filed Mar. 26, 1969.

ANCHOR-VAC

For Automobile Body and Frame Repair Equipment—Namely, Portable Floor Hold-Down Devices (Int. Cl. 7).
First use Dec. 8, 1968.

SN 323,091. Deco Tools, Inc., Toledo, Ohio. Filed Mar. 28, 1969.

DECO

For High Pressure Spray Washers for Cleaning Decorative Spray Painting Masks and Automatic Spray Painting Machines for Use in Decorative Spray Painting (Int. Cl. 7).
First use October 1957.

SN 324,940. Sky-Van Limited, Vancouver, British Columbia, Canada. Filed Apr. 18, 1969.

HYDRADRIVER

For Electrically Powered Hydraulic Drive Units for Use in Connection With Hoisting Equipment (Int. Cl. 7).
First use Oct. 10, 1968; in commerce Oct. 10, 1968.

SN 326,597. The John T. Parsons Company, Traverse City, Mich. Filed May 7, 1969.

COMPUTERBILT

For Fixtures of the Meltable Matrix Bed Type, for Holding Metal Workpieces During Machining Operations (Int. Cl. 7).
First use Mar. 28, 1969.

SN 330,312. Union Carbide Corporation, New York, N.Y. Filed June 17, 1969.

UCAR

Owner of Reg. Nos. 856,515, 874,607, and others.
For Machines for Depositing Hard-Facing Alloys on Metal Surfaces (Int. Cl. 7).
First use on or about Nov. 18, 1968.

SN 330,743. Hans Sickinger Co., Pontiac, Mich. Filed June 23, 1969.

MECANO

For Paper Converting Machines (Int. Cl. 7).
First use June 5, 1969.

SN 332,659. Garsite Products, Inc., Deer Park, N.Y. Filed July 16, 1969.

SURGITE

For Hydraulic Surge Suppressors and Hydraulic Accumulators (Int. Cl. 7).
First use Apr. 7, 1969.

Class 26—Measuring and Scientifi Appliances

SN 296,364. Vectograph Corporation of America, San Antonio, Tex. Filed Apr. 23, 1968.

SCOPE AD

For Projectors and Viewing Screens on Which Images Are Projected (Int. Cl. 9).
First use Oct. 6, 1967.

SN 300,014. Spartans Industries, Inc., New York, N.Y. Filed June 7, 1968.

KORVETTE

For Binoculars, Telescopes, Opera Glasses, Movie Projectors, Movie Cameras; and Movie Camera Accessories—Namely, Movie Lights, Movie Editors, Tripods, Gadget Bags, and Compartment Cases (Int. Cls. 9 and 11).
First use June 1, 1966.

SN 305,310. The Challenge Machinery Company, Grand Haven, Mich. Filed Aug. 16, 1968.



Owner of Reg. Nos. 438,846, 718,209, and others.
For Precision Equipment for Layout and Inspection—Namely, Fixed Gages, Dovetailed Straight Edges, Layout Surface Plates, Clamp Edge Layout Plates, Bench Plates, Round Lapping Plates, Bench Blocks, Lapping Plates, Straight Edges, Parallel Straight Edges, Surface Plates, Right Angle Irons, Angle Plates, Solid Parallels, Box Parallels, V-Blocks, Welding Tables, Floor Plates, and Universal Box Angles (Int. Cl. 9).
First use on or about June 1, 1967.

SN 306,464. Delta Design, Inc., La Mesa, Calif. Filed Sept. 3, 1968.

DIGITEMP

For Electronic Temperature Controllers Used to Control Temperatures of an Environmental Chamber To Preset Values by an Electronic Sensor (Int. Cl. 9).
First use Nov. 20, 1967.

SN 308,316. Dynamics Corporation of America, Garden City, N.Y. Filed Sept. 26, 1968.

AUCHEC

For Tape Programmed Automatic Electronic Test Facility for the Semi-Automatic Measurement and Calibration of Electrical and Electro-Mechanical Components and Systems (Int. Cl. 9).
First use on or about Mar. 25, 1968.

SN 309,829. Bell & Howell Company, Chicago, Ill. Filed Oct. 17, 1968.

FILMOSOUND EIGHT

"Eight" is disclaimed apart from the mark. Owner of Reg. No. 517,065.
For Motion Picture Projectors Usable in a Picture and Sound Reproducing System (Int. Cl. 9).
First use as early as July 24, 1968.

SN 312,564. Chronetics, Inc., Mount Vernon, N.Y. Filed Nov. 19, 1968.

C

Owner of Reg. No. 843,604.
For Electronic Laboratory Testing Instruments—Namely, Pulse Generators, Amplifiers, and Counters (Int. Cl. 9).
First use May 1965.

SN 312,592. Chronetics, Inc., Mount Vernon, N.Y., assignee of Intercontinental Instruments, Inc., Mount Vernon, N.Y. Filed Nov. 19, 1968.



Owner of Reg. No. 757,291.
For Electronic Laboratory Testing Instruments—Namely, Pulse Generators, Amplifiers, and Counters (Int. Cl. 9).
First use April 1966.

SN 318,765. Data Graphics Corporation, San Antonio, Tex. Filed Feb. 10, 1969.

DATA GRAPHICS

Applicant disclaims the word "Data" apart from the mark as shown.
For Digital Counter and Scaler Apparatus, Digital Data Transfer Systems, and Digital Readout Apparatus (Int. Cl. 9).
First use at least as early as Jan. 13, 1969.

SN 319,645. Spectrex Company, Redwood City, Calif. Filed Feb. 19, 1969.

METALLOSCOPE

For Spectroscopes (Int. Cl. 9).
First use June 24, 1968.

SN 320,067. Link Enterprises, Inc., Hope Hull, Ala. Filed Feb. 25, 1969.



For Sound Recorder and Reproducer Used To Synchronize Sound With Slides or Film Strips (Int. Cl. 9).
First use October 1967.

SN 321,554. U.S. Safety and Engineering Corporation, Torrance, Calif. Filed Mar. 12, 1969.

VULCAN

For Thermostatically Controlled Fire Detection Alarms (Int. Cl. 9).
First use Feb. 12, 1969.

SN 324,594. Industrial Inventions, Inc., Monmouth Junction, N.J. Filed Apr. 15, 1969.

LOGALOG

For Strobed Latching Monitor of Digital and Binary Voltages (Int. Cl. 9).
First use Mar. 10, 1969.

SN 327,867. Dieterich Standard Corporation, New Buffalo, Mich. Filed May 21, 1969.

ELLISON

For Pressure, Vacuum, and Differential Gauges of the Manometer and Diaphragm Type, Gas Analyzers, Steam Calorimeters, Pitot Tubes, Fluid Flow Instruments, Velocity Gauges, Draft Gauges, and Parts and Accessories (Int. Cl. 9).
First use at least as early as 1896.

SN 331,983. Pulse Communications, Inc., Falls Church, Va. Filed July 8, 1969.

DATALOK

For Electronic and Electrical Equipment—Namely, Telemetry Systems for Collecting and Communicating Information and Data, and for Transmitting Control Signals From One Location to Another, Namely, Data Logging Systems, Scanning Equipment, Encoders, Decoders, and Pulse Code Modulators (Int. Cl. 9).
First use at least as early as July 1965.

SN 338,966. Dwyer Instruments, Inc., Michigan City, Ind. Filed Sept. 26, 1969.

MINIMASTER

For Flowmeters (Int. Cl. 9).
First use Sept. 4, 1969.

Class 27—Horological Instruments

SN 300,606. Mite Corporation, New Haven, Conn. Filed June 17, 1968.



Owner of Reg. No. 799,045.
For Time Stamps, Job Recorders, Attendance Recorders, Time Cards and Racks, and Master and Slave Clocks (Int. Cl. 14).
First use April 1966.

SN 333,277. Longines-Wittnauer Watch Co., Inc., New York, N.Y. Filed July 23, 1969.

QUARTZ-CHRON

For Watches and Clocks (Int. Cl. 14).
First use Jan. 5, 1968.

Class 31—Filters and Refrigerators

SN 278,581. The Cuno Engineering Corporation, Meriden, Conn. Filed Aug. 18, 1967.

AQUA-TAP

For Faucet Water Filters (Int. Cl. 11).
First use Feb. 11, 1966.

SN 316,848. Union Carbide Corporation, New York, N.Y. Filed Jan. 16, 1969.

BIOFLEX

For Plastic Cryogenic Containers (Int. Cl. 11).
First use on or about Oct. 8, 1968.

SN 333,952. U.S. Industries, Inc., New York, N.Y. Filed July 30, 1969.

WEBCOR

Owner of Reg. Nos. 574,309, 762,349, and others.
For Refrigerators and Electric Freezers (Int. Cl. 11).
First use Aug. 5, 1968.

Class 32—Furniture and Upholstery

SN 327,293. Nationwide Bedding Corp., New York, N.Y. Filed May 14, 1969.

ORTHO-CARE

For Mattresses (Int. Cl. 20).
First use Apr. 26, 1969.

SN 327,344. American Manufacturing Company, Inc., Landover, Md. Filed May 15, 1969.

SECRET-SLEEPER

For Convertible Sofas (Int. Cl. 20).
First use Jan. 15, 1969.

SN 330,374. Drexel Enterprises, Inc., Drexel, N.C. Filed June 18, 1969.

PLUS ONE

For Bedroom Furniture (Int. Cl. 20).
First use June 2, 1969.

SN 330,978. Wilder Mfg. Co. Inc., Port Jervis, N.Y. Filed June 24, 1969.

Select-a-Slide

For Sliding Shelves, Used in Commercial Bakery Equipment Such as Pan Racks, Cooling Trays, Proof Boxes and Cabinets (Int. Cl. 20).
First use Mar. 1, 1962.

Class 33 — Glassware

SN 299,470. Mississippi Glass Company, St. Louis, Mo. Filed May 31, 1968.

PROTEX

Owner of Reg. No. 518,920.
For Tempered Rolled Glass (Int. Cl. 21).
First use Feb. 22, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 292,477. Flex-Cable Corporation, Cleveland, Ohio. Filed Mar. 5, 1968.

FLEX-LO-X

For Portable Welding Gun Assemblies, Cooling Jackets for Welding Equipment and Parts Thereof (Int. Cl. 9).
First use June 1, 1966.

SN 294,626. C. I. Hayes Inc., Cranston, R.I. Filed Apr. 1, 1968.

VCQ

For Vacuum Heat Treatment Furnaces (Int. Cl. 11).
First use on or about May 19, 1967.
Subj. to Intf. with SN 309,349.

SN 309,349. Alco Standard Corporation, Valley Forge, Pa. Filed Oct. 10, 1968.

VCQ

For Heat Treating Apparatus and Particularly Vacuum Furnaces With Associated Quenching Mechanism (Int. Cl. 11).
First use at least as early as June 29, 1966.
Subj. to Intf. with SN 294,626.

SN 333,953. U.S. Industries, Inc., New York, N.Y. Filed July 30, 1969.

WEBCOR

Owner of Reg. Nos. 547,309, 762,349, and others.
For Electric Ranges and Surface Units (Int. Cl. 11).
First use Aug. 7, 1968.

SN 336,932. Hurricane Fan and Ventilator Co., Miami, Fla. Filed Sept. 3, 1969.

HURRICANE

For Fans, Ventilators, Fan Housings, Shutters and Dampers, Fan Curbs, Fan Bases, Duct Sound Attenuators, and Duct Heaters (Int. Cl. 11).
First use at least as early as 1935.

SN 340,478. International Telephone and Telegraph Corporation, New York, N.Y. Filed Oct. 13, 1969.

THERMO-FLECTOR

For Radiant Heaters (Int. Cl. 11).
First use Sept. 22, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 294,844. Minnesota Rubber Company, Minneapolis, Minn. Filed Apr. 3, 1968.



For Sealing Rings, Gaskets, and Diaphragms (Int. Cl. 17).
First use Sept. 1, 1967.

SN 327,060. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed May 12, 1969.

EASY-TITE

Owner of Reg. No. 224,528.
For Packing for Valves and the Like (Int. Cl. 17).
First use during 1965.

Class 36 — Musical Instruments and Supplies

SN 323,773. ABC Records, Inc., New York, N.Y. Filed Apr. 7, 1969.

BLUESWAY ...IS WHERE IT'S AT!

For Phonograph Records (Int. Cl. 9).
First use Mar. 5, 1969.

SN 332,389. Jon W. Whirry, d.b.a. Jonathan W. Little, Middleton, Wis. Filed July 11, 1969.



For Phonograph Records (Int. Cl. 9).
First use May 13, 1969.

SN 339,812. Peerless Telerad, Inc., New York, N.Y. Filed Oct. 6, 1969.

MTI

For Phonographs (Int. Cl. 9).
First use Mar. 6, 1968.

SN 339,951. Double Sixteen Company, Wheaton, Ill. Filed Oct. 23, 1969.

CANON

Owner of Reg. No. 876,559.
For Magnetic Tape and Tape Equipment—Namely, Magnetic Tape Cassettes, Blank and Pre-Recorded Magnetic Tapes, Magnetic Tape Splicers, Tape Transports, Tape Storage Receptacles, and Components Thereof (Int. Cl. 9).
First use July 9, 1969 on cassettes.

Class 37 — Paper and Stationery

SN 296,327. Robert Koreska, d.b.a. W. Koreska, Vienna, Austria. Filed Apr. 23, 1968.

CARDIOREX

Owner of Austrian Reg. No. 60,401, dated Sept. 28, 1967.
For Hectograph Paper, Indigo Paper, Copying and Hot-Sealing Paper, Recording Papers of All Kinds, and Stencils (Int. Cl. 16).

SN 330,392. Kimberly-Clark Corporation, Neenah, Wis. Filed June 18, 1969.

SPUN-TUFF

Owner of Reg. Nos. 619,085 and 730,117.
For Plastic Printing Paper (Int. Cl. 16).
First use May 26, 1969.

Class 38 — Prints and Publications

SN 277,676. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 7, 1967.



The facial feature which forms a part of the mark does not represent any human being and is merely fanciful.
For Publications, Particularly Comic Magazines (Int. Cl. 16).
First use on or about Mar. 16, 1967; on or about Jan. 29, 1962, in a different form.

SN 277,677. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 7, 1967.



The facial features which form a part of the mark do not represent any human beings and are merely fanciful.
For Publications, Particularly Comic Magazines (Int. Cl. 16).
First use on or about Jan. 17, 1967.

SN 278,014. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 10, 1967.

SUB-MARINER

For Publications, Particularly Comic Magazines and Stories in Illustrated Form (Int. Cl. 16).
First use on or about Aug. 31, 1939.

SN 278,710. Magazine Management Co., Inc., New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, New York, N.Y. Filed Aug. 21, 1967.

MALE

For Magazine Published Periodically (Int. Cl. 16).
First use on or about June 2, 1950.

SN 287,588. Security Van Lines, Inc., Kenner, La. Filed Dec. 26, 1967.

SECURITY COLOR CODE

The drawing is lined for raspberry, yellow, blue, a shade of red, and green, but it is understood that applicant is not limited to these particular contrasting colors. The legend "Color Code" is disclaimed apart from other features shown in the mark.
For Printed Contrastingly Colored Stickers To Be Placed on Furniture and on the Walls of Rooms and Other Areas for Indicating Placement of Furniture by Movers, Correspondingly Colored Ones of Said Stickers Being Applied to Furniture Items and to a Wall of the Respective Destination Areas (Int. Cl. 16).
First use Aug. 23, 1967.

SN 298,762. Kenneth Stremming, d.b.a. Imagenuity, Chicago, Ill. Filed May 21, 1968.

IMAGENUITY

For Looseleaf Bound Books Dealing With Co-Ordination and Holding Pattern Maneuvers Used in Flight Training (Int. Cl. 16).
First use Apr. 28, 1968.

SN 300,181. Elias Felluss, d.b.a. Banter Publishing Company, Island Park, N.Y. Filed June 11, 1968.

NEW YORK Herald Tribune

For Magazine (Int. Cl. 16).
First use Jan. 27, 1968.

SN 308,526. Magazine Management Co., Inc., New York, N.Y., assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y. Filed Sept. 30, 1968.

MOVIE WORLD

For Magazine (Int. Cl. 16).
First use on or about Nov. 1, 1952.

SN 314,498. Mead Johnson & Company, Evansville, Ind. Filed Dec. 16, 1968.

WeatheRx

The word "Weather" is disclaimed apart from the mark as a whole.
For Newsletter (Int. Cl. 16).
First use on or prior to July 30, 1968.

SN 314,918. Robert Russell, Sterling, Va. Filed Dec. 19, 1968.

TV PICTO GAME

Applicant disclaims the use of the words "TV" and "Game" apart from the mark as shown.
For Rebus or Picture Puzzle Published Periodically in Newspapers or Magazines (Int. Cl. 16).
First use Dec. 8, 1968.

SN 317,074. Marketplace Publications, Inc., New Canaan, Conn. Filed Jan. 21, 1969.

The Dentists Market Place

For Magazine for Dentists Comprising Detachable Business Reply Cards (Int. Cl. 16).
First use Mar. 10, 1968.

SN 317,075. Marketplace Publications, Inc., New Canaan, Conn. Filed Jan. 21, 1969.

The Lawyers Market Place

For Magazine for Lawyers Comprising Detachable Business Reply Cards (Int. Cl. 16).
First use Oct. 15, 1968.

SN 317,204. Burt Munk Productions, Inc., Chicago, Ill. Filed Jan. 22, 1969.

THE PRINCIPLES OF PERSUASION

Applicant disclaims the words "The Principles of Persuasion" apart from the mark as shown for purpose of registration only and not in derrogation of its common law rights therein, if any.
For Sales Development and Motivational Program Publications—Namely, Sales Development Handbooks, Lesson Plans, and Narrative Sound Recordings Integrated With the Same (Int. Cl. 16).
First use June 12, 1968.

SN 318,292. The Cleveland Museum of Natural History, Cleveland, Ohio. Filed Feb. 4, 1969.

THE EXPLORER

For Quarterly Magazine Relating to the Natural Sciences (Int. Cl. 16).
First use on or about November 1938.

SN 318,967. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 12, 1969.

the Life Cycle Library

No claim is made to the terminology "Library" apart from the mark as shown.
For Books and Teachers' Guides, Published Periodically, All Concerning Feminine Hygiene (Int. Cl. 16).
First use Jan. 8, 1968.

SN 319,004. The Viking Press, Inc., New York, N.Y. Filed Feb. 12, 1969.

VIKING SEAFARER BOOKS

Applicant disclaims the word "Books" apart from the mark as shown. Owner of Reg. No. 211,649.
For Children's Books (Int. Cl. 16).
First use Nov. 19, 1968.

SN 323,002. McGraw-Hill, Inc., New York, N.Y. Filed Mar. 27, 1969.

WASHINGTON DRUG LETTER

No claim is made to the term "Letter" apart from the mark as shown.
For Weekly Newsletter (Int. Cl. 16).
First use Mar. 10, 1969.

SN 326,363. Eastman Kodak Company, Rochester, N.Y. Filed May 5, 1969.

TELEK

For Industrial Magazine (Int. Cl. 16).
First use Apr. 30, 1969.

SN 330,910. Curriculum Innovations, Inc., Chicago, Ill. Filed June 25, 1969.

SYNOPSIS

For Magazine Published Every Other Week (Int. Cl. 16).
First use Apr. 23, 1969.

SN 332,866. Thomas Publishing Company, New York, N.Y. Filed July 17, 1969.

THOMAS REGISTER

Owner of Reg. Nos. 356,819, 779,932, and others.
For Annual Directory (Int. Cl. 16).
First use 1905.

SN 334,412. Woodmen of the World Life Insurance Society and/or Omaha Woodmen Life Insurance Society, Omaha, Nebr. Filed Aug. 4, 1969.

O.W.L.

For Magazine (Int. Cl. 16).
First use Jan. 1, 1967.

SN 335,830. Addison-Wesley Publishing Company, Inc., Reading, Mass. Filed Aug. 21, 1969.

For Books (Int. Cl. 16).
First use on or before Oct. 5, 1968.

SN 336,602. Replay Publications, Inc., St. Louis, Mo. Filed Aug. 28, 1969.

REPLAY

For Magazine (Int. Cl. 16).
First use June 30, 1969.

SN 338,687. National Audubon Society, Inc., New York, N.Y. Filed Sept. 23, 1969.

AUDUBON

Owner of Reg. No. 769,589.
For Calendars (Int. Cl. 16).
First use Aug. 4, 1969.

SN 338,778. W. R. Grace & Co., New York, N.Y. Filed Sept. 24, 1969.

DIAL-'N-ALBUM

For Photo Album Selector Guide (Int. Cl. 16).
First use June 7, 1969.

SN 338,826. Western Publishing Company, Inc., Racine, Wis. Filed Sept. 24, 1969.

THE GOLDEN MAGAZINE FOR BOYS AND GIRLS

Applicant disclaims its exclusive right in the words "Magazine for Boys and Girls" apart from the mark as shown.
For Children's Magazine Published Periodically (Int. Cl. 16).
First use Jan. 2, 1964.

SN 339,682. Production Systems for Architects & Engineers, Inc., Chicago, Ill. Filed Oct. 3, 1969.

PSAE

For Booklets and Pamphlets (Int. Cl. 16).
First use no later than Sept. 15, 1969.

SN 339,790. Elmcraft, Inc., Chicago, Ill. Filed Oct. 6, 1969.

EC

For Greeting Cards (Int. Cl. 16).
First use Jan. 15, 1961.

Class 39—Clothing

SN 317,207. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Jan. 22, 1969.

TOP HONORS

For Men's Shirts (Int. Cl. 25).
First use Mar. 14, 1968.

SN 317,959. Jayson Shoe Manufacturing Co., Inc., Clayton, Mo. Filed Jan. 30, 1969.

WIGGLE TOES

For Infants' and Children's Shoes (Int. Cl. 25).
First use Dec. 4, 1968.

SN 321,592. Aristoc Limited, Langley Mill, Nottingham, England. Filed Apr. 16, 1969.

Aristoc TOPS

Owner of British Reg. No. 919,580, dated Jan. 11, 1968.
For Women's Stockings (Int. Cl. 25).

SN 321,795. Genesco Inc., Nashville, Tenn. Filed Mar. 17, 1969.

MILER

For Sweatshirts and Sweatpants (Int. Cl. 25).
First use Feb. 17, 1969.

SN 327,047. Partout International Corp., New York, N.Y. Filed May 12, 1969.

Partout

The word "Partout" is the French translation of "Ueberall," the family-name (of Austrian origin) of the president of applicant corporation.
For T Shirts, Sweaters, Pants, Suits, Dresses, Beach-Shifts and Rompers, Shorts, Swimsuits, Scarves, Stoles, and Capes (Int. Cl. 25).
First use July 10, 1961.

SN 330,107. Consolidated Foods Corporation, Chicago, Ill. Filed June 16, 1969.

THE HIGHWICK

For Outer Dress and Sport Shirts (Int. Cl. 25).
First use Jan. 17, 1969.

SN 333,295. Perret-Jaunet S.A., Lyon (Rhone), France. Filed July 23, 1969.

NEW MEN

Priority claimed under Sec. 44(d) on French Reg. No. 755,227, dated Jan. 24, 1969.
For Articles of Clothing—Namely, Coats, Overcoats, Suits, Frocks, Waistcoats, Trousers, Skirts, Blouses, Hats, Scarves, Ties, Gloves, Underwear, Socks, Stockings, Shirts, Bathing Suits, Corsets, Girdles, and Brassieres (Int. Cl. 25).

SN 335,572. Hanes Corporation, Winston-Salem, N.C. Filed Aug. 18, 1969.

L'EGGS

For Ladies' Hosiery and Panty Hose (Int. Cl. 25).
First use Aug. 8, 1969.

SN 337,224. Bogart Neckwear, Ltd., New York, N.Y. Filed Sept. 8, 1969.

DINA

For Neckwear (Int. Cl. 25).
First use Aug. 7, 1969.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 312,634. The U.S. Pillow Corporation, d.b.a. Willikin Creations, New York, N.Y. Filed Nov. 20, 1968.

THE Cuddler

For Multi-Purpose Acrilic Knitted Throws, Wraps, and Blankets (Int. Cl. 24).
First use June 20, 1968.

SN 327,764. Burlington Industries, Inc., Norristown, Pa. Filed May 20, 1969.

WIZARDRY

For Textile Rugs and Carpets (Int. Cl. 27).
First use Nov. 20, 1967.

Class 43—Thread and Yarn

SN 307,750. Orchard Yarn and Thread Company, New York, N.Y. Filed Sept. 19, 1968.



Applicant disclaims the representation of the ball of yarn separate and apart from the mark.
For Yarns (Int. Cl. 23).
First use Aug. 15, 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 299,376. Harry C. Otwell, Fayetteville, Ark. Filed May 29, 1968.

ELECTRONIC ORTHOPTOR

The word "Electronic" is disclaimed apart from use with the mark as shown.
For Apparatus for Treatment of Visual Defects and Anomalies (Int. Cl. 10).
First use on or about Apr. 1, 1962.

SN 312,673. Gulf General Atomic Incorporated, San Diego, Calif. Filed Nov. 20, 1968.

PYROLITE

For Carbon Coated Prosthetic Devices—Namely, Heart Valves and Parts Therefor, Parts for Blood Pumps, Vascular Tubes and Hip Joint Balls (Int. Cl. 10).
First use Aug. 6, 1968.

SN 323,105. The Jaeger Machine Company, Columbus, Ohio. Filed Mar. 28, 1969.

Owner of Reg. No. 765,198.
For Medical Electronic Systems—Namely, Monitoring Devices for Fetal Heart Sound, and for Oscilloscopes, Cardiotachometers, and a Fetoscope and Parts Thereof (Int. Cl. 10).
First use Apr. 2, 1962.

SN 328,728. Faberge, Incorporated, New York, N.Y., by change of name from Rayette-Faberge, Inc., New York, N.Y. Filed May 29, 1969.

CINDERELLA

Owner of Reg. Nos. 73,312, 761,718, and others.
For Electric Hair Rollers (Int. Cl. 9).
First use at least as early as June 1967.

SN 330,625. Picker Electronics, Inc., Longmont, Colo. Filed June 20, 1969.

PORTASCAN

Owner of Reg. Nos. 855,634 and 855,635.
For Medical Ultrasonic Diagnostic Equipment (Int. Cl. 10).
First use Jan. 21, 1964.

SN 331,479. Boulevard Electronics, Inc., Chicago, Ill. Filed July 1, 1969.

COMFORT Stream

Applicant disclaims all rights to the use of the word "Stream."
For Whirlpool Bath Home Appliance for Therapeutic Purposes (Int. Cl. 10).
First use May 19, 1969.

SN 331,558. Wilkinson Dental Manufacturing Company, Incorporated, d.b.a. The Wilkinson Company, Westlake Village, Calif. Filed July 1, 1969.

W

For Precious Metals Used in the Dental Field for Tooth Fillings, Bridges, and Crowns (Int. Cl. 5).
First use on or before Aug. 1, 1963.

SN 332,036. Medical Supply Company, Rockford, Ill. Filed July 8, 1969.

OFFSET

For Bandage Compresses (Int. Cl. 5).
First use May 28, 1969.

SN 332,213. Bio-Medical Systems Inc., Danbury, Conn. Filed July 10, 1969.

X-GRID

For Medical and Surgical Appliances—Namely, Disposable Reference Decals for Radiographic Localization Prior to Biopsy or Incision (Int. Cl. 5).
First use Apr. 22, 1968.

SN 337,748. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 12, 1969.

SMART

For Sanitary Napkins (Int. Cl. 5).
First use Aug. 28, 1969.

SN 337,749. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 12, 1969.

TACT

For Sanitary Napkins (Int. Cl. 5).
First use Aug. 28, 1969.

SN 337,751. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 12, 1969.

TINA

For Sanitary Napkins (Int. Cl. 5).
First use Aug. 28, 1969.

Class 45—Soft Drinks and Carbonated Waters

SN 283,321. The Cotton Club Bottling Company, Cleveland, Ohio. Filed Oct. 25, 1967.

WITH THAT HUG-A-JUG FLAVOR!

The word "Flavor," alone, is disclaimed apart from the mark as shown.
For Carbonated Beverages Sold as Soft Drinks and Syrups and Bottler's Essences Therefor (Int. Cl. 32).
First use Apr. 16, 1965.

SN 286,276. National Bakers Services, Inc., Hollywood, Fla. Filed Dec. 5, 1967.

HOLLYWOOD

Owner of Reg. Nos. 561,621, 620,033, and 817,885.
For Carbonated Dietary Soft Drinks (Int. Cl. 5).
First use Nov. 6, 1967.

SN 296,882. The Squirt Company, Sherman Oaks, Calif. Filed Apr. 29, 1968.

TART SWEET

For Carbonated Soft Drinks and Bases, Concentrates and Extracts for Making the Same (Int. Cl. 32).
First use Sept. 10, 1940.

SN 324,321. Yoo-Hoo Beverage Co., Carlstadt, N.J. Filed Apr. 11, 1969.



The words "High Protein" and "Chocolate Energy Drink" are disclaimed apart from the mark as shown. Owner of Reg. No. 507,891.
For Chocolate Flavored Soft Drink (Int. Cl. 32).
First use Mar. 12, 1969.

SN 332,593. Pet Incorporated, St. Louis, Mo. Filed July 15, 1969.



Owner of Reg. Nos. 335,786, 728,611, and others.
For Fruit Flavored Drinks Containing Water (Int. Cl. 32).
First use at least as early as May 1, 1968.

Class 46 — Foods and Ingredients of Foods

SN 280,370. Eskimo Pie Corporation, Richmond, Va. Filed Sept. 15, 1967.

FESTIVE FANCIES

No registration rights are claimed for the word "Fancies" apart from the mark as a whole.
For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice (Int. Cl. 30).
First use Sept. 28, 1961.

SN 285,321. Fountain Specialties, Inc., Cleveland, Ohio. Filed Nov. 21, 1967.

choc-O-luck

For Chocolate Flavored Syrup (Int. Cl. 32).
First use July 20, 1967.

SN 302,460. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed July 10, 1968.

TWISTEROO

Owner of Reg. Nos. 794,531 and 823,008.
For Chewing Gum (Int. Cl. 30).
First use June 5, 1968.

SN 308,358. Ward Chocolate Company, Inc., Philadelphia, Pa., by change of name from Blumenthal Bros. Chocolate Co., Philadelphia, Pa. Filed Sept. 27, 1968.

MINIKINS

For Candies (Int. Cl. 30).
First use February 1958.

SN 309,241. Cooperative Conservera Navarra (Conserna), Pamplona, Navarra, Spain. Filed Oct. 9, 1968.

XAVI

For Canned Vegetables (Int. Cl. 29).
First use May 24, 1967; in commerce May 24, 1967.

SN 309,778. Terrell Wayne Miller, d.b.a. T. Miller Co., Trenton, Mo. Filed Oct. 16, 1968.

BUTTER POP

For Unpopped Popcorn, Popcorn Oil and Popcorn Seasoning (Int. Cls. 29, 30, and 31).
First use July 1, 1968.

SN 312,080. Urschel Laboratories, Inc., Valparaiso, Ind. Filed Nov. 13, 1968.

Urschelburger

For Flake-Cut Beef (Int. Cl. 29).
First use July 1958.

SN 314,340. Gristede Bros., Inc., New York, N.Y. Filed Dec. 12, 1968.



Owner of Reg. Nos. 798,866, 811,903, and others.
For Canned Vegetables and Fruits; Canned and Bottled Fruit Juices; Bottled Cocktail Cherries; Canned Coffee; Tea; Bottled Ciders and Vinegars; Marmalades; Canned Soups, Consommes and Broths; Butter; Mustard; Chili Sauce; Tomato Juice; Honey; Bread, Rolls and Pastries (Int. Cls. 29, 30, and 32).
First use May 27, 1964.

SN 314,343. Gristede Bros., Inc., New York, N.Y. Filed Dec. 12, 1968.



Owner of Reg. Nos. 798,866, 811,903, and others.
For Canned Vegetables and Fruits; Canned and Bottled Fruit Juices; Bottled Cocktail Cherries; Canned Coffee; Tea; Bottled Ciders and Vinegars; Marmalades; Canned Soups, Consommes and Broths; Butter; Mustard; Chili Sauce; Tomato Juice; Honey; Dried Prunes; Bread, Rolls and Pastries (Int. Cls. 29, 30, and 32).
First use May 27, 1964.

SN 314,346. Gristede Bros., Inc., New York, N.Y. Filed Dec. 12, 1968.



Owner of Reg. Nos. 798,866, 811,903, and others.
For Canned Vegetables and Fruits; Canned and Bottled Fruit Juices; Bottled Cocktail Cherries; Coffee; Jellies, Preserves and Marmalades; Canned Soups, Consommes and Broths; Canned Fish; Butter; Mayonnaise; Catsup; Chili Sauce; Tomato Juice; Apple Sauce; Honey; Peanut Butter; Dried Prunes (Int. Cls. 29, 30, and 32).
First use May 27, 1964.

SN 314,347. Gristede Bros., Inc., New York, N.Y. Filed Dec. 12, 1968.



Owner of Reg. Nos. 798,866, 811,903, and others.
For Canned Vegetables and Fruits; Canned and Jarred Fruit Juices; Instant Coffee; Bottled Ciders and Vinegars; Jellies, Preserves and Marmalades; Canned Soups, Consommes and Broths; Canned Fish; Butter; Mayonnaise; Catsup; Tomato Juice; Apple Sauce; Peanut Butter; Dried Prunes (Int. Cls. 29, 30, and 32).
First use May 27, 1964.

SN 314,365. Spartan Grain & Mill Co., Spartanburg, S.C. Filed Dec. 12, 1968.



Applicant disclaims the word "Quality" apart from the mark as a whole. Owner of Reg. Nos. 442,380 and 529,748.
For Flour and Animal Feeds—Namely, Cattle Feed, Chicken Feed, Horse Feed, Turkey Feed, Poultry Feed, Hog Feed, Dog Feed, Rabbit Feed and Game Bird Feed (Int. Cls. 30 and 31).
First use September 1952.

SN 315,390. The Dietene Company, d.b.a. The Delmark Company, Minneapolis, Minn. Filed Dec. 30, 1968.

MERILAC

For Powdered Whey and Milk Protein Concentrate Which, When Water Is Added, Is Utilized as a Reconstituted Milk Product in Bakeries and the Like (Int. Cl. 29).
First use Dec. 5, 1968.

SN 315,412. Hautly Cheese Company, Inc., St. Louis, Mo. Filed Dec. 30, 1968.

HAUTLY

For Cheeses, Spreads, and Dips—Namely, Cheeses, Natural and Processed and Derivatives Thereof, and Vegetable, Spice and Cheese Dips (Int. Cl. 29).
First use in or before December 1944.

SN 315,475. Dip'n Sip Donuts of America, Inc., Roslindale, Mass. Filed Dec. 31, 1968.

DIP'N SIP

For Foods—Namely, Coffee and Donuts (Int. Cl. 30).
First use Jan. 6, 1966.

SN 316,004. Dip'n Sip Donuts of America, Inc., Roslindale, Mass. Filed Jan. 7, 1969.



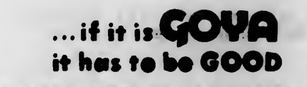
For Foods—Namely, Coffee and Donuts (Int. Cl. 30).
First use Jan. 6, 1966.

SN 319,603. Geo. A. Hormel & Company, Austin, Minn. Filed Feb. 19, 1969.

HEREFORD HEAVEN BRANDS

Applicant disclaims the words "Hereford" and "Brands" apart from the mark as shown.
For Fresh and Frozen Packaged Meats (Int. Cl. 29).
First use 1953.

SN 322,981. Goya Foods Inc., Brooklyn, N.Y. Filed Mar. 27, 1969.



Owner of Reg. Nos. 391,069, 622,395, and 733,156.
For Canned Vegetables (Int. Cl. 29).
First use November 1968.

SN 323,020. Otto Roth & Company, Inc., New York, N.Y. Filed Mar. 27, 1969.

ORO

Owner of Reg. Nos. 249,663 and 656,529.
For Cheese (Int. Cl. 29).
First use May 1, 1949.

SN 323,021. Otto Roth & Company, Inc., New York, N.Y. Filed Mar. 27, 1969.

SOLA

For Cheese (Int. Cl. 29).
First use Feb. 1, 1947.

SN 323,454. Hiland Potato Chip Co. of Des Moines, d.b.a. Hiland Potato Chip Co. of Sioux Falls and Polly Parrot Potato Chip Co., Des Moines, Iowa. Filed Apr. 2, 1969.

POLLY PARROT

For Potato Chips and Popped Popcorn (Int. Cls. 29 and 30).
First use on or about Jan. 1, 1954.

SN 323,616. Zevo, Inc., Los Angeles, Calif. Filed Apr. 3, 1969.

FAMILY-MATE

Owner of Reg. No. 845,561.
For Edible Oleaginous Emulsion for Use in Coffee, on Fruit, Cereals, and in Cooking (Int. Cl. 29).
First use Mar. 28, 1969.

SN 323,718. Marval Poultry Company, Inc., Dayton, Va. Filed Apr. 4, 1969.

MARVAL

For Fresh and Frozen Dressed Poultry and Parts Thereof (Int. Cl. 29).
First use on or before May 2, 1955.

SN 323,719. Marval Poultry Company, Inc., Dayton, Va. Filed Apr. 4, 1969.

ROYAL VALLEY

For Frozen Dressed Poultry (Int. Cl. 29).
First use on or before May 2, 1955.

SN 323,859. Bettie M. Taylor, d.b.a. Taylor's Sausage Co., St. Louis, Mo. Filed Apr. 7, 1969.

HOG ENOUGH TO WANT YOUR BUSINESS . . . MAN ENOUGH TO TREAT YOU RIGHT

Applicant makes no claim to the word "Hog" apart from the mark as shown.
For Pork Sausage (Int. Cl. 29).
First use March 1939.

SN 324,009. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

CINAMON JOE

Applicant disclaims the exclusive right to the use of the word "Cinamon" apart from the mark as shown.
For Cereal Derived Ready-To-Eat Snack (Int. Cl. 30).
First use on or prior to Feb. 14, 1969.

SN 324,014. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

JOLLY PUFFS

Applicant disclaims the exclusive right to the use of the word "Puffs" apart from the mark as shown.
For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or prior to Sept. 30, 1968.

SN 325,036. Hadley Fruit Orchards, Inc., Cabazon, Calif. Filed Apr. 21, 1969.

HADLEY

For Dried and Canned Fruits, Shelled Nuts, Unshelled Nuts, Fig Bars, Cider, Fruit Juice, Apricot Roll, Peach Roll, Honey, Date Butter, Jelly, Jam, Bread, Cookies, Flours, Wheat Germ, Rice, Lecithin Used for Food Purposes, and Olives (Int. Cls. 5, 29, 30, 31, 32, and 33).
First use 1951.

SN 325,904. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Apr. 29, 1969.

FIRE CHIEF

For Candy (Int. Cl. 30).
First use Mar. 18, 1969.

SN 327,320. Performance Systems, Inc., Nashville, Tenn. Filed May 15, 1969.



The mark consists of the portrait of "Sarah Ophelia Cannon," whose consent is of record.
For Fried Chicken and Fried Chicken Dinners, Including Potatoes, Gravy, Slaw, Salads, and/or Barbeque Beans and Roast Beef, Ham, and Fish Sandwiches (Int. Cl. 29).
First use Dec. 19, 1967.

SN 329,035. Cory Corporation, Chicago, Ill. Filed June 4, 1969.

CORY

Owner of Reg. Nos. 507,612, 826,246, and others.
For Coffee (Int. Cl. 30).
First use Nov. 18, 1968.

SN 329,393. Strazzulla Bros. Company, Boston, Mass. Filed June 6, 1969.

THERE IS A DIFFERENCE

For Fresh Tomatoes (Int. Cl. 31).
First use Mar. 1, 1969.

SN 332,067. General Mills, Inc., Minneapolis, Minn. Filed July 9, 1969.

HAMBURGER HELPER

For Packaged Casserole Food Product Consisting Mainly of Macaroni and Tomato Sauce Mix (Int. Cl. 30).
First use on or prior to June 20, 1969.

SN 332,581. General Mills, Inc., Minneapolis, Minn. Filed July 15, 1969.

ORADEX

For Ready-To-Eat Breakfast Cereal With Sodium Phosphates (Int. Cl. 30).
First use on or about May 21, 1969.

SN 333,049. General Mills, Inc., Minneapolis, Minn. Filed July 22, 1969.

POWS

For Flavored Mix for Making a Food Beverage (Int. Cl. 32).
First use on or about May 26, 1969.

For Flavored Mix for Making a Food Beverage (Int. Cl. 32).
First use on or about May 26, 1969.

Class 47 — Wines

SN 324,840. Schenley Affiliated Brands Corp., d.b.a. Dreyfus Ashby & Co., New York, N.Y. Filed Apr. 17, 1969.

GOLDENE SONNE

The words "Goldene Sonne" literally translated mean "golden sun." Owner of Reg. Nos. 845,129 and 845,130.
For Wines (Int. Cl. 33).
First use Feb. 18, 1969.

Class 48 — Malt Beverages and Liquors

SN 339,505. Jamaica Company Ltd., d.b.a. Jamaica Brewing Co., Camden, N.J. Filed Oct. 2, 1969.

JAMAICA SUN

For Beer (Int. Cl. 32).
First use Sept. 26, 1969.

Class 49 — Distilled Alcoholic Liquors

SN 324,666. Ezra S. Webb, d.b.a. Ezra Webb Distilling Co., Arcadia, Calif. Filed Apr. 16, 1969.



For Whiskey (Int. Cl. 33).
First use Dec. 9, 1968.

SN 326,999. Consolidated Distilled Products, Inc., d.b.a. Sunset Company, Chicago, Ill. Filed May 12, 1969.

SUNSET

Owner of Reg. No. 319,858.
For Liqueurs, Flavored Brandies, Diluted Brandy, Gins, Flavored Vodkas, Prepared Alcoholic Cocktails, Alcoholic Beverage Made With Whiskey and Herbs, Alcoholic Beverage Bitters, and Grain Alcohol for Beverage Purposes (Int. Cl. 33).
First use 1894.

SN 333,124. Gilmore & Co., d.b.a. Your Host Products Co., South San Francisco, Calif. Filed July 22, 1969.

YOUR HOST

For Prepared Alcoholic Cocktails (Int. Cl. 33).
First use Feb. 3, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 311,683. Hammerhead, Inc., Miami, Fla. Filed Nov. 8, 1968.



For Tropical Fish Catchers in the Nature of a Suction Gun (Int. Cl. 28).
First use Apr. 20, 1968.

SN 313,829. Panaura Limited, d.b.a. Top-Optic Designs, Farnham, Surrey, England. Filed Dec. 6, 1968.

GLOBERRIES

Priority claimed under Sec. 44(d) on British Reg. No. B932,028, dated Oct. 8, 1968.
For Ornaments and Decorations for Commercial Establishment and Home Decorating All of Plastic and Being Fluorescent (Int. Cl. 20).

SN 326,924. Milton Story, New York, N.Y. Filed May 9, 1969.

"GRIN AND WEAR IT"

For Caps, Sashes, Badges, Ribbons and Neckties, All Made of Plastic Material To Be Used as Promotional Items or Sold as Novelty Items (Int. Cl. 20).
First use Mar. 29, 1969.

SN 327,334. The Security Blanket Co., Malibu, Calif. Filed May 15, 1969.



No claim is made to the representation of the blanket apart from the mark as shown.
For Novelty Items—Namely, Miniature Blankets (Int. Cl. 20).
First use Oct. 6, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 309,860. The Gillette Company, Boston, Mass. Filed Oct. 17, 1968.

SOFT & DRI

For the purposes of registration no claim is made to the exclusive right to use "Dri," apart from the mark as shown, but applicant waives none of its common-law rights therein.
For Deodorants for Personal Use (Int. Cl. 5).
First use Sept. 25, 1968.

SN 319,223. Carter-Wallace, Inc., New York, N.Y. Filed Feb. 17, 1969.

ANTISEP

Owner of Reg. No. 134,628.
For Denture Adhesives and Denture Cleansers (Int. Cls. 3 and 5).
First use Dec. 19, 1968.

SN 327,150. Lancôme S.A., Paris, France. Filed May 13, 1969.

HAL-SPORT

For Sun Tan Lotion (Int. Cl. 3).
First use May 22, 1967; in commerce May 22, 1967.

SN 336,294. Kimberly-Clark Corporation, Neenah, Wis. Filed July 24, 1969.

KOTIQUE

For Bath Oil (Int. Cl. 3).
First use July 3, 1969.

Class 52 — Detergents and Soaps

SN 328,580. Pathway Products Corporation, Verona, N.J. Filed May 28, 1969.

Haste

For Household Cleaner Liquid for General Cleaning (Int. Cl. 3).
First use Aug. 29, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 261,099. PBI Research, Inc., San Francisco, Calif. Filed Dec. 19, 1966.



For Computerized Matching of Females and Males Based on a Questionnaire Completed by the Individual (Int. Cl. 42).
First use about Sept. 25, 1966.
Subj. to Intf. with SN 257,369.

SN 262,278. PBI Research, Inc., San Francisco, Calif. Filed Jan. 10, 1967.

COMPUTER MATCH

Applicant disclaims the use of the word "Computer" apart from the mark as shown.
For Computerized Matching of Females and Males Based on a Questionnaire Completed by the Individual (Int. Cl. 42).
First use about Sept. 25, 1966.
Subj. to Intf. with SN 257,369.

SN 292,217. Master Chef, Inc., Lafayette, La. Filed Feb. 29, 1968.



The drawing is lined for the colors orange and maroon.
For Restaurant Services (Int. Cl. 42).
First use on or about Sept. 1, 1967.

SN 294,744. Modeling Association of America, Inc., Norfolk, Va. Filed Apr. 2, 1968.



No claim is made to the words "Modeling Association of America," "Student Model Pageants" or "Professional Model Pageant" apart from the mark as shown.
For Association Services—Namely, Promoting the Interests of the Modeling Profession (Int. Cl. 42).
First use Mar. 18, 1968; on or about May 15, 1964, as to "Modeling Association of America," the letters "MAA" and design.

SN 298,105. Caesar's Palace, Inc., Memphis, Tenn. Filed May 14, 1968.

CAESAR'S PALACE

For Hair Styling Services for Men (Int. Cl. 42).
First use Mar. 12, 1968.
Subj. to Intf. with SN 300,267 and SN 300,269.

SN 304,635. Wal-Bon of Ohio, Inc., Belpre, Ohio. Filed Aug. 7, 1968.

Napolis

For Restaurant and Carry-Out Restaurant Services (Int. Cl. 42).
First use Sept. 1, 1966.

SN 310,566. Joseph P. Kennedy, Jr. Foundation, New York, N.Y. Filed Oct. 25, 1968.



For Eleemosynary Services to the Mentally Retarded—Namely, To Stimulate the Development of Physical Fitness and Recreational Programs for the Mentally Retarded (Int. Cl. 42).
First use June 29, 1968.

SN 317,622. Schlumberger Technology Corporation, Houston, Tex. Filed Jan. 27, 1969.

SYNERGETIC

For Well Logging Services, Particularly, Providing Well Logs or Log-Type Presentations Based on Data Combined From Other Well Logs (Int. Cl. 42).
First use January 1968.

SN 320,927. American Schizophrenia Foundation, Ann Arbor, Mich. Filed Mar. 6, 1969.

AMERICAN SCHIZOPHRENIA FOUNDATION

For Association Services—Namely, the Dissemination of Information and Research Relating to the Field of Schizophrenia (Int. Cl. 42).
First use on or about Jan. 1, 1964.

SN 323,126. Al Reiser, d.b.a. Steakmaster, Boulder, Colo. Filed Mar. 28, 1969.

STEAKMASTER

For Restaurant Services (Int. Cl. 42).
First use Jan. 8, 1965.

SN 323,415. Azar's, Inc., Fort Wayne, Ind. Filed Apr. 2, 1969.

AZAR'S

For Restaurant Services (Int. Cl. 35).
First use May 25, 1954.

SN 323,560. John J. Grisaffi, New Orleans, La. Filed Apr. 3, 1969.

JOHN JAY

"John Jay" is not a known living person.
For Hair Grooming and Styling and Makeup Application (Int. Cl. 42).
First use Oct. 1, 1961.

SN 324,691. Computer Profiles, Inc., Norfolk, Va. Filed Apr. 16, 1969.

COMPROFILE

For Computer Programming Services (Int. Cl. 42).
First use Mar. 1, 1969.

SN 324,693. Computer Profiles, Inc., Norfolk, Va. Filed Apr. 16, 1969.

COMPROFLO

For Computer Programming Services (Int. Cl. 42).
First use Mar. 15, 1969.

SN 325,312. Tinkers & Thinkers Co., Chicago, Ill. Filed Apr. 23, 1969.



For Product Designing Services (Int. Cl. 42).
First use June 14, 1968.

SN 325,313. Tinkers & Thinkers Co., Chicago, Ill. Filed Apr. 23, 1969.

Tinkers & Thinkers

For Product Designing Services (Int. Cl. 42).
First use June 14, 1968.

SN 325,690. Eddy Arnold's Tennessee Fried Chicken, Inc., Nashville, Tenn. Filed Apr. 28, 1969.

EDDY ARNOLD'S

"Eddy Arnold" identifies a living individual whose consent is of record.
For Restaurant Services (Int. Cl. 42).
First use Dec. 3, 1968.

SN 328,143. L.A.P., Inc., Madison, Wis. Filed May 23, 1969.



For Restaurant Services (Int. Cl. 42).
First use Mar. 8, 1966.

SN 328,296. Greenwood Restaurant Corporation, Greenwood Lake, N.Y. Filed May 26, 1969.

MOTHER'S

For Cabaret Services (Int. Cl. 42).
First use Aug. 9, 1968.

SN 329,647. Ramada Inns, Inc., Phoenix, Ariz. Filed July 24, 1969.

"Luxury for Less"

Owner of Reg. No. 780,480.
For Hotel and Inn Services (Int. Cl. 42).
First use Feb. 1, 1960.

SN 330,017. Steak n Shake, Inc., Bloomington, Ill. Filed June 13, 1969.

A TOUCH OF GOLD

For Restaurant Services (Int. Cl. 42).
First use June 9, 1969.

SN 337,412. PepsiCo, Inc., New York, N.Y. Filed Sept. 9, 1969.

PEPSICO

For Leasing Motor Vehicles (Int. Cl. 42).
First use at least as early as July 24, 1969.

SN 340,306. Schnitzelbank, Inc., Wheaton, Md. Filed Dec. 3, 1969.

SCHNITZELBANK

For Restaurant Services (Int. Cl. 42).
First use 1962.
Subj. to Intf. with SN 334,673.

Class 101 — Advertising and Business

SN 298,094. American Institutional Developers, Inc., Wynnewood, Pa. Filed May 14, 1968.

AID

For Managing Nursing Homes and Sanitariums; Providing Advise and Management Planning Services to Same (Int. Cl. 35).
First use Dec. 14, 1964.

SN 299,807. The Children's Hospital of Akron, Akron, Ohio. Filed May 7, 1968.



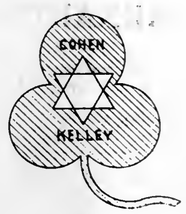
For Children's Hospital Support Services on a Contributing Voluntary Basis (Int. Cl. 35).
First use on or about Nov. 1, 1967.

SN 302,776. Temporary Help Services, Inc., Kansas City, Mo. Filed July 15, 1968.



The term "Temporaries" is disclaimed apart from the mark as shown. The horizontal lines shown on the drawing are a feature of the mark and do not represent color.
For Providing Short Term Help for Offices, Industries, and the Like (Int. Cl. 35).
First use on or about July 8, 1968; on or about Jan. 15, 1968, as to "TTT" and design.

SN 305,073. Jay J. Shuer, Toledo, Ohio. Filed Aug. 13, 1968.



The Star of David is disclaimed apart from the entire composite mark. The drawing is lined for the color green.
For Furnishing Technical Assistance in the Establishment and Operation of Restaurant Services of Others (Int. Cl. 35).
First use July 9, 1968.

SN 308,623. International Data Corporation, Newtonville, Mass. Filed Oct. 1, 1968.

IDC

For Provision of Information Concerning the Number, Type, and Location of Computer Installations to Others (Int. Cl. 35).
First use February 1968.
Subj. to Intf. with SN 306,122.

SN 309,002. A & B Personnel Systems, Ltd., Denver, Colo. Filed Oct. 7, 1968.

A & B PERSONNEL SYSTEMS

The words "Personnel Systems" are disclaimed apart from the mark.
For Employment Agency Services (Int. Cl. 35).
First use on or about July 19, 1967.

SN 309,893. Professional Nurses Bureau, Inc., San Francisco, Calif. Filed Oct. 17, 1968.



Application disclaims the representation of the caduceus and the words "Dedication-Integrity" apart from the mark as shown.
For Placing Nurses With Hospitals, Industrial Organizations, Doctors, Rest Homes and the Like (Int. Cl. 35).
First use about Sept. 15, 1968.

SN 309,911. Shopper's Credit, Inc., Torrington, Conn. Filed Oct. 17, 1968.



For Stamp Trading Service for Promoting the Sale of Merchandise of Others (Int. Cl. 35).
First use Mar. 6, 1962.

SN 309,912. Shopper's Credit, Inc., Torrington, Conn. Filed Oct. 17, 1968.

BONUSAVER

For Stamp Trading Service for Promoting the Sale of Merchandise of Others (Int. Cl. 35).
First use Mar. 6, 1962.

SN 311,076. Taxpediters, Inc., Kansas City, Mo. Filed Oct. 31, 1968.

TAXPEDITERS

For Preparation of Income Tax Returns for Others (Int. Cl. 35).
First use on or about Sept. 12, 1968.

SN 311,544. Youth Dynamics Inc., New York, N.Y. Filed Nov. 6, 1968.

CAMPUS CLASSICS

For Mail Order Services Designed To Provide the Youth Market With Items for Their Use (Int. Cl. 35).
First use Sept. 10, 1968.

SN 313,620. Turtle Creek Management, Inc., Indianapolis, Ind. Filed Dec. 4, 1968.

TURTLE CREEK

For Apartment Management, Office Building Management and Other Property Management (Int. Cl. 35).
First use at least as early as Sept. 10, 1963.

SN 319,968. Southern Pacific Company, San Francisco, Calif. Filed Feb. 24, 1969.

TOPS

For Location of the Freight Cars of Application and Others by Means of Computer (Int. Cl. 35).
First use November 1963.

SN 320,446. Decision Sciences Corporation, St. Louis, Mo. Filed Mar. 3, 1969.

GRASP

For Computer Programming Services (Int. Cl. 35).
First use Sept. 6, 1968.

SN 322,062. Golden Pantry Food Stores, Inc., Athens, Ga. Filed Mar. 18, 1969.



The drawing is lined for the color gold, but the mark is not restricted to a particular color.
For Retail Food Store Services (Int. Cl. 35).
First use on or about Nov. 15, 1964.

SN 322,983. Hep-Ur-Sef, Inc., Prescott, Ark. Filed Mar. 27, 1969.

HEP-UR-SEF

For Automobile Service Stations—Namely, Dispensing Gasoline Through Coin Operated Pumps (Int. Cl. 35).
First use September 1963.

SN 323,211. Ticket Reservation Systems, Inc., New York, N.Y. Filed Apr. 1, 1969.

TRS

Owner of Reg. No. 865,941.
For Vending Tickets and Scrip for Others Using Centralized Computers To Control Remote Box Offices, and Providing Accounting Services in Connection With Ticket Sales (Int. Cl. 35).
First use April 1966.

SN 323,774. Anita Shops Incorporated, Los Angeles, Calif. Filed Apr. 7, 1969.

ANITA SHOPS

Applicant disclaims the word "Shops" apart from the balance of the mark as shown.
For Retail Women's Apparel Store Services (Int. Cl. 35).
First use at least as early as 1950.

SN 327,736. Barnaby's Incorporated, Chicago, Ill. Filed May 20, 1969.

BARNABY'S

For Consulting, Planning and Advisory Services in Connection With Establishing and Operating Restaurants (Int. Cl. 35).
First use on or before Feb. 6, 1969.

SN 330,992. Albee Homes, Inc., Niles Ohio. Filed June 26, 1969.



Applicant disclaims the term "Housing Systems Franchise" apart from the mark as shown.
For Aid in the Establishment and Operation of Home Construction, Modular Home and Mobile Home Companies (Int. Cl. 35).
First use June 12, 1969.

SN 331,810. Arthur Treacher's Fish & Chips, Inc., Columbus, Ohio. Filed July 7, 1969.



For purposes of registration, no claim is made to the exclusive right to the words "Fish & Chips" apart from the mark as shown, but applicant waives none of its common-law rights in the mark or any feature thereof. Arthur Treacher is the name of a particular living individual whose consent to register his name and portrait is of record.
For Aiding in the Establishment and Operation of Restaurants and Carry Out Restaurants for Others (Int. Cl. 35).
First use on or about Mar. 19, 1969.

SN 332,660. Gifts for Men, Inc., Atlanta, Ga. Filed July 17, 1969.



Without relinquishing any common law rights therein, the words "Gifts for Men, Inc." are disclaimed apart from the mark as shown.
For Retail Gift Store Services (Int. Cl. 35).
First use at least as early as July 1967.

Class 102—Insurance and Financial

SN 313,574. General Finance Corporation, Evanston, Ill. Filed Dec. 4, 1968.



Owner of Reg. No. 822,578.
For Consumer Loan Services (Int. Cl. 36).
First use on or about Sept. 1, 1954.

SN 313,575. General Finance Corporation, Evanston, Ill. Filed Dec. 4, 1968.

FRIENDLY BOB ADAMS

The name "Bob Adams" is an arbitrary name and does not refer to a specific living individual. Owner of Reg. No. 720,131.
For Consumer Loan Services (Int. Cl. 36).
First use in 1951.

SN 321,384. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Mar. 11, 1969.



For Providing an Electronic Data Processing Service Furnished to Subscribing Banks, Which Processes and Maintains Savings (Time Deposit) Account Records of Customers of Subscribers, and Furnishes Continuously Updated Management Information for the Subscribing Banks (Int. Cl. 36).
First use as early as Sept. 3, 1968.

SN 321,385. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Mar. 11, 1969.



For Providing an Electronic Data Processing Service Which, Based Upon Information and Guidelines Furnished by the Various Clients, Processes and Answers Inquiries of Merchants as to the Appropriateness of Credit Purchases by Customers of Clients of Applicant, and Which Maintains and Furnishes Continuously Updated Status Reports of All Such Requests, Authorizations, Transactions, and Accounts for Clients of Applicant (Int. Cl. 36).
First use as early as Mar. 27, 1968.

Class 103—Construction and Repair

SN 334,431. Serv-Kor, Inc., Carlsbad, Ill. Filed Aug. 5, 1969.

DIKOR

For Drilling, Coring and Grouting of Soil and Rock (Int. Cl. 37).
First use as early as Dec. 1, 1952.

Class 106—Material Treatment

SN 306,963. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 9, 1968.

TRI-KOTE

For Spray Coating Service for Coating Articles—Namely, Feed Trays, Food Processing Containers and Heat Sealing Tools, With a Film of Polytetrafluoroethylene To Provide Anti-Stick Properties and a Very Slippery or Low Friction Surface (Int. Cl. 40).
First use Aug. 2, 1968.

SN 321,745. Art Photo Service, Inc., San Francisco, Calif. Filed Mar. 14, 1969.



The word "Service" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights therein.
For Photo Finishing, Developing and Printing of Film (Int. Cl. 40).
First use on or about Mar. 10, 1957.

Class 107—Education and Entertainment

SN 285,140. Motown Record Corporation, Detroit, Mich. Filed Nov. 17, 1967.

MOTOR TOWN REVUE

Applicant disclaims the word "Revue" apart from the mark as shown.
For Providing Packaged Theatrical Attractions (Int. Cl. 41).
First use 1962.

SN 298,151. Rosenbush Advertising Agency, Inc., Baltimore, Md. Filed May 14, 1968.

THE TRADER BEN SHOW

Applicant makes no claim to the use of the word "Show" apart from the mark as shown.
For Entertainment Services—Namely, a Radio Program in Which the Moderator Accepts Telephone Calls From the General Public and Both Sides of the Conversation Are Broadcast (Int. Cl. 41).
First use Apr. 15, 1968.

SN 303,555. Randall Hank Williams, d.b.a. Hank Williams, Jr., Nashville, Tenn. Filed July 24, 1968.

HANK WILLIAMS, JR. AND THE CHEATIN' HEARTS

For Entertainment Services Rendered by a Vocal Group (Int. Cl. 41).
First use May 28, 1964.

SN 314,694. The Barnum Festival Society, Incorporated, Bridgeport, Conn. Filed Dec. 17, 1968.

BARNUM FESTIVAL

Applicant disclaims the word "Festival" apart from the mark as shown.
For Conceiving, Organising and Operating an Annual Festival, Including a Plurality of Different Educational, Cultural and Entertainment Events and Activities, Such as Amusements, Parades, Circus Acts, Talent Contests, Air Shows, Auto Shows, Boat Shows, Musical Entertainment and Concerts, Antique Shows, Art Shows, and Memorial and Other Official Ceremonies Pertaining to Various Aspects of the Festival (Int. Cl. 41).
First use in 1949.

SN 319,279. Cincinnati Reds, Inc., Cincinnati, Ohio. Filed Feb. 17, 1969.



The mark comprises, in part, a fanciful representation of the letter "C." The drawing is lined for the color red.
For Entertainment Services—Namely, Baseball Contests Rendered Live and Through the Media of Television Broadcasts (Int. Cl. 41).
First use 1928.

SN 323,671. Avco Broadcasting Corporation, Cincinnati, Ohio. Filed Apr. 4, 1969.

the phil donahue show

The mark comprises, in part, the name of Philip J. Donahue, a living individual, whose consent to the use of the mark is of record. The exclusive right to the word "show" is disclaimed apart from the mark as shown.
For Title of Television Programs Consisting of the Discussion of Current Issues and Topics With Various Guest Individuals (Int. Cl. 41).
First use Nov. 6, 1967.

SN 323,885. Nancy T. and Harris M. McRae (joint owners), Ellerbe, N.C. Filed Apr. 7, 1969.

BOONE HALL

For Operating a Traditional Historical Southern Mansion and Gardens Associated Therewith as a Tourist Attraction (Int. Cl. 41).
First use Apr. 15, 1956.

SN 324,233. St. Regis Paper Company, New York, N.Y. Filed Apr. 10, 1969.

ST REGIS

Owner of Reg. Nos. 377,917, 851,471, and others.
For Educational Services—Namely, Encouraging Studies in the Field of the Graphic Arts (Int. Cl. 41).
First use 1960.

SN 324,234. St. Regis Paper Company, New York, N.Y. Filed Apr. 10, 1969.

ST REGIS

Owner of Reg. Nos. 377,917, 851,471, and others.
For Entertainment Services—Namely, Provision and Maintenance of Recreation Sites and Camp Facilities for Public Use (Int. Cl. 41).
First use November 1966.

SN 326,800. Shango Enterprises, Inc., Altadena, Calif. Filed May 8, 1969.

SHANGO

For Entertainment Services in the Form of Vocal and Instrumental Renditions Presented by a Group (Int. Cl. 41).
First use at least as early as Feb. 13, 1969.

SN 327,069. Southwestern Historical Wax Museum, Inc., Dallas, Tex. Filed May 12, 1969.



For Operating an Historical Museum Having Historical Scenes and Figures Displayed Therein (Int. Cl. 41).
First use on or about Dec. 30, 1965.

SN 328,735. Show Biz, Inc., Nashville, Tenn. Filed May 29, 1969.

THE COUNTRY PLACE

Applicant disclaims the word "Country" apart from the mark without relinquishing any of its common-law rights.
For Entertainment Services—Namely, a Television Program Featuring Country and Popular Music (Int. Cl. 41).
First use Apr. 26, 1969.

SN 332,204. Instrument Flight Training, Inc., Minneapolis, Minn. Filed July 10, 1969.

IFT

For Flight Training for Aviators (Int. Cl. 41).
First use July 1958.

SN 332,307. Baltimore Bullets Basketball Club, Inc., Baltimore, Md. Filed July 11, 1969.

BULLETS

For Professional Basketball Entertainment Services (Int. Cl. 41).
First use 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 314,765. National Hockey League, Montreal, Quebec, Canada. Filed Dec. 18, 1968.



For Indicating Membership in Applicant.
First use 1922; in commerce not later than 1947.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

887,314. LA BAGAGERIE. S. A. Maroquinerie Aucler "La Bagagerie." MULTIPLE CLASS (Classes 1, 3, 39, and 41). SN 289,034. Pub. 12–23–69. Filed 1–17–68.

887,315. KOJAH. Emba Mink Breeders Association, assignee of Sable Mink Farms. SN 298,046. Pub. 12–23–69. Filed 5–13–68.

887,316. WEP. Ashland Oil & Refining Company. SN 311,004. Pub. 12–23–69. Filed 10–31–68.

887,317. RANDOFLUFF. Curlator Corporation. SN 312,280. Pub. 12–23–69. Filed 11–15–68.

887,318. SILASTIC 132. Dow Corning Corporation. SN 316,710. Pub. 12–23–69. Filed 1–16–69.

887,319. DESIGN-CAST. Macnaughton-Brooks Incorporated. SN 317,854. Pub. 12–23–69. Filed 1–29–69.

887,320. WIT-THERM. Witco Chemical Corporation. SN 319,218. Pub. 12–16–69. Filed 2–14–69.

887,321. GOLDEN CHANCE FARMS. Robert E. Lehmann. SN 319,455. Pub. 12–23–69. Filed 2–18–69.

Class 2—Receptacles

887,322. GREYHOUND. The Greyhound Corporation. SN 311,032. Pub. 12–23–69. Filed 10–31–68.

887,323. SCENICRUISER. The Greyhound Corporation. SN 311,142. Pub. 12–23–69. Filed 11–1–68.

887,324. STACK 'N RACK. Aldo Controls & Mfg., Inc. SN 316,962. Pub. 12–23–69. Filed 1–21–69.

887,325. ENGLISH GARDEN. General Mills, Inc. SN 324,003. Pub. 12–23–69. Filed 4–9–69.

887,326. SILENT SERVICE. Sweetheart Plastics, Inc. SN 326,603. Pub. 12–23–69. Filed 5–7–69.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

887,314. (See Class 1 for this trademark.)

887,327. MAYCRAFT. Miller Harness Company, Inc. SN 316,449. Pub. 12–2–69. Filed 1–13–69.

Class 4—Abrasives and Polishing Materials

887,328. PERFECUT. Van Straaten Chemical Company. SN 330,075. Pub. 12–23–69. Filed 6–16–69.

Class 6—Chemicals and Chemical Compositions

887,329. MILCHEM AND DESIGN. Milchem Incorporated. SN 286,275. Pub. 12–23–69. Filed 12–5–67.

887,330. UNO-HEME. Becton, Dickinson and Company. SN 289,960. Pub. 12–23–69. Filed 1–31–68.

887,331. REPRESENTATION OF A BABY. Da-Roche Laboratories, Inc. SN 301,209. Pub. 12–23–69. Filed 6–24–68.

887,332. NO. 18. Universal Oil Products Company. SN 302,783. Pub. 12–23–69. Filed 7–15–68.

887,333. PLASTI-SLIDE. Mark E. Warren, d.b.a. Southern Textile Works. SN 304,419. Pub. 12–23–69. Filed 8–5–68.

887,334. SOLATEX. Standard Brands Chemical Industries, Inc. SN 307,358. Pub. 12–23–69. Filed 9–13–68.

887,335. PLASTICRYL. ABCO Chemicals, Inc. SN 308,755. Pub. 12–23–69. Filed 10–3–68.

887,336. PHTALOTROP. Farbenfabriken Bayer Aktiengesellschaft. SN 310,222. Pub. 12–23–69. Filed 10–22–68.

887,337. DUPLISET AND DESIGN. The Mead Corporation. SN 314,355. Pub. 12–23–69. Filed 12–12–68.

887,338. VELOURS. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 315,061. Pub. 12–23–69. Filed 12–23–68.

887,339. PARA-SLAG. Metallurgical Exoproducts, Inc. SN 316,802. Pub. 12–23–69. Filed 1–16–69.

887,340. ZIPCIDE. Balcom Chemicals, Inc. SN 318,387. Pub. 10–28–69. Filed 2–5–69.

887,341. KORTACID. Kortman & Schulte N.V. SN 319,171. Pub. 12–23–69. Filed 2–14–69.

887,342. SODYETHRENE. Martin Marietta Corporation. SN 320,776. Pub. 12–23–69. Filed 3–5–69.

887,343. PLUS X AND CAN DESIGN. Oil Center Research, Inc. MULTIPLE CLASS (Classes 6 and 15). SN 322,682. Pub. 12–23–69. Filed 3–25–69.

887,344. CULMO. Dr. Ing. Max Schlotter. SN 325,292. Pub. 12–23–69. Filed 4–23–69.

Class 9—Explosives, Firearms, Equipments, and Projectiles

887,345. SHARPS AND DESIGN. Sharps Arms Company. SN 329,314. Pub. 12–23–69. Filed 6–6–69.

Class 10—Fertilizers

887,346. SILVIPLEX. AG Marketing Corporation. SN 312,410. Pub. 12–23–69. Filed 11–18–68.

Class 12—Construction Materials

887,347. TESTED APA QUALITY AND DESIGN. American Plywood Association. SN 297,266. COLLECTIVE MARK. Pub. 12–23–69. Filed 5–3–68.

887,348. BEHLEN. Behlen Manufacturing Company. MULTIPLE CLASS (Classes 12, 23, and 34). SN 328,649. Pub. 12–23–69. Filed 5–29–69.

887,349. MISCELLANEOUS DESIGN. Behlen Manufacturing Company. MULTIPLE CLASS (Classes 12, 23, and 34). SN 328,650. Pub. 12–23–69. Filed 5–29–69.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

887,350. HECORROS. Vereinigte Deutsche Metallwerke A.G. SN 311,631. Pub. 12–23–69. Filed 11–7–68.

887,351. MIRACLE PRESS. Bill Rochester, Inc. SN 319,734. Pub. 12–23–69. Filed 2–20–69.

887,352. LA TOQUE BLANCHE AND DESIGN. David Kamenstein, Inc. SN 326,593. Pub. 12–23–69. Filed 5–7–69.

887,353. METAL CRAFT. The Metal Craft Company. SN 328,880. Pub. 12–23–69. Filed 6–2–69.

887,354. DOT SNAPPER. United-Carr Incorporated. SN 330,221. Pub. 12–23–69. Filed 6–16–69.

887,355. TESPA. The Expanded Metal Company Limited. MULTIPLE CLASS (Classes 13 and 23). SN 330,986. Pub. 12–23–69. Filed 6–26–69.

887,356. DIPLOMAT. British Castors Limited. SN 331,813. Pub. 12–23–69. Filed 7–7–69.

Class 14—Metals and Metal Castings and Forgings

887,357. STYMIE HAIRLINE. Bonder & Carnase Studio Inc. SN 303,268. Pub. 12–23–69. Filed 7–22–68.

887,358. TEMPER COTE. Aluminum Company of America. SN 314,302. Pub. 12–23–69. Filed 12–12–68.

887,359. SCALE (DESIGN). David C. Davis, d.b.a. David C. Davis Company. SN 317,533. Pub. 12–23–69. Filed 1–27–69.

887,360. FAME. Super Food Services Inc. SN 327,105. Pub. 12–23–69. Filed 5–13–69.

887,361. CLIMATE GUARD. Reynolds Metals Company. SN 331,649. Pub. 12–23–69. Filed 7–2–69.

887,362. BRONWITE. American Smelting and Refining Company. SN 331,712. Pub. 12–23–69. Filed 7–3–69.

Class 15—Oils and Greases

887,343. (See Class 6 for this trademark.)

887,363. MULTRON. The Standard Oil Company. SN 278,042. Pub. 12–23–69. Filed 8–10–67.

887,364. DE-LIGHT. Pioneer Sales, Inc. SN 289,828. Pub. 12–23–69. Filed 1–29–68.

887,365. MILANO TAPERS. Pioneer Products, Inc. SN 309,091. Pub. 12–23–69. Filed 10–7–68.

887,366. GAF. GAF Corporation. SN 317,993. Pub. 12–23–69. Filed 1–31–69.

887,367. ATOC. MOC Products Company, Inc. SN 318,446. Pub. 12–23–69. Filed 2–5–69.

887,368. TEK. Turtle Wax, Inc. SN 319,088. Pub. 12–23–69. Filed 2–13–69.

887,369. TEKNA. Turtle Wax, Inc. SN 322,866. Pub. 12–23–69. Filed 3–20–69.

Class 16—Protective and Decorative Coatings

887,370. PLUSH. The O'Brien Corporation. SN 306,267. Pub. 12–23–69. Filed 8–29–68.

887,371. ARTEX AND DESIGN. Artex Hobby Products, Inc. SN 310,051. Pub. 12–23–69. Filed 10–21–68.

Class 17—Tobacco Products

887,372. SAHARA. Lorillard Corporation. SN 321,955. Pub. 12–23–69. Filed 3–17–69.

887,373. DUNHILL ETC. AND DESIGN. Alfred Dunhill, Limited. SN 331,686. Pub. 12–23–69. Filed 7–3–69.

887,374. GALA. Gallaher Limited. SN 332,820. Pub. 12–23–69. Filed 7–17–69.

887,375. LA FEMME. General Cigar Co., Inc. SN 333,917. Pub. 12–23–69. Filed 7–30–69.

Class 18—Medicines and Pharmaceutical Preparations

887,376. PM. Bristol-Myers Company. SN 279,451. Pub. 12–23–69. Filed 8–31–67.

887,377. ACNE-AID. Stiefel Laboratories, Inc. MULTIPLE CLASS (Classes 18 and 52). SN 306,420. Pub. 9–16–69. Filed 9–3–68.

887,378. BAILLY. YAB. SN 321,313. Pub. 12–23–69. Filed 3–10–69.

887,379. TUCKS. Fuller Laboratories, Inc. SN 327,885. Pub. 12–23–69. Filed 5–21–69.

887,380. TUCKS TAKE-ALONGS. Fuller Laboratories, Inc. SN 327,886. Pub. 12–23–69. Filed 5–21–69.

887,381. ASPIR-MINT. Miles Laboratories, Inc. SN 333,634. Pub. 12–23–69. Filed 7–28–69.

887,382. PROPADRINE. Merck & Co., Inc. SN 333,799. Pub. 12–23–69. Filed 7–29–69.

Class 19—Vehicles

887,383. BLAZON. Blazon Mobile Homes Corp. SN 249,723. Pub. 7–30–68. Filed 7–7–66.

887,384. GH AND DESIGN. General Hitch Products, Inc. SN 295,525. Pub. 12–23–69. Filed 4–12–68.

887,385. PERMA-SKIRT. Herman E. Sautbine. SN 301,860. Pub. 12–23–69. Filed 7–2–68.

887,386. SIERRACIN. The Sierracin Corporation. SN 304,401. Pub. 12–23–69. Filed 8–5–68.

887,387. 4 LEAVED SHAMROCK (DESIGN). Alfa Romeo S.p.A. SN 304,877. Pub. 12–23–69. Filed 8–12–68.

887,388. SNAKE AND CHILD (DESIGN). Alfa Romeo S.p.A. SN 304,878. Pub. 12–23–69. Filed 8–12–68.

887,389. LELAND. Maremont Corporation. SN 316,230. Pub. 12–23–69. Filed 1–9–69.

887,390. REVOLUTION. Motion Industries Incorporated. SN 319,340. Pub. 12–23–69. Filed 2–17–69.

887,391. BANNER AND DESIGN. The Commodore Corporation. SN 319,820. Pub. 12–23–69. Filed 2–24–69.

887,392. STEELHEAD. Twin-Tanks, Inc. SN 325,095. Pub. 12–23–69. Filed 4–21–69.

887,393. TEDDY BEAR AND DESIGN. Goldfish Sailboat Company, Inc. SN 326,873. Pub. 12–23–69. Filed 5–9–69.

887,394. MISCELLANEOUS DESIGN. Tyee Aircraft, Inc. SN 328,085. Pub. 12–23–69. Filed 5–22–69.

887,395. TYEE. Tyee Aircraft, Inc. SN 328,086. Pub. 12–23–69. Filed 5–22–69.

887,396. AIRSHIELD AND DESIGN. Rudkin-Wiley Corporation. SN 328,346. Pub. 12–23–69. Filed 5–26–69.

887,397. WIRT & KNOX. National Foam System, Inc. SN 328,716. Pub. 12–23–69. Filed 5–29–69.

887,398. MEYERS LYNX AND DESIGN. B. F. Meyers & Company. SN 329,111. Pub. 12–23–69. Filed 6–4–69.

887,399. OASIS AND DESIGN. The Commodore Corporation. SN 329,226. Pub. 12–23–69. Filed 6–5–69.

887,400. FINBOAT. Finboat Mfg. Co. SN 330,128. Pub. 12–23–69. Filed 6–16–69.

887,401. CHANCELLOR. Gordonay Corporation. SN 331,371. Pub. 12–23–69. Filed 6–30–69.

887,402. MODULINE. Mobile Industries, Inc. SN 331,410. Pub. 12–23–69. Filed 6–30–69.

887,403. NORSEMAN. Universal Oil Products Company, d.b.a. UOP Bostrom Division. SN 331,580. Pub. 12–23–69. Filed 7–2–69.

887,404. NATCHEZ. Bright Leaf Corporation. SN 333,526. Pub. 12–23–69. Filed 7–25–69.

887,405. EL CABANA. Bright Leaf Corporation. SN 333,528. Pub. 12–23–69. Filed 7–25–69.

887,406. NHK. Nippon Hatsujyo Kabushiki Kaisha. SN 333,940. Pub. 12–23–69. Filed 7–30–69.

Class 21 — Electrical Apparatus, Machines, and Supplies

887,407. GRIPLET. Berg Electronics, Inc. SN 288,614. Pub. 12-23-69. Filed 10-30-67.

887,408. ACCELETRON. Electro Dispersion Corporation. SN 286,002. Pub. 12-23-69. Filed 11-16-67.

887,409. COMBO. Metex Corporation. SN 294,843. Pub. 12-23-69. Filed 4-3-68.

887,410. AM AND DESIGN. Anaren Microwave, Inc. SN 301,502. Pub. 12-23-69. Filed 6-27-68.

887,411. MECCA AND DESIGN. Maruwa Denshi Kagaku Kabushiki Kaisha, d.b.a. Maruwa Electronic and Chemical Co., Ltd. SN 302,854-A. Pub. 8-26-69. Filed 7-16-68.

887,412. E-BOND. Emerson Electric Co. SN 306,232. Pub. 12-23-69. Filed 8-29-68.

887,413. FOCUSTAT. American Plasticraft Company. SN 306,324. Pub. 12-23-69. Filed 8-30-68.

887,414. WAFERCON. Molex Products Company. SN 309,393. Pub. 12-23-69. Filed 10-10-68.

887,415. MINIT-FRANK. Beverly E. Williams and Kathryn I. Williams (joint owners), assignees of Beverly E. Williams. SN 311,963. Pub. 12-23-69. Filed 11-12-68.

887,416. MORRELL M AND DESIGN. Morrell Company. SN 317,085. Pub. 12-23-69. Filed 1-21-69.

887,417. M AND DESIGN. Medelco, Incorporated. SN 317,349. Pub. 12-23-69. Filed 1-22-69.

887,418. CONSARC POWER. Consarc Corporation. SN 318,293. Pub. 12-23-69. Filed 2-4-69.

887,419. B LINE AND DESIGN. M. Black Manufacturing Company, Inc. SN 319,751. Pub. 12-23-69. Filed 1-3-69.

887,420. SUNCERAM. Matsushita Electric Industrial Co., Ltd. SN 321,679. Pub. 12-23-69. Filed 3-13-69.

887,421. THE BROADMOOR. Broadmoor Industries, Ltd. SN 321,898. Pub. 12-23-69. Filed 3-17-69.

887,422. ROSETTE (DESIGN). Kaman Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 322,130. Pub. 12-23-69. Filed 3-19-69.

887,423. NIMO. Industrial Electronic Engineers, Inc. SN 323,061. Pub. 12-23-69. Filed 3-28-69.

887,424. NT. Photocircuits Corporation. SN 325,624. Pub. 12-23-69. Filed 4-25-69.

887,425. ACTOFLEX. Natvar Corporation. SN 331,696. Pub. 12-23-69. Filed 7-3-69.

887,426. NOVAGLAS. Natvar Corporation. SN 331,697. Pub. 12-23-69. Filed 7-3-69.

887,427. K MART AND DESIGN. S. S. Kresge Company. SN 333,982. Pub. 12-23-69. Filed 7-30-69.

Class 22 — Games, Toys, and Sporting Goods

887,428. RED STREAK AND DESIGN. Sportline, a Division of Homemaker Industries, Inc. SN 283,466. Pub. 12-23-69. Filed 10-26-67.

887,429. SLIMLINE. The Ski Hut. SN 300,293. Pub. 12-23-69. Filed 6-12-68.

887,430. WEE THREE FAMILY. Uneeda Doll Co., Inc. SN 301,653. Pub. 12-23-69. Filed 6-28-68.

887,431. FASTBACK. "Automatic" Sprinkler Corporation of America, assignee of The Rawlings Corporation. SN 302,762. Pub. 9-23-69. Filed 7-15-68.

887,432. ZEST AND DESIGN. David L. Rogers, d.b.a. Zest Card Company. SN 302,974. Pub. 12-23-69. Filed 7-17-68.

887,433. FLYING FLOOGLE. Lisbeth Whiting Company, Inc. SN 303,806. Pub. 12-23-69. Filed 7-29-68.

887,434. PUD. Palatine Engineering Sales, Inc., d.b.a. Beam Industries. SN 303,819. Pub. 12-23-69. Filed 7-29-68.

887,435. DUAL BUG. Totalmold, Inc. SN 303,844. Pub. 12-23-69. Filed 7-29-68.

887,436. W AND DESIGN. Wonder Products Company. SN 303,948. Pub. 12-23-69. Filed 7-30-68.

887,437. WONDER HORSE. Wonder Products Company. SN 305,590. Pub. 12-23-69. Filed 8-20-68.

887,438. SHARPIE. M. Edward Pope, d.b.a. Eddie Pope & Company. SN 305,672. Pub. 12-23-69. Filed 8-21-68.

887,439. JOINT-MINNOW. Atlantic Lures, Inc. SN 305,798. Pub. 12-23-69. Filed 8-23-68.

887,440. PSYCHO-ANALYSIS. The Game Company. SN 308,696. Pub. 12-23-69. Filed 10-2-68.

887,441. NEUROSIS. The Game Company. SN 308,698. Pub. 12-23-69. Filed 10-2-68.

887,442. LAW & ORDER. Chemtoy Corporation, by change of name from Chemical Sundries Co., Inc. SN 308,771. Pub. 12-23-69. Filed 10-3-68.

887,443. ROSSIGNOL STRATO. Etablissements Abel Rossignol-Club Rossignol. SN 310,315. Pub. 12-23-69. Filed 10-23-68.

887,444. KRAZY LEG. Rathcon, Inc. SN 314,986. Pub. 12-23-69. Filed 12-20-68.

887,445. OCEANIC. URB Products Corporation. SN 315,280. Pub. 12-23-69. Filed 12-26-68.

887,446. CARO-NET. Carron Net Company, Inc. SN 315,518. Pub. 12-23-69. Filed 1-2-69.

887,447. MARCY. Marcy Gymnasium Equipment Co. SN 315,777. Pub. 12-23-69. Filed 1-3-69.

887,448. BABY PEEK 'N PLAY. Topper Corporation. SN 319,517. Pub. 12-23-69. Filed 2-18-69.

887,449. NUTS TO YOU. Hasbro Industries, Inc. SN 322,292. Pub. 12-23-69. Filed 3-20-69.

887,450. SSK AND DESIGN. S. S. Kresge Company. SN 322,874. Pub. 12-23-69. Filed 3-26-69.

887,451. FLOSSIE'S. Flossie Schultz. SN 323,132. Pub. 12-23-69. Filed 3-28-69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

887,348. (See Class 12 for this trademark.)

887,349. (See Class 12 for this trademark.)

887,355. (See Class 13 for this trademark.)

887,452. THERMAL DISC. Bartlett-Snow-Pacific, Inc. SN 247,877. Pub. 6-11-68. Filed 6-13-66.

877,453. GORATOR. Georg Neidl. SN 285,849. Pub. 12-23-69. Filed 11-29-67.

887,454. EIMCOMET. Envirotech Corporation, assignee of The Eimco Corporation. SN 291,372. Pub. 12-23-69. Filed 2-19-68.

887,455. EDGESEAL. W. R. Grace & Co. SN 293,513. Pub. 12-23-69. Filed 3-18-68.

887,456. PRACTI-JACK. Guy-Chart Tools Limited. SN 296,522. Pub. 12-23-69. Filed 4-23-68.

887,457. CIRCU FLOW AND DESIGN. Nebraska Engineering Company. SN 303,191. Pub. 12-23-69. Filed 7-19-68.

887,458. PINEAPPLE PRINCE. Eric P. McNair. SN 303,809. Pub. 12-23-69. Filed 7-29-68.

887,459. UNIQUICK. Rudolf Gietzelt, d.b.a. Gietzelt & Herbort Machinenfabrik. SN 305,053. Pub. 12-23-69. Filed 8-13-68.

887,460. STOW-AWAY. Overhead Door Corporation. SN 305,973. Pub. 9-2-69. Filed 8-26-68.

887,461. RENOVATOR. Sky-Van Limited. SN 305,988. Pub. 12-23-69. Filed 8-26-68.

887,462. REMOTE-A-MATIC. Applied Power Industries, Inc. SN 306,626. Pub. 12-23-69. Filed 9-5-68.

887,463. SCC (DESIGN). Screw Conveyor Corporation. SN 310,362. Pub. 12-23-69. Filed 10-23-68.

887,464. ECON-O-MIZER. Winpower Manufacturing Company. SN 310,602. Pub. 12-23-69. Filed 10-25-68.

887,465. SI ORDERMATIC. SI Handling Systems, Inc. SN 312,335. Pub. 12-23-69. Filed 11-15-68.

887,466. PANA. Pool Equipment Corp. SN 312,908. Pub. 10-21-69. Filed 11-22-68.

887,467. TOSTEM POLES. Alick Company, Incorporated. SN 313,391. Pub. 12-23-69. Filed 12-2-68.

887,468. KARMIN. Dyno Merchandise Corp. SN 313,496. Pub. 12-23-69. Filed 12-3-68.

887,469. TENSILATHE. Sieburg Industries, Inc. SN. 315,448. Pub. 12-23-69. Filed 12-30-68.

887,470. TIREMENS. Arvid H. Le Pier and Howard H. Le Pier (co-partners). SN 317,267. Pub. 12-23-69. Filed 1-22-69.

887,471. MAR-FAX. Martco Mfg., Inc., assignee of Robert W. Martin, d.b.a. Martin Products. SN 318,315. Pub. 12-23-69. Filed 2-4-69.

887,472. TRAC-LOK. Dana Corporation. SN 318,763. Pub. 12-23-69. Filed 2-10-69.

887,473. FANCIFUL A (DESIGN). Alto Corporation. SN 320,010. Pub. 12-23-69. Filed 2-25-69.

887,474. AIRLIF. Alto Corporation. SN 320,011. Pub. 12-23-69. Filed 2-25-69.

887,475. EL PRADO. Oneida Ltd. SN 322,082. Pub. 12-23-69. Filed 3-18-69.

887,476. MIRACLE. Miracle Pet Products, Inc. SN 322,890. Pub. 12-23-69. Filed 3-26-69.

887,477. STARTRITE. Startrite Engineering (Sales) Limited. SN 323,380. Pub. 12-23-69. Filed 4-1-69.

887,478. DELSTEEL AND DESIGN. Delsteel, Incorporated. SN 324,333. Pub. 12-23-69. Filed 4-14-69.

887,479. MAGNUS. Economics Laboratory, Inc. SN 324,899. Pub. 12-23-69. Filed 4-18-69.

887,480. SKYDRIVER. Sky-Van Limited. SN 324,939. Pub. 12-23-69. Filed 4-18-69.

887,481. HMC AND TREE (DESIGN). HMC Corporation. SN 327,893. Pub. 12-23-69. Filed 5-21-69.

887,482. MAXON. Maxon Industries, Inc. SN 328,566. Pub. 12-23-69. Filed 5-28-69.

887,483. ASCONA. Imperial International Corp. SN 330,930. Pub. 12-23-69. Filed 6-25-69.

Class 24 — Laundry Appliances and Machines

887,484. POLY-COT. Ametek, Inc. SN 330,046. Pub. 12-23-69. Filed 6-16-69.

Class 26 — Measuring and Scientific Appliances

887,485. SI AND DESIGN. Scientific Industries, Inc. SN 292,817. Pub. 12-23-69. Filed 3-8-68.

887,486. GI GREENWALD AND DESIGN. Greenwald Industries, Inc. SN 317,449. Pub. 12-23-69. Filed 1-24-69.

887,487. PANA-MIKE. MTI Corporation. SN 320,071. Pub. 10-21-69. Filed 2-25-69.

887,488. TELESENTRY. Jackson & Church Electronics Company, Inc. SN 321,566. Pub. 12-23-69. Filed 4-7-69.

887,489. NIMSCOPE. Measurement Control Devices, Inc. SN 322,887. Pub. 12-23-69. Filed 3-26-69.

Class 27 — Horological Instruments

887,490. DOUBLE SPEED. Ernest Borel & Cie S.A. SN 313,894. Pub. 12-23-69. Filed 12-9-68.

Class 28 — Jewelry and Precious-Metal Ware

887,491. GREYHOUND. The Greyhound Corporation. SN 312,040. Pub. 12-23-69. Filed 11-13-68.

887,492. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 312,041. Pub. 12-23-69. Filed 11-13-68.

887,493. COEUR A COEUR. Bijoux Fix, Societe Anonyme. SN 316,978. Pub. 12-23-69. Filed 1-21-69.

887,494. SUMIKO. Goodrich Brothers Pearl Corp. SN 334,173. Pub. 12-23-69. Filed 8-1-69.

Class 29 — Brooms, Brushes, and Dusters

887,495. LOO-LINE. The French Beauty Inc. MULTIPLE CLASS (Classes 29 and 40). SN 304,598. Pub. 12-23-69. Filed 8-7-68.

887,496. MOP-SOCK. Dorothy R. Scott. SN 321,404. Pub. 12-23-69. Filed 3-11-69.

Class 31 — Filters and Refrigerators

887,497. AQUAVANE. Farr Company. SN 298,217. Pub. 12-23-69. Filed 5-15-68.

887,498. MILLIPORE AND DESIGN. Millipore Corporation. SN 306,262. Pub. 12-23-69. Filed 8-29-68.

887,499. AMANA AUTUMN GOLD. Amana Refrigeration, Inc. SN 310,432. Pub. 12-23-69. Filed 10-24-68.

887,500. FILTEK. Appleton Wire Works Corp. SN 318,382. Pub. 12-23-69. Filed 2-5-69.

887,501. PACTECON. The W. E. Sly Manufacturing Co. SN 320,386. Pub. 12-23-69. Filed 2-26-69.

Class 32 — Furniture and Upholstery

887,502. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,594. Pub. 12-23-69. Filed 11-7-68.

887,503. FUN CENTER. Turco Manufacturing Company. SN 316,257. Pub. 12-23-69. Filed 1-9-69.

887,504. OCTO-FLEX. Virco Mfg. Corporation. SN 333,068. Pub. 12-23-69. Filed 7-22-69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

887,348. (See Class 12 for this trademark.)

887,349. (See Class 12 for this trademark.)

887,505. JETDRAFT. Jetdraft, Inc. SN 272,836. Pub. 12-23-69. Filed 6-1-67.

887,506. ACTION AIR. Amana Refrigeration, Inc. SN 309,218. Pub. 12-23-69. Filed 10-9-68.

887,507. BALL-B-Q. William H. Wiggins. SN 316,917. Pub. 12-23-69. Filed 1-17-69.

887,508. THERMOS. King-Seeley Thermos Co. SN 318,431. Pub. 12-23-69. Filed 2-5-69.

887,509. ELECTRODRAFT. Gordon McLarty, d.b.a. McLarty Systems. SN 318,449. Pub. 12-23-69. Filed 2-5-69.

887,510. BELT AIRE. Printing Aids Corporation. SN 318,675. Pub. 12-23-69. Filed 2-7-69.

887,511. DURABAKE. Fostoria-Fannon, Inc. SN 320,141. Pub. 12-23-69. Filed 2-26-69.

Class 36 — Musical Instruments and Supplies

887,422. (See Class 21 for this trademark.)

887,512. PHILICORDA. N.V. Philips' Gloeilampenfabrieken. SN 314,591. Pub. 12–23–69. Filed 12–16–68.

887,513. MARMADUKE. Marmaduke, Inc. SN 333,280. Pub. 12–23–69. Filed 7–23–69.

887,514. MCA SPECIAL MARKETS AND DESIGN. MCA Inc. SN 333,417. Pub. 12–23–69. Filed 7–24–69.

Class 37 — Paper and Stationery

887,515. MICRON II. U.S. Plywood-Champion Papers Inc. SN 327,983. Pub. 12–23–69. Filed 5–21–69.

887,516. SERCO. S. E. Rykoff & Co. SN 334,283. Pub. 12–23–69. Filed 8–4–69.

887,517. BOUTIQUE. Kimberly-Clark Corporation. SN 334,435. Pub. 12–23–69. Filed 8–5–69.

Class 38 — Prints and Publications

887,518. MURRAY-GO-ROUND. Thomas M. Murray. SN 277,926. Pub. 12–23–69. Filed 8–9–67.

887,519. MCG. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group. SN 286,947. Pub. 12–23–69. Filed 12–14–67.

887,520. MISCELLANEOUS DESIGN. American Stock Exchange. MULTIPLE CLASS (Classes 38 and 102). SN 294,363. Pub. 12–23–69. Filed 3–28–68.

887,521. MY SHADOW. The Exclusive Company. SN 298,117. Pub. 9–16–69. Filed 5–14–68.

887,522. FOOSNEWS. Patterson International Corporation. SN 308,510. Pub. 12–23–69. Filed 9–30–68.

887,523. EXECUTIVE MART. Cahners Publishing Company, Inc. SN 328,267. Pub. 12–23–69. Filed 5–26–69.

887,524. CALIFORNIA FARMER. California Farmer. SN 332,215. Pub. 12–23–69. Filed 7–10–69.

887,525. PARENTS' MAGAZINE & BETTER FAMILY LIVING. Parents' Magazine Enterprises, Inc. SN 332,251. Pub. 12–23–69. Filed 7–10–69.

887,526. SALT WATER SPORTSMAN. The Salt Water Sportsman, Incorporated. SN 334,380. Pub. 12–23–69. Filed 8–4–69.

Class 39 — Clothing

887,314. (See Class 1 for this trademark.)

887,527. SUN-KISSED. Joseph Stafford, d.b.a. Curtis Eddy-Form Co. SN 286,285. Pub. 12–23–69. Filed 12–5–67.

887,528. SOCK-IT-TO-ME. Puritan Fashions Corporation. SN 295,954. Pub. 12–23–69. Filed 4–18–68.

887,529. THE VIN DRADDY VACATIONER. David Crystal, Inc. (Delaware corporation), by merger and assignment from David Crystal, Inc. (New York corporation). SN 297,541. Pub. 12–23–69. Filed 5–7–68.

887,530. SMC. Sewell Manufacturing Company. SN 303,352. Pub. 12–23–69. Filed 7–22–68.

887,531. BOUQUET AND DESIGN. Puritan Fashions Corporation. SN 305,676. Pub. 12–23–69. Filed 8–21–68.

887,532. GALLA MORRA. Harry Fischer Corporation. SN 307,097. Pub. 12–23–69. Filed 9–11–68.

887,533. OLEG CASSINI. Oleg Cassini, Inc. SN 309,072. Pub. 12–23–69. Filed 10–7–68.

887,534. PHILIP MARTIN III. Shane Uniform Company, Inc. SN 311,940. Pub. 12–23–69. Filed 11–12–68.

887,535. DIVERSO AND DESIGN. Leighton's, Inc. SN 315,573. Pub. 12–23–69. Filed 1–2–69.

887,536. THE JOHN SMITH COLLECTION AND DESIGN. John Smith (Shoes) Limited. SN 316,894. Pub. 12–23–69. Filed 1–17–69.

887,537. HERMITT. Hermitt. SN 318,045. Pub. 12–23–69. Filed 1–31–69.

887,538. GIANNI REDA. Melody Fashions, Inc. SN 318,211. Pub. 12–23–69. Filed 2–3–69.

887,539. NEW MAN AND DESIGN. Perret-Jaunet S.A. SN 318,330. Pub. 12–23–69. Filed 2–4–69.

887,540. VSI. Jump Suits Limited, Inc. SN 318,608. Pub. 12–23–69. Filed 2–7–69.

887,541. VASSARETTE JUNIORS. Munsingwear, Inc. SN 318,716. Pub. 12–23–69. Filed 2–10–69.

887,542. MURRAY Z. Wm. Devitz Inc. SN 321,480. Pub. 12–23–69. Filed 3–12–69.

887,543. DUXBAK AND DESIGN. Utica Duxbak Corporation. SN 321,555. Pub. 12–23–69. Filed 3–12–69.

887,544. IN CROWD. Broadway-Hale Stores, Inc. SN 321,576. Pub. 12–23–69. Filed 4–9–69.

887,545. FARENHITE. De Wan Manufacturing Corporation. SN 322,052. Pub. 12–23–69. Filed 3–18–69.

887,546. ATTIVO INTERNATIONALS AND DESIGN. Dahle Importers, Inc. SN 322,273. Pub. 12–23–69. Filed 3–20–69.

887,547. CAPSULE COLLECTION. Charisma Fashions, Inc. SN 322,406. Pub. 12–23–69. Filed 3–21–69.

887,548. WILD CAP. The Fibre-Metal Products Company. SN 323,548. Pub. 12–23–69. Filed 4–3–69.

887,549. S.W.A.K. Villager Industries, Inc. SN 324,143. Pub. 12–23–69. Filed 4–10–69.

887,550. CANADA ETC. AND DESIGN. Fabricas del Calzado Canada, S.A. SN 325,294. Pub. 12–23–69. Filed 4–23–69.

887,551. CORBIN. Corbin, Ltd. SN 326,826. Pub. 12–23–69. Filed 5–9–69.

887,552. BABY'S OWN. The Dorsey Company, d.b.a. The Baby's Own Company. SN 334,169. Pub. 12–23–69. Filed 8–1–69.

887,553. DREAMWEAR. Maidenform, Inc. SN 334,175. Pub. 12–23–69. Filed 8–1–69.

887,554. INTRODUCTION. Maidenform, Inc. SN 334,176. Pub. 12–23–69. Filed 8–1–69.

Class 40 — Fancy Goods, Furnishings, and Notions

887,495. (See Class 29 for this trademark.)

887,555. COMMODORE. Royaume Ltd. SN 302,343. Pub. 12–23–69. Filed 7–9–68.

887,556. HELEN OF TROY (DESIGN). Helen of Troy Wig Corporation. SN 327,145. Pub. 12–23–69. Filed 5–13–69.

Class 41 — Canes, Parasols, and Umbrellas

887,314. (See Class 1 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

887,557. ABSOLUTE. E. T. Barwick Industries, Inc. SN 333,997. Pub. 12–23–69. Filed 7–31–69.

887,558. ALLEGIANCE. E. T. Barwick Industries, Inc. SN 333,998. Pub. 12–23–69. Filed 7–31–69.

887,559. ANOTHER DAY. E. T. Barwick Industries, Inc. SN 333,999. Pub. 12–23–69. Filed 7–31–69.

887,560. ARCHWAY. E. T. Barwick Industries, Inc. SN 334,000. Pub. 12–23–69. Filed 7–31–69.

887,561. ARGOSY. E. T. Barwick Industries, Inc. SN 334,001. Pub. 12–23–69. Filed 7–31–69.

Class 44 — Dental, Medical, and Surgical Appliances

887,562. DENT U SONIC. Dent-U-Sonic Corp. MULTIPLE CLASS (Classes 44 and 51). SN 297,850. Pub. 12–23–69. Filed 5–10–68.

887,563. MAMM METRY AND DESIGN. Anthony H. Lamb. SN 310,337. Pub. 12–23–69. Filed 10–28–68.

887,564. READIFLEX. Parke, Davis & Company. SN 318,657. Pub. 5–20–69. Filed 12–5–68.

887,565. PARA-BLOC. Resiflex Laboratory. SN 320,290. Pub. 12–23–69. Filed 2–27–69.

887,566. CITATION. Coastal Dynamics Corporation. SN 324,175. Pub. 12–23–69. Filed 4–10–69.

887,567. CLEARTRON. T.P. Laboratories, Inc. SN 326,263. Pub. 12–23–69. Filed 5–2–69.

887,568. SKIN-TRAC. Zimmer Manufacturing Company. SN 327,313. Pub. 12–23–69. Filed 5–14–69.

Class 45 — Soft Drinks and Carbonated Waters

887,569. SEALTEST AND DESIGN. Kraftco Corporation, by change of name from National Dairy Products Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 294,780. Pub. 12–23–69. Filed 4–3–68.

887,570. COAT OF ARMS (DESIGN). Apple Beer Corporation. SN 301,504. Pub. 12–23–69. Filed 6–27–68.

887,571. CAN-D-STICK POP. Wm. Scheele & Sons Co., Inc. SN 326,324. Pub. 12–23–69. Filed 5–5–69.

887,572. MOON DUST. Tom Huston Peanut Company. SN 328,770. Pub. 12–23–69. Filed 6–2–69.

Class 46 — Foods and Ingredients of Foods

887,569. (See Class 45 for this trademark.)

887,573. DOO DADS. National Biscuit Company. SN 287,472. Pub. 4–23–68. Filed 1–27–66.

887,574. CULPEPPER'S PLANTATION PIT AND DESIGN. Edith Culpepper, executrix of the estate of Joseph Culpepper, deceased, assignee of Joseph Culpepper. SN 249,509. Pub. 5–6–69. Filed 7–5–66.

887,575. DESIKOKO. Coconut Products Limited. SN 298,427. Pub. 12–23–69. Filed 5–17–68.

887,576. LUMBERCAMP STYLE. Jackco Enterprises, Inc. SN 307,844. Pub. 12–23–69. Filed 9–20–68.

887,577. ODOM'S TENNESSEE PRIDE AND DESIGN. Odom Sausage Co., Inc. SN 311,899. Pub. 12–23–69. Filed 11–5–68.

887,578. TREASURE CHEST. Bunte Candies, Inc. SN 318,026. Pub. 9–16–69. Filed 1–31–69.

887,579. MISCELLANEOUS DESIGN. National Biscuit Company. SN 322,825. Pub. 12–23–69. Filed 3–20–69.

887,580. MISCELLANEOUS DESIGN. Allied Mills, Inc. SN 323,754. Pub. 12–23–69. Filed 4–7–69.

887,581. SHIELD LABEL. B. F. Trappey's Sons, Inc. SN 325,240. Pub. 12–23–69. Filed 4–22–69.

887,582. BLOSSOM HILL. Dutch Gold Honey, Inc. SN 325,470. Pub. 12–23–69. Filed 4–24–69.

887,583. GOLDEN GLORY. James P. Linette, Inc. SN 325,496. Pub. 12–23–69. Filed 4–24–69.

887,584. BETCHA'LIFE. James P. Linette, Inc. SN 325,497. Pub. 12–23–69. Filed 4–24–69.

887,585. DEE AND BEE AND DESIGN. D & B Foods, Inc. MULTIPLE CLASS (Classes 46 and 52). SN 325,642. Pub. 12–23–69. Filed 4–28–69.

887,586. PRINCE. Prince Macaroni Manufacturing Company, d.b.a. Prince Butter Cookie Co., Inc. SN 326,128. Pub. 12–23–69. Filed 5–1–69.

887,587. TRI-M BRAND AND DESIGN. Delicious Foods Co. SN 326,752. Pub. 12–23–69. Filed 5–8–69.

887,588. SHIELD LABEL AND DESIGN. B. F. Trappey's Sons, Inc. SN 326,927. Pub. 12–23–69. Filed 5–9–69.

887,589. YIELD-SHIELD. Arby's, Inc. SN 331,102. Pub. 12–23–69. Filed 6–27–69.

887,590. GRUBSTAKE. General Mills, Inc. SN 331,821. Pub. 12–23–69. Filed 7–7–69.

887,591. RARE-BITS. General Mills, Inc. SN 331,822. Pub. 12–23–69. Filed 7–7–69.

Class 49 — Distilled Alcoholic Liquors

887,592. BAR SINISTER. Continental Distilling Corporation. SN 326,291. Pub. 12–23–69. Filed 5–5–69.

887,593. BAR DEXTER. Continental Distilling Corporation. SN 326,292. Pub. 12–23–69. Filed 5–5–69.

887,594. THE COMPLEAT ANGLER. Continental Distilling Corporation. SN 326,293. Pub. 12–23–69. Filed 5–5–69.

887,595. HEATHER CROWN. Continental Distilling Corporation. SN 326,294. Pub. 12–23–69. Filed 5–5–69.

Class 50 — Merchandise Not Otherwise Classified

887,596. FOUNDRY-STONE. Consolidated Fine Arts, Ltd. SN 313,266. Pub. 12–23–69. Filed 11–29–68.

887,597. TT GEM. Laidlaw Corporation. SN 329,989. Pub. 12–23–69. Filed 6–13–69.

Class 51 — Cosmetics and Toilet Preparations

887,562. (See Class 44 for this trademark.)

887,598. AMNIODERM. Laboratoires du Dr. N. G. Payot Etablissement. SN 272,738. Pub. 12–23–69. Filed 5–31–67.

887,599. SETTING ICE. Helene Curtis Industries, Inc. SN 293,375. Pub. 12–23–69. Filed 8–15–68.

887,600. CREME SILK. Helene Curtis Industries, Inc. SN 304,791. Pub. 12–23–69. Filed 8–9–68.

887,601. FELIDE. Neotis S.p.A. SN 304,807. Pub. 12–23–69. Filed 8–9–68.

887,602. DOUBLE BLUSH. New York Pencil Co., Inc. SN 304,951. Pub. 12–23–69. Filed 8–12–68.

887,603. EAU DE "1775" AND DESIGN. Houbigant, Inc. SN 306,909. Pub. 12–23–69. Filed 9–9–68.

887,604. IMPERIAL FERN. Houbigant, Inc. SN 307,329. Pub. 12–23–69. Filed 9–13–68.

887,605. TORSOLINA. Ana Maria, Inc. SN 308,020. Pub. 12–23–69. Filed 9–23–68.

887,606. TIDY HOUSE HIYA-BUB. Church & Dwight Co., Inc., assignee of Tidy House Products Co. SN 309,527. Pub. 12–23–69. Filed 10–14–68.

887,607. THIXOVER. Woltz Prodotti di Bellezza Srl. SN 311,322. Pub. 12–23–69. Filed 11–4–68.

887,608. LANCOMATIC. Lancôme S.A. SN 312,210. Pub. 12–23–69. Filed 11–14–68.

887,609. MINERS WILD. Miners Make Up Limited. SN 312,058. Pub. 12–23–69. Filed 11–13–68.

887,610. OH! DE LONDON LUV BUBBLES. Yardley of London, Inc. SN 312,628. Pub. 12-23-69. Filed 11-19-68.

887,611. CONFI-DENT. Block Drug Company, Inc. SN 317,435. Pub. 12-23-69. Filed 1-24-69.

887,612. 3 STEPS TO BEAUTY. Merle Norman Cosmetics, Inc. SN 320,836. Pub. 12-23-69. Filed 3-5-69.

887,613. KOUMARA. William T. Silvers, d.b.a. Argence. SN 320,974. Pub. 12-23-69. Filed 3-6-69.

887,614. THE CRIMPERS AND DESIGN. Genesco Inc. SN 321,794. Pub. 12-23-69. Filed 3-17-69.

887,615. JEWELTONE. Jean D'Arc, Ltd. SN 322,148. Pub. 12-23-69. Filed 3-19-69.

887,616. YOUNG LIFE. Lusier Incorporated. SN 327,284. Pub. 12-23-69. Filed 5-14-69.

887,617. MAELSTROM. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,555. Pub. 12-23-69. Filed 6-10-69.

887,618. APOSTROPHE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,559. Pub. 12-23-69. Filed 6-10-69.

887,619. STARWIND. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,564. Pub. 12-23-69. Filed 6-10-69.

887,620. WHAT INTRIGUES A MAN ABOUT A WOMAN IS ELUSIVE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,567. Pub. 12-23-69. Filed 6-10-69.

887,621. CONTROVERSIAL. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,569. Pub. 12-23-69. Filed 6-10-69.

887,622. ONENESS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,570. Pub. 12-23-69. Filed 6-10-69.

887,623. ANYTIME. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,572. Pub. 12-23-69. Filed 6-10-69.

887,624. FEELIN' BEAUTIFUL. John H. Breck, Inc. SN 331,024. Pub. 12-23-69. Filed 6-26-69.

887,625. CANDIDATE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,642. Pub. 12-23-69. Filed 7-16-69.

887,626. UNINHIBITED. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,646. Pub. 12-23-69. Filed 7-16-69.

887,627. WIND IN THE WILLOW. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,647. Pub. 12-23-69. Filed 7-16-69.

887,628. GREEN EYES. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,648. Pub. 12-23-69. Filed 7-16-69.

887,629. DELERIA. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,649. Pub. 12-23-69. Filed 7-16-69.

887,630. CATCH A STAR. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,025. Pub. 12-23-69. Filed 7-22-69.

Class 52 — Detergents and Soaps

887,377. (See Class 18 for this trademark.)

887,585. (See Class 46 for this trademark.)

887,617. (See Class 51 for this trademark.)

887,618. (See Class 51 for this trademark.)

887,619. (See Class 51 for this trademark.)

887,620. (See Class 51 for this trademark.)

887,621. (See Class 51 for this trademark.)

887,622. (See Class 51 for this trademark.)

887,623. (See Class 51 for this trademark.)

887,625. (See Class 51 for this trademark.)

887,626. (See Class 51 for this trademark.)

887,627. (See Class 51 for this trademark.)

887,628. (See Class 51 for this trademark.)

887,629. (See Class 51 for this trademark.)

887,630. (See Class 51 for this trademark.)

887,631. CREME COTE. James Varley & Sons, Inc. SN 288,900. Pub. 12-23-69. Filed 1-15-68.

887,632. ULTRA-CLEAN. Helene Curtis Industries, Inc. SN 294,496. Pub. 12-23-69. Filed 3-29-68.

887,633. BLITZ. Bristol-Myers Company. SN 299,216. Pub. 10-21-69. Filed 5-28-68.

887,634. SUDZY'S. Sudzy's, Inc. SN 301,467. Pub. 12-23-69. Filed 6-26-68.

887,635. DABOLIN. David Boeniger. SN 307,188. Pub. 12-23-69. Filed 9-12-68.

887,636. IQDINE. West Chemical Products, Inc. SN 307,775. Pub. 12-23-69. Filed 9-19-68.

887,637. FREMONT. Fremont Industries, Inc. SN 325,658. Pub. 12-23-69. Filed 4-28-69.

887,638. FEELING PRETTY. John H. Breck, Inc. SN 328,407. Pub. 12-23-69. Filed 5-27-69.

887,639. AQUA MAID. Simonis Company. SN 329,414. Pub. 12-23-69. Filed 6-9-69.

Service Marks

Class 100 — Miscellaneous

887,640. PAY YOURSELF FIRST. The Savings and Loan Foundation, Inc. SN 263,203. Pub. 2-11-69. Filed 1-24-67.

887,641. BOCKER TREE SERVICE AND DESIGN. Edward Bocker, d.b.a. Bocker Exterminating Service. SN 295,101. Pub. 12-23-69. Filed 4-8-68.

887,642. GRAMMY. National Academy of Recording Arts and Sciences. SN 308,304. Pub. 12-23-69. Filed 9-26-68.

887,643. MISCELLANEOUS DESIGN. National Academy of Recording Arts and Sciences. SN 308,305. Pub. 12-23-69. Filed 9-26-68.

887,644. TRANS-TECH. Trans-Tech, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 314,882. Pub. 12-23-69. Filed 12-18-68.

887,645. REPRESENTATION OF WAITER. Denny's Restaurants, Inc. SN 318,035. Pub. 12-23-69. Filed 1-31-69.

887,646. THE KITCHENS OF DOLLY MADISON AND DESIGN. Dolly Madison Industries, Inc. SN 325,436. Pub. 12-23-69. Filed 4-24-69.

Class 101 — Advertising and Business

887,647. THERE'S A GROWING EXCITEMENT AT STERN BROTHERS. Allied Stores of New York, Inc., d.b.a. Stern Brothers. SN 299,746. Pub. 12-23-69. Filed 6-5-68.

887,648. START WITH AN EMPTY NEST. Miss Jean Kinney, d.b.a. Empty Nest Enterprises. SN 300,825. Pub. 12-23-69. Filed 6-19-68.

887,649. LEE TIRE CENTER. Lee Tire & Rubber Company. SN 303,535. Pub. 12-23-69. Filed 7-24-68.

887,650. TA (DESIGN). Transamerica Mobile Home Company. SN 313,358. Pub. 12-23-69. Filed 11-29-68.

887,651. ARTRON. Electrographic Corp. SN 315,461. Pub. 12-23-69. Filed 12-31-68.

887,652. BROADWAY JOE'S INC. AND DESIGN. Broadway Joe's, Inc. SN 315,536. Pub. 12-23-69. Filed 1-2-69.

887,653. MINI PRINT AND DESIGN. Same Duplicating Products, Inc. SN 315,654. Pub. 12-23-69. Filed 12-19-68.

887,654. GIT N' GO. Dairyland, Inc., d.b.a. Git n' Go Stores. SN 319,835. Pub. 12-23-69. Filed 2-24-69.

887,655. ADVENTURES IN SPACE. Glendianing Companies, Inc. SN 327,141. Pub. 12-23-69. Filed 5-13-69.

887,656. FIELDSCOPE. Field Research Corporation. SN 332,885. Pub. 12-23-69. Filed 7-18-69.

Class 102 — Insurance and Financial

887,520. (See Class 38 for this trademark.)

887,657. BANK OF PENNSYLVANIA AND BP DESIGN. Bank of Pennsylvania. SN 310,835. Pub. 12-23-69. Filed 10-30-68.

887,658. OF (DESIGN). O'Neil Fund. SN 311,169. Pub. 12-23-69. Filed 11-1-68.

887,659. FANCIFUL UNICORN. Union National Bank of Little Rock. SN 312,620. Pub. 12-23-69. Filed 11-19-68.

887,660. GROW WITH FOX-RAFF. Fox-Raff & Company, Inc. SN 321,117. Pub. 12-23-69. Filed 3-10-69.

887,661. MISCELLANEOUS DESIGN. The Fidelity Bank. SN 324,187. Pub. 12-23-69. Filed 4-10-69.

Class 103 — Construction and Repair

887,644. (See Class 100 for this trademark.)

887,662. MEDALLION. Medallion Pool Corporation. SN 298,840. Pub. 12-23-69. Filed 5-22-68.

887,663. TRANSCO. Transco Inc. SN 309,704. Pub. 12-23-69. Filed 10-15-68.

887,664. RECON AND DESIGN. Recon Incorporated. SN 311,518. Pub. 12-23-69. Filed 11-6-68.

887,665. SERVICEMASTER AND DESIGN. Servicemaster Industries Inc. SN 321,830. Pub. 12-23-69. Filed 3-14-69.

887,666. MISCELLANEOUS DESIGN. Sparkle Wash, Inc. SN 322,102. Pub. 12-23-69. Filed 3-18-69.

887,667. SPARKLE WASH. Sparkle Wash, Inc. SN 322,194. Pub. 12-23-69. Filed 3-19-69.

Class 105 — Transportation and Storage

887,668. THE AYES OF TEXAS TOURS. Convention and Travel Coordinating Service of the Southwest. SN 298,202. Pub. 12-23-69. Filed 5-15-68.

887,669. CC AND DESIGN. Convention and Travel Coordinating Service of the Southwest. SN 298,203. Pub. 12-23-69. Filed 5-15-68.

887,670. ADVENTURELAND SAFARIS. Pierre C. T. Verheye, d.b.a. Adventureland Safaris. SN 302,540. Pub. 12-23-69. Filed 7-11-68.

887,671. TRANS INTERNATIONAL AIRLINES. Trans International Airlines, Inc. SN 310,369. Pub. 12-23-69. Filed 10-23-68.

Class 107 — Education and Entertainment

887,672. A/S AMERICAN SALESMASTERS AND DESIGN. American Salesmasters, Ltd. SN 302,209. Pub. 12-23-69. Filed 7-8-68.

887,673. GREYHOUND. The Greyhound Corporation. SN 312,192. Pub. 12-23-69. Filed 11-14-68.

887,674. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 312,193. Pub. 12-23-69. Filed 11-14-68.

887,675. THE NATIONAL LABORATORY FOR THE ADVANCEMENT OF EDUCATION. Aerospace Education Foundation. SN 316,062. Pub. 12-23-69. Filed 1-8-69.

Collective Membership Marks

Class 200

887,676. INTERNATIONAL INVENTORS ASSOCIATION AND DESIGN. International Inventors Association. SN 286,824. Pub. 12-23-69. Filed 12-12-67.

887,677. COAT OF ARMS (DESIGN). Alpha Kappa Psi Fraternity. SN 299,540. Pub. 12-23-69. Filed 6-3-68.

Certification Marks

Class A — Goods

887,678. NOMELLE. E. I. du Pont de Nemours and Company. SN 291,665. Pub. 3-5-69. Filed 2-23-68.

887,679. COATWORTHY. E. I. du Pont de Nemours and Company. SN 310,022. Pub. 12-23-69. Filed 10-21-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 38 — Prints and Publications

887,680. Haywood Publishing Company, d.b.a. Oakes Consumer Catalogs, New York, N.Y. SN 275,050. Filed P.R. 6-29-67; Am. S.R. 12-2-68.

UNIQUE PLAYTHINGS

The lining on the drawing represents shading and does not represent any particular color.

For Consumer Catalogs Published Annually (Int. Cl. 16). First use August 1965.

887,681. Kovler Gallery: Chicago, Inc., Chicago, Ill. SN 285,926. Filed P.R. 11-30-67; Am. S.R. 8-20-69.

FORGOTTEN PRINTMAKERS OF THE 19TH CENTURY

Applicant disclaims "Printmakers of the 19th Century" for purposes of registration only, and not in derrogation of any common law rights it may have therein.

For Fine Arts Prints—Namely, Etchings, Engravings, and Lithographs, and Catalogues of Fine Arts Prints (Int. Cl. 16). First use Sept. 6, 1967.

887,682. L.I. Commercial Review, Inc., Plainview, N.Y. SN 315,492. Filed P.R. 12-31-68; Am. S.R. 10-24-69.

LONG ISLAND DAILY REVIEW

For Daily Business Paper (Int. Cl. 16).
First use Sept. 14, 1953.

Class 43—Thread and Yarn

887,683. Hazel Pearson Handicrafts, Inc., Rosemead, Calif. SN 292,692. Filed P.R. 3-7-68; Am. S.R. 8-28-69.

RIBBON STRAW

For Decorative Rayon Strips for Handicrafts (Int. Cl. 23).
First use Aug. 8, 1967.

Class 50—Merchandise Not Otherwise Classified

887,684. Renwal Products, Inc., Mineola, N.Y. SN 307,350. Filed P.R. 9-13-68; Am. S.R. 11-17-69.

EASEL MINIATURES

For Paint-by-Number Set (Int. Cl. 16).
First use Aug. 20, 1968.

Service Marks

Class 100—Miscellaneous

887,685. International Minerals & Chemical Corporation, Skokie, Ill. SN 319,242. Filed P.R. 2-17-69; Am. S.R. 11-3-69.

BETTER WAY TO FARM

For Recommending Fertilization, Seeding and Pest Control Practices to Farmers (Int. Cl. 42).
First use Oct. 2, 1968.

Class 101—Advertising and Business

887,686. Qualified Personnel, Inc., Madison, Wis. SN 308,313. Filed P.R. 9-26-68; Am. S.R. 10-21-69.

BETTER JOBS FOR PEOPLE
BETTER PEOPLE FOR JOBS

For Personnel Placement Services (Int. Cl. 35).
First use on or about July 29, 1968.

Class 102—Insurance and Financial

887,687. Associated Hospital Service of New York, New York, N.Y. SN 301,671. Filed P.R. 7-1-68; Am. S.R. 7-25-69.

Rx

For Providing Prepaid Coverage Either in Full or in Part Against the Cost of Drugs or Medicines Prescribed by Doctors (Int. Cl. 36).
First use May 24, 1968.

TRADEMARK REGISTRATIONS RENEWED

34,777. AMERICAN BEAUTY. Cl. 46 (Int. Cl. 29). 6-12-1900.
76,372. ZEPTO. Cl. 18 (Int. Cl. 5). 1-11-10.
76,449. AMERICAN FAMILY. Cl. 52 (Int. Cl. 3). 1-18-10.
76,493. P & T. Cl. 49 (Int. Cl. 33). 1-18-10.
76,606. SALADA. Cl. 46 (Int. Cl. 30). 2-1-10.
76,702. RE UMBERTO. Cl. 46 (Int. Cl. 29). 3-8-10.
76,722. PITUITRIN. Cl. 18 (Int. Cl. 5). 3-8-10.
77,295. CHICAGO. Cl. 13 (Int. Cl. 6). 3-29-10.
77,496. TOBRALCO. Cl. 42 (Int. Cl. 24). 4-12-10.
77,955. POLKA DOT. Cl. 46 (Int. Cl. 29). 5-17-10.
78,056. CONTRACT. Cl. 37 (Int. Cl. 16). 5-31-10.
78,157. BOOTH. Cl. 35 (Int. Cl. 17). 5-31-10.
263,371. "KNICKERBOCKER" AND DESIGN. Cl. 46 (Int. Cl. 30). 11-5-29.
263,834. LAUNTEX. Cl. 52 (Int. Cl. 3). 11-12-29.
264,053. FISCHER'S. Cl. 46 (Int. Cl. 30). 11-19-29.
265,108. REPRESENTATION OF SEAL AND BORDER. Cl. 46 (Int. Cl. 30). 12-17-29.
265,135. HY-LAND KIDS. Cl. 46 (Int. Cl. 31). 12-17-29.
265,165. VELVETA. Cl. 46 (Int. Cl. 30). 12-17-29.
265,532. DUNEGAL TWEEDS. Cl. 42 (Int. Cl. 24). 12-31-29.
266,279. PONO. Cl. 46 (Int. Cls. 29 and 32). 1-14-30.
266,316. TRAFFLEX. Cl. 21 (Int. Cl. 9). 1-14-30.
267,114. LANA. Cl. 46 (Int. Cls. 29 and 32). 2-11-30.
267,256. CARBOFRAX. Cl. 34 (Int. Cl. 11). 2-18-30.
267,686. FEEDSTUFFS. Cl. 38 (Int. Cl. 16). 2-25-30.
267,719. ETHAVAN. Cl. 46 (Int. Cl. 30). 2-25-30.
268,132. REPRESENTATION OF PORTRAIT OF AN OLD MAN AND DESIGN. Cl. 49 (Int. Cl. 33). 3-11-30.
268,176. THOM MC AN. Cl. 39 (Int. Cl. 25). 3-11-30.
268,971. MOLLE (MO-LAY). Cl. 51 (Int. Cl. 3). 3-25-30.
269,180. OLD OVERHOLT. Cl. 49 (Int. Cl. 33). 3-25-30.
269,197. D & O. Cl. 51 (Int. Cls. 1, 2, and 3). 4-1-30.
269,421. KAPA. Cl. 46 (Int. Cls. 29 and 32). 4-8-30.
269,699. DEMON. Cl. 12 (Int. Cl. 19). 4-15-30.
271,282. HANDI-FOLD. Cl. 28 (Int. Cl. 14). 5-27-30).
271,559. RALEIGH. Cl. 17 (Int. Cl. 34). 6-10-30.
443,377. WINDY CITY. Cl. 39 (Int. Cl. 25). 9-20-49.
443,829. DUMPCRETE. Cl. 23 (Int. Cl. 12). 3-14-50.
443,922. CONCERTO. Cl. 39 (Int. Cl. 25). 4-18-50.
513,996. BRONZOIL. Cl. 28 (Int. Cl. 7). 8-23-49.
514,170. CASTROLEASE. Cl. 15 (Int. Cl. 4). 8-23-49.

514,171. SPHEEROL. Cl. 15 (Int. Cl. 4). 8-23-49.
514,172. CASTROLITE. Cl. 15 (Int. Cl. 4). 8-23-49.
515,457. BIG-BOY. Cl. 7 (Int. Cl. 22). 9-20-49.
515,754. SNOWFINE. Cl. 6 (Int. Cl. 1). 9-27-49.
516,406. SALES MANAGEMENT. Cl. 38 (Int. Cl. 38). 10-18-49.
516,612. LITKENHOUS DIFFERENCE BY SCORE SYSTEM. Cl. 38 (Int. Cl. 16). 10-18-49.
516,724. DEEP SOUTH. Cl. 46 (Int. Cls. 29 and 32). 10-25-49.
516,933. STAG. Cl. 17 (Int. Cl. 34). 10-25-49.
517,402. PROBRITE. Cl. 6 (Int. Cl. 1). 11-8-49.
517,467. LAKE REGION. Cl. 46 (Int. Cl. 29). 11-8-49.
517,819. CHART. Cl. 17 (Int. Cl. 34). 11-22-49.
518,092. CLEVELAND. Cl. 28 (Int. Cl. 7). 11-29-49.
518,442. BONAFAB. Cl. 42 (Int. Cl. 24). 12-6-49.
518,920. PROTEX. Cl. 33 (Int. Cl. 21). 12-20-49.
518,924. CHIKSAN AND DESIGN. Cl. 15 (Int. Cl. 4). 12-20-49.
518,951. QUALITY. Cl. 34 (Int. Cl. 11). 12-20-49.
519,000. SILVACON. Cl. 1 (Int. Cl. 31). 12-20-49.
519,092. SCATBACK. Cl. 22 (Int. Cl. 28). 12-20-49.
519,171. TIMKEN. Cl. 23 (Int. Cls. 7 and 12). 12-27-49.
519,256. SPARTAN. Cl. 23 (Int. Cl. 7). 12-27-49.
519,391. OAK-TEX. Cl. 20 (Int. Cl. 27). 1-3-50.
519,682. BAILEY. Cl. 39 (Int. Cl. 25). 1-10-50.
519,732. UROKON. Cl. 18 (Int. Cl. 5). 1-10-50.
519,752. RESINAT AND DESIGN. Cl. 18 (Int. Cl. 5). 1-10-50.
519,854. REPRESENTATION OF A TROPHY. Cl. 46 (Int. Cl. 30). 1-17-50.
520,254. CERAMAG. Cl. 1 (Int. Cl. 6). 1-24-50.
520,267. CURITY. Cl. 44 (Int. Cl. 5). 1-24-50.
520,291. PATEK PHILIPPE. Cl. 27 (Int. Cl. 14). 1-24-50.
520,360. KITCHENETTE. Cl. 46 (Int. Cls. 29 and 32). 1-31-50.
520,481. NYQ AND DESIGN. Cl. 18 (Int. Cls. 1 and 5). 1-31-50.
520,627. AFCO. Cl. 50 (Int. Cl. 24). 2-7-50.
520,758. KENT MORE. Cl. 26 (Int. Cl. 9). 2-7-50.
521,027. EZ BLEND. Cl. 51 (Int. Cl. 2). 2-14-50.
521,257. EMBLEM (DESIGN). Cl. 39 (Int. Cl. 25). 2-21-50.
521,377. CRESCENDOE LEATHER TAILORED OF WONDERFUL WONDER FABRIC. Cl. 39 (Int. Cl. 25). 2-21-50.
521,385. NOKEM. Cl. 21 (Int. Cl. 11). 2-28-50.
521,642. PRODIGE. Cl. 51 (Int. Cl. 3). 2-28-50.
521,752. SUPER STURDIWEVE AND DESIGN. Cl. 39 (Int. Cl. 25). 3-7-50.
521,776. RENOWN. Cl. 39 (Int. Cl. 25). 3-7-50.
521,956. CHEVRON. Cl. 6 (Int. Cl. 1). 3-7-50.
521,978. MORAINE. Cl. 37 (Int. Cl. 16). 3-7-50.
522,184. MAYTAG. Cl. 23 (Int. Cl. 7). 3-14-50.
522,238. PYRAMID AND DESIGN. Cl. 39 (Int. Cl. 24). 3-14-50.
522,508. MEEHANITE METAL. Cl. 14 (Int. Cl. 6). 3-21-50.
522,509. M METAL. Cl. 14 (Int. Cl. 6). 3-21-50.
522,527. EVERPURE. Cl. 31 (Int. Cl. 11). 3-21-50.
522,703. SANESS. Cl. 44 (Int. Cl. 5). 3-21-50.
522,896. MC CULLOUGH. Cl. 23. (Int. Cls. 7 and 8). 3-28-50.
522,911. BOSTON. Cl. 23 (Int. Cl. 7). 3-28-50.
522,912. BOSTON. Cl. 23 (Int. Cl. 7). 3-28-50.
523,051. WHEAT. Cl. 21 (Int. Cl. 11). 3-28-50.
523,227. FLEET-WING. Cl. 103 (Int. Cl. 37). 3-28-50.
523,268. ARMAND COLD CREAM POWDER. Cl. 51 (Int. Cl. 3). 3-28-50.
523,328. "CHUGGER-SPOOK." Cl. 22 (Int. Cl. 28). 4-4-50.
523,526. PARAGON. Cl. 46 (Int. Cl. 30). 4-4-50.
523,787. CUTTY PIPE SMOKING TOBACCO AND DESIGN. Cl. 17 (Int. Cl. 34). 4-11-50.
523,834. CAPSTAN. Cl. 17 (Int. Cl. 34). 4-11-50.
523,885. MARATAN. Cl. 6 (Int. Cl. 1). 4-11-50.
524,013. DODGE CITY. Cl. 39 (Int. Cl. 25). 4-11-50.
524,116. MONOXI-VENT. Cl. 34 (Int. Cl. 11). 4-18-50.
524,125. KENCORK. Cl. 12 (Int. Cl. 19). 4-18-50.
524,210. WHITEHALL. Cl. 39 (Int. Cl. 25). 4-18-50.
524,220. YORK TOWN. Cl. 23 (Int. Cl. 7). 4-18-50.
524,460. MARLENE. Cl. 46 (Int. Cl. 29). 4-25-50.
524,520. FLAXEDIL. Cl. 18 (Int. Cl. 5). 4-25-50.
524,810. NATIONAL GEOGRAPHIC. Cl. 107 (Int. Cl. 41). 5-2-50.
524,826. VALLEYPLAN. Cl. 102 (Int. Cl. 36). 5-2-50.
524,915. E-Z FOLD AND DESIGN. Cl. 36 (Int. Cl. 20). 5-9-50.
524,927. HYDRO-DRIVE. Cl. 15 (Int. Cl. 4). 5-9-50.
524,946. CRAWFORD AND DESIGN. Cl. 50 (Int. Cl. 22). 5-9-50.
524,987. RED-LINE. Cl. 12 (Int. Cl. 19). 5-9-50.
525,006. SUPER LIMOID. Cl. 12 (Int. Cl. 19). 5-9-50.
525,129. VICTOR. Cl. 13 (Int. Cls. 6 and 12). 5-9-50.
525,178. COAT OF ARMS (DESIGN). Cl. 28 (Int. Cl. 14). 5-16-50.
525,179. BADGE (DESIGN). Cl. 28 (Int. Cl. 14). 5-16-50.
525,313. STREETFIELD. Cl. 39 (Int. Cl. 25). 5-16-50.
525,389. GREEK LETTERS SIGMA NU. Cl. 28 (Int. Cl. 14). 5-23-50.
525,447. BUN AND DESIGN. Cl. 46 (Int. Cl. 30). 5-23-50.
525,505. BEDDY-BYE. Cl. 39 (Int. Cl. 25). 5-23-50.
525,522. TONY LAMA AND DESIGN. Cl. 39 (Int. Cl. 25). 5-23-50.
525,537. AGA. Cl. 34 (Int. Cl. 11). 5-23-50.
525,655. COPPER HEAD. Cl. 46 (Int. Cl. 31). 5-30-50.
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763,657. A AND DESIGN. Cl. 50.
763,661. VIBRA-GUARD. Cl. 50.
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763,664. CHATTON AND DESIGN. Cl. 51.
763,668. QUAKER STATE Q VCC AND DESIGN. Cl. 52.
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763,678. CAPCO/CARDS. Cl. 101.
763,681. DBS/. Cl. 101.
763,683. SEALED DEAL. Cl. 101.
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763,686. ASSOCIATED PROFESSIONAL ETC. AND DESIGN. Cl. 103.
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763,691. DISTRICT PHOTO SERVICE AND DESIGN. Cl. 106.
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763,709. MJB QUICK RICE AND DESIGN. Cl. 46.
763,711. STRAWBERRY FARMS. Cl. 46.
763,714. DESERT ONYX. Cl. 51.
763,719. CONTAINER (DESIGN). Cl. 51.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

148,546. PERFEX AND DESIGN. Cl. 26. 11–16–21. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 5 and 20, in the heading, signature and in the statement, column 1, lines 1 and 2, "Co., Inc." should be deleted and *Company, Incorporated* should be inserted.

247,106. VELVET-LITE. Cl. 26. 9–18–28. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 2, "Inc." should be deleted and *Incorporated* should be inserted.

264,891. DOUBLE EAGLE AND DESIGN. Cl. 21. 12–10–29. The Goodyear Tire & Rubber Company, Akron, Ohio. Amended to appear:

Double Eagle



289,134. BONVUE ETC. AND DESIGN. Cl. 26. 11–17–31. Titmus Optical Company, Incorporated. Petersburg, Va. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

343,728. VALCO. Cl. 26, 3–2–37. Virginia Lens Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Co., Inc." should be deleted and *Company, Incorporated* should be inserted.

374,098. CONTRA-GLARE. Cl. 26. 1–2–40. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, after "Company", *Incorporated* should be inserted.

389,902. CORONET AND DESIGN. Cl. 26. 8–26–41. Virginia Lens Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

508,607. ORANGE CORE. Cl. 5. 4–12–49. Hudson Pulp & Paper Corporation. Hudson Pulp & Paper Corp., New York, N.Y. Amended to appear:

Orange Core

523,362. SKOS. Cl. 39. 4–4–50. Allen-Edmonds Shoe Corporation. Belgium, Wis. Amended to appear:

SKOS

548,883. NOTIFIER. Cl. 21. 9–25–51. Oliver T. Joy, doing business as Notifier Manufacturing Company. Notifier Company, Lincoln, Nebr. Amended to appear:

NOTIFIER

586,645. CABANA. Cl. 26. 3–9–54. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

617,202. TO. Cl. 26. 12–6–55. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 4 and 15, in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

617,203. TO. Cl. 26. 12–6–55. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 4 and 15, and in the statement, Column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

617,204. TO. Cl. 26. 12–6–55. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 4 and 15, in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

622,682. NORMALSITE. Cl. 26. 3–6–56. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the certificate, lines 4 and 15, in the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

662,920. THE GOLDEN LINK AND DESIGN. Cl. 101. 6–10–58. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

672,799. TITMUS. Cl. 26. 1–20–59. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

688,286. TP. Cl. 26. 11–17—59. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

715,040. CRISTYL. Cl. 26. 5–9–61. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

720,519. ANGELITE. Cl. 4. 8–29–61. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

763,827. NOTIFIER AND DESIGN. Cl. 21. 1–28–64. Notifier Corporation. Notifier Company, Lincoln, Nebr. Amended to appear:



764,989. N AND DESIGN. Cl. 21. 2–18–64. Notifier Corporation. Notifier Company, Lincoln, Nebr. Amended to appear:



790,372. LO VAC. Cl. 26. 6–1–65. Titmus Optical Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

824,032. VALGREN. Cl. 26. 2–14–67. Virginia Lens Company, Incorporated, Petersburg, Va. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

838,261. MSL AND DESIGN. Cls. 19, 23, 44, and 50. 11–7–67. MSL Industries, Inc., Chicago, Ill. Amended: In the statement, column 2, line 4, "first aid kits and" is deleted.

881,861. SNUG'L. Cl. 52. 12–2–69. Colgate-Palmolive Company, New York, N.Y. Corrected: In the heading, "Dec. 9, 1969" should be deleted and *Dec. 2, 1969* should be inserted.

882,030. S–E2–V 50. Cl. 18. 12–9–69. American Home Products Corporation, New York, N.Y. Corrected: In the statement, column 2, line 1, "Sulfur" should be deleted and *sulfa* should be inserted.

882,631. LESLIE'S FRIED CHICKEN. Cl. 100. 12–16–69. Chicken Shack, Inc., by change of name from Western Franchise Corporation, Bryan, Tex. Corrected: In the statement, column 2, line 4, "1945" should be deleted and *1934* should be inserted.

883,211. KROEPKE KONTROLS THE KEY TO SAFE DRIVING AND DESIGN. Cl. 19. 12–30–69. Kroepke Kontrols Incorporated, Bronx, N.Y. Corrected: In the statement, column 2, line 3, "and" should be deleted and *an* should be inserted.

883,703. ACTION. Cl. 21. 1–6–70. Connecticut Consolidated Industries, Inc., doing business as Action! Systems Company, Meriden, Conn. Corrected: In the statement, column 2, line 4, "1969" should be deleted and *1959* should be inserted.

883,731. GLURECT. Cl. 23. 1–6–70. Sprinter-Pack Aktiebolag, Halmstad, Sweden. Corrected: In the statement, column 2, line 1, "Actiebolag" should be deleted and *Aktiebolag* should be inserted.

INDEX OF REGISTRANTS

MARCH 10, 1970

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AG Marketing Corp., Indianapolis, Ind. 887,346, pub. 12–23–69. Cl. 10.
AMP Inc.: *See*—
Aircraft-Marine Products Inc.
Abco Chemicals, Inc., Spartanburg, S.C. 887,335, pub. 12–23–69. Cl. 6.
Acme Boot Mfg. Co., Inc., to Acme Boot Co., Inc., Clarksville, Tenn. 524,013, ren. 3–10–70. Cl. 39.
Aerospace Education Foundation, Washington, D.C. 887,675, pub. 12–23–69. Cl. 107.
Aircraft-Marine Products Inc., to AMP Inc., Harrisburg, Pa. 525,972, ren. 3–10–70. Cl. 21.
Aircraft-Marine Products Inc., to AMP Inc., Harrisburg, Pa. 526,014, ren. 3–10–70. Cl. 21.
Albuquerque Phoenix Express, Inc., Albuquerque, N. Mex. 763,690, canc. Cl. 105.
Aldo Controls & Mfg., Inc., Crystal Lake, Ill. 887,324, pub. 12–23–69. Cl. 2.
Alick Co., Inc., Livingston, N.J. 887,467, pub. 12–23–69. Cl. 23.
Allen-Edmonds Shoe Corp., Belgium, Wis. 523,362. Am. 7(d). Cl. 39.
Allied Chemical & Dye Corp., to Allied Chemical Corp., New York, N.Y. 515,754, ren. 3–10–70. Cl. 6.
Allied Mills, Inc., Chicago, Ill. 887,580, pub. 12–23–69. Cl. 46.
Allied Stores of New York, Inc., Jamaica, N.Y. 887,647, pub. 12–23–69. Cl. 101.
Alpha Kappa Psi Fraternity, Indianapolis, Ind. 887,677, pub. 12–23–69. Cl. 200.
Alto Corp., York, Pa. 887,473–4, pub. 12–23–69. Cl. 23.
Aluminum Co. of America, Pittsburgh, Pa. 887,358, pub. 12–23–69. Cl. 14.
Amana Refrigeration, Inc., Amana, Iowa. 887,499, pub. 12–23–69. Cl. 31.
Amana Refrigeration, Inc., Amana, Iowa. 887,506, pub. 12–23–69. Cl. 34.
American Brands, Inc.: *See*—
American Tobacco Co., The.
American Can Co.: *See*—
Marathon Corp.
American Cyanamid Co.: *See*—
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American Enka Corp., Enka, N.C. 763,377, canc. Cl. 21.
American Envelope Co., The, West Carrollton, Ohio, to Kimberly-Clark Corp., Neenah, Wis. 521,978, ren. 3–10–70. Cl. 37.
American Felt Co., Glenville, Conn., to GAF Corp., New York, N.Y. 520,627, ren. 3–10–70. Cl. 50.
American Flag & Banner Co. of New Jersey, Clifton, N.J. 763,657, canc. Cl. 50.
American Gas Association, Inc., New York, N.Y. 525,537, ren. 3–10–70. Cl. 34.
American Home Products Corp., New York, N.Y. 882,030, cor. Cl. 18.
American Plasticraft Co., Chicago, Ill. 887,413, pub. 12–23–69. Cl. 21.
American Plywood Association, Tacoma, Wash. 887,347, pub. 12–23–69. Cl. 12.
American Rubber Corp., Albertville, Ala. 763,697, canc. Cl. 12.
American Salesmasters, Ltd., Denver, Colo. 887,672, pub. 12–23–69. Cl. 107.
American Smelting & Refining Co., New York, N.Y. 887,362, pub. 12–23–69. Cl. 14.
American Stock Exchange, New York, N.Y. 887,520, pub. 12–23–69. Multiple Class (Classes 38 and 102).
American Tobacco Co., The, to American Brands, Inc., New York, N.Y. 523,787, ren. 3–10–70. Cl. 17.
American Tobacco Co., The, to American Brands, Inc., New York, N.Y. 523,884, ren. 3–10–70. Cl. 17.
American Writing Paper Co., Holyoke, Mass., to Brown Co., New York, N.Y. 78,056, ren. 3–10–70. Cl. 37.
Ametek, Inc., East Moline, Ill. 887,484, pub. 12–23–69. Cl. 24.
Ana Maria, Inc., Beverly Hills, Calif. 887,605, pub. 12–23–69. Cl. 51.
Anaren Microwave, Inc., Syracuse, N.Y. 887,410, pub. 12–23–69. Cl. 21.
Apple Beer Corp., Salt Lake City, Utah. 887,570, pub. 12–23–69. Cl. 45.
Appleton Wire Works Corp., Appleton, Wis. 887,500, pub. 12–23–69. Cl. 31.
Applied Power Industries, Inc., Milwaukee, Wis. 887,462, pub. 12–23–69. Cl. 23.
Arby's, Inc., Youngstown, Ohio. 887,589, pub. 12–23–69. Cl. 46.
Armand Co., The, to Evert D. Weeks, Des Moines, Iowa. 523,268, ren. 3–10–70. Cl. 51.
Arnold, Schwinn & Co., to Schwinn Bicycle Co., Chicago, Ill. 526,131, ren. 3–10–70. Cl. 19.
Aron, M., Corp., New York, N.Y. 443,922, ren. 3–10–70. Cl. 39.
Artex Hobby Products, Inc., Lima, Ohio. 887,371, pub. 12–23–69. Cl. 16.
Ashland Oil & Refining Co., Ashland, Ky. 887,316, pub. 12–23–69. Cl. 1.
Associated Hospital Service of New York, New York, N.Y. 887,687. Cl. 102.
Associated Professional Launderers of America, Inc., Charlotte, N.C. 763,686, canc. Cl. 103.
Astroweld Corp., Linden, N.J. 763,328, canc. Cl. 13.
Ateliers Reunis pour la Fabrication d'Articles Metalliques, Schiltigheim, France. 763,364, canc. Cl. 19.
Atlantic Lures, Inc., Providence, R.I. 887,439, pub. 12–23–69. Cl. 22.
Aunt Lucy Hams, Inc.: *See*—
Southern Farms.
"Automatic" Sprinkler Corp., Cleveland, Ohio, from The Rawlings Corp., St. Louis, Mo. 887,431, pub. 9–23–69. Cl. 22.
Avon Products, Inc., New York, N.Y. 887,617–23, pub. 12–23–69. Multiple Class (Classes 51 and 52).
Avon Products, Inc., New York, N.Y. 887,625–30, pub. 12–23–69. Multiple Class (Classes 51 and 52).
Avon Shoe Co., Inc., New York, N.Y. 763,561, canc. Cl. 39.
Bailey, George S., Hat Co., Inc., Los Angeles, Calif. 519,682, ren. 3–10–70. Cl. 39.
Balcom Chemicals, Inc., Greeley, Colo. 887,340, pub. 10–28–69. Cl. 6.
Bank of Pennsylvania, Reading, Pa. 887,657, pub. 12–23–69. Cl. 102.
Bantam Metal Corp., Philadelphia, Pa. 763,483, canc. Cl. 31.
Bartlett-Snow-Pacific, Inc., San Francisco, Calif. 887,452, pub. 6–11–68. Cl. 28.
Barwick, E. T., Industries, Inc., Chamblee, Ga. 887,557–61, pub. 12–23–69. Cl. 42.
Beatrice Foods Co.: *See*—
Knickerbocker Mills Co.
Beco Products Corp., Chicago, Ill. 763,304, canc. Cl. 3.
Becton, Dickinson & Co., East Rutherford, N.J. 887,330, pub. 12–23–69. Cl. 6.
Behlen Mfg. Co., Columbus, Nebr. 887,348–9, pub. 12–23–69. Multiple Class (Classes 12, 23, and 34).
Bendix Corp., The, Washington, D.C. 763,464, canc. Cl. 26.
Berg Electronics, Inc., New Cumberland, Pa. 887,407, pub. 12–23–69. Cl. 21.
Berman, Bud, Sportswear Inc., New York, N.Y. 763,549, canc. Cl. 39.
Bernstein, H., & Co., Chicago, Ill. 443,377, ren. 3–10–70. Cl. 39.
Biddle Purchasing Co., New York, N.Y. 524,987, ren. 3–10–70. Cl. 12.
Bijour Fix, Societe Anonyme, Paris, France. 887,493, pub. 12–23–69. Cl. 28.
Black, M., Mfg. Co., Inc., Philadelphia, Pa. 887,419, pub. 12–23–69. Cl. 21.
Blason Mobile Homes Corp., Elkhart, Ind. 887,383, pub. 7–30–68. Cl. 19.
Block Drug Co., Inc., Jersey City, N.J. 887,611, pub. 12–23–69. Cl. 51.
Blumcraft of Pittsburgh, Pittsburgh, Pa. 763,688, canc. Cl. 108.
Bocker, Edward, d.b.a. Bocker Exterminating Service, Inwood, N.Y. 887,641, pub. 12–23–69. Cl. 100.
Boeniger, David, Zurich, Switzerland. 887,635, pub. 12–23–69. Cl. 52.
Boise Cascade Corp., Boise, Idaho. 763,812, canc. Cl. 16.
Bonder & Carnase Studio Inc., New York, N.Y. 887,357, pub. 12–23–69. Cl. 14.
Booth, Edwin W.: *See*—
Booth, Nelson E.
Booth, Nelson E., to Edwin W. Booth, Brooklyn, N.Y. 78,157, ren. 3–10–70. Cl. 85.
Borel, Ernest, & Cie S.A., Neuchatel, Switzerland. 887,490, pub. 12–23–69. Cl. 27.
Boston Gear Works, Inc., North Quincy, Mass., to Murray Co. of Texas, Inc., d.b.a. Boston Gear Works, Pittsburgh, Pa. 522,911–12, ren. 3–10–70. Cl. 28.
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Breck, John H., Inc., Wayne, N.J. 887,624, pub. 12–23–69. Cl. 51.
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Bremerman, Eugene S., d.b.a. The No-Kem Co., to The No Kem Co., Inc., St. Louis, Mo. 521,385, ren. 3–10–70. Cl. 21.
Bright Leaf Corp., Douglas, Ga. 887,404–5, pub. 12–23–69. Cl. 19.
Bristol-Myers Co., New York, N.Y. 887,376, pub. 12–23–69. Cl. 18.
Bristol-Myers Co., New York, N.Y. 887,633, pub. 10–21–69. Cl. 52.
British Castors Ltd., Tipton, England. 887,356, pub. 12–23–69. Cl. 18.
Broadmoor Industries, Ltd., Des Plaines, Ill. 887,421, pub. 12–23–69. Cl. 21.
Broadway Joe's, Inc., Miami, Fla. 887,652, pub. 12–23–69. Cl. 101.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 887,544, pub. 12–23–69. Cl. 39.
Brown Co.: *See*—
American Writing Paper Co.

Brown & Williamson Tobacco Corp., Louisville, Ky. 271,559, ren. 3–10–70. Cl. 17.
Brundee Co., The, Cranford, N.J. 763,381, canc. Cl. 21.
Budelman Electronics Corp., Stamford, Conn. 763,385, canc. Cl. 21.
Budkon, Inc., Fort Lauderdale, Fla. 763,360, canc. Cl. 18.
Bunte Candies, Inc., Oklahoma City, Okla. 887,578, pub. 9–16–69. Cl. 46.
Burlington Industries, Inc., New York, N.Y. 763,543, canc. Cl. 39.
CPC International Inc.: *See*—
New York Quinine & Chemical Works, Inc.
Cadillac-Wheelchairs, Inc., Baltimore, Md. 763,608, canc. Cl. 44.
Cahners Publishing Co., Inc., Boston, Mass. 887,523, pub. 12–23–69. Cl. 38.
Caldwell, J. E., & Co., Philadelphia, Pa. 763,473, canc. Cl. 28.
California Farmer, San Francisco, Calif. 887,524, pub. 12–23–69. Cl. 38.
Capco Inc., Pasadena, Calif. 763,678, canc. Cl. 101.
Carborundum Co., The, to The Carborundum Co., Niagara Falls, N.Y. 267,256, ren. 3–10–70. Cl. 34.
Carron Net Co., Inc., Two River, Wis. 887,446, pub. 12–23–69. Cl. 22.
Cassini, Oleg Inc., New York, N.Y. 887,583, pub. 12–23–69. Cl. 39.
Castrol Ltd.: *See*—
Wadefield, C. C., & Co. Ltd.
Catini, Mario, Co., North Bergen, N.J. 752,856, canc. Cl. 12.
Charisma Fashions, Inc., New York, N.Y. 887,547, pub. 12–23–69. Cl. 39.
Chemical Sundries Co., Inc.: *See*—
Chemtoy Corp.
Chemtoy Corp., from Chemical Sundries Co., Inc., Chicago, Ill. 887,442, pub. 12–23–69. Cl. 22.
Chicago Spring Butt Co., to Chicago Spring Hinge Co., Chicago, Ill. 77,295, ren. 3–10–70. Cl. 13.
Chicken Shack, Inc., by change of name from Western Franchise Corp., Bryan, Tex. 882,631, cor. Cl. 100.
Chiksan Co., Brea, to FMC Corp., San Jose, Calif. 518,924, ren. 3–10–70. Cl. 15.
Christy, Thos., & Co. Ltd.: *See*—
Olson, Martin C.
Church & Dwight Co., Inc., New York, N.Y., from Tidy House Products Co., Omaha, Nebr. 887,606, pub. 12–23–69. Cl. 51.
Cleveland Mill and Power Co., Lawndale, N.C., to Indian Head Inc., New York, N.Y. 515,457, ren. 3–10–70. Cl. 7.
Coastal Dynamics Corp., Venice, Calif. 887,566, pub. 12–23–69. Cl. 44.
Coca-Cola Bottling Works, Nashville, Tennessee, Nashville, Tenn. 643,760, canc. Cl. 45.
Cockshaw, Herbert, Jr., New York, N.Y. 763,477, canc. Cl. 28.
Coconut Products Ltd., Rabaul, New Guinea. 887,575, pub. 12–23–69. Cl. 46.
Colgate-Palmolive Co., New York, N.Y. 881,861, cor. Cl. 52.
Commodore Corp., The, Omaha, Nebr. 887,391, pub. 12–23–69. Cl. 19.
Commodore Corp., The, Omaha, Nebr. 887,399, pub. 12–23–69. Cl. 19.
Concord Mobile Homes, Inc., Elkhart, Ind. 763,372, canc. Cl. 19.
Connecticut Consolidated Industries, Inc., d.b.a. Action! Systems Co., Meriden, Conn. 882,703, cor. Cl. 21.
Consare Corp., Rancocas, N.J. 887,418, pub. 12–23–69. Cl. 21.
Consolidated Fine Arts, Ltd., New York, N.Y. 887,596, pub. 12–23–69. Cl. 50.
Consumers Textile, Ypsilanti, Mich. 763,544, canc. Cl. 31.
Continental Distilling Corp., Philadelphia, Pa. 887,592–5, pub. 12–23–69. Cl. 49.
Convention & Travel Coordinating Service, Houston, Tex. 887,668–9, pub. 12–23–69. Cl. 105.
Corbin, Ltd., New York, N.Y. 887,551, pub. 12–23–69. Cl. 39.
Corporate Publications, Inc., Boston, Mass. 763,532, canc. Cl. 38.
Corsi, Robert M., San Francisco, Calif. 763,711, canc. Cl. 46.
Cowiche Growers, Inc., Cowiche, Wash. 265,135, ren. 3–10–70. Cl. 46.
Cowles Detergent Co., The, Cleveland, Ohio, to Stauffer Chemical Co., New York, N.Y. 263,834, ren. 3–10–70. Cl. 52.
Crawford Mfg. Co., Inc., Richmond, Va. 524,946, ren. 3–10–70. Cl. 50.
Crescendoe Gloves, Inc.: *See*—
Super Glove Co., The.
Crompton Co., New York, N.Y. 763,596, canc. Cl. 42.
Crouse-Hinds Co., Syracuse, N.Y. 266,316, ren. 3–10–70. Cl. 21.
Crown Cork & Seal Co., Inc., Philadelphia, Pa. 525,898, ren. 3–10–70. Cl. 50.
Crystal, David, Inc. from David Crystal, Inc., New York, N.Y. 887,529, pub. 12–23–69. Cl. 39.
Culpepper, Edith, exectrix of the estate of Joseph Culpepper, from Joseph Culpepper, Opa-Locka, Fla. 887,574, pub. 9–6–69. Cl. 46.
Culpepper, Joseph: *See*—
Culpepper, Edith.
Curiator Corp., East Rochester, N.Y. 887,317, pub. 12–23–69. Cl. 1.
Curtis, Helene, Industries, Inc., Chicago, Ill. 887,599–600, pub. 12–23–69. Cl. 51.
Curtis, Helene, Industries, Inc., Chicago, Ill. 887,632, pub. 12–23–69. Cl. 52.
D & B Foods, Inc., Corvallis, Oreg. 887,585, pub. 12–23–69. Multiple Class (Classes 46 and 52).
D.C. Wine Industries, Ltd., Washington, D.C. 763,654, canc. Cl. 47.
Dahle Importers, Inc., Arcadia, Calif. 887,546, pub. 12–23–69. Cl. 39.
Dairyland, Inc., Des Moines, Iowa. 887,654, pub. 12–23–69. Cl. 101.
Dana Corp., Toledo, Ohio. 887,472, pub. 12–23–69. Cl. 23.
D'Arc, Jean, Ltd., Chicago, Ill. 887,615, pub. 12–23–69. Cl. 51.
Da-Roche Laboratories, Inc., Jackson, Mich. 887,331, pub. 12–23–69. Cl. 6.
Darrien, Paul Leon Jean Marie, Brussells, Belgium. 763,664, canc. Cl. 51.
Data-Bank Systems, Inc., Hartford, Conn. 763,681, canc. Cl. 101.
Davis, David C., d.b.a. David C. Davis, to C. Davis Co., San Francisco, Calif. 887,359, pub. 12–23–69. Cl. 14.
Deep South Products, Inc.: *See*—
Fischer, B., & Co., Inc.
Mitchell Canneries, Inc.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 887,338, pub. 12–23–69. Cl. 6.
Delicious Foods Co., Grand Island, Nebr. 887,587, pub. 12–23–69. Cl. 46.
Delsteel, Inc., Wilmington, Del. 887,478, pub. 12–23–69. Cl. 23.
Denny's Restaurants, Inc., La Mirada, Calif. 887,645, pub. 12–23–69. Cl. 100.
Dent-U-Sonic Corp., North Miami Beach, Fla. 887,562, pub. 12–23–69. Cl. 44.
Devitz, Wm., Inc., New York, N.Y. 887,542, pub. 12–23–69. Cl. 39.
De Wan Mfg. Corp., Milwaukee, Wis. 887,545, pub. 12–23–69. Cl. 39.
Dexter Folder Co., Pearl River, N.Y., to Miehle-Goss-Dexter, Inc., Chicago, Ill. 518,092, ren. 3–10–70. Cl. 23.
Diamond Sales Corp., New York, N.Y. 763,663, canc. Cl. 101.
Diana Mfg. Co., to Diana Mfg. Co., Green Bay, Wis. 522,703, ren. 3–10–70. Cl. 44.
Dior, Christian, Perfumes Corp., New York, N.Y. 763,719, canc. Cl. 51.
District Photo, Inc., Washington, D.C. 763,691, canc. Cl. 106.
Dodge Mfg. Corp., to Reliance Electric Co., Mishawaka, Ind. 518,996, ren. 3–10–70. Cl. 23.
Dodge & Olcott Co., to Fritzsche Dodge & Olcott Inc., New York, N.Y. 269,197, ren. 3–10–70 Cl. 51.
Dolly Madison Industries, Inc., Philadelphia, Pa. 887,640, pub. 12–23–69. Cl. 100.
Dorsey Co., The, d.b.a. The Baby's Own Co., New York, N.Y. 887,552, pub. 12–23–69. Cl. 39.
Dow Corning Corp., Midland, Mich. 887,318, pub. 12–23–69. Cl. 1.
Duffy-Mott Co., Inc.: *See*—
Pratt-Low Preserving Co.
Duncan, Donald F., Inc., Evanston, Ill. 763,895–7, canc. Cl. 22.
Dunhill, Alfred, Ltd., London, England. 887,373, pub. 12–23–69. Cl. 17.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 887,-678–9, pub. 8–5–69. Cl. A.
Dutch Gold Honey, Inc., Lancaster, Pa. 887,582, pub. 12–23–69. Cl. 46.
Dutron Corp., Costa Mesa, Calif. 763,392, canc. Cl. 21.
Dyno Merchandise Corp., New York, N.Y. 887,468, pub. 12–23–69. Cl. 23.
Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 763,638, canc. Cl. 46.
Economics Laboratory, Inc., St. Paul, Minn. 887,479, pub. 12–23–69. Cl. 23.
Eimco Corp., The: *See*—
Envirotech Corp.
Electrada Corp., The, Los Angeles, Calif. 763,461, canc. Cl. 26.
Electro Dispersion Corp., Long Island City, N.Y. 887,408, pub. 12–23–69. Cl. 21.
Electrographic Corp., New York, N.Y. 887,651, pub. 12–23–69. Cl. 101.
Emba Mink Breeders Association, Racine, Wis., from Sable Mink Farms, Zion, Ill. 887,315, pub. 12–23–69 Cl. 1.
Emerson Electric Co., St. Louis, Mo. 887,412, pub. 12–23–69. Cl. 21.
English Sewing Ltd.: *See*—
Tootal Broadhurst Lee Co. Ltd.
Envirotech Corp., Palo Alto, Calif., from The Eimco Corp., Salt Lake City, Utah 887,454, pub. 12–23–69. Cl. 23.
Era Watch Co. Ltd. C. Ruedi-Flury & Co., Bienne, Switzerland. 763,469, canc. Cl. 27.
Essex Products, Inc., Haverhill, Mass. 763,566, canc. Cl. 39.
Etablissements Abel Rossignol-Club Rossignol, Voiron, France. 887,443, pub. 12–23–69 Cl. 22.
Eveready Manifold Corp., Chicago, Ill. 763,525, canc. Cl. 37.
Everpure, Inc.: *See*—
Tested Appliance Co.
Exclusive Co., The, Philadelphia, Pa. 887,521, pub. 9–16–69. Cl. 38.
Expanded Metal Co Ltd., The, London, England. 887,355, pub. 12–23–69. Multiple Class (Classes 13 and 23).
FMC Corp.: *See*—
Chicksan Co.
Food Machinery Corp.
FMC Corp., San Jose, Calif. 763,430, canc. Cl. 23.
Fairchild Publications, Inc., New York, N.Y. 763,529, canc. Cl. 38.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 887,336, pub. 12–23–69. Cl. 6.
Fabricas Del Calzado Canada, S.A., Jalisco, Mexico. 887,550, pub. 12–23–69. Cl. 39.
Farr Co., El Segundo, Calif. 887,497, pub. 12–23–69. Cl. 31.

Fibre-Metal Products Co., The, Chester, Pa. 887,548, pub. 12–23–69. Cl. 39.
Fidelity Bank, The, Philadelphia, Pa. 887,661, pub. 12–23–69. Cl. 102.
Field Research Corp., San Francisco, Calif. 887,656, pub. 12–23–69. Cl. 101.
Finboat Mfg. Co., Waterloo, Iowa. 887,400, pub. 12–23–69. Cl. 19.
Fischer, B., & Co., Inc., New York, N.Y., to Deep South Products, Inc., Jacksonville, Fla. 264,053, ren. 3–10–70. Cl. 46.
Fischer, Harry, Corp., Philadelphia, Pa. 887,582, pub. 12–23–69. Cl. 39.
Fisher, H. C., Springfield, Mo. 763,675, canc. Cl. 100.
Fleet-Wing Corp., Cleveland, Ohio. 528,227, ren. 3–10–70. Cl. 103.
Food Machinery Corp., to FMC Corp., San Jose, Calif. 519,-256, ren. 3–10–70. Cl. 23.
Food Products Co. of America, Chicago, Ill. 524,460, ren. 3–10–70. Cl. 46.
Fostoria-Fannon, Inc., Fostoria, Ohio. 887,511, pub. 12–23–69. Cl. 34.
"Fo-We" Forschungs- und Verwertungs-Anstalt, Vaduz, Liechtenstein. 763,359, canc. Cl. 18.
Fox-Raff & Co., Inc., Seattle, Wash. 887,660, pub. 12–23–69. Cl. 102.
Foy Paint Co., Inc., The, to Foy-Johnston, Inc., Cincinnati, Ohio. 526,045, ren. 3–10–70. Cl. 16.
Foy-Johnston, Inc.: *See*—
Foy Paint Co., Inc., The.
Fremont Industries, Inc., Shakopee, Minn. 887,637, pub. 12–23–69. Cl. 52.
French Beauty Inc., The, Montreal, Quebec, Canada. 887,495, pub. 12–23–69. Multiple Class (Classes 29 and 40).
Fritzsche Dodge & Olcott Inc.: *See*—
Dodge & Olcott Co.
Fuller Laboratories, Inc., Eden Prairie, Minn. 887,379–80, pub. 12–23–69. Cl. 18.
GAF Corp.: *See*—
American Felt Co.
GAF Corp., New York, N.Y. 887,366, pub. 12–23–69. Cl. 15.
Gallaher Ltd., Belfast, Northern Ireland. 887,374, pub. 12–23–69. Cl. 17.
Game Co., The, New York, N.Y. 887,440–1, pub. 12–23–69. Cl. 22.
Gates Rubber Co., The, Denver, Colo. 763,321, canc. Cl. 18.
General Baking Co., to General Host Corp., New York, N.Y. 265,108, ren. 3–10–70. Cl. 46.
General Cigar Co., Inc., New York, N.Y. 887,375, pub. 12–23–69. Cl. 17.
General Hitch Products, Inc., Detroit, Mich. 887,384, pub. 12–23–69. Cl. 19.
General Host Corp.: *See*—
General Baking Co.
General Mills, Inc., Minneapolis, Minn. 887,325, pub. 12–23–69. Cl. 2.
General Mills, Inc., Minneapolis, Minn. 887,590–1, pub. 12–23–69. Cl. 46.
General Tire & Rubber Co., The: *See*—
Pennsylvania Rubber Co.
Genesco Inc., Nashville, Tenn. 887,614, pub. 12–23–69. Cl. 51.
Georgia Co., Inc., The, New York, N.Y. 763,598, canc. Cl. 42.
Gletzelt, Rudolf, d.b.a. Gletzelt & Herbort Machinenfabrik, Guetersloh, Germany. 887,459, pub. 12–23–69. Cl. 23.
Glen Keith-Glenlivet Distillery Co., Ltd., Keith, Scotland. 763,655, canc. Cl. 49.
Glen Raven Cotton Mills, Inc., Glen Raven, N.C. 763,454, canc. Cl. 23.
Glendinning Companies, Inc., Westport, Conn. 887,655, pub. 12–23–69. Cl. 101.
Goldfish Sailboat Co., Inc., Waxahachie, Tex. 887,393, pub. 12–23–69. Cl. 19.
Goodrich Brothers Pearl Corp., New York, N.Y. 887,494, pub. 12–23–69. Cl. 28.
Goodrich, Elvin R., Oklahoma City, Okla. 763,506, canc. Cl. 34.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 264,891. Am. 7(d). Cl. 21.
Gordon Baking Co., to Silvercup Bakers Inc., Detroit, Mich. 519,854, ren. 3–10–70. Cl. 46.
Gordonay Corp., Kershaw, S.C. 887,401, pub. 12–23–69. Cl. 19.
Grace, W. R., & Co., Duncan, S.C. 887,455, pub. 12–23–69. Cl. 23.
Greenwald Industries, Inc., Belleville, N.J. 887,486, pub. 12–23–69. Cl. 26.
Greyhound Corp., The, Chicago, Ill. 887,322–3, pub. 12–23–69. Cl. 2.
Greyhound Corp., The, Chicago, Ill. 887,491–2, pub. 12–23–69. Cl. 28.
Greyhound Corp., The, Chicago, Ill. 887,502, pub. 12–23–69. Cl. 32.
Greyhound Corp., The, Chicago, Ill. 887,673–4, pub. 12–23–69. Cl. 107.
Grogan, Garner H., Jr.: *See*—
Security Electric Corp.
Guy-Chart Tools Ltd., Scarborough, Ontario, Canada. 887,-456, pub. 12–23–69. Cl. 23.
HMC Corp., Contoocook, N.H. 887,481, pub. 12–23–69. Cl. 23.
Hahn, William, & Co., Washington, D.C. 763,547, canc. Cl. 39.
Hasbro Industries, Inc., Pawtucket, R.I. 887,449, pub. 12–23–69. Cl. 22.
Haserot Co., The: *See*—
Hawaiian Canneries Co., Ltd.
Hassenfeld Bros., Inc., Central Falls, R.I. 763,400, canc. Cl. 22.
Hatchet Petroleum Co., New York, N.Y. 763,334, canc. Cl. 15.
Hatchet Petroleum Co., New York, N.Y. 763,336, canc. Cl. 15.
Hawaiian Canneries Co., Ltd., Kapaa, Kauai, Hawaii, to The Haserot Co., Cleveland, Ohio. 266,279, ren. 3–10–70. Cl. 46.
Hawaiian Canneries Co., Ltd., Kapaa, Kauai, Hawaii, to The Haserot Co., Cleveland, Ohio. 267,144, ren. 3–10–70. Cl. 46.
Hawaiian Canneries Co., Ltd., Kapaa, Kauai, Hawaii, to The Haserot Co., Cleveland, Ohio. 269,421, ren. 3–10–70. Cl. 46.
Haywood Publishing Co., d.b.a. Oakes Consumer Catalogs, New York, N.Y. 887,580. Cl. 38.
Heddon's, James, Sons, Dowagiac, Mich., to Victor Comptometer Corp., Chicago, Ill. 523,328, ren. 3–10–70. Cl. 22.
Helen of Troy Wig Corp., El Paso, Tex. 887,556, pub. 12–23–69. Cl. 40.
Hermitt, Parma, Italy. 887,537, pub. 12–23–69. Cl. 39.
Hober, Mark, Inc., New York, N.Y. 763,557, canc. Cl. 39.
Hooker Chemical Corp., Ntagara Falls, N.Y. 763,309, canc. Cl. 6.
Houbigant, Inc., New York, N.Y. 887,603–4, pub. 12–23–69. Cl. 51.
Houghland Packing Co., Inc., The, Franklin, Ind., to Rossville Packing Co., Rossville, Ill. 520,360, ren. 3–10–70. Cl. 46.
Houghton, E. F., & Co., Philadelphia, Pa. 524,927, ren. 3–10–70. Cl. 15.
Hudson Pulp & Paper Corp., from Hudson Pulp & Paper Corp., New York, N.Y. 508,607. Am. 7(d). Cl. 5.
Humes & Berg Mfg. Co., Inc., East Chicago, Ind. 524,915, ren. 3–10–70. Cl. 36.
Huston, Tom, Peanut Co., Minneapolis, Minn. 887,572, pub. 12–23–69. Cl. 45.
Indian Head Inc.: *See*—
Cleveland Mill & Power Co.
Industrial Electronic Engineers Inc., Van Nuys, Calif. 887,-423, pub. 12–23–69. Cl. 21.
Ingals, Frank J., Chicago, Ill. 763,335, canc. Cl. 15.
Injection Molders Supply Co., Inc., Cleveland, Ohio. 763,442, canc. Cl. 23.
Imperial International Corp., New York, N.Y. 887,483, pub. 12–23–69. Cl. 23.
International Inventors Association, New York, N.Y. 887,-676, pub. 12–23–69. Cl. 200.
International McKay Industries Corp., Minneapolis, Minn. 763,322, canc. Cl. 18.
International Minerals & Chemical Corp., Skokie, Ill. 887,585. Cl. 100.
Isler, Jacques, Corp., New York, N.Y. 763,571, canc. Cl. 39.
Jackco Enterprises, Inc., Grand Rapids, Mich. 887,576, pub. 12–23–69. Cl. 46.
Jackson & Church Electronics Co., Inc., Melbourne, Fla. 887,488, pub. 12–23–69. Cl. 26.
Jacobson, F., & Sons, Inc., to Kayser-Roth Corp., New York, N.Y. 524,210, ren. 3–10–70. Cl. 39.
Jacobson, F., & Sons, Inc., to Kayser-Roth Corp., New York, N.Y. 525,813, ren. 3–10–70. Cl. 39.
Janesville Cotton Mills, Inc., Janesville, Wis. 763,695, canc. Cl. 1.
Jayar Corp., Ltd., Lale, Hawaii. 763,407, canc. Cl. 22.
Jetdraft, Inc., Detroit, Mich. 887,505, pub. 12–23–69. Cl. 34.
Johnson & Johnson, New Brunswick, N.J. 763,607, canc. Cl. 44.
Johnson & Johnson, New Brunswick, N.J. 763,610, canc. Cl. 44.
Joseph & Feiss Co., The: *See*—
Schloss Bros. & Co., Inc.
Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 521,257, ren. 3–10–70. Cl. 39.
Joy, Oliver T. d.b.a. Notifier Mfg. Co. Notifier Co., Lincoln, Nebr. 548,858. Am. 7(d). Cl. 21.
Juilliard, A. D., & Co., Inc., to United Merchants and Manufacturers, Inc., New York, N.Y. 265,532, ren. 3–10–70. Cl. 42.
Jump Suits Ltd., Inc., Dallas, Tex. 887,540, pub. 12–23–69. Cl. 39.
Junior Major Leaguer Inc., New York, N.Y. 763,560, canc. Cl. 39.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 763,333, canc. Cl. 14.
Kaman Corp., Bloomfield, Conn. 887,422, pub. 12–23–69. Multiple Class (Classes 21 and 36).
Kamenstein, David, Inc., New York, N.Y. 887,552, pub. 12–23–69. Cl. 18.
Kanawha Valley Bank, The, Charleston, W. Va. 524,626, ren. 3–10–70. Cl. 102.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 525,805, ren. 3–10–70. Cl. 39.
Kayser-Roth Corp.: *See*—
Jacobson, F., & Sons, Inc.
Kayser, Julius, & Co.
Kendall Co., The, Waspole, Mass. 520,267, ren. 3–10–70. Cl. 44.
Kennedy, David E., Inc., to Kentile Floors Inc., Brooklyn, N.Y. 524,125, ren. 3–10–70. Cl. 12.
Kentile Floors Inc.: *See*—
Kennedy, David E., Inc.
Kent-Moore Corp.: *See*—
Kent-Moore Organization Inc.
Kent-Moore Organization Inc., Detroit, to Kent-Moore Corp., Warren, Mich. 520,758, ren. 3–10–70. Cl. 26.

Kent-Moore Organization Inc., Detroit, to Kent-Moore Corp., Warren, Mich. 524,116, ren. 3–10–70. Cl. 34.
Kestenman Bros. Mfg. Co., Providence, R.I. 271,282, ren. 3–10–70. Cl. 28.
Khen Klassics Advertising, Inc., New York, N.Y. 744,107, canc. Cl. 38.
Kimberly-Clark Corp.: *See*—
American Envelope Co., The.
Kimberly-Clark Corp., Neenah, Wis. 763,300, canc. Cl. 2.
Kimberly-Clark Corp., Neenah, Wis. 887,517, pub. 12–23–69. Cl. 37.
King-Seeley Thermos Co., Ann Arbor, Mich. 887,508, pub. 12–23–69. Cl. 34.
Kinney, Miss Jean, d.b.a. Empty Nest Enterprises, New Milford, Conn. 887,648, pub. 12–23–69. Cl. 101.
Kirk, James S., & Co., Chicago, Ill., to The Procter & Gamble Co., Cincinnati, Ohio. 76,449, ren. 3–10–70. Cl. 52.
Kitchen Art Foods, Inc., Chicago, Ill. 763,652, canc. Cl. 46.
Knapp Mills Inc., Long Island City, N.Y. 763,661–2, canc. Cl. 50.
Knickerbocker Mills Co., New York, N.Y., to Beatrice Foods Co., Chicago, Ill. 263,371, ren. 3–10–70. Cl. 46.
Koehler Mfg. Co., Marlboro, Mass. 523,051, ren. 3–10–70. Cl. 21.
Kohnstamm, H., & Co., Inc., New York, N.Y. 521,027, ren. 3–10–70. Cl. 51.
Kohnstamm, H., & Co., Inc., New York, N.Y. 523,526, ren. 3–10–70. Cl. 46.
Kortman & Schulte N.V., Rotterdam, Netherlands. 887,341, pub. 12–23–69. Cl. 6.
Kovler Gallery: Chicago, Inc., Chicago, Ill. 887,681. Cl. 38.
Krafteo Corp., from National Dairy Products Corp., New York, N.Y. 887,569, pub. 12–23–69. Multiple Class (Classes 45 and 46).
Kresge, S. S., Co., Detroit, Mich. 887,427, pub. 12–23–69. Cl. 21.
Kresge, S. S., Co., Detroit, Mich. 887,450, pub. 12–23–69. Cl. 22.
Kroepke Kontrols Inc., Bronx, N.Y. 883,211, cor. Cl. 19.
Krogh Industries, Inc., San Francisco, Calif. 763,367, canc. Cl. 19.
L.I. Commercial Review, Inc., Plainview, N.Y. 887,682. Cl. 38.
Laboratoires du Dr. N. G. Payot Etablissement, Vaduz, Liechtenstein. 887,598, pub. 12–23–69. Cl. 51.
Laidlaw Corp., Peoria, Ill. 887,597, pub. 12–23–69. Cl. 50.
Lake Central Airlines, Inc., Indianapolis, Ind. 763,689, canc. Cl. 105.
Lake Region, Inc.: *See*—
Northern Vegetable Packers, Inc.
Lama, Tony, to Tony Lama Co., Inc., El Paso, Tex. 525,522, ren. 3–10–70. Cl. 39.
Lama, Tony, Co., Inc.: *See*—
Lama, Tony.
Lamar Mfg. Co., Bowdon, Ga. 763,562, canc. Cl. 39.
Lamb, Anthony H., Hillside, N.J. 887,563, pub. 12–23–69. Cl. 44.
Lancome S.A., Paris, France. 887,608, pub. 12–23–69. Cl. 51.
Lanvin-Charles of the Ritz, Inc.: *See*—
Lanvin-Parfums, Inc.
Lanvin-Parfums, Inc., to Lanvin-Charles of the Ritz, Inc., New York, N.Y. 521,642, ren. 3–10–70. Cl. 51.
Larus & Brother Co., Inc., to Larus & Brother Co., Richmond, Va. 517,819, ren. 3–10–70. Cl. 17.
Lee Tire & Rubber Co., Conshohocken, Pa. 887,649, pub. 12–23–69. Cl. 101.
Lehmann, Robert E., Paris, Ky. 887,321, pub. 12–23–69. Cl. 1.
Leighton's, Inc., New York, N.Y. 887,535, pub. 12–23–69. Cl. 39.
Leob, Erich: *See*—
Roberts & Mander Corp.
Lepier, Arvid H., and Howard H. Lepier, Fosston, Minn. 887,470, pub. 12–23–69. Cl. 23.
Linette, James P., Inc., Reading, Pa. 887,583–4, pub. 12–23–69. Cl. 46.
Litkenhous, Edward E., Nashville, Tenn. 516,612, ren. 3–10–70. Cl. 38.
Lorillard Corp., New York, N.Y. 887,372, pub. 12–23–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 516,933, ren. 3–10–70. Cl. 17.
Lowe, Joe, Corp., New York, N.Y. 763,626, canc. Cl. 46.
Lowe, Joe, Corp., New York, N.Y. 763,650, canc. Cl. 46.
Lowenstein, M., & Sons, Inc., New York, N.Y. 518,442, ren. 3–10–70. Cl. 42.
Lusier Inc., Kansas City, Mo. 887,616, pub. 12–23–69. Cl. 51.
MCA Inc., Universal City, Calif. 887,514, pub. 12–23–69. Cl. 36.
M.J.B. Co., San Francisco, Calif. 763,709, canc. Cl. 46.
MOC Products Co., Inc., Glendale, Calif. 887,367, pub. 12–23–69. Cl. 15.
MSL Industries, Inc., Chicago, Ill. 838,261, ren. 3–10–70. Multiple Class (Classes 19, 23, 44, and 50).
MTI Corp., New York, N.Y. 887,487, pub. 10–21–69. Cl. 26.
Macnaughton-Brooks Inc., Buffalo, N.Y. 887,319, pub. 12–23–69. Cl. 1.
Magazine Management Co., Inc., from Magazine Management Co., d.b.a. Marvel Comics Group, New York, N.Y. 887,519, pub. 12–23–69. Cl. 38.
Maidenform, Inc., New York, N.Y. 887,553–4, pub. 12–23–69. Cl. 39.
Mallinckrodt Chemical Works, St. Louis, Mo. 519,732, ren. 3–10–70. Cl. 18.
Mallory Randall Corp., New York, N.Y. 763,299, canc. Cl. 2.
Manning, Joseph P., Co., Boston, Mass. 763,556, canc. Cl. 17.
Mannington Mills, Inc., Salem, N.J. 519,391, ren. 3–10–70. Cl. 20.
Marathon Corp., Rothschild, Wis., to American Can Co., New York, N.Y. 523,885, ren. 3–10–70. Cl. 6.
Marcy Gymnasium Equipment Co., Glendale, Calif. 887,447, pub. 12–23–69. Cl. 22.
Maremont Corp., Chicago, Ill. 887,389, pub. 12–23–69. Cl. 19.
Margan Packing Co., Inc.: *See*—
Stockham, Edward V.
Marmaduke, Inc., Philadelphia, Pa. 887,513, pub. 12–23–69. Cl. 36.
Mars Inc., Chicago, Ill. 763,644–6, canc. Cl. 46.
Mars Inc., Chicago, Ill. 763,649, canc. Cl. 46.
Martco Mfg., Inc., from Robert W. Martin, Trenton, N.J. 887,471, pub. 12–23–69. Cl. 23.
Martin-Marietta Corp., Baltimore, Md. 763,374, canc. Cl. 21.
Martin-Marietta Corp., New York, N.Y. 887,342, pub. 12–23–69. Cl. 6.
Martin, Robert W.: *See*—
Martco Mfg., Inc.
Marut, Charles, New Britain, Conn. 763,536, canc. Cl. 38.
Maruwa Denshi Kagaku Kabushiki Kaisha, d.b.a. Maruwa Electronic & Chemical Co., Ltd., Aichi-ken, Japan. 887,411, pub. 8–26–69. Cl. 21.
Mask-O-Matic, Inc., Paterson, N.J. 763,433–5, canc. Cl. 23.
Matella Corp., The, St. Louis, Mo. 763,614, canc. Cl. 44.
Matsushita Electric Industrial Co., Ltd., Osaka Prefecture, Japan. 887,420, pub. 12–23–69. Cl. 21.
Maxon Construction Co., Inc., Dayton, Ohio. 443,829, ren. 3–10–70. Cl. 23.
Maxon Industries, Inc., Los Angeles, Calif. 887,482, pub. 12–23–69. Cl. 23.
Maytag Co., The, Newton, Iowa. 522,134, ren. 3–10–70. Cl. 23.
McCullough Tool Co., Los Angeles, Calif., to National Lead Co., New York, N.Y. 522,896, ren. 3–10–70. Cl. 23.
McCullough Tool Co., Los Angeles, Calif., to National Lead Co., New York, N.Y. 525,802, ren. 3–10–70. Cl. 100.
McKay Co., The, Pittsburgh, Pa. 525,129, ren. 3–10–70. Cl. 13.
McLarty, Gordon, d.b.a. McLarty Systems, Battle Creek, Mich. 887,509, pub. 12–23–69. Cl. 34.
McNair, Eric P., Libertyville, Ill. 887,458, pub. 12–23–69. Cl. 23.
Mead Corp., The, Dayton, Ohio. 887,337, pub. 12–23–69. Cl. 6.
Measurement Control Devices, Inc., Philadelphia, Pa. 887,489, pub. 12–23–69. Cl. 26.
Medallion Pool Corp., Lindenhurst, N.Y. 887,662, pub. 12–23–69. Cl. 103.
Medelco, Inc., Wood Dale, Ill. 887,417, pub. 12–23–69. Cl. 21.
Meehanite Metal Corp., Chattanooga, Tenn., to Meehanite Metal Corp., White Plains, N.Y. 522,508–9, ren. 3–10–70. Cl. 14.
Melody Fashions, Inc., New York, N.Y. 887,538, pub. 12–23–69. Cl. 39.
Melville Shoe Corp., New York, N.Y. 268,176, ren. 3–10–70. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 887,382, pub. 12–23–69. Cl. 18.
Mermade Bait Co., Inc., The, Platteville, Wis. 519,092, ren. 3–10–70. Cl. 22.
Metal Craft Co., The, Troy, Mich. 887,353, pub. 12–23–69. Cl. 13.
Metallurgical Exoproducts, Inc., McKees Rocks, Pa. 887,339, pub. 12–23–69. Cl. 6.
Metex Corp., Edison, N.J. 887,409, pub. 12–23–69. Cl. 21.
Meyer-Gunther-Martini Inc., New York, N.Y. 763,490, canc. Cl. 32.
Meyers, B. F., & Co., Fountain Valley, Calif. 887,398, pub. 12–23–69. Cl. 19.
Miehle-Goss-Dexter, Inc.: *See*—
Dexter Folder Co.
Milchem Inc., Houston, Tex. 887,329, pub. 12–23–69. Cl. 6.
Miles Laboratories, Inc., Elkhart, Ind. 887,381, pub. 12–23–69. Cl. 18.
Miller Harness Co., Inc., New York, N.Y. 887,327, pub. 12–2–69. Cl. 3.
Miller Publishing Co., The, to The Miller Publishing Co., Minneapolis, Minn. 267,686, ren. 3–10–70. Cl. 38.
Millipore Corp., Bedford, Mass. 887,498, pub. 12–23–69. Cl. 31.
Miners Make Up Ltd., Surrey, England. 887,609, pub. 12–23–69. Cl. 51.
Miracle Pet Products, Inc., Jersey City, N.J. 887,476, pub. 12–23–69. Cl. 28.
Mississippi Glass Co.: *See*—
Protex Glass Co.
Mitchell Canneries, Inc., Fort Mead, to Deep South Products, Inc., Jacksonville, Fla. 516,724, ren. 3–10–70. Cl. 46.
Mobile Industries, Inc., Chehalis, Wash. 887,402, pub. 12–23–69. Cl. 19.
Molex Products Co., Downers Grove, Ill. 887,414, pub. 12–23–69. Cl. 21.
Molle Co., The, Cleveland, Ohio, to Sterling Drug Inc., New York, N.Y. 268,971, ren 3–10–70. Cl. 51.
Monsanto Chemical Works, to Monsanto Co., St. Louis, Mo. 267,719, ren. 3–10–70. Cl. 46.
Monsanto Co.: *See*—
Monsanto Chemical Works.
Moore, Doris, of California, Long Beach, Calif. 763,573, canc. Cl. 39.
Morrell Co., Troy, Mich. 887,416, pub. 12–23–69. Cl. 21.
Morrell, John, & Co., Chicago, Ill. 763,627, canc. Cl. 46.
Motelmobile Corp. of America, New York, N.Y. 763,365, canc. Cl. 19.
Motion Industries Inc., Detroit, Mich. 887,390, pub. 12–23–69. Cl. 19.
Munsingwear, Inc., Minneapolis, Minn. 887,541, pub. 12–23–69. Cl. 39.

Murray Co. of Texas, Inc.: *See*—
Boston Gear Works, Inc.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 887,512, pub. 12–23–69. Cl. 36.
National Academy of Recording Arts & Sciences, Hollywood, Calif. 887,642–3, pub. 12–23–69. Cl. 100.
National Biscuit Co., New York, N.Y. 887,573, pub. 4–23–68. Cl. 46.
National Biscuit Co., New York, N.Y. 887,579, pub. 12–23–69. Cl. 46.
National Dairy Products Corp.: *See*—
Krafteo Corp.
National Distillers & Chemical Corp.: *See*—
Overholt, A., & Co.
National Drug Co., The, Philadelphia, Pa., to Richardson-Merrell Inc., New York, N.Y. 519,752, ren. 3–10–70. Cl. 18.
National Foam System, Inc., West Chester, Pa. 887,397, pub. 12–23–69. Cl. 19.
National Geographic Society, Washington, D.C. 524,810, ren. 3–10–70. Cl. 107.
National Lead Co.: *See*—
McCullough Tool Co.
National Newspaper Syndicate, Inc., Chicago, Ill. 763,540, canc. Cl. 38.
Natvar Corp., Woodbridge, N.J. 887,425–6, pub. 12–23–69. Cl. 21.
Nebraska Engineering Co., Omaha, Nebr. 887,457, pub. 12–23–69. Cl. 23.
Neidl, Georg, Berlin-Frohnau, Germany. 887,453, pub. 12–23–69. Cl. 23.
Neotis S.p.A., Como, Italy. 887,601, pub. 12–23–69. Cl. 51.
New York Pencil Co., Inc., New York, N.Y. 887,602, pub. 12–23–69. Cl. 51.
New York Quinine & Chemical Works, Inc., Brooklyn, N.Y., to CPC International Inc., Englewood Cliffs, N.J. 520,481, ren. 3–10–70. Cl. 18.
Newberry, J. J., Co., New York, N.Y. 763,643, canc. Cl. 46.
Nippon Hatsujyo Kabushiki Kaisha, Yokohama, Japan. 887,406, pub. 12–23–69. Cl. 19.
No Kem Co., Inc., The: *See*—
Bremerman, Eugene S.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 887,612, pub. 12–23–69. Cl. 51.
Northern Vegetable Packers, Inc., McAllen, Tex. 517,467, ren. 3–10–70. Cl. 46.
Notifier Co.: *See*—
Joy, Oliver T.
Notifier Corp. Notifier Co., Lincoln, Nebr. 763,827. Am. 7(d). Cl. 21.
Notifier Corp. Notifier Co., Lincoln, Nebr. 764,989. Am. 7(d). Cl. 21.
O'Brien Corp., The, South Bend, Ind. 887,370, pub. 12–23–69. Cl. 16.
Odom Sausage Co., Inc., Madison, Tenn. 887,577, pub. 12–23–69. Cl. 46.
Oil Center Research, Inc., Lafayette, La. 887,343, pub. 12–23–69. Multiple Class (Classes 6 and 15).
Olewits, Murray, Inc., New York, N.Y. 763,577, canc. Cl. 39.
Olson, Martin C., Chicago, Ill., to Thos. Christy & Co. Ltd., Aldershot, Hampshire, England. 76,372, ren. 3–10–70. Cl. 18.
Oneida Ltd., Oneida, N.Y. 887,475, pub. 12–23–69. Cl. 23.
O'Neil Fund, Beverly Hills, Calif. 887,658, pub. 12–23–69. Cl. 102.
Overhead Door Corp., Dallas, Tex. 887,460, pub. 9–2–69. Cl. 28.
Overholt, A., & Co., Broad Ford, Pa., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., also d.b.a. A. Overholt & Co., New York, N.Y. 268,132, ren. 3–10–70. Cl. 49.
Overholt, A., & Co., Broad Ford, Pa., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., and A. Overholt & Co., New York, N.Y. 269,180, ren. 3–10–70. Cl. 49.
Palatine Engineering Sales, Inc., d.b.a. Beam Industries, St. Louis, Mo. 887,434, pub. 12–23–69. Cl. 22.
Parents' Magazine Enterprises, Inc., New York, N.Y. 887,525, pub. 12–23–69. Cl. 38.
Parke, Davis & Co., Detroit, Mich. 76,722, ren. 3–10–70. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 887,564, pub. 5–20–69. Cl. 44.
Park & Tilford, to Schenley Distillers, Inc., New York, N.Y. 76,493, ren. 3–10–70. Cl. 49.
Patterson International Corp., Cincinnati, Ohio. 887,522, pub. 12–23–69. Cl. 38.
Pearson, Hazel, Handicrafts, Inc., Rosemead, Calif. 887,683. Cl. 43.
Pennsylvania Rubber Co., Jeannette, Pa., to The General Tire & Rubber Co., Akron, Ohio. 525,703, ren. 3–10–70. Cl. 22.
Perley, Reuben Noel, Dalton, Ga. 763,535, canc. Cl. 38.
Perlman, Hy., & Co., Inc., New York, N.Y. 763,569, canc. Cl. 39.
Perret-Jaunet S.A., (Rhone), France. 887,539, pub. 12–23–69. Cl. 39.
Philco Corp., Philadelphia, Pa. 763,375, canc. Cl. 21.
Philco Corp., Philadelphia, Pa. 763,457, canc. Cl. 24.
Philco Corp., Philadelphia, Pa. 763,463, canc. Cl. 26.
Philco Corp., Philadelphia, Pa. 763,503, canc. Cl. 34.
Philips Mfg. Co., Brooklyn, N.Y. 763,476, canc. Cl. 28.
Photocircuits Corp., Glen Cove, N.Y. 887,424, pub. 12–23–69. Cl. 21.
Picano, Paul J., Banning, Calif. 763,341, canc. Cl. 16.
Pioneer Products, Inc., Ocala, Fla. 887,365, pub. 12–23–69. Cl. 15.
Pioneer Sales, Inc., Ocala, Fla. 887,364, pub. 12–23–69. Cl. 15.
Plibrico Co.: *See*—
Plibrico Jointless Firebrick Co.
Plibrico Jointless Firebrick Co., to Plibrico Co., Chicago, Ill. 269,699, ren. 3–10–70. Cl. 12.
Pluimveefokbedrijf en Kuikenbroederij W. A. Derksen N.V., Loo, Netherlands. 763,291, canc. Cl. 1.
Pneumodynamics Corp., Cleveland, Ohio. 763,438, canc. Cl. 23.
Pool Equipment Corp., Salem, Va. 887,466, pub. 10–21–69. Cl. 23.
Poor & Co., Chicago, Ill., to Stauffer Chemical Co., New York, N.Y. 517,402, ren. 3–10–70. Cl. 6.
Pope, M. Edward, d.b.a. Eddie Pope & Co., Altadena, Calif. 887,438, pub. 12–23–69. Cl. 22.
Porter, H. K., Inc., Pittsburgh, Pa. 763,445, canc. Cl. 23.
Power Engineering, Inc., Dallas, Tex. 763,332, canc. Cl. 21.
Pratt-Low Preserving Co., Santa Clara, Calif., to Duffy-Mott Co., Inc., New York, N.Y. 77,955, ren. 3–10–70. Cl. 46.
Precision Metal Products Co., Portland, Oreg. 763,510, canc. Cl. 35.
Prewitt, J. Nelson, Inc., Rochester, N.Y. 744,204, canc. Cl. 52.
Prince Macaroni Mfg. Co., Lowell, Mass. 887,586, pub. 12–23–69. Cl. 46.
Printing Aids Corp., Rolling Meadows, Ill. 887,510, pub. 12–23–69. Cl. 34.
Procter & Gamble Co., The: *See*—
Kirk, James S., & Co.
Protex Glass Co., to Mississippi Glass Co., to St. Louis, Mo. 518,920, ren. 3–10–70. Cl. 33.
Puritan Fashions Corp., New York, N.Y. 887,528, pub. 12–23–69. Cl. 39.
Puritan Fashions Corp., New York, N.Y. 887,531, pub. 12–23–69. Cl. 39.
Quaker State Oil Refining Corp., Oil City, Pa. 763,668, canc. Cl. 52.
Qualified Personnel, Inc., Madison, Wis. 887,686. Cl. 101.
Radio Shack Corp., Boston, Mass. 735,844, canc. Cl. 26.
Rathcon, Inc., Dallas, Tex. 887,444, pub. 12–23–69. Cl. 22.
Rawlings Corp., The: *See*—
"Automatic" Sprinkler Corp.
Reader's Digest Association, Inc., The, Dover, Del. 763,541, canc. Cl. 38.
Recon Inc., Tallahasse, Fla. 887,664, pub. 12–23–69. Cl. 103.
Reliance Electric Co.: *See*—
Dodge Mfg. Corp.
Renwal Products, Inc., Mineola, N.Y. 887,684. Cl. 50.
Repova Corp. of America, New York, N.Y. 763,620–3, canc. Cl. 46.
Resiflex Laboratory, Los Angeles, Calif. 887,565, pub. 12–23–69. Cl. 44.
Reynolds Metals Co., Richmond, Va. 887,361, pub. 12–23–69. Cl. 14.
Richardson-Merrell Inc.: *See*—
National Drug Co., The.
Roberts & Mander Corp., Hatboro, Pa., to Erich Leob, New York, N.Y. 518 951 ren. 3–10–70. Cl. 34.
Rochester, Bill, Inc., Aberdeen, N.C. 887,351, pub. 12–23–69. Cl. 13.
Rockwell-Standard Co.: *See*—
Timken-Detroit Axle Co., The.
Rogers, David L., d.b.a. Zest Card Co., Bay City, Mich. 887,432, pub. 12–23–69. Cl. 22.
Romeo, Alfa, S.p.A., Milan, Italy. 887,887–8, pub. 12–23–69. Cl. 19.
Rose Brothers, Inc., New York, N.Y. 763,564, canc. Cl. 39.
Rossville Packing Co.: *See*—
Houghland Packing Co., Inc., The.
Royaume Ltd., Long Beach, N.Y. 887,555, pub. 12–23–69. Cl. 40.
Rudkin-Wiley Corp., Seymour, Conn. 887,396, pub. 12–23–69. Cl. 19.
Rykoff, S. E., & Co., Los Angeles, Calif. 887,516, pub. 12–23–69. Cl. 37.
S.A. Maroquinerie Aucler "La Bagagerie," Paris, France. 887,314, pub. 12–23–69. Multiple Class (Classes 1, 3, 39, and 41).
SI Handling Systems, Inc., Paston, Pa. 887,465, pub. 12–23–69. Cl. 23.
Sable Mink Farms: *See*—
Emba Mink Breeders Assoc.
Salada Foods Ltd.: *See*—
Sherman Bros. & Co.
Sales Management, Inc., New York, N.Y. 516,406, ren. 3–10–70. Cl. 38.
Salt Water Sportsman, Inc., The, Boston, Mass. 887,520, pub. 12–23–69. Cl. 38.
Same Duplicating Products, Inc., Davenport, Iowa. 887,653, pub. 12–23–69. Cl. 101.
Sanitary Paper Mills, Inc., East Hartford, Conn., to Swanee Paper Co., Inc., New York, N.Y. 526,137, ren. 3–10–70. Cl. 37.
Sautbine, Herman E., Portland, Ind. 887,385, pub. 12–23–69. Cl. 19.
Savings & Loan Foundation, Inc., The, Washington, D.C. 887,640, pub. 2–11–69. Cl. 100.
Scheele, Wm., & Sons Co., Inc., Fort Wayne, Ind. 887,571, pub. 12–23–69. Cl. 45.
Schenley Distillers, Inc.: *See*—
Park & Tilford.
Schloss Bros. & Co., Inc., Baltimore, Md., to The Joseph & Feiss Co., Cleveland, Ohio. 521,752, ren. 3–10–70. Cl. 39.
Schlotter, Dr. Ing. Max, Geislingen, Steige, Germany. 887,344, pub. 12–23–69. Cl. 6.
Schultz, Flossie, Arlington, S. Dak. 887,451, pub. 12–23–69. Cl. 22.

Schwinn Bicycle Co.: *See*—
Arnold, Schwinn & Co.
Scientific Industries, Inc., Hempstead, N.Y. 887,485, pub. 12–23–69. Cl. 26.
Scott, Dorothy R., Washington, D.C. 887,496, pub. 12–23–69. Cl. 29.
Screw Conveyor Corp., Hammond, Ind. 887,463, pub. 12–23–69. Cl. 23.
Seattle-First National Bank, Seattle, Wash. 763,685, canc. Cl. 102.
Security Electric Corp., from G. H. Grogan, Jr., d.b.a. Security Electric, Pontiac, Mich. 854,541, canc. Cl. 21.
Semlac Corp., Houston, Tex. 763,370, canc. Cl. 19.
Servicemasters' Industries Inc., Downers Grove, Ill. 887,665, pub. 12–23–69. Cl. 103.
Sewall Mfg. Co., Bremen, Ga. 887,530, pub. 12–23–69. Cl. 39.
Shand & Jurs Co., Berkeley, Calif. 763,460, canc. Cl. 26.
Shane, E. L., Co., Inc. Dayton, Ohio. 763,307, canc. Cl. 6.
Shane Uniform Co., Inc., Evansville, Ind. 887,534, pub. 12–23–69. Cl. 39.
Sharpe Arms Co., Salt Lake City, Utah. 887,345, pub. 12–23–69. Cl. 9.
Sherman Bros. & Co., Chicago, Ill., to Salada Foods Ltd., Toronto, Ontario, Canada. 76,606, ren. 3–10–70. Cl. 46.
Shur-Lok Bonded Structures, Ltd., Santa Ana, Calif. 763,326, canc. Cl. 13.
Sieburg Industries, Inc., Danbury, Conn. 887,469, pub. 12–23–69. Cl. 22.
Sierracin Corp., The, Sylmar, Calif. 887,386, pub. 12–23–69. Cl. 19.
Sigma Nu Fraternity, Indianapolis, Ind. 525,178–9, ren. 3–10–70. Cl. 28.
Sigma Nu Fraternity, Indianapolis, Ind. 525,389, ren. 3–10–70. Cl. 28.
Silvercup Bakers Inc.: *See*—
Gordon Baking Co.
Silvers, William T., d.b.a. Argence, Paris, France. 887,618, pub. 12–23–69. Cl. 51.
Simonis Co., Chicago, Ill. 887,639, pub. 12–23–69. Cl. 52.
Singh & Wood Farms, to J. A. Wood Co., Growers, Packers & Shippers, Phoenix, to J. A. Wood Co., Growers, Packers & Shippers, Tolleson, Ariz. 525,655, ren. 3–10–70. Cl. 46.
Sjuco Aktiebolag, Gothenburg, Sweden. 763,605, canc. Cl. 44.
Ski Hut, The, Berkeley, Calif. 887,429, pub. 12–23–69. Cl. 22.
Sky-Van Ltd., Vancouver, British Columbia, Canada. 887,461, pub. 12–23–69. Cl. 25.
Sky-Van Ltd., Vancouver, British Columbia, Canada. 887,480, pub. 12–23–69. Cl. 25.
Sly, W. E., Mfg. Co., The, Cleveland, Ohio. 887,501, pub. 12–23–69. Cl. 31.
Smith, D. B., & Co., Inc., Utica, N.Y. 524,220, ren. 3–10–70. Cl. 23.
Smith, John, (Shoes) Ltd., London, England. 887,536, pub. 12–23–69. Cl. 39.
Sparkle Wash, Inc., Chagrin Falls, Ohio. 887,666–7, pub. 12–23–69. Cl. 103.
Sportline, Chicago, Ill. 887,428, pub. 12–23–69. Cl. 22.
Sprinter-Pack Aktiebolag, Halmstad, Sweden. 883,731, cor. Cl. 23.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France, to American Cyanamid Co., Wayne, N.J. 524,520, ren. 3–10–70. Cl. 18.
Sommers Plastic Products Co. Inc., New York, N.Y. 763,295, canc. Cl. 1.
Southern Farms, to Aunt Lucy Hams, Inc., Walkersville, Md. 525,719, ren. 3–10–70. Cl. 46.
Southern Wholesalers Assoc., Atlanta, Ga. 743,140, canc. Cl. 101.
Southern Wholesalers Assoc., Atlanta, Ga. 743,575, canc. Cl. 101.
Stackpole Carbon Co., St. Marys, Pa. 520,254, ren. 3–10–70. Cl. 1.
Stafford, Joseph, d.b.a. Curtis Eddy-Form Co., New York, N.Y. 887,527, pub. 12–23–69. Cl. 39.
Standard Brands Chemical Industries, Inc., Dover, Del. 887,334, pub. 12–23–69. Cl. 6.
Standard Oil Co. of California, San Francisco, Calif. 521,956, ren. 3–10–70. Cl. 6.
Standard Oil Co., The, Cleveland, Ohio. 887,343, pub. 12–23–69. Cl. 15.
Startrite Engineering (Sales) Ltd., London, England. 887,447, pub. 12–23–69. Cl. 23.
Stauffer Chemical Co.: *See*—
Cowles Detergent Co., The.
Poor & Co.
Sterling Drug Inc.: *See*—
Mollé Co., The.
Stern, Henri, Watch Agency, Inc., The, New York, N.Y. 520,291, ren. 3–10–70. Cl. 27.
Stiefel Laboratories, Inc., Oak Hill, N.Y. 887,377, pub. 9–16–69. Multiple Class (Classes 18 and 52).
Stockham, Edward V., Perryman, Md., to Morgan Packing Co., Inc., Austin, Ind. 34,777, ren. 3–10–70. Cl. 46.
Stretchini, Inc., Larchmont, N.Y. 763,550, canc. Cl. 39.
Strohmeyer & Arpe Co., New York, N.Y. 76,702, ren. 3–10–70. Cl. 46.
Sudsy's, Inc., Galesburg, Ill. 887,634, pub. 12–23–69. Cl. 52.
Sun Chemical Corp., New York, N.Y. 743,015, canc. Cl. 37.
Super Food Services Inc., Dayton, Ohio. 887,360, pub. 12–23–69. Cl. 14.
Superb Glove Co., The, to Crescendoe Gloves, Inc., Johnstown, N.Y. 521,377, ren. 3–10–70. Cl. 39.
Swanee Paper Co., Inc.: *See*—
Sanitary Paper Mills, Inc.
Sweetheart Plastics, Inc., Wilmington, Mass. 887,326, pub. 12–23–69. Cl. 2.
T.P. Laboratories, Inc., Westville, Ind. 887,567, pub. 12–23–69. Cl. 44.
Tested Appliance Co., Chicago, Ill., to Everpure, Inc., Las Vegas, Nev. 522,527, ren. 3–10–70. Cl. 31.
Tidy House Products Co.: *See*—
Church & Dwight Co., Inc.
Timken-Detroit Axle Co., The, Detroit, Mich., to Rockwell-Standard Co., Pittsburgh, Pa. 519,171, ren. 3–10–70. Cl. 23.
Titmus Optical Co., Inc., Petersburg, Va. 148,546, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 247,106, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 289,184, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 374,098, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 586,645, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 617,202–4, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 622,682, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 662,920, cor. Cl. 101.
Titmus Optical Co., Inc., Petersburg, Va. 672,709, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 688,286, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 715,040, cor. Cl. 26.
Titmus Optical Co., Inc., Petersburg, Va. 720,519, cor. Cl. 4.
Titmus Optical Co., Inc., Petersburg, Va. 790,872, cor. Cl. 26.
Topper Corp., Elizabeth, N.J. 887,448, pub. 12–23–69. Cl. 22.
Tootal Broadhurst Lee Co. Ltd., to English Sewing Ltd., Manchester, England. 77,496, ren. 3–10–70. Cl. 42.
Tootal Broadhurst Lee Co. Ltd., to English Sewing Ltd., Manchester, England. 522,236, ren. 3–10–70. Cl. 39.
Totalmold, Inc., Denver, Colo. 887,435, pub. 12–23–69. Cl. 22.
Trans International Airlines, Inc., Oakland, Calif. 887,671, pub. 12–23–69. Cl. 105.
Transamerica Mobile Home Co., Tacoma, Wash. 887,650, pub. 12–23–69. Cl. 101.
Transco Inc., Chicago, Ill. 887,663, pub. 12–23–69. Cl. 103.
Trans-Tech, Inc., Gaithersburg, Md. 887,644, pub. 12–23–69. Multiple Class (Classes 100 and 103).
Trappey's, B. F., Sons, Inc., New Iberia, La. 887,581, pub. 12–23–69. Cl. 46.
Trappey's, B. F., Sons, Inc., New Iberia, La. 887,588, pub. 12–23–69. Cl. 46.
Travelmaster, Inc., Elkhart, Ind. 763,369, canc. Cl. 19.
Turco Mfg. Co., Du Quoin, Ill. 887,503, pub. 12–23–69. Cl. 32.
Turtle Wax, Inc., Chicago, Ill. 887,368–9, pub. 12–23–69. Cl. 15.
Twin-Tanks, Inc., Eugene, Oreg. 887,392, pub. 12–23–69. Cl. 19.
Tyee Aircraft, Inc., Everett, Wash. 887,394–5, pub. 12–23–69. Cl. 19.
URB Products Corp., Farmingdale, N.Y. 887,445, pub. 12–23–69. Cl. 22.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 887,480. Cl. 22.
Union National Bank of Little Rock, Little Rock, Ark. 887,659, pub. 12–23–69. Cl. 102.
Uniroyal, Inc.: *See*—
U.S. Rubber Co.
United Merchants & Manufacturers, Inc.: *See*—
Juilliard, A. D., & Co., Inc.
U.S. Plywood-Champion Papers Inc., Hamilton, Ohio. 887,515, pub. 12–23–69. Cl. 37.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 521,776, ren. 3–10–70. Cl. 39.
U.S. Rubber Co., New York, N.Y. 763,511, canc. Cl. 35.
United-Carr Inc., Boston, Mass. 887,354, pub. 12–23–69. Cl. 13.
Universal Mfg. Corp., Paterson, N.J. 763,390, canc. Cl. 21.
Universal Oil Products Co., Des Plaines, Ill. 887,332, pub. 12–23–69. Cl. 6.
Universal Oil Products Co., d.b.a. UOP Bostrom Division, Des Plaines, Ill. 887,403. pub. 12–23–69. Cl. 19.
Upjohn Co., The, Kalamazoo, Mich. 763,363, canc. Cl. 18.
Utica Duxbak Corp., Utica, N.Y. 887,543, pub. 12–23–69. Cl. 39.
Van Fleet, Lorraine Mae, South English, Iowa. 763,496, canc. Cl. 32.
Van Straaten Chemical Co., Chicago, Ill. 887,328, pub. 12–23–69. Cl. 4.
Varley, James, & Sons, Inc., St. Louis, Mo. 887,631, pub. 12–23–69. Cl. 52.
Venus Pen & Pencil Corp., New York, N.Y. 763,517, canc. Cl. 37.
Vereinigte Deutsche Metallwerke A G., Frankfurt-Heddernheim, Germany. 887,350, pub. 12–23–69. Cl. 18.
Verheye, Pierre C. T., d.b.a. Adventureland Safaris, Los Angeles, Calif. 887,670, pub. 12–23–69. Cl. 105.
Victor Comptometer Corp.: *See*—
Heddon's, James, Sons.
Villager Industries, Inc., Philadelphia, Pa. 887,549, pub. 12–23–69. Cl. 39.
Virco Mfg. Corp., Los Angeles, Calif. 887,504, pub. 12–23–69. Cl. 32.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 265,165, ren. 3–10–70. Cl. 46.
Virginia Lens Co., Inc., Petersburg, Va. 343,728, cor. Cl. 26.
Virginia Lens Co., Inc., Petersburg, Va. 389,902, cor. Cl. 26.
Virginia Lens Co., Inc., Petersburg, Va. 824,032, cor. Cl. 26.
Vogue Creations, Los Angeles, Calif. 763,472, canc. Cl. 28.
Wakefield, C. C., & Co. Ltd., to Castrol Ltd., London, England. 514,170–2, ren. 3–10–70. Cl. 15.

Walker, Joseph B., West Hollywood, Calif. 763,714, canc. Cl. 51.
Warner Co., Philadelphia, Pa. 525,006, ren. 3–10–70. Cl. 12.
Warner Press, Inc., Anderson, Ind. 763,531, canc. Cl. 38.
Warren, Mark E., d.b.a. Southern, Anderson, S.C. 887,333, pub. 12–23–69. Cl. 6.
Wayne Candies, Inc., Fort Wayne, Ind. 525,447, ren. 3–10–70. Cl. 46.
Weber Aircraft Corp., Burbank, Calif. 763,394, canc. Cl. 22.
Weeks, Evert D.: *See*—
Armand Co., The.
West Chemical Products, Inc., Long Island City, N.Y. 887,636, pub. 12–23–69. Cl. 52.
Western Franchise Corp.: *See*—
Chicken Shack, Inc.
Weyerhaeuser Co.: *See*—
Weyerhaeuser Timber Co.
Weyerhaeuser Timber Co., to Weyerhaeuser Co., Tacoma, Wash. 519,000, ren. 3–10–70. Cl. 1.
Whiting, Lisbeth, Co., Inc., Jamaica, N.Y. 887,433, pub. 12–23–69. Cl. 22.
Wiggins, William H., Toronto, Ontario, Canada. 887,507, pub. 12–23–69. Cl. 34.
Williams, Beverly E., and Kathryn I. Williams, from Beverly E. Williams, La Grange Park, Ill. 887,415, pub. 12–23–69. Cl. 21.
Wilshire Manufacturing-Storall, Los Angeles, Calif. 763,493, canc. Cl. 33.
Winpower Mfg. Co., Newton, Iowa. 887,464, pub. 12–23–69. Cl. 23.
Witco Chemical Corp., New York, N.Y. 887,320, pub. 12–16–69. Cl. 1.
Wolfs Prodotti di Bellezza Srl, Milan, Italy. 887,607, pub. 12–23–69. Cl. 51.
Wonder Products Co., Collierville, Tenn. 887,436–7, pub. 12–23–69. Cl. 23.
Wood, J. A., Co., Growers, Packers & Shippers: *See*—
Singh & Wood Farms.
Woodard, Lee L., Sons, Inc., Owosso, Mich. 763,497, canc. Cl. 32.
Wyeski, Marion, d.b.a. Lady Marion, San Antonio, Tex. 763,634, canc. Cl. 46.
YAB, Nogent-sur-Marne (Val de Marne), France. 887,378, pub. 12–23–69. Cl. 18.
Yardley of London, Inc., New York, N.Y. 887,610, pub. 12–23–69. Cl. 51.
Yee, Warren Y. J., Honolulu, Hawaii. 743,255, canc. Cl. 40.
York, L. T., Co., St. Louis, Mo. 763,608, canc. Cl. 18.
Ziabicki, Joseph M., Racine, Wis. 763,327, canc. Cl. 13.
Zimmer Mfg. Co., Warsaw, Ind. 887,568, pub. 12–23–69. Cl. 44.

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1970

Examiner affirmed	188
Examiner affirmed in part	14
Examiner reversed	28
Total	230

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,022,137, E. W. Nelson, COMBUSTION OF TITANIUM TETRACHLORIDE WITH OXYGEN, decided July 8, 1969, Interference No. 96,001, claim 1.

Patent No. 3,115,507, G. Nomine, R. Bucourt and A. Pierdet, NEW ANALOGS OF 19-NOR-TESTOSTERONE, THEIR ESTERS AND PROCESS OF PREPARATION, decided July 30, 1969, Interference No. 94,918, claim 1.

Patent No. 3,161,993, G. W. Balz, FINISHING APPARATUS AND METHOD, decided Apr. 25, 1968, Interference No. 94,983, claims 3, 4, 25, 26, 28, 29, 30 and 32.

Patent No. 3,182,620, H. M. Hornberger, Sr., SURPLUS THREAD REMOVING APPARATUS, decided Sept. 30, 1968, Interference No. 95,240, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,206,601, R. M. Gold, PLASTIC FILM THERMOGRAPHY, decided Aug. 28, 1969, Interference No. 95,549, claims 3, 15, 16, 18, 20 and 22.

Patent No. 3,206,601, R. M. Gold, PLASTIC FILM THERMOGRAPHY, decided Oct. 6, 1969, Interference No. 95,551, claim 24.

Patent No. 3,236,971, A. Cotsworth, COMBINATION ON-OFF SWITCH AND CIRCUIT-BREAKER, decided Sept. 25, 1969, Interference No. 96,070, claims 1, 2 and 5.

Patent No. 3,238,098, J. H. Howell and E. L. King, Jr., METHOD OF CONTROLLING SEA LAMPREY, decided Mar. 26, 1969, Interference No. 95,664, claims 1–16.

Patent No. 3,244,506, O. W. Reen, CUTTING TOOL MATERIAL, decided Aug. 25, 1969, Interference No. 96,147, claims 1, 2, 3, 6, 7 and 8.

Patent No. 3,291,601, J. Gaynor, PROCESS OF INFORMATION STORAGE ON DEFORMABLE PHOTOCONDUCTIVE MEDIUM, decided Oct. 21, 1969, Interference No. 96,240, claims 1, 2 and 4.

Patent No. 3,294,844, W. Sarneckl, A. Nuerrenbach and W. Reif, PRODUCTION OF AXEROPHTHYL PHOSPHONIUM SALTS, decided Sept. 22, 1969, Interference No. 96,313, claims 1, 2, 3, 4 and 7.

Patent No. 3,318,906, J. E. McKeon and P. S. Starcher, PROCESS FOR THE PRODUCTION OF ETHYLENYLATED LACTAMS, decided Sept. 29, 1969, Interference No. 96,341, claims 1, 2 and 6–15.

Patent No. 3,336,408, C. W. Capp, E. J. Gasson, P. E. Grindlay and B. Wood, PRODUCTION OF ALKENYL BENZENES, decided Sept. 23, 1969, Interference No. 96,215, claims 1, 2, 5–11, and 13–17.

Erratum

[See Notice published Dec. 23, 1969, 869 O.G. 1033 and Consolidated Listing of Notices, published Jan. 13, 1970, 870 O.G. 375]

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

PART 3—FORMS FOR PATENT CASES

UPDATING OF RULES AND FORMS

Correction

Paragraph No. 1 in F.R. Doc. 69–14030, appearing in the first column of page 18857 of the Federal Register for Wednesday, November 26, 1969, should be corrected to read as follows:

1. Paragraph (a) of § 1.15 is amended by deleting the word "division" and inserting in lieu thereof "group art unit and name of the examiner."

Published in 35 F.R. 2828, Feb. 11, 1970

Patents Available for Licensing or Sale

3,285,307. SHERRY LYNN TOPPER. Ruth M. Dormaier, Star Route, Marlin, Wash., 98837.

3,374,595. REINFORCED CONCRETE REINFORCEMENT FOR HIGHLY STRESSED STRUCTURAL COMPONENTS. Salzgitter Industriebau, Drutte, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,455,300. CHIN SEAT. Maria R. Hayner, P.O. Box 44, Rhinebeck, N.Y., 12572.

3,459,296. RECEPTACLE AND SUPPORT FOR FROZEN CONFECTION. Jean L. Berg, 1632 S. 94th St., West Allis, Wis., 53214.

3,471,854. RESCUE AID. Merrill McKern, 2565 Birch Lane, Eugene, Oreg., 97403.

New Applications Received During January 1070

Patents	7396
Designs	438
Plant Patents	11
Reissues	11
Total	7856

Issue—March 17, 1970

Patents	1300	No. 3,500,472 to No. 3,501,771, incl.
Designs	76	No. 216,863 to No. 216,938, incl.
Reissues	12	No. 26,821 to No. 26,832, incl.
Total	1388	

3,480,169. CLOSURE. Mauser Kommandit - Gesellschaft, Cologne, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,483,689. FOLDING RAKE. Harold A. Kabel, 1611 Circular Road, Toledo, Ohio, 43614.

3,487,731. HOLE SPACER. James A. Coon, 929 Drever St., West Sacramento, Calif., 95691.

3,488,473. ELECTRIC BEVERAGE HEATER. Fred E. Sanders, 503 E. 108th St., Cleveland, Ohio, 44108.

Eastman Kodak Company announces that, in accordance with its policy, nonexclusive licenses upon reasonable terms (under the circumstances prevailing at the time) are available to responsible domestic applicants under the following U.S. patent.

This offer is consistent with the present practice of Eastman Kodak Company to grant such nonexclusive licenses for any of its unexpired United States patents on photographic inventions issued prior to 1965 and on inventions made in the course of research or development work for the U.S. Government.

Applications for license may be addressed to the Director, Patent Department, Eastman Kodak Company, 343 State St., Rochester, N.Y., 14650.

3,117,490. PHOTOGRAPHIC EXPOSURE METER.

General Motors Corporation is prepared to grant nonexclusive licenses under the following patent upon reasonable terms.

Applications for license may be addressed to the Director, Patent Section, General Motors Building, 3044 W. Grand Blvd., Detroit, Mich., 48202.

3,356,339. TURBINE MOTOR.

Scott Paper Company is prepared to grant nonexclusive, nondiscriminatory, non-transferable licenses under the following patent for reasonable royalties. Each license under this patent will include an option to acquire for a reasonable royalty a non-exclusive, non-discriminatory non-transferable license for "Know-How" associated with the patented inventions.

Applications for license may be addressed to: Scott Paper Company, Law Division, Philadelphia, Pa., 19113. Attention: James A. Corrodi.

3,297,803. METHOD FOR EXPLOSION RETICULATION USING A NON-INFLAMMABLE LIQUID

The Philadelphia Quartz Company offers to grant nonexclusive licenses on reasonable terms and conditions under the following 52 patents.

Inquiries respecting licenses under the following patents should be addressed to Philadelphia Quartz Company, Manager of Corporate Development, Room 1060, Public Ledger Building, Independence Square, Philadelphia, Pa., 19106.

3,450,547. EXPANDED SILICATE PARTICLES.

3,419,495. EXPANDED SILICA.

3,466,221. EXPANDED SILICATE INSULATION.

3,440,175. CONTINUOUS PROCESS FOR MAKING SILICA SOL.

3,392,039. LITHIUM SILICATE COMPOSITION.

3,397,950. PROCESS FOR PREPARING SOLUTIONS FOR TELEVISION SCREENS.

3,377,134. SODIUM METASILICATE PENTAHYDRATE PRODUCT AND PREPARATION.

3,346,335. PROCESS FOR SILICA AND SILICATES.

3,346,334. AMMONIUM SILICATES.

3,345,302. STABLE MIXTURES (OF SOLID ALKALI SILICATE AND ACIDIC MATERIAL).

3,329,520. REFRACTORY BINDER COMPRISING ORGANIC SILICATES.

3,326,950. ORGANIC TITANATE MATERIALS.

3,326,910. AMORPHOUS AMINE SILICATES SUBSTANTIALLY FREE OF ALKALI OXIDE AND PROCESS FOR THEIR PREPARATION.

3,326,701. FORMATION OF SOLID BODIES.

3,324,075. PROCESS FOR COMPOUNDING RUBBER.

3,314,806. PRODUCTION OF REFRACTORY OBJECTS.

3,301,701. NONREFLECTIVE GLASS COATINGS.

3,299,166. HARDENING OF EPOXY RESIN BY MEANS OF CONDENSATION PRODUCTS OF AMINOALKOXYSILANES AND MONO-OXIRANE COMPOUNDS.

3,292,220. METHOD OF MAKING SHELL MOULDS.

3,270,382. SHELL MOULD PROCESS.

3,266,886. PHOSPHO-SILICATE AGGLOMERATION OF NON-NITROGENOUS FERTILIZERS AND RESULTANT PRODUCT.

3,257,328. ORGANIC PHOSPHATES — STABILIZATION OF SILICA SOLS AND DISPERSIONS OR SUSPENSIONS OF SILICA AND SILICEOUS MATERIALS.

3,257,325. STABLE, ALKALI-RICH, SODIUM SILICATES.

3,248,237. COMPOSITIONS OF MATTER CONTAINING ORGANIC SILICATES.

3,244,739. PREPARATION OF ORGANIC POLYSILICATES.

3,239,548. ALKALI METAL AND QUATERNARY AMMONIUM DOUBLE SALTS OF SILICIC ACID.

3,222,200. COMPOSITIONS FOR IMPARTING WATER-REPELLENT PROPERTIES TO FIBROUS MATERIALS.

3,208,867. SILICEOUS PRODUCT.

3,208,823. FINELY DIVIDED SILICA PRODUCT AND ITS METHOD OF PREPARATION.

3,208,822. SPHERICAL PARTICLES OF ANHYDROUS SODIUM METASILICATE AND METHOD OF MANUFACTURE THEREOF.

3,186,857. METHOD FOR DECREASING ADHESION OF SILICATE ADHESIVES TO HEATED METAL SURFACES.

3,164,622. COMPOUNDS CONTAINING SILICON AND PHOSPHORUS.

3,146,252. ORGANIC SILICATES.

3,141,899. PREPARATION OF ORGANO-HALOGENO-SILANES.

3,122,492. PREPARATION OF SILICON TETRACHLORIDE.

3,112,538. PROCESSES FOR BINDING PARTICULATE SOLID MATERIALS.

3,110,601. ORGANIC SILICATE MATERIALS.

3,093,529. MANUFACTURE OF WATER-RESISTANT LAMINATES AND SILICATE ADHESIVE THEREFOR.

3,079,656. AMINOALKYL POLYSILICATES.

3,070,861. MOLDS UTILIZING ACID HYDROLYZED ISOPROPYL SILICATES AS BINDERS.

3,061,541. WATER TREATMENT.

3,034,909. SELF-RELEASE ADHESIVES.

2,972,594. PROCESS FOR THE MANUFACTURE OF FINELY DIVIDED METAL SILICATES.

2,958,578. MANUFACTURE OF FINELY DIVIDED METAL SILICATE PRODUCTS.

2,948,701. FINELY DIVIDED METAL SILICATE PRODUCTS.

2,940,829. IMPROVEMENT RELATING TO THE PURIFICATION OF SOLUBLE SILICATES.

2,844,436. MANUFACTURE OF FINELY DIVIDED COMPOUNDS OF CERTAIN ELEMENTS.

2,827,384. WATERPROOF COATINGS AND ADHESIVES.

2,795,485. CRYSTALLIZED ALKALI METASILICATE HYDRATES.

2,772,996. BORATED-SILICATE-STARCH LAMINATING ADHESIVES AND MANUFACTURE OF COMBINED FIBERBOARD THEREWITH.

2,681,290. WATER-RESISTANT SILICATE ADHESIVES FOR MACHINE FABRICATION OF PAPERBOARD.

2,669,282. LAMINATING ADHESIVE AND MANUFACTURE OF COMBINED FIBERBOARD THEREWITH.

General Electric Company is prepared to grant non-exclusive licenses upon reasonable terms under the following 123 patents to domestic manufacturers.

Applications for license under the following 3 patents may be addressed to the Patent Counsel, Aerospace Electronics, General Electric Company, Utica, N.Y., 13503.

2,699,070. HERMETICALLY SEALED TORQUE TRANSMITTER.

3,424,949. HIGH-SPEED OVERLOAD CIRCUIT.

3,438,030. OBJECT DETECTION SYSTEM.

Applications for license under the following 6 patents may be addressed to: General Electric Co., Appliance Components Division, 1635 Broadway, Fort Wayne, Ind., 64804. Attn: Patent Counsel.

3,210,503. ADJUSTABLE CONTACT SPACING FOR DIFFERENTIAL SWITCH.

3,350,588. DYNAMOELECTRIC MACHINE ROTOR SUPPORTING STRUCTURE.

3,466,587. SNAP ACTING SWITCH ASSEMBLY.

3,471,917. APPARATUS FOR TURN DEVELOPMENT OF ELECTRIC COILS IN INDUCTIVE DEVICES.

3,471,926. PROCESS FOR TURN DEVELOPMENT OF ELECTRICAL COILS IN INDUCTIVE DEVICES.

3,480,812. SIGNAL GENERATING DEVICE FOR USE IN CONJUNCTION WITH A DYNAMOELECTRIC MACHINE AND THE LIKE.

Applications for license for the following 23 patents may be addressed to: General Electric Company, Power Distribution Division, 100 Woodlawn Ave., Pittsfield, Mass., 01201. Attention: Division Patent Counsel.

2,863,130. COIL CONSTRUCTION FOR ELECTROMAGNETIC INDUCTION APPARATUS.

2,890,383. STACKING ARRANGEMENT FOR LIGHTNING ARRESTER COMPONENTS.

2,890,410. IMPULSE TESTING.

2,922,953. SURGE RELIEF SYSTEM FOR WATTHOUR METER.

2,930,979. NETWORK METER.

3,054,943. CONTROL SYSTEM FOR VOLTAGE REGULATOR.

3,059,151. HIGH VOLTAGE CURRENT TRANSFORMER.

3,123,763. CONTROL CIRCUIT FOR VOLTAGE REGULATOR.

3,132,288. COMBINED ELECTRICAL CONNECTOR AND SUPPORT MEANS FOR HOLLOW ELECTRICAL COMPONENTS.

3,164,771. APPARATUS FOR CENTRAL RECORDING OF REMOTE METER DATA BY PERIODIC AND SEQUENTIAL METER INTERROGATION.

3,187,232. TIME DELAY CONTROL SYSTEM.

3,212,615. AUTOMATIC FARE COLLECTION SYSTEM FOR RAPID TRANSIT SYSTEMS.

3,223,205. MECHANISM PROVIDING INTERMITTENT DRIVE.

3,233,165. VOLTAGE REGULATOR WITH RECTIFIER AND PHASE CONTROLLED SCR INVERTER.

3,233,168. CONTROL SYSTEM FOR VOLTAGE REGULATORS.

3,258,692. AUTOMATIC READING APPARATUS FOR PLURAL METERS BY TRANSMITTED CODED PULSE TRAINS.

3,259,780. ELECTRIC GAP DEVICE USING POROUS MATERIAL IN THE ARC CHAMBER.

3,264,633. AUTOMATIC POWER METER READING OVER NEUTRAL POWER TRANSMISSION LINE.

3,282,388. TIME CODING MEANS FOR TRANSIT TICKETS.

3,304,414. PULSE COUNTING DEVICE WITH VISUAL AND ELECTRICAL STORAGE AND READOUT.

3,310,388. METHOD OF JOINING ALUMINUM AND A DISSIMILAR METAL AND JOINT FORMED BY SUCH METHOD.

3,353,132. LEAKAGE FLUX SUPPRESSOR WINDINGS FOR TRANSFORMERS.

3,377,183. ELECTROSTATIC POWDER COATING ON HEATED PARTS.

Applications for license under the following 25 patents may be addressed to the: Patent Counsel, Consumer Electronics Division, General Electric Company, Bldg. 1, Room 104, Electronics Park, Syracuse, N.Y., 13201.

2,639,156. DOUBLE-TWIST PHONOGRAPH STYLUS ASSEMBLY.

2,711,322. PHONOGRAPH STYLUS SUPPORT.

2,748,199. CHANNEL-SHAPED STYLUS.

2,755,403. MAGNETIC MOTION TRANSDUCER.

2,765,864. ACOUSTIC HORN ASSEMBLY.

2,803,738. WEAR RESISTANT CONTACT.

2,809,373. COMPONENT PARTS PLACEMENT.

2,820,854. SLIDE-IN STYLUS ASSEMBLIES.

2,961,244. PICKUP STYLUS ASSEMBLY.

2,984,712. LOUDSPEAKER CONSTRUCTION.

3,006,430. LOUDSPEAKER CONSTRUCTION.

3,047,676. CHANNEL AND REPLACEABLE STYLUS ASSEMBLIES.

3,072,213. LOUDSPEAKER CONE SUSPENSION.

3,088,000. PHONOGRAPH CARTRIDGE AND STYLUS.

3,093,379. PHONOGRAPH TONE ARM.

3,130,811. LOUDSPEAKER CONE SUSPENSION.

3,154,173. LOUDSPEAKER CONE SUSPENSION.

3,162,727. STEREOPHONIC REVERBERATION SYSTEM.

3,181,872. RECORD CHANGER CONTROL ASSEMBLY.

3,188,093. TONE ARM RESTRAINING DEVICE.

3,190,389. LOUDSPEAKER CONSTRUCTION.

3,194,566. DEVICE FOR USE IN HANDLING PHONOGRAPH RECORDS.

D. 198,103. PORTABLE PHONOGRAPH OR SIMILAR ARTICLE.

D. 198,116. CARRYING CASE FOR A PHONOGRAPH OR SIMILAR ARTICLE.

D. 198,185. PHONOGRAPH OR SIMILAR ARTICLE.

Applications for license under the following 57 patents may be addressed to the: Patent Counsel, Appliance and Television Group, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,015,712. OVEN THERMOSTAT BULB PROTECTOR.

3,017,488. TENSION MOUNT FOR OVEN BREAKER FRAME.

3,024,344. OVEN THERMOSTAT PROTECTOR.

3,037,444. HYDRAULIC THERMOSTAT BULB SHIELDING MEANS.

3,038,462. OVEN LINER AND METHOD OF MOUNTING SAME.

3,041,440. DOUBLE OVEN CLEANING SYSTEM.

3,050,048. DOOR SAFETY LATCH FOR HEATED CAVITY.

3,053,963. HYDRAULIC THERMOSTAT PROTECTOR.

3,059,088. OVEN THERMOSTAT SHIELDING SYSTEM.

3,066,212. THERMAL ISOLATION OF OVEN LINER.

3,081,763. COOLING SYSTEM FOR HEATING APPLIANCE.

3,082,311. OVEN THERMOSTAT COOLING SYSTEM.

3,092,706. DOMESTIC OVEN WITH OPTIMUM HEAT DISTRIBUTION.

3,094,605. OVEN TEMPERATURE CONTROL SYSTEM.

3,096,420. OVEN THERMOSTAT.

3,099,259. GASKETING ARRANGEMENT FOR OVEN DOOR.

3,099,471. DOOR LATCH.

3,113,200. OVEN LINER FOR AUTOMATIC HEAT CLEANING OVEN.

3,116,398. THERMOSTATIC CONTROL SYSTEM WITH THERMAL RELAY MEANS.

3,121,158. HOUSEHOLD COOKING OVENS AND METHODS OF CLEANING THE SAME.

3,122,626. THERMOSTATIC CONTROL SYSTEM.

3,125,365. DOOR LATCH MECHANISM.

3,125,659. AUTOMATIC OVEN CLEANING WITH CONSTANT HEATING CONDITIONS.

3,132,640. ADJUSTABLE HINGE MECHANISM FOR DOORS.

3,149,214. THERMALLY RESPONSIVE CAM-CONTROLLED CYCLING SWITCH.

3,176,485. TAMPER-PROOF DOOR LATCHING MECHANISM.

3,189,020. OVEN DOOR WITH FLOATING INNER PANEL.

3,189,375. SAFETY FEATURE FOR DOOR LATCH.

3,214,567. SAFETY INTERLOCK SYSTEM FOR HIGH TEMPERATURE OVEN.

3,270,183. CIRCUITRY FOR ELECTRIC OVEN.

3,277,280. CONDITION RESPONSIVE CIRCUIT.

3,286,080. SELF-CLEANING CONVERSION MEANS FOR DOMESTIC OVEN.

3,290,483. COMBINED BROILER AND CATALYTIC OXIDATION UNIT.

3,291,113. HOUSEHOLD COOKING OVENS PROVIDED WITH SLIDABLY SUPPORTED RACKS.

3,293,410. OVEN THERMOSTAT WITH ANTICIPATOR HEATER.

3,293,411. OVEN TEMPERATURE CONTROL WITH REMOTE SENSOR.

3,296,416. SAFETY DOOR LATCH AND TEMPERATURE CONTROL CIRCUIT FOR A HEATED CAVITY.

3,301,999. SAFETY CONTROL MECHANISM FOR HIGH TEMPERATURE OVEN.

3,302,000. DOMESTIC OVEN WITH MOVABLE WALL PANELS.

3,310,046. DOMESTIC OVEN WITH AIR COOLING SYSTEM.

3,310,654. THERMOSTATIC CONTROL SYSTEM WITH ANTICIPATION.
3,311,106. WINDOWED OVEN DOOR.
3,317,708. DOOR LATCHING MECHANISM FOR OVEN CAVITY.
3,318,299. SELF-CLEANING OVEN WITH REMOVABLE PANELS.
3,331,942. DOMESTIC OVEN WITH SMOKE LEAKAGE PREVENTION.
3,336,465. DOMESTIC OVEN WITH SELF-CLEANING BOTTOM WALL.
3,348,023. AIR INLET MEANS FOR SELF-CLEANING OVEN.
3,358,674. AIR INLET MEANS FOR SELF-CLEANING OVEN.
3,362,396. WINDOWED OVEN DOOR.
3,362,398. OVEN DOOR LATCHING ARRANGEMENT.
3,364,912. SELF-CLEANING GAS OVEN.
3,367,697. DOOR LATCH MECHANISM.
3,396,717. TRACK SYSTEM FOR SHUTTER OF WINDOWED OVEN DOOR.
3,404,258. DOMESTIC OVEN WITH SEPARATE HEAT-CLEANING COMPARTMENT.
3,405,253. COMBINED FRONT HEATING AND INSULATING MEANS FOR SELF-CLEANING OVEN.
3,410,987. ELECTRIC BAKING OVEN WITH A FRONT HEATING ELEMENT.
3,413,444. THERMOSTATIC CONTROL SYSTEM WITH SMOKE OVERLOAD PROTECTION.
3,413,445. FRONT-HEATING AND THERMAL BREAKER MEANS FOR SELF-CLEANING OVEN.
3,419,428. METHOD OF LOOSENING FOOD SOIL FROM WALLS OF DOMESTIC OVEN.
3,428,434. TWO-STAGE SELF-SUSTAINING CATALYTIC OXIDATION UNIT.
3,428,435. SELF-SUSTAINING CATALYTIC OXIDATION UNIT.
3,428,785. SOLID STATE OVEN TEMPERATURE CONTROL.
3,439,669. SUPPORTING MEANS FOR SHUTTER OF OVEN DOOR WINDOW.
3,440,401. THERMAL BREAKING MEANS FOR FRONT OF BAKING OVEN.
3,463,905. COMBINATION INFINITE HEAT SWITCH AND SOLID-STATE TEMPERATURE CONTROL.
3,484,858. SELF-CLEANING OVEN WITH OVER-TEMPERATURE PROTECTIVE SYSTEM.

Certificates of Correction for the Week of Mar. 17, 1970

Re. 26,518	3,398,182	3,409,082	3,414,592	3,417,494	3,419,994	3,422,272	3,428,599
D. 212,377	3,398,280	3,409,122	3,414,594	3,417,585	3,420,036	3,422,305	3,431,851
D. 213,117	3,398,360	3,409,175	3,414,610	3,417,633	3,420,083	3,422,452	3,432,499
D. 213,151	3,398,524	3,409,207	3,414,997	3,417,797	3,420,323	3,422,586	3,434,808
D. 213,182	3,398,848	3,409,424	3,415,017	3,417,823	3,420,431	3,422,594	3,436,134
2,988,474	3,399,365	3,409,615	3,415,065	3,417,923	3,420,626	3,422,632	3,436,203
3,150,525	3,400,546	3,409,627	3,415,146	3,417,979	3,420,643	3,422,678	3,436,734
3,209,500	3,400,822	3,409,637	3,415,542	3,418,038	3,420,741	3,422,809	3,438,965
3,225,585	3,401,000	3,409,694	3,415,734	3,418,053	3,420,803	3,422,937	3,439,066
3,252,607	3,401,385	3,409,813	3,415,749	3,418,070	3,420,836	3,423,042	3,439,740
3,252,804	3,401,396	3,409,832	3,415,755	3,418,092	3,420,858	3,423,211	3,440,010
3,270,055	3,401,997	3,409,888	3,415,764	3,418,102	3,420,874	3,423,222	3,441,543
3,284,430	3,402,163	3,410,063	3,415,818	3,418,130	3,420,900	3,423,254	3,441,575
3,287,341	3,402,167	3,410,174	3,415,820	3,418,146	3,420,903	3,423,268	3,442,430
3,287,534	3,402,904	3,410,320	3,415,821	3,418,178	3,420,933	3,423,440	3,442,808
3,313,271	3,402,953	3,410,651	3,415,839	3,418,198	3,420,950	3,423,628	3,442,851
3,316,769	3,403,098	3,410,682	3,415,844	3,418,202	3,420,954	3,423,699	3,443,213
3,336,306	3,403,244	3,410,857	3,415,854	3,418,222	3,420,998	3,423,738	3,443,417
3,337,983	3,403,654	3,410,944	3,415,896	3,418,272	3,421,003	3,423,739	3,444,151
3,347,937	3,403,808	3,410,991	3,415,918	3,418,285	3,421,088	3,424,051	3,444,390
3,350,091	3,404,157	3,411,052	3,415,975	3,418,322	3,421,138	3,424,190	3,444,464
3,354,746	3,404,511	3,411,298	3,416,057	3,418,342	3,421,211	3,424,265	3,444,511
3,366,625	3,404,676	3,411,650	3,416,090	3,418,354	3,421,283	3,424,270	3,445,391
3,367,041	3,404,688	3,411,663	3,416,177	3,418,368	3,421,402	3,424,287	3,446,628
3,368,672	3,404,735	3,412,020	3,416,242	3,418,388	3,421,433	3,424,300	3,446,860
3,369,041	3,405,107	3,412,069	3,416,287	3,418,531	3,421,461	3,424,319	3,446,897
3,370,391	3,405,118	3,412,077	3,416,299	3,418,585	3,421,562	3,424,321	3,447,948
3,370,724	3,405,137	3,412,094	3,416,307	3,418,587	3,421,630	3,424,445	3,448,065
3,378,056	3,405,248	3,412,111	3,416,308	3,418,630	3,421,640	3,424,619	3,448,526
3,378,074	3,405,603	3,412,112	3,416,389	3,418,645	3,421,663	3,424,645	3,448,586
3,378,128	3,405,770	3,412,389	3,416,415	3,418,678	3,421,666	3,424,757	3,448,911
3,378,353	3,405,856	3,412,444	3,416,419	3,418,749	3,421,710	3,424,812	3,449,082
3,379,013	3,406,101	3,412,522	3,416,518	3,418,775	3,421,730	3,424,814	3,449,200
3,381,417	3,406,177	3,412,545	3,416,531	3,418,951	3,421,736	3,424,919	3,449,273
3,382,584	3,406,341	3,412,817	3,416,536	3,419,059	3,421,774	3,425,101	3,449,329
3,383,021	3,406,394	3,413,223	3,416,547	3,419,117	3,421,782	3,425,178	3,449,332
3,383,055	3,407,183	3,413,264	3,416,561	3,419,121	3,421,801	3,425,187	3,449,460
3,385,819	3,407,198	3,413,279	3,416,568	3,419,207	3,421,804	3,425,248	3,450,264
3,387,897	3,407,201	3,413,343	3,416,638	3,419,366	3,421,847	3,425,300	3,450,543
3,388,830	3,407,233	3,413,372	3,416,801	3,419,374	3,421,957	3,425,315	3,450,544
3,389,730	3,407,386	3,413,403	3,416,840	3,419,415	3,421,970	3,425,518	3,452,086
3,389,788	3,407,685	3,413,724	3,416,891	3,419,446	3,421,985	3,425,804	3,452,123
3,391,567	3,407,839	3,413,801	3,417,094	3,419,447	3,422,020	3,425,891	3,453,074
3,393,055	3,408,004	3,413,814	3,417,102	3,419,464	3,422,069	3,426,030	3,453,259
3,393,219	3,408,192	3,414,094	3,417,137	3,419,506	3,420,073	3,426,071	3,453,260
3,394,047	3,408,257	3,414,203	3,417,150	3,419,546	3,422,077	3,426,274	3,454,930
3,394,500	3,408,297	3,414,233	3,417,152	4,419,559	3,422,094	3,426,298	3,455,074
3,394,793	3,408,345	3,414,253	3,417,165	3,419,560	3,422,108	3,426,383	3,455,955
3,394,839	3,408,349	3,414,371	3,417,191	3,419,566	3,422,128	3,426,898	3,456,044
3,396,149	3,408,479	3,414,395	3,417,196	3,419,575	3,422,165	3,426,920	3,456,055
3,396,281	3,408,533	3,414,407	3,417,265	3,419,595	3,422,169	3,427,219	3,460,049
3,396,492	3,408,713	3,414,478	3,417,353	3,419,658	3,422,185	3,427,254	3,463,063
3,396,794	3,408,746	3,414,502	3,417,476	3,419,793	3,422,208	3,427,393	3,469,694
3,397,794	3,408,930	3,414,528	3,417,483	3,419,798	3,422,244	3,427,571	3,470,704
3,397,972	3,408,953	3,414,569	3,417,490	3,419,830			

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-04-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Sterolds; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*8-29-67
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-24-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-68
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-26-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ASHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-03-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-19-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-68
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-02-68
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-29-68
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-19-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10-11-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-04-68
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	7-09-68
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-03-68
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	9-11-68

Total number of pending applications (excluding Designs)	183,028
Total number of Design applications pending	2,920

Expiration of patents: The patents within the range of numbers indicated below expire during February 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,627,071 to 2,629,868, inclusive
Plant Patents	Numbers 1,162 to 1,171, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE DONALD H. NOVAK

No. 8200. Decided November 26, 1969

[57 CCPA —; 417 F.2d 1403; 163 USPQ 651]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"IMPROVEMENTS IN TRISEXTANT."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Improvements in Trisextant" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 262,920.

AFFIRMED.

Robert L. Berger for appellant.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, MATTHEWS, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the rejection of claims 1–13, 15 and 16 of appellant's application [1] on the ground that these claims are unpatentable over the prior art under the provisions of 35 U.S.C. 103. No claim has been allowed.

Appellant's invention relates to a space navigational instrument based on the sextant principle of measuring angles between objects by sighting the two objects simultaneously, superimposing one object image upon the other, and determining the angle between the two lines of sight. More particularly, the instant invention resides in appellant's practical application of the proposition that a position in space can be uniquely determined from three landmarks, two landmarks and one star or two stars and one landmark, and to that end appellant has provided a "trisextant," differing from the ordinary sextant in that three objects are sighted simultaneously.

The invention is best understood by referring to FIG. 8 below, showing a perspective view, partially in section, of a fully manually operated embodiment of the invention.

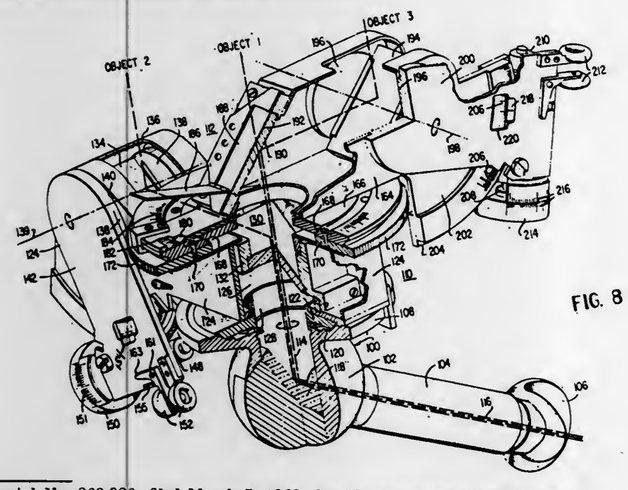


FIG. 8

[1] Serial No. 262,920, filed March 5, 1963, for "Improvements in Trisextant."

As seen, the trisextant employs three main parts, (1) a telescope 104, (2) a first rotatable head assembly 110, and (3) a second rotatable head assembly 112 mounted on the head assembly 110 for rotation relative thereto.

The telescope 104 is equipped with an eye piece 106 for viewing a first object and forming a reference axis 114 therewith. The first rotatable head assembly 110 is mounted for rotation about the axis 114. It includes a fixedly mounted beam splitter 130 and a rotatably mounted reflecting member or mirror 134 for receiving light rays from a second object and superimposing the object image thereof over the first object image along the axis 114. The reflecting member or mirror 134 is connected to an indexing arm 142 which is pivotally mounted on the head assembly 110. The lower end of arm 142 is provided with an index mark 154 and a micrometer 150 to indicate an angular reading.

Like the first head assembly 110, the second head assembly 112 is also mounted for rotation about the axis 114. It includes a fixed beam splitter 188 and a rotatably mounted reflecting member or mirror 194 for receiving light rays from a third object and superimposing them over the object images from the first and second objects along the reference axis 114. The mirror 194 is also connected to an index arm 200. The arm 200 is pivotally mounted on the head 112 and has an index marker 218 and a micrometer 216 associated therewith.

Indicator 180 provides a readout of the relative rotation of the two rotatable heads 110 and 112 with respect to each other which together with the indicator 154 and 218 readouts of the orientation of the reflecting surfaces 134 and 194 enable the determination of special positions geometrically. These three readings, we are told, constitute:

(1) The angular displacement between a line of sight reference axis to a first object and a line of sight to a second object.

(2) The angular displacement between the line of sight reference axis to the first object and the line of sight to a third object.

(3) The angular displacement between the *planes* defined by the line of sight reference axis and the lines of sight to the second and third objects, respectively.

Claim 1 is illustrative:

1. A space navigation instrument for taking three angular readings simultaneously of three spaced objects forming a plane which does not contain the observer, comprising: means for viewing said first object and forming a reference axis therewith, first transposing means for receiving light from said second object and forming a second object image superimposed on a first object image along said reference axis, second image transposing means for receiving light from said third object and forming a third object image superimposed on said first and second images along said reference axis, and means coupled to said transposing means for indicating the angular displacements between said reference axis and the line of sight to said second object, between said reference axis and the line of sight to said third object and between the planes defined by each said line of sight with said reference axis.

The remaining claims are similar in recitation to claim 1, with various claims defining in more detail the nature and structure of the apparatus features as well as their structural relationship. The claims were considered as a group by both the Examiner and Board and are not argued separately by appellant before this court, thus rendering it unnecessary for us to set them all out in detail here.

The references relied upon in the Examiner's rejection under 35 U.S.C. 103 are:

Cable, 2,566,312, Sept. 4, 1951.
Johns, 3,206,605, Sept. 14, 1965.

Cable discloses a navigational instrument comprising a telescope for directing an observer's line of sight, which constitutes a reference axis to a first object, and a rotatable head assembly mounted for rotation about the reference axis. The rotatable head assembly includes a fixedly mounted beam splitter and a rotatably mounted reflecting member for viewing light rays from a second object and superimposing the object image over the first object image along the reference axis. As objects of the invention are stated "the provision of means for simultaneously sighting and collimating the images of at least two selected heavenly bodies," and "the provision of celestial navigational means of the plural star collimating type, for finding the true north direction from a single collimated celestial observation of any two or more selected and visible navigational star images * * *." In addition, the apparatus contains a gravity-seeking instrument.

Johns describes a system for the location and tracking of extraplanetary objects such as orbiting satellite bodies. In one form of the system three direction-sensing means, such as telescopes, are coupled to the object for sensing the direction of three reference sources, such as ground beacons, in response to the respective signal of each source. The measurement of the three angles between the direction of each pair of reference sources defines the position of the object to be tracked. Another form uses only a pair of telescopes and ground beacons, while a third embodiment utilizes a single telescope sextant-type device wherein a semitransparent mirror is pivoted about an axis perpendicular to a telescope and is rotatable about the telescope axis to superimpose an off-axis object in the telescope. With respect to the embodiment, the patentee states:

> Here a single apparatus provides direction-sensing means for both beacons. This concept can of course be further enhanced with a third reflecting surface transparent-reflecting device which is oriented with respect to a third beacon.

The Examiner found the claim unpatentable over Cable in view of Johns, reasoning that:

> Since Johns discloses that sighting three objects or beacons will uniquely determine one's position in three dimensional space and in another embodiment that two semitransparent reflectors rotatable about a telescope axis and pivotable about an axis perpendicular to the telescope axis can similarly be employed, it would be obvious to one of ordinary skill in the art to provide a duplicate secondary star sighting head in the Cable instrument. Such a modification of Cable will allow the instrument to be employed to determine any point in space as taught by Johns.

The Examiner felt that appellant's contention that Johns did not measure the three angles of interest to appellant was unfounded with respect to the single telescope embodiment, but that nevertheless someone skilled in the art related to angle measurement would have a knowledge of trigonometry and would be able to derive the necessary angular information.

In affirming, the Board expressed agreement with the Examiner and called attention to the two passages found in Cable and quoted hereinbefore in the discussion of that reference.

Appellant's position is simply that the references taken alone or together fail to teach the claimed structural configuration of his trisextant. Cable, it is urged, not being concerned with space navigation discloses no appreciation of measurements required in connection therewith. Moreover, the quoted portions of Cable relied upon appear only in the list of intended objects with the remainder of the specification devoid of any teaching as to how these desired goals are attained.

Appellant argues that therefore these statements are meaningless and Cable's disclosure shows merely an instrument for viewing two objects.

With respect to Johns, appellant contends that, in addition to the lack of structural similarity between the instruments of Johns and appellant, the patentee teaches the determination of point position in space by measuring three angles differing from those three angles measured by appellant's trisextant. Appellant argues that Johns' description of his embodiment employing the single telescope sextant-type device is ambiguous when it refers to a "third reflecting surface transparent-reflecting device" since no mention of a second such device appears. While admitting some degree of similarity between this instrument and appellant's in that both utilize readings provided by a common sextant, any further inferences are argued to be unfounded and based on hindsight reasoning.

Appellant's arguments leave us unconvinced of error in the Board's decision. We are in agreement with the Patent Office's position that the claimed trisextant finds substantially full response in Cable except that the reference fails to show the second image transposing means and its associated angular displacement indicating means. However, we feel that the teaching of Johns, that sighting three objects will uniquely determine one's position in space and that such three sightings may be accomplished utilizing a single telescope sextant-type device having semitransparent mirrors pivoted about an axis perpendicular to a telescope, suggest to one of ordinary skill in the art the provision of a secondary sighting head in Cable. That such would be obvious can be further seen by the suggestion found in the following language of Cable:

> * * * means of simultaneously sighting and collimating the images of *at least two* selected heavenly bodies * * *
>
> * * * * * * * *
>
> a single collimated celestial observation of any *two or more* selected * * * star images * * *. [Emphasis added.]

indicating at least the amenability of the Cable instrument to reception of a secondary sighting head.

[1] Accordingly, the decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,588,744, I. C. McKechnie, AUTOMATIC ELECTRIC SPACE-DISCHARGE MATERIAL REMOVAL METHOD AND APPARATUS; **2,628,330**, E. M. Williams, CONDENSER-CHARGING SYSTEM FOR SPARK-CUTTING DEVICES; **2,650,979**, E. E. Teubner, METHOD AND APPARATUS FOR ELECTRICALLY DISINTEGRATING METALLIC MATERIAL; **2,654,256**, I. C. McKechnie, DIAPHRAGM SPRING RECIPROCATING TOOL; **2,756,316**, E. E. Teubner, APPARATUS FOR ELECTRICALLY ERODING MATERIALS; **2,769,078**, V. E. Matulaitis, ARC MACHINING; **2,773,168**, E. M. Williams, HIGH-SPEED SPARK MACHINING APPARATUS; **2,783,411**, V. E. Matulaitis, SERVO FEED FOR MULTIPLE ELECTRODES; **2,804,575**, same, ARC MACHINING APPARATUS WITH PERIODIC POWER CONTROL; **Re. 25,542**, R. S. Webb, POWER FEED SYSTEM; **2,841,686**, E. M. Williams, AUTOMATIC CONTROL SYSTEM FOR THE ELECTRODE OF A SPARK-CUTTING APPARATUS; **3,243,567**, W. Lobur, ELECTRICAL DISCHARGE MACHINING APPARATUS; **3,257,580**, R. S. Webb, FAULT DETECTION AND CUT-OFF CIRCUIT FOR ELECTRICAL DISCHARGE MACHINING APPARATUS, **filed** Dec. 15, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2590, *Elox, Inc.* v. *Astral Precision Equipment Co.*

2,628,330. (See 2,588,744.)

2,650,979. (See 2,588,744.)

2,654,256. (See 2,588,744.)

2,756,316. (See 2,588,744.)

2,769,078. (See 2,588,744.)

2,773,168. (See 2,588,744.)

2,783,411. (See 2,588,744.)

2,804,575. (See 2,588,744.)

2,841,686. (See 2,588,744.)

3,048,498, Juvinall and Marsh, ELECTROSTATIC SPRAY COATING SYSTEM; **3,169,882**, Juvinall, Kock and Marsh, ELECTROSTATIC COATING METHODS AND APPARATUS; **3,169,883**. J. W. Juvinall, same, **filed** July 16, 1965, D.C., N.D.

Ill. (Chicago), Doc. 65c1195, *Ransburg Electro Coating Corp. v. Nordson Midwestern Inc., Marvel Metal Products.* Final judgment, Sept. 29, 1969.

3,169,882. (See 3,048,498.)

3,169,883. (See 3,048,498.)

3,209,228, A. F. Gawron, SYSTEM FOR CONTROLLING ELECTRIC MOTORS IN POWER TOOLS AND THE LIKE; **3,213,307,** D. N. Summerfield, COMMUTATOR CONNECTIONS SUPPORT CONSTRUCTION, **filed** Feb. 10, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c267, *Skil Corporation v. Sears, Roebuck & Company, The Singer Company, and Cutler-Hammer, Inc.* (per amended complaint). Judgment of the court entered June 27, 1968 is hereby vacated. Plaintiff owner of Pat. No. 3,209,228 which is valid. Judgment hereby entered in favor of plaintiff and against defendant Cutler-Hammer, Inc., plaintiff's third amended complaint dismissed without prejudice, Nov. 28, 1969.

3,213,307. (See 3,209,228.)

3,243,567. (See 2,588,744.)

3,257,580. (See 2,588,744.)

3,356,943. (See D. 202,702.)

3,356,944. (See D. 202,702.)

3,390,480, L. S. Turner, ARROW-HELICOPTER TOY; **D. 212,699,** same, AERIAL TOY; **Reg. No. 841,173** (ARROW-COPTER), Basic Products Development Company, Aerial toys, **filed** Feb. 5, 1969, D.C.N.J. (Newark), Doc. 132-69, *Basic Products Development Co., Inc. v. Plawner Toy Mfg. Co., Inc. (Felix Plawner and Karl Plawner).*

3,423,149, H. N. Braunhut, ADJUSTABLE POLARIZING EYEGLASSES, **filed** Oct. 20, 1969, D.C. Mass. (Boston), Doc. 69-1111-C, *Honey Toy Industries, Inc. v. Bandwagon, Inc. and John B. Crawford.*

3,426,274. (See D. 202,702.)

Re. 25,542. (See 2,588,744.)

Re. 26,224, W. L. Hulslander, LUBRICATED TAPPING T, **filed** Dec. 12, 1969, D.C., N.D. Ind. (South Bend), Doc. 69-S-207, *Dresser Industries, Inc. v. Textron, Inc., doing business as M. B. Skinner Co.*

D. 202,702, Wise, Sutliff and Coon, PORTABLE VOLT-OHM MILLIAMMETER; **3,356,943,** D. S. Wise, METHOD AND APPARATUS FOR MEASURING VOLTAGE AND CURRENT; **3,356,944,** D. B. Coon, DECIMAL AND RANGE INDICATING MEANS FOR ELECTRICAL MEASURING APPARATUS; **3,426,274,** D. S. Wise, DIODE BRIDGE PROTECTION CIRCUITS FOR ELECTRICAL MEASURING INSTRUMENTS EMPLOYING THE DIODE FORWARD DROP THRESHOLD VOLTAGE, **filed** Dec. 15, 1969, U.S. Ct. of Cl., Washington, D.C., Doc. 515-69, *Western Reserve Electronics, Inc. v. The United States of America.*

D. 212,699. (See 3,390,480.)

Reg. No. 841,173. (See 3,390,480.)

Erratum

In Patent Suits of the OFFICIAL GAZETTE, vol. 870, page 389, published January 13, 1970, the paragraph reading "2,95,601" should be *2,905,601.*

REISSUES

MARCH 17, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,821

STEPPING-TUBE MULTIPLE-STORE CIRCUIT EMPLOYING PLURAL COUNTER CHAINS SELECTIVELY GATED THROUGH SINGLE INTERSTAGE GATING CHAIN

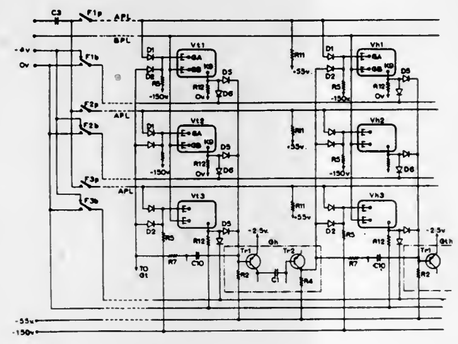
Gerald Offley Crowther and Graham Frank Jeynes, Cheam, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Original No. 3,308,337, dated Mar. 7, 1967, Ser. No. 331,678, Dec. 19, 1963. Application for reissue Feb. 3, 1969, Ser. No. 802,286

Claims priority, application Great Britain, Dec. 19, 1962, 47,958/62

Int. Cl. H01j *17/36*

U.S. Cl. 315—84.5 **6 Claims**



A group of chains of cold cathode stepping tube counting circuits and a chain of gating circuits for transferring counting pulses between tubes in a chain, and a set of switches for connecting the gating chain to a desired chain of the tube group, thereby isolating or decoupling the remaining chains.

26,822

STEPPING TUBE READ-IN CIRCUIT EMPLOYING GATES TO SELECTIVELY INHIBIT LOWER ORDER COUNTERS TO EFFECT MORE EFFICIENT READ-IN OF ADDITIONAL NUMBERS

Gerald Offley Crowther and Graham Frank Jeynes, Cheam, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

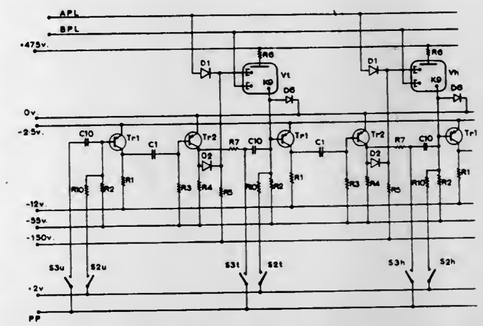
Original No. 3,303,384, dated Feb. 7, 1967, Ser. No. 331,677, Dec. 19, 1963. Application for reissue Feb. 3, 1969, Ser. No. 802,288

Claims priority, application Great Britain, Dec. 19, 1962, 47,957/62

Int. Cl. H01j *17/36*

U.S. Cl. 315—84.5 **4 Claims**

A cold cathode stepping tube counting circuit including gating means between stepping tube stages for providing a carry from a lower order stage to a higher order stage, and an interstage gating circuit for inhibiting lower



order stages upon external introduction of a counting pulse to a higher order stage.

26,823

STEPPING-TUBE COUNTING-CIRCUIT UTILIZING A CONTROL SIGNAL TO PRE-CONDITION INTERSTAGE GATES TO AVOID SIGNAL TIME DELAY

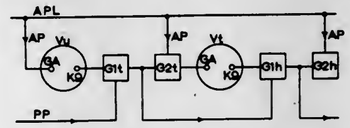
Gerald Offley Crowther and Graham Frank Jeynes, Cheam, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Original No. 3,303,383, dated Feb. 7, 1967, Ser. No. 331,676, Dec. 19, 1963. Application for reissue Feb. 3, 1969, Ser. No. 802,289

Claims priority, application Great Britain, Dec. 19, 1962, 47,955/62

Int. Cl. H03k *23/38*

U.S. Cl. 315—84.5 **5 Claims**



A chain of cascade-counting stepping tubes having a two stage gating circuit interconnecting adjacent tubes and responsive to a control pulse and the output of the previous tube for permitting the passage of a guide pulse for setting the next tube.

26,824

NYLON TIRE CORDS

George C. Stow, Jr., Pensacola, Fla., William C. Mallonee, Chapel Hill, N.C., and Homer D. Barrett, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original No. 3,343,363, dated Sept. 26, 1967, Ser. No. 443,170, Mar. 26, 1965. Application for reissue Aug. 13, 1968, Ser. No. 758,636

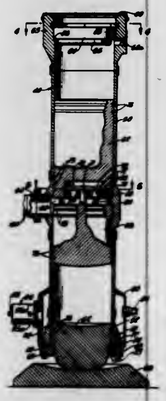
Int. Cl. D02g *3/02, 3/48*

U.S. Cl. 57—140 **1 Claim**

The performance characteristics of nylon tire cords are greatly improved by a process which comprises hot-stretching the cords, or the yarns which are to be later used to

fabricate the cords, at temperatures between 275° C. and 350° C., for 2 to 12 seconds while under tension sufficient enough to produce at least a 10% stretch. The cords produced have excellent properties characterized by a tenacity above 7 grams per denier, an elongation below 20%, an initial modulus between 25 and 60 grams per denier and a breaking strength of at least 0.0160 lb. per denier. Also, the properties of moisture regain, sonic modulus and density are improved.

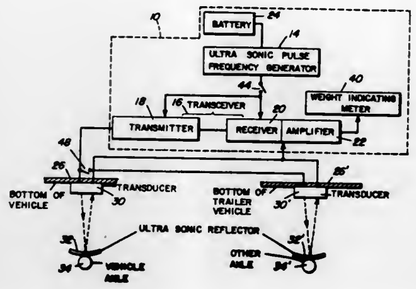
26,825
SEISMIC PROSPECTING SYSTEM
James T. Kenney, Arcadia, Calif., assignor, by mesne assignments, to United Geophysical Corporation, Pasadena, Calif., a corporation of Delaware
Original No. 3,283,845, dated Nov. 8, 1968, Ser. No. 311,486, Sept. 25, 1963. Application for reissue Nov. 4, 1968, Ser. No. 786,494
Int. Cl. G01v *1/14*
U.S. Cl. 181—.5 **34 Claims**



A mobile seismic generator having a hammer which is driven downwardly by the force of an expanding gas to impact a plate on the earth is provided with a counterbalancing mass which is driven upwardly at the same instant. The reaction force on the transporting vehicle is thereby minimized so that the vehicle does not rise off the ground and then fall to produce an undesired impact. The hammer is prevented from causing undesired impact on rebound by hydraulic catcher means which temporarily retains the hammer in an elevated position on rebound.

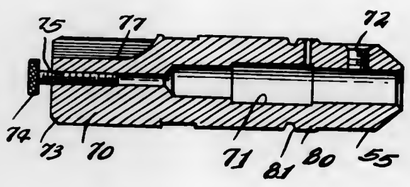
26,826
ULTRASONIC TYPE NET WEIGHT LOAD INDICATOR FOR VEHICLES
Earl C. Nolan, 208 Kensington Drive, Biloxi, Miss. 39530
Original No. 3,428,139, dated Feb. 18, 1969, Ser. No. 735,824, June 10, 1968. Application for reissue Apr. 8, 1969, Ser. No. 824,004
Int. Cl. G01g *19/08, 19/12;* **B60p** *5/00*
U.S. Cl. 177—137 **13 Claims**

This invention is a weight load indicator for vehicles and measures the net weight of the load of a vehicle or the weight on each axle, on a meter weight indicator located in the cab of the vehicle. It includes an ultrasonic pulse generator which is operated, when desired, to send a burst of sound through a transceiver to a transducer. The transducer is located on the underside of the vehicle and a sonic reflector is mounted on the vehicle axle, there being springs on the axle supporting the vehicle body. The reflector is in the sonic path of the transducer. A meter, calibrated in weight, is connected to the transceiver, and the meter is thus actuated to reflect the time it takes for the sound to echo back from the sonic reflector to the transducer, which varies in proportion to the compression of the vehicle springs under the weight of the load thereon. One or more trailer vehicles may have their loads indicated



in the tractor vehicle cab by having a second transducer and a second sonic reflector similarly mounted on the trailer vehicle underside and axle through a selective switch to the same transceiver and ultrasonic pulse generator, and to the same meter.

26,827
TOOL SUPPORTING ADAPTER
Fred R. Swanson, Rockford, and Carl Erikson, Belvidere, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Original No. 3,136,563, dated June 9, 1964, Ser. No. 59,236, Sept. 29, 1960. Application for reissue Apr. 18, 1967, Ser. No. 693,027
Int. Cl. B23b *31/12*
U.S. Cl. 279—83 **4 Claims**

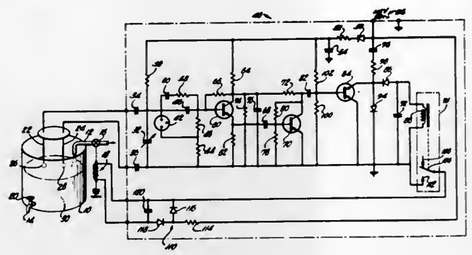


A tool supporting adapter having an adjustable stop at one end thereof for controlling the over-all length of the tool and the adapter, with the adapter having a circumferential handling groove with inclined sides, and a keyway with inclined sides for keying the adapter to a rotatable spindle.

26,828
LIQUID LEVEL DETECTOR
Carl E. Atkins, Montclair, N.J., and Robert L. Ziolkowski, Roselle, Ill., assignors, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware
Original No. 3,291,149, dated Dec. 13, 1966, Ser. No. 393,175, Aug. 31, 1964. Application for reissue Mar. 22, 1968, Ser. No. 717,056
Int. Cl. G01f *23/26;* **F16k** *21/18;* **G05d** *9/12*
U.S. Cl. 137—392 **9 Claims**

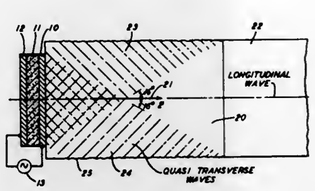
An electronic apparatus for detecting the level of a liquid is provided wherein spaced conductive elements are positioned at predetermined locations to detect the level

of the liquid. When the liquid level rises sufficiently to touch the elements or change the dielectric constant in the space between the elements to change the capacitance between the elements, a signal is fed into an oscillator



circuit which in response thereto sends an output signal to an amplifier. The amplified signal, in turn, is used to provide an indication of the detection of the liquid or a feedback control over the flow of the liquid.

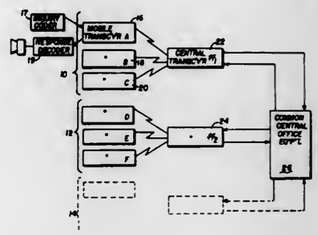
26,829
METHOD OF FORMING A PIEZOELECTRIC ULTRASONIC TRANSDUCER
Norman F. Foster, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original No. 3,388,002, dated June 11, 1968, Ser. No. 387,837, Aug. 6, 1964, which is a continuation-in-part of application Ser. No. 320,379, Oct. 31, 1963. Application for reissue Oct. 24, 1968, Ser. No. 771,685
Int. Cl. H01l *3/16;* **H01v** *7/02;* **B44d** *1/18*
U.S. Cl. 117—217 **10 Claims**



A piezoelectric ultrasonic transducer is formed by evaporating a semiconductive material, such as cadmium sulfide, having latent piezoelectric properties onto a heated substrate where it recrystallizes into piezoelectrically aligned crystals. The resistivity of the layer is raised so it can support a piezoelectric field. Chose of substrate and direction of evaporation controls the primary ultrasonic mode generated.

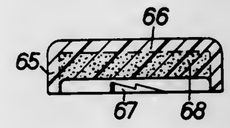
26,830
MULTIPLE REMOTE INTERROGATED INFORMATION SYSTEM
Frederick P. Willcox, 565 Oenoke Ridge, and Newland F. Smith, 140 Llewellyn Drive, both of New Canaan, Conn. 06840, and Harold E. Levitt, Pacific Palisades, Calif.; said Levitt assignor of forty-five percent to said Willcox
Original No. 3,281,789, dated Oct. 25, 1966, Ser. No. 235,067, Nov. 2, 1962. Application for reissue Oct. 22, 1968, Ser. No. 807,462
Int. Cl. H04q *9/12*
U.S. Cl. 340—152 **12 Claims**

An information system comprising a central station having a store or "library" of information, and a plurality of remote stations, and in which system each remote station has facilities for sending coded interrogation messages, including identification of the remote station, to the central station, and the central station has means for sending to the inquiring remote station a reply message, in coded form, including the information obtained from the store. The central station may be linked to the remote stations by radio wave transmitting channels, and may include provision for transmitting to the inquiring remote station a distinctive code signal indicative of the fact that the store contains no information on the



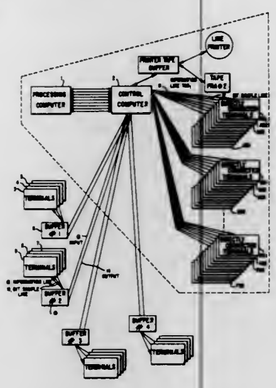
subject of inquiry, or for transmitting a coded identification of the remote station being answered. Each remote station may include means for pre-storing an inquiry message to be sent to the central station thereafter, as well as means for decoding, and manifesting in clear language form, at least the messages from the central station intended for that particular remote station. Each remote station may be arranged to respond only to reply messages coded for that station, and may include a single buffering means to serve both for pre-storing its inquiry messages and for storing received coded reply messages.

26,831
CLOSURES FOR CONTAINERS
Eugene J. Treanor, The Cloisters, 94 Berrow Road, Burnham-on-Sea, Somerset, England
Original No. 3,348,717, dated Oct. 24, 1967, Ser. No. 523,813, Dec. 8, 1965. Application for reissue Nov. 21, 1968, Ser. No. 786,496
Claims priority, application Great Britain, Dec. 9, 1964, 50,031/64; Apr. 15, 1965, 16,141/65
Int. Cl. A61j *1/00*
U.S. Cl. 215—9 **5 Claims**



A container is provided with a cap which is difficult for a child to remove, the container and cap having spigot-and-slot fittings of the bayonet type but with two or more sockets for each spigot. The cap can only be removed by pushing it inwards and twisting it until the spigot has cleared all the slots. If the cap is pushed in, rotated only a little way, and then released any further twisting causes the spigot to drop into another socket. In an alternative the cap engages a tubular neck which screws tightly onto an existing container.

26,832
INTEGRATED DATA PROCESSING SYSTEM
Peter L. Randlev, Croton-on-Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of Delaware
Original No. 3,245,045, dated Apr. 5, 1966, Ser. No. 153,880, Nov. 21, 1961, which is a continuation of application Ser. No. 719,791, Apr. 1, 1968. Application for reissue Mar. 20, 1969, Ser. No. 831,787
Int. Cl. H04j *3/00*
U.S. Cl. 340—172.5 17 Claims



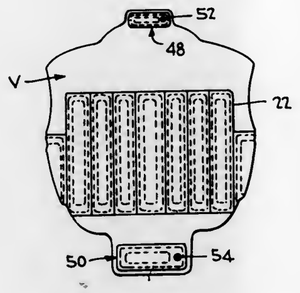
A data processing system which comprises a central computer and a plurality of remote terminals. Each of the remote terminals includes an input/output device which is adapted to transmit messages or to receive messages from the central computer, certain of the remote terminals being directly connected to the central computer. Each remote terminal has means associated therewith for generating a terminal service request signal when there is a message to be transmitted to or from a particular remote terminal. A plurality of buffers are included, others of the remote terminals being connected by groups to the central computer through the buffers, a different group of the other terminals being connected through each of the buffers. Means are provided for generating a buffer service request signal at any buffer when there is a message to be transmitted to or from a terminal connected to the buffer and means are also included for successively scanning each of the directly connected terminals to detect the presence of a terminal service request signal. There are further provided normally inoperative means for successively scanning the buffers to detect the presence of a buffer service request signal and control means effective after the scanning of each of the directly connected terminals to respond to the presence of a buffer service request signal for any one or more of the other remote terminals for interrupting the operation of the direct terminal scanning means and initiating an operation of the buffer scanning means. The aforementioned control means is responsive to the termination of the last buffer service request signal to restore the operation of the direct terminal scanning means and to stop the operation of the buffer scanning means. Means are further included, responsive to the detection by either of the scanning means of a service request signal for transferring information between the central computer and the remote terminal to which the detected service request signal pertains.

PATENTS

GRANTED MARCH 17, 1970

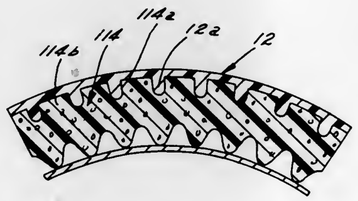
GENERAL AND MECHANICAL

3,500,472
FOOTBALL AND BASEBALL EQUIPMENT
Joseph D. Castellani, 202 Josephine St., Peckville, Pa. 18452
Filed May 13, 1968, Ser. No. 728,520
Int. Cl. A41d *13/00, 13/06;* A42b *1/08*
U.S. Cl. 2—2 2 Claims



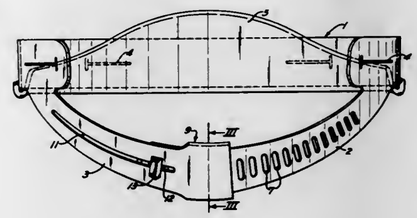
Football and baseball equipment provided with protection means to protect players against injuries when they are struck blows by other players or objects; the protective means comprises one or more cushioning units applied to garments worn by the players at the areas of the body to be protected; each cushioning unit comprises a relatively rigid member covered with a spongy material shaped to conform to the shape of the body part to be protected; the covered rigid member is enclosed within an inflatable chamber, having walls that are formed of a pliable nonporous material, that has been pressurized by the introduction of a gaseous medium.

3,500,473
SAFETY HEADGEAR ASSEMBLY
John L. Marchello, New Hudson, Mich., assignor to Wolverine World Wide, Inc., Rockford, Mich., a corporation of Michigan
Filed Dec. 14, 1967, Ser. No. 690,609
Int. Cl. B42b *1/08*
U.S. Cl. 2—3 5 Claims



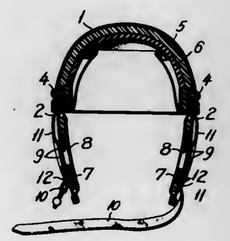
Safety headgear having an outer shell with special ribbing formed of a plurality of ribs, preferably extending radially of the headgear or alternately in crisscross honeycomb pattern and normally on the inner surface of the shell. This shell is combined with an impact absorbing liner that preferably is configurated with grooves to interfit with the ribbed shell.

3,500,474
ADJUSTABLE HEADBAND
Harry W. Austin, Monroeville, Pa., assignor to Mine Safety Appliance Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 8, 1968, Ser. No. 765,932
Int. Cl. A42b *1/22, 3/06*
U.S. Cl. 2—3 3 Claims



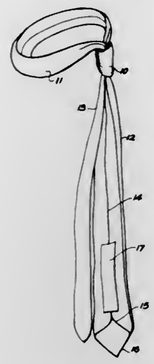
A flexible headband has overlapping end portions that are slidingly connected together by a ratchet tooth and slot arrangement, whereby the size of the headband can quickly be reduced while on the head by simply sliding one end portion along the other, or enlarged after pinching the part carrying the ratchet teeth to disengage them from the ratchet slots.

3,500,475
PROTECTIVE HELMET
Norimoto Otsuka, Tokyo, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan
Filed Mar. 1, 1968, Ser. No. 709,606
Claims priority, application Japan, Mar. 1, 1967, 42/16,468
Int. Cl. A42b *3/02*
U.S. Cl. 2—3 8 Claims



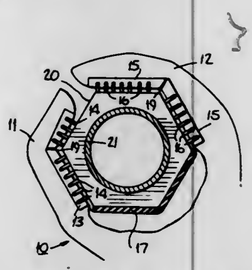
A helmet having an outer shell body constituted of rigid synthetic resin and an inner shell body secured to the outer body at the lower edge thereof and depending therefrom, the inner shell body being constituted of a synthetic resin having a larger bending flexibility and serving to protect the ears of the wearer.

3,500,476
ADHESIVE ATTACHMENT FOR NECKTIES
Lloyd Nuttall, 149 Glenview,
Canfield, Ohio 44406
Filed Aug. 14, 1968, Ser. No. 752,566
Int. Cl. A41d 25/06
U.S. Cl. 2—157 3 Claims



An adhesive attaching means for securing the depending portions of neckties to one another to hold the same with the narrower back portion of the necktie hidden behind the wider front portion thereof.

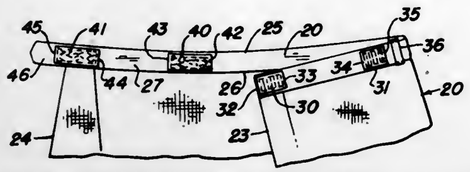
3,500,477
THUMB PLIER GLOVE
Albert B. Meszaros, 24 Eastern Ave.,
Ossining, N.Y. 10562
Filed Dec. 10, 1968, Ser. No. 782,579
Int. Cl. A41d 19/00
U.S. Cl. 2—161 9 Claims



The thumb and index finger of the glove are provided with a ribbed insert which provides a gripping surface for engaging a nut or jar cap. In addition, the palm of the glove contains a flexible insert so that the glove can be formed into a hexagonal shape about plumbing fixture nuts for manual tightening or loosening of the nut.

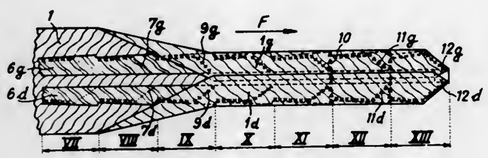
3,500,478
WAIST CLOSURE FOR GARMENTS
John R. Foster, Daly City, Calif., assignor to Koret of California, Inc., San Francisco, Calif., a corporation of California
Filed Apr. 24, 1968, Ser. No. 723,724
Int. Cl. A41d 1/14; A41f 9/00
U.S. Cl. 2—221 4 Claims

A waist closure arrangement for skirts, slacks, and the like employing the teasel-and-fleece type of fastening strips, where there are pairs of strips, one of each pair with many tiny hooks and the other with many tiny loops or a fleece-like pile. Adjustability is herein provided by having one of each pair, generally the fleece-like strip, much longer than the other strip and located on the inner face of the outer layer of two garment layers, with the shorter strip on the outer face of the inner layer, both at the waist. The outer layer has a short belt-like flap extending beyond its end and at the end of the longer strip, and this tucks into a belt loop closely adjacent to the



end of the shorter strip. For wraparound skirts, two pairs of closure strips may be provided in repeating relationship, with one tuck flap and belt loop. For slacks, a drop front may be used with strips and flaps at each end of the belt line, and the inner layer terminates in two spaced-apart ends near the extremities of the front waist, with the belt loops at the sides or near to them.

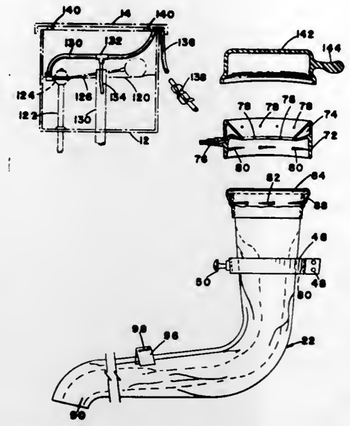
3,500,479
METHOD OF MANUFACTURING JACKETS AND LIKE GARMENTS AND JACKETS OBTAINED THEREBY
Claude Raymond Pierron, 7 Rue Albert 1er,
Epinal, Vosges, France
Filed Nov. 26, 1968, Ser. No. 778,984
Claims priority, application France, Nov. 27, 1967, 129,867
Int. Cl. A41d 27/00
U.S. Cl. 2—243 26 Claims



A method of continuously manufacturing jackets in series in an assembly line, from a web, consisting in making pairs of right and left sleeves and laying them flat in a longitudinal row on said web, superposing thereon over said sleeves two bands laterally secured to the edges of said web, respectively, and covering each a different row of sleeves, to form the left and right front sides of the jackets, assembling said bands and web to the outer periphery of the sleeve arm-opening lines and severing the finished jackets.

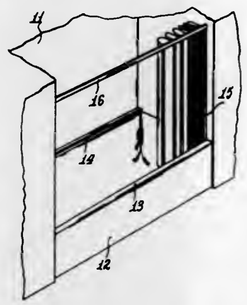
3,500,480
URINAL ATTACHMENT FOR TOILET BOWL
John H. Michal, Jr., 2467 Auburn Road,
York, Pa. 17402
Original application July 1, 1966, Ser. No. 562,349, now Patent No. 3,412,408, dated Nov. 26, 1968. Divided and this application July 30, 1968, Ser. No. 748,797
Int. Cl. E03d 13/00, 9/00; A47k 11/12
U.S. Cl. 4—102 5 Claims

A disposable duct for a urinal attachment arranged to be mounted adjacent a toilet bowl and formed from flexible, inexpensive, waterproof sheet material and normally relatively flat for ready storage as well as insertion between the rim of a toilet bowl and a seat normally disposed in slightly spaced relationship to said rim, said duct being of a nature to kill the sound of splashing of liquid while passing between the urinal attachment and discharging from the lower end of the duct which normally is disposed within the interior of the toilet bowl and is anchored adjacent the rim of the bowl so as to prevent



dislodgment during use, said duct readily being connectable to and removable from the urinal attachment and the toilet bowl when replacement is desired.

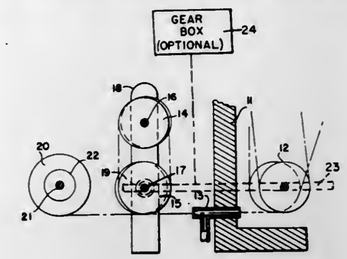
3,500,481
BATH TUB CLOSURE AND TRACK THEREFOR
Arthur A. McKwane, 1234 N. Lamon Ave.,
Chicago, Ill. 60651
Filed Jan. 19, 1967, Ser. No. 610,332
Int. Cl. A47k 3/22, 3/08, 4/00
U.S. Cl. 4—149 11 Claims



A bath tub closure and track therefor characterized by an upper and lower track, the lower track being coextensive and integral with at least one longitudinal side of a bath tub rim, and a foldable closure having stiffening members slidable on the tracks.

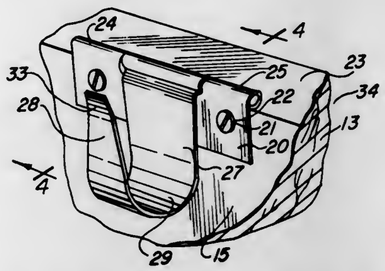
3,500,482
PRODUCTION OF CARBON FIBRES
Thomas Lloyd, Potters Hatch, Crondall, Farnham, Surry, England, and Patrick McMullen, Elm Cottage, Bentley, Hampshire, England
Filed June 26, 1967, Ser. No. 648,917
Claims priority, application Great Britain, Aug. 18, 1966, 37,051/66
Int. Cl. D06c 1/00, 7/04; D06f 37/00
U.S. Cl. 8—151.2 10 Claims

A device for feeding fibres of organic polymer material to an oxidizing oven in the process of manufacture of carbon fibres from the fibres. The device includes tensioned fibre supply means and a pair of rollers adjacent the oven for supporting successive separated turns of fibres from the supply means. At least one of the rollers is driven at a rate such that the fibre is held taut in passing from the rollers to driven means within the oven so that the fibre can undergo at most a controlled and



limited change in length compared with its original length. Brake means are operable to apply a braking force to the fibres supplied to the rollers to maintain same at a tension sufficient to prevent slippage of the fibres on the rollers.

3,500,483
OAR REST
Wilhelmina Schohn, 231 N. Kenilworth,
Oak Park, Ill. 60302
Filed Nov. 19, 1968, Ser. No. 777,080
Int. Cl. B36b 17/00
U.S. Cl. 9—1 5 Claims

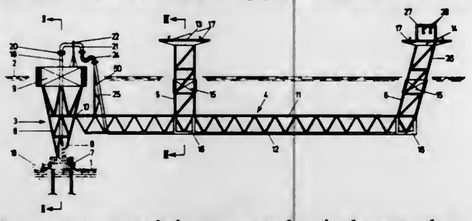


An oar rest having a base plate attachable to the exterior surface of a rowboat and connected by a hinge to a curved bracket member which is pivotable about the hinge from an operative oar-supporting position outside of the boat to a non-operative, non-obstructive position on the top of the sidewall of the boat.

3,500,484
DEVICE FOR MOORING SHIPS
Cevdet A. Erzen, The Hague, Netherlands, (% Mr. Touloukian, 258 Broadway, New York, N.Y. 10007)
Filed Nov. 6, 1968, Ser. No. 773,709
Claims priority, application Netherlands, Nov. 10, 1967, 6715247
Int. Cl. B63b 21/52, 21/00
U.S. Cl. 9—8 12 Claims

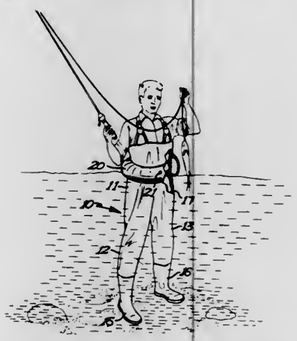
A device for mooring ships offshore, in particular for the transportation of liquids between a ship and the shore, having an upright mast structure rising from the sea bottom to the surface and anchored at its lower end for universal swinging movement and free rotation about its longitudinal axis, the mast structure carrying floats keeping the same in its upright position. A mooring boom is secured to the mast structure below the water level and

extends sideways therefrom in a horizontal position which boom carries one or more mooring towers provided with floats and rising upwardly therefrom to a suitable height above the water level. A riser pipe runs upwardly through



the mast structure being connected at its lower end to a pipeline running to the shore and being coupled at its upper end to a pipe running through the mooring boom and towers for connection with the pipe system of a ship.

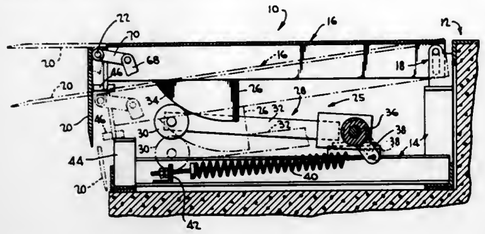
3,500,485
AUTOMATIC WADER FLOATATION RING
Raymond A. Hillary, Spirit Lake, Iowa, assignor to Berkley & Company, Inc., Spirit Lake, Iowa, a corporation of Iowa
Filed Apr. 10, 1968, Ser. No. 720,279
Int. Cl. B63c *9/16*
U.S. Cl. 9—343 **4 Claims**



Wader apparatus comprising a generally inelastic outer water impermeable shell adapted to receive and confine the lower portion of the body of the wearer and having a top adapted to encircle the body of the wearer, a generally flexible inelastic inner wall substantially commensurate with the said outer water impermeable shell, a generally flexible gas impermeable shell interposed between said inner and outer walls and being generally coextensive therewith and including an upper inflatable floatation ring chamber; the gas impermeable shell being adapted to entrap a volume of air therewithin, the volume being generally sufficient to inflate said floatation ring chamber upon the exposure to hydrostatic pressure encountered when the wearer enters the water.

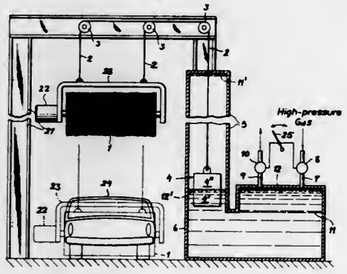
3,500,486
BALANCING MEANS, LIP ACTUATING, LOCKING AND SUPPORTING MEANS FOR DOCKBOARD ASSEMBLY
Robert L. Le Clear, Albion, Mich., assignor to T & S Equipment Co., Albion, Mich., a corporation of Michigan
Filed Nov. 16, 1967, Ser. No. 683,657
Int. Cl. E01d *15/04;* **B65g** *11/12*
U.S. Cl. 14—71 **16 Claims**

A dockboard assembly comprising a deck and a hinged lip is disclosed, the deck being substantially counterbalanced throughout all raised positions thereof when the hinged lip is in a dependent position. When the hinged lip itself is raised, the deck ceases to be balanced and drops until the hinged lip comes into contact with the vehicle to be loaded or unloaded.



Pivotal support means are provided for supporting the hinged lip in its dependent position and thus the deck member in a cross-traffic or below cross-traffic position. Means are also provided to lock the hinged lip member in its dependent position.

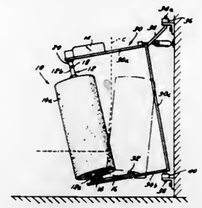
3,500,487
VEHICLE WASHING APPARATUS
Uberto Capra, Vicenza, Italy, assignor to Ceccato & C. S.p.A., Vicenza, Italy, a corporation of Italy
Filed Feb. 23, 1968, Ser. No. 707,836
Claims priority, application Italy, Mar. 10, 1967, 13,557/67; Oct. 17, 1967, 21,677/67
Int. Cl. B60s *3/06*
U.S. Cl. 15—21 **6 Claims**



A suspended load, such as a rotary brush used for the scrubbing of vehicular bodies, is anchored to a cable having an end attached to a weight which is vertically movable in a well adapted to be alternately filled with water and drained; the gravitational pull of the weight in the empty well is sufficient to displace the load in one direction against a biasing force (e.g. gravity), whereas the biasing force together with the buoyancy of the displaced water in the filled well overbalances this gravitational pull to displace the load in the opposite direction.

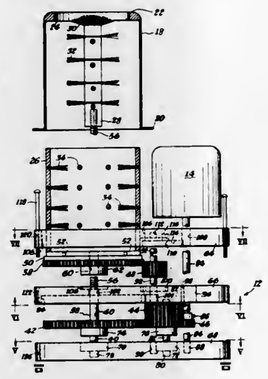
3,500,488
CAR WASH BRUSH
Howard E. Grant, % Trans-World Car Wash Systems, Inc., 65 Marine St., Farmingdale, N.Y. 11735
Filed Aug. 8, 1968, Ser. No. 751,110
Int. Cl. B60s *3/06*
U.S. Cl. 15—21 **7 Claims**

For use in a car or automobile washing unit in the operation of which an automobile is moved along a prescribed path in association with various apparatus for cleaning different parts of the automobile, a fender and side panel washer including at least one brush mounted on a C-shaped support frame having an initial cleaning position projected into the path of movement and a subsequent cleaning position extending in substantial alignment with the car path of movement and wherein the bottom of the brush is movable out of the plane of the support so that in the subsequent cleaning position it has a favorable inclination for making cleaning contact



with the side panel of the car, particularly the rocker panel located along the car bottom and inclined inwardly towards the car chassis.

3,500,489
AUTOMATIC DRINKING GLASS WASHER
Leamon S. Cox, 5064 Brownsville Road, Pittsburgh, Pa. 15236; and Winfield D. Gibbs, Box 594, Warner Road, Vienna, Ohio 44473
Filed June 20, 1967, Ser. No. 647,381
Int. Cl. B67c *1/04, 1/08*
U.S. Cl. 15—76 **11 Claims**



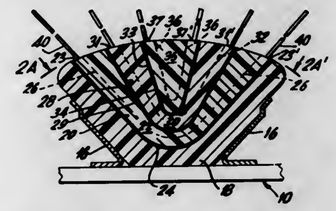
Novel washing apparatus is disclosed which is capable of complete immersion in a sink or other washing tank. The moving parts of the apparatus are arranged for water lubrication and are encapsulated in a novel base structure. In furtherance of this purpose the base structure is made up of a number of layers having gearing recesses, hub wells, bearing recesses and through aperatures appropriately positioned to enclose a gearing train of the apparatus and to beamingly engage the shafts and/or hubs associated therewith. Contrarotated brushes are mounted respectively on output gears. An outer or drum brush is extended through an opening in one of the layers and mounted on one of the output gears for rotation therewith. A shaft of the other output gear extends through said one output gear and is threadedly engaged with a central or cylinder brush juxtaposed to the drum brush. A stationary shield for the scrubbing head is mounted on the top base layer and includes a retaining lip for the drum brush. Another arrangement of the apparatus includes double brush heads and a second pair of output gears. The washing apparatus can be powered by a submersible electric motor or by a fluid motor. If the latter be employed, a novel arrangement for recirculating exhaust water thereof through one or more tanks can be used.

3,500,490
ROTARY TOOL DEVICE WITH COACTIVE LIQUID DISPENSING MEANS
Jack Teren, 2195 N. Central Road, Fort Lee, N.J. 07024
Filed Jan. 30, 1967, Ser. No. 612,410
Int. Cl. A47l *17/04*
U.S. Cl. 15—97 **10 Claims**



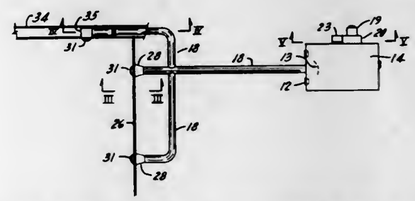
A rotary tool device with coactive liquid dispensing means. The device comprises a hand-held casing supporting a rotatable mandrel upon which is mounted the tool. The latter has a hollow jacketed holder with an outer abrading or other working wall, like a scouring pad, said holder having an inside annular jacket containing a selected liquid, like soap water, which is ejected into said working wall through suitable openings by centrifugal action caused by the rotation of the tool.

3,500,491
BRISTLE BRUSH
Robert A. Cohn, 38—54 13th St., Long Island City, N.Y. 11101, and Sanford Ellis, 123 Drisler Ave., White Plains, N.Y. 10707
Original application Oct. 16, 1967, Ser. No. 680,289. Divided and this application Sept. 13, 1968, Ser. No. 759,663
Int. Cl. A46b *3/16, 9/02*
U.S. Cl. 15—159 **9 Claims**



A low cost bristle brush for manufacturing in mass production which has intermediate portions of monofilaments, as supplied from a continuous source, embedded in the body of the brush, both distal ends of such monofilaments extending in rows.

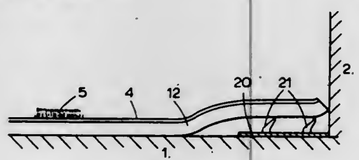
3,500,492
TRASH DISPOSAL SYSTEM FOR AUTOMOBILES
Joe Coleman, Rte. 2, Grand Bay, Ala. 36541
Continuation of application Ser. No. 624,095, Mar. 17, 1967. This application Nov. 4, 1968, Ser. No. 774,582
Int. Cl. B60s *1/64*
U.S. Cl. 15—313 **6 Claims**



A refuse disposal system for automobiles having a collection box under the automobile hood connected through tubes to various refuse-receiving units. A fan or blower

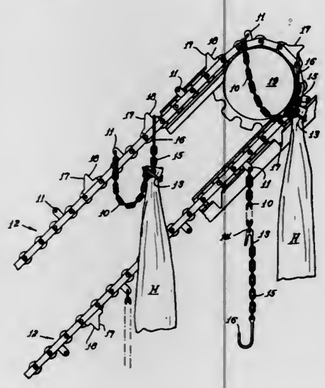
exhausts air from the collection box and is operated by switches at the various refuse-receiving units.

3,500,493
CARPET FASTENERS
Kenneth Mark Hurll, Matfield, Kent, England, assignor to Gripperrods Limited, Horsham, Sussex, England, a British company
Filed Dec. 26, 1968, Ser. No. 786,974
Claims priority, application Great Britain, Dec. 28, 1967, 58,909/67
Int. Cl. A47g *27/04*
U.S. Cl. 16—8 **3 Claims**



The invention is concerned with a carpet fastener of the kind comprising a metal plate from which there are pressed out, carpet engaging prongs. The invention is characterised by the shaping which is applied to the prongs.

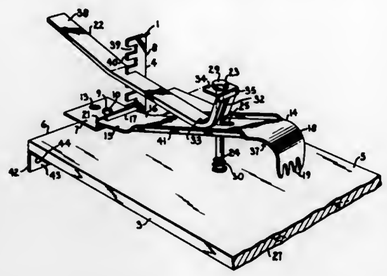
3,500,494
AUTOMATIC RELEASING MECHANISM
Edward Ochylski, Chicago, and Ernest A. Kopp, Oak Lawn, Ill., assignors to The American Meat Packing Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1967, Ser. No. 676,569
Int. Cl. A22b *5/16;* **C14b** *17/08;* **A22c** *15/00*
U.S. Cl. 17—24 **7 Claims**



Mechanism for attaching an article to an upwardly moving conveyor, which mechanism though permanently attacher to the conveyor automatically releases the article at the end of upward travel thereof.

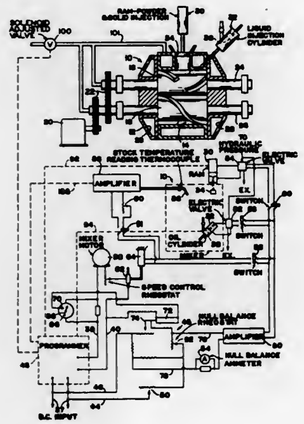
3,500,495
FISH HOLDING APPARATUS
William L. Morse, 7526 E. 85th St., Kansas City, Mo. 64138
Filed Jan. 15, 1968, Ser. No. 697,704
Int. Cl. A22c *25/06*
U.S. Cl. 17—70 **7 Claims**

Fish holding apparatus mounted on a fish supporting work surface having a support member mounted adjacent one edge of the work surface for retaining one end of a clamping member having a jaw portion on the other end for engaging a portion of a fish. A cam lever is operative to move the clamping member toward and away from the work surface. An upright portion of the support member



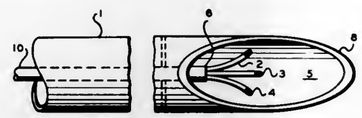
has spaced notches along one edge for receiving a handle portion of the cam lever thereby maintaining the jaw portion in a selected spaced relation with the work surface while engaging a portion of the fish in clamping engagement.

3,500,496
APPARATUS FOR READOUT AND CONTROL OF VISCOSITY OF ELASTOMER IN A MIXING APPARATUS
S. Everett Perlberg, West New York, N.J., and Rex C. Seanor, Akron, Ohio, assignors to Adamson United Company, Akron, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 602,767, Dec. 19, 1966. This application Oct. 16, 1968, Ser. No. 768,056
Int. Cl. B29h *1/10*
U.S. Cl. 18—2 **5 Claims**



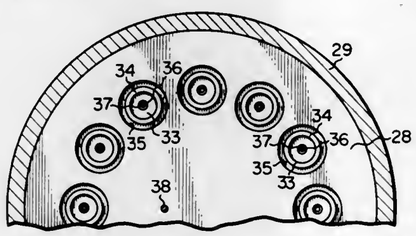
The readout and control of the viscosity of elastomeric materials including rubber and plastics in a mixing apparatus for such materials relates to a housing defining a mixing chamber, rotor mixing means in the chamber, and a driving means for the mixing means. The viscosity of the processed batch is measured by electronic means and a control circuit including means for detecting the viscosity of the material in process, and means responsive to the viscosity to change the processing conditions are present. The control circuit also detects a change in temperature of the material in the mixing chamber, and controls are provided to change the processing action and/or to add compounding ingredients dependent upon the batch viscosity at that time.

3,500,497
BLOW MOLDING APPARATUS WITH COOLING MEANS
Eugene Culpepper, Newnan, Ga., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,047
Int. Cl. B29c *5/06*
U.S. Cl. 18—5 **5 Claims**



Apparatus for blow molding articles comprises an air injection needle extending into the interior of the mold cavity there being disposed within said needle a plurality of cooling fluid injection conduits the extremities of which do not extend beyond the axial or circumferential extremities of said needle and being at an angle of up to 120° with the axis of said conduit.

3,500,498
APPARATUS FOR THE MANUFACTURE OF CONJUGATED SHEATH-CORE TYPE COMPOSITE FIBERS
Noboru Fukuma, Hiroshi Chayamichi, Toshio Okamoto, and Hiroshi Henmi, Nobeoka-shi, Japan, assignors to Asahi Chemical Industry Company Limited, Osaka, Japan
Filed May 26, 1967, Ser. No. 641,617
Claims priority, application Japan, May 28, 1966, 41/33,875; Aug. 10, 1966, 41/52,111
Int. Cl. D01d *3/00*
U.S. Cl. 18—8 **5 Claims**

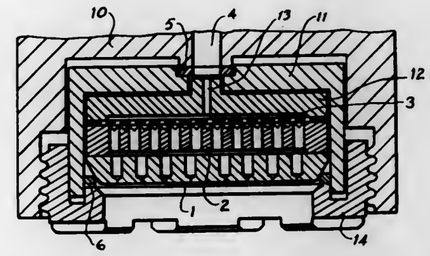


(1) A conjugated sheath-core type composite fiber, wherein the core is arranged concentrically with the sheath and composed of two different spinning materials conjugated to each other.

(2) A process for the manufacture of conjugated sheath-core type of composite fibers, comprising for each fiber the following steps of: conjoining two different spinning materials so as to form a conjugated core; supplying a different spinning material around the thus conjoined core mass in a concentric manner so as to form a sheath; and extruding the thus conjugated core-and-sheath mass through a discharge opening.

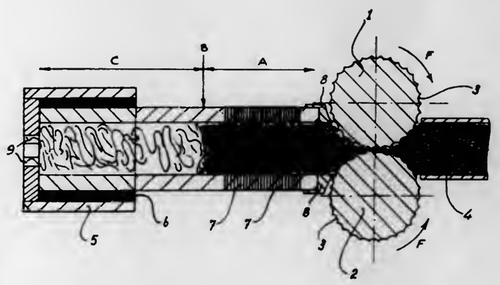
(3) A spinneret assembly for the manufacture of conjugated sheath-core type composite filaments, having a number of spinneret elements, wherein each of the latter contains a conjugating zone for two different spinning materials destined for the core; a sheath-forming and conjugating zone to form a concentric sheath around the thus conjugated core mass; and an extruding zone for extruding the thus conjugated core-and-sheath through a discharge opening.

3,500,499
SPINNING DEVICE FOR SYNTHETIC FIBERS
Gunter Goossens, Domat, Ems, Grisons, Switzerland, assignor to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland
Continuation-in-part of application Ser. No. 533,386, Mar. 3, 1966. This application June 1, 1967, Ser. No. 642,870
Claims priority, application Switzerland, Mar. 3, 1965, 2,889/65
Int. Cl. D01d *5/18*
U.S. Cl. 18—8 **3 Claims**



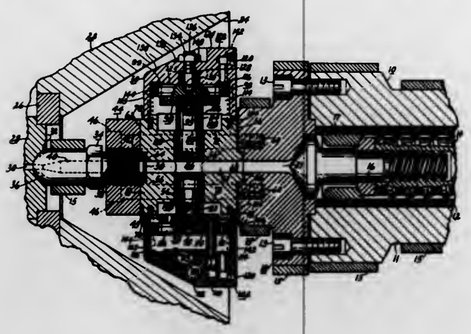
A device for spinning of synthetic fibers containing filters, wherein the principle of "selfsealing" is applied and the external positions to be sealed and gasketed are limited to only two. Leaking of the device is eliminated and the working life of the gaskets increased.

3,500,500
APPARATUS FOR THE EXTRUSION OF SYNTHETIC PLASTIC MATERIAL
Eugenio Calvete Capdevila, Badalona, Barcelona, Spain, assignor to Invenplast S.A., Barcelona, Spain
Filed Nov. 7, 1966, Ser. No. 592,471
Claims priority, application Spain, Nov. 13, 1965, 319,560
Int. Cl. B29f *3/012*
U.S. Cl. 18—12 **2 Claims**



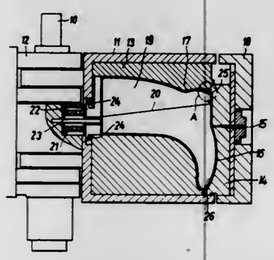
Improved apparatus for extruding synthetic thermoplastic material which includes a material inlet and outlet having an extruding head, a pair of oppositely rotatable, fluted feed rolls disposed in parallel between said inlet and outlet, and having the apices of the flutes of respective rolls in opposed near touching relation to positively compress and feed granular input material directed thereto. Knife means are provided on the discharge side of said rolls to separate the compressed plastic therefrom. A heating zone and heating means as well as gas bleed-off vent means are disposed between the discharge side of the feed rolls and the die head of the outlet.

3,500,501
NOZZLE SHUT-OFF DEVICE
Oskar R. Johansson, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 30, 1968, Ser. No. 701,699
Int. Cl. B29f 1/03
U.S. Cl. 18—30 10 Claims



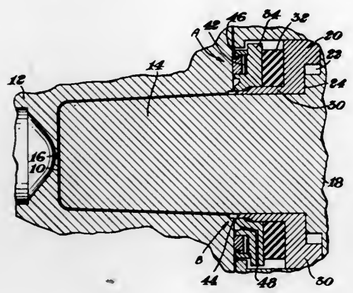
In an injection molding apparatus, wherein a plasticizing chamber has a nozzle attached to one end thereof, with the nozzle having a passageway therein and being in communication with the sprue of a mold, the improvement which constitutes a compact, pneumatically-powered, reciprocable spool-type device having a passageway therein, operated by alternately actuated opposed pistons, interposed between the nozzle and the plasticizing chamber, in one position blocking the communication between the plasticizing chamber and the nozzle and in the other position allowing molten material to enter the nozzle.

3,500,502
MOLD FOR THE PRODUCTION OF BOOTS OF RUBBER OR PLASTICS MATERIAL
Kurt M. Santelmann, Hamburg, Germany, assignor to Desma-Werke GmbH, Uesen, near Bremen, Germany
Filed Oct. 4, 1967, Ser. No. 672,920
Claims priority, application Germany, Oct. 5, 1966, P 40,503; Feb. 15, 1967, P 41,414; Sept. 15, 1967, P 43,000
Int. Cl. B29f 1/10
U.S. Cl. 18—42 25 Claims



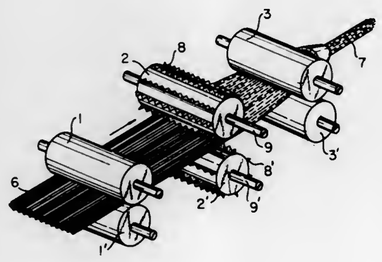
This disclosure provides a mold for manufacturing boots of moldable material. The mold includes a bottom force means mounted on a split lateral mold to mold a boot sole. A last is mounted within the mold in spaced relationship to the bottom force means and the lateral mold. The bottom force means includes guide fin members mounted thereon to fixedly position the last with respect to transverse movements inside the lateral mold. A biasing means is mounted on the bottom force means to provide longitudinal displacement to the guide fin members with respect to the longitudinal movement of the last.

3,500,503
MECHANICAL SEAL FOR USE ON MOLDING APPARATUS
Kenneth J. Cleereman, Midland, and Edward R. Sederlund, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 580,697, Sept. 20, 1966. This application Dec. 28, 1967, Ser. No. 694,162
Int. Cl. B29f 1/03
U.S. Cl. 18—42 9 Claims



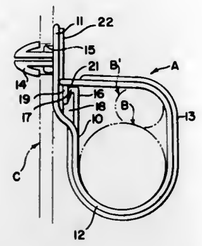
In plastic mold apparatus wherein at least one mold element rotates, a seal comprising a rotating element with an annular gap leading from the mold cavity, and a friction reducing needle bearing between said rotating element and the outer mold element to maintain proper gap width for extended periods, the annular gap effecting the seal.

3,500,504
METHOD AND APPARATUS FOR PRODUCING SLIVER DIRECTLY FROM TOW
Noboru Oguchi and Takashi Hiramatsu, Nagoya-shi, Japan, assignors to Mitsubishi Rayon Company Limited, Tokyo, Japan, a company of Japan
Filed June 27, 1967, Ser. No. 649,284
Claims priority, application Japan, Aug. 19, 1966, 41/54,596; Aug. 27, 1966, 41/56,308
Int. Cl. D01g 1/00
U.S. Cl. 19—.37 6 Claims



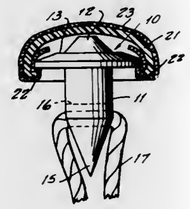
Sliver is produced directly from tow by providing a pair of breaker rollers between the usual feed rollers and delivery rollers. The breaker rollers are rotated at a higher peripheral speed than the delivery rollers and have intermeshing blades which sever a first portion of filaments of the tow, abrade a second portion of filaments of the tow to form weakened zones in which said filaments are broken by the draft of the delivery rollers and leave a third portion of the filaments in the tow uncut and unabraded whereupon they are broken at random points by the draft of the delivery rollers.

3,500,505
HANGER FOR WIRE BUNDLES
John P. Thompson, Fairview Park, Ohio, assignor to Thogus Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 7, 1968, Ser. No. 750,889
Int. Cl. B65d 63/00
U.S. Cl. 24—16 6 Claims



A hanger for holding a bundle of wires, cables, flexible tubing or the like and securing it to a structural member such as in an automotive vehicle. The hanger comprises a resilient strap formed into a loop which opens sufficiently to admit the bundle to be secured, the loop having interconnectable ends that latch together when manipulated to a closed position. The latch mechanism prevents lateral movement of the ends of the strap relative to one another and will not release in response to inadvertent forces acting on the wire bundle or on the loop.

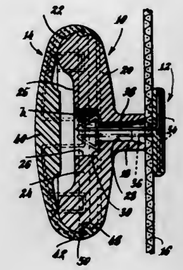
3,500,506
UPHOLSTERY BUTTON
David B. Mitchell, 2905 Walnut, Garland, Tex. 75040
Filed Aug. 28, 1967, Ser. No. 663,822
Int. Cl. A44b 1/12, 1/14
U.S. Cl. 24—113 6 Claims



Apparatus for forming tufts in padded material, such apparatus including a stem with a penetrating point at one end and a head at the opposite end. The head is adapted to be covered by a fabric material and means is provided for locking the fabric material to the head.

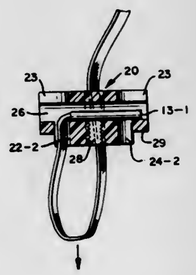
3,500,507
BUTTON ASSEMBLY
Charles A. Malhenzie, Norwalk, and Florian Leo Vielleux, Danbury, Conn.; said Malhenzie assignor to Anna Frances Malhenzie, Norwalk, Conn.
Filed Sept. 11, 1967, Ser. No. 666,862
Int. Cl. A44b 1/12, 1/14
U.S. Cl. 24—113 3 Claims

A button structure of the kind which may be assembled on a fabric by interconnecting two button parts through the fabric, is provided with a snap action spring cap making it possible to readily substitute on the basic combination of said two parts any of a variety of caps which may be of different colors to match different costumes, or to display various insignia. The cap is shaped to embrace the periphery of the basic button structure and the spring action of the cap is increased by the provision of spring means embedded in the cap which, when the center of the crown of the cap is depressed aids in providing the peripheral portion of the cap with a snap action causing it to lift up and release the basic button structure.



The basic button structure consisting of the two parts which are moved into engagement from opposite sides of the fabric is improved by the spring arms on one button part which are projected through the fabric onto a shoulder provided on the button part which is on the other side of the fabric, the free ends of the spring arms being bent over to form triangles the lower sides of which are not fixed and so are able to swing thus providing an infinite variety of contact points for contacting the shoulder of the coacting button part, the point of contact of the swingable arm with the shoulder depending upon the thickness of the fabric through which the spring arms are inserted.

3,500,508
SHOE TIE
Robert A. Bennett, Shelton, Conn., assignor to Bridgeport Plating Company, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed May 13, 1968, Ser. No. 728,704
Int. Cl. F16g 11/00
U.S. Cl. 24—117 9 Claims



A tie for holding a shoe lace including a body member with two pairs of holes and a cross-channel. Each end of the lace passes through one hole of a pair in a first direction and through the second hole of the pair in a second direction forming a loop, the head of the end of the lace being inserted and locked in the channel. After

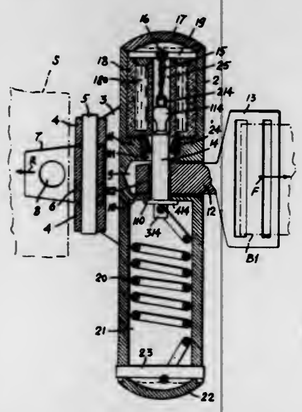
the loops are pulled to make the lace tight, a cover member is secured to the body engaging portions of each lace end forming a respective loop.

3,500,509
REINFORCED BUTTONHOLE
James R. Moden, Barrington, R.I., assignor to AMH Corporation, Barrington, R.I., a corporation of Rhode Island
Filed July 1, 1966, Ser. No. 562,307
Int. Cl. A41f *1/00*
U.S. Cl. 24—202 **2 Claims**



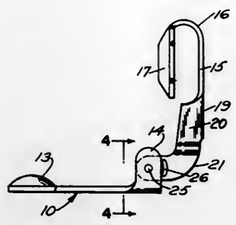
A buttonhole formed in an article of apparel that is defined by a film of plastic material that is interposed between layers of flexible material of the article of apparel, the film of plastic material being fused to the layers in concealed relation therein such that there is no penetration of the plastic film through the layers to the outer surfaces thereof, a slit extending through the fused plastic film and layers of material to define the buttonhole therein.

3,500,510
QUICK-UNFASTENING DEVICE FOR SAFETY BELTS
Paolo Galone, Genoa, Italy, assignor to Quick-Free S.r.L., Genoa-Rivarolo, Italy, a company of Italy
Filed May 7, 1968, Ser. No. 727,233
Claims priority, application Italy, June 23, 1967, 7,106/67, Patent 807,190
Int. Cl. A44b *19/00*
U.S. Cl. 24—230 **7 Claims**



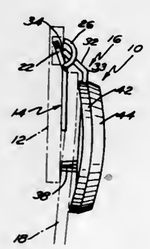
The safety belt is provided with connecting means formed into two parts which are connected together by a cord. A sealed breakable phial containing a cord-weakening liquid is arranged near said cord, means being provided for breaking said phial whenever the vehicle is subjected to a violent deceleration, allowing the liquid in said phial to flow into contact with said cord, thus weakening same and permitting the automatic unfastening of the safety belt connecting means.

3,500,511
FRICTION PIVOT FOR JEWELRY ARTICLE
Richard G. Gloss, Cranston, R.I., assignor to Gloss & Grim Company, a corporation of Rhode Island
Filed May 17, 1968, Ser. No. 730,186
Int. Cl. A44c *7/00*; A44b *21/00*
U.S. Cl. 24—248 **3 Claims**



A pivot joint for jewelry clasps and the like in which two ears are on one part which is resistant to deformation with an arm between these ears formed with cam surfaces to engage the inner surface of the ears when the pivoted parts are in closed position but swinging from out of the ears when the parts are in open position.

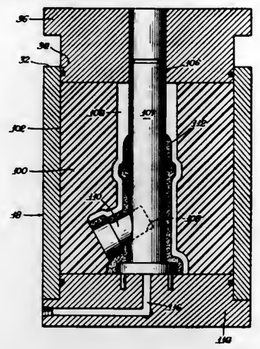
3,500,512
ORNAMENTAL CLIP
Domenic A. Zinni, Warwick, R.I., assignor to B. B. Greenberg Co., Cranston, R.I., a corporation of Rhode Island
Filed Feb. 17, 1969, Ser. No. 799,759
Int. Cl. A44b *21/00*
U.S. Cl. 24—252 **3 Claims**



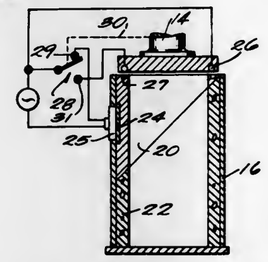
An ornamental clip designed particularly for use with an article of wearing apparel and including a clamping arm that is mounted for pivotal movement with respect to a plate having an ornament fixed thereto, means being formed on the clamping arm for adding rigidity thereto, and the clamping arm being further formed such that it conforms to the portion of the wearer it engages, thereby avoiding discomfort to the wearer in the use of the clip.

3,500,513
ISODYNAMIC APPARATUS FOR MOLDING CERAMIC PIPE
John M. Stanley, Milledgeville, Ga., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed May 4, 1967, Ser. No. 636,098
Int. Cl. B28b *7/06, 21/18*
U.S. Cl. 25—30 **1 Claim**

This invention relates to an apparatus for the iso-dynamic pressing of ceramic particles. A mold is provided, the outer surface of the mold cavity being formed by an elastomeric material, which material is retained in a rigid member. Pressure is applied to one end of the elastomeric material thereby applying pressure inwardly to compact the particles around the inner mold member.



3,500,514
MACHINE FOR MANUFACTURING CONCRETE PIPE FITTINGS
Glenn F. Ruegsegger, 3447 W. North Union, Bay City, Mich. 48706
Filed May 9, 1967, Ser. No. 637,170
Int. Cl. B28b *21/06, 21/90*
U.S. Cl. 25—30 **7 Claims**

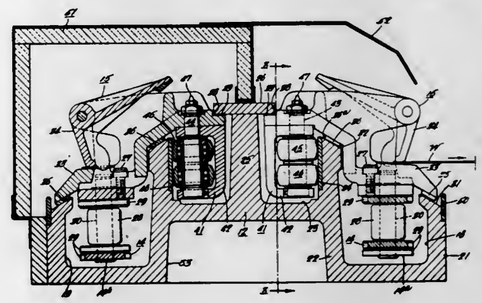


The present disclosure pertains to an automatic drain tile making machine which employs vertically reciprocal packer heads and push-rods to form a tile within a mold and to eject the formed tile onto a pallet by axially moving the push-rods through the mold. The machine is provided with a plurality of molds which are fixed to a turntable so as to permit simultaneous molding and ejection during each vertical cycle of a head which carries the packer heads and push-rods.

The molds employed are of regular cylindrical shape and are capable of producing concrete pipes of regular square-ended contour. The irregular contour at one end of the pipes is obtained by providing an insert in the top portion of the mold during the molding operation. The insert is cylindrical in its end view and is of equal wall thickness as the intended tile. Its top edge is even and square to the axis of the mold; however its lower edge is contoured to complement the desired end contour of the pipe to be produced. Because of the insert, the tile which is formed by the packer head in a known manner will have an irregular contour as described above.

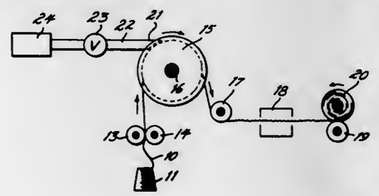
An electro-magnet which is provided at the mold sidewall releasably maintains the insert in the upper mold position during the molding operation and during rotation of the turntable. In ejecting the tile, the push-rod moves against the top edge of the insert at which time the first electro-magnet is deenergized and a second electro-magnet, provided in the lower face of the push-rod, takes over. As the push-rod progresses downwardly the insert moves with it and in turn pushes the formed tile onto a pallet. On the return stroke the push-rod carries the insert back to its original position at which point the second electro-magnet is deenergized and the first magnet is energized to retain the insert in its original position.

3,500,515
TENTERING MACHINE
Wallace Cunningham and Alexander Sclater, Renfrewshire, England, assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1968, Ser. No. 716,422
Int. Cl. D06c *3/02, 3/10*; B29
U.S. Cl. 26—61 **9 Claims**



A tentering machine is provided wherein the clips thereof are vertically supported on runners which are inclined downwardly and inwardly toward the longitudinal center line of the machine, and are laterally supported by rollers bearing against a vertical track in horizontal alignment with the nip of the tenter clips. The clips are interconnected and advanced by a chain in vertical alignment with the line of nips of the tenter clips.

3,500,516
APPARATUS FOR STRAND TREATMENT
Charles A. McClure, R.D. 2, Malvern, Pa. 19355
Continuation-in-part of applications Ser. No. 543,957, Apr. 20, 1966, and Ser. No. 686,424, Nov. 29, 1967. This application Mar. 19, 1968, Ser. No. 714,171
Int. Cl. D02g *1/16*
U.S. Cl. 28—1.2 **13 Claims**

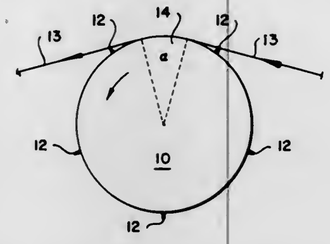


This invention relates to treatment of textile strands, concerning especially strand-crimping. Apparatus is provided for directing hot fluid, preferably obliquely, on one side of a textile strand, the opposite side of which is maintained relatively cool. The strand is preferably confined over three of four quadrants of its circumferential surface at the treating location, the hot fluid being directed onto the strand from the fourth quadrant. The strand so treated, which may consist of only one or may comprise many individual "ends" lying alongside one another, subsequently assumes a crimped configuration upon being forwarded away from the treating location.

3,500,517
PROCESS AND APPARATUS FOR FIBRILLATING AND CRIMPING FILMS

Jan Dekker and Gerrit Schuur, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 20, 1968, Ser. No. 714,500
Claims priority, application Great Britain, Mar. 20, 1967, 12,967/67
Int. Cl. D02g *1/10*
U.S. Cl. 28—1.5 **8 Claims**

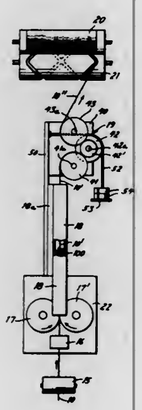


Fibrillated structures suitable for textile use are produced from thermoplastic film by passing a moving band of such film, uniaxially oriented in the direction of movement, into brief contact with cutting projections arranged in rows at substantially right angles to the direction of film movement and moving in the direction of film movement at the point of contact at a linear speed at least twice that of the film, contact being limited to no more than two rows of cutting projections at one time. The cutting projections may be the points of serrated knife-blades or of rows of pins.

3,500,518
STRAND TREATMENT METHOD AND APPARATUS

Robert K. Stanley, Media, and Malcolm F. Irwin, Philadelphia, Pa., assignors to Techniservice Corporation, North Kennett Square, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 567,245, July 22, 1966. This application Dec. 5, 1967, Ser. No. 688,119
The portion of the term of the patent subsequent to June 4, 1985, has been disclaimed
Int. Cl. D02g *1/12*
U.S. Cl. 28—1.6 **10 Claims**

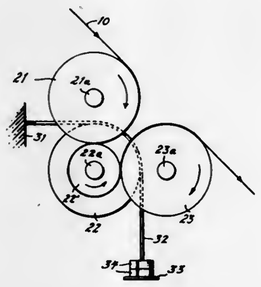


Textile strands are compressively crimped as in a stuffer crimper, at constant withdrawal or windup rate. The degree of crimp is controlled by superimposing added control tension without need for varying the withdrawal or windup rate, although that rate may be adjusted to different constant values for a like purpose.

3,500,519
STRAND TREATMENT

Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Kennett Square, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 600,986, Dec. 12, 1966. This application Apr. 1, 1968, Ser. No. 717,882
Int. Cl. D02j *1/22*
U.S. Cl. 28—71.3 **8 Claims**

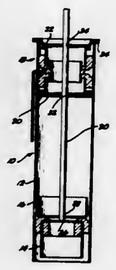


Textile strands are fed into and are removed from a strand-drawing zone and/or a strand-crimping zone through a tension-control step wherein the tension is controlled by passing the strand in essentially non-slipping contact with two or more rolls rotating together and retarding the roll rotation by frictional contact with one thereof.

3,500,520
METHOD OF OBTAINING APERTURE ALIGNMENT IN AN ELECTRON GUN CONSTRUCTION

Frederick G. Oess, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 695,079
Int. Cl. H01j *9/18*
U.S. Cl. 29—25.16 **3 Claims**



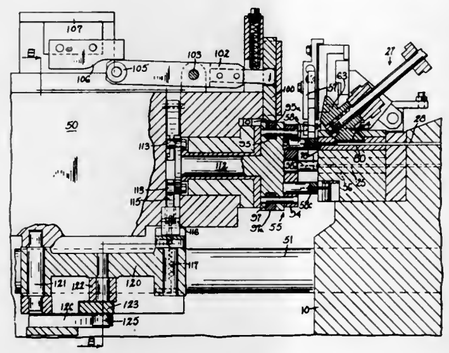
A method of obtaining precise alignment electron gun limiting and exit apertures is disclosed. The limiting aperture plate is permanently assembled to the gun cylinder and the cap plate is loosely positioned in place. A straight mandrel having sized diameters positioned in an electrode aperture and the limiting and cap apertures. The mandrel is rotated to achieve alignment of the electrode, limiting and cap apertures. The cap aperture is then secured to the cylinder.

3,500,521
GATE ASSEMBLY INDEXING HEAD

Erwin B. Byam, Wolcott, and Gregory L. Klein, Cheshire, Conn., assignors to Textron, Inc., Providence, R.I., a corporation of Delaware

Filed Feb. 14, 1968, Ser. No. 705,511
Int. Cl. B23p *23/04*
U.S. Cl. 29—33 **12 Claims**

This invention relates to a mechanism for extending

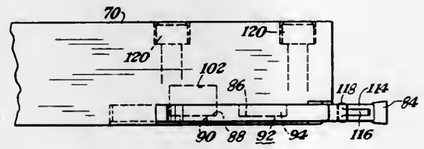


the capabilities of a primary metal working machine to include a secondary operation of assembly and possible parts forming after assembly is complete. In particular, the mechanism includes an indexing head on a gate, comprising four individual adjustable stations and a feeding unit capable of orienting and feeding a prepared unit.

3,500,522
CUTOFF TOOL HOLDER

Henry W. Stier, Dearborn Heights, Mich., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey

Filed Mar. 1, 1967, Ser. No. 619,796
Int. Cl. B26d *1/00*
U.S. Cl. 29—96 **7 Claims**

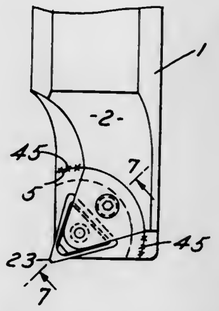


A cutoff tool holder having a generally T-shaped clamping member pivotally supported by and securing a die insert to the support blade. The clamping member has a leg with an enlarged portion cooperating with a mating aperture in the support member for pivotal movement. One arm of the clamping member engages the cutting insert, and the other arm thereof engages a cam member cooperating with the support, rotation of the cam member urging the clamping arm about the pivot point to clamp the cutting insert in place. Reverse rotation of the cam member releases the cutting insert.

3,500,523
TOOL HOLDER CONSTRUCTION

Robert W. Cashman and Anthony Wasco, Jr., Saginaw, Mich., assignors to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan

Filed Aug. 14, 1967, Ser. No. 660,475
Int. Cl. B23p *15/28;* **B26d** *1/00*
U.S. Cl. 29—96 **7 Claims**

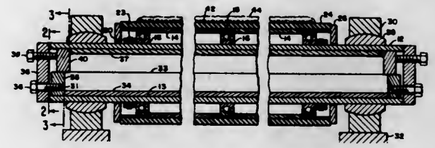


A tool holder comprising a body having a segment-shaped recess at one end in which is secured a correspondingly shaped carrier provided with a tool bit-accommodating pocket in which an indexable tool bit is adapted to be received and including a clamp adapted to overlie the carrier for clamping the tool bit in the pocket, the clamp having a recess in which is secured an indexable chip breaker that is adapted to overlie and assist in the clamping of the tool bit.

3,500,524
ADJUSTABLE-DEFLECTION ROLL

Romualdas Jagminas, Bridgewater, Mass., assignor to Mount Hope Machine Company, Incorporated, Taunton, Mass., a corporation of Massachusetts

Filed Mar. 29, 1968, Ser. No. 717,245
Int. Cl. B21b *13/02*
U.S. Cl. 29—116 **7 Claims**

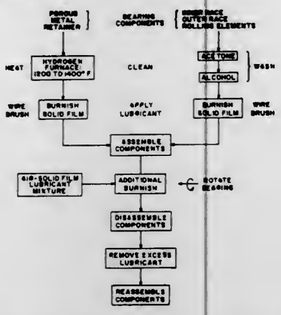


An adjustable-deflection roll has an axle formed with a longitudinal cavity, in which compression and tension members are closely but slidably received; they lie on opposite sides of a neutral bending axis. These members contribute to the cross-sectional moment of inertia and thus to the stiffness of the axle. Means for compressing one member, and tensioning the other, apply corresponding reactions to the axle on either side of the neutral bending axis, to adjust the form of the axle to or from a straight or curved shape. The device is useful, for example, in straightening table rolls and bending expander rolls.

3,500,525
METHOD OF LUBRICATING ROLLING ELEMENT BEARINGS

Dean C. Glenn, League City, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 28, 1967, Ser. No. 686,344
Int. Cl. B21d 53/12
U.S. Cl. 29—148.4 5 Claims

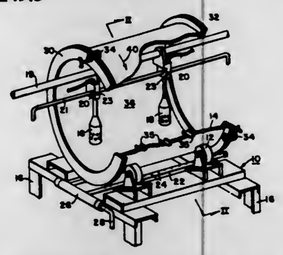


A solid film lubricant is applied to components of rolling element bearings having porous retainers prior to use in a vacuum.

3,500,526
PRODUCTION OF LARGE BEARINGS

Howard B. Taft, Pleasantville, Pa. (% Vertical Seal Company, Box 105, Titusville, Pa. 16354)

Filed Jan. 3, 1967, Ser. No. 607,063
Int. Cl. B21h 1/12
U.S. Cl. 29—149.5 10 Claims



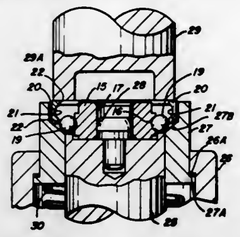
A method for applying bearing metal to the bearing side of a bearing shell, the steps comprising tinning said bearing side, movably supporting said shell, damming the ends of said shell, applying heat directly to a surface portion of said bearing side to aid in adhesion thereof to said bearing metal, pouring a first pass of molten bearing metal onto said heated surface portion, immediately cooling the adjacent shell surface on the opposite side thereof to solidify rapidly said pass and to ensure adhesion thereof to said shell, and repeating the steps of applying heat, pouring and cooling to apply similar and adjacent passes until said passes cover the bearing side of said shell.

3,500,527
APPARATUS FOR ASSEMBLING BALL BEARING DEVICES

Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141

Application Mar. 13, 1967, Ser. No. 622,720, now Patent No. 3,374,524, dated Mar. 26, 1968, which is a division of application Ser. No. 431,852, Feb. 11, 1965, now Patent No. 3,337,937, dated Aug. 29, 1967. Divided and this application Sept. 26, 1967, Ser. No. 670,604
Int. Cl. B23p 19/04, 11/02
U.S. Cl. 29—201 5 Claims

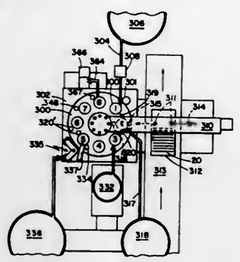
Apparatus for assembling a ball bearing device of an inner race member, a plurality of balls, and a split outer race resiliently biased toward contraction, the apparatus including a first support for the inner race member, a second support for the outer race member, the support supporting the race members in axial alignment and one support being movable relative to the other to place the race members in concentric arrangement, the second support having a flange portion extending to support the balls arranged in a circle in the raceway of the outer race member, pressing means for forcing the inner race member to within the outer race member and against the balls to cause the balls to cammingly expand the outer race member sufficiently to allow the balls to enter the raceway of the inner race member, and means providing for the axial movement to the first support relative to the second support to permit the inner race member to move to within the outer race member.



3,500,528
LOADING APPARATUS FOR CARTRIDGE FOR STRIP MATERIAL

Richard Joseph Maguire, Scituate, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 586,840, Oct. 14, 1966. This application Sept. 11, 1967, Ser. No. 666,750
Int. Cl. B23p 19/04
U.S. Cl. 29—208 17 Claims

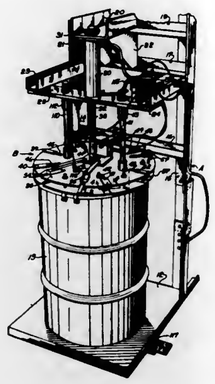


A turret assembly having eight identical assembly heads loads razor blade strips into cartridges. Each assembly head includes a vertical movable platform which receives the cartridge back. Projecting above the platform are two winding shafts, two form arms, two blade winding guides, and a clamp. In the blade strip loading operation, the turret rotates through eight stations at which, in sequence, a cartridge back is placed on the platform; one end of the blade is attached to one winding shaft; the assembly head is rotated 341° to wrap the blade strip about the guides and bring it into contact with the second winding shaft; the first winding shaft is rotated to wind the blade on that shaft; an arbor is positioned on the second shaft; the form arms are moved in to define the desired blade path; the first shaft is wound further as the guides are removed and the blade is clamped after slack is removed; the first winding shaft is then reversed four turns; the cartridge cover is attached to the cartridge back; and in a dial aligning operation the second shaft is rotated 42½°.

3,500,529
RING APPLYING APPARATUS

Frank J. Kohout, Pepper Pike, Ohio, assignor to Drum Parts, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 2, 1966, Ser. No. 576,937
Int. Cl. B23p 19/08
U.S. Cl. 29—229 7 Claims

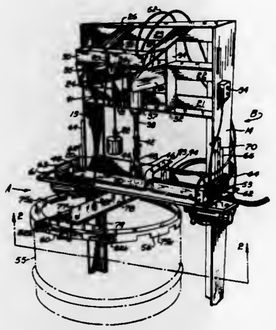


Apparatus for assembling a split cover clamping ring on a periphery of a drum-like container includes a ring carrier on which a resilient split ring is positioned for placement on a container, ring expanding structure for expanding the ring to a diametrical size greater than the size of the container, and a ring releasing means operable to move the expanded ring onto the container.

3,500,530
RING CLAMPING APPARATUS

Frank J. Kohout, Pepper Pike, Ohio, assignor to Drum Parts, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 2, 1966, Ser. No. 577,042
Int. Cl. B23p 19/04
U.S. Cl. 29—229 7 Claims

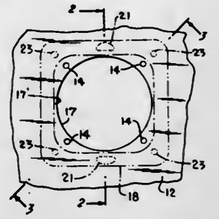


Ring clamping apparatus includes a movable frame supporting ring contracting members for circumferentially tightening a split cover clamping ring about a container and cover therefor. The contracting members are moved by actuating means and have semicircular portions which first engage the ring remote from the split and subsequently engage the ring at locations proceeding toward the split.

3,500,531
METHOD OF CHANGING A MOUNTING

William Finley Wright, P.O. Box 403, Vestal, N.Y. 13850

Filed Feb. 27, 1968, Ser. No. 709,597
Int. Cl. B23p 7/00
U.S. Cl. 29—401 2 Claims



A method of repairing by changing the rear mounting position of a device, such as an instrument, to a front mounting position, including widening the opening through which the instrument projects, so as to clear the passage for the instrument, removing and repairing the instrument, and remounting the instrument in a front mounting position.

3,500,532
METHOD OF COLD PRESSURE WELDING

Luis J. Lozano, Southington, and Robert S. Bray, Cheshire, Conn., assignors to Anaconda American Brass Company, a corporation of Connecticut

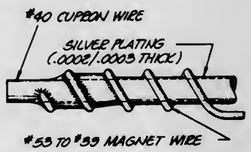
No Drawing. Filed Dec. 15, 1966, Ser. No. 601,870
Int. Cl. B23k 21/00
U.S. Cl. 29—470.1 7 Claims

This disclosure relates to a method for cold pressure welding metal members wherein the metal surface areas to be welded are cleaned in a reducing atmosphere by striking an arc between the surfaces at a frequency sufficient to clean the metal surfaces and then immediately cold welding by compressing the metal members together.

3,500,533
MEANS AND METHOD OF WELDING SMALL WIRES

Arthur J. Sparling, 638 14th St., Manhattan Beach, Calif. 90266

Continuation-in-part of application Ser. No. 675,148, Oct. 13, 1967. This application Oct. 16, 1968, Ser. No. 767,937
Int. Cl. B23k 27/00
U.S. Cl. 29—475 12 Claims



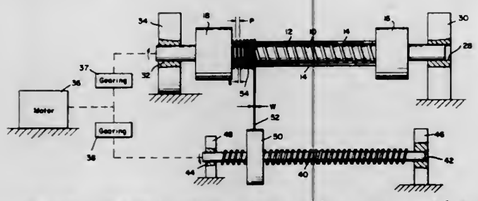
The invention relates to an improved means and process for welding wires and, more particularly, for welding lead wires to the ends of the magnet wire in small wire coils.

The invention also embraces an improved welding torch using a small-orificed burner tip and providing a sheath of shielding inert gas around the welding flame.

Improved fixture means is likewise provided for tensioning and holding the wires in intimate contact while welding or fusing. The fixturing includes a means holding one wire in tension and coiling the other thereabout. The torch is moved up to the wrapped wires to effect the weld by fusing the wires at a temperature such that the insulation first vaporizes, obviating the need for initial removal

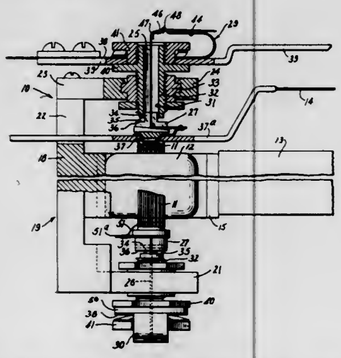
of the insulation by other means or methods. The fixture includes rotatable means to bring the two ends of the coil wire into position for making welds to the leads.

3,500,534
METHOD OF MAKING A SLOW-WAVE STRUCTURE ENCASEMENT
Joseph B. Kennedy, Palos Verdes Peninsula, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Original application Feb. 23, 1966, Ser. No. 529,517, now Patent No. 3,435,273. Divided and this application May 9, 1968, Ser. No. 736,898
Int. Cl. H01p *11/00*; H01q *13/00, 17/00*
U.S. Cl. 29—600 **2 Claims**



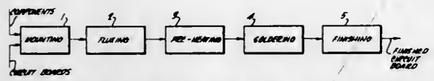
In the disclosed method for making a wrapped enveloping barrel for a slow-wave structure-support rod assembly, a predetermined width strip of selected material is wound around the assembly in a manner leaving a preselected spacing between successive windings of the strip. A layer of filler material is then placed over the strip windings, after which the assembly is heated to melt the filler material and then cooled to allow the filler material intermediate the strip windings to become sealed to the strip and to the support rods. The filler material has a thermal coefficient of expansion related to that of the strip material and to the strip width and spacing so as to provide a net thermal coefficient of expansion essentially equal to that of the support rods.

3,500,535
METHOD OF ASSEMBLING AN ELECTRICAL MEASURING INSTRUMENT
Raymond T. Gould, Harlem Township, Winnebago County, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 17, 1966, Ser. No. 587,051
Int. Cl. B23p *19/04*
U.S. Cl. 29—606 **10 Claims**



This disclosure relates to methods of assembling an electrical measuring instrument of the type in which a movable coil assembly is suspended for free rotation between the core and poles of a permanent magnet by a pair of thin elongated filaments fastened to and tensioned between a pair of cantilever springs wherein each spring is deflected with a predetermined force to an unselected position so that the force exerted on the filaments by each spring is approximately equal even though the springs have different characteristics.

3,500,536
PROCESS FOR FINISHING SOLDER JOINTS ON A CIRCUIT BOARD
Sandor Goldschmied, Anaheim, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 17, 1966, Ser. No. 595,137
Int. Cl. H01h *69/02*
U.S. Cl. 29—623 **12 Claims**

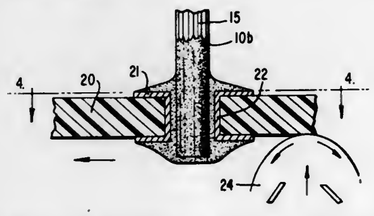


A process for installing electrical components on a printed circuit board is disclosed, which includes a finishing step comprising the application of a fluid wave to the underside of the board after passing it through a wave of liquid solder. The temperature of the fluid is above the melting point of the solder. A nozzle arrangement for producing fluid waves is also disclosed. This nozzle arrangement is particularly well suited for use in the process because it permits adjustment of the characteristics of the wave produced.

3,500,537
METHOD OF MAKING PALLADIUM COATED ELECTRICAL CONTACTS
Hamish Carmichael Angus, High Wycombe, Bucks., England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 1, 1966, Ser. No. 530,777
Claims priority, application Great Britain, Mar. 9, 1965, 9,957/65
Int. Cl. C23b *5/30*; H01r *9/00*
U.S. Cl. 29—630 **3 Claims**

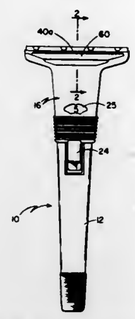
A method of making corrosion resistant electrical contacts coated with palladium. The palladium is electrodeposited from an aqueous ammoniacal bath comprising tetrammino-palladous bromide and having a pH of about 8–10. The resulting palladium deposit is highly ductile and thus permits subsequent deformation of the coated article to form electrical contacts.

3,500,538
METHOD FOR PRODUCING A WIRE HAVING IMPROVED SOLDERING CHARACTERISTICS
Joseph A. Raciti, East Boxford, Mass., assignor to General Electric Company, a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,813
Int. Cl. H01r *9/06*
U.S. Cl. 29—630 **3 Claims**



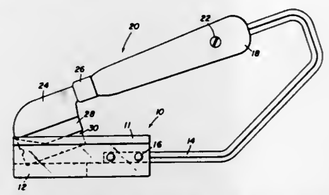
A method for producing an electrical conductor having improved soldering characteristics. A plurality of independent solder capillaries are formed by longitudinally grooving the conductor.

3,500,539
SAFETY RAZOR WITH FLEXIBLE GUARD
Joseph P. Muros, Newtonville, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,779
Int. Cl. B26b *21/24*
U.S. Cl. 30—40.1 **7 Claims**



A safety razor blade holder includes a blade support platform and a flexible guard bar capable of resilient deformation that is spaced forwardly and downwardly from the front edge of the platform. The platform and guard bar are a unitary acetyl plastic member with the ends of the guard bar attached to the support platform by webs and a stop projecting from the front of the platform toward the center of the bar for limiting the dynamic movement of the bar to about 0.009 inch. The guard bar has a cross-sectional thickness ranging from 0.040 inch at its narrowest point to 0.055 inch at its widest point. The guard bar may be moved through its range of dynamic positions under force applied by the user during a shaving stroke to vary the shaving geometry of the razor.

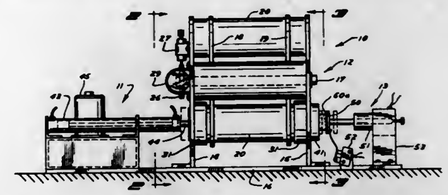
3,500,540
WALLPAPER KNIFE AND GUIDE
Jergen F. Lundquist, 225 S. Yale, Addison, Ill. 60101
Filed May 11, 1967, Ser. No. 637,804
Int. Cl. B26b *29/00*
U.S. Cl. 30—294 **2 Claims**



A paper hanging knife and guide apparatus that is especially adapted for creasing and cutting wall covering material, such as wallpaper, on a wall surface along a line where two adjoining surfaces meet each other at an angle.

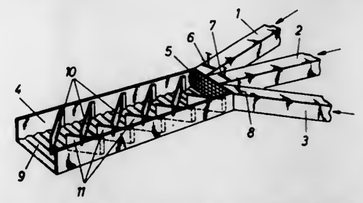
3,500,541
BUTTER PATTY FORMING DEVICE
Albert W. Hammerlund, Jr., 58 6th Ave. S., Hopkins, Minn. 55343, and Richard M. Farnlok, Rte. 1, Box 137, Delano, Minn. 55328
Filed Feb. 28, 1968, Ser. No. 708,881
Int. Cl. A01j *21/02, 23/00*
U.S. Cl. 31—14 **8 Claims**

This invention relates to a device for the forming of butter patties and the like and includes means for providing the butter in extrudable containers, power ram means for applying the necessary extruding force to the butter to force the same through a dye plate and form the proper exterior shape of the butter patty, means for sensing the length of the extrusion and slicing means actuated by said length sensing means for cutting the butter from the extruded length. The means for sensing the length of the extrusion may also be provided with impression dies on a surface thereof to form a design into



one face of the patty. The device may logically be a continuous operating device wherein containers of butter are arranged in sequential relation to the extruding die portions of the device to position a filled container in proper forming positon after a preceeding container has been emptied.

3,500,542
METHOD AND APPARATUS FOR THE MANUFACTURE OF CHEESE
Franz Roiner, Deggendorfer Str. 16, Bogen (Danube), Germany
Filed Apr. 3, 1968, Ser. No. 718,414
Claims priority, application Germany, Apr. 4, 1967, R 45,683; May 20, 1967, R 46,067
Int. Cl. A01j *25/11*; A23l *3/00*; C12h *1/06*
U.S. Cl. 31—46 **24 Claims**

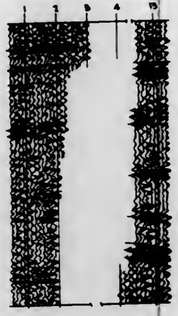


Cheese is made in a continuous operation wherein separate batches of milk are fermented and coagulated in a sequence so timed and adjusted as to provide substantially continuous discharge of cut coagulum into a curd separating and working vessel. This vessel is provided with a plurality of baffles and/or other deflecting means whereby as the coagulum passes therethrough the curd is gently agitated and worked with substantially complete separation of whey without coalescing into larger particles. This vessel may be constructed as a stationary trough arranged at an incline sufficient to establish the desired flow by gravity. In another embodiment, the separating and working device may be tubular and provided with means for rotation about the longitudinal axis.

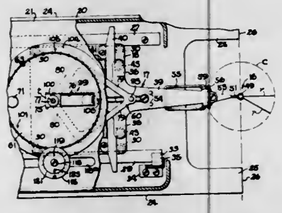
3,500,543
METHOD FOR EDITING SEISMIC TRACES
Miller W. Quarles, Jr., San Antonio, Tex., assignor to Petty Geophysical Engineering Company, San Antonio, Tex., a corporation of Delaware
Filed Oct. 31, 1967, Ser. No. 679,471
Int. Cl. B43l *13/20*
U.S. Cl. 33—1 **8 Claims**

This invention relates to a method of editing seismic recordings to obtain highly accurate corrections on seismic traces to enhance the reflections. The prominent reflections are marked on each trace of a different set of cross sections and the reflections transferred to an overlay. The corresponding reflections are combined to form an alignment section which is assembled and coordinated

with the original seismic traces in such a way that the combined reflections serve as reference lines to establish independent corrections for shifting each seismic trace to align the respective reflections.



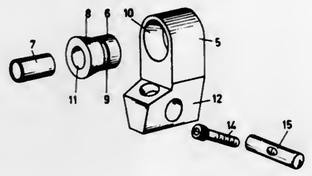
3,500,544
ELLIPSOGRAPH
Keith Audis Hill, 155 Russell St., Rockton, Ill. 61072
Filed Jan. 25, 1968, Ser. No. 700,462
Int. Cl. B43l *13/20*
U.S. Cl. 33—30 **27 Claims**



A compass for drawing ellipses and circles of any desired proportions and of any desired size within a given range includes a marking element carried on the following the movement of a cross slide mounted for crosswise shifting on a main slide and movable longitudinally with the main slide. The longitudinal and crosswise components of motion of an eccetrically mounted and rotatable driving pin are transmitted to the cross slide through a proportioning device to move the cross slide and the marking element through longitudinal and crosswise strokes. Adjustment of the eccentricity of the driving pin causes the length of both strokes of the cross slide to change simultaneously and by equal amounts to change the size of the geometrical figure being drawn. The proportioning device is adjustable independently of the driving pin and may be set to transmit any selected fraction of the crosswise component of the driving pin to the cross slide to vary the crosswise stroke of such slide without changing the longitudinal stroke and thereby enable adjustment of the proportions of the figure.

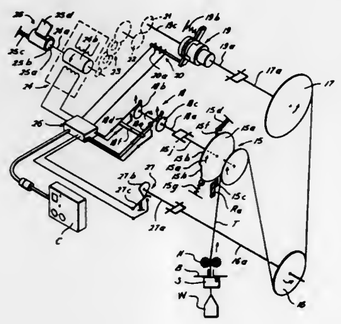
3,500,545
VISUAL AIMING DEVICES
Michael H. Chivers, Middle Brighton, Victoria, Australia, assignor to Auxarmes (International) Proprietary Limited, Melbourne, Victoria, Australia, a company of Victoria
Filed Nov. 28, 1967, Ser. No. 686,069
Claims priority, application Australia, Dec. 2, 1966, 14,760/66
Int. Cl. F41g *1/46*
U.S. Cl. 33—47 **11 Claims**

A visual sighting device, particularly, for use on a weapon such as a rifle comprises a thin walled metal sleeve fitted within a wider walled cylindrical tube of translucent material which, in turn, is fitted into a metallic sleeve or mounting block. The mounting block is carried on a post which may be mounted on a support or pillar secured on the weapon. The translucent cylindrical tube is advantageously formed with a uniform wall thickness cylindrical portion at one end and an outwardly flaring conical portion of outwardly increasing thickness at the opposite end which is adapted to be oriented toward the target. The increased thickness of translucent cylindrical tube of this end permits a greater inclusion of light around the thin walled metallic sleeve which functions to provide a ring



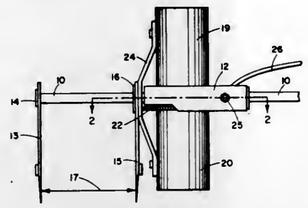
which may be centered on the target. A ring of luminous material is formed in the vicinity of the boundary between the translucent tube and the mounting block so that the translucent tube is illuminated during the darkened hours to highlight the ring which will surround the target. The sight may be used as a single unit forming a peep-type sight or two such sights may be arranged at spaced locations along the length of the gun barrel. In the latter case, the two sights form a series of concentric rings which facilitate the locating of the target within the innermost ring.

3,500,546
AUTOMATIC CONTAINER STORAGE LEVEL CONTAINER
Harold Pilcher, 4418 Lido Lane, Houston, Tex. 77018
Filed Sept. 20, 1967, Ser. No. 669,214
Int. Cl. G01b *3/10*
U.S. Cl. 33—126.6 **3 Claims**



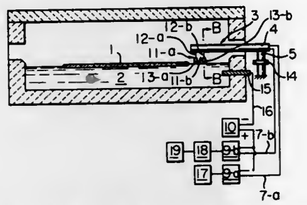
An automatic apparatus for determining the quantity of material stored in containers. A weight secured to the end of a flexible measuring tape wound on a storage reel draws the tape over a rotatable measuring sprocket as it falls by gravity to produce an electrical pulse with each revolution of the sprocket which is counted by an electronic counter to produce a digital reading corresponding to the length of tape removed from the storage reel. An idler mechanism reacts to changes in the tension of the tape to activate an electric motor when the weight meets an obstruction to rewind the tape.

3,500,547
PRECISE CALIPERS WITH AUTOMATIC PRINTOUT
Richard H. van Haagen, Lexington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 24, 1967, Ser. No. 640,886
Int. Cl. G01b *5/00*
U.S. Cl. 33—143 **1 Claim**



A vernier calipers with high precision, and accuracy within the range of about one-tenth of a millimeter. Movable spaced pins are used to measure linear dimensions and these pins are mechanically linked to electrical resistance measuring means, the resistance of which is a linear function of the pin spacing. Readings may be done visually or may be automatically recorded and printed out upon actuation.

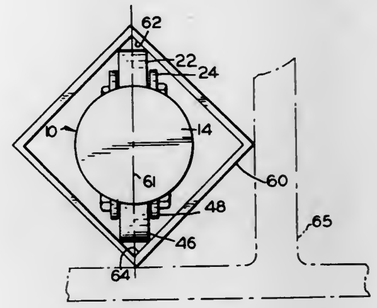
3,500,548
DETECTING AND MEASURING APPARATUS FOR GLASS RIBBON
Hideo Mitsuno, Maizuru-shi, Japan, assignor to Nippon Sheet Glass Co., Ltd., Osaka, Japan
Filed Nov. 13, 1967, Ser. No. 682,037
Claims priority, application Japan, Nov. 17, 1966, 41/75,679, 41/75,680
Int. Cl. G01b *7/16*
U.S. Cl. 33—174 **8 Claims**



Position of a side edge of a glass ribbon advancing on a molten metal bath is detected electrically by an apparatus wherein at least one electrode is suspended in such a manner that when the ribbon passes the position of the electrode, it contacts the electrode at its upper surface, and there is provided a power source with one pole connected to the electrode and other pole to the metal bath. Change in electric current shows that the glass passes that position of the electrode. A width of the ribbon is determined by checking the positions of both side edges of the ribbon.

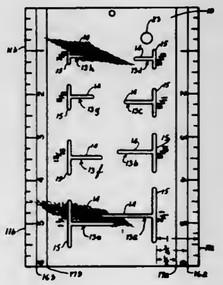
3,500,549
METHOD AND APPARATUS FOR DETERMINING STRESSES AND DEFORMATIONS
Harlan B. Smith, Albany, Oreg., assignor to Cornell, Howland, Hayes and Merryfield, Inc., Corvallis, Oreg., a corporation of Oregon
Filed Sept. 23, 1968, Ser. No. 761,478
Int. Cl. G01b *7/16*
U.S. Cl. 33—174 **14 Claims**

A method of determining bending stresses in a structural member in which a square tube is attached to the member with a diagonal plane parallel to the plane of bending of the structural member, the tube being adapted to assume the curvature of the member during the bending thereof. A curvature meter in inserted in the tube. The meter has a tubular body and supporting rollers mounted at each end thereof. A third or sensing roller is mounted on a cantilever midway between



the end rollers. The meter is inserted in the tube so that the end rollers ride in one apex thereof and the sensing roller rides in the opposite apex. Strain gauges mounted on the cantilever record the deflection thereof, which deflection can then be used to compute the stress in the structural member.

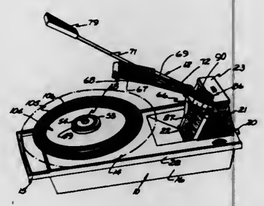
3,500,550
BUTTON AND BUTTONHOLE TEMPLATE
George Mihal, 32 Bell St., Bridgeport, Conn. 06610
Filed June 13, 1968, Ser. No. 736,687
Int. Cl. A41h *25/00*
U.S. Cl. 33—190 **8 Claims**



A device for positioning buttonholes and buttons on a piece of material and marking the positions consists of a plate having a straight edge along at least one side and a row of T-shaped apertures adapted for guiding a marking instrument applied through a selected aperture. The stem and crossbar of each aperture are the same length and represent the horizontal and vertical position of a buttonhole of a given length; different apertures have different length stems and crossbars representing different buttonhole sizes. The apertures are in a line with their stems parallel to each other and with their crossbars parallel to, and spaced a measured distance from said straight edge, thereby enabling a horizontal or a ver-

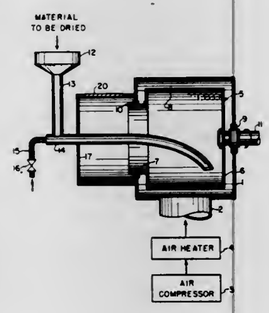
tical buttonhole of a selected size, or a corresponding button therefor, to be positioned a desired distance from an edge of said piece material.

3,500,551
RESTORING MECHANISM FOR A RECORD PLAYER
Robert E. Polewski, Cincinnati, Ohio, assignor to Rennek Company, Cincinnati, Ohio, a corporation of Delaware
Filed Jan. 19, 1968, Ser. No. 699,221
Int. Cl. G11b *17/06, 3/10*
U.S. Cl. 33—214 5 Claims



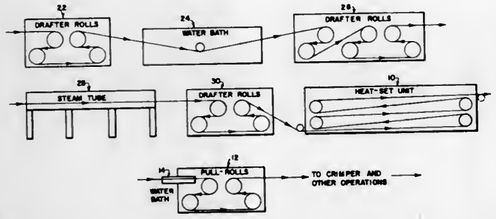
In a record player having a turntable, drive means for the turntable, and a housing for the drive means, the improvement comprising, in preferred form, a tone arm mounted at one end to the housing, said tone arm having structure defining an elongated aperture, and a lift arm mounted in a slot structure at one end to the housing, the lift arm passing through the elongated aperture to form a generally X-shaped configuration with the one arm at the point of intersection, whereby the tone arm can be mechanically moved between the record playing position and a record changing position by manually raising the lift arm and vertically pivoting it in a slot structure having a recess portion for engagement with the lift arm whereby the tone arm can be maintained in the record changing position.

3,500,552
METHOD AND APPARATUS FOR DRYING FOODS
Daniel F. Farkas, Berkeley, and Melvin E. Lazar, Oakland, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Mar. 7, 1968, Ser. No. 711,315
Int. Cl. F26b *5/08*
U.S. Cl. 34—8 10 Claims



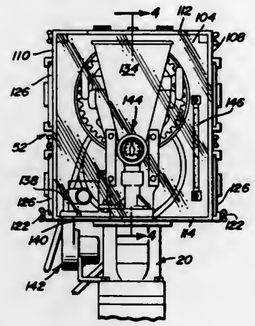
In dehydrating particulate foods and other heat-sensitive materials by blowing hot air through a bed of the material, centrifugal force is applied to the bed to resist the lifting action of the air stream. This permits the use of high air velocities without blowing material out of the bed, and results in faster and more uniform dehydration and reduces the size of the equipment needed for a given throughput.

3,500,553
HEAT SETTING METHOD AND APPARATUS FOR POLYMERIC FIBERS
Thomas O. Patton, Sherwood M. Caldwell, and Samuel W. Bartholomew, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 1, 1968, Ser. No. 717,775
Int. Cl. F26b *3/00*
U.S. Cl. 34—23 14 Claims



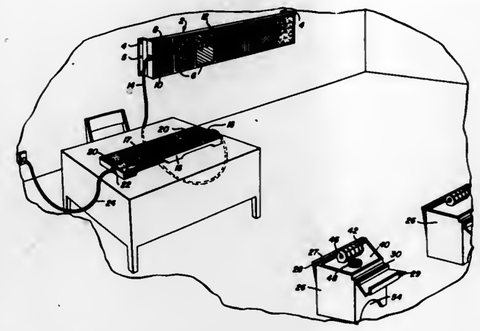
Method and apparatus for heat setting by high velocity heated air impingement upon and through the surfaces of a synthetic fiber band of at least 900,000 denier while holding the fiber band at a constant length until the fiber band cools to a dimensionally stable condition.

3,500,554
HUMIDITY CONTROLLING ENCLOSURE
Tomas Hernandez, 9220 SW. 38th St., Miami, Fla. 33165, and Valentin E. Lorenzo, 119 NE. 20th St., Miami, Fla. 33137
Filed Apr. 10, 1968, Ser. No. 720,259
Int. Cl. F26b *17/00, 21/06*
U.S. Cl. 34—51 4 Claims



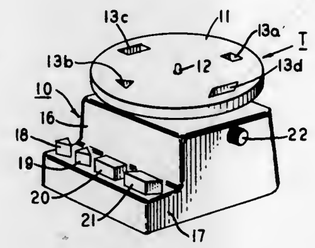
A humidity controlling apparatus for substantially reducing water contamination of hygroscopic materials of the type being processed by material processing machines. The humidity controlling apparatus includes enclosure means for enclosing the portions of the material processing means in which the material being processed is handled and air pump means for pumping heated air of low relative humidity into the enclosed portions of the material processing means in a manner such that the heated air within the enclosed portions of the processing means is maintained at a pressure at least slightly above the pressure of the ambient atmosphere.

3,500,555
TEACHING DEVICE
Clarence A. Best, P.O. Box 341, New Albany, Ind. 47150
Filed Oct. 4, 1967, Ser. No. 672,890
Int. Cl. G09b *1/04*
U.S. Cl. 35—8 5 Claims



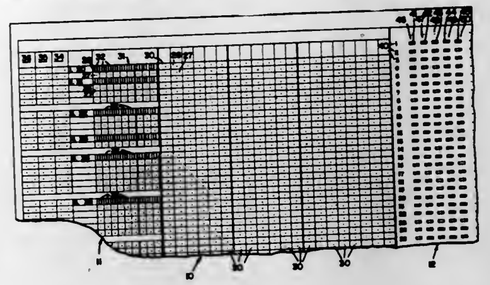
An electrically lighted display board with a viewing surface which displays a matrix pattern of alphabetical letters for observation by a group of students. A light bulb is positioned above each letter and selected letters in the matrix may be emphasized by energizing those light bulbs corresponding to the selected letters. The control of energizing the bulbs is accomplished remotely by a switchboard console operated by a teacher and containing a control panel arranged in a matrix pattern similar to that of the display board. Further, alphabetical blocks are provided for a pupil seated in front of the display board. The pupil arranges a sequence of letter blocks in accordance with the letters which are flashed on the display board.

3,500,556
VISUAL EDUCATION DEVICE
William Moskowitz, Somerville, N.J., assignor to Multisensory Systems, Somerville, N.J., a partnership of New Jersey
Filed Oct. 16, 1967, Ser. No. 675,377
Int. Cl. G09b *19/00*
U.S. Cl. 35—22 10 Claims



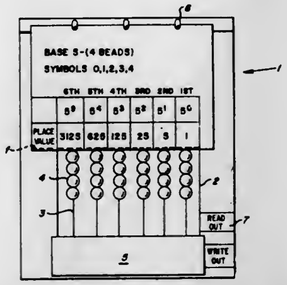
A form board, commonly used to test the ability of a user to place blocks of prescribed shapes into mating apertures, is turned into a therapeutic tool for developing form perception and visual-motor integration by adapting the board to rotary motion. An additional spindle receiving aperture in a form board permits the operation to be realized with any common record changer.

3,500,557
JOB IDENTIFICATION, LOCATION, PROGRAMMING, AND AUDITING SYSTEM
Rawson J. White, 317 San Rafael Ave., Belvedere, Calif. 94920
Filed July 9, 1968, Ser. No. 743,353
Int. Cl. G09b *19/18*
U.S. Cl. 35—24 12 Claims



A columnar job board is divided into job location and job number rows. Pieces denoting job locations and job numbers are normally aligned in rows of the same correspondence and are moved to rows in the other division as the work progress.

3,500,558
DEVICE FOR THE TEACHING OF NUMERATION SYSTEMS TO ALL BASES
Blair J. Matejczyk, 226 Ross Ave., Cambridge Springs, Pa. 16403
Filed Dec. 8, 1967, Ser. No. 689,059
Int. Cl. G09b *19/02*
U.S. Cl. 35—32 4 Claims

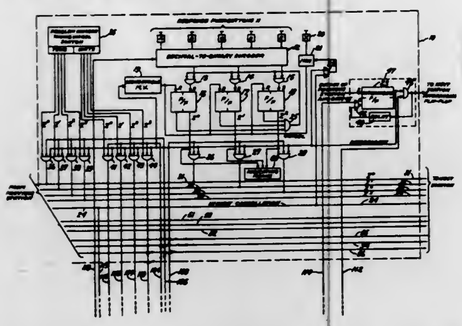


A device for self-instruction or teaching of others computing in base ten or other bases, which is readily adjustable to the desired base and embodies vertical rows of beads mounted upon wires with hinged indexing cards which selectively cover portions of the beads of each wire and indicate the base chosen for use of the exposed beads.

3,500,559
ELECTRONIC SYSTEM FOR ACCEPTING AND PROCESSING RESPONSES TO QUESTIONS PRESENTED TO STUDENTS
Leonidas J. Jones and Richard W. Rankin, Scotia, and Everett L. Rivest, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 11, 1967, Ser. No. 666,663
Int. Cl. G09b *7/06*
U.S. Cl. 35—48 23 Claims

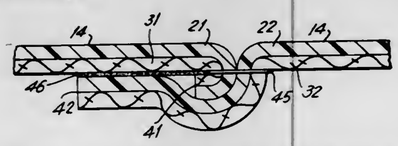
A system for recording and correlating signals from student response stations which incorporates both lock-step and non-lock-step modes of operation. The system

includes provision for insertion of problem numbers individually at each response station, allowing each student to answer questions not only at his own pace but in any



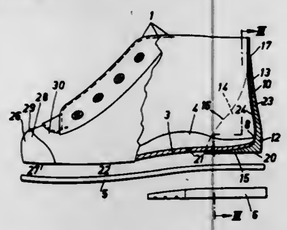
order. Student identification numbers may also be inserted at each station. Data is formatted for recording or transmission directly to a remote computer.

3,500,560
SEAM CONSTRUCTION FOR BOOT AND METHOD OF MAKING SAME
Irving Drazen, Scranton, Pa., assignor to Golo Footwear Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1968, Ser. No. 740,146
Int. Cl. A43b *23/00*
U.S. Cl. 36—57 **7 Claims**



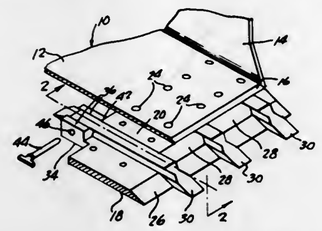
A seam construction especially suitable for a boot in which the material at the seam is stitched together with one edge of the material closer to the stitching than the other edge and in which the longer edge overlies the shorter edge in order to form a smooth seam which is water resistant. The invention includes the method of fabricating the seam.

3,500,561
SHOE, ESPECIALLY SHOE FOR AIDING CHILDREN IN LEARNING TO WALK
Roland O. Epstein, Asperg, Wurttemberg, Germany, assignor to Salamander Aktiengesellschaft, Kornwestheim, Wurttemberg, Germany
Filed Oct. 19, 1967, Ser. No. 676,490
Int. Cl. A43b *9/00, 23/08*
U.S. Cl. 36—2.5 **9 Claims**



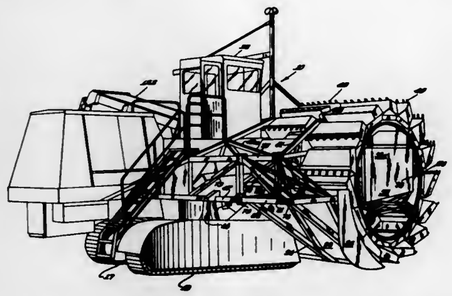
A shoe, especially a shoe for aiding children in learning to walk, and is characterized in that it is free from lasting margin at the front and at the rear. More specifically, the shoe according to the invention is characterized in that the upper has lateral lasting margin only, the ends of which rest in a cap and a counter while the bottom surface of said cap and said counter together with the bottom side of said lasting margin and the inner sole resting in said cap and said counter form a substantially plane surface to which the outer sole is connected.

3,500,562
TOOTH ARRANGEMENT FOR ALTERNATE DIGGING AND SCOOPING
Richard B. Reinhard, 1291 Georgesville Road, Columbus, Ohio 43228
Filed Apr. 28, 1967, Ser. No. 634,684
Int. Cl. E02f *9/28*
U.S. Cl. 37—141 **4 Claims**



A combination scooper and digger blade for earth moving equipment comprising a base blade having a beveled forward edge; spacer blocks mounted on said blade and having forward edges complementary to said blade edge; members slidably mounted on said blade between said blocks, each of said members having one end beveled to complement the bevel of said blade and spacer blocks and the other end being sized and shaped to project forwardly beyond the edge of said blade, and means to secure said members with either end in forward position.

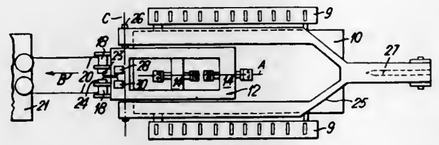
3,500,563
WHEEL-TYPE TOP LOADING MACHINE AND METHOD
Fred T. Smith, Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Sept. 15, 1967, Ser. No. 668,064
Int. Cl. E02f *3/24*
U.S. Cl. 37—190 **41 Claims**



A material handling device comprising a frame mounted on three transporting and propelling means and having multiple digging wheels extending transversely from the side of the frame between the transporting and propelling means. The multiple digging wheels are supported on cantilever frame members which include members extending parallel to the main frame to counteract the torsional moment developed by the digging wheels. The outermost digging wheel and its associated frame structure are detachable from the frame member supporting the inner

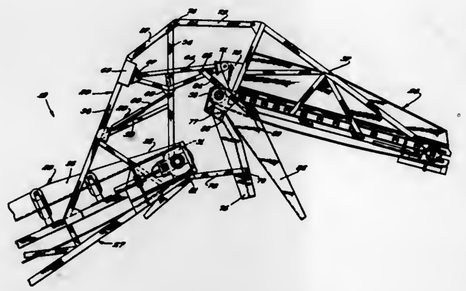
most wheel so that the width of the device may be reduced to facilitate transportation between working locations. The device includes a conveying means comprised of two belts one of which extends into the center of the multiple digging wheels and is detachably mounted on the frame so that when the outer wheel is removed the conveyor can be slid transversely into the remaining digging wheel and frame. The transporting and propelling means include means which allow the relative movement of the transporting and propelling means with respect to each other to adjust the depth and the horizontal angle of the digging wheels.

3,500,564
MOLE PLOUGH DRIVE WINCH CONTROL
Ainsley N. Ede, 36 Thornton Way, Cambridge, England
Filed Mar. 8, 1968, Ser. No. 711,803
Claims priority, application Great Britain, Mar. 10, 1967, 11,289/67
Int. Cl. E02f *5/18;* **F11l** *1/00;* **A01b** *3/66*
U.S. Cl. 37—193 **6 Claims**



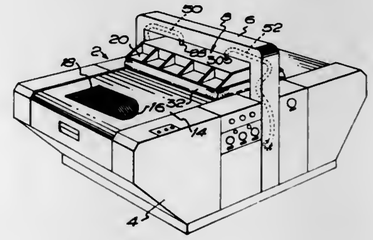
Mole plough apparatus comprises a mole plough supported on a vehicle; the vehicle supports two horizontally disposed winches each displaced towards a respective side of the vehicle and which receive cables for dragging the vehicle over the ground. Means are provided for controlling the relative peripheral speeds of the two winches so as to control the attitude of the vehicle about a vertical axis.

3,500,565
CONVEYOR SYSTEM HAVING PLURAL UNLOADING STATIONS
Fred T. Smith, Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 496,107, Oct. 14, 1965. This application Nov. 6, 1967, Ser. No. 680,825
Int. Cl. E02f *3/24;* **B65g** *47/44*
U.S. Cl. 37—190 **16 Claims**



A conveyor system especially useful with a material handling device having first and second unloading stations to allow the selective loading of a hauling unit positioned beneath either station. The system has a first conveyor disposed to receive material from the material handling device and transport it to the first station to be selectively discharged into a hauling unit or onto a second conveyor which will transport the material to the second station. The second conveyor is pivotally attached to the first conveyor and is moveable into and out of the path of the material discharged from the first conveyor. The system includes a deflecting chute and a spillage chute attached to the second conveyor for catching spillage when the second conveyor is transporting material. When the second conveyor is moved out of the path of the material discharged from the first conveyor, the chutes are pivoted to empty their contents into the unit below the first station, and the deflecting chute is moved into the path of the discharge of the first conveyor to direct the material downward into the unit below the first station.

3,500,566
PRESSING MACHINES FOR USE IN THE LAUNDRY, DRY CLEANING AND CLOTHING INDUSTRIES
George Philip Holyoake, Kendal, England, assignor to Isaac Braithwaite & Son (Engineers) Limited, Kendal, England, a company of Great Britain
Filed Jan. 29, 1968, Ser. No. 701,341
Claims priority, application Great Britain, July 22, 1967, 33,813/67
Int. Cl. D06f *71/00, 71/32*
U.S. Cl. 38—17 **9 Claims**

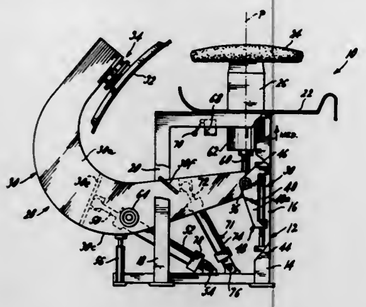


A pressing machine in which textile pieces and textile articles are subjected to heat and pressure between a rigid heated pressing surface and a flexible pressing surface formed by a sheet of thin flexible material, such as synthetic plastic or thin metal. The sheet forms one end of an inflatable chamber which has rubber side walls bonded to the sheet. Textile pieces and articles are introduced between the sheet and a rigid pressing surface by a driven conveyor band and are pressed against the rigid surface by the sheet when the chamber is inflated by pressurized gas, the sheet flexing to adopt the contour of the textile pieces and articles being pressed.

3,500,567
CLEAR BUCK PRESSING MACHINE
Vincent W. Tucker and Daniel T. Chilton, Cape Elizabeth, and Edward F. Vandall, Falmouth Foreside, Maine, assignors to Ametek, Inc., New York, N.Y.
Filed Mar. 26, 1969, Ser. No. 810,758
Int. Cl. D06f *71/08*
U.S. Cl. 38—35 **18 Claims**

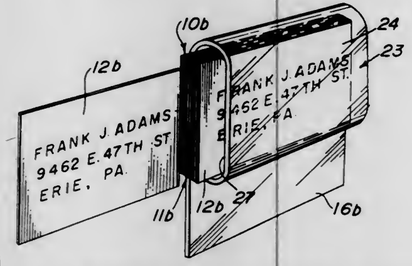
A pressing machine of the type including a stationary buck and movable head wherein said head is initially disposed in a clear buck position spaced rearwardly of the buck of the pressing machine and in a position wherein the buck is free of any obstruction to enable the work to be draped thereon, with an actuating mechanism and control being provided for moving the buck to a stand-

off position in spaced confronting relation above and aligned with the buck from which standoff position the



head moves downwardly, first into a contact or zero pressure position and then into a pressure-applying position.

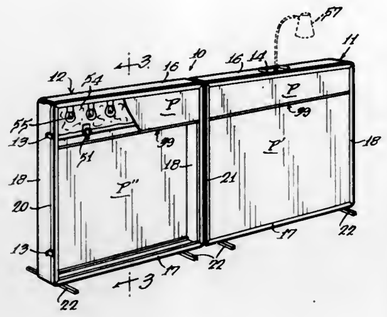
3,500,568
PACK OF PERSONAL IDENTIFICATION AND CALLING CARDS FOR USE AT CONVENTIONS, TRADE SHOWS AND THE LIKE
Daniel J. Hushek, 630 Davis St., Melrose Park, Ill. 60160
Continuation of application Ser. No. 646,437, Mar. 24, 1967, which is a continuation-in-part of application Ser. No. 309,452, Sept. 17, 1963. This application Feb. 17, 1969, Ser. No. 802,327
Int. Cl. A44c *3/00*
U.S. Cl. 40—1.5 **2 Claims**



A pack of identical combination personal or company identification and calling cards are assembled together in such a manner that they may be worn or carried on the person of the user, as by attachment to the clothing or to a lapel pocket. The foremost card in the pack of identical cards is readily visible to the public and hence serves as a personal identification badge for use at conventions, trade shows, etc., to identify the individual or a company with which he is associated. When the wearer wishes to leave his name at a booth or exhibit he merely tears off the top card in the pack of identical cards and the thus removed card then serves as a calling card, while at the same time, the foremost card remaining in the pack continues to serve as a personal identification badge. This process is repeated until the entire back of cards has been exhausted.

3,500,569
PORTABLE DISPLAY UNIT
James R. Simmons, Chicago, Ill., assignor to Dimensional Concepts Inc., a corporation of Illinois
Filed Jan. 4, 1968, Ser. No. 695,656
Int. Cl. G09f *21/02, 13/04*
U.S. Cl. 40—132 **13 Claims**

A portable display device in the form of a suitcase, with each shell of the unit including channel structure for removably mounting one or more panels having display information thereon. Illumination means is provided in each shell, so that varied visual display effects can be created.



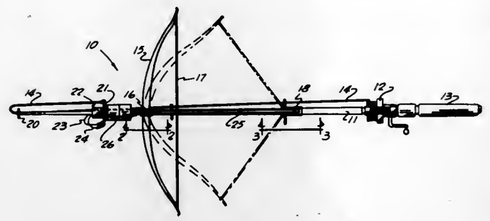
3,500,570
FISHING ROD PUMP ASSEMBLY
Albert L. Hubbard, 677 E. Channel Island Blvd., Oxnard, Calif. 93030
Filed Sept. 16, 1968, Ser. No. 762,227
Int. Cl. A01k *87/00*
U.S. Cl. 43—18 **4 Claims**



A hollow fishing rod provided with a single-action air pump incorporated in the handle thereof for filling the hollow of the rod with air under internal pressure to regulate the degree of flexibility of the rod according to said internal pressure, and means providing a position of the pump to vent said rod hollow either partly or totally.

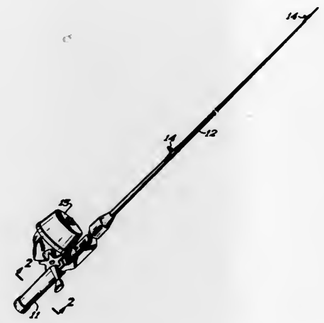
3,500,571
AUTOMATIC CASTING APPARATUS
Chester E. Jangala, Sr., Los Angeles, Calif. (6134 Fair Ave., North Hollywood, Calif. 91602)
Filed June 4, 1968, Ser. No. 734,412
Int. Cl. A01k *91/02*
U.S. Cl. 43—19 **11 Claims**

A fishing rod carries a bow mechanism adapted to launch a bait arrow. The arrow includes a bait cup secured to one end thereof and buoyancy means so that the arrow will float in the water. Attachment means are employed for detachably securing the bow mechanism on the rod and an arrow release mechanism is carried on the rod in spaced relationship to the bow mechanism



for loosening the tensioned arrow to effect launching. Signalling means are carried by the arrow so that the position of the arrow can be located after launch.

3,500,572
ROD HANDLE MATERIAL
Paul C. Johnson, Spirit Lake, Iowa, assignor to Berkley & Company, Inc., Spirit Lake, Iowa, a corporation of Iowa
Filed Jan. 26, 1968, Ser. No. 700,803
Int. Cl. A01k *87/00*
U.S. Cl. 43—23 **4 Claims**



A fishing rod assembly comprising a gripping handle having a shaft member secured thereto. The handle has a generally rigid core and a covering consisting essentially of a substantially closed but partially open cell frothed polypropylene polymer having a density of between about 4 and 5 pounds per cubic foot, the diameter of the cells being generally less than about 0.02 inch in diameter. The covering is generally hydrophobic, and does not become slippery when wet.

3,500,573
FISHING LURE
John R. Hudson, Greenville, Ky. (2904 Alabama St., Paducah, Ky. 42001)
Filed Dec. 4, 1967, Ser. No. 687,685
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.11 **7 Claims**

An underwater fishing lure comprising a weighted hook and a spinner which is mounted on a shaft a distance laterally of and substantially parallel to said hook. The spinner has blades which cause water to exert pressure on both sides of the axis of rotation. Each blade includes an arcuate portion including the whole width of the blade and which extends from a first side of the shaft portion to the rearward end section of the blade on a side of the shaft opposite from the first side. The lure construction



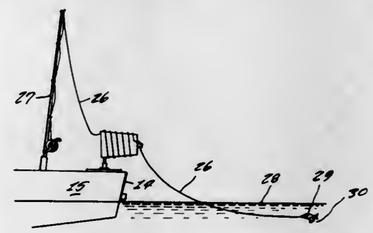
prevents snagging of the hook as the lure is pulled through the water. In addition, the moving parts serve to attract fish as the lure travels through the water.

3,500,574
FISHING FLIES, LURES AND NYMPHS
Allen Lewis Putnam, Fullerton, Calif., assignor of one-third each to Allen Putnam, Leland C. Launer, and Mark L. Kerridge, all of Fullerton, Calif.
Filed Feb. 12, 1968, Ser. No. 704,657
Int. Cl. A01k *85/08*
U.S. Cl. 43—42.25 **11 Claims**



A fishing fly comprising a hook having a shank, an eye and a barbed point, a fly body and head formed on the shank between the eye and the barbed point and an attaching means for a leader mounted between the head and the body. The attaching means comprises a group of tension closed clips in an assembly made of non-absorbent, semi-flexible plastic material which is wrapped around the hook shank with the clips facing rearwardly and lashed thereto by thread. A leader is tied to the hook eye and by means of a half-hitch is hooked around one of the clips providing leverage on the fly and causing erratic movement of the fly in water.

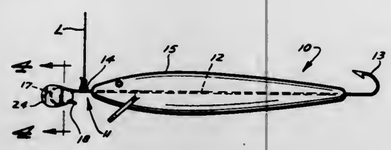
3,500,575
BILLFISH ADAPTER
Philip J. Klemkowski, 1146 Hull St., Baltimore, Md. 21230
Filed Apr. 30, 1968, Ser. No. 725,301
Int. Cl. A01k *91/00*
U.S. Cl. 43—43.11 **2 Claims**



A device for transforming a fishing rod placed at the stern of a deep sea fishing boat into a big game fishing apparatus includes a conical drum having a spiral groove around the outer side for receiving a fishing line, the fishing line passing through a small opening at the large end

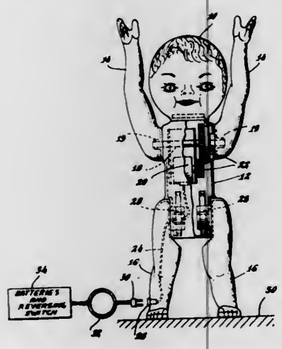
of the drum and being connected to a fishing rod, the opposite end of the fishing line extending from the spiral groove through a clamp and into the water where it is connected to a baited hook.

3,500,576
REMOVABLY-WEIGHTED JIGGING LURE
Raymond G. Ostrom, Minneapolis, Minn., assignor to Normark Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 27, 1968, Ser. No. 708,576
Int. Cl. A01k *95/00*
U.S. Cl. 43—43.12 **4 Claims**



A weighted jigging lure having means for releasably holding a weight at its forward end which comprises a shank having eyelet means intermediate its length for securing a line thereto and a portion of the shank forwardly of the eyelet bent back on itself to form a spring clamping arm spaced from the shank. A weight is releasably inserted into the area between the shank and the arm and may be replaced with weights of different sizes. Should the lure become entangled in rocks or the like, a pull on the line will disengage the weight to allow retrieval of the lure.

3,500,577
TUMBLING DOLL
Philip D. Bart, Monsey, N.Y., assignor to Remco Industries, Inc., Harrison, N.J.
Filed Sept. 26, 1968, Ser. No. 762,895
Int. Cl. A63h *15/08*
U.S. Cl. 46—134 **10 Claims**



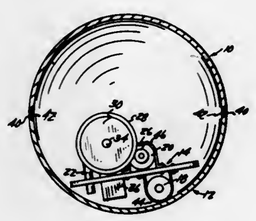
A doll is provided which can do somersaults, backflips, handstands, and other acrobatic maneuvers. These acrobatics are the result of the continuous, simultaneous, rotational movement of the doll's arms which, when they come in contact with the floor, give the body of the doll a tumbling momentum. The direction of rotation of the arms may be reversed or stopped completely, thereby either changing the type of acrobatics performed or stopping the doll in some desired acrobatic position. The movement of the doll's arms is caused by a reversible, remotely controlled but self-contained electric motor.

3,500,578
FLAT TOY FIGURE WITH ROOTED HAIR
Irving Arthur Albert, Lynbrook, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Feb. 14, 1969, Ser. No. 799, 394
Int. Cl. A63h *3/44*
U.S. Cl. 46—172 **9 Claims**



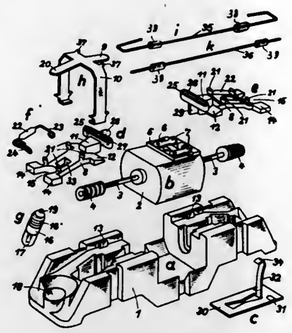
A hair assembly is formed on a flat toy figure having a head formed of generally flat material by rooting hair-like fibers in a curved row parallel to the upper edge of the head, rooting at least one additional row of hair-like fibers in a generally straight line extending transversely of and downwardly from the curved row with the fibers of the additional row extending outwardly from the front surface of the head, parting the fibers of the additional row and extending portions thereof about opposite sides of the head and the head's upper edge and forming the hair-like fibers over the rear surface of the head.

3,500,579
RANDOMLY SELF-PROPELLED SPHERICAL TOY
Robert F. Bryer, 597 Montclair, Detroit, Mich. 48219
Filed May 10, 1967, Ser. No. 637,488
Int. Cl. A63h *33/26, 1/32*
U.S. Cl. 46—243 **6 Claims**



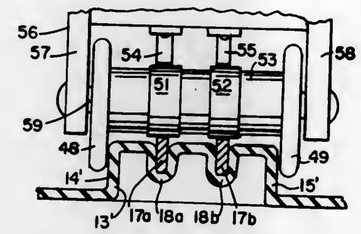
A hollow sphere is randomly self-propelled upon a haphazard path by a self-contained internal driving unit including a friction drive wheel rotated by an electric motor mounted on a supporting platform carrying a battery for energizing the motor. An optional mercury switch on the platform automatically breaks the circuit when the driving unit is turned upside down. The platform and the driving wheel engage the inner wall of the sphere at haphazard and constantly varying locations by being completely independent of connection therewith, resulting in an irregular path of travel which automatically veers away from an object with which it collides.

3,500,580
ELECTRIC LOCOMOTIVE FOR TOY AND MODEL RAILROADS
Robert Munzing, Nuremberg, Germany, assignor to Max Ernst, Nuremberg, Germany
Filed July 31, 1967, Ser. No. 657,315
Claims priority, application Germany, Aug. 3, 1966, E 32,206
Int. Cl. A63h *33/26, 19/00, 19/02*
U.S. Cl. 46—243 **13 Claims**



Model electric locomotive in which all connections in the electric circuit of the locomotive are formed by resilient engagement of the wires of the electric circuit with each other and with terminals of the electric components of the circuit.

3,500,581
VEHICLE TRACKWAY TOY
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 636,136, May 4, 1967, which is a continuation of application Ser. No. 834,875, Aug. 19, 1959, and a division of application Ser. No. 347,532, Feb. 26, 1964, now Patent No. 3,308,575, Mar. 14, 1967. This application Aug. 21, 1968, Ser. No. 754,229
Int. Cl. A63h *19/24*
U.S. Cl. 46—243 **11 Claims**



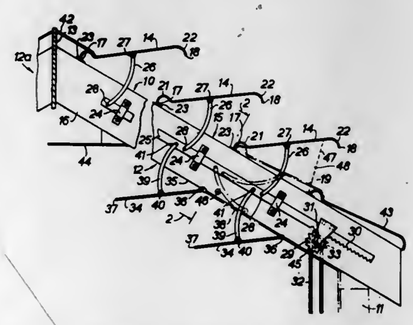
Constructions in electrical toys are provided which are relatively simple in structure and may be produced at low cost. In one form a toy track is fabricated of plastic sheet which is deformed with narrow folds in a surface thereof defining parallel slots or channels into which conducting metal strips are pushed and utilized for conducting electrical energy to vehicles riding on said trackway. In another form, an elongated, flexible vehicle guideway is provided which may be bent to define curved track and conform to irregular surfaces such as blocks defining hills and gullies. A pair of bendable metal conducting strips extend through the flexible guideway and have upper edge portions which project upwardly from the upper surface thereof to be engaged by slip rings, wheels or sliding brushes depending downwardly from a toy vehicle. The side walls of the flexible vehicle guideway serve to guide the vehicle in a predetermined path depending on the contour or shape of the guideway across a supporting surface therefore.

3,500,582
METHOD OF APICAL GRAFTING
Robert W. Hyde, Putter Place, Crystal River, Fla. 32629
Filed Aug. 8, 1967, Ser. No. 659,138
Int. Cl. A01g *1/06*
U.S. Cl. 47—6 **1 Claim**



Methods of joining scion and understock, that are generally of the same diameter, first, wherein a tapered socket is formed in the lower end of the scion to expose a substantial length of cambium extending around the wall of the socket; the upper end of the understock is tapered to fit snugly within said socket and to expose a substantial length of cambium extending around said upper end; and then said upper and lower ends are forcibly joined to bring the respective cambium layers into intimate contact with one another, and the taper is of such an angle (less than 15° included angle) that the parts lock together. Second, wherein a non-metallic peg or double pointed toothpick-like piece is inserted half into the pithy center of the scion and the other half into the pithy center of the root stock and the two parts pressed tightly together and held in contact and alignment by this internal device. These two methods have in common that the respective cambium layers, of scion and understock, are brought together throughout 360° and in intimate contact.

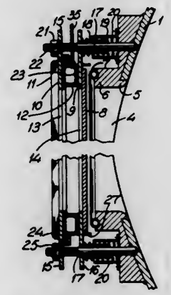
3,500,583
LOUVERED BUILDING STRUCTURES
Colin James McKinnon, 34 Nobb St. Rockhampton, Queensland, Australia
Filed Sept. 10, 1968, Ser. No. 758,727
Int. Cl. E06b *7/08*; E05f *17/00*
U.S. Cl. 49—78 **11 Claims**



A louvered building structure to be used at the roof or wall of a building. The structure includes at least two adjacent sets of movable outer panels mounted on an up-

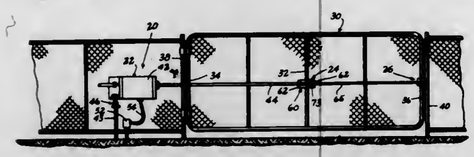
wardly extending mounting frame. The outer panels of each set are movable in unison between open and closed attitudes. The individual panels of adjacent sets of outer panels are in coplanar, aligned relationship in their closed attitudes, with the mutually adjacent ends of the outer panels being in near-abutting relationship. Between the adjacent sets of outer panels there is a drainage channel secured between support members of the mounting frame inwardly of adjacent ends of the nearly abutting outer panels.

3,500,584
PNEUMATICALLY OPERATED SEALING DEVICE, MORE PARTICULARLY FOR TANNERY DRUMS
Raymond Maurice Clery, Roullet, and Claude Ange Maurice Pechdo, Sireuil, France, assignors to Les Tanneries de Sireuil, Sireuil, Charente, France
Filed Apr. 2, 1968, Ser. No. 718,137
Claims priority, application France, Apr. 6, 1967, 101,713; Mar. 11, 1968, 143,175
Int. Cl. E05d *15/10*; E06b *7/23*
U.S. Cl. 49—209 **12 Claims**



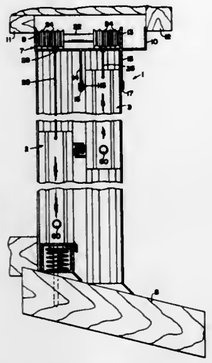
A device for sealing off an opening, comprises a door slidably mounted before the opening and operated by a set of double-acting pneumatic jacks. An inflatable seal is positioned facing the framing of the opening in such manner that the door be capable of sliding between the seal and the framing.

3,500,585
GATE OPERATOR UNIT
Theodore M. Vollmar, Rte. 1, Hillsboro, Mo. 63050
Filed July 17, 1968, Ser. No. 745,470
Int. Cl. E05f *15/12*; E06b *11/06*
U.S. Cl. 49—280 **9 Claims**



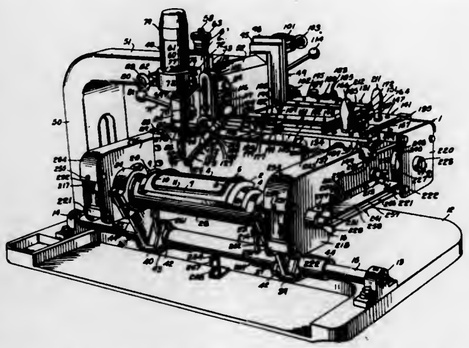
A powered mechanism for unlatching, opening, closing and latching sequentially, as required, a gate, particularly a vehicular gate, including an electric motor unit with suitable controls mounted upon a post near the associated gate when in open position, said electric motor unit having a ram or long rod extending therethrough for reciprocation thereby, a pusher and unlatcher assembly including an elongated latch rod or bolt and a spring biasing said latch rod toward open position mounted upon the gate and pivotally connected to the ram, a latching assembly mounted upon the free end of the gate and the adjacent fence post receiving the free end of the latch rod, said latch rod being movable into unlatching position with the help of the spring upon energization of the electric motor unit to withdraw the ram, the gate thereafter being pivoted to open position upon continued energization of the electric motor unit, reversal of power in the electrical motor unit effecting similarly closing and latching of the gate.

3,500,586
BALANCE MEANS AND SASH ASSEMBLY
Waldo O. Johnson, Wooster, Ohio, assignor, by mesne assignments, to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Mar. 28, 1968, Ser. No. 716,736
Int. Cl. E05d *13/12*
U.S. Cl. 49—431 **1 Claim**



A slidably positioned single or double hung window sash assembly is provided and it is characterized by the use of a single coil spring positioned in a top header of the window assembly and operatively engaging a pair of block and tackle assemblies which resiliently engage and position a sash operatively in the window assembly by individual cords extending from the block and tackle assemblies and operatively engaging a window sash. The sash is slidably positioned in the assembly by sash runner strips having flanges thereon slidably engaging flanges formed on side jamb liners positioned in the assembly.

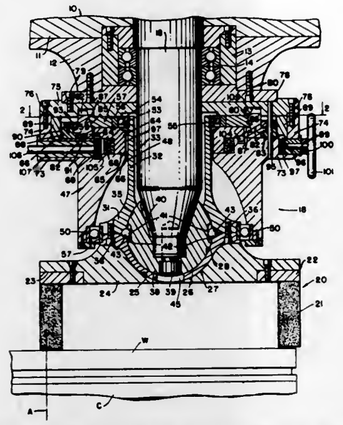
3,500,587
MACHINE FOR GRINDING THE CUTTING EDGE OF A DIE
Alonza F. Martin and Daniel B. Finnigan, Richmond, Va., assignors to Walbert Equipment Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 29, 1968, Ser. No. 701,429
Int. Cl. B24b *17/02*
U.S. Cl. 51—100 **15 Claims**



A rotary cutting die edge grinder is constructed to use a flat template as a tracing guide, the template being

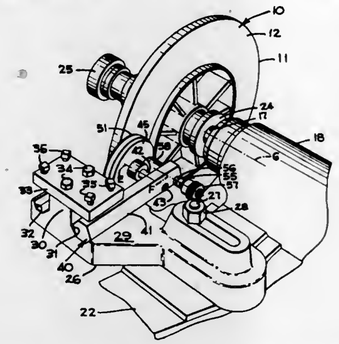
mounted on a base arranged to move with the die in a direction parallel to the die axis and causes rotary oscillation of the die about its axis when moved in a direction normal to the die axis.

3,500,588
SURFACE GRINDER OR RELATED UNIT
Fred W. Fischer, 1450 Silver Bell Road, Rochester, Mich. 48063
Filed Dec. 5, 1966, Ser. No. 599,108
Int. Cl. B24b *7/10*
U.S. Cl. 51—119 **12 Claims**



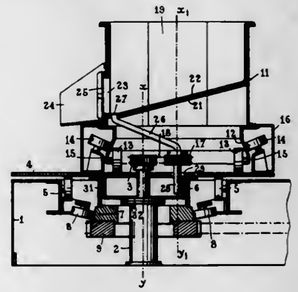
A power spindle rotatively drives a tubular housing encircling the spindle, the drive being through a universal ball and socket connection; and the housing carries a cutting tool. An adjustable wedge-type slide plate in turn cases the rotating housing to have a continual oscillatory motion eccentric of the spindle axis, thus compounding this action at the tool with a spindle-derived rotative action. A separate power source drives the housing for the oscillatory motion; and the slide plate has cam means to adjust it and the path of the oscillatory motion during the operation of the tool.

3,500,589
DISC BRAKE GRINDER
Weldon B. Ellege, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,816
Int. Cl. B24b *7/02*
U.S. Cl. 51—132 **4 Claims**



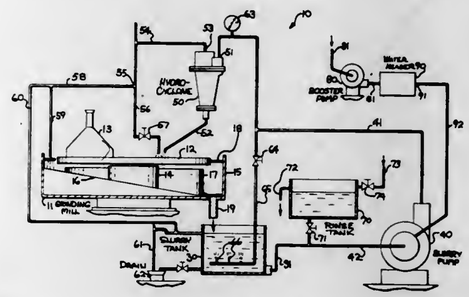
A grinding device for finishing flat surfaces on disc brake rotors has a support bar from which a stub shaft extends. A grinding disc on the stub shaft has a flat front abrasive grinding face which is rotated when brought into engagement with a rotating rotor disc. The grinding disc is positioned to rotate about an axis spaced from the axis of rotation of the brake rotor. The grinding device has a pressure member with a plastic pad which is shifted to engage the back of the grinding disc between the axis of rotation of the disc and the axis of rotation of the rotor. The disc, which rotates in the same direction as the rotor before the pressure member engages the disc, rotates in the opposite direction to the rotor after the application of pressure to the disc to quickly finish the rotor surface.

3,500,590
PARTICULAR POLISHING APPARATUS HAVING A VERTICAL WORKING VESSEL
Claude le Guen de Kergolan, Neuilly-sur-Seine, France, assignor to Compagnie Generale des Produits Industriels et de Synthese C.O.G.E.P.R.I.S., Toulouse, France, a French body corporate
Filed July 21, 1967, Ser. No. 655,147
Claims priority, application France, July 28, 1966, 71,302
Int. Cl. B24b *31/02*
U.S. Cl. 51—164 **5 Claims**



Apparatus for working and in particular polishing articles in a vessel having a vertical axis about which it rotates while the vertical axis rotates about another vertical axis spaced from the axis of the vessel, the bottom of the vessel being at least partially inclined so that the articles in the vessel undergo an alternating motion which is both vertical and horizontal.

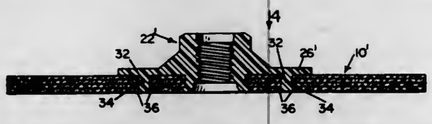
3,500,591
GLASS GRINDING METHOD AND APPARATUS
Eugene A. Gawronski and Eugene L. Keith, Columbus, Ohio, assignors to Owens-Illinois, Inc., a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 595,740
Int. Cl. B24b *57/00, 1/00*
U.S. 51—263 **14 Claims**



An apparatus and method for grinding the surface of glass articles by employing a grinding mill that utilizes an

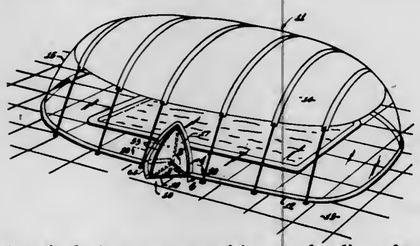
aqueous abrasive laden slurry. An apparatus consisting essentially of a closed slurry system that recirculates an abrasive carrying liquid through a hydrocyclone and delivers an abrasive-rich slurry mixture to a grinding mill. A method of utilizing a minimum of inlet fluids to satisfy the demands of an entire recirculation system while minimizing the loss of grinding abrasive material. A method of accurately delivering a grinding material and water slurry at controlled feed rates and concentrations.

3,500,592
PLASTIC HUB AND THE APPLICATION THEREOF TO AN ABRASIVE WHEEL
Robert A. Harriet, 17 Crowningshield Drive, Paxton, Mass. 01612
Filed Jan. 9, 1968, Ser. No. 696,658
Int. Cl. B24d *17/00*
U.S. Cl. 51—376 **6 Claims**



An abrasive wheel comprising two parts only, a disc having a central aperture therein and a one-piece plastic hub molded onto the disc, the hub including a threaded aperture, a broad circular flange, and a tubular projection extending through the aperture in the disc and into close cooperation with a countersunk portion at the opposite side of the disc from the main body of the hub and the circular flange, there being a bonding agent first applied to the disc in the area thereof that the plastic hub is to be molded.

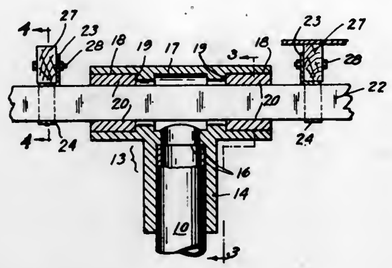
3,500,593
ENCLOSURE FOR ENTRY INTO INFLATABLE STRUCTURES AND FOR OTHER PURPOSES
John P. Kwake, 2507 Carob Drive, Los Angeles, Calif. 90046
Filed Jan. 20, 1967, Ser. No. 610,509
Int. Cl. E04b *1/34;* **E05f** *1/10;* **E05d** *15/02*
U.S. Cl. 52—2 **15 Claims**



An air lock entry comprising a plurality of spaced upstanding members carrying a non-porous material to thereby form a substantially leak-free enclosure and carrying thereon a pair of doors for entry into and exit from the enclosure.

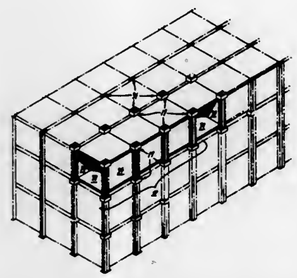
3,500,594
TILTABLE AND ROTATIVELY ADJUSTABLE PATIO ROOF
Edward P. O'Brien, 9411 12th NE., Seattle, Wash. 98115
Filed May 24, 1968, Ser. No. 731,976
Int. Cl. E04b *1/34, 1/346, 7/16*
U.S. Cl. 52—65 **3 Claims**

The structure comprises a roof supported by a single upright post which is adjustably connected with the central part of the roof by means which provides for rotative adjustment of the roof about the upright axis of the post and tilting adjustment of the roof about a



horizontal axis which intersects the upright axis of the post close to the plane of the roof.

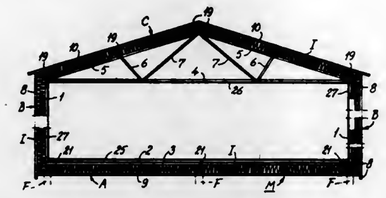
3,500,595
MODULAR BUILDING CONSTRUCTION UNIT AND COLUMN
Ronald S. Bennett, Honolulu, Hawaii (% Flehr, Hohbach et al., 160 Sansome St., San Francisco, Calif. 94104)
Filed Oct. 27, 1967, Ser. No. 679,941
Int. Cl. E04b *12/12, 1/00;* **E02d** *27/42*
U.S. Cl. 52—79 **9 Claims**



A modular building construction unit includes corner support members which, when assembled with others, provides a building support column. The column includes joints formed by fixtures held in place by tensioning rods extending from one fixture to the next. Each fixture includes oppositely facing receptacles serving to collect and seat the ends of the members forming the column. Several such modular units when so assembled form rooms of a building and ultimately a complete building supported by the columns.

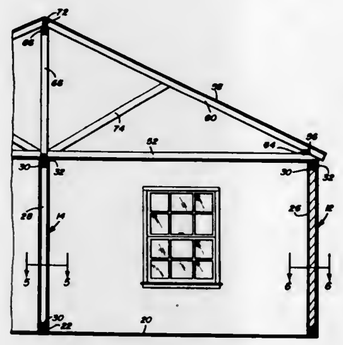
3,500,596
BUILDING OF PREFABRICATED SECTIONS
Karl Erik Evald Andersson, Dalangen, Jungskola, Sweden
Filed June 12, 1968, Ser. No. 736,459
Claims priority, application Sweden, June 28, 1967, 9,398/67
Int. Cl. E04b *1/343, 1/88;* **E04c** *2/32*
U.S. Cl. 52—79 **13 Claims**

A building of prefabricated sections is provided comprising two complete end wall sections and a number of intermediate sections therebetween, each such intermediate section comprising a complete assembly of a bottom joisting structure, two side wall structures and a roof-forming top structure, and being of double-shell construction including an inner layer of corrugated sheet metal forming the supporting body structure and an outer layer of corrugated sheet metal attached thereto in spaced relationship, a heat insulation being provided between said inner and outer layers. All said inner and outer sheet metal layers being composed of trapezoidal-corrugated sheet metal bands of a particular cross section, said bands being interconnected at their ends by lap joints including bent



band end portions and at their longitudinal edges by connecting elements of wood or the like. The bends in the sheet metal layers are of a particular design providing for stiffness and strength, and the top structure of each intermediate section is, preferably, of a sheet metal framework construction capable of load distribution over the whole width of said mating side wall structures.

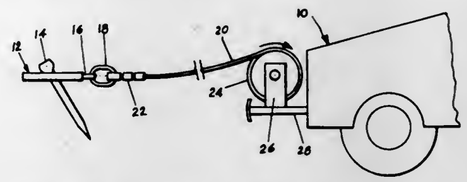
3,500,597
PREFABRICATED HOUSE CONSTRUCTION
Duane McKenzie, 53 West 2nd North, Preston, Idaho 83263
Filed Apr. 25, 1968, Ser. No. 724,096
Int. Cl. E04b *7/02;* **E04d** *3/40, 13/00*
U.S. Cl. 52—92 **5 Claims**



A structure defined by a plurality of prefabricated wall, ceiling and roof units which are adapted to be specifically interlocked or assembled into a house or the like. Each of the wall, ceiling and roof units is of a substantial size, including both facing panels and internal supports so as to, in itself, define a completed segment of the structure which is uniquely adapted to be assembled with adjacent units through nesting type inserts.

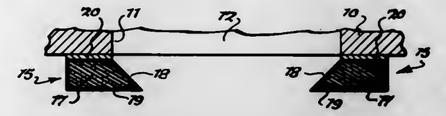
3,500,598
ANCHORING SET
William S. Ettinger, Brookings, Oreg. (Rte. 1, Lenore, Idaho 83841)
Filed Mar. 25, 1968, Ser. No. 715,796
Int. Cl. E02d *5/80;* **E04c** *5/12*
U.S. Cl. 52—155 **3 Claims**

An anchoring set is provided consisting of an anchor plate, spikes and a slide hammer, specifically constructed for use with one another, and adapted, among other uses, for pulling automotive vehicles out of stalled conditions. The slide hammer is constructed to be slid into and out of snugly embracing relation to a spike head so it can be used for driving the spikes into the ground and for later withdrawing the spikes from the ground. The anchor plate is formed with apertures through which the spike shanks pass comfortably but snugly.



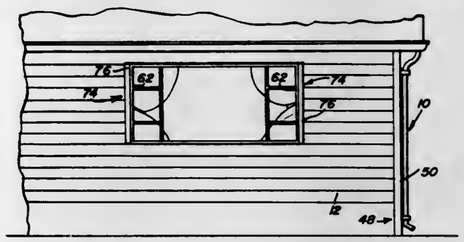
While the anchorage is intended primarily to assist in pulling stalled vehicles out of mud or snow and for similar service, it may be used for permanently anchoring stay wires or cables. In the latter case replacements would have to be provided for the spikes and the anchor plates put into service, but the slide hammer would continue in use indefinitely.

3,500,599
CLOSURE DEVICE
Samuel Sciolino, Buffalo, N.Y., assignor to Weathershield Corporation, Buffalo, N.Y.
Filed Oct. 23, 1967, Ser. No. 677,210
Int. Cl. E04h *9/14, 14/00*
U.S. Cl. 52—173 **3 Claims**



The construction disclosed herein is for a closure device including protective and resilient pads for the sides of doors to be used by trucks or other vehicles when backing to the door opening for loading or unloading. These pads are designed to close the spaces between the sides of a truck and the sides of the door opening so as to obstruct the flow of air through the door opening during the loading and unloading of trucks.

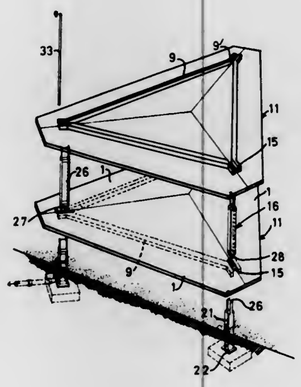
3,500,600
TRIM FOR SHIPLAP SIDING
Obie E. Bagley, Sr., Rte. 2, Box 75, Rock Hill, S.C. 29730
Filed Mar. 19, 1968, Ser. No. 714,175
Int. Cl. E06b *1/12;* **E04f** *19/02*
U.S. Cl. 52—211 **4 Claims**



A trim panel for use in concealing the space provided between the ends of siding material on a building and corner framing members, window framing members and

the like to enable the ends of the siding to be spaced from said framing members for allowing expansion and contraction of the siding material without buckling, bending or damage to the siding material itself.

3,500,601
BUILDING STRUCTURES
Peter Hamill, Bella Vista, Leeds Lane, Five Ashes, Sussex, England
Filed Nov. 8, 1967, Ser. No. 681,492
Claims priority, application Great Britain, Nov. 14, 1966, 50,921/66
Int. Cl. E04c *1/28;* **E04g** *21/14*
U.S. Cl. 52—236 **10 Claims**



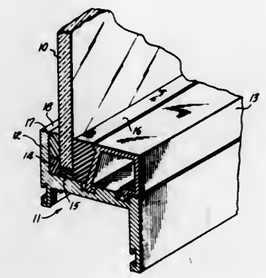
This invention relates to a building element for use in erecting a building structure, such as a dwelling for human habitation, in which a plurality of said building elements are joined together to form the floor and ceiling (or roof) of said structure, and together with structural supporting columns provide the main building structure.

3,500,602
PREFABRICATED WATER TANK
Chozaburo Ueno, Chiba-shi, Japan, assignor to Kawasaki Steel Corporation, Kobe-shi, Hyogoken, Japan, a corporation of Japan
Filed Jan. 15, 1968, Ser. No. 697,773
Claims priority, application Japan, Jan. 17, 1967, 42/3,251
Int. Cl. E02d *27/46;* **E04h** *7/02*
U.S. Cl. 52—265 **2 Claims**



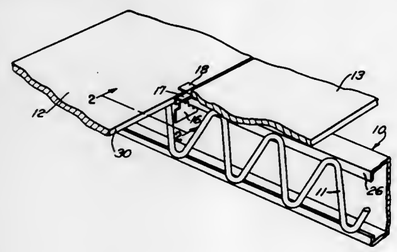
A tightly sealed, light-weight water tank of a desired size which permits local repair or modification after completion can be constructed by merely assembling together mass-produced cap members, channel members and connecting members adapted for connecting and fixing said channel members and by providing water-proof caulking in the spaces in the assembly. Thus, construction work is extremely simplified and prompted. Component members can be carried along or transported easily. A marked curtailment of construction cost is achieved.

3,500,603
SELF-SUPPORTING, NONLOAD-BEARING RESILIENT TAPE SEALANT
Donald R. Strack, Dayton, Ohio, assignor to Protective Treatments, Inc., Dayton, Ohio, a corporation of Ohio
Filed Jan. 3, 1967, Ser. No. 607,022
Int. Cl. E04b *1/66*
U.S. Cl. 52—397 **4 Claims**



Panels are mounted in an architectural mounting using resilient elements to sustain the load, the supported panel being sealed against the weather by means of a self-supporting tape partially compressed between the panel and a wall of the mounting. The tape is formed of resilient elastomer having a Mooney value of at least 45 compounded with large amounts of plasticizing oil and filler to provide a self-supporting structure which is stable, adherent to glass and metal, incapable of bearing sustained loads and capable of maintaining a seal in a partially compressed condition.

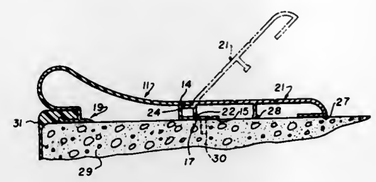
3,500,604
TIE DOWN CLIP
Le Roy N. Vandall, Warwick, R.I., assignor of thirty-three and one-third percent to Richard E. Forsyth, Plymouth, and thirty-three and one-third percent to Douglas H. Anderson, Worcester, Mass.
Filed Apr. 10, 1968, Ser. No. 720,310
Int. Cl. E04b *5/10;* **E04g** *17/02, 17/06*
U.S. Cl. 52—489 **1 Claim**



A tie down clip for horizontal panels is provided with a pair of tabs to engage adjacent panels and with a

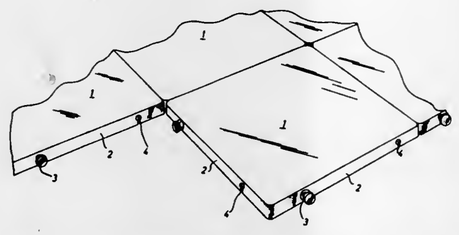
notched recess to engage the transverse supports for the panels in the form of beams to prevent the panels from being displaced by wind or other means.

3,500,605
COPING
Frederick Katzman, 1998 Rte. 22, Scotch Plains, N.J. 07076
Filed Apr. 16, 1968, Ser. No. 721,743
Int. Cl. E04c *2/38;* **E04f** *19/02;* **E04h** *7/02*
U.S. Cl. 52—588 **2 Claims**



A coping for a swimming pool made of a nose-piece and an end-piece wherein the nose-piece has two channels into which two legs of the end-piece may be pivoted to snap-fitted engagement.

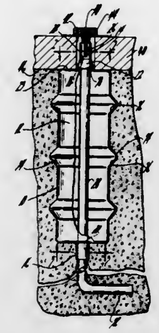
3,500,606
METHOD OF JOINING FLAT SECTIONS OF MOULDED PLASTICS
Martin John Wharmby, Dunstable, England, assignor to Thermo Plastics Limited, Dunstable, England
Filed Feb. 23, 1968, Ser. No. 707,704
Claims priority, application Great Britain, Feb. 24, 1967, 8,812/67
Int. Cl. E04c *1/30;* **A63h** *33/08*
U.S. Cl. 52—589 **1 Claim**



A flooring unit adapted to be joined to other units to form a flooring assembly comprises a plane polygon of plastics material having flanges on at least some of its edges, the flanges being provided with keyhole shaped slots and holes. The units are joined together by way of studs.

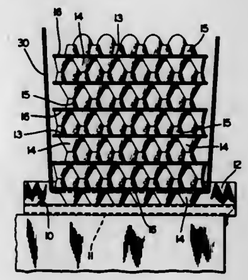
3,500,607
ANCHOR BOLT FORM
Herbert S. Wilson, 86 Woolson St., Watertown, Conn. 06795
Filed Feb. 19, 1968, Ser. No. 706,388
Int. Cl. E04b *1/41;* **E04g** *15/04;* **E04c** *5/12*
U.S. Cl. 52—699 **13 Claims**

An apparatus for use in setting an anchor bolt which spaces the upper portion of the bolt from the surrounding concrete when the bolt is embedded in a concrete foundation to permit lateral adjustment of the bolt without damaging the concrete to facilitate alignment thereof with a superstructure to be secured thereto, including spaced apart, bolt engaging means formed integrally with, and at opposite ends of an elongated body portion which permit



relative axial adjustment of the body portion upon the bolt by relative rotation therebetween.

3,500,608
METHOD FOR LOADING FILLED EGG FLATS INTO CARTONS
John Pavick, Rte. 1, Dellroy, Ohio 44620
Filed Mar. 9, 1966, Ser. No. 533,010
Int. Cl. B65b *23/02, 67/02*
U.S. Cl. 53—35 **3 Claims**

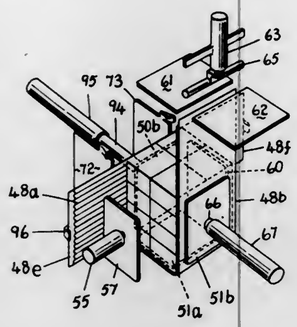


An egg packaging fixture having a substantially flat base which is provided with a pair of longitudinally extending grooves. The base is also provided with an upstanding flange for registering an egg carton so that grooves in the egg carton are in registry with grooves in the fixture when the egg carton abuts the flange. The invention also includes a method of packaging egg cartons which includes providing a jig having a base with a flat surface, and being provided with rope guide means and abutment means, replacing a rope of suitable length in the guide means, placing six flats of eggs on the fixture, lifting the stack of flats by the rope and lowering the stack of flats into a carton and repeating the process for a second stack of flats.

3,500,609
MEANS FOR PACKAGING CUBOID CONTAINERS
John C. Gunyou, Don Mills, Ontario, Canada, assignor to Signet Packaging Enterprises Limited, Toronto, Ontario, Canada, a corporation
Original application Oct. 3, 1963, Ser. No. 313,667, now Patent No. 3,315,435, dated Apr. 25, 1967. Divided and this application Apr. 5, 1967, Ser. No. 628,770
Int. Cl. B65b *11/48, 49/08, 63/02*
U.S. Cl. 53—124 **2 Claims**

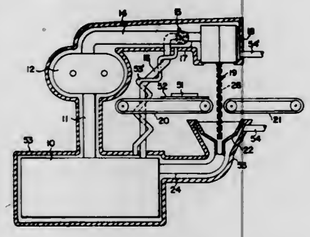
A stack of filled cuboid containers formed of thin sheets of soft bendable material is loosely arranged on a support. Pressure is applied simultaneously to all sides of the stack by means of pressure plates, to cause the

containers to fit snugly together. While the stack is compressed wrapper panels are applied and the adjoining edges



of the panels are secured together to hold the package under compression.

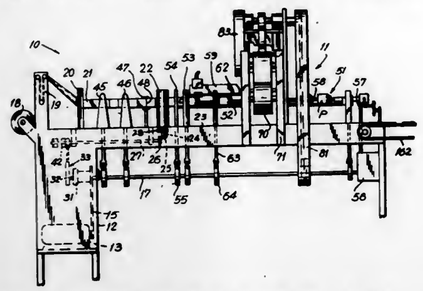
3,500,610
APPARATUS FOR COATING AN ARTICLE WITH A LIQUID SUBSTANTIALLY FREE FROM DISCRETE IMMISCIBLE MATTER
Dean B. Chenoweth, Minneapolis, and Richard Louis Barnard, Wayzata, Minn., assignors, by mesne assignments, to Eastman Kodak Company
Application Feb. 19, 1963, Ser. No. 259,707, now Patent No. 3,299,195, dated Jan. 17, 1967, which is a continuation-in-part of application Ser. No. 178,128, Mar. 7, 1962. Divided and this application Jan. 16, 1967, Ser. No. 627,279
Int. Cl. B05b *13/02, 15/02;* **B05c** *5/00*
U.S. Cl. 53—140 **2 Claims**



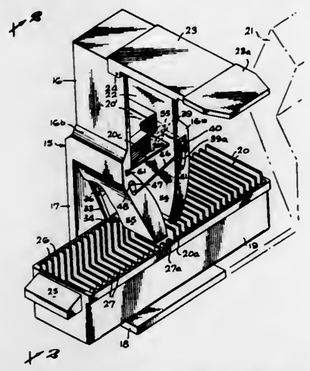
Apparatus for curtain coating including means for removing contaminants from a viscous liquid coating composition and means, such as a nozzle, for projecting a falling curtain of the coating composition. The apparatus may also include as additional elements a conveying means for an article to be coated, a catch basin for that portion of the falling curtain not used for coating, a reservoir, and a pump for moving the viscous liquid from the reservoir to the projecting nozzle.

3,500,611
MOIST PACKAGED ARTICLE AND EQUIPMENT FOR MAKING SAME
Donald Field, Trenton, N.J., assignor, by mesne assignments, to Holland-Rantos Company, Inc., Piscataway, N.J., a corporation of New Jersey
Filed Aug. 26, 1966, Ser. No. 575,369
Int. Cl. B65b *1/02, 63/04, 3/04*
U.S. Cl. 53—183 **4 Claims**

Apparatus for forming a sealed packet containing a fluid saturated pad including means for forming a three sided, open envelope from heat sealable material, means for advancing the envelope to a puffer station, means for inserting a folded, moisture absorbent segment into said packet, means for saturating the moisture absorbent segment and means for thereafter sealing the open mouth portion of the packet.



3,500,612
SLIDE TRAY LOADER
Justice Hall, Los Angeles, Calif.
(12732 Darla Ave., Granada Hills, Calif. 91344)
Filed Jan. 22, 1968, Ser. No. 699,425
Int. Cl. B65b *5/10, 39/00, 35/02*
U.S. Cl. 53—246 **13 Claims**



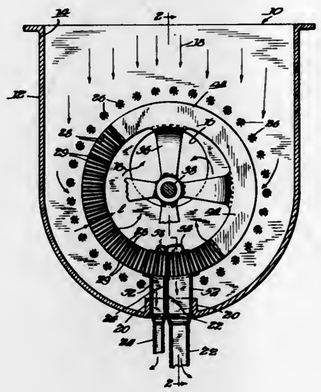
A device for loading photographic slides into a slide tray for subsequent projection therefrom. The device comprises a housing adapted to receive a stack of slides to be loaded into a tray supported below the housing. As the tray is advanced through the loader, partitions in the tray engage a lever which actuates the loading mechanism. The stack of slides is retained by a separator lever which, under power of the actuator lever, displaces one slide into engagement with a substantially cylindrical release cam. Further motion of the slide tray causes the actuator lever to rotate the release cam thereby causing the displaced slide to drop into a slot in the tray.

3,500,613
SEPARATION OF CHLOROSILANES FROM GASEOUS REACTION PRODUCTS
Harry Kloepfer, Bad Homburg vor der Hohe, and Rudolf Schwarz, Gross-Auheim, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Dec. 1, 1967, Ser. No. 687,095
Claims priority, application Germany, Dec. 2, 1966, D 51,691
Int. Cl. B01d *19/00*
U.S. Cl. 55—48 **9 Claims**

Process for separating chlorosilanes such as silicon tetrachloride or silicochloroform from gaseous reaction mixtures, consisting of chlorosilanes in admixture with carbon

dioxide and/or carbon monoxide and/or hydrogen by absorption in a liquid organic absorption agent such as paraffin oil, chlorinated paraffin, alkyl silicate or phosphoric acid ester which has unlimited miscibility with the chlorosilanes and is inert thereto at temperatures below the boiling point of the absorption liquid and which has a boiling point sufficiently above that of the chlorosilanes whereby the absorbed chlorosilanes can subsequently be recovered from the absorption agent by heating the charged agent to a temperature above the boiling point of the chlorosilane and below the boiling point of the absorption liquid which step may be combined with or followed by rinsing the mixture with an inert gas followed, if desired by recycling of the rinsing gas.

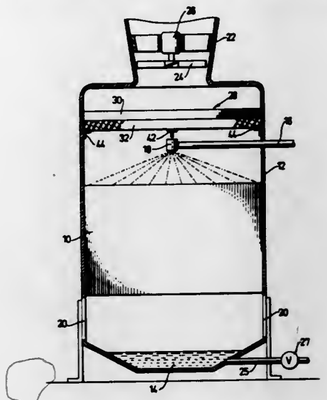
3,500,614
ELECTRO-AERODYNAMIC PRECIPITATOR
Shao L. Soo, Urbana, Ill., assignor to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 629,981, Apr. 11, 1967. This application Feb. 10, 1969, Ser. No. 805,931
Int. Cl. B03c *3/76*
U.S. Cl. 55—112 **10 Claims**



An electro-aerodynamic precipitator having a set of high voltage wire electrodes at a first polarity immediately adjacent a set of collecter plates at the opposite polarity with the direction of the electric field formed between the electrodes and the plates being aligned with the direction of the dust laden input gases to the precipitator. A rotary electro-aerodynamic precipitator with collector plates located approximately one-half inch or less apart with the precipitator functioning in gas flow velocities of greater than 10 feet per second.

3,500,615
GAS AND LIQUID CONTACT APPARATUS
George W. Meek, Fort Myers, Fla., assignor to Carl Munters & Co., Stocksund, Sweden, a Swedish company
Filed July 7, 1967, Ser. No. 651,731
Claims priority, application Sweden, Feb. 21, 1967, 2,374/67
Int. Cl. B01d *41/04, 47/00*
U.S. Cl. 55—233 **3 Claims**

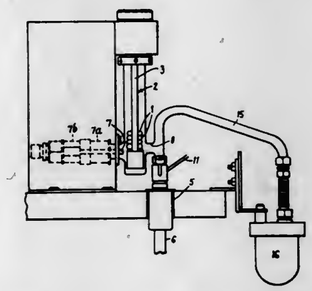
A drift eliminator comprising at least two contiguous units, each of which has a multiplicity of intersecting and intercommunicating passages to allow passage of gas and liquid therethrough and adapted to be positioned across the air discharge opening of the housing in which a contact body is enclosed to preclude splashing of liquid from the housing.



3,500,616
ADSORBENT FOR GAS-SOLID CHROMATOGRAPHY
Clayton J. Boosart, Monroeville, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 8, 1968, Ser. No. 727,663
Int. Cl. B01d *53/30*
U.S. Cl. 55—386 **13 Claims**

A porous inert support is impregnated with a hydrolyzable beta (3,4 epoxy cyclohexyl) ethyl trisubstituted silane. The impregnated carrier is treated with warm moist air to effect hydrolysis of the silane followed by heat stripping a substantial portion of residual organic material from the hydrolysis product. The product is a packing for gas-solid chromatography of especial utility for separating the constituents of gas mixtures.

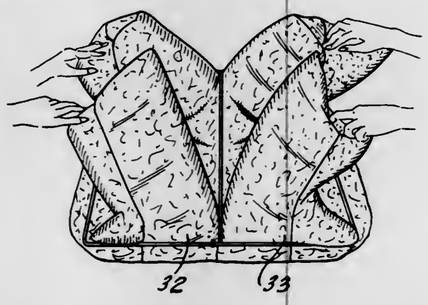
3,500,617
CHROMATOGRAPHIC APPARATUS
Joseph E. Hall, Richard J. Hunt, and Colin J. Vincett, Cambridge, England, assignors to Pye Limited, Cambridge, England, a British company
Filed Apr. 21, 1969, Ser. No. 817,647
Claims priority, application Great Britain, May 2, 1968, 20,921/68
Int. Cl. B01d *15/08*
U.S. Cl. 55—386 **12 Claims**



The present invention relates to an apparatus for the injection of samples into a gas chromatograph column. The invention provides a magazine for storing slugs con-

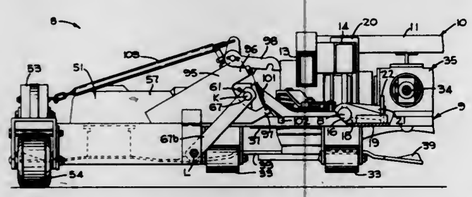
taining the samples, a mechanism for transferring the slugs individually into a region at the mouth of the chromatograph column, means for passing a sample contained in a slug into the column and an ejector arrangement for ejecting the spent slug from the column when the sample, or a part of it, has passed into the column.

3,500,618
EXTENDED AREA AIR FILTER
Frank Sokol, Fords, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 7, 1968, Ser. No. 735,384
Int. Cl. B01d *39/04, 39/16*
U.S. Cl. 55—484 **5 Claims**



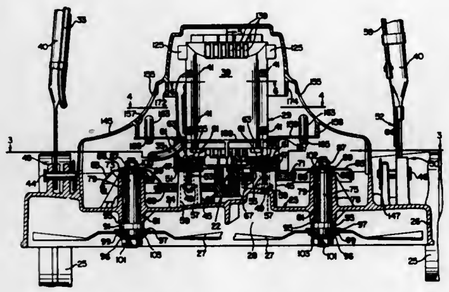
An extended area air filter comprising a pair of substantially co-extensive trapezoids of fibrous batts. Each trapezoid having a slit starting at substantially the mid-point of the shorter, parallel side and extending perpendicular therefrom a portion ofthe distance towards the longer parallel side. The trapezoidal batts being secured together at both non-parallel edges and along both sides of said slit. Each trapezoid is folded upon itself at the mid-point along its shorter parallel side between said slit and non-parallel edge and sealed together along its shorter parallel side to form a pair of truncated ellipsoidal conical sections collapsed and sealed at their top position.

3,500,619
SECTIONALIZED MOWER
Roger J. Bacon, Port Washington, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,217
Int. Cl. A01d *75/30, 35/26*
U.S. Cl. 56—6 **18 Claims**



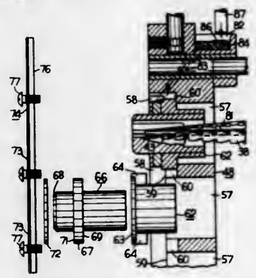
A grass mower attached to the front of a tractor has a central section and side wing sections, the sections having rotary blades normally in a common plane. Each wing section is connected to the central section by an intermediate connecting member and swings, initially, relative to the connecting member, about a pivot axis in the plane of the blades. Thereafter, the wing section swings with the connecting member about a different pivot axis. When swinging movement occurs about this latter pivot axis, a spring biased idler pulley, over which the belt drive to the wing blade runs, is pivoted to interrupt the drive to the wing blade.

3,500,620
ELECTRIC LAWNMOWER CONSTRUCTION
Raymond J. Duran, Lutherville, and William R. Lessig III and Henry J. Stelper, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed May 5, 1967, Ser. No. 636,343
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **22 Claims**



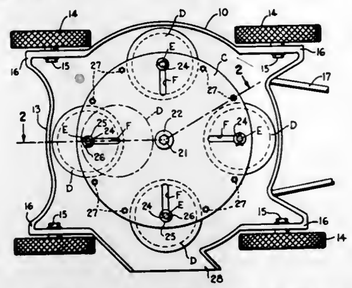
The device hereinafter disclosed relates to a lawnmower of the type having an inverted, generally cup-shaped housing supported for movement along the ground by a plurality of wheels and provided with an upstanding handle for control and manipulation of the mower. A set of mowing blades are supported beneath and within the housing for rotation in a plane generally parallel to the ground and the blades are driven by an electric motor supported atop the housing. As the mower moves over the ground, grass is cut by the rotating blades and is discharged from within the housing through a laterally directed opening. The handle is pivotally reversible on the housing so that the mower may be pushed in both a forward and reverse longitudinal direction without turning the mower around. The mower is constructed and arranged for maximum operator protection against electrical shock, movement of the blades and objects struck thereby, and meets or exceeds American Standards Association (ASA), Underwriters Laboratory (UL) and other safety specifications.

3,500,621
COOLING AND CLEANING OF STRIPPER BUSHINGS
Rector C. Fergason, Gadsden, Ala., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 21, 1967, Ser. No. 661,933
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 **5 Claims**



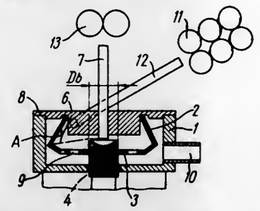
A cotton harvester stripper bar structure provided with water lubrication for cooling, cleaning and lubricating stripper bushings and spindles.

3,500,622
MOWER CUTTING BLADE
Marvin Bowen, Anderson, S.C., assignor of thirty-three and one-third percent to William R. Pruitt, Anderson, S.C.
Filed Aug. 17, 1967, Ser. No. 661,437
Int. Cl. A01d *55/18*
U.S. Cl. 56—295 **2 Claims**



A cutting blade for a mower having a pair of spaced circular discs mounted on the rotating shaft of the mowers motor. Cylindrical cutting discs are mounted between a pair of spaced discs so that such can rotate as the cutting edge dulls exposing a sharpened portion of the cutting discs to the grass being cut. The cutting discs are also allowed to retract between the spaced cylindrical discs upon striking large objects.

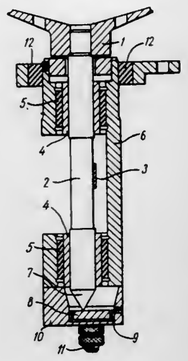
3,500,623
DEVICE FOR SPINNING FIBRES
Lev Ivanovich Oskin, Odesskaya ulitsa, 14, korpus 4, kv. 20; Chary Anna-Seidov, ulitsa Televidenia, 22, korpus I, kv. 58; Alexandr Sergeevich Zhukov, Nagornaya ulitsa, 32, korpus 3, kv. 71; and Alexandr Fedoseevich Zadoya, ulitsa Gasheka, II, kv. 54, all of Moscow, U.S.S.R.
Filed Apr. 18, 1968, Ser. No. 722,374
Int. Cl. D01h *7/00*
U.S. Cl. 57—58.89 **1 Claim**



A device for spinning fibres which includes a rotating twisting pot having a base and being provided with a cover. A boss is disposed in the base of the pot and has the shape of a solid of revolution. The boss is provided with end-face teeth which are skewed in the direction of rotation of the twisting pot. Provision is made for the supply of material to be spun into fibres and for the exhausting of air from the pot.

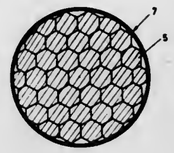
3,500,624
TWISTING AND FORMING DEVICE FOR PNEUMATIC AND MECHANICAL SPINNING
Lev Judelevich Polyakovsky, 13 Parkovaya ulitsa, 27, korpus 4, kv. 51; Igor Vladimirovich Kornev, Pogodinskaya ulitsa, 14/16, kv. 28; Lidia Petrovna Kovaeva, Varshavskoe shosse, 9/1, kv. 40; and Stanislav Markovich Balandin, Nikolo-Yamsky pereulok, 4/6, kv. 64, all of Moscow, U.S.S.R.
Filed Apr. 25, 1968, Ser. No. 724,165
Int. Cl. D01h *7/68*
U.S. Cl. 57—129 **4 Claims**

A twisting and forming device is provided for pneumatic and mechanical spinning and comprises a driving spindle supporting a cup for yarn formation at one end and having a cone at the other end which rests on a flat journal of antifriction graphite so as to form a thrust



bearing at this end. The spindle is supported for rotation by a plurality of radial sliding friction bearings with an air cushion, the bearings in turn being mounted in elastic dampers.

3,500,625
PARALLEL CABLES
Isao Gokyu, 3, 10, 2-chome Nishikubo Masashino-shi, Tokyo, Japan
Filed May 15, 1968, Ser. No. 729,150
Claims priority, application Japan, May 17, 1967, 42/30,868, 42/30,869
Int. Cl. D02g *3/00*
U.S. Cl. 57—139 **4 Claims**

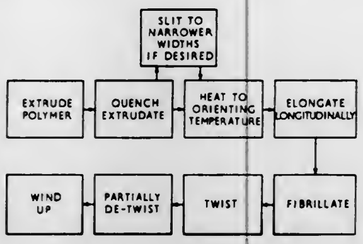


A cable, for suspension bridges or the like, comprises wires having a hexagonal cross section. These wires are grouped into strands likewise having a hexagonal cross section, and the strands are grouped into the cable. The cross section of the wires, when the cable is used in a suspension bridge or the like, is reduced in accordance with the variations in the stresses effective along the length of the cable.

3,500,626
PROCESS FOR TREATMENT OF MOLECULARLY ORIENTED CRYSTALLINE ORGANIC POLYMERIC MATERIAL
Denis James Henry Sandiford, Welwyn, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
Filed July 1, 1965, Ser. No. 468,875
Claims priority, application Great Britain, July 1, 1964, 27,198/64; Oct. 12, 1964, 41,612/64
Int. Cl. D02g *3/02*
U.S. Cl. 57—140 **23 Claims**

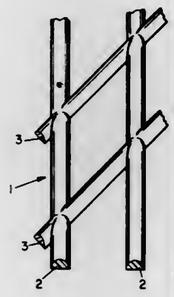
A process which comprises fibrillating one or more ribbons each of which is of a crystalline organic polymeric material and each of which has been molecularly

oriented longitudinally to cause incipient fibrillation, by twisting this material about its longitudinal axis under sufficient tension to cause transverse rupture of a proportion of the fibres forming the outer surface of the twisted



material, thereby providing at least one broken fibre every one-thousandth of a square inch of the area consisting of the product of the length of the treated material multiplied by its average circumference.

3,500,627
SYNTHETIC TEXTILE YARN
Charles W. Kim, Heritage Park, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed July 31, 1968, Ser. No. 749,116
Int. Cl. D02g *3/02, 3/06*
U.S. Cl. 57—140 **6 Claims**



This invention relates to synthetic yarns made by the fibrillation of a ribbon of plastic material having filament-forming ribs, and having fibril-forming ribs disposed at an acute angle to the filament-forming ribs, which ribbon, upon fibrillation by severing the fibril-forming ribs, form filaments corresponding to the filament-forming ribs and having fibrils formed from the fibril-forming ribs extending laterally therefrom.

3,500,628
TORQUE YARN
Virginia S. Bowers and Francis B. Breazeale, Hendersonville, and Charles M. Rice, Candler, N.C., assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Continuation of application Ser. No. 395,997, Sept. 14, 1964, now Patent No. 3,435,607, dated Apr. 1, 1969. This application June 28, 1968, Ser. No. 753,820
Int. Cl. D02g *3/02;* **B28b** *28/52;* **B29f** *3/00*
U.S. Cl. 57—140 **1 Claim**

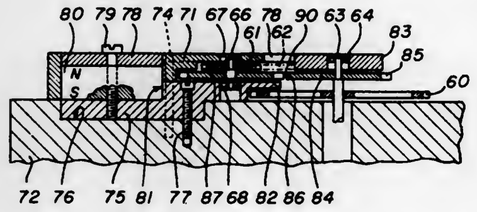
A torque yarn having a tendency to twist about its longitudinal axis and having a substantially circular cross section, except for one flat side, is produced on a modified draw twister.

3,500,629
PROCESS FOR PRODUCING A STRETCH CORE SPUN YARN
David Gliksmann, Bronx, N.Y., and David W. Petree, High Point, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,509
Int. Cl. D02g *3/36*
U.S. Cl. 57—144 **8 Claims**



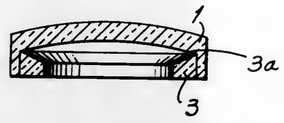
A process for producing a stretch yarn which comprises preparing a core spun yarn made up of a core of continuous filament yarn covered with staple fibers and thereafter false twisting said core spun yarn.

3,500,630
MAGNETIC TRANSMISSION SYSTEM
René Béguin, "La Chaumiere," Chemin des Vignettes, Villette, Geneva, Switzerland
Filed July 25, 1967, Ser. No. 655,803
Claims priority, application Switzerland, July 27, 1966, 10,869/66
Int. Cl. H02k *49/00;* **G04c** *13/00*
U.S. Cl. 58—23 **10 Claims**



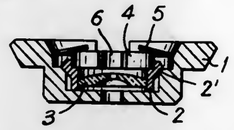
A magnetic system for the transmission of the movement from a driving rotatable member to a driven rotatable member in which the periphery of each member is provided with a magnetizable zone comprising at least one ferromagnetic merlon and at least one nonmagnetic crenel. The members face one another so as to mutually skim past one another at least at one point of their magnetizable zones without being in mechanical contact with one another, there being a magnetic flux passing from the magnetizable zone of one member to the magnetizable zone of the other member which produces a force of attraction between the merlons of the driving member and the merlons of the driven member which is capable of angularly driving the driven member when the driving member is displaced angularly.

3,500,631
STRUCTURE OF CUT-GLASS FOR WRISTWATCH
Masayoshi Aoki, Tokyo, Japan, assignor to Kabushiki Kaisha Daini Seikosha
Filed Mar. 22, 1968, Ser. No. 715,340
Claims priority, application Japan, Mar. 24, 1967, 42/23,857
Int. Cl. G04b *39/00*
U.S. Cl. 58—91 **3 Claims**



A watch crystal assembly for covering the faces of watches. The assembly includes an outer transparent member which is adapted to extend across and cover the face of a watch and an inner ring which is adapted to engage the bezel of the watch and which has a surface visible through the outer member and formed with facets. As a result the thickness of the watch case need not be increased to accommodate the watch crystal and the facets can be formed in a simple inexpensive manner.

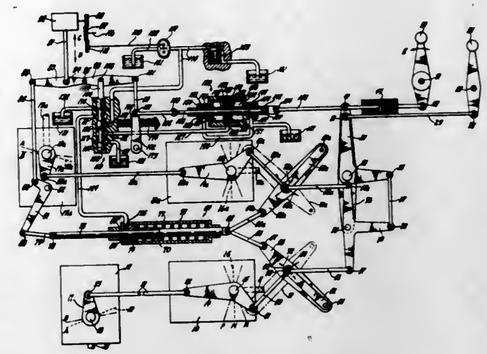
3,500,632
BEARING FOR A TIMEPIECE PIVOT
Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap, Le Porte-Echappement Universal S.A., La Chaux-de-Fonds, Switzerland
Filed Sept. 9, 1968, Ser. No. 758,515
Claims priority, application Switzerland, Sept. 11, 1967, 12,496/67; Oct. 16, 1967, 14,516/67
Int. Cl. G04b *13/02, 31/00*
U.S. Cl. 58—140 **19 Claims**



A timepiece bearing having a drilled jewel and an end piece which is held adjacent to the back of the drilled jewel. The end piece has at least one radial notch at its periphery which extends into the central portion of the end piece and exposes corresponding portions of the drilled jewel allowing the bearing to be lubricated without removal or dismantlement.

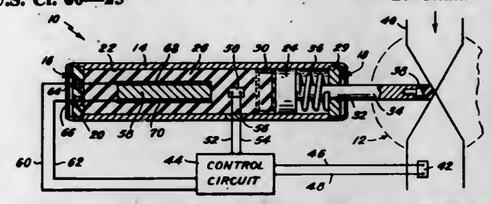
3,500,633
CONTROL LINKAGE FOR HYDROSTATIC UNITS
William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,760
Int. Cl. F02b *41/00, 73/00;* **F16d** *31/06*
U.S. Cl. 60—19 **21 Claims**

Disclosed herein is an operator control linkage for a hydrostatic transmission which is responsive, to engine overload and engine overspeed conditions, to reduce or increase the displacement of the hydrostatic unit if one of these conditions should occur. The linkage has an adjustable pivot point which is positionable in response to the input power level between the operator and the servo control to change the relationship between the operator input movement and servo control movement such that a given operator movement has a diminishing affect on servo control movement when a power overload occurs. When used with a drive by steering vehicle utilizing two hydraulic pumps and two hydraulic motors, the overload control is operative, during steer to reduce the displacement of both pumps proportionally to maintain a constant turn radius. Also included is an overspeed control which operates on



the control linkage to increase the displacement of the hydrostatic pump when an engine overspeed is about to occur.

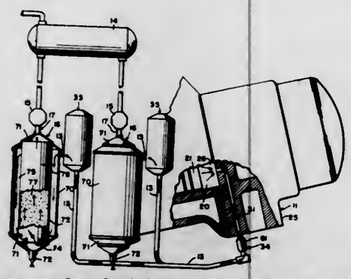
3,500,634
CONTROL SYSTEM AND ACTUATOR USED THEREIN
Joseph W. Waseleski, Jr., Mansfield, and Francis P. Bulting, Plainville, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,915
Int. Cl. F03g *7/06;* **G05d** *15/00;* **F16k** *31/18*
U.S. Cl. 60—23 **17 Claims**



A control system in which the output of an actuator is used to change a first condition, such as the quantity of a fluid flowing through a conduit by modulating a valve opening. A second condition of the fluid such as temperature, is sensed and gives an electrical signal which is integrated with a standard in a control circuit to result in a controlled energization of the actuator. The actuator comprises thermally expandable material confined in a pressure chamber having an output element or piston, which is spring biased against the material. A heater is used to control the temperature of the thermally expandable material, and hence the amount of expansion of the material and the travel of the piston. The piston is connected to the valve in the conduit by a conventional piston rod. The heater is formed of a mass of material having a positive temperature coefficient (PTC) of resistance and a sharply defined transition temperature above which the material's resistance increases sharply. In one embodiment the PTC heater is embedded in the thermally responsive material; in another, it is mounted on the actuator casing but in heat transfer relation to the material; in yet another, PTC material is dispersed throughout the thermally responsive material; and in another embodiment the thermally responsive material is made a part of the heating element by incorporating conductive particles such as carbon black therethrough. A temperature sensor is mounted in heat transfer relation to the thermally expandable material, preferably embedded therein, the electrical signal from which, along

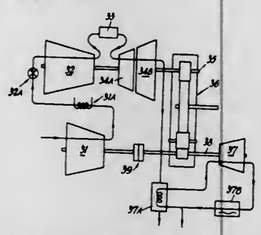
with the signal from the fluid condition sensor, is compared with a standard in the control circuit. The resultant signal then controls the heater energization current to maintain the temperature of the expandable material at the desired level and concomitantly the piston travel.

3,500,635
GAS PRESSURE PRODUCING APPARATUS
John H. Roper, 1325 Eutaw Place, Baltimore, Md. 21217
Continuation-in-part of application Ser. No. 623,049, Mar. 14, 1967. This application Apr. 11, 1968, Ser. No. 726,273
Int. Cl. B01d *47/02;* **F01n** *3/04;* **F02b** *75/10*
U.S. Cl. 60—29 **1 Claim**



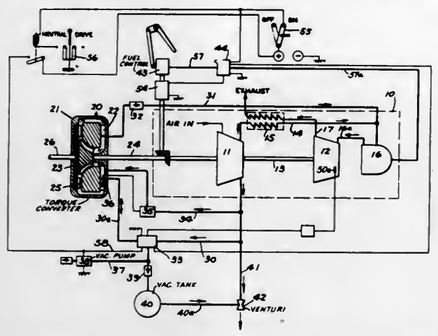
An apparatus for obtaining pressurized motive gas from a compression ignition engine for supplying a system of gas pressure actuated devices, having a withdrawal port for the flow of gas from a power cylinder of the engine, a conduit means communicating with the withdrawal port and connected through a ball check valve and a gas cleaning and cooling device to a storage reservoir, the dimensions of the gas passageways and flow rates of gas therethrough are so coordinated to the operating conditions of the internal combustion engine as to obtain a sufficient flow of motive gas without seriously imparing the operation of the engine.

3,500,636
GAS TURBINE PLANTS
Hugh Robert Morton Craig, Sale, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Feb. 14, 1967, Ser. No. 615,943
Claims priority, application Great Britain, Feb. 18, 1966, 7,349/66, 7,350/66; Oct. 17, 1966, 46,238/66
Int. Cl. F02c *9/14, 3/06, 7/02*
U.S. Cl. 60—39.03 **11 Claims**



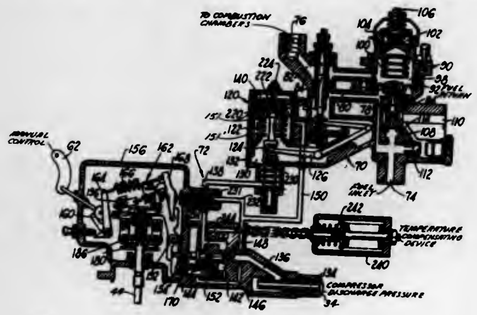
Gas turbine shaft-power plant including a high pressure compressor set positively driven by a gas turbine set and delivering working air to the turbine set through air heating means. The high pressure compressor set is supplied with air from a low pressure compressor and provision is made for selectively controlling the pressure ratio of the low pressure compressor either by driving it through a controllable variable speed transmission means from the gas turbine set, or by controllably driving it by a separate engine energised by exhaust heat from the gas turbine, or by providing it with controllable variable-stagger blading.

3,500,637
GAS TURBINE ENGINE WITH AERODYNAMIC TORQUE CONVERTER DRIVE
William W. Toy, Bloomfield, Mich., assignor of fifty percent to Lewis G. Harmon, Birmingham, Mich.
Filed Jan. 26, 1968, Ser. No. 700,942
Int. Cl. F02b *61/00;* **F02g** *3/00;* **F16d** *33/12*
U.S. Cl. 60—39.03 **14 Claims**



A gas turbine engine including a compressor, a turbine, a combustor, and a heat exchanger, is combined with an aerodynamic torque converter. The torque converter has a casing filled with a compressible fluid, namely air, and mechanically includes a stator, an input rotor, and an output rotor which is driven by fluid action upon rotation of the input rotor. The input rotor of the torque converter is connected to and driven by the rotor of said turbine. A first fluid line extends between the outlet of the compressor and a pressure area of the casing of the torque converter. A second fluid line extends from the casing of the torque converter to a point ahead of the inlet to the turbine. A valve in the first fluid line is operable to control the fluid delivery to the torque converter casing and to variably dump fluid therefrom, in response to varying turbine temperature and to pressure differentials between the casing and the compressor outlet, as well as to certain engine speed conditions.

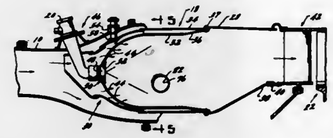
3,500,638
FUEL CONTROL FOR A GAS TURBINE ENGINE
Robert W. Schuster, 5215 Rowantree Place, South Bend, Ind. 46619
Filed Dec. 21, 1967, Ser. No. 692,378
Int. Cl. F02c *9/04*
U.S. Cl. 60—39.28 **12 Claims**



A fuel control device for a gas turbine engine in which the fuel flow to the engine is regulated by a metering

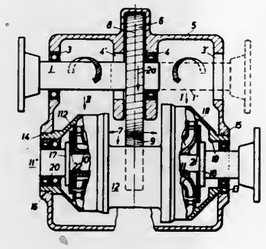
valve controlled by a pneumatic system having a governor bellows responsive to a compressor discharge pressure and to engine speed. A deceleration bellows mounted on and operating in conjunction with the governor bellows limits the engine deceleration to a rate at which flame-out will not occur. A valve is included in the pneumatic system to prevent the engine from overspeeding if the pneumatic system malfunctions because of contamination with foreign matter.

3,500,639
COMBUSTION CHAMBER MOUNTING MEANS
Edward I. Stamm, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 10, 1968, Ser. No. 758,823
Int. Cl. F02c *7/20*
U.S. Cl. 60—39.31 **10 Claims**



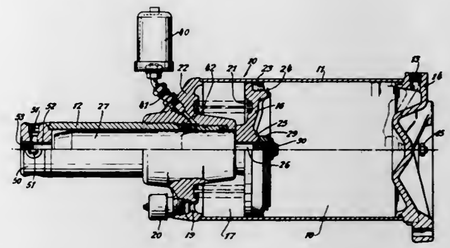
Improved means are provided for rigidly securing a cannular or cellular type combustion chamber to a suitable gas turbine engine frame in alignment with the fuel nozzle discharge axis. Each combustion chamber is formed with means at its upstream end to receive its fuel nozzle and establish proper alignment therebetween. Variable means are provided to rigidly space and secure each chamber from the frame without disturbing the nozzle-chamber aligned relationship. Cross over conduit means are provided for interconnecting adjacent chambers in a manner which will tolerate installation misalignment and thermal growth.

3,500,640
HYDRODYNAMIC TRANSMISSION, ESPECIALLY FOR RAIL VEHICLES
Rolf Ritz, Heidenheim (Brenz), Germany, assignor to Voith Getriebe KG, Heidenheim (Brenz), Germany
Filed July 29, 1968, Ser. No. 748,489
Claims priority, application Germany, Aug. 5, 1967, 1,580,951
Int. Cl. F16d *33/00;* **F16h** *41/00*
U.S. Cl. 60—54 **4 Claims**



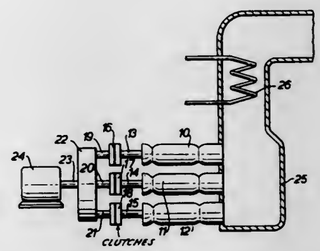
A hydrodynamic transmission, especially for rail vehicles, with at least two preferably differently designed coaxially arranged fluid flow circuits, especially two torque converters, which comprises a gear transmission drivingly connected to said fluid flow circuits between the same, a first housing common to and encasing said fluid flow circuits and a second housing having said first housing mounted therein at two spaced areas arranged symmetrically with regard to a straight line passing through the input shaft of the transmission and through the central plane of the gear transmission, the drive shaft being mountable in said second housing so as to be connected selectively on one or the other side thereof to a prime mover.

3,500,641
PRESSURE INTENSIFYING DEVICES
Francis A. Meekings, London, England, assignor to Spencer Franklin Limited, London, England
Filed May 8, 1968, Ser. No. 727,399
Int. Cl. F15b *7/08;* **F01b** *29/04;* **F16j** *15/18*
U.S. Cl. 60—54.6 **10 Claims**



A pressure intensifying device for a fluid system comprises a pneumatic cylinder **11** having a piston **16** therein provided with a detachable plunger **27** which projects through the front closure member **22** of the pneumatic cylinder into a smaller diameter hydraulic cylinder **12**. The plunger **27** enters the hydraulic cylinder **12** through a removable bearing bush or capsule **33** and the hydraulic cylinder **12** is detachable so that the bearing bush can be changed for different size plungers to vary the pressure intensification ratio.

3,500,642
MULTIPLE TURBINE EXHAUST SYSTEM
Richard W. Foster-Pegg, Warren, Pa., assignor to Struthers Energy Systems, Inc., a corporation of Delaware
Filed July 3, 1968, Ser. No. 742,468
Claims priority, application Great Britain, July 11, 1967, 31,781/67
Int. Cl. F01d *13/00;* **F01k** *23/16;* **F02c** *7/02*
U.S. Cl. 60—102 **2 Claims**

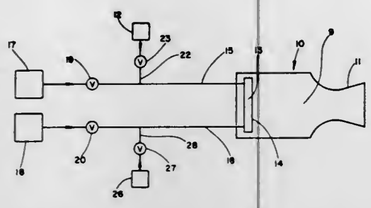


A number of gas turbines provide power through clutches and a gear box, the turbines exhausting into a common plenum chamber, the clutches, when disengaged, providing sufficient drag to slowly rotate non-working turbines sufficiently to draw air therethrough and prevent any counter flow of exhaust gases.

3,500,643
THRUST MODULATION

Herbert W. Hoeptner, San Jose, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,459
Int. Cl. B63h 11/00
U.S. Cl. 60—204 2 Claims

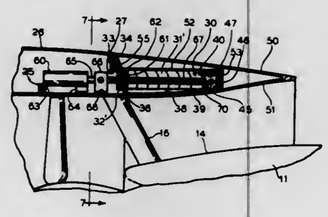


1. A method for selectively adjusting the mass flow rate of a liquid propellant to a reaction motor comprising providing a liquid propellant source of a first predetermined density, flowing said liquid propellant through feed lines to the situs of combustion in said reaction motor, providing a compatible reactive material source of a second predetermined density and independently selectively injecting said material of a second predetermined density into said liquid propellant feed line at a point upstream of the situs of combustion whereby the feed line downstream of said point of injection and upstream of the situs of combustion contains a mixture of said propellant and said compatible reactive material possessing a density different from said propellant whereby the thrust level of the reaction motor selectively varies with the density of the fluid in said feed line.

3,500,644
THRUST REVERSER

Felix Hom, La Mesa, and George E. Medawar, San Diego, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Apr. 10, 1968, Ser. No. 720,031
Int. Cl. F02k 1/00, 3/02; B64c 15/04
U.S. Cl. 60—229 7 Claims

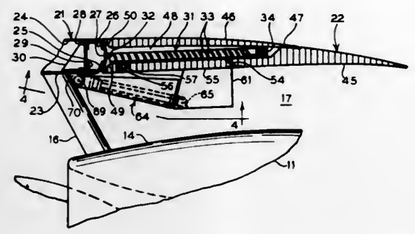


A thrust reverser arrangement for a fan type jet propulsion engine includes a fixed ring of flow reversing cascades which are uncovered when the aft portion of a split cowl for the engine fan is translated rearwardly to an extended position. During the translational movement of the aft portion, peripherally disposed blocker doors which are pivotally secured to the cascades are rotated into position to block the fan air and force the same through the cascades. Rotary actuators actulators carried by the forward cowl portion have threaded shafts which drive threaded members secured to the aft cowl portion to translate the same. The ends of the threaded shafts act through right angle drives and flexible shafts to operate power hinges for rotating the doors. Additional right angle drives operated by the threaded shafts are operatively connected together to synchronize the rotary actuators.

3,500,645
THRUST REVERSER

Felix Hom, La Mesa, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Apr. 10, 1968, Ser. No. 720,318
Int. Cl. F02k 1/00, 3/02; B64c 15/04
U.S. Cl. 60—229 8 Claims



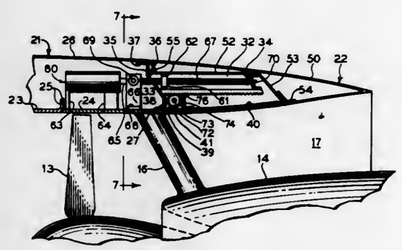
A thrust reverser arrangement for a fan type jet propulsion engine includes a fixed ring of flow reversing cascades which are uncovered when the aft portion of a split cowl for the engine fan is translated rearwardly in telescoping relation with respect to the cascade structure. During the terminal translational movement of the aft cowl portion into its fully deployed position peripherally disposed blocker doors which are pivotally secured to the aft cowl portion and have telescoping link connections with the forward cowl portion are rotated into position to block the fan air and force the same through the cascades, the arrangement thus being such that the flow area of the cascades is substantially fully opened before the telescoping links become effective to rotate the doors to blocking position. The aft cowl portion including the blocker doors are formed of honeycomb panel structure, and the aft portion has an annular recess for receiving the cascade structure in stowed position. Ball screw actuators disposed within longitudinal channels in the cascade structure produce the translational movements of the cowl aft portion to deployed position and support the same for such movements.

In an alternative split cowling arrangement, the aft cowl portion is fixed, and a translatable sleeve moves to expose the cascades and rotate the doors.

3,500,646
THRUST REVERSER

Felix Hom, La Mesa, and George E. Medawar, San Diego, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Apr. 19, 1968, Ser. No. 722,687
Int. Cl. F02k 1/00, 3/02; B64c 15/04
U.S. Cl. 60—229 10 Claims



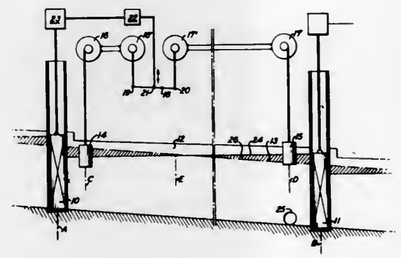
A thrust reverser arrangement for a fan type jet propulsion engine includes a fixed ring of flow reversing cascade which are uncovered when the aft portion of a split cowl for the engine fan is translated rearwardly to an extended position. During the translational movement of the aft portion, peripherally disposed blocker doors which are pivotally secured to the aft cowl portion and are pivotally secured into position to block the fan air and force the same through the cascades. Rotary actuators carried by the forward cowl portion have threaded shafts which drive threaded members secured to the aft cowl portion to translate the same. Right angle drives operated by the threaded shafts are operatively connected together to synchronize the rotary actuators. Peripherally spaced gear racks are supported on the ring of cascades and extend longitudinally thereof, and gears supported on the aft cowl portion and disposed respectively in meshed engagement with the racks rotate therealong as the aft cowl portion translates. The gears act through flexible shafts to operate power hinges for rotating the doors.

In an alternative arrangement, linear actuators are employed to translate the aft cowl portion, and rotary motors are employed to rotate the doors independently of the translational movement of the aft cowl portion.

3,500,647
WATER DISTRIBUTION SYSTEM FOR CANALS

Gilles Combes and Alexandre Preissmann, Grenoble, France, assignors to Societe Grenobloise d'Etudes et d'Applications Hydrauliques (SOGREAH), Grenoble, Isere, France, a corporation of France

Filed Sept. 13, 1968, Ser. No. 759,728
Claims priority, application France, Sept. 21, 1967, 5,171
Int. Cl. E02b 7/36
U.S. Cl. 61—22 9 Claims



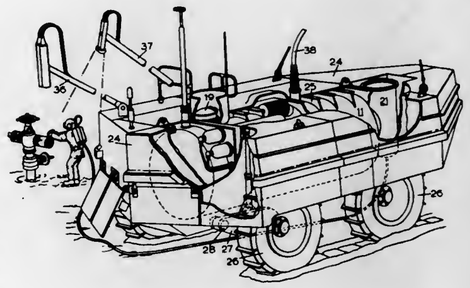
Means are provided at both the upstream and downstream ends of an irrigation canal reach to simultaneously measure the water levels thereat. These measurements are transmitted to means capable of combining them in a given proportion representative of the level of the water at a given intermediate point of the reach and of controlling the operation of a gate at the upstream end of the reach.

3,500,648
UNDERWATER VEHICLES

Alan F. Daniell, Birkenhead, Cheshire, England, assignor to Cammell Laird & Company (Shipbuilding & Engineers), Limited, Birkenhead, Cheshire, England, a British company

Filed Apr. 15, 1968, Ser. No. 721,317
Int. Cl. B63c 11/34
U.S. Cl. 61—69 14 Claims

The underwater vehicle having a buoyant body or hull is mounted on wheels having, or adapted to be given preponderant weight, when the vehicle is submerged, so that the vehicle will travel over the seabed. The mounting of the buoyant hull on the wheels is such as to provide for limited relative movement between the hull and the wheels. The vehicle may include a winch on the hull, a heavy weight or sinker suspended from the hull by a rope of said winch and adapted to be lowered by the latter onto the seabed and raised therefrom, and means for flooding the wheels of the vehicle to reduce its buoyancy whereby, when the sinker is on the seabed it is effective as an anchorage to enable the vehicle to be winched down to the seabed by the winch. Following the winching-down of the vehicle onto the seabed the heavy weight or sinker may be clamped to the hull so

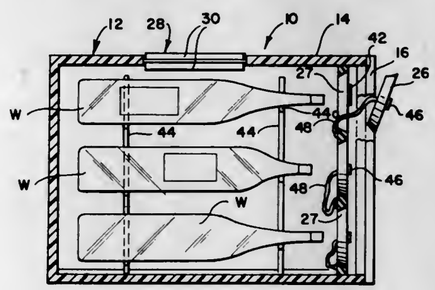


that its weight is added thereto to keep the vehicle on the seabed and render it mobile. Subsequently, when it is desired to surface the hull, the weight or sinker is released onto the seabed and the hull is allowed to rise under the control of the winch. Water ballast in the wheels of the vehicle may then be blown and the sinker recovered. In one particular arrangement the hull has four wheels each of which is mounted on an arm or lever pivotally attached to the hull and capable of rising and falling between limits defined by stops on the hull. Each wheel may have in its hub a hydraulic driving motor.

3,500,649
WINE STORAGE CHEST

Charles Feldman, 7400 Rebecca Drive, Alexandria, Va. 22307

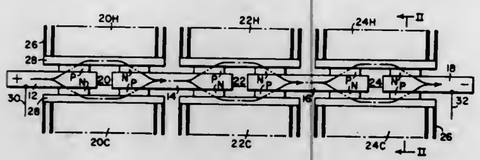
Filed May 10, 1968, Ser. No. 728,132
Int. Cl. F25b 21/02; F25d 25/02
U.S. Cl. 62—3 12 Claims



A wine storage chest includes a thermoelectric panel for maintaining stored wine at a predetermined temperature. An inner wall located behind an outer door provides, a heat barrier when the door is open. Removable

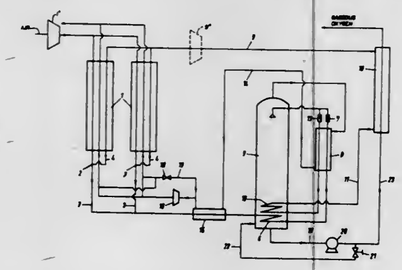
plugs located in the inner wall provide access to individual wine bottles as well as information regarding the wine lying therebehind.

3,500,650
MULTISTAGE DIRECT TRANSFER THERMOELECTRIC APPARATUS
Cecil J. Mole, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 13, 1968, Ser. No. 728,472
Int. Cl. F25b *21/02*
U.S. Cl. 62—3 **11 Claims**



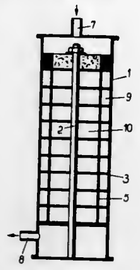
In a thermoelectric heat transfer system where the temperature difference between the hot and the cold sides is high, the efficiency of the system is improved by providing multistage devices in which a number of thermoelectric pellets are connected in series thermally and in parallel electrically. Thus, the temperature difference over any one pellet is reduced and heat is pumped by successive pellets. In a two-stage device, the applied current is divided into two smaller currents which drive the first and second stages. In the first stage, heat is pumped from the cold side members to interstage members. In the second stage, heat is pumped from the interstage members to the hot side members. This heat includes the heat pumped from the cold side, the energy required to pump the first stage, and the interstage member losses.

3,500,651
PRODUCTION OF HIGH PRESSURE GASEOUS OXYGEN BY LOW TEMPERATURE RECTIFICATION OF AIR
Rudolf Becker, Munich, Germany, assignor to Linde A.G., Wiesbaden, Germany
Filed Jan. 13, 1967, Ser. No. 609,208
Claims priority, application Germany, Jan. 13, 1966, L 52,586
Int. Cl. F25j *3/04, 5/00*
U.S. Cl. 62—13 **21 Claims**



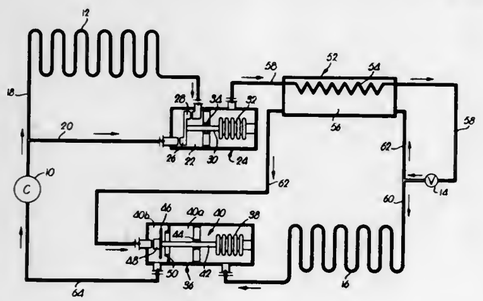
System for producing high pressure gaseous oxygen by using a liquid pump to elevate pressure of oxygen, and by using such inlet raw gas pressure in conjunction with either air reheat or separation product reheat that relatively low pressure gaseous process streams can be employed to vaporize high pressure liquid oxygen.

3,500,652
LIQUEFIED GAS FILTER
Horst Manns, Lubeck-Siems, Paul Zorner, Eggerscheidt, Ratingen, and Willi Breitenstraeter, Lubeck-Kuchnitz, Germany, assignors to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany
Filed Jan. 30, 1967, Ser. No. 612,516
Claims priority, application Germany, Feb. 4, 1966, M 68,369
Int. Cl. F25j *3/08;* **B01d** *27/02, 25/06*
U.S. Cl. 62—18 **3 Claims**



A filter for removing aromatic substances from liquefied gas, such as oxygen, is made of a fibrous batting material which may be disposed in a housing divided by spaced sieve bottoms.

3,500,653
REFRIGERATION APPARATUS AND METHOD HAVING CONTROL FOR REFRIGERATION EFFECT AND CONDENSER HEAT REJECTION
Robert V. Anderson, Dallas, Tex., assignor to Anderson Service Company, Dallas, Tex., a corporation of Texas
Filed Apr. 5, 1968, Ser. No. 719,140
Int. Cl. F25b *5/00, 41/00*
U.S. Cl. 62—117 **14 Claims**

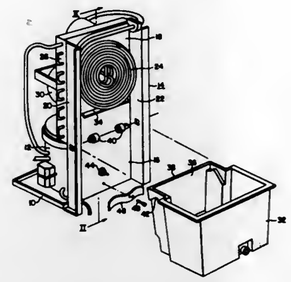


An expansion-compression, continuous cycle cooling system in which the enthalpy of the working medium at certain zones of both the high and the low pressure sides of the circuit is controlled in a manner to maintain the heat rejection of the condenser and the refrigeration effect of the evaporator in proper balance.

3,500,654
DEHUMIDIFIER STRUCTURE
Carl E. Sholtes, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 11, 1968, Ser. No. 736,219
Int. Cl. F25d *21/14, 11/00*
U.S. Cl. 62—150 **4 Claims**

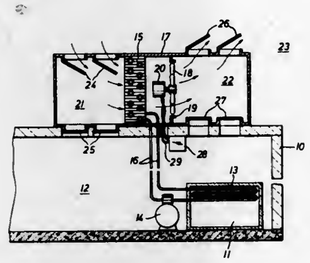
In dehumidifier structure having an upright mounting frame supporting a circular evaporator and a condenser on opposite sides of an aperture in the upper portion wall

of the frame, an integral lower marginal flange of the upper portion wall projecting outwardly therefrom at an acute angle to form a condensate directing ledge below at least a portion of the evaporator, with the condensate



bucket abutting the lower portion wall of the frame and with the upper edge of one of its side walls underlying the ledge so that condensate dripping from the evaporator will be directed by the ledge into the bucket.

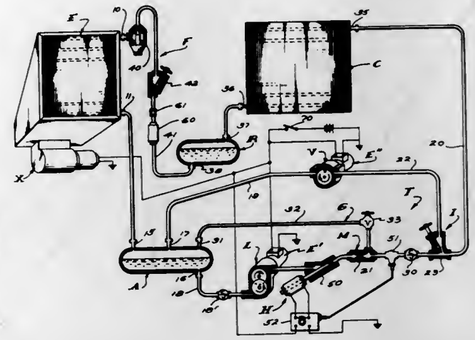
3,500,655
HEAT EXCHANGE APPARATUS
Joe C. Lyons, 5705 Alvarado, Houston, Tex. 77035
Filed May 2, 1968, Ser. No. 725,981
Int. Cl. F25b *39/04;* **F25d** *23/12*
U.S. Cl. 62—183 **11 Claims**



Waste heat from the condenser of a refrigeration system as used in commercial buildings is exhausted to the outside environment in the summer, or reclaimed for heating the interior of the building in the winter, by a mechanism using a reversible fan along with one-way, self-operating check valves to direct the flow of air. A pair of opposing fans, only one operable at one time, may be used in place of the reversible fan. The fan or fans may be controlled by the interior or outdoor temperatures.

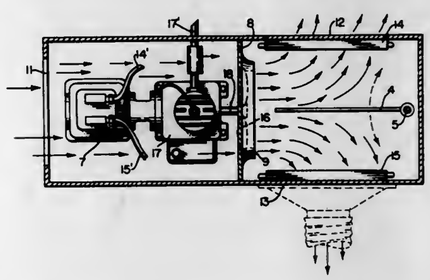
3,500,656
REFRIGERATION SYSTEM WITH LIQUID AND VAPOR PUMPS
Andrew F. Lofgreen and Harley L. Coggburn, both of P.O. Box 948, Big Bear Lake, Calif. 92315
Filed Apr. 18, 1968, Ser. No. 722,271
Int. Cl. F25b *41/04, 43/00*
U.S. Cl. 62—196 **5 Claims**

A refrigeration system including, an elongate evaporator with inlet and outlet ends, an elongate low pressure condenser with inlet and outlet ends and means connecting the inlet end of said condenser with the outlet end of the evaporator, a liquid vapor phase separator connected with the outlet end of the low pressure condenser, a positive displacement heat pump connected with and draining liquid from the separator, an elongate high pressure condenser with inlet and outlet ends, a delivery line from the heat pump to the inlet end of the high pressure condenser, an electro magnetically controlled metering valve in the delivery line, a venturi in the delivery line downstream of the metering valve to accelerate the rate of flow of refrigerant therethrough, a temperature sensing bulb in the line downstream of the venturi connected



with the metering valve, a vapor pump connected with and extracting vapor from the separator and connected with the delivery line downstream of the venturi and injecting vapor into said line, a receiver connected with the outlet end of the high pressure condenser and flow control and expansion means between the receiver and the inlet end of the evaporator to control the rate of flow of high pressure liquid refrigerant from the receiver and into the evaporator.

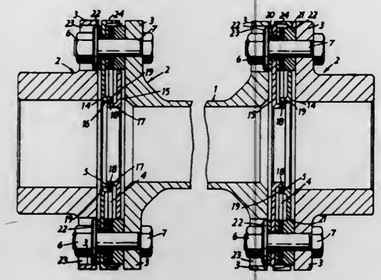
3,500,657
AIR-CONDITIONING UNIT
John W. Johnson, Baton Rouge, La., assignor to Johnson Associates Industries Corp., a corporation of Louisiana
Filed June 3, 1968, Ser. No. 733,996
Int. Cl. F25d *17/06;* **F25b** *29/00*
U.S. Cl. 62—428 **7 Claims**



This invention relates to a new and improved portable air-conditioning unit. The structural elements of the unit include an enclosure which provides an air inlet, and air outlets. A condenser and evaporator, respectively, lie within the air flow paths through the outlets. A compressor and fan can be energized via virtually any convenient source of power to transfer heat to and from and blow air across both the condenser and evaporator. An adjustably mounted baffle or vane is preferably used to

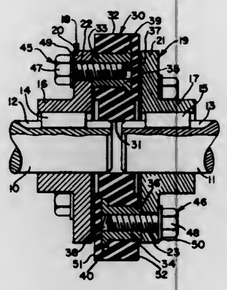
regulate the flow of air from the fan, causing it to flow over the condenser and evaporator in optimum proportions.

3,500,658
FLEXIBLE COUPLINGS
Edward W. Goody, Weybridge, Surrey, England, assignor to Turboflex Limited
Filed Mar. 13, 1968, Ser. No. 712,717
Claims priority, application Great Britain, Mar. 15, 1967, 12,267/67
Int. Cl. F16d *3/78*
U.S. Cl. 64—13 **4 Claims**



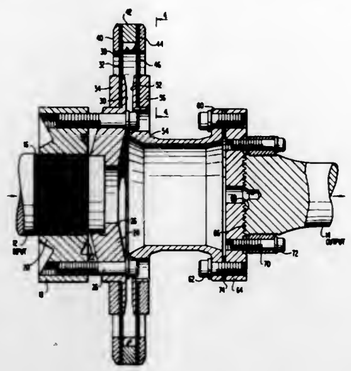
A flexible coupling for transmitting rotational drive comprising two components which are coupled together by flexible links of resilient material the links being connected respectively to the each component at points lying on a pitch circle about the axis of rotation of the components and one components being provided with a retaining part or parts co-axial with the axis of rotation and arranged within the pitch circle diameter of the connection points of the flexible links to that components, the retaining part circumferentially over-lapping a co-operating axially extending inner part carried on the other component.

3,500,659
FLEXIBLE COUPLING WITH ELASTOMER PLATE
William E. Martin, P.O. Box 187, Kewanee, Ill. 61443
Filed Jan. 10, 1968, Ser. No. 696,849
Int. Cl. F16d *3/78*
U.S. Cl. 64—13 **14 Claims**



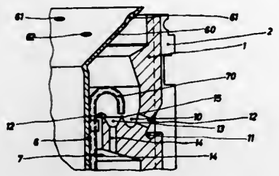
A flexible coupling for connecting a pair of aligned shafts that includes a pair of couplers fixed to rotate with the respective shafts and having radial flanges thereon; an elastomer plate disposed between the flanges; and angularly spaced axially extending lugs having one of their ends mounted on the respective flanges and the other of their ends imbedded in the elastomer plate.

3,500,660
FLEXIBLE COUPLINGS AND HUB MOUNTINGS
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Nov. 26, 1968, Ser. No. 779,125
Int. Cl. F16b *7/02, 7/18;* **F16d** *3/79*
U.S. Cl. 64—13 **12 Claims**



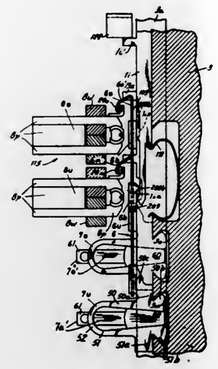
A flexible coupling or connection between substantially aligned rotating shafts of high torque transmitting capabilities wherein the coupling is of the flexible disc type and is in frictional engagement with at least one of the shafts. The coupling permits a certain degree of axial as well as angular displacement between the shafts while at the same time providing for relatively quick and simple mounting and de-mounting of the coupling.

3,500,661
METHOD AND APPARATUS FOR LUBRICATING NEEDLE CYLINDERS IN CIRCULAR-KNITTING MACHINES
Heinz Köhler and Gerhard Hoeber, Ingolstadt, Germany, assignors to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Germany, a corporation of Germany
Filed Feb. 6, 1968, Ser. No. 703,408
Claims priority, application Germany, Feb. 8, 1967, Sch 40,185
Int. Cl. D04b *9/00, 35/28;* **F16n** *1/00*
U.S. Cl. 66—8 **10 Claims**



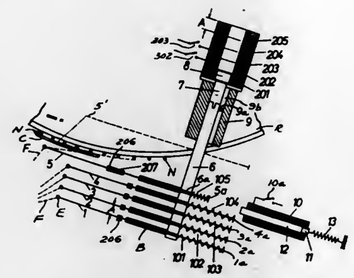
One or more tubes extend into the needle cylinder interior to supply lubricating oil to an annular groove formed in the interior cylinder wall. Such oil flows from such interior wall groove through a plurality of ports to an annular groove formed in the cylinder exterior wall adjacent to the needle stems. In a stationary cylinder the oil flows by gravity through ports inclined downwardly from the interior wall groove to the exterior wall groove. In a rotating cylinder the oil is flung through the ports by centrifugal force. The needle pushrods are lubricated by a similar port-and-groove arrangement in which the interior wall groove is supplied by additional tubes or from a second interior wall groove alongside the first. Ports in the bottom of such second interior wall groove supply oil to the lower pushrod interior wall groove.

3,500,662
PATTERN CONTROLLING SELECTOR ARRANGEMENT
Erich Ribler, Kenzingen, Germany, assignor to Franz Morat GmbH, Stuttgart-Vaihingen, Germany
Filed Feb. 15, 1967, Ser. No. 616,228
Claims priority, application Germany, Feb. 16, 1966, M 68,419
Int. Cl. D04b *15/68*
U.S. Cl. 66—50 **7 Claims**



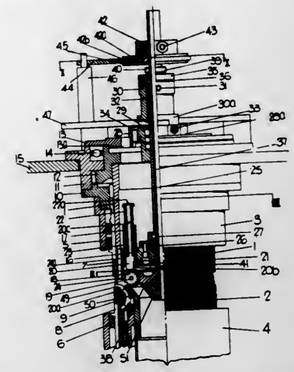
At least two electromagnetic selectors are placed at each knitting station of a circular knitting machine for respectively selecting and operating resilient control elements which are arranged in at least two circumferential rows on the needle cylinder of the circular knitting machine and control the selection and operation of needle influencing jacks. The electromagnetic selectors and the rows of control elements are spaced in axial direction of the needle cylinder so that alternating control elements are staggered whereby more circumferential space is available for each control element.

3,500,663
YARN CHANGING AND FEEDING ARRANGEMENT FOR CIRCULAR KNITTING MACHINES
Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat GmbH, Stuttgart-Vaihingen, Germany
Filed Apr. 1, 1968, Ser. No. 718,315
Int. Cl. D04b *15/54, 23/22, 27/02*
U.S. Cl. 66—139 **10 Claims**



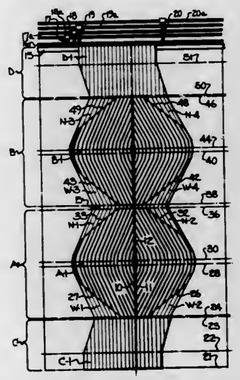
A set of yarn guides for feeding different yarns to the needles of a knitting machine at a knitting station, are moved together by electromagnetic selector means between a plurality of positions in which one selected yarn guide is operative, and can be moved by electromagnetic actuating means to an advanced position for feeding the respective yarn.

3,500,664
FABRIC DRAW-OFF MECHANISM
Roland Peberdy, Leicester, England, assignor to The Bentley Engineering Company Limited, Leicester, England
Filed Apr. 26, 1967, Ser. No. 633,736
Claims priority, application Great Britain, Apr. 30, 1966, 19,093/66
Int. Cl. D04b *27/14*
U.S. Cl. 66—150 **8 Claims**



Fabric tensioning means in a circular knitting machine having a succession of tensioning members formed by wheels arranged in a circular row above and around the throat of a needle cylinder, the wheels being of toothed form and engaging in the helical thread of a common central worm so that relative rotation between the needle cylinder and the worm causes the tensioning wheels to be rotated and by engagement with fabric close to the needles draws the fabric away from the needles. To avoid reverse turning movement of the tensioning wheels during a reverse swing in reciprocatory knitting, ratchet means is provided to eliminate relative turning movement between the needle cylinder and the worm during such reverse swing.

3,500,665
FULL-FASHIONED BRASSIERE AND BLANK
Ralph C. Braxton and Glenn R. Schoffner, Burlington, N.C., and Alex Levine, Lynbrook, N.Y.; Ida Levine, executrix of said Alex Levine, deceased; said Schoffner and Braxton assignors to Alamance Industries, Inc., Burlington, N.C., a corporation of North Carolina
Filed Feb. 16, 1968, Ser. No. 706,095
Int. Cl. D04b *7/30;* **A41b** *9/06*
U.S. Cl. 66—176 **14 Claims**

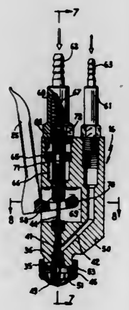


Fashioned brassiere blanks are knit on a full-fashioned knitting machine and include band portions extending

outwardly from opposite ends of pairs of fashioned breast-receiving cups or pockets. Opposite side edges of the band portions extend at an acute angle from the pockets to provide better fit and support to the brassiere. The lower portions of the cups may include extra yarns to reinforce or covered spandex yarn to provide extra support while the upper portions may include an open pattern design.

3,500,666
CLOTH CLEANING DEVICE

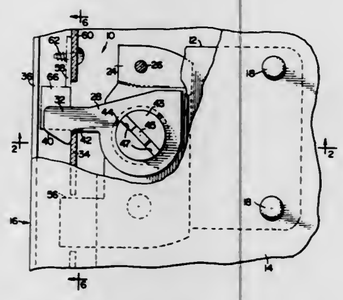
Luigi Calcaterra, Via Saccardo 45, Milan, Italy
Filed Oct. 9, 1967, Ser. No. 673,742
Int. Cl. D06f *35/00*
U.S. Cl. 68—222 2 Claims



The method for removing spots or stains of water-soluble substances from a cloth article laid out on a punctured support, by directing against the spotted or stained article a jet of pressurized air having finely particulated cold water evenly dispersed thereinto at low concentration. A device comprising a punctured support and a hand manipulated nozzle assembly supplied with pressurized air and with cold water for forming and ejecting said jet.

3,500,667
COMBINATION LOCKING AND LATCHING DEVICE

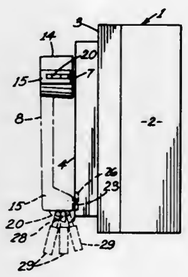
Paul W. Jespersen, Stamford, Conn., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Aug. 5, 1968, Ser. No. 750,169
Int. Cl. E05b *65/44, 65/62;* E05c *3/04*
U.S. Cl. 70—84 6 Claims



A device which functions either as a key-operated lock or as a push button-operated latch for releasably securing separable portions of an enclosure together, and having means for selectively preventing the device from functioning other than as a key-operated lock to prevent unauthorized access to the interior of the enclosure.

3,500,668
SWITCH ENCLOSURE, EXTERNAL OPERATING HANDLE, AND HANDLE LOCKING ASSEMBLY

Kaye P. Henry, Iowa City, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 23, 1968, Ser. No. 723,396
Int. Cl. E05b *57/00, 3/00*
U.S. Cl. 70—212 10 Claims



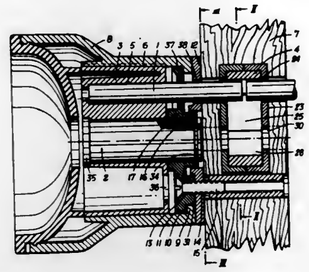
The present external handle is shown supported on the front wall of a switch enclosure cover for rotation about an axis generally normal to the front wall of the cover. Means in the cover are connected to the hub of the handle and are arranged to drive an actuating means or operator for a switch or enclosure door latch mechanism located within the enclosure. Upon rotation of the handle about its hub, its outer end swings in an arcuate path closely above and closely adjacent the front wall. The outer end has a cavity which is open toward the front wall and outwardly endwise of the handle through its outer end wall. Pivotally mounted within the cavity is a rockable detent plate which rocks outwardly of the cavity toward the front wall to an extended position and away from the front wall to a retracted position within the cavity. A notch in the front wall of the cover opens toward the handle and is positioned along the path of the outer end of the handle so as to clear the detent plate upon swinging of the handle with the detent plate in retracted position and so as to receive a latching finger on the detent plate and arrest swinging of the handle when the detent plate is moved to extended position while aligned with the notch. The detent plate has a portion extending outwardly from the outer end of the handle by which the detent plate can be rocked, against the bias of a retracting spring in the cavity, to extended position. The plate has an elongated slot which, upon rocking the plate to an extended position, is exposeed outwardly of the outer end of the handle for receiving one or more padlock hasps, any one of which, when in the slot, engages the outer end of the handle to prevent retraction of the detent plate from its extended position.

3,500,669
SHIFTING DEVICES

Wilhelm Bardfeld, Loeschenkohlgasse 8, Vienna 15, Austria
Filed July 27, 1967, Ser. No. 656,587
Int. Cl. E05b *65/06*
U.S. Cl. 70—216 2 Claims

A shifting device for the actuator of a member to be shifted, which is adapted to be blocked by means of a cylindrical lock, the core cylinder of which is mounted in a casing in such a manner that the core cylinder casing

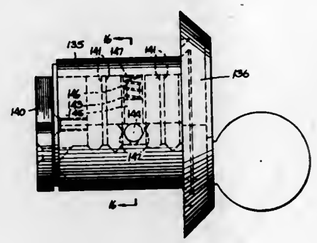
is connected to the actuator so as to be rotatable relatively to the core cylinder, which is fixed, and is then



locked in one or more positions by means of locking pins.

3,500,670
LOCK MECHANISM AND ALARM

Paul Maddison Hawkins, Brookville, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware
Original application Mar. 15, 1967, Ser. No. 623,333, now Patent No. 3,427,413, dated Feb. 11, 1969. Divided and this application Mar. 8, 1968, Ser. No. 729,852
Int. Cl. E05b *17/00, 45/08, 63/14*
U.S. Cl. 70—375 6 Claims

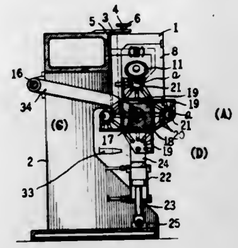


A lock mechanism employing cylinder means, a plurality of key slotted plugs supported for rotation in the cylinder means in tandem disposition and at least one pin tumbler and driver means associated with each plug and the cylinder means normally to maintain same against relative rotation but shiftable to a position to permit such rotation; and, if desired, the combination therewith of an alarm actuating switch and means normally maintaining the switch in one position and shifting same to a second position upon rotation of one of said plugs.

3,500,671
ROLLING APPARATUS FOR MANUFACTURING RINGS

Tadashi Saito, 3–40 2-chome, Nakasu; Masaya Saito, 1–20 1-chome, Minamiguchi; and Masaru Saito and Hachiro Saito, both of 3–40 2-chome, Nakasu, all of Takarazuka, Hyogo Prefecture, Japan
Filed Feb. 23, 1968, Ser. No. 707,582
Int. Cl. B21b *19/14*
U.S. Cl. 72—106 5 Claims

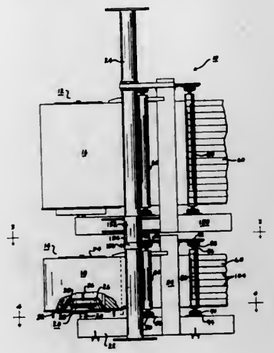
A rolling apparatus for manufacturing rings comprises a pair of inclined rolling rollers, a pair of travelling members respectively supporting the rolling rollers and a roll block supporter carrying a group of rolls on each of its side surfaces. Through the travel of the travelling members, the rolling rollers are adapted to move close to or away from each other. The rolling rollers press a material ring cooperatively with the group of rolls, and



a series of rolling operation is continuously performed through the rotation of the roll block supporter which rotates intermittingly every 90 degrees.

3,500,672
SHEET METAL PAY-OFF REEL APPARATUS

Gary T. Weatherwax, Elkhart, Ind. 46514
Filed Nov. 22, 1967, Ser. No. 684,995
Int. Cl. B21d *5/14*
U.S. Cl. 72—179 10 Claims



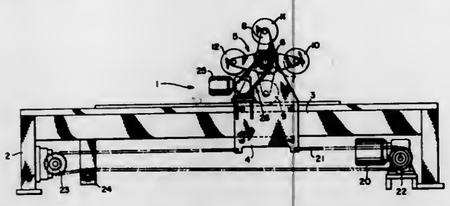
A sheet metal siding reel apparatus in which a coil of sheet metal is unreeled by a power drive consisting of a pair of rollers, one of the rollers being adjustable angularly with respect to the other roller for controlling the angular edgewise direction of the strip unreeled from the coil. A second pair of rollers, one of which has a plurality of annular ribs thereon is employed to form a series of spaced creases in the uncoiled strip; the reel is placed adjacent the end of a trailer or mobile home, and as the strip is unreeled from the coil, it is in substantially the proper position for mounting on the side wall of the vehicle.

3,500,673
TURRET HEAD ROLL FORMER

Donald J. Wheeler, 7373 Rte. 43, Kent, Ohio 44240, and James E. Cochran, Belmer Road, Box 149, Franklin, Pa. 16323
Filed Dec. 6, 1967, Ser. No. 688,529
Int. Cl. B21d *5/08*
U.S. Cl. 72—220 11 Claims

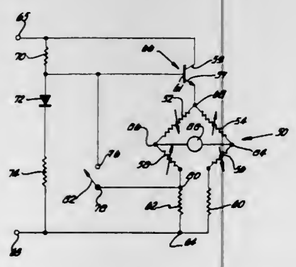
A turret head roll former including a turret head having a series of progressive forming rolls mounted thereon, such turret head being pivotally supported on a movable

carriage permitting indexing of the forming rolls between each pass of the carriage over strip or sheet ma-



terial to progressively form strip or sheet material into the desired shape.

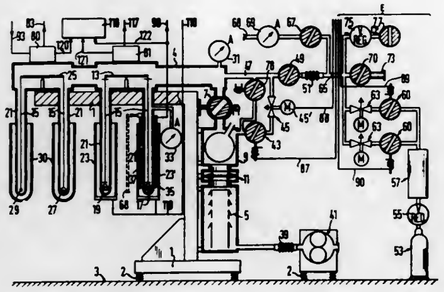
3,500,674
STRAIN GAGE TRANSDUCER CIRCUIT
Shmuel Elazar, Camarillo, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 11, 1968, Ser. No. 697,060
Int. Cl. G01c *25/00*
U.S. Cl. 73—1 **7 Claims**



A transducer circuit including additional elements for calibration of the transducer. Calibration is accomplished by a method referred to as a "series method of calibration." The circuit includes a calibration device connected in series with a strain sensitive bridge network of the transducer. The circuit is provided with a pair of calibration points which when open result in the transducer working in its normal mode with current bypassing the calibration device. When the calibration points are closed or shorted, current then flows through the device so that the voltage which appears at the output of the bridge is due to current flowing through the calibration device and is independent of any physical force being exerted on the transducer.

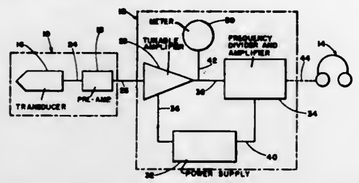
3,500,675
APPARATUS FOR AN AUTOMATIC GRAVIMETRIC RECORDING OF CHARACTERISTIC CURVES WHICH REPRESENT THE SORPTION OF GAS BY A SAMPLE
Gerd Sandstede and Erich Maria Robens, Frankfurt am Main, Germany, assignors to Sartorius-Werke, GmbH (und vormals Gottinger Prazisionswaagenfabrik, GmbH), Gottingen, Germany, a corporation of Germany
Filed June 20, 1968, Ser. No. 738,525
Claims priority, application Germany, June 20, 1967, 1,623,097
Int. Cl. G01n *5/02, 7/04*
U.S. Cl. 73—19 **22 Claims**

An evacuable sorption vessel adapted to contain a sample contains an electric sorption balance, which is adapted to measure the mass of sorbate taken up by said sample. Control means are provide to selectively maintain any one of the three variables consisting of said mass of sorbate, gas pressure in said sorption vessel, and temperature in said sorption vessel constant as a first variable and for adjusting any of the variables consisting of said gas pressure and said temperature as a second variable in succession to a plurality of different values within a selected range. Said control means comprise a supply container for holding said gas under superatmospheric pressure, a high-vacuum pump having an inlet and an outlet, at least one electrically operable outlet valve rigidly connected between said sorption vessel and said inlet of said high vacuum pump, a backing pump, a first flexible tube connecting said outlet of said



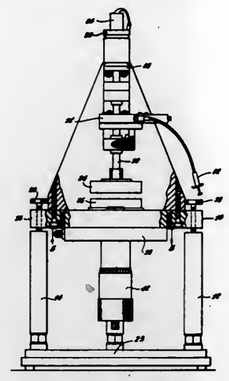
high-vacuum pump to said backing pump, a gas supply conduit connected to said container, a second flexible tube connecting said sorption vessel to said gas supply conduit, electrically operable inlet valve means connected between said container and said sorption vessel and a gas pressure-setting device adapted to control said inlet and outlet valve means. The apparatus further comprises measuring means for measuring any one of said variables as a third variable and including said sorption balance. Said apparatus also comprises means for recording said second and third variables and a vibration-damped mounting. The sorption vessel and the high-vacuum pump are rigidly carried by said mounting.

3,500,676
METHODS AND APPARATUS FOR DETECTING LEAKS
Myron N. Palmer, Gibsonia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 15, 1968, Ser. No. 713,482
Int. Cl. G01m *3/08*
U.S. Cl. 73—40.5 **13 Claims**



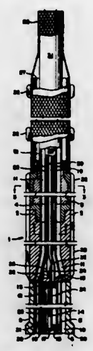
An instrument to detect both the sound of an intravalve leak which is in the sonic range, and the sound of a leak to atmosphere which is in the ultrasonic range. The instrument is primarily used with pressurized fluid systems. An external touch probe is provided for sonic sounds, another probe is provided for ultrasonic sounds. A tunable amplifier is used so that steady leakage sounds can be distinguished from other extraneous noises, and a frequency divider is utilized to convert ultrasonic vibrations to the audible range.

3,500,677
PARALLEL PLATE VISCOMETER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Harold H. Broyles, Riverside, and Howard F. Broyles, La Crescenta, Calif.
Filed Aug. 7, 1967, Ser. No. 658,957
Int. Cl. G01n *11/10*
U.S. Cl. 73—57 **10 Claims**



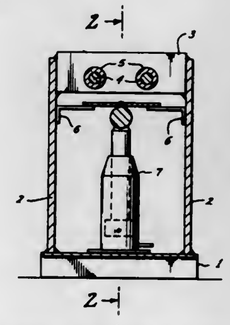
An instrument capable of measuring the true shear viscosity of liquids and viscoelastic materials. The operation of the instrument is predicated upon the parallel plate method of viscosity measurement, however, optical flats are used instead of the usual parallel plates. The sample material whose viscosity is to be measured is placed between a pair of horizontal optical flats, the upper optical flat is adjusted until it is touching the sample and is then released. The rate of fall of the upper plate as it reduces the height of the sample material to a particular value is recorded, for example, by a suitable recorder coupled to a linear displacement transducer. The absolute viscosity of the sample is then determined by computing a simple formula.

3,500,678
APPARATUS FOR DETERMINING SOIL RESISTANCE INCLUDING A DRILL
Constant C. W. Van Romondt Vis, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,034
Claims priority, application Netherlands, Aug. 17, 1966, 6611541
Int. Cl. G01n *3/36;* **E21b** *47/026*
U.S. Cl. 73—84 **6 Claims**



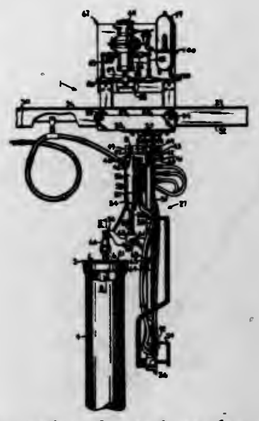
A method and apparatus for determining the resistance of the soil in the floor of a body of water. The apparatus (known as a penetrometer) includes an extensible sounding pin which can be driven into the soil and the stress in the pin measured to determine soil resistance. A fluid-turbine driven drill bit is rotatably mounted about the pin to assist the apparatus in penetrating into the soil. In operation, the stress in the pin can be measured continuously as the apparatus is buried or intermittently by retracting the pin, drilling to advance the apparatus into the soil and then extending the pin to measure soil resistance. Alignment of the device is maintained by a guide positioned on the floor of the body of water.

3,500,679
WELD TESTING DEVICE
William P. Smith, 4015 Underwood, Houston, Tex. 77025
Filed July 29, 1968, Ser. No. 748,440
Int. Cl. G01n *3/20*
U.S. Cl. 73—100 **1 Claim**



A device for testing the welding ability of a student or an applicant for employment as a welder, having means for bending a welded plate into a substantially U-shape.

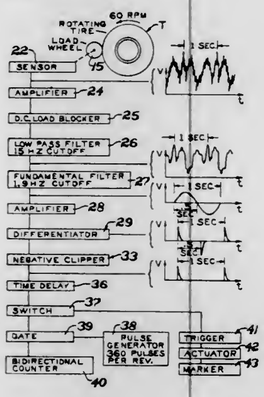
3,500,680
METHOD AND APPARATUS FOR TESTING AND HANDLING CLAY PIPE
Elmer R. Ligon and Norman D. Reed, Pittsburg, Kans., assignors to W. S. Dickey Clay Manufacturing Company, Pittsburg, Kans., a corporation of Kansas
Filed Aug. 5, 1968, Ser. No. 750,173
Int. Cl. G01n *3/26*
U.S. Cl. 73—102 **13 Claims**



Apparatus for testing pipe such as clay pipe for resistance to hoop and shear load. The apparatus includes an expandable member movable into a pipe portion and

fluid pressure to expand said member under a predetermined pressure to apply an internal force on the pipe section. The apparatus preferably includes a pipe handling mechanism and carriage for moving the tested pipe. The mechanism includes a device for effecting opening of a normally closed three-way valve to permit hydraulic fluid under pressure to pass through a normally open three-way valve and to expand said expandable member in the tester to a selected hoop load on the pipe portion and activate a sequence and check valve at the selected hoop load which closes the normally open valve and completes a connection to a pressure relief valve to maintain the expandable member in a partially expanded condition with sufficient pressure to maintain gripping engagement between the tester and the pipe portion during moving of the pipe. Also a method of testing pipe and moving same wherein the pressure application engages the pipe to effect a gripping engagement and maintain the gripping engagement during moving the pipe.

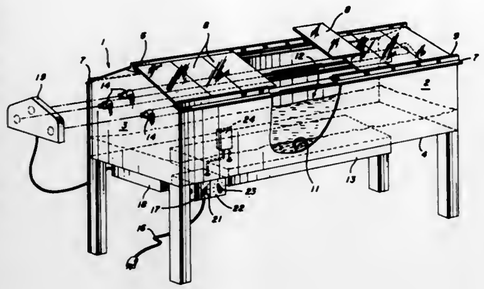
3,500,681
LOCATING MAXIMUM RADIAL FORCE VARIATION IN A TIRE
Harmon G. Shively, Tallmadge, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 12, 1968, Ser. No. 751,969
Int. Cl. B60c *19/10*
U.S. Cl. 73—146 **9 Claims**



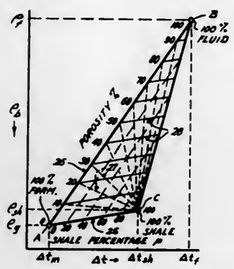
An apparatus for locating the region of the maximum radial force variation of a vehicle tire as it is rotated in contact with a load wheel that is supported for radial deflecting and provided with a load cell which produces force variation. The apparatus includes an electrical circuit which isolates from the output of the load cell the fundamental frequency and provides a signal which may either activate a counter for indicating the position of the maximum force variation with respect to the tire circumference for manually marking the tire or for activating a means for automatically marking the tire during rotation.

3,500,682
APPARATUS FOR WEATHERING COATED TEST PANELS
Stephen E. Newfield, 4309 Fairway, Los Alamos, N. Mex. 87544
Filed June 5, 1968, Ser. No. 734,751
Int. Cl. G01n *17/00*
U.S. Cl. 73—150 **7 Claims**

Panels coated with a protective, anti-corrosive material to be tested are mounted in the top portion of a cabinet which also contains a plurality of fluorescent lamps and a reservoir filled with water. The water is heated to fill the container with a water vapor and the fluorescent lamps energized to radiate ultra-violet light onto the test surfaces of the panels. By separately controlling humidity and radiation, weathering is substantially accelerated and environmental conditions of use can be approximated.



3,500,683
METHODS AND APPARATUS FOR INTERPRETING SHALY-SAND EARTH FORMATIONS
William R. Hoyle, Redding, Conn., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Continuation of application Ser. No. 510,137, Nov. 9, 1965. This application May 13, 1968, Ser. No. 733,214
Int. Cl. E21b *49/00*
U.S. Cl. 73—152 **17 Claims**

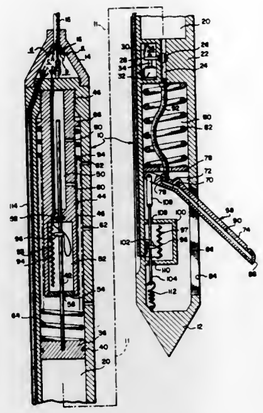


In accordance with illustrative embodiments of the invention, methods and apparatus for determining certain characteristics of earth formations are disclosed. More particularly, measurements representative of the bulk density and acoustic velocity or travel time of a formation are obtained from one or more runs in a borehole. These measurements are then combined in a desired manner to arrive at the percentage of sand or shale and porosity of the formation under investigation. This information is useful in determining the presence of hydrocarbons in the formation.

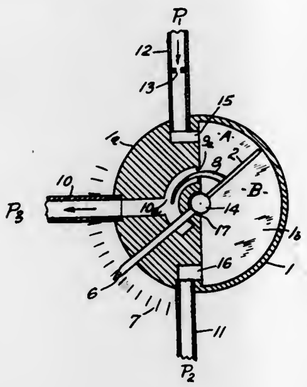
3,500,684
BOREHOLE LOGGING APPARATUS AND METHOD
Floyd O. Bohn, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,640
Int. Cl. E21b *49/00, 33/12*
U.S. Cl. 73—152 **3 Claims**

This disclosure relates to borehole logging apparatus and to a method to provide a log of relative permeability

of formations traversed by the borehole. The apparatus includes means by which a selected test fluid is injected into the formation, and sensing circuitry indicates the volume of fluid accepted by the formation during a determinate time interval. Also, the apparatus measures the diameter of the borehole at the point of the test.

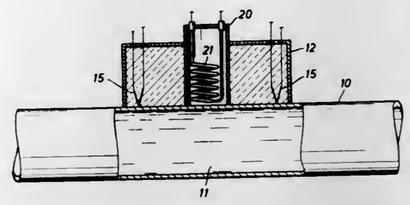


3,500,685
AIRCRAFT ANGLE OF ATTACK AND SIDESLIP INDICATORS
Edward S. Gwathmey, Charlottesville, Va., assignor to Teledyne, Inc., Hawthorne, Calif.
Filed Aug. 22, 1968, Ser. No. 754,697
Int. Cl. G01c *21/00*
U.S. Cl. 73—180 **8 Claims**



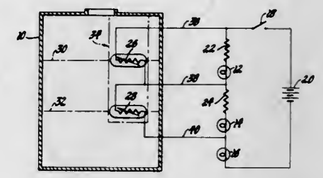
This instrument determines angle of attack or sideslip by means of air pressures taken at three selected points on the aircraft. These pressures are converted to fluid flows by applying them to capillaries, orifices, or the like and means are provided to equalize the flows until a balanced condition of a movable element such as a piston or vane is achieved. A pointer attached to the movable element will then indicate the angle of attack or sideslip, relative to a scale.

3,500,686
HEATED ELEMENT FLUID FLOW SENSOR
David Bell III, Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 25, 1968, Ser. No. 762,438
Int. Cl. G01f *1/00*
U.S. Cl. 73—204 **1 Claim**



A heated element fluid flow sensor for sensing the fluid flow in a thermal conductive conduit. It includes a pair of spaced-apart thermocouples arranged for contact with axially spaced-apart points on the outside surface of the conduit, with the heating element spaced therebetween and arranged for heating a portion of the conduit to thereby heat fluid in the conduit. Electrical sensing means are connected to the thermocouples for sensing the flow of fluid in the conduit.

3,500,687
LIQUID LEVEL DETECTOR
Robert W. Smith, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 14, 1968, Ser. No. 767,216
Int. Cl. G01f *23/10*
U.S. Cl. 73—295 **5 Claims**

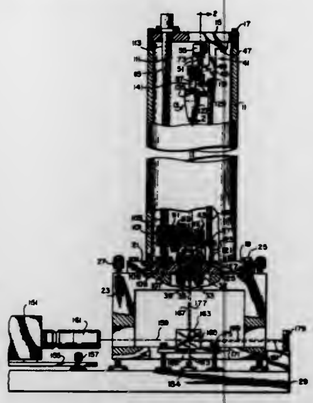


A liquid level detector comprising a plurality of probe thermistors and a plurality of indicator devices. The probe thermistors are positioned at different levels within a reservoir and are connected with the indicator devices so that as the liquid recedes out of contact with each probe thermistor the resistance of the probe thermistor decreases so as to energize one of the indicator devices and so as to deenergize another one of the indicator devices.

3,500,688
GRAVIMETER
Orlo K. Hudson, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 19, 1968, Ser. No. 706,564
Int. Cl. G01v *7/00*
U.S. Cl. 73—382 **3 Claims**

A gravimeter having a vacuum chamber in which a body, having a light reflective surface, is allowed to fall. An interferometer system associated with the body including a stationary reflective surface for producing inter-

ference fringes as the body falls and a polarization rotator for balancing the amplitude of the reflected light from the body and the stationary reflective surface. A data col-



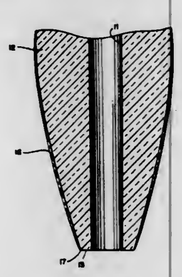
lection system for counting with respect to time, in two adjacent time spans, the interference fringes, thereby yielding a value of acceleration of the falling body.

3,500,689

PIPETTE CONSTRUCTION

John G. Band, North Miami Beach, Fla., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Filed Mar. 18, 1968, Ser. No. 713,871
Int. Cl. G01n *1/10;* **G01f** *13/00*
U.S. Cl. 73—425.4 **8 Claims**



A transparent glass tube to be used as a wiping pipette has an axial bore extending therethrough and a tapered portion at one end of the tube terminating in an exposed annular end surface with the end surface being substantially normal to the axis of the bore. A smooth coating of polyfluorohydrocarbon resin with the characteristics of low frictional coefficient and high chemical resistance completely covers the side surface of the tapered end portion. The coating terminates along an edge defined by the outer limits of the annular end surface of the pipette.

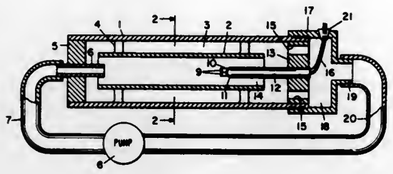
3,500,690

ANGULAR MOVEMENT SENSING DEVICE

Wilfred C. Schuemann, Rawlings, Md., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,238
Int. Cl. G01p *15/00*
U.S. Cl. 73—516 **4 Claims**

The present invention relates to an angular movement sensing device of the type wherein angular movement is indicated by deflection of a fluid jet relative to a sensing means and wherein the fluid jet is enclosed within a sleeve, and comprises venting the input end of the sleeve about the nozzle whereby a counterflow of fluid within



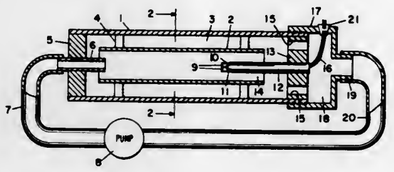
the sleeve and in the direction opposite to the direction of the jet is avoided and introducing the same fluid to the venting means as is provided to the jet whereby gravity-induced deflection of the jet is avoided.

3,500,691

ANGULAR MOVEMENT SENSING DEVICE

Alvin G. Moore, Cumberland, Md., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,239
Int. Cl. G01p *15/00*
U.S. Cl. 73—516 **11 Claims**



The present invention relates to an angular movement sensing device of the type wherein angular movement is indicated by deflection of a fluid jet relative to a sensing means and is characterized primarily in that the jet has laminar flow, is enclosed within a sensor sleeve that is dimensioned relative to the jet to dampen the same, may also be enclosed within a housing to provide a closed fluid system, and has a sensing means comprising a pair of spaced thermistors adapted to be acted upon by the fluid and to respond to deviations of the jet imposed by angular movement of the device.

3,500,692

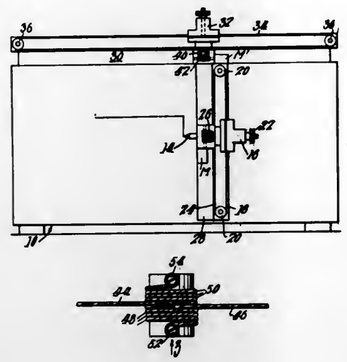
CABLE ACTUATED DEVICE CONVERTING ROTARY TO LINEAR MOTION

Arlon G. Sangster, Sterling, and Howard W. Parker, Westboro, Mass. (both % Decitek, Inc., 15 Sagamore Road, Worcester, Mass. 01605)

Filed July 25, 1968, Ser. No. 747,597
Int. Cl. F16h *25/18*
U.S. Cl. 74—89.22 **1 Claim**

A device converting rotary to linear motion including a drum, a flexible cable, the two ends of the cable being fixed to the periphery of the drum at points spaced in an axial direction, a plurality of cable winds about the drum from both ends inwardly toward the center of the drum forming a pair of cable ends extending tangen-

tially from the center of the drum and in close condition relative to each other, said ends extending over separate pulleys and then joining in a cable run not directly as-



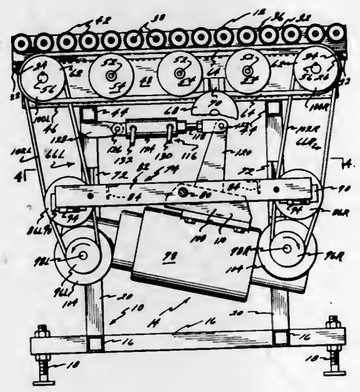
sociated with the drum, and means on the run for securing an object thereto for linear motion in two directions, depending on the direction of rotation of the drum.

3,500,693

REVERSIBLE ROLLER TOP CONVEYOR DRIVE

James C. Wright, Aurora, Colo., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 11, 1968, Ser. No. 766,876
Int. Cl. F16h *9/00, 11/00*
U.S. Cl. 74—220 **10 Claims**



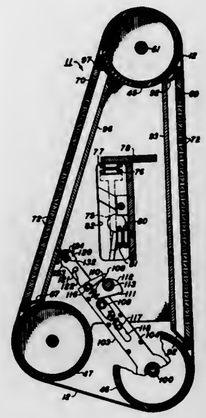
This invention relates to a reversible roller top conveyor drive wherein a motor having spaced parallel output shafts on opposite ends thereof turning in different directions is connected in driving relation to the main drive pulleys of the roller top by a pair of belt-and-pulley type power transfer mechanisms. The motor is mounted for rockable movement about a transverse axis located between the output shafts in parallel relation thereto so that, when it is tilted to and fro, it will alternately connect one power transfer mechanism while allowing the other to slip and thus disengage.

3,500,694

BELT TRACKING SYSTEM

Hugh L. Jones and David R. Stokes, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Continuation of application Ser. No. 731,755, May 24, 1968. This application Mar. 27, 1969, Ser. No. 826,740
Int. Cl. F16h *7/18*
U.S. Cl. 74—241 **6 Claims**



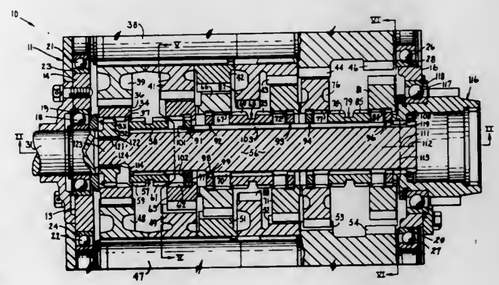
A belt tracking arrangement for use with a belt supporting roller wherein the shaft for the roller is mounted for short pivotal movement about an axis normal to its axis and which lies in a plane that bisects the angle of the belt runs on either side of the roller.

3,500,695

TWIN COUNTERSHAFT TRANSMISSION IN WHICH THE MAIN SHAFT HAS ONE END FLOATING AND THE OTHER END PIVOTED

Frederick E. Keiser, Vicksburg, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

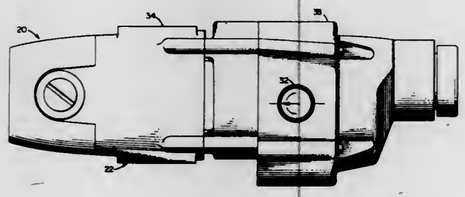
Filed Aug. 23, 1968, Ser. No. 754,765
Int. Cl. F16h *3/08*
U.S. Cl. 74—331 **13 Claims**



A change gear system having a plurality of spaced countershafts having parallel axes and means supporting the countershafts for rotation. Countershaft gears are provided on the countershafts and are concentric and rotatable therewith. A rotatable main shaft is provided which is arranged substantially parallel with the countershafts

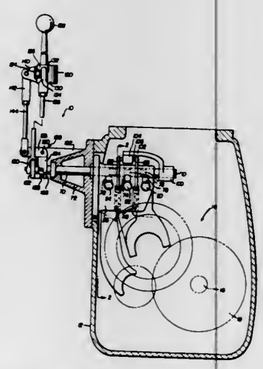
and is preferably located between a pair of the countershafts. Means are provided for pivotally supporting one end of the main shaft in addition to means for guiding the other end thereof in a free floating relation relative to the one end for movement in at least a direction transverse of a plane through the axes of two of the countershafts. Clutching means are provided for effecting a driving connection between the countershafts and the main shaft.

3,500,696
TWO-SPEED POWER TOOL
Warren A. Berube, Camillus, N.Y., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 25, 1968, Ser. No. 747,716
Int. Cl. F16h *3/08, 3/22*
U.S. Cl. 74—363 **11 Claims**



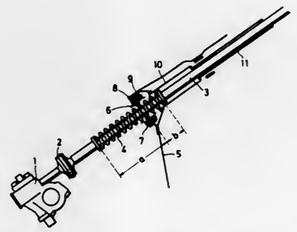
A power tool having a gear selector shiftable by manipulation of an exteriorly accessible operator into engagement with one of two gears to connect a rotatable tool receiving component to the tool motor through one of two drive trains providing different speed ratios between the motor and the tool receiving component. An overcenter spring arrangement keeps the gear selector in firm engagement with the gear selected for engagement by manipulation of the operator.

3,500,697
SHIFTING DEVICE FOR TRANSMISSION
Lewis G. Schowalter, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 29, 1968, Ser. No. 756,153
Int. Cl. G05g *5/10, 9/00*
U.S. Cl. 74—477 **16 Claims**



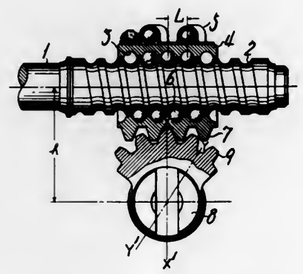
A gear shift mechanism including a rotatable and axially movable shaft extending transversely of a plurality of rails supporting shifter forks and in which axial movement of the shaft determines the fork to be shifted while rotational movement causes the axial shifting of the fork. Lock means are interposed between the shaft and the respective forks which lock all but one of the forks in the neutral position at any given time. A specific interconnection is provided between adjacent pairs of forks which cooperate with rotational movement of the shaft to cause the shifting of the associated fork from the neutral to either of the engaged positions.

3,500,698
COLLAPSIBLE STEERING COLUMN
Philipp Richter, 16 Behringstrasse, 318, Wolfsburg, Germany
Filed Mar. 25, 1968, Ser. No. 715,609
Claims priority, application Germany, Apr. 4, 1967, 1,655,598
Int. Cl. B62d *1/18*
U.S. Cl. 74—493 **2 Claims**



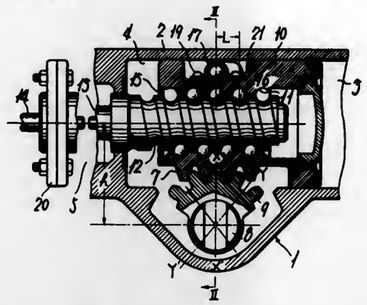
A collapsible safety steering column for motor vehicles having an energy-absorbing element inserted directly into the steering column as one of a plurality of sections thereof.

3,500,699
VARIABLE RATIO STEERING GEAR
Akinobu Matsuda, Osaka, Japan, assignor to Koyo Seiko Company, Limited, Osaka, Japan
Filed Mar. 12, 1968, Ser. No. 712,497
Claims priority, application Japan, Mar. 28, 1967, 42/19,719
Int. Cl. B62d *1/20*; F16h *1/04*
U.S. Cl. 74—498 **3 Claims**



This invention relates to improvements in a steering gear that transmits steering operation from a steering column to steering wheels in order to secure stability of driving required in accordance with an increase in the speed of automobiles, said improvements being made in a variable ratio steering gear which brings about stability in the operation of a steering handwheel during high speed and a smooth feel of the steering handwheel through a reduction in the driver's efforts required for turning the handwheel heavily during slow driving as for example in garaging.

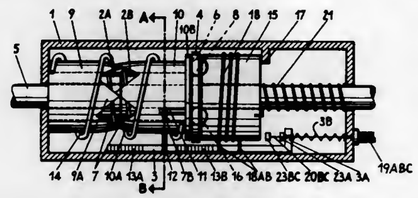
3,500,700
VARIABLE RATIO POWER STEERING GEAR
Akinobu Matsuda, Osaka, Japan, assignor to Koyo Seiko Company, Limited, Osaka, Japan
Filed May 28, 1968, Ser. No. 732,770
Claims priority, application Japan, June 3, 1967, 42/35,634
Int. Cl. B62d *1/20*
U.S. Cl. 74—498 **3 Claims**



An improved power steering gear which is adapted to transmit steering force from a steering column to front wheels in order to decrease the amount of steering wheel rotation or save time in such a case as when garaging an automobile during low speed running and to keep steering wheel operation stable during high speed running, too.

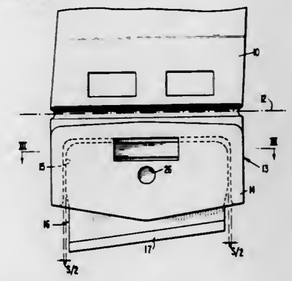
The improvement in a power steering gear includes a special profile sector so as to make variable the gear ratio between the sector and the rack in proportion to the rotation of steering wheels in the left or right direction from the neutral position.

3,500,701
DEVICE FOR SETTING THE ACCELERATOR PEDAL OF A MOTOR VEHICLE
Heinrich Gussenbauer, 2 Schleifmuhlgasse, 1040 Vienna 4, Austria, and Kurt Gussenbauer, Terramaregasse 3, Vienna 23, Austria
Filed June 13, 1968, Ser. No. 736,666
Int. Cl. G05g *1/14*; B65h *59/10*; F16d *51/00*
U.S. Cl. 74—513 **13 Claims**



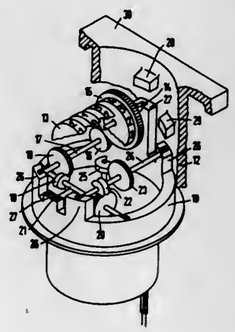
A device capable of maintaining an accelerator pedal of a vehicle releasably at a selected position. The device includes a rotary shaft the angular position of which corresponds to that of the accelerator pedal. A stationary drum surrounds the rotary shaft and supports it for rotary movement while a rotary drum is fixed to the shaft for rotation therewith. A spring is coiled about both drums and normally grips them at their exterior surfaces so as to maintain the rotary drum and shaft at a given position with respect to the stationary drum. A loose sleeve surrounds the rotary drum and has a diameter slightly greater than that of the spring. This spring has a free end connected to the loose sleeve for rotary movement therewith, and the loose sleeve has an operating projection extending therefrom. A movable means has a normal unlocking position of rest where it engages the operating projection to maintain the loose sleeve at an angular position where it lifts the spring from the rotary drum. A moving means coacts with this movable means to shift it from its normal unlocking position of rest to an operating position releasing the operating projection so that the spring will then grip the rotary drum and maintain it together with the shaft at a selected position.

3,500,702
FOOT PEDAL
Karl Röder, Stuttgart-Monchfeld, and Waltrud Nautsch, Wulferdingsen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 28, 1968, Ser. No. 741,060
Claims priority, application Germany, July 1, 1967, 1,630,310
Int. Cl. G05g *1/14*
U.S. Cl. 74—560 **27 Claims**



A drive pedal, especially for motor vehicles, in which two connecting parts are provided for a detachable connection, whereby one connecting part is connected with the footplate so as to pivot about an axis and includes a slotted socket for a plate-like shaped part of the second connecting part which is rigidly secured at the floor of the vehicle.

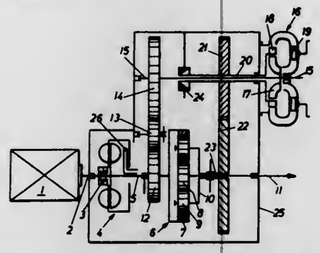
3,500,703
TRANSMISSION FRAME FOR MECHANICAL DEVICES
Günther Schertel, Lauf, Wilhelm Bilz, Schwaig, and Horst Flerek and Bernhard Hentschel, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed May 28, 1968, Ser. No. 732,607
Claims priority, application Germany, June 3, 1967, S 110.165
Int. Cl. F16h *57/02*; G06
U.S. Cl. 74—606 **11 Claims**



A frame for holding the transmissions of precision mechanical instruments has a plurality of individual annular parts mutually superimposed and coaxial with respect to each other. At least two of the annular parts are mutually adjacent and have respective end faces facing each other.

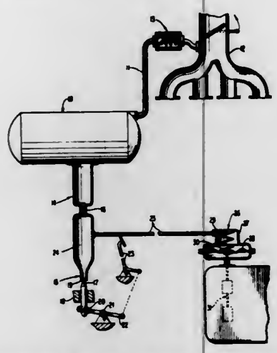
Recesses adapted to bear a shaft of the transmission are provided in one of the end faces. The other of the end faces is adjacent the recesses for closing the same.

3,500,704
SUPERIMPOSED TRANSMISSION
Helmut Müller and Wilhelm Gsching, Heidenheim, Germany, assignors to Voith Getriebe KG, Heidenheim (Brenz), Germany
Filed Feb. 16, 1968, Ser. No. 706,022
Claims priority, application Germany, Feb. 25, 1967, 1,625,177
Int. Cl. F16h *47/08*
U.S. Cl. 74—688 **5 Claims**



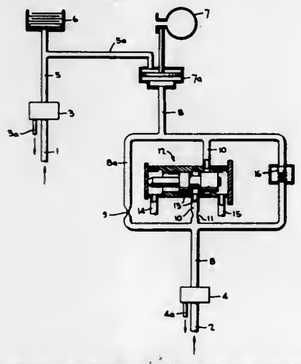
A compound transmission, especially for use in connection with the drive of feed pumps for boilers, for controlling the speed of such pumps, which includes a direct power path and an indirect power path from the driving means for the compound transmission to the output shaft thereof, said indirect power path being variable as to speed by a variable converter, preferably variable by adjustment of the guide wheel blades thereof, said direct and indirect power paths uniting in a planetary gear transmission forming part of said compound transmission.

3,500,705
INSTALLATION FOR THE CONTROL OF AUTOMATICALLY SHIFTING MOTOR VEHICLE TRANSMISSIONS
Hans-Joachim M. Forster, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 29, 1968, Ser. No. 709,453
Claims priority, application Germany, Mar. 3, 1967, D 52,429
Int. Cl. B60k *21/00*
U.S. Cl. 74—863 **15 Claims**



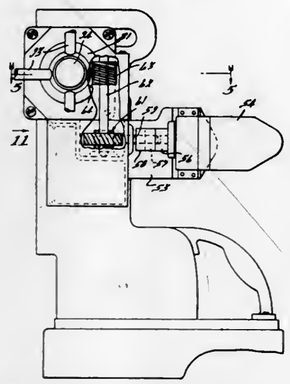
An installation for the control of automatically shifted motor vehicle transmissions in which the shifting pulse is controlled, inter alia, in dependence on the torque of the driving engine and in which a vacuum source is available with an essentially constant pressure whereby a torque transmitter device of the engine acts on an adjustable first throttle in a line leading from the atmosphere to the vacuum source and a second throttle is connected downstream of the first throttle so that the space between the first and second throttle reflects by is pressure condition the torque of the engine; this space is then connected by way of a line with the control member of the transmission shifting installation which triggers the pulses dependent on the torque.

3,500,706
HYDRAULIC CONTROL DEVICE FOR AN AUTOMATIC MOTOR VEHICLE CHANGE-SPEED GEAR
Gerd Oberpichler, 52 Oldenburgstrasse, 33 Braunschweig, Germany
Filed Feb. 8, 1968, Ser. No. 704,107
Claims priority, application Germany, Feb. 17, 1967, 1,655,587
Int. Cl. B60k *19/00*
U.S. Cl. 74—868 **2 Claims**



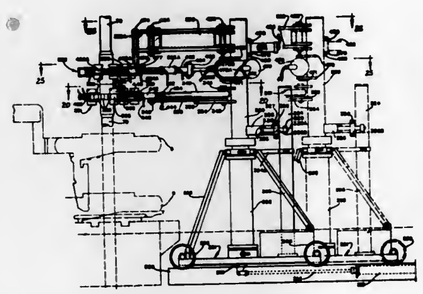
A hydraulic control device for a motor vehicle change-speed gear having a piston valve in a fluid pressure system which is connected in the system to be responsive to effective speed change.

3,500,707
MANUAL AND MOTOR OPERATED PLANETARY FEED FOR DRILL
Wesley S. Warren, Bloomfield Hills, Mich., assignor to General Automation Manufacturing, Incorporated, a corporation of Michigan
Filed June 7, 1967, Ser. No. 644,260
Int. Cl. B23b *39/10*
U.S. Cl. 77—33.4 **9 Claims**



The invention pertains to a portable drill device having a magnetic base which secures itself to a steel plate to be drilled. The driven drill is moved by rack and pinion toward and into the workpiece either manually or by a motor. In either arrangement, the drive for advancing the drill is through a planetary gear system which provides a mechanical advantage to the applied force.

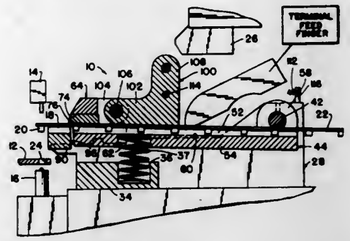
3,500,708
AUTOMATED PIPE TONGS
John Hart Wilson, % Wilson Manufacturing Company, P.O. Box 1031, Wichita Falls, Tex. 76307
Continuation-in-part of application Ser. No. 434,745, Feb. 19, 1965. This application May 1, 1967, Ser. No. 634,976
Int. Cl. B25b *13/50*
U.S. Cl. 81—57.34 **10 Claims**



Automated pipe tongs for making up or breaking out drill stem or pipe, such as used in conjunction with a drilling rig, which tongs are moved into and away from operating position on a wheeled carrier. The various operations of tongs are actuated by fluid cylinders, which fluid cylinders are programmed by a rotary cam programming control mechanism, to cause sequential action of certain cylinders, both for the opening and for closing the tongs and for moving the handle of one of the tongs arcuately to make up or break out drill stem or pipe. Two or more cams may be programmed to operate simultaneously, with the same operations being repeated each time the programming mechanism makes one complete cycle. The present programming device is so constructed as to stop when one cycle is completed. Provisions are made for stopping the programming mechanism at any point within the cycle and for manually operating valves to perform any phase of the operation. Further valves are provided to selectively render any portion of the operation inoperative. Further provisions are made to enable the entire programmed cam shaft to be removed and another programmed cam shaft installed to perform different operations.

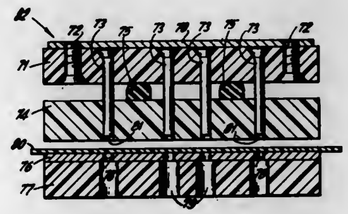
3,500,709
CUTOFF DEVICE
Dirk Landman, Mechanicsburg, Pa., assignor to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennnsylvania
Filed Oct. 31, 1967, Ser. No. 679,389
Int. Cl. B26d *5/20, 5/16*
U.S. Cl. 83—278 **8 Claims**

A cut-off device is provided for severing a terminal from a chain of terminals. The severed terminal is subsequently staked onto a terminal board. The cut-off device includes a fixed cutting blade structure and a movable cutting blade structure which coact to sever the terminal. An actuator is pivotally mounted on the movable cutting blade structure. The actuator has a cam follower. A cam having a pair of cam surfaces is caused to move through a forward stroke and contact the cam follower to drive the actuator and movable cutting blade structure to sever a terminal. The cam passes by the cam follower on the



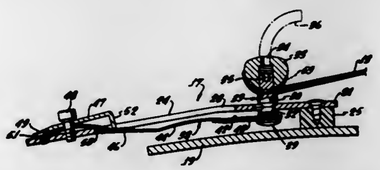
forward stroke. Upon the return stroke, the cam again contacts the cam follower. However, the actuator is free to pivot in the reverse direction and does not cause movement of the movable cutting blade structure on the return stroke of the cam.

3,500,710
APPARATUS FOR PUNCHING OPENINGS IN SHEET MATERIAL
Philip Taber, Nonquitt, South Dartmouth, Mass. 02748
Continuation-in-part of application Ser. No. 425,912, Jan. 15, 1965. This application June 16, 1967, Ser. No. 705,865
Int. Cl. B26f *1/14*
U.S. Cl. 83—588 **5 Claims**



The present invention includes a punching assembly having punch pins removably held in an upper member, an intermediary member for guiding the pins, and film support means for holding film and for cooperatively and matingly received the pins and punched material.

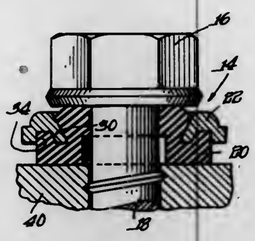
3,500,711
VIBRATO DEVICE AND STRINGED INSTRUMENT INCORPORATING THE SAME
Clarence L. Fender, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 9, 1966, Ser. No. 600,615
Int. Cl. G10d *3/12*
U.S. Cl. 84—313 **12 Claims**



A vibrato device mounted entirely above the face of the guitar includes a tail plate which also acts as the mounting means for the vibrato. A string-engaging ele-

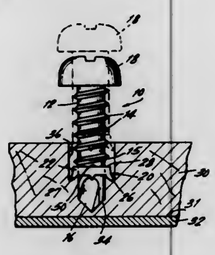
ment is pivotally mounted on the tail plate by a knife-edge bearing. A leaf spring is used to counteract the pull of the strings on the string-engaging element, and has its forward end secured to the string-engaging element, while its rearward end is engaged by an adjustable stop means capable of varying the neutral position of the string-engaging element.

3,500,712
SEALING WASHER UNIT
David Prugh Wagner, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed July 11, 1968, Ser. No. 743,998
Int. Cl. F16b *35/00, 43/00*
U.S. Cl. 85—1 **14 Claims**



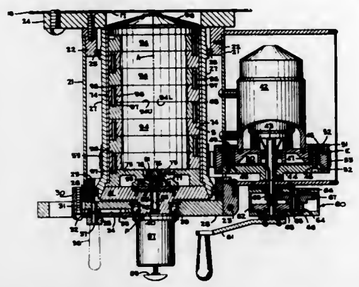
A washer unit comprising a sealing washer of rubber-like material and a preassembled relatively rigid washer member. The sealing washer presents a work clamping surface area on one side and a washer engaging a surface area on the opposite side. The rigid washer superimposes the sealing washer and has an annular flange portion embedded in recess means in the sealing washer and also a shoulder overlying an outer periphery of the sealing washer for restraining the tendency of said periphery to shift radially outwardly when the sealing washer is clamped against a work surface.

3,500,713
DRILL SCREW AND REAMING COLLAR THEREFOR
Walter Bell, Monroe, N.Y., assignor to Star Expansion Industries Corporation, Mountainville, N.Y., a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 713,245
Int. Cl. F16b *25/00, 35/00*
U.S. Cl. 85—41 **7 Claims**



The invention is directed to a self-drilling and self-tapping screw for drilling and fastening a first work member to a harder second work member. Material removing means provided on the screw extend radially outwardly to form a clearance hole for the threads in the first work member, and when said material removing means contact the harder second work member the threaded portion of the screw threadingly, lockingly, engages the said harder work member.

3,500,714
APPARATUS FOR LAUNCHING PROJECTILES
James F. Cullinane, Saratoga, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,595
Int. Cl. F41f *1/00*; F41b *3/04*
U.S. Cl. 89—1 **28 Claims**



A launcher propels projectiles into the air for dispersion. The launcher has a vertical tube which receives a plurality of disc-shaped projectiles comprising anti-personnel munitions. Each projectile has adjacent the edge a vertical pin which is received in a radial edge slot of an adjacent projectile. The tube is spun about its longitudinal axis to spin the projectile discs, and a propulsion unit secured in the base of the tube propels the spinning, releasably engaged projectiles out of the tube. Each projectile, when released from the confines of the tube, swings about the pin by which it is connected to an adjacent projectile, so that all discs separate and fly outwardly from the longitudinal axis of the launcher tube for explosion. Launchers mounted in tanks and planes are disclosed. An arcuate backing plate is disclosed which is mounted on the outer end of the tube to aim the projectile. Projectiles mounted on an axle instead of in a tube are also disclosed. Alternative means disclosed for spinning the discs includes rifling and a spinner motor connected to the discs.

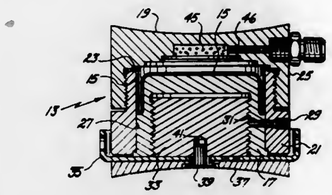
3,500,715
FIRING EQUIPMENT
Boris Batou, Geneva, Switzerland, assignor to Mecar S.A., Brussels, Belgium, a firm of Belgium
Filed Sept. 30, 1968, Ser. No. 763,838
Claims priority, application Switzerland, Oct. 3, 1967, 13,863/67
Int. Cl. F41f *1/06*
U.S. Cl. 89—1 **2 Claims**



Noiseless, flameless and smokeless firing equipment comprises a motar having a breech at the rear of a barrel and a launching rod fixed in the breech. A projectile, which

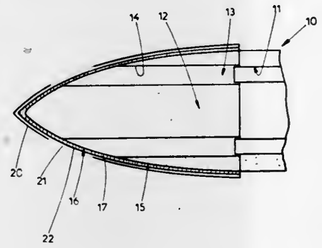
slides in and is guided by the barrel, has a front body and a tubular tail terminating in an annular restriction. Fins form a tail assembly of the calibre of the barrel. In the front of the tail, a piston is headed by a cap and an explosive charge. An annular flexible ring around the piston keeps the tail sealably spaced from the launching rod throughout its passage over the rod. By making the barrel twice the length of the rod, the projectile is kept guided even after propulsion ends. Deflections from correct trajectory of the projectile, due to misalignment of the launching rod, are thus obviated.

3,500,716
BOMB EJECTOR
Robert W. Schnepfe, Timonium, and Edward W. Rollman, Cockeysville, Md., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 15, 1968, Ser. No. 713,407
Int. Cl. B64d *1/04*; F41f *5/02*
U.S. Cl. 89—1.5 **1 Claim**



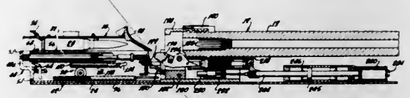
A bomb ejector for use with a clip-type bomb rack where the stores are held in vertical columnar relationship. An ejector cartridge is positioned between the stores such that, upon firing, a downward velocity is imparted to the lower store which is simultaneously released from the support means angularly positioned on the vertical structural members. The flash and combustion products are contained within the expanded cup seal of the ejector after firing and the support means and ejector drop away from the release path allowing the upper store to be released and ejected.

3,500,717
ROCKET-BOMB MAGAZINE
Pierre J. Sautier, Paris, France, assignor to Engins Matra, Paris, France, a French company
Filed July 22, 1968, Ser. No. 746,387
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.817 **4 Claims**



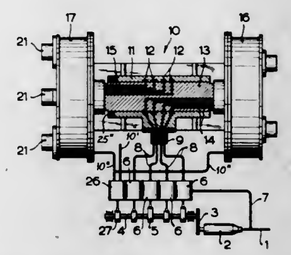
A rocket magazine has a body with a plurality of parallel guide channels therein adapted for respectively receiving a rocket bomb, the front of the body being of ogival shape and having a frangible cover applied continuously thereon with an ogival cap on and covering the surface of the cover. The cap is provided with apertures coinciding in shape with the theoretical section formed by the intersection of the prolongation of the channels with the cap to restrict the area of the opening formed in the cover upon the launching of a rocket bomb to the area of the associated aperture in the cap.

3,500,718
RECOIL OPERATED AUTOMATIC GUN
Eugene M. Stoner, Rte. 1, Box 70, Port Clinton, Ohio 43452
Filed Aug. 23, 1967, Ser. No. 662,614
Int. Cl. F41d *7/00*
U.S. Cl. 89—138 **41 Claims**



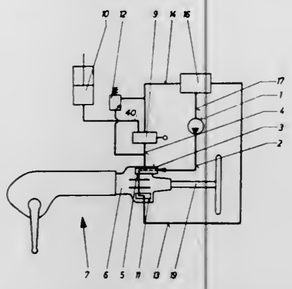
The firing cycle of a reciprocating gun barrel is arranged to overlap its ammunition ramming cycle. As the barrel is being driven forwardly by springs loaded by recoil forces from the previous firing, a round of ammunition is propelled into thet barrel by a spring-driven rammer operated by movement of the barrel; locked in the barrel by a rolling, pivoting breech block; and fired by a pivoting hammer. The recoil forces from the firing first overcome the forward momentum of the barrel and then drive the barrel rearwardly, during which time the spent cartridge is ejected and the next round is propelled by the rammer toward the barrel. A hydraulic buffer assembly including a variable area orifice limits movement of the barrel. An ammunition feed mechanism automatically feeds the rammer at the necessary speed as the absence of a round in the rammer is sensed.

3,500,719
SYSTEMS FOR CONTROLLING SELF-ADVANCING MINE ROOF SUPPORT UNITS
Hans Rieschel, Essen-Kray, Germany, assignor to Bergwerksverband GmbH, Essen, Germany, a company of Germany
Filed Mar. 18, 1968, Ser. No. 713,777
Claims priority, application Germany, Mar. 30, 1967, B 91,830
Int. Cl. F15b *21/02*; F02b *73/00*; E21d *11/00*
U.S. Cl. 91—36 **7 Claims**



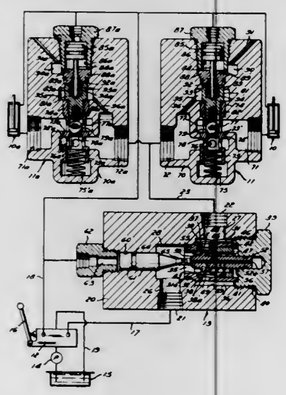
The specification describes a control system for a series of mine roof support units of the self-advancing type. The system comprises a distributor valve with a number of output ducts which are arranged to be connected sequentially with the self-advancing mine roof support unit by means of at least one disc arranged to rotate inside a drum which can be pressurized. Multiple ducts connected with the self-advancing units are in turn connected with connecting pieces mounted on the drum and rotation of the disc in steps is arranged to bring about connection with the connecting pieces in sequence.

3,500,720
FLUID PRESSURE DISTRIBUTION SYSTEM
Heinrich Wagner and Erich Jablonsky, Schwabisch Gmund, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany
Filed May 3, 1967, Ser. No. 635,887
Claims priority, application Germany, May 11, 1966, Z 12,208
Int. Cl. F15b *13/06, 15/18*
U.S. Cl. 91—412 **5 Claims**



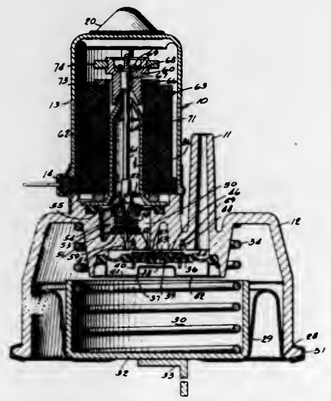
The invention comprises a pair of hydraulic circuits, one of which encompasses pressure fluid flow to and from a booster steering mechanism, and another of which encompasses pressure fluid flow to and from an accessory cylinder. A pump and reservoir form a common branch of the two systems with pressure inlet being only from the pump to the booster steering mechanism housing in which is incorporated a flow divider valve operable to divert flow to the accessory cylinder when the pump is speeded up by engine acceleration. A manual control valve is utilized for selectively shunting flow to the accessory cylinder from the booster mechanism housing or from the accessory cylinder to the reservoir.

3,500,721
HYDRAULIC CONTROL FOR TWO HYDRAULIC MOTORS
John D. Allen, South Euclid, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 23, 1968, Ser. No. 746,809
Int. Cl. F15b *13/08, 15/26;* **F02b** *73/00*
U.S. Cl. 91—412 **17 Claims**



Two hydraulic cylinders have individual lock valves, each directly attached to the respective cylinder and each controlling the return flow from the head end of its cylinder, and a single counterbalance valve connected to both lock valves to regulate both return flows in accordance with the pressure at the rod ends of the cylinders. Each lock valve is pressure-balanced to the fluid pressure at the head end of its cylinder. Each lock valve is also pressure-balanced to the fluid pressure at its connection to the other lock valve so as to prevent undesired interaction between the two lock valves in case one opens ahead of the other when the respective pistons are to be lowered. Both lock valves open ahead of the counterbalance valve when the respective pistons are to be lowered.

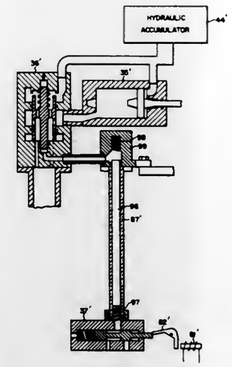
3,500,722
ELECTRO-MAGNETIC TRANSDUCER
Rudolph L. Franz, 312 S. Harvard, Arlington Heights, Ill. 60005, and Frank E. Obermaier, 849 N. Merrill Ave., Park Ridge, Ill. 60068
Continuation of application Ser. No. 558,694, June 20, 1966. This application Dec. 16, 1968, Ser. No. 785,449
Int Cl. F15b *11/08, 13/04, 13/044*
U.S. Cl. 91—446 **2 Claims**



A transducer for converting electrical signals to pneumatic signals which includes a motor diaphragm positioned within a housing and having valve means controllably actuated in response to electrical signals and controlling the fluid pressure to said motor diaphragm. A control diaphragm is positioned within the transducer to allow the motor diaphragm to be controlled in response to the electrical signals and to seal the motor diaphragm chamber when variations in pressure occur thereby preventing such variations in pressure from effecting a movement of the motor diaphragm. Means are connected between the control valve of the transducer and the electrical solenoid to provide adjustment for adjusting the efficiency of the transducer.

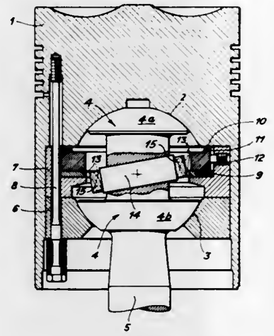
3,500,723
HYDRAULIC SYSTEMS WITH INCREASED SPEED OF RESPONSE
Albert P. Strom, Forest Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Feb. 16, 1965, Ser. No. 432,983, now Patent No. 3,345,487, dated Oct. 3, 1967. Divided and this application July 7, 1967, Ser. No. 651,851
Int. Cl. F15b *17/02, 7/00;* **F16j** *9/00*
U.S. Cl. 91—460 **4 Claims**

The speed of response of a hydraulic system is increased by disposing a loosely fitting member, which may be either solid or hollow, inside a hydraulic line which, for example, interconnects the pilot valve with a control valve spaced therefrom. Another embodiment of the invention utilizes a solid rod with hydraulic operating cylinders at each end of the rod of solid material. As a result,



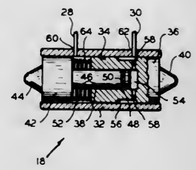
the operating response is increased with respect to that which would exist using merely a hydraulic line filled with a hydraulic fluid.

3,500,724
INDEXING PISTON FOR AN INTERNAL COMBUSTION ENGINE
Anton Dolenc, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Oct. 25, 1968, Ser. No. 770,650
Claims priority, application Switzerland, Oct. 26, 1967, 15,039/67
Int. Cl. F01b *3/00;* **F16j** *1/24*
U.S. Cl. 92—31 **11 Claims**



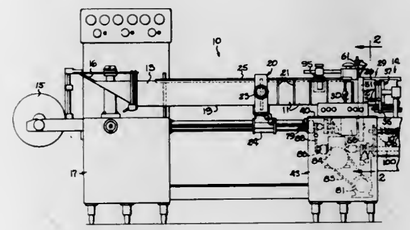
The indexing mechanism for an indexing piston assembly comprises an indexing ring disposed about the spherical bearing of the piston at the small end of the connecting rod, the indexing ring being caused to reciprocate in a plane perpendicular to the longitudinal axis of the piston by the pivoting motion of the connecting rod relative to the piston. Inertial mass means associated with the indexing ring (for example, a separate metal ring positioned above the indexing ring) cause the indexing ring to frictionally engage the piston during the lower half of the piston's to-and-fro longitudinal travel, the indexing ring and piston being essentially frictionally disengaged during the upper half of the piston travel. The reciprocating motion of the indexing ring is thereby transmitted to the piston during one half of said motion whereby the piston is caused to rotate in one direction about the spherical bearing.

3,500,725
REDUNDANT BRAKE ACTUATOR
Louis A. Haddock, Jr., Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Delaware
Filed Apr. 30, 1968, Ser. No. 725,404
Int. Cl. F01b *7/20;* **F15b** *15/08;* **B60t** *11/10*
U.S. Cl. 92—75 **4 Claims**



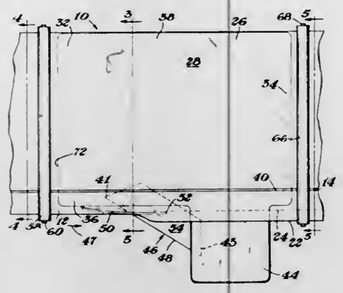
A dual brake system having a brake actuator at each brake and two separate conduit systems connecting the actuators to a dual master cylinder. Each actuator includes two separate chambers which are connected to different ones of the conduit systems.

3,500,726
MACHINE FOR CONVERTING STRIP MATERIAL INTO BAGS
Robert F. Lense, Rockford, Ill., assignor to Riegel Paper Corporation, Rockford, Ill., a corporation of Delaware
Filed Feb. 20, 1968, Ser. No. 706,882
Int. Cl. B31b *1/16*
U.S. Cl. 93—8 **9 Claims**



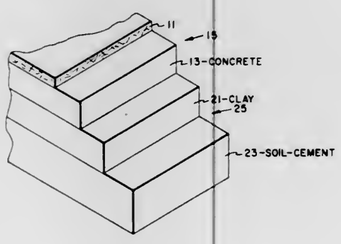
A packaging machine includes a swingable cutter for separating individual bags from a row of interconnected bags formed from a web of flexible material as the latter is advanced step-by-step along a predetermined path by a pair of rotatably driven feed rolls. The feed rolls are spaced just upstream from the cutter to provide effectual support for the flexible web as the cutter swings into engagement with the web to cut off the bags and, in addition, the rolls are adjustable along the path in unison with the cutter in order that the same small spacing may be maintained between the two when the cutter is shifted to an adjusted position along the path to operate on bags of a different size. An adjustable drive connection to the feed rolls rotatably drives the latter while permitting adjustment of the rolls along the path with the cutter.

3,500,727
APPARATUS FOR JOINING TOGETHER CLOSURE MEMBERS
Raymond D. Behr and Carlton E. Beyer, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 717,337
Int. Cl. B31b *23/14*
U.S. Cl. 93—20 **12 Claims**



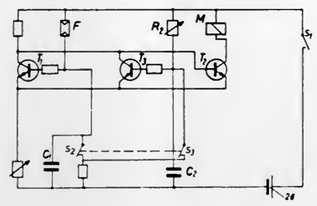
The present invention relates to apparatus for joining together male and female locking members of the kind extending longitudinally on the interior surface of flexible tube. The apparatus described herein combines high speed efficiency in joining the locking members together with other beneficial features as, for example, slitting means to part the tube longitudinally as the members are being joined. Further beneficial aspects of the present invention include means to guide particular portions of the tube to the slitting means such that a cut offset from the locking members can be obtained or alternately, an off center blade arrangement wherein the same purpose is realized in a somewhat different manner.

3,500,728
CONCRETE CONSTRUCTION AND ROADWAYS
Richard L. Longini, James P. Romualdi, and Thomas E. Stelson, Pittsburgh, Pa., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,869
Int. Cl. E01c *7/10, 7/00*
U.S. Cl. 94—10 **7 Claims**



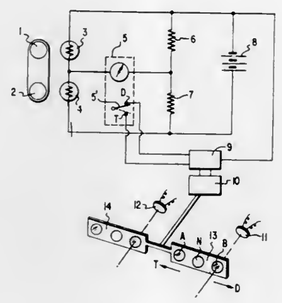
A composite concrete construction comprised of: both (a) a surface layer of concrete including closely spaced wire elements and an underlying layer of concrete, and (b) a substratum comprising a bottom hard layer and a top flexible layer; and either (a) or (b).

3,500,729
PHOTOGRAPHIC CAMERA SHUTTER WITH AN ELECTRONIC TIMING DEVICE
Waldemar T. Rentschler and Winfried Espig, Calmbach, Germany, assignors to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany
Filed Mar. 3, 1966, Ser. No. 531,586
Claims priority, application Germany, Mar. 19, 1965, P 36,323
Int. Cl. G03b *7/08;* **G01j** *1/46*
U.S. Cl. 95—10 **4 Claims**



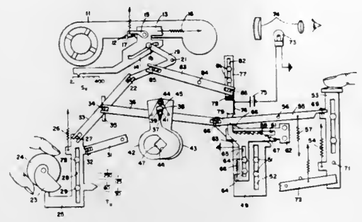
A camera shutter provided with a photoelectric timing circuit adapted to regulate the duration of a photographic exposure in response to prevailing light conditions. There is additionally provided a preset timing circuit in parallel with the photoelectric timing circuit to prematurely close the shutters and thus terminate the exposure when the exposure time determinated by the photoelectric timer is too long for hand-held picture taking.

3,500,730
FILTER CONTROL DEVICE
Shigeru Matsubara and Shin Fujisawa, Chuo-ku, Tokyo, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigum, Kanagawa, Japan
Filed Sept. 18, 1967, Ser. No. 668,406
Claims priority, application Japan, Sept. 30, 1966, 41/64,436
Int. Cl. G01j *1/00, 1/50, 1/42*
U.S. Cl. 95—10 **4 Claims**



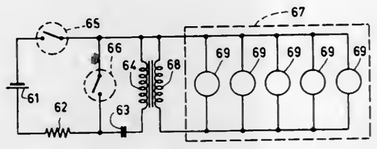
A filter control device has a correcting filter assembly comprising a set of types of different spectral characteristics, each filter of which is brought in and out of the optical axis for color correction in accordance with the spectral characteristics of the condition of illumination of the object to be photographed and in accordance with the type of film used. Two photoelectric elements are disposed in a bridge circuit in cooperative relationship with two filters, thereby detecting the condition of illumination and activating a relay switch. A second switch is set, according to the type of film used, and causes a motor means to more a set of filters into alignment with a photocell and the lens of the camera in response to movement of the relay in the bridge circuit.

3,500,731
ADJUSTABLE LOW-LIGHT SIGNAL
Richard Joseph Bresson, Rochester, and Robert George Elton, Spencerport, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 6, 1967, Ser. No. 688,460
Int. Cl. G01j *1/00, 1/52;* **G03b** *9/02*
U.S. Cl. 95—10 **12 Claims**



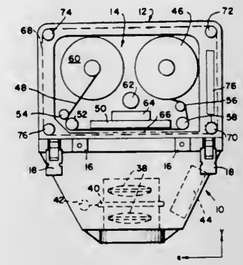
A camera low-light-signal device provides a warning signal when the illumination of a subject to be photographed is below a level determined by the position of a film-sensitivity-sensing member. An exposure control adjusting system controls the actuation of the low-light-signal device prior to actuation of the shutter of the camera.

3,500,732
APPARATUS FOR SEQUENTIALLY IGNITING FLASH LAMPS
Louis Marius Nijland, Emmasingel, Eindhoven, Netherlands; Johann Schroder, 125A, 51 Aachen, Drimbornallee, Germany; and Ekkehard Andrich, Eupenerstrasse 18, Aachen, Germany
Filed June 8, 1967, Ser. No. 644,506
Claims priority, application Netherlands, June 24, 1966, 6608781; Sept. 30, 1966, 6613816
Int. Cl. G03b *9/70, 15/02*
U.S. Cl. 95—11.5 **1 Claim**



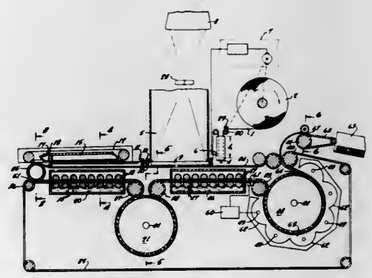
An apparatus for sequentially igniting a plurality of flashlamps connected in parallel by providing a voltage surge across the lamps causing ignition of only the lamp having the lowest voltage breakdown characteristics. The apparatus includes a flashlamp holder, a voltage source, a capacitor, a pair of switching elements, and a pulse transformer. One of the switching elements is closed in response to attachment of the flashlamp holder to a camera to connect the voltage source across the capacitor to charge it up to a given potential. The other switching element is closed during operation of the shutter mechanism of the camera to cause discharge of the capacitor across the pulse transformer which will produce a voltage surge across the parallel connected flashlamps. When the flashlamp having the lowest voltage breakdown characteristics is ignited, the voltage surge across the flashlamps decreases thereby enabling the flashlamps to be ignited sequentially.

3,500,733
AERIAL CAMERA
William E. Kreuz, Pasadena, John C. Dankowski, El Monte, and William Slatten, Duarte, Calif., assignors to Hycon Mfg. Company, Monrovia, Calif.
Filed Sept. 19, 1967, Ser. No. 668,803
Int. Cl. G03b *29/00*
U.S. Cl. 95—12.5 **7 Claims**



An aerial camera having an easily removable film magazine containing film transport apparatus, including an easily operable magazine locking device which, in combination with a pair of locking wedge devices, secures the magazine within the camera in all directions. The film spools are held in the magazine by means of a pair of spool holders which are easily operable for locking the spools therein, and for releasing the spools from the magazine when desired. The camera further includes a focal plane shutter having an endless loop curtain which peripherally traverses the magazine.

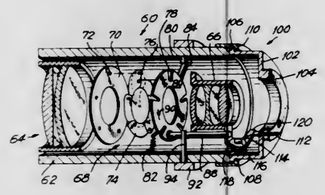
3,500,734
PHOTOGRAPHIC RECORDER AND PROCESSOR
Edward V. Lewis, Newport Beach, and Robert B. Trousdale, Santa Ana, Calif., assignors to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Filed Oct. 4, 1967, Ser. No. 672,845
Int. Cl. G03b *17/50, 27/60*
U.S. Cl. 95—14 **25 Claims**



High speed oscillograph paper may be utilized to produce permanent records of visually displayed data. The oscillograph paper may be stored on a magazine reel which can be rotated to supply paper according to the rate at which frames or visual information are presented.

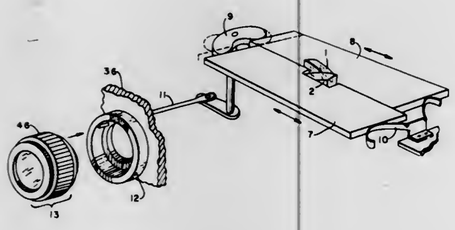
The functions of exposure and processing may be carried out at speeds independent of one another if the exposed frames are severed from the unexposed stock. After separation, vacuum and springband conveyors may be utilized to transport the exposed frames through the various processing steps of developing, stabilizing, drying and trimming, which are required to produce permanent copies.

3,500,735
ADAPTERS FOR AUTOMATIC LENS SYSTEM USABLE WITH DIFFERENT REFLEX CAMERAS
Hiroshi Mito, Tokyo, Japan, assignor to Taisei Kogaku Kogyo Co., Ltd., Omiya-shi, Japan
Filed Mar. 28, 1967, Ser. No. 626,526
Claims priority, application Japan, Apr. 19, 1966, 41/24,817
Int. Cl. G03b *3/00, 9/02, 19/12*
U.S. Cl. 95—44 **3 Claims**



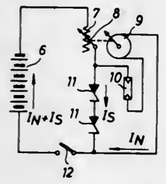
An objective and adapter assembly for use with single lens reflex cameras according to which an objective of one construction, which includes the diaphragm, can be used with any type of single lens reflex camera by having a suitable one of a plurality of adapters of the invention connected to the objective and to a camera for which the adapter is designed. Different reflex cameras will have different types of diaphragm-actuating elements and the several adapters are respectively designed for the different types of diaphragm-actuating elements so that by using a suitable adapter which is designed for a given camera the same objective can be used with all types of cameras.

3,500,736
COINCIDENCE TYPE RANGEFINDER
William P. Ewald, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 31, 1968, Ser. No. 702,106
Int. Cl. G03b *3/00*
U.S. Cl. 95—44 **14 Claims**



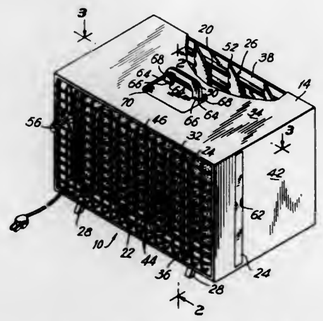
A coincidence type rangefinder system for use with interchangeable objectives is disclosed having focus-indicating refracting means provided with more than one available refracting power to deviate light at more than one angle, so that maximum focusing sensitivity may be attained for each of a plurality of different aperture objectives. In one embodiment of the invention, the focus indicator comprises a pair of lens elements which are movable in the primary image plane of the system with respect to the optical axis of the objective and each other, thereby changing the angle of deviation of light transmitted from the objective to the exit pupil. This ability to vary the effective deviating power of the refracting means with respect to the optical axis of the objective permits variation of the sensitivity of the system.

3,500,737
LIGHT CONTROL ARRANGEMENT FOR PHOTOGRAPHIC CAMERAS
Helmut Mayr and Richard Pelte, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Aug. 25, 1967, Ser. No. 663,324
Claims priority, application Germany, Aug. 31, 1966, A 53,381
Int. Cl. G03b *9/02;* **G01j** *1/44*
U.S. Cl. 95—64 **10 Claims**



An arrangement for maintaining constant the voltage across a light meter, in the presence of severely varying light conditions as may prevail in moving picture cameras. A photosensitive element is connected in series with the light meter. Zener diodes or stabilizing cells are connected in parallel with the series combination of the light meter and photosensitive element. A variable resistor connected in series with the battery supplying the power to the circuitry, has its sliding contact coupled to the indicator of the light meter. The variable resistor may be replaced with another photosensitive element having compensating resistors connected in series and in parallel with it.

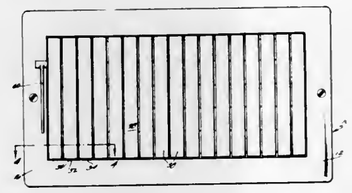
3,500,738
MULTIPLE USE AIR MOVING APPARATUS
Norman B. Wenig, 39 Herkimer Road, Scarsdale, N.Y. 10583
Continuation-in-part of application Ser. No. 676,533, Oct. 19, 1967. This application Dec. 12, 1967, Ser. No. 689,970
Int. Cl. E06b *7/02;* **F04d** *29/60*
U.S. Cl. 98—94 **2 Claims**



Air moving apparatus comprising fan or blower means disposed within a housing constructed and arranged for

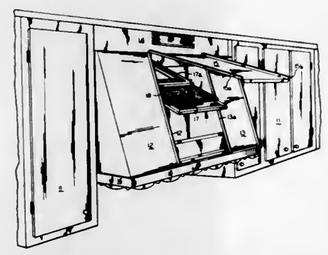
alternative installation with an air-conditioning sleeve, at a window opening, or free standing on a floor or other support surface, foldable or retractable legs and handle means structurally associated with the housing, damper means for controlling airflow through the housing, means for selectively supporting an air filter panel or a solid panel disposed within the air path of the fan for selectively providing air filtration or closure of the air path, grille means at one end of the housing, and louver means at the other end thereof.

3,500,739
PLASTIC REGISTER WITH SHUTTER BLADES
John P. Dry, 607 N. Rogers, Winter, Tex. 79567
Filed May 23, 1968, Ser. No. 731,371
Int. Cl. F24f *13/14*
U.S. Cl. 98—110 **2 Claims**



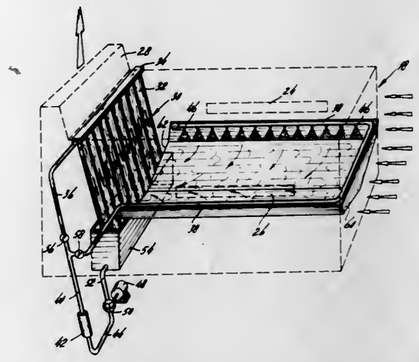
A plastic grille or register having a plastic L-shaped frame about and forming an opening, U-shaped slots forming a series along the edge of the sides of the frame and equally spaced from each other, and arranged in mating symmetry, a shutter blade extending side to side of the frame and closing off said space when in a common plane to each other, and providing an opening through said space when perpendicularly arranged with the plane of said space, said shutter blades having pin extensions for mating with the U-shaped slots, extensions from the free ends of the shutter blades, a lever engaging each of the extensions to provide unison of action, an actuator arm mounted from its intermediate portion on one of the pin extensions and engaging at a fixed end thereof, the free end extension of one of the extensions for opening and closing said grille.

3,500,740
VENTILATING HOOD
Donald M. Aubrey, % Aubrey Manufacturing Inc., Union, Ill. 60180
Filed Dec. 1, 1967, Ser. No. 687,193
Int. Cl. F23j *15/00;* **F24c** *15/20*
U.S. Cl. 98—115 **7 Claims**



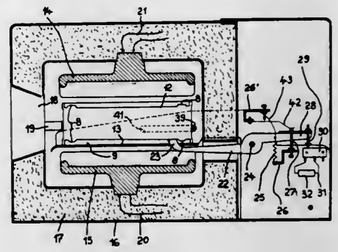
The ventilating hood includes means such as an access door for replacing the filter means thereof.

3,500,741
BAFFLE STRUCTURE FOR A SPRAY-COATING ENVIRONMENT
Hendrik F. Bok, 819 Tucker Road, North Dartmouth, Mass. 02747
Continuation-in-part of application Ser. No. 676,599, Oct. 19, 1967. This application Feb. 20, 1969, Ser. No. 801,027
Int. Cl. B05b *15/04*
U.S. Cl. 98—115 **6 Claims**



A liquid-flowing baffle structure for use in a spray-coating chamber and including a plurality of staggered downwardly inclined channels, defining an end wall of individually flowing liquid streams.

3,500,742
CODED FOOD PACKAGES AND DEVICE PERMITTING TO COOK SAID PACKAGES ACCORDING TO CODED INFORMATION THEREON
Pierre Tanguy, Pierre Carré, and Jean Le Boulbouech, all of 2 Rue Bodelio, Lorient, France
Filed Dec. 14, 1967, Ser. No. 690,470
Claims priority, application France, Dec. 15, 1966, 2,270
Int. Cl. A23b *1/06;* **A47j** *27/62;* **F24c** *7/08*
U.S. Cl. 99—326 **10 Claims**

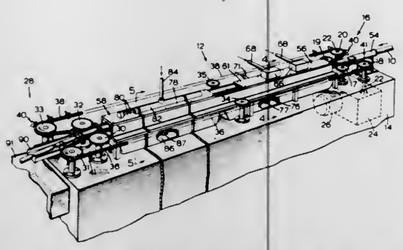


Food packages are provided with coded information in the form of irregularities on their surfaces or edges and a heating device is actuated, adjusted and timed by feelers which read the code. Heating and timing circuits are actuated by the feelers in accordance with whether or not they contact the surface irregularities of the package.

3,500,743
PRODUCTION OF SKINLESS SAUSAGE
Andrew Hepburn Cameron, Weston, Ontario, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a Canadian company
Filed Jan. 27, 1967, Ser. No. 612,233
Int. Cl. A22c *11/00*
U.S. Cl. 99—353 **12 Claims**

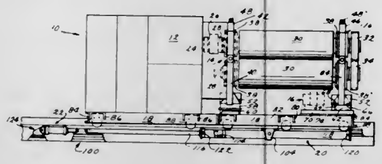
An apparatus and process for producing skinless sausages from a continuous cellulose sheath stuffed with

meat. Two endless conveyors are positioned on opposite sides of the path of travel of the cellulose sheath. Each conveyor has projecting members on the opposite conveyor to pinch off the sheath along predetermined lengths of its path. A heating means is positioned in the path for



coagulating the protein in the outer surface of the sausages after pinching off, and a cooling means is positioned downstream of the heating means for cooling the surface layer of the sausages to set the coagulated protein. A means is provided downstream of the cooling means for stripping the sheath from the sausages.

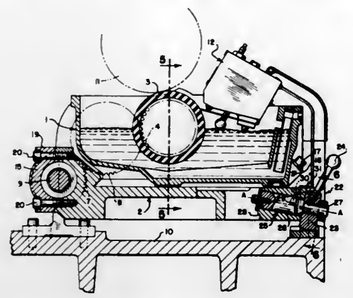
3,500,744
IN-LINE CARRIAGE ARRANGEMENT FOR EMBOSSING MACHINES
Harry M. Lewis, Springfield, N.J., assignor to Modern Engraving and Machine Corporation, Hillside, N.J., a corporation of New Jersey
Filed Aug. 17, 1967, Ser. No. 661,368
Int. Cl. B41f *13/44*
U.S. Cl. 101—23 **8 Claims**



An embossing machine mounted on a carriage and having a headstock and a tailstock for carrying embossing rolls. The headstock and tailstock are adjustable, with respect to one another, in a direction parallel to the longitudinal axis of the embossing rolls so that different length rolls may be used on the embossing machine. The carriage is mounted on rails and is provided with two hydraulic cylinders or other types of prime movers which position the carriage relative to other machinery in the process line. One of the cylinders moves the carriage onto or off the process line, while the other cylinder adjusts the position of the carriage in the line so that the carriage is in the desired position relative to other machines in the process line regardless of the length of roll used in the embossing machine.

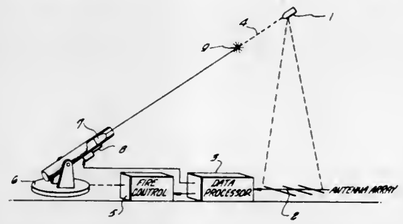
3,500,745
ADJUSTABLE MOUNTING FOR AN INK FOUNTAIN
Frank Neal, Green Brook, N.J., assignor to Wood Industries, Inc., a corporation of Virginia
Filed Aug. 23, 1967, Ser. No. 662,703
Int. Cl. B41f *31/06*
U.S. Cl. 101—207 **4 Claims**

An adjustable mounting for an ink fountain of an inking system including a platform for mounting the ink bowl for pivotal movement about an axis spaced from the axis of rotation of the ink fountain roll and an adjustable control for pivoting the entire fountain about



such axis to move the ink fountain roll into and out of engagement with the pickup roll of the inking system.

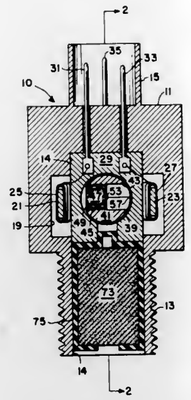
3,500,746
WEAPON SYSTEM WITH AN ELECTRONIC TIME FUZE
Leonard R. Ambrosini, Arlington, Va., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Apr. 17, 1968, Ser. No. 722,099
Int. Cl. F42c *11/06, 13/06, 15/40*
U.S. Cl. 102—70.2 **8 Claims**



An electronic time fuze mounted in a projectile is connected to ground equipment through an umbilical cord until the projectile is launched. The umbilical cord exchanges information between the fuze and the ground equipment so the fuze can more accurately measure the time elapsed from projectile launch to detonation. The fuze includes a local oscillator that is energized by the power stored in the capacitor. Output pulses from the local oscillator are coupled through a launch gate to a counter which is set prior to launch. After the projectile is launched, the local oscillator pulses count down the setting of the counter until a zero state is reached, at which time the detonator is actuated. Prior to launch, the counter is set, errors in the frequency of the local oscillator are compensated for, and the power supply capacitor is charged through the umbilical cord. The errors in the local oscillator frequency are compensated for either by modifying the initial setting of the counter or correcting the frequency itself of the local oscillator.

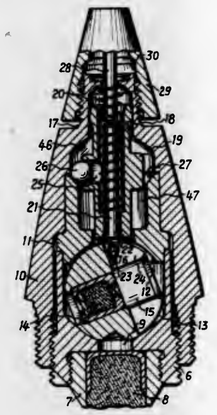
3,500,747
SAFE-ARM INITIATOR
Loyd C. Parker, Onley, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 17, 1968, Ser. No. 730,162
Int. Cl. F42c *13/08*
U.S. Cl. 102—70.2 **5 Claims**

A safe-arm firing-type initiator in which a first charge of electrical current is passed to electromagnetic rotor drive coils and electromagnets to cause rotation of an out of line ignition bead or primary charge housed within a rotor to a second position in which the primary charge is in line with an explosive output charge and a second electrical current is passed to the ignition bead through internal contacts that close upon alinement and cause



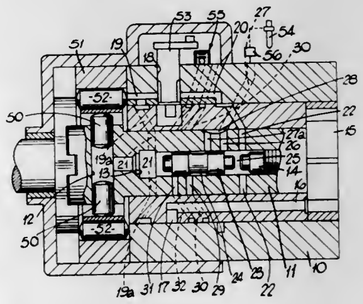
sufficient heat to be generated by the bridge wire to thereby ignite the ignition bead and initiator output charge by means of heat, deflagration or detonation, depending upon the type of primary explosive ignition bead employed in a particular initiator.

3,500,748
PERCUSSION FUZE FOR A MISSILE AND PROCEDURE FOR THE ASSEMBLY OF SAME
August Hager and Louis Biaggi, Zurich, Switzerland, assignors to Werkzeugmaschinenfabrik Oerlikon-Buhrle AG, Zurich, Switzerland
Filed Nov. 25, 1968, Ser. No. 778,414
Claims priority, application Switzerland, Dec. 4, 1967, 17,026/67
Int. Cl. F42c *15/18, 15/24, 15/04*
U.S. Cl. 102—79 **2 Claims**



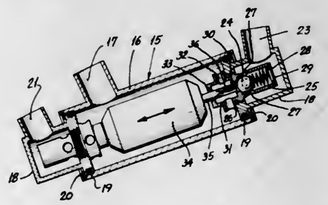
Percussion fuze for a missile having a casing and a fuze cap having a bore. A firing pin with an extension firing pin having a frontal face and a lateral face projecting movably into the bore. The diameter of the lateral face is smaller than the diameter of the bore. An annular packing is located with one side on the frontal and lateral faces of the extension firing pin and with the other side abutting the wall of the bore. The annular packing when assembled has an L-shaped cross section with the first leg of said packing adjoining said frontal face and the second leg adjoining said lateral face and said second leg prior to assembly into said fuze cap having a thickness greater than the distance between said lateral face and the wall of said bore. A melting body is located adjacent the top of said fuze cap and the first leg of the packing is clamped between the melting body and the frontal face. The extension firing pin has a member fastened thereto and the first leg of the packing is clamped between such member and the frontal face. The melting body is provided with grooves.

3,500,749
LIQUID FUEL PUMPING APPARATUS
Kenneth Albert Walters Kemp, Ealing, London, and Terence Redvers Wheeler, Highgate, London, England, assignors to C.A.V. Limited, London, England
Filed Mar. 13, 1968, Ser. No. 712,789
Claims priority, application Great Britain, Mar. 28, 1967, 14,059/67
Int. Cl. F04b *13/02, 9/10*
U.S. Cl. 103—2 **5 Claims**



A liquid fuel pumping apparatus for supplying fuel to a combustion engine and comprising a pumping piston reciprocably accommodated within a bore, means for moving the piston in a direction to reduce the volume of the pumping chamber, a passage extending from the pumping chamber at a position to be completely covered by the piston at the end of the movement thereof in said one direction, the covering of the passage serving to create an hydraulic lock in the pumping chamber thereby holding the piston at a predetermined position.

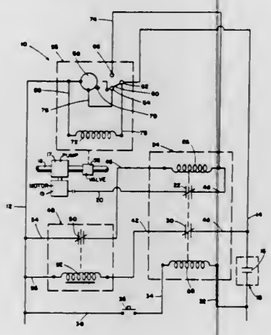
3,500,750
INTAKE SELECTOR SYSTEM FOR ENGINE OIL CIRCULATING PUMP
Justin Vohl, 369 St. Gilbert St., St. Marc des Carrieres, Quebec, Canada
Filed Sept. 16, 1968, Ser. No. 762,250
Claims priority, application Canada, Sept. 27, 1967 1,151
Int. Cl. F04b *13/00;* **B67d** *5/40*
U.S. Cl. 103—2 **7 Claims**



An engine oil circulating pump having dual intakes and a gravity-actuated selector for establishing communi-

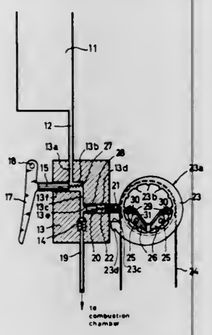
cation of the lower one of the intakes with the pump depending on the inclination of the engine and of its oil sump.

3,500,751
SAFETY SWITCH CIRCUIT
Melborne L. Robertson, Laird Hill, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 27, 1967, Ser. No. 656,372
Int. Cl. F04b *49/00, 47/06, 49/10*
U.S. Cl. 103—12 **8 Claims**



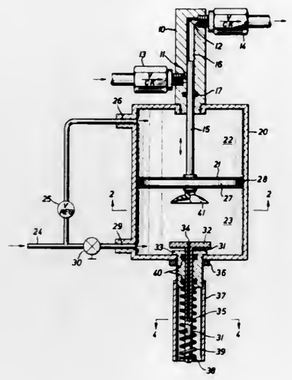
The invention comprises an arrangement of a latching relay and a time delay relay between a switch and a power line to a point of use, arranged so that power will not be fed through the power line until a predetermined time has passed to thereby prevent feeding power to the point of use prematurely in the event of malfunctions of the switch.

3,500,752
VARIABLE CAPACITY FUEL INJECTION PUMP FOR FUEL COMBUSTION OPERATED PILE DRIVER
Helmut Sigle, Beutelsbach, Germany, assignor to Delmag-Maschinenfabrik Reinhold Dornfeld, Esslingen (Neckar), Germany
Filed June 13, 1968, Ser. No. 736,664
Claims priority, application Germany, June 19, 1967, 1,634,327
Int. Cl. F04b *49/00;* **F16h** *27/02*
U.S. Cl. 103—37 **3 Claims**



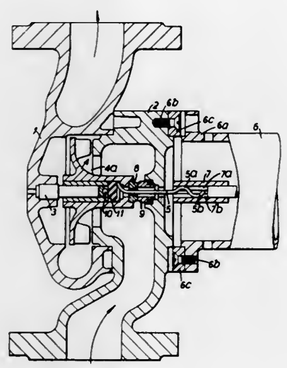
In combination with a fuel injection device, especially for fuel combustion operable pile drivers, a control device which is adjustable each time by equal steps while the fuel injection device is operable independently of the stroke time and power of adjustment of said control device.

3,500,753
INJECTION PUMP APPARATUS
George J. Greene, Jr., Shreveport, La., assignor to Greene Research & Engineering Company, Houston, Tex., a joint venture of Texas
Filed Apr. 16, 1968, Ser. No. 721,662
Int. Cl. F04b *17/00;* **F01l** *15/02*
U.S. Cl. 103—50 **17 Claims**



This application discloses an injection pump operated by a fluid motor, with a valve assembly for the fluid motor which includes a vent tube functioning to control pressure build-up and venting on one side of the piston. The vent tube is axially moveable and is engaged by the piston of the fluid motor using a resilient cup which contacts the head of the vent tube and covers the vent hole.

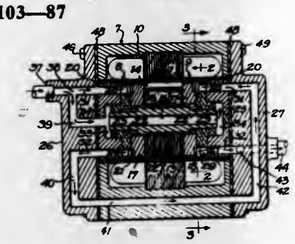
3,500,754
CENTRIFUGAL PUMP UNITS
Gunther Boes and Willi Plumeyer, Luneburg, and Christian Schmidt, Neetze, Germany, assignors to Loewe Pumpenfabrik GmbH, Luneburg, Germany, a joint-stock company of Germany
Filed Jan. 25, 1968, Ser. No. 700,421
Int. Cl. F04d *13/02*
U.S. Cl. 103—87 **9 Claims**



A centrifugal pump unit includes a centrifugal pump coupled by a shaft to an electric motor. The pump housing and the motor casing are connected together and a

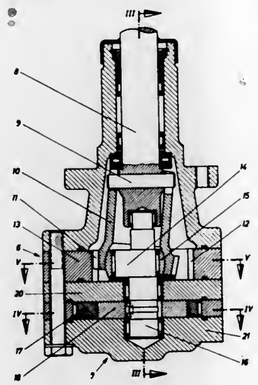
coupling is provided between the rotor of the electric motor and the pump rotor which is sufficient only to transmit the torsion between the rotors of the electric motor and of the pump.

3,500,755
COMBINED DRAG PUMP AND ELECTRIC MOTOR
William H. Gibson, Pacoima, Calif., assignor to Crane Co., doing business as Hydro-Aire Division, Los Angeles, Calif., a corporation of Illinois
Filed May 17, 1968, Ser. No. 729,979
Int. Cl. F04d *13/02*
U.S. Cl. 103—87 **11 Claims**



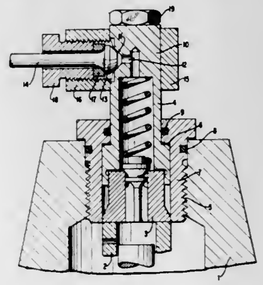
Disclosed herein is a drag pump incorporated in an induction type electric motor, the pump impeller being an integral part of the motor rotor; and the pump casing, with peripheral flow chamber, being formed integrally in a carbon end plate of the motor, the end plate including an integral bearing in which the rotor shaft is journalled. Pumps are provided at both ends of a motor-pump assembly which is so contructed as to provide for easy conversion from parallel to series pumping by the two pump units.

3,500,756
PUMP OR HYDRAULIC MOTOR CONSTRUCTION, ESPECIALLY FOR BOOSTER STEERING
Karl-Heinz Liebert, Fuggerle, Germany, assignor to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany
Filed Aug. 12, 1968, Ser. No. 751,769
Claims priority, application Germany, Aug. 19, 1967, Z 12,999
Int. Cl. F04c *17/06;* **F15b** *15/18;* **B62d** *5/00*
U.S. Cl. 103—126 **8 Claims**



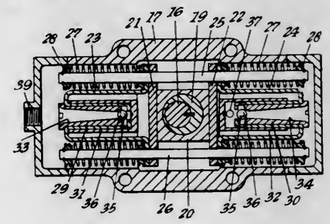
The invention is for a hydraulic pump or motor construction particularly for use in combination with a steering spindle and operated as a pump wherein a pinion is rotated by the spindle and having a universal joint coupling therewith so that it has a nutatory motion as it rolls in engagement with a fixed internal gear. The pinion is universally coupled to a crank, i.e., an eccentric, which is rotated as the steering spindle is rotated, to rotate the rotor of a positive displacement metering pump for effecting pressure to actuate a valve. The valve controls fluid pressure from a main pump to a booster cylinder for power steering. The gearing described affords a step up in rotational speed of the metering pump whereby a large volume discharge is realized.

3,500,757
PRESSURE CONNECTION OF LOW STRUCTURAL HEIGHT
Frank Thoma, Stuttgart, and Ulrich Conrad, Ludwigsburg-Ossweil, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 5, 1968, Ser. No. 695,960
Claims priority, application Germany, Jan. 7, 1967, D 51,966
Int. Cl. F04b *19/22, 21/00*
U.S. Cl. 103—154 **3 Claims**



A pressure connection of low structural height for an injection pump, for example, of an internal combustion engine to effect a connection of one end of an injection line at substantially a right angle to the pump piston axis with a cross bore provided in a spring housing which forms part of a pressure nipple and is adapted to be screwed into the body of an injection pump, whereby a tightening or clamping element surrounds the end of the injection line and directly, sealingly connects the enlarged conical sealing surface of the end of the injection line with a similarly shaped conical sealing surface disposed at the outer end of the cross bore.

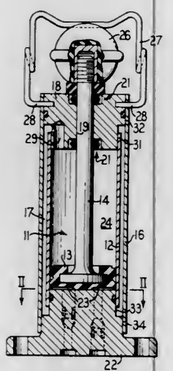
3,500,758
RECIPROCATING LIQUID PUMPS
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 12, 1968, Ser. No. 720,784
Int. Cl. F04b *1/00, 21/04, 9/06*
U.S. Cl. 103—171 **3 Claims**



A liquid pump having a casing, an inlet for liquid, eccentric means driven by a shaft in the casing, a pair of piston and cylinder devices at opposite sides of the eccentric means, one part being movable with the eccentric

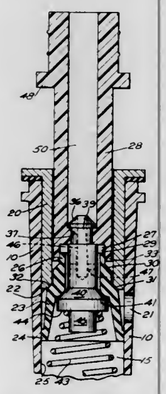
means and the other part being fixed to the casing, a resilient coupling between the movable parts, and a pair of non-return valves for permitting flow of liquid from the inlet to a pair of outlets from the inner ends of the cylinders.

3,500,759
FUEL PRIMING PUMP
Millard D. Potter, Bartonville, and John H. Parks, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 13, 1968, Ser. No. 736,710
Int. Cl. F04b *9/22, 21/08, 33/00*
U.S. Cl. 103—175 **1 Claim**



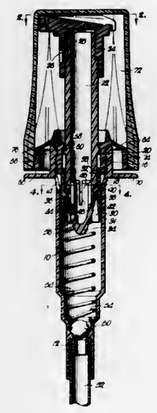
A compact fuel priming pump having a reciprocable piston within a first cylinder, a second cylinder concentrically arranged about the first cylinder to form an annular passage in communicatiton with one end of the first cylinder and suitable check valves separately communicating the other end of the first cylinder and the annular passage between the two cylinders with a fluid outlet and a fluid inlet.

3,500,760
PUMP FOR AN ATOMIZER OR THE LIKE
Roy F. Schlenker, South Attleboro, Mass., assignor to T. J. Holmes Co. Inc., a corporation of Massachusetts
Filed Apr. 22, 1968, Ser. No. 723,159
Int. Cl. F04b *21/04;* **G01f** *11/06, 11/42*
U.S. Cl. 103—188 **3 Claims**



A fluid pump for an atomizer or the like with a flexible piston to provide a seal against the wall of the cylinder in which it operates, to seal against the plunger which engages the piston in a slidable manner to operate the piston, and to seal in closed position with the bushing which limits the upward movement of the piston.

3,500,761
CONTROL VALVE FOR HAND PUMPS
Juel D. Clevenger, Raytown, Asa Pickinpaugh, Kansas City, and Michael A. Waters, Independence, Mo., assignors to Cook Chemical Company, Kansas City, Mo., a corporation of Missouri
Filed July 1, 1968, Ser. No. 741,509
Int. Cl. F04b *19/04, 21/04;* **B67d** *5/06*
U.S. Cl. 103—188 **8 Claims**



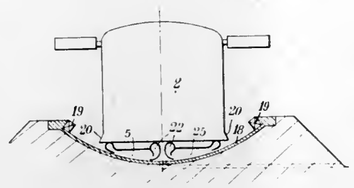
A reciprocable plunger hand pump has a floating sleeve slidable in a barrel and limited in axial movement relative to the plunger by a check valve integral with the sleeve, spaced from the plunger and alternately engageable with spaced valve seats surrounding the plunger. A liquid seal is established when the sleeve is wedged between the plunger and a collar; at the same time, the valve closes liquid inlet orifices in the plunger by engagement with one of the seats. The collar has a skirt adapted to support a cover cap and shiftable to mount container caps of various top thicknesses.

3,500,762
APPARATUS FOR INDICATING AND/OR PRODUCING LATERAL TRACK ALIGNMENT
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna I., Austria
Filed Aug. 21, 1967, Ser. No. 662,180
Claims priority, application Austria, Aug. 22, 1966, 7,938/66
Int. Cl. E01b *33/02*
U.S. Cl. 104—8 **11 Claims**



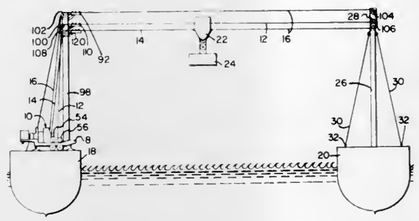
In track alignment operations, a beam of radiant energy is used as a reference line and a laterally movable stop is arranged at a track rail point to be aligned. The lateral position of the stop in respect of the reference line beam measurably changes the intensity with which the beam is received by a receiver mounted behind that point. This change in intensity is used to indicate the misalignment of the point.

3,500,763
HIGH-SPEED TRANSPORTATION SYSTEMS EMPLOYING GROUND-EFFECT VEHICLES
Jacques Jean Emile Mesnager, 182 Rue de Rivoli, Paris, France
Filed Aug. 15, 1966, Ser. No. 572,274
Claims priority, application France, Aug. 17, 1965, 28,501
Int. Cl. B60v *3/04;* **E01b** *26/00;* **A63g** *21/00*
U.S. Cl. 104—23 **4 Claims**



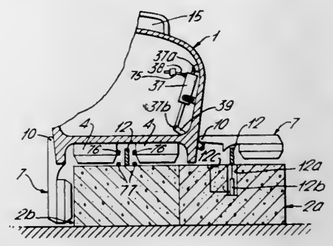
This invention relates to land vehicles hovering at high speed by means of air cushions on tracks. To balance the action of transverse forces, such as centrifugal forces generated in curved track sections, these track sections must necessarily be canted; however, this cant is applicable only for given speed values. To avoid this inconvenience, it is proposed by this invention to use a track having a circular cross-sectional configuration so that the vehicle will take by itself at any time on such track a position of equilibrium in which the resultant of the transverse forces and of the relative weight lies in the longitudinal plane of symmetry of the vehicle, the virtual axis about which the vehicle can oscillate freely passing through the center of the cross-sectional track contour, above the center of gravity of the vehicle.

3,500,764
MECHANISM FOR TRANSFERRING LOADS THROUGH TENSIONED, CONTROLLED CABLES
Charles P. Warman, Wichita Falls, Tex., assignor to Wichita Clutch Company, Inc., Wichita Falls, Tex.
Filed Feb. 19, 1968, Ser. No. 706,575
Int. Cl. B61b *7/02*
U.S. Cl. 104—114 **8 Claims**



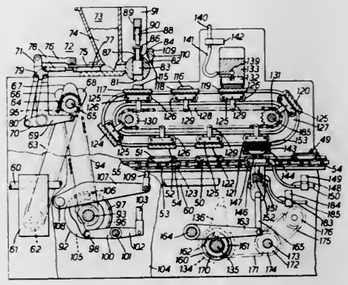
A system for maintaining a lineal element, such as load transfer cables, at a constant tension to enable the transfer of a load, such as parcels, cargo, or the like, from one station to another, even though one or both stations are relatively movable. Provision is made to maintain constant tension on winch lines, to enable the transfer of loads between two fixed stations, between a ship at sea and a stationary loading dock, or between two ships at sea, which are relatively movable, by utilizing a continuously rotating, slipping clutch, which clutch is continuously cooled by circulating a fluid media therethrough to maintain the friction elements therein at a temperature below which the friction elements would become damaged.

3,500,765
GAS-CUSHION VEHICLES
Geoffrey John Easton, Christchurch, and Denys Stanley Bliss, Southampton, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed Sept. 12, 1967, Ser. No. 667,149
Claims priority, application Great Britain, Sept. 13, 1966, 40,963/66
Int. Cl. B61b *13/08;* **B60v** *3/04*
U.S. Cl. 104—23 **11 Claims**



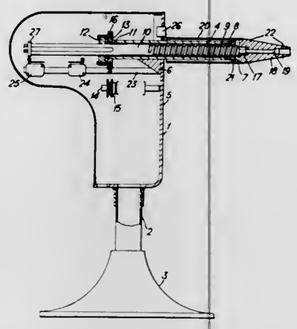
An air-cushion train which in operation is supported and guided by a concrete track of rectangular cross-section. The vehicle is supported by air-cushions formed between the vehicle and the top surface of the track and is guided by air-cushions between the side faces of the track and track-straddling structural parts of the vehicle body. Actuating means are provided for lifting these side parts away from the track so that the vehicle is free to leave one branch of the track and follow another.

3,500,766
MACHINE FOR APPLYING DOUGH LIDS TO FOOD-FILLED CONTAINERS
Roy Desmond Ingledew, Greenford, and David Anthony Lawrence, Saltdean, Brighton, England, assignors to J. Lyons & Company Limited, Cadby Hall, London, England, a British company
Filed Apr. 26, 1968, Ser. No. 724,419
Int. Cl. A21c *11/00*
U.S. Cl. 107—1 **16 Claims**



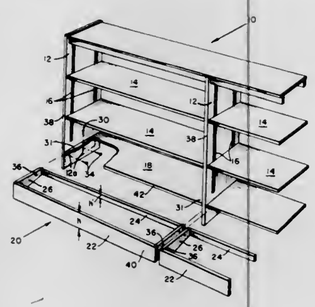
In a machine for applying dough lids to food-filled containers a dough lid is shaped between opposed forming members to a desired size and form. The members are held at respective hotter and cooler temperatures differing by an amount such that the formed lid adheres preferentially to the cooler member. This member may be initially beneath the dough and is then inverted before mating with the container. Air pressure may be used to assist retention of the lid on a member and/or to assist separation of the lid from the member.

3,500,767
MACHINES FOR THE MANUFACTURE OF PASTRIES
Leslie Victor Hodge, 101 Blackamoor Lane, Maidenhead, Berkshire, England
Filed Feb. 15, 1968, Ser. No. 705,789
Claims priority, application Great Britain, Aug. 29, 1967, 39,386/67
Int. Cl. A21c *11/00*
U.S. Cl. 107—8 **7 Claims**



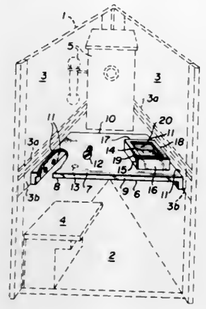
The invention relates to machines for winding strips of uncooked pastry into conical shells which are subsequently baked and filled with cream or other fillings. The machine comprises a shaft carrying a chuck at one end to mount a pastry former, the shaft being mounted so that it rotates and moves axially simultaneously when driven. In the preferred embodiment the shaft is rotatably driven by a motor and has a screw thread engaging a mating member fixed to the machine to produce the axial movement during rotation. Limit switches may be provided to stop movement at each of the axial travel of the shaft.

3,500,768
REVERSIBLE LOWER BOOKCASE BASE FRAME
William C. Lowe, Jr., Francis H. Asbury, and Jesse E. Milliken, High Point, N.C., assignors to Alma Desk Company, High Point, N.C., a corporation of North Carolina
Filed Feb. 27, 1968, Ser. No. 709,583
Int. Cl. A47f *7/00*
U.S. Cl. 108—1 **9 Claims**



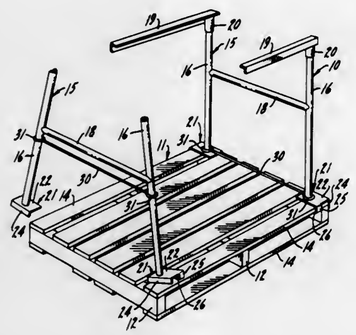
A lower adjustable and reversible base frame for a library bookcase having a plurality of substantially horizontal shelves, the frame supporting a lower shelf member in a first position substantially horizontal and parallel to the other bookshelves or in a second position wherein the shelf is rearwardly inclined to support books thereon in a more viewable position.

3,500,769
WRITING PLATFORM COMPRISING A CONTAINER ELEMENT
Thomas P. O'Donnell, 220 Highland Blvd., Brooklyn, N.Y. 11207
Filed Sept. 15, 1967, Ser. No. 667,932
Int. Cl. A47b *41/06*
U.S. Cl. 108—25 **3 Claims**



A writing platform base with walls of a container element projecting upwardly therefrom and into said container element's top wall which marginally overlies said walls and has an opening therethrough for removably inserting a sheet of paper therethrough and on top of said base within said container element for a purpose that said sheet of paper is margined by said top wall and exposed through said opening therethrough. Each modification shows an end portion of a said container element is without a wall thereby disposing itself thereat for removably inserting a sheet of paper therethrough and into said container element, for a said purpose.

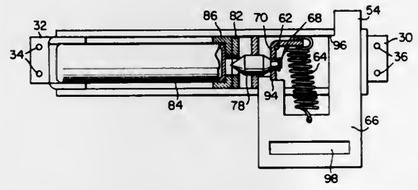
3,500,770
PALLET TIERING FRAME WITH POSITIVE LOCK TO PALLET
Leroy F. Skubic, Long Beach, Ind., assignor to The Paltier Corporation, a corporation of Illinois
Filed June 14, 1968, Ser. No. 737,137
Int. Cl. B65d *19/16*
U.S. Cl. 108—53 **8 Claims**



A pallet tiering frame which may be positively locked to a pallet with solid top deck or standard type spaced boards so that the frame may safely support a plurality of stacked pallets and withstand sudden impact forces without unintended disengagement from the pallet. The uprights of the tiering frame each have a mounting bracket

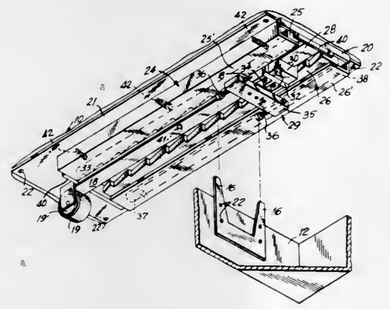
with a transverse finger adapted to engage the underside of the pallet deck boards. Displaceable tie rods secure the lower end portions of the frame uprights against relative movement so that said mounting brackets are maintained in positive engagement with the pallet. The tie rods may be either slidably or detachably displaced to permit relative movement between the lower ends of the uprights and ready disengagement of the frame from said pallet.

3,500,771
BURGLAR-PROOF LOCK DEVICE
Harvey D. Fischer, 508 W. Venango Ave., Philadelphia, Pa. 19140; Nunzio J. Palumbo, 3515 Post Road, Huntingdon Valley, Pa. 19006; and Jack Macione, 350 N. York Road, Hatboro, Pa. 19040
Filed Jan. 15, 1969, Ser. No. 791,280
Int. Cl. G08b *15/02;* **E05g** *3/00*
U.S. Cl. 109—29 **16 Claims**



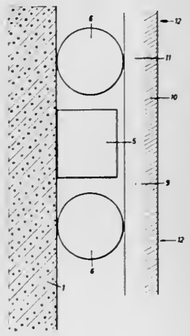
A burglar-proof lock device comprising an elongated body having a gas cartridge containing tear gas, dye or other deterrent affixed thereto, the said body retaining a spring biased firing pin therein in spaced relationship from one end of the said tear gas cylinder, and spring bias release means operable by an extended tongue which is responsive to actions initiated to open the enclosure guarded by the said lock device.

3,500,772
SECURITY LOCKING DEVICE
George I. Ratner, 67 S. Munn Ave., East Orange, N.J. 07018, and Abram Mark Ratner, East Orange, N.J.; said Abram Mark Ratner assignor to said George I. Ratner
Filed Jan. 27, 1969, Ser. No. 794,237
Int. Cl. E05g *1/00*
U.S. Cl. 109—47 **8 Claims**



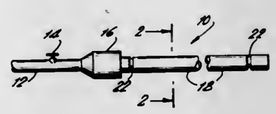
A self-contained protection unit for use with a security compartment and a movable closure therefor for protection of valuables has a traveler mounted for movement longitudinal of the compartment, and spring means for driving the traveler to close and lock the compartment; and ratchet means to latch the traveler at any point to which is is moved thereby to limit opening of the closure, and remotely controlled to release the latch and thereby to free the spring for moving the traveler for an emergency and for unlatching the ratchet to permit use under ordinary conditions. A limit stop may be provided to hold the closure partly open for access to a limited part of the compartment.

3,500,773
PROTECTIVE ARRANGEMENT
Herbert Pfaff and Walter Lasseur, Meppen, and Friedhelm Hillebrand, Osnabruck, Germany, assignors to Klockner-Werke AG, Duisburg, Germany
Filed Sept. 21, 1967, Ser. No. 669,664
Claims priority, application Germany, Sept. 21, 1966, K 60,300
Int. Cl. E04b *2/42*
U.S. Cl. 109—81 **8 Claims**



An arrangement for protecting an exposed side of a building or similar structure against impacting by objects moving at high velocity. A cover plate of penetration-resisting material is mounted on the exposed side spaced therefrom and with freedom of movement relative thereto. Resilient spring means is interposed between the exposed side and the cover plate and is operative for resiliently resisting the movement of the cover plate towards the exposed side to thereby assist in absorbing the kinetic energy of objects impacting the cover plate.

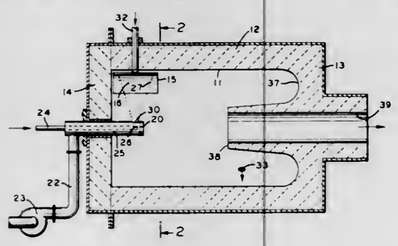
3,500,774
MEANS FOR CUTTING HARD CONSTRUCTION MATERIALS
Robert Meier, Seestrasse 158, Kusnacht, Zurich, Switzerland
Continuation-in-part of application Ser. No. 724,016, Apr. 25, 1968. This application Nov. 4, 1968, Ser. No. 772,907
Int. Cl. F23b *7/00;* **F23d** *21/00*
U.S. Cl. 110—1 **3 Claims**



A torch constructed as tube of steel, iron and the like material having therein fastened lengthwise weldable wires. Oxygen is passed through the tube and wires,

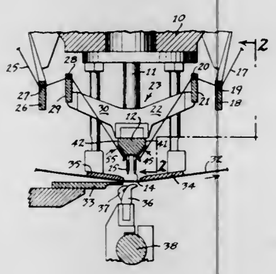
whereby the ignited tube burns away at its end and the resulting heat burns holes according to melting process in hard materials such as concrete, rock, cast iron and the like. A feature is that the tube has at least one annular groove which extends into the interior of the tube and by contracting acts clampingly on the wires and gives a reduction of the cross section for the flow of oxygen.

3,500,775
IMPINGEMENT TYPE CYCLONIC REACTOR
Peter J. Hubbard, 40 Farbell Road, Norwalk, Conn. 06850
Filed July 25, 1968, Ser. No. 747,664
Int. Cl. F23g *7/04;* **F23c** *3/00;* **F23d** *11/00*
U.S. Cl. 110—8 **9 Claims**



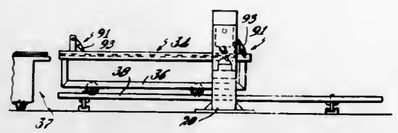
A cyclonic reactor having a cylindrical combustion chamber in which a jet flame of burning fuel and combustion air passes tangentially over a smooth heat conducting surface area or pan rendered highly heated and wiped clean by such passage, and a spray device which sprays a stationary pattern of moist waste organic sludge to be treated, against the highly heated surface of the pan, by which the sludge is rapidly dried and bounced off the impingement surface into the combustion chamber for burning.

3,500,776
YARN GUIDE FOR A TUFTING NEEDLE
Roy T. Card, Chattanooga, Tenn., assignor to Lewis Card & Co., Inc., Chattanooga, Tenn., a corporation of Tennessee
Original application Jan. 7, 1965, Ser. No. 423,925. Divided and this application Aug. 15, 1967, Ser. No. 660,802
Int. Cl. D05c *15/00;* **D05b** *87/00;* **B65h** *57/00*
U.S. Cl. 112—79 **4 Claims**



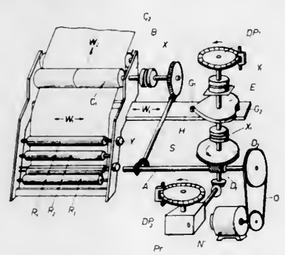
An angular plate member including a mounting flange and a guide flange, the mounting flange being fixed to a front sloping surface of a needle bar, while the guide flange, including an aperture for each needle depending from the needle bar, depends proximately adjacent the upper portion of the needle to guide yarn through the aperture and downwardly along the needle.

3,500,777
QUILTING APPARATUS
Frederick E. Kalning, Quincy, and Howard E. Redman, Weymouth, Mass., assignors to Mathewson Corporation, Quincy, Mass., a corporation of Massachusetts
Filed Mar. 7, 1968, Ser. No. 711,386
Int. Cl. D05f *11/00*
U.S. Cl. 112—118 **20 Claims**



Apparatus for quilting having a plurality of transversely spaced sewing heads, a movable frame which is adapted to support the material to be quilted below the sewing heads for movement transversely and laterally thereof and transversely spaced pairs of lower and upper endless chains mounted on the movable frame with the upper runs of the lower chain and the lower runs of the upper chain substantially parallel and movable in directions to draw the material to be quilted onto the frame and to hold it gripped therebetween during the process of quilting.

3,500,778
AUTOMATIC STRETCH QUILTING MACHINES
Giannino Landoni, Cassano Magnago, Italy, assignor to The Gillette Company, Santa Monica, Calif., a corporation of Delaware
Filed Jan. 30, 1969, Ser. No. 795,324
Int. Cl. D05b *11/00, 27/00, 69/00*
U.S. Cl. 112—118 **4 Claims**

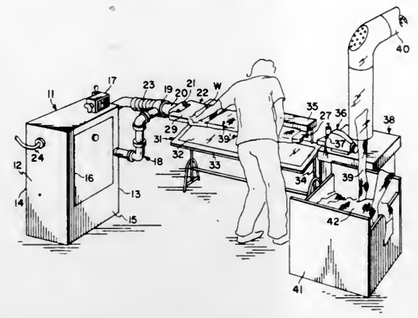


Automatic quilting machine having a plurality of needles for making bonded quilted fabrics with an underlying warp stretch fabric wherein the materials to be bonded are fed with a longitudinal motion and a transversely movable carriage supports a plurality of material feed rolls, said motions being totally independent by reason of an electromagnetic coupling interposed between means for controlling said motions and means actuating said rolls and a programming device controlling the electromagnetic coupling.

3,500,779
METHOD OF HANDLING HOSIERY
Ralph Bernard Jones, Greensboro, and Thurman B. Oakley, Burlington, N.C., assignors to Textile Metals & Plastics, Inc., Greensboro, N.C., a corporation of North Carolina
Filed Apr. 11, 1966, Ser. No. 541,698
Int. Cl. D05b *39/00;* **A41n** *43/00*
U.S. Cl. 112—121.15 **5 Claims**

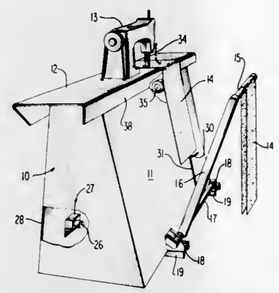
The method of handling hosiery and more particularly to an improved arrangement for everting, inspecting and toe-seaming of seamless hosiery comprising a unitary everting and inspecting board, subsequently referred to as

a combination board, a spatially related seaming device, and a pneumatic or pneumatic like conduit system com-



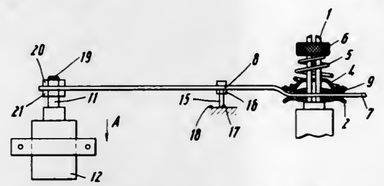
municating with a collecting system and with a stacking enclosure.

3,500,780
STACKER FOR FLEXIBLE SHEET MATERIAL
Ronald W. Emus, Greer, and Barry W. Stuart, Taylors, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed Sept. 30, 1968, Ser. No. 763,650
Int. Cl. D05b *33/02, 81/00*
U.S. Cl. 112—121.29 **16 Claims**



A versatile simplified and reliable stacker, for cloth articles and the like, characterized by few moving parts and the absolute minimum floor space occupation and being automatic in operation. The stacker may be used in conjunction with a sewing machine and/or thread cutting means if desired.

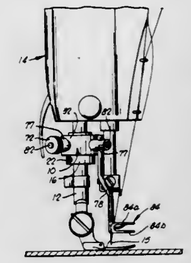
3,500,781
YARN TENSION RELEASING ATTACHMENT FOR SEWING MACHINES
Gunter Peschke, Niederhofheimer Strasse 49, Hofheim, Taunus, Germany
Filed June 7, 1968, Ser. No. 735,211
Claims priority, application Germany, Feb. 23, 1968, P 30,972
Int. Cl. D05b *47/00*
U.S. Cl. 112—254 **4 Claims**



A device for releasing yarn tension in sewing machines during use thereof consisting of a gripping disc tensioning

means adapted to be quickly fitted to various types of machines, by inexperienced personnel, and which ensures satisfactory operation thereof.

3,500,782
NEEDLE GUARD FOR SEWING MACHINES
Kenneth M. Smith, P.O. Box 55, Weatherford, Okla. 73096
Filed May 15, 1968, Ser. No. 729,351
Int. Cl. D05b *83/00*
U.S. Cl. 112—261 **8 Claims**

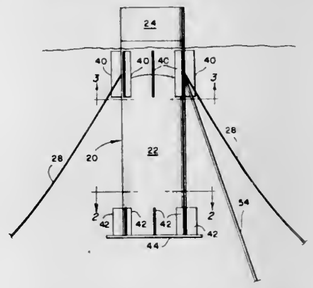


A needle guard for attachment to a sewing machine and including an inner sleeve, an outer sleeve concentrically and rotatably mounted on the inner sleeve, a lug projecting radially outwardly from the outer sleeve, an elongated guard shaft slidably extending through the lug, and an arcuate guard element secured to one end of the guard shaft. Securing elements are included in the structure for adjustably interlocking the inner and outer sleeves in predetermined positions of rotation relative to each other, for securing the inner sleeve at a predetermined position along a suitable supporting shaft of the sewing machine, and for adjusting the position of the guard shaft relative to the lug.

ERRATUM

For Class 113—121 see:
Patent No. 3,500,939

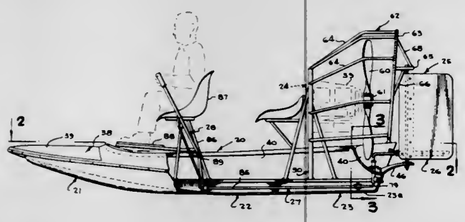
3,500,783
STABLE OCEAN PLATFORM
Virgil E. Johnson, Jr., Gaithersburg, John O. Scherer, Jr., Laurel, Eugene R. Miller, Jr., Annapolis, and Viggo A. Blaes, Pikesville, Md., assignors to Hydronautics, Inc., Laurel, Md., a corporation of Maryland
Filed July 16, 1968, Ser. No. 745,285
Int. Cl. B63b *35/44, 21/50;* **E21b** *15/02*
U.S. Cl. 114—.5 **6 Claims**



A stable, floating marine platform is provided having a natural period of oscillation greater than the period of the waves of maximum energy to which the platform

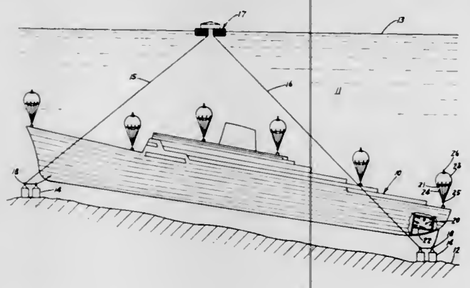
may be exposed. A plurality of vertically and radially extending damping plates are circumferentially spaced around the upper and lower submerged portions of the platform, and a horizontal damping plate is secured to the bottom of the platform to prevent resonance oscillation of the platform. A stabilized, flow line system is also provided for maintaining fluid connection between the platform and an underwater well head under all sea conditions. The system includes an upper, substantially vertically disposed flow line and a lower, substantially horizontally disposed flow line that are connected in fixed angular relationship, said connection being moored at a point laterally spaced from the platform to maintain the flow lines in the form of stiffened catenary curves.

3,500,784
SURFACE CRAFT
Robert G. Reynolds, 1441 S. Lake Roy Drive, Winter Haven, Fla. 33880
Continuation of abandoned application Ser. No. 539,419, Apr. 1, 1966. This application Sept. 20, 1968, Ser. No. 764,027
Int. Cl. B60f *3/00;* **B63b** *1/18*
U.S. Cl. 114—43 **10 Claims**



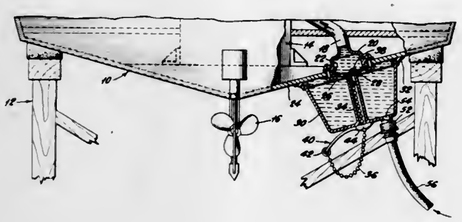
A surface craft generally comprising a hull including a bottom having a forward section, a mid section and an aft section, the forward section having a pair of transversely spaced, longitudinally disposed ridges, the ridges diminishing in depth from a point and aft thereof merging into the mid section, means for propelling the hull and means for steering the hull.

3,500,785
SYSTEM FOR SALVAGING SUBMERGED OBJECTS
Robert J. Strange, 1270 Gibbs Ave., St. Paul, Minn. 55108
Filed Feb. 5, 1968, Ser. No. 703,106
Int. Cl. B63c *7/12*
U.S. Cl. 114—50 **13 Claims**



A system and method for salvaging submerged marine vessels and other submerged objects, according to which a plurality of flexible inflatable containers are disposed in accessible compartments of the sunken object and/or secured to its exterior and inflated until the object is buoyant. The submerged object is permitted to rise progressively in controlled predetermined increments. Rapid upward acceleration of the object due to rapid expansion of the volume of gas in the inflated containers is prevented. When the object reaches the limit of each controlled incremental rise, the buoyancy of the containers is reduced by bleeding air therefrom or otherwise, while still maintatining the object buoyant. Then the submerged object is permitted to rise a further predetermined amount, and the buoyancy of the inflated containers is again reduced. This is repeated until the object is surfaced. This invention relates to a relatively simple and relatively inexpensive system and method for economically salvaging submerged marine vessels and other objects. Hundreds or ships have been sunk, as the result of storms or collisions or otherwise, through the ages. Although many of these ships may contain valuable cargo or fittings and may themselves have considerable salvage value, relatively few sunken ships have been recovered because the great cost of salvaging usually exceeds the value of the ship and its contents. Similarly, many aircraft have been lost due to ditching and off-shore radar and drilling platforms have been damaged and sunk.

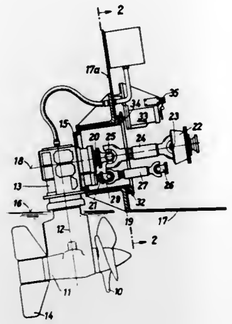
3,500,786
MARINE ENGINE COOLING ADAPTER
Michael J. Oliver, 19741 NW. 7th Court, Miami, Fla. 33169
Filed Apr. 8, 1968, Ser. No. 719,421
Int. Cl. B63b *35/00;* **F16l** *5/00, 41/00*
U.S. Cl. 115—.5 **4 Claims**



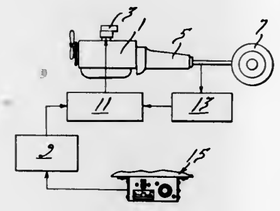
A marine engine cooling adapter for insertion over a grill strainer provided in the hull of a marine craft, the adapter including a cup-shaped member, the open end of which is adapted to fit against said hull and surround the grill strainer. Means are also provided to secure the cup-shaped member against the hull and to connect the cup-shaped member to a source of water.

3,500,787
ARRANGEMENT OF TILTABLE STEERABLE PROPELLER
Josef Becker, Oberspay (Rhine), Germany, assignor to Schottel-Werft Josef Becker KG, Oberspay (Rhine), Germany, a Germany corporation
Filed Jan. 2, 1968, Ser. No. 695,025
Claims priority, application Germany, Jan. 16, 1967, Sch 40,095
Int. Cl. B63h *5/12, 1/28, 25/42*
U.S. Cl. 115—41 **4 Claims**

A steerable propeller for driving watercraft, said steerable propeller being pivotable about a vertical axis for the purpose of controlling the watercraft and being arranged for pivoting about a horizontal axis on a drum-shaped neck with sleeve bearings for being lifted out of the water. The drum-shaped neck at least partly surrounds a cardan shaft for the propeller drive and a cardan shaft for the control drive and one of the cardan shafts, preferably the one for the propeller drive, is arranged approximately in the pivot axis.



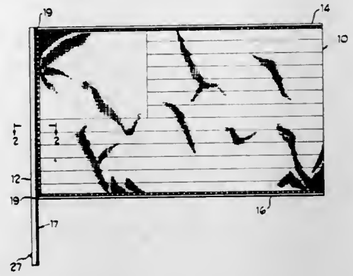
3,500,788
CONTROL UNIT
Isadore Balan, Oak Park, and Ian J. C. Scott, Madison Heights, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,400
Int. Cl. B60k *31/00*
U.S. Cl. 116—28 **10 Claims**



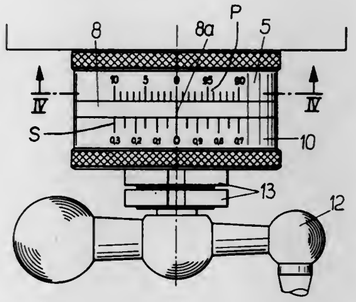
Control unit for an automatic speed control system for a vehicle, the unit including a thumbwheel having a plurality of visual indicating members frictionally held on the thumbwheel but movable relative to the latter, each indicating member bearing indicia indicating a desired speed selection. A latching detent is provided for serving as a pointer and for locking each indicating member against movement when the thumbwheel is rotated to permit adjustment of the position of the indicating members on the thumbwheel.

3,500,789
DISPLAY DEVICE
John B. Keats, Marietta, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,825
Int. Cl. G09f *17/00*
U.S. Cl. 116—173 **7 Claims**

An improved inflatable display device including a body of substantially flat flexible material forming a flag or sign supported by an inflatable flexible tubular member affixed to the periphery of the flat flexible material along a length sufficient to maintain the material in an unfurled display condition upon inflation of the tubular member. The tubular member includes integrally formed spaced apart flaps along its length. The flat flexible material of the flag or sign is positioned intermediate to flaps and secured thereto to form a display unit suitable for easy storage.



3,500,790
MACHINE TOOL POSITIONING SCALE DRIVE
Ulrich Hofmann, Ebingen, Germany, assignor to Theodor Groz & Sohne & Ernst Beckert Nadelfabrik, Ebingen, Germany, a German firm
Filed May 15, 1967, Ser. No. 638,300
Claims priority, application Germany, May 17, 1966, H 59,420
Int. Cl. B23q *17/02*
U.S. Cl. 116—115.5 **9 Claims**

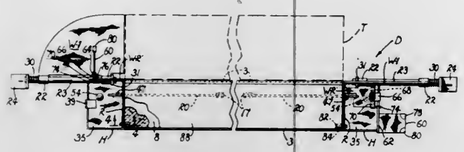


A second positioning scale is arranged concentrically with the main spindle scale of a machine tool and a circular gear carrier element is interposed between the two scales. A fixed marker serving as a reference for both scales is placed on the carrier. The gearing in the gear carrier element also includes a worm gear having a shaft at right angles to the spindle and driving an internal gear which drives the positioning scale.

3,500,791
AUTOMATIC ATHLETIC FOUL INDICATOR
Earl R. Jackson, deceased, late of San Joaquin County, Calif., by Sophia F. Jackson, sole heir, 1917 S. Chestnut Ave., Fresno, Calif. 93702
Continuation-in-part of application Ser. No. 534,983, Mar. 9, 1966. This application May 8, 1968, Ser. No. 727,454
Int. Cl. G08c *5/00*
U.S. Cl. 116—132 **4 Claims**

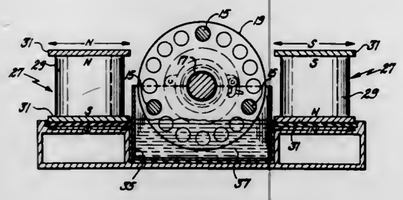
A device for automatically indicating when a foul line has been violated including a pivoted planar wing latched

in a down position but released and raised to an upstanding position when an athlete steps on a trip board, the wing carrying a hinged flag which lies generally in the same plane as the wing in the latched position thereof but pivots to be disposed generally at right angles thereto



in the upstanding position of the wing. Provision is also made for indicating the commission of a foul when the pressure on the trip board is insufficient to unlatch the wing and for limiting the vertical movement of the trip board when stepped on.

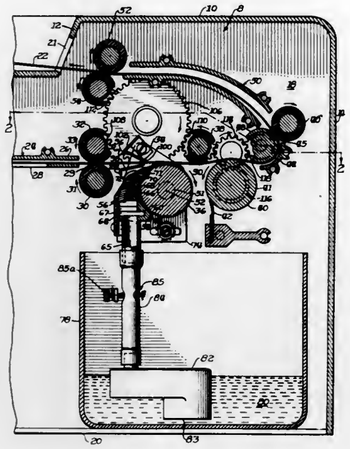
3,500,792
MAGNETIC SEPARATING AND COATING APPARATUS
Charles R. Brockett, Rowland Heights, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 29, 1968, Ser. No. 725,046
Int. Cl. B05c *3/09*
U.S. Cl. 118—416 **3 Claims**



Apparatus for magnetically holding and separating laminations used in electric motors to allow coating of all surfaces with insulating adhesive. The laminations are stacked on a holding fixture positioned in the magnetic field between magnetic separators which arrangement causes the laminations to come to rest in an evenly spaced parallel relationship. The laminations are then rotated through a container of adhesive, compressed and cured to form the insulated lamination stack.

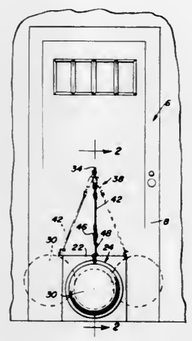
3,500,793
DEVELOPER ROLLER COATING MEANS AND GUIDE FOR ELECTROSTATIC COPYING MACHINE
Robert J. Bartusek, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 30, 1967, Ser. No. 679,103
Int. Cl. B05b *5/02;* **B05c** *3/02*
U.S. Cl. 118—637 **7 Claims**

Apparatus for use in the development station of electrostatic copying machines using liquid developer compositions, to improve development of a copy sheet bearing a latent electrostatic image. In particular, this invention relates to improvements in apparatus for coating a



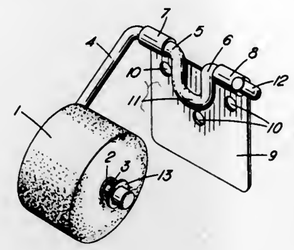
developer roller with liquid developer for subsequent application to the image bearing copy sheet.

3,500,794
PET DOOR
Robert J. Russell, 3708 Navajo St., Bakersfield, Calif. 93309
Filed June 5, 1968, Ser. No. 734,707
Int. Cl. A01k *15/00*
U.S. Cl. 119—1 **10 Claims**



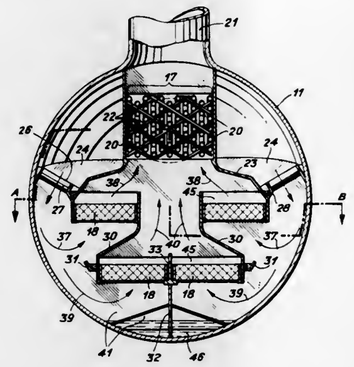
A hole in the bottom portion of a door or wall is lined with a collar and provides a passageway by way of which a pet can go outdoors and return when so desired. The collar has inward and outward positioning and retaining flanges. The outward flange is provided with an endless annulus V-shaped in cross-section which provides a seat for a closing and sealing weight (ball, pendulum-type bob or the like). The weight is suspended by adjustable hanger means, is acted on by the forces of gravity and momentum, is self-centering, automatically closes the outward end of the passage but can be actuated, after training, by the pet. A plate on the inward end of the passageway provides a manually controllable shutter.

3,500,795
NUTRITIONAL DEVICES FOR PIGLETS
Richard George Towlerton, Nottingham, England, assignor to Boots Pure Drug Company Limited, Nottingham, England, a British company
Filed Apr. 11, 1968, Ser. No. 720,656
Claims priority, application Great Britain, Apr. 12, 1967, 16,851/67
Int. Cl. A01k *5/00*
U.S. Cl. 119—51 **8 Claims**



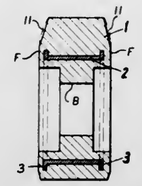
A device for administering assimilable iron to piglets comprises an iron lick block rotatably mounted on an axle. This axle is attached to an arm which is pivotally connected to a support.

3,500,796
APPARATUS FOR SEPARATING WATER FROM WET STEAM PRIOR TO SUPERHEATING OF THE STEAM
Josua Roffler, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 6, 1968, Ser. No. 757,917
Claims priority, application Switzerland, Sept. 6, 1967, 12,480/67; July 19, 1968, 10,902/68
Int. Cl. F22b *37/28;* **B01d** *50/00*
U.S. Cl. 122—34 **9 Claims**



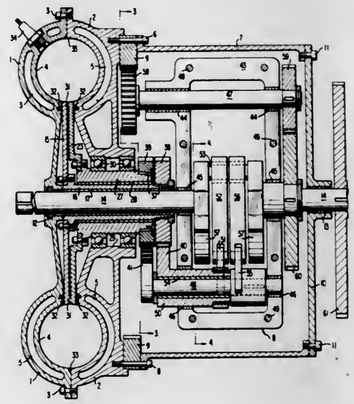
The separator is positioned in the flow of wet steam and includes a horizontally disposed tank having a lower portion containing separator elements and an upper portion containing superheater tubes. The wet steam is introduced into the upper portion of the tank along side the superheater tubes to flow longitudinally of the axis of the tank and is thereafter distributed uniformly into the lower section of the tank to flow upwardly through the separators. Water is separated out in the lower section by gravity and by the separators. The dehydrated steam then flows upwardly into the superheater and flows out of the tank.

3,500,797
REINFORCED ROTARY PISTON
Roland Schenfler, Neckarsulm, Wurttemberg, Germany, assignor to Karl Schmidt G.m.b.H., Neckarsulm, Wurttemberg, Germany
Filed Apr. 25, 1967, Ser. No. 633,478
Claims priority, application Germany, May 7, 1966, Sch 38,952
Int. Cl. F02b *53/00, 55/00;* **F16c** *9/00*
U.S. Cl. 123—8 **12 Claims**



A light metal bearing housing reinforced by embedded steel inserts to limit the effect of thermal expansion and contraction upon certain critical dimensions of the housing.

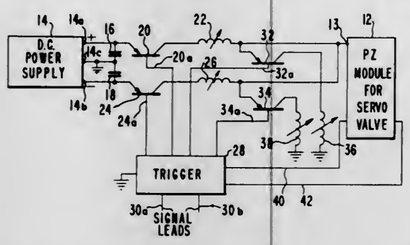
3,500,798
ROTARY ENGINE
George Charles Arnal, Ravenscrag, Saskatchewan, Canada
Filed Mar. 7, 1968, Ser. No. 711,317
Int. Cl. F02b *53/00, 55/10*
U.S. Cl. 123—11 **9 Claims**



A rotary engine in which two pairs of power vanes are arranged to substantially alternately travel in the same direction around a common annular chamber and about a common axis of rotation. The vanes of each pair are connected diametrically in fixed relation to each other and disposed in the chamber alternately with the vanes of the opposite pair. Upon ignition of a compressed mixture between adjacent vanes the expansion, exhaust, intake and compression cycles are simultaneously carried out between the alternately arranged vanes of opposite pairs, with succeeding engine cycles progressively carried out between consecutive pairs of the alternate vanes. The rotating power from the pairs of vanes is transferred to the crank shaft through two separate gear trains, on a drive block assembly rotatively mounted on the crank shaft, with means of reversing the action of the gear trains, whereby the reversing action of the gear trains applies power from the pairs of power vanes to rotate the crank shaft in the same direction. The gearing is such that one pair of power

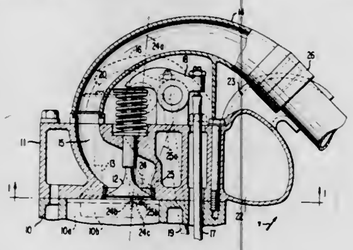
vanes is retained substantially stationary, with very little arcuate movement, while the other pair of power vanes, due to ignition of the compression chamber between adjacent vanes of opposite pairs, travels substantially half way around the annular chamber providing four cycles of engine operation.

3,500,799
ELECTROMECHANICAL CONTROL SYSTEM
Glendon M. Benson, Danville, Calif., assignor, by mesne assignments, to Physics International Company, San Leandro, Calif., a corporation of California
Filed Sept. 27, 1967, Ser. No. 671,060
Int. Cl. F02b *3/06;* **F02m** *51/00;* **F04b** *19/00*
U.S. Cl. 123—32 **10 Claims**



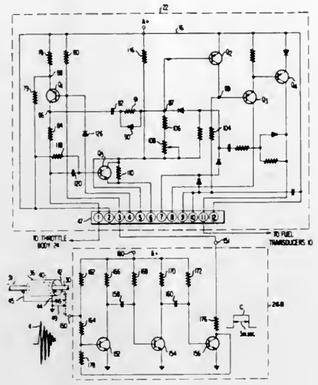
An electromechanical control system for controlling the timing, duration of excitation, and function of a transducer. A control system for controllably actuating two or more electromechanical transducers in precise timed relationship to one another. A control system for controlling the injection of fuel into the cylinders in a multi-cylinder engine.

3,500,800
INTERNAL COMBUSTION ENGINE WITH CYLINDERS IN V-ARRANGEMENT
Josef Reisacher, Fellbach, Wurttemberg, and Wolfgang Rapp, Esslingen (Neckar), Germany, assignors to Daimler-Benz, Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 1, 1968, Ser. No. 702,236
Claims priority, application Germany, Feb. 3, 1967, D 52,190
Int. Cl. F02b *3/00*
U.S. Cl. 123—32 **23 Claims**



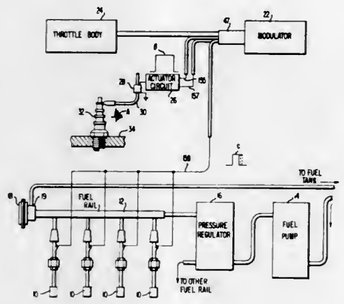
An internal combustion engine with cylinders in V-arrangement which includes for each cylinder an injection nozzle and glow or spark plug together with a rotary movement of the air in the combustion space whereby the injection nozzle and the glow or spark plug are arranged in the direction of rotation of the air between the inlet valve and the exhaust valve on that side in relation to the axial longitudinal plane extending through the respective cylinder axis of the cylinder or cylinders of a cylinder row which faces the longitudinal plane of symmetry, indicated by the direction of arrow *v* in FIGURE 2 of the V-type engine.

3,500,801
ACTUATOR CIRCUIT FOR ELECTRONIC PRECISION FUEL METERING SYSTEMS
Emile David Long and Keith C. Richardson, Elmira, N.Y., assignors to Gillett Tool Co., Inc., Buffalo, N.Y.
Filed Mar. 21, 1968, Ser. No. 715,056
Int. Cl. F02b *3/00, 33/00;* **F02p** *1/00*
U.S. Cl. 123—32 **14 Claims**



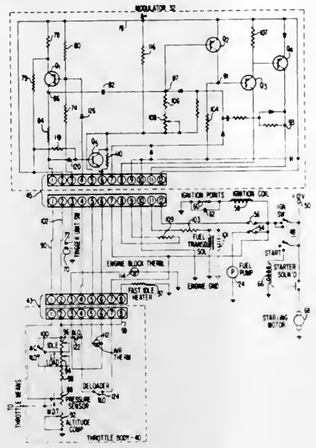
The present invention discloses circuit means for triggering a fuel modulator circuit once per engine cycle to control a precision fuel metering system so that a predetermined fuel charge is delivered to each of the cylinders of an engine in accordance with the selected operating engine parameters. The circuit is operable to generate an actuator pulse of predetermined constant pulse width from electrical energy coupled from a spark plug lead.

3,500,802
CONTROL CIRCUIT FOR PRECISION FUEL METERING SYSTEMS
Emile David Long, Elmira, N.Y., assignor, by mesne assignments, to Gillett Tool Co., Inc., Buffalo, N.Y.
Filed Mar. 21, 1968, Ser. No. 715,101
Int. Cl. F02m *69/00*
U.S. Cl. 123—32 **13 Claims**



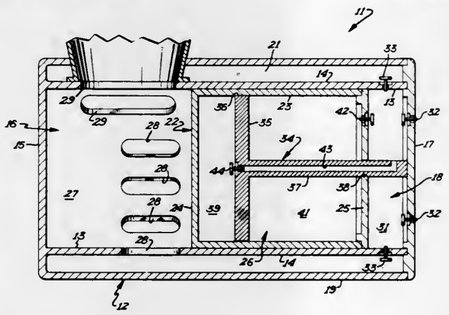
A circuit for generating a voltage which varies as a function of engine speed to additionally control the pulse width of an electrical energizing pulse applied to a plurality of fuel transducers which deliver a predetermined fuel charge to the respective cylinders of an internal combustion engine wherein the amount of the fuel charge being delivered is dependent upon the width of the energizing pulse.

3,500,803
ELECTRONIC MODULATOR CIRCUIT FOR PRECISION FUEL METERING SYSTEMS
Emile David Long, Elmira, N.Y., assignor to Gillett Tool Co., Inc., Buffalo, N.Y.
Continuation of application Ser. No. 653,484, July 14, 1967. This application Feb. 19, 1969, Ser. No. 809,450
Int. Cl. F02m *15/00;* **F02n** *5/12, 39/00*
U.S. Cl. 123—32 **13 Claims**



A non-regenerative variable pulse width generator for energizing one or more fuel transducers in a precision fuel metering system in order to optimally feed a predetermined charge of fuel to respective cylinders of an internal combustion engine during each engine cycle in accordance with the length of time each transducer is energized. The length of time or pulse width is determined from continuously measured engine operating parameters such as throttle position, engine temperature, barometric pressure, et cetera.

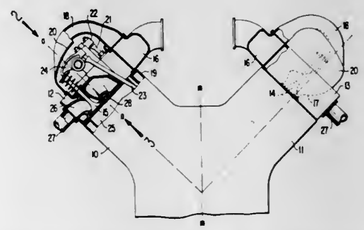
3,500,804
FREE PISTON ENGINE
Anton Braun, 6421 Warren Ave., Minneapolis, Minn. 55435
Continuation-in-part of application Ser. No. 657,625, Aug. 1, 1967. This application Dec. 16, 1968, Ser. No. 787,299
Int. Cl. F02d *39/10;* **F02b** *71/06*
U.S. Cl. 123—46 **20 Claims**



The improved free piston engine of this invention is a relatively lightweight and compact engine in which the return energy for the reciprocating, power-compressor piston is supplied by a unique arrangement of a stationary bouncer piston positioned within the reciprocating power-compressor piston. The novel stationary bouncer piston and reciprocating power-compressor piston arrangement permits the clearance volume tof the compressor section of the engine to be designed independently of the power section and permits, for any given power section, a significant reduction in the diameter of the compressor piston, as compared to prior free piston engines having compressor sections of the same volumetric delivery capacity.

This novel stationary bouncer piston and reciprocating power-compressor piston arrangement may be utilized with a free piston engine in which the power-compressor pistons have a uniform diameter, as well as with free piston engines which use the more conventional, so-called "stepped" power-compressor pistons.

3,500,805
GAS EXCHANGE SYSTEM FOR V-TYPE INTERNAL COMBUSTION ENGINES
Josef Reisacher, Fellbach, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 15, 1967, Ser. No. 690,813
Claims priority, application Germany, Dec. 23, 1966, D 51,858
Int. Cl. F02b *75/18, 75/22, 41/10*
U.S. Cl. 123—52 **42 Claims**

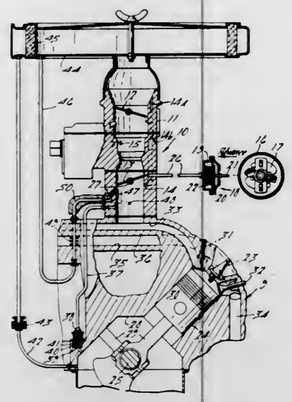


A gas-exchange system for internal combustion engines, especially for V-type engines having cylinders arranged in the form of a V, in which the inlet and exhaust lines are arranged on opposite sides of the cylinder and in which a swirling motion is imparted to the air or to the mixture within the combustion space by means of the inlet system; the inlet channel arranged in the cylinder head is thereby so arranged at the inlet valve that the swirling motion of the charge medium at the inlet valve is directed essentially toward the side of the inlet line, i.e., inwardly, and at the exhaust valve is directed essentially toward the side of the exhaust line, i.e., outwardly. The inlet channel in the cylinder head leading to the inlet valve is thereby connected with the inlet line by way of a connecting line extending across the cylinder head, either above or through the same.

3,500,806
PREHEATING INLET AIR DURING ENGINE IDLING
Jorma O. Sarto, Orchard Lake, and Everett G. Moeller, Grosse Pointe Farms, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 12, 1968, Ser. No. 720,859
Int. Cl. F02m *23/14;* **F02d** *37/02;* **F02f** *9/02*
U.S. Cl. 123—119 **8 Claims**

An internal combustion engine which may employ closed crankcase ventilation and which has an acceptable idle operating condition at optimum fuel economy is idled bypass air flow around the throttle is conducted in heat at retarded ignition and with idle fuel supplied in a stoichiometric mixture at an accelerated rate with respect to said condition of optimum economy. The idle combustion supporting air required for the accelerated idle fuel

supply in addition to the minimum non-preheatable air necessary for the crankcase ventilation and the customary exchange relationship with the hot exhaust gases of the



engine and induced into the carburetor induction conduit downstream of the throttle valve to heat the latter and enhance vaporization and dispersion of the idle fuel prior to combustion.

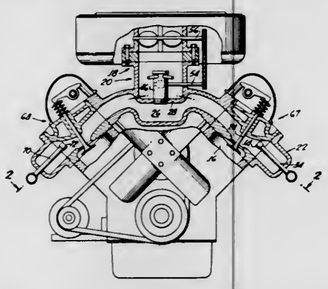
3,500,807
EXHAUST RECYCLE SYSTEM

Harold D. Daigh, Rolling Hills Estates, Calif., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 561,959, June 30, 1966. This application Mar. 4, 1968, Ser. No. 710,365

Int. Cl. F02m *25/06, 31/08;* **F01n** *1/14*

U.S. Cl. 123—119 **22 Claims**



This application describes an internal combustion engine with an exhaust recycle system and means for injecting air into the exhaust gas. Means are provided for prevention of air injection into that portion of exhaust gas which is recycled into the induction system.

3,500,808
CAPACITIVE-DISCHARGE IGNITION SYSTEM

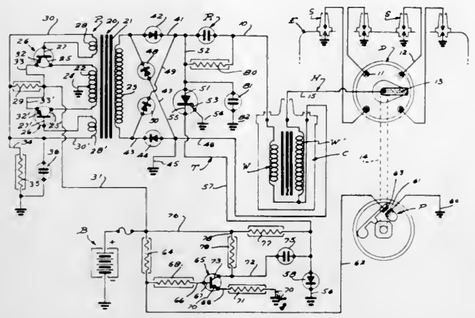
George V. Ilinski, Los Angeles, Calif., assignor to Grant Industries, Los Angeles, Calif., a corporation of California

Filed Nov. 28, 1967, Ser. No. 686,029

Int. Cl. F02p *1/00;* **H05b** *37/02, 39/04*

U.S. Cl. 123—148 **4 Claims**

A capacitor discharge ignition system for automotive internal combustion engines which includes and utilizes conventional low voltage D-C power source, coil, distributor, breaker points and spark plugs, said system including a step-up D-C to D-C converter connected with the power source, a saturable capacitor connected between the power source and coil, circuit means to effect discharge of the capacitor and including a silicon controlled rectifier, the gate of which is directly grounded and the anode of which is connected between the converter and capacitor and triggering means to intermittently open and close the rectifier and including a circuit connected with and between the power source, breaker points and rectifier cathode and adapted to apply negative voltage to the cathode with respect to the gate and such that the voltage between the breaker points does not exceed the voltage of the power source and the potential between the gate and cathode is below the maximum potential which the rectifier is capable of withstanding.



3,500,809
IGNITION ARRANGEMENT FOR INTERNAL COMBUSTION ENGINES

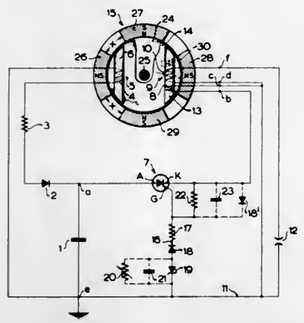
Gerd Höhne, Ludwigsburg, and Gerhard Söhner, Geradstetten, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Apr. 29, 1968, Ser. No. 724,794

Claims priority, application Germany, May 9, 1967, B 92,422

Int. Cl. F02p *1/00*

U.S. Cl. 123—148 **15 Claims**



An electronic circuit arrangement for firing spark plugs in internal combustion engines. A capacitor stores the energy for firing the spark plugs during one portion of the operation cycle. This energy is supplied to the capacitor by a charging coil operating in conjunction with a movable magnetic system. A semi-conductive control rectifier or thyristor discharges the energy from the capacitor in a controlled manner. The discharge from the capacitor is applied to the primary winding of an ignition transformer whose secondary winding is connected across the spark plug to be fired. Both the charging coil and the ignition transformer have ferromagnetic cores magnetically linked with the movable magnetic system. The latter moves a series of permanent magnets past the ferromagnetic cores to influence them in an alternating manner. Electronic circuit components are associated with the electronic switching element in the form of semiconductor rectifiers so as to assure reliable operation.

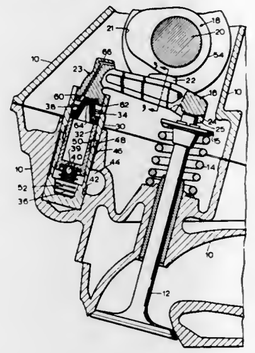
3,500,810
LUBRICATING OVERHEAD ROCKER ARM

Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan

Original application Jan. 5, 1966, Ser. No. 518,815, now Patent No. 3,400,696, dated Sept. 10, 1968. Divided and this application July 15, 1968, Ser. No. 767,867

Int. Cl. F01m *1/00;* **F16n** *17/06*

U.S. Cl. 123—196 **5 Claims**



In an internal combustion engine of the valve-in-head type in which an overhead rocker arm is pivoted at one end in an automatic hydraulic tappet, the pivot has a cylindrical bearing surface rocking on a flat surface on the rocker arm seat in the tappet; a hole in the seat feeds lubricant from inside the tappet to the rocker arm. The lubricant passes through a conduit in the rocker arm and squirts onto the cam and the cam-follower surface. As the arm rocks it rolls over the valve seat, rapidly and periodically changing the size of the orifice formed by the hole in the seat. This prevents clogging of the orifice.

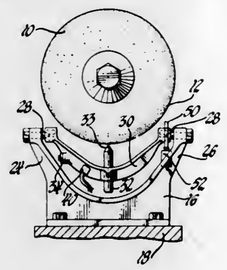
3,500,811
AUTOMATICALLY CONTROLLED DRESSING APPARATUS FOR A GRINDING WHEEL

Wallace W. Perkins, West Hartford, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 26, 1966, Ser. No. 575,312

Int. Cl. B24b *53/00*

U.S. Cl. 125—11 **9 Claims**



A grinding wheel dresser with means to monitor the vibrations of the dressing tool as caused by the grinding wheel and to indicate a need for dressing the wheel.

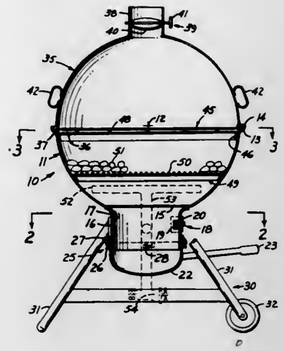
3,500,812
BARBEQUE STOVE

Otto Korngold, 61 E. Arthur, Arcadia, Calif. 91006

Filed Apr. 19, 1968, Ser. No. 722,763

Int. Cl. F24b *3/00;* **A47j** *37/07*

U.S. Cl. 126—25 **12 Claims**



This disclosure relates to a covered barbeque stove. The stove includes a base shell and a cover shell which are separably joined together at an upwardly facing flange formed on the base shell so that the cover shell fits inside the flange, and drippings drip into the base shell instead of onto the outside of the structure. The cover shell includes a flue on its central axis with exhaust gas control means in it, and the base shell includes a port to which an ash pan is removably fitted to catch ashes therein. Air inlet control means is provided in the base shell.

Food support means and fuel supply means are also provided inside the base shell.

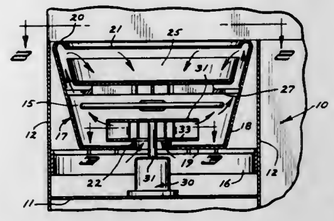
3,500,813
SPATTER CONTROL APPARATUS FOR RANGES

Gerald E. Opdahl, Litchfield, Minn. (R.C.A. BMEWS, Box 222, A.P.O. New York, N.Y. 09023)

Filed Sept. 11, 1968, Ser. No. 759,063

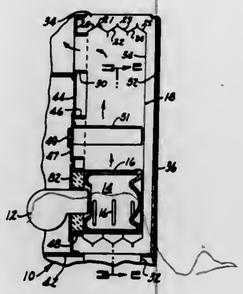
Int. Cl. F24c *15/12, 3/00, 15/20*

U.S. Cl. 126—39 **10 Claims**



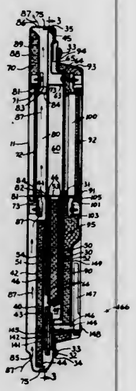
Spatter control apparatus for electric and gas ranges that includes a baffle member extending around the pan to be heated on a range heating element and having a deflector portion for directing the flow of gas downwardly into the pan. A fan forces air between the pan and baffle member at a sufficiently high velocity to direct most of the spatters back into the pan. In one embodiment, no structure is provided between the fan wheel and the heating element, while in the gas range embodiment there is provided a second baffle member between the pan and fan.

3,500,814
FURNACE HEAT EXCHANGER CONSTRUCTION
Warren H. De Lancey, Elyria, Ohio, assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,034
Int. Cl. F28f *3/12*; F23m *1/02, 9/06*
U.S. Cl. 126—110 **8 Claims**



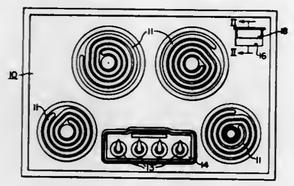
This invention relates to a hot air furnace construction comprising a hollow finned heat exchanger having a removal combustion chamber located in one of its ends, said chamber being configured to promote a swirling motion of the combustion products tending toward more complete combustion. The combustion chamber is ported so that hot gases fan outwardly into the hollow fins for more effective heat transfer with the treated air flowing along the fin outer surfaces.

3,500,815
WINDOWED DOOR FOR SELF-CLEANING OVEN
Raymond P. DeWeese, Elmer H. Meisinger, and Frank D. Prindle, Kankakee, Ill., assignors to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware
Filed May 21, 1968, Ser. No. 733,217
Int. Cl. F24c *15/04*
U.S. Cl. 126—200 **12 Claims**



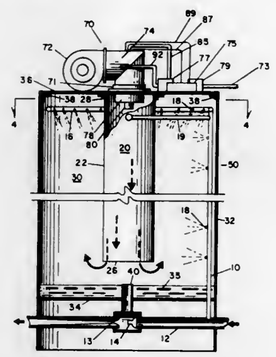
A door for a self-cleaning oven formed of spaced panels having registering window openings, enclosed front and back by sheets of glass with a shutter normally occupying a pocket below window level between adjacent panels with linkage for manually elevating the shutter into radiation-obstructing position in the window. Ports are provided for flow of cooling air behind the front panel and an interlock is provided for preventing start of the self-cleaning cycle unless the shutter is in place.

3,500,816
COOKING APPARATUS
Edmund H. Filipak, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1968, Ser. No. 754,810
Int. Cl. F24c *15/10*
U.S. Cl. 126—211 **4 Claims**



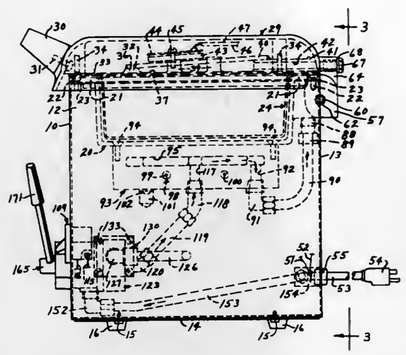
A range cooking top or range platform provided with an electric outlet mounted on the underside of a flat closure member which is movable between a horizontal position where it covers an opening in the top or platform with the outlet hidden therebelow and a vertical position where the outlet is accessible above the top or platform. An auxiliary closure element disposed at right angles to the flat closure member closes the opening from beneath when the closure member is in the vertical position with the outlet accessible.

3,500,817
LIQUID HEATING DEVICE
Richard H. Read, San Diego, Calif., assignor to Hydronics Systems, Inc., San Diego, Calif., a corporation of California
Filed Mar. 25, 1968, Ser. No. 715,612
Int. Cl. F24h *1/10*
U.S. Cl. 126—350 **10 Claims**



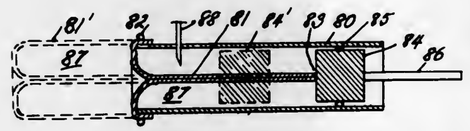
A heater for the heating of liquids is disclosed which has dual heat exchange chambers, one surrounded by the other. The inner heat exchange chamber has a flame producing means disposed in it which heats the liquid introduced into the chamber as well as the side wall of the heat exchange chamber, causing the inner heat exchange chamber to act as a bi-wall heat exchanger. Hot combustion gases generated by the flame producing means provide the heating means in the outer heat exchange chamber, together with the bi-wall effect.

3,500,818
FLASH STEAMER FOR MOISTENING AND HEATING FOOD PRODUCTS
Albert M. Elias, 13027 Frankfurt, Detroit, Mich. 48213
Filed Feb. 17, 1969, Ser. No. 799,581
Int. Cl. A47j *27/06*
U.S. Cl. 126—369 **15 Claims**



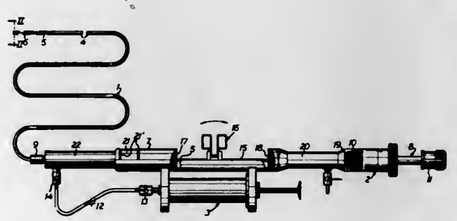
A flash steamer apparatus for use in steaming foods such as buns, bread, cake and the like, for the purpose of freshening the same and which includes a cabinet having a food compartment, a lower steam generating chest disposed below the food compartment, an upper heated steam chest disposed in a cover hingedly mounted over the food compartment, the upper steam chest is provided with a tapered steam receiving chamber so as to distribute the steam entering the chamber evenly through a plurality of discharge ports into the food compartment with a minimum loss of pressure, passage means for conveying steam generated in the lower steam generating chest to the upper steam chest including passageways formed through the hinge means for hinging the cover on the cabinet, and a rotary flow control valve and metering valve adapted to be connected to a water supply source for controlling the injection of metered amounts of water into the lower steam generating chest to convert the water into steam, and wherein the steam passes upwardly into the upper steam chest chamber and is discharged downwardly into heating engagement with food disposed in the food compartment.

3,500,819
MEDICAL PROBE ADAPTED TO BE EVERTED UNDER PRESSURE AND METHOD
Daniel Silverman, 5969 S. Birmingham, Tulsa, Okla. 74105
Filed Oct. 24, 1965, Ser. No. 504,815
The portion of the term of the patent subsequent to Feb. 2, 1982, has been disclaimed
Int. Cl. A61b *10/00*; A61j *1/00*
U.S. Cl. 128—1.2 **23 Claims**



This invention is directed to a medical instrument comprising a non-eversible tube, an elongated, flexible, eversible tubing inside the tube. One end of the tubing is closed, the other end is sealed circumferentially over a first end of the tube. Non-deformable, cylindrical, fluid-displacing means is inserted and sealed into the second end of the tube. The tube is filled with fluid. Then when the fluid-displacing means is pushed farther into the tube by means external to the tube, fluid in the tube will be displaced out through the first end, causing the tubing to be everted. When the fluid-displacing means is withdrawn, fluid will be withdrawn from the everted tubing back into the tube, causing the tubing to be inverted back into the tube.

3,500,820
MEDICAL PROBE FOR INJECTING X-RAY CONTRAST MEDIUM INTO THE BODY
Torsten Hakan Oskar Almén, Lansmansvagen, Kaglinge, Lockarp, Sweden
Filed July 1, 1966, Ser. No. 562,150
Claims priority, application Sweden, July 5, 1965, 8,832/65
Int. Cl. A61b *6/00*; A61m *25/00*
U.S. Cl. 128—2 **11 Claims**

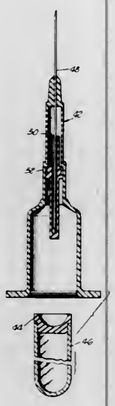


This invention relates to medical instruments to be introduced into a living body through a confined passage or system of canals, such as the vascular system, for examination, treatment or other purposes in the body, said instrument comprising a flexible tube and an element movable in said tube. The main characteristic features of the instrument suggested by the present invention reside in that the element includes at least two and sometimes three threads of stiff but flexible resilient material, such as plastic or metal, extending through the tube and shiftably united at their inner and outer ends, said threads being movable back and forth in relation to each other and to the tube as well as the tube being axially shiftable in relation to the element, to bend the front end portion of the element, such bend being controllable by the size of the lengthening or shortening of the threads in relation to each other and by the length to which said front end portion of the element is projected from the front end of the tube.

3,500,821
MULTIPLE BLOOD SAMPLING APPARATUS WITH ASPIRATION MEANS
Robert W. Ogle, Newport Beach, Calif., assignor to Asper-Vac Corporation, Wilmington, Del., a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,190
Int. Cl. A61m *1/00*
U.S. Cl. 128—2 **8 Claims**

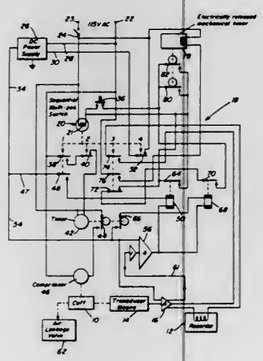
This patent describes a novel blood sampling device comprising a translucent flexible tubular holder having an open end and a closed end, extending through its closed end a double-ended needle, the inner end of the needle being covered over a portion of its length by a longitudinally compressible imperforate rubber tube, the inside diameter of the tube being greater than the external diameter of the needle so that a fluid passage is provided from the inner end of the needle to the open end of the

tube, the exterior of the rubber tube sealing on the interior of the holder at a point remote from the closed end of said tube, said holder being flexible in proximity to the point of sealing of the imperforate tube on the interior of the holder so that when the other end of the needle is inserted in the patient, the operator can establish whether



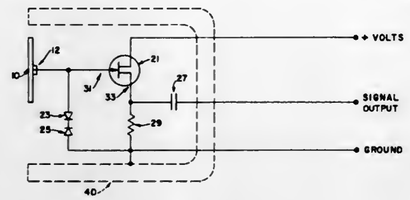
the needle is in a vein by simply squeezing the holder out of round thus creating an air passage in proximity to the point of sealing, thus permitting a small amount of blood to escape from the inner end of the needle and flow inside of the tube to visibly emerge at the open end of the tube.

3,500,822
BLOOD PRESSURE MEASURING AND RECORDING APPARATUS
Oliver S. Schadt, 721 Turner, and Luther A. Schubert, 1845 29th SW., both of Allentown, Pa. 18103
Filed Dec. 27, 1967, Ser. No. 693,792
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **9 Claims**



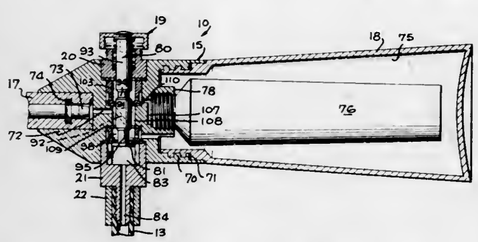
An inflatable cuff is positioned over the brachial artery in the upper arm. A microphone is positioned underneath the cuff, the output of the microphone being connected to a recorder. A stepping switch controlled circuit causes inflation of the cuff; controlled reduction of pressure in the cuff; energization of the recorder for recording blood pressure pulse beat; and resetting of the control circuit.

3,500,823
ELECTROCARDIOGRAPHIC AND BIOELECTRIC CAPACITIVE ELECTRODE
Philip C. Richardson and Alfredo Lopez, Jr., San Antonio, Tex., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 20, 1967, Ser. No. 684,574
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.06 **3 Claims**



Electrodes for electrocardiographic and bioelectric recording have been insulated against direct contact with the skin. Each electrode is a thin anodized aluminum disk. A one stage transistor source follower circuit is built on the electrode and is used to match the high electrode impedance to the lower impedance of subsequent circuitry. The electrodes can be applied on unprepared skin and easily held in place.

3,500,824
ORAL HYDROTHERAPEUTIC APPARATUS
Samuel Gilbert, Los Angeles, Calif., assignor to Hydro Manufacturing Inc., Encino, Calif., a corporation of California
Filed Mar. 16, 1967, Ser. No. 623,676
Int. Cl. A61b *9/00;* **A61m** *3/00*
U.S. Cl. 128—66 **8 Claims**

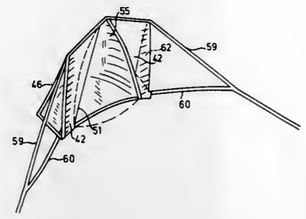


An oral syringe which dispenses fluid under pressure for the purpose of cleaning teeth and massaging gums. A finger operated push button carried on the syringe handle allows the user to meter desired amounts of mouthwash from a container into the pressurized fluid stream through interconnecting valve passages and chambers. An aerator-valve assembly permits the syringe to be detachably coupled to an ordinary water faucet and additionally allows the user to by-pass fluid from the syringe without the necessity of detaching the entire assembly.

3,500,825
MOUTH COVER
Bror Axel Erling Andersson and Erik Arne Andersson, both of Sveavagen 13–15, Stockholm, Sweden
Filed Dec. 19, 1966, Ser. No. 603,024
Claims priority, application Sweden, Dec. 30, 1965, 16,996/65
Int. Cl. A61b *19/02;* **A62b** *23/06*
U.S. Cl. 128—139 **10 Claims**

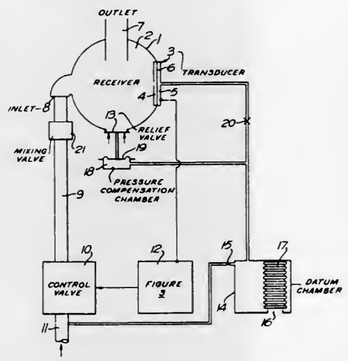
A mouth cover having a shield wall which covers the nose, mouth and adjacent portions of the face and extends downwardly below the jaw-bone and also contains

an inner wall having an opening to receive the passage of the nose and mouth therethrough. The inner wall is connected to the shield wall at the upper and lower portions thereof. The shield wall extends forward of the nose and mouth to define a through air channel in front



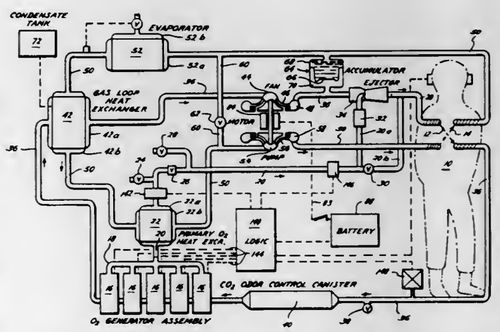
of the nose and mouth. This air channel extends from one side of said shield wall to the other and guides the flow of inhalation and exhalation air for movement between said shield and inner walls from and to the opposite sides of said air channel.

3,500,826
AUTOMATIC FLUID SUPPLY CONTROL APPARATUS
Christopher Adrian Haire, Weybridge, England, assignor, by mesne assignments, to Westland Aircraft Limited, Yeovil, Somerset, England, a corporation of the United Kingdom
Filed July 19, 1965, Ser. No. 472,901
Claims priority, application Great Britain, Mar. 1, 1965, 8,631/65
Int. Cl. A62b *7/04*
U.S. Cl. 128—142.2 **19 Claims**



1. Oxygen breathing apparatus for supplying oxygen to a person breathing, comprising a face mask having the gas inlet; means for connecting the mask with the face of the person, so that the mask and the face will co-operate to form a mask cavity with which the nose and mouth of the person communicate; a capacitance differential gas-pressure transducer having first and second chambers and a diaphragm providing a capacitor dielectric that separates the chambers; the wall of the second chamber providing one electrode and the face of the diaphragm exposed within the first chamber providing the other electrode, whereby relative movement of the electrodes varies the capacitance generating a variable electric output signal; a pressure datum chamber for providing gas at an adjustable predetermined pressure; means for mounting the transducer in the mask and for permitting gas in the mask cavity to communicate with the first chamber of the transducer, and means for conveying gas between the pressure datum chamber and the second chamber of the transducer, so that the capacitance of the transducer will be related to a difference between the pressures in the mask cavity and in the datum chamber, so long as the pressure in the datum chamber is at least as great as the pressure in the mask cavity; an electrically actuable oxygen flow control valve having an oxygen inlet, an oxygen outlet and electronic control device for supplying an electric control signal to actuate the valve so that oxygen may pass from the inlet to the outlet, according to the magnitude of the control signal; means for connecting the control valve outlet to the gas inlet of the face mask; means for connecting the control valve inlet to a source of oxygen at a pressure greater than the desired maximum pressure in the mask cavity; the electronic control device having input and output connections and adapted to provide an electric control signal according to the capacitance at the input connection; means for electrically connecting the input and output connections of said device to the electrodes of the capacitance transducer and to the oxygen flow control valve, respectively, so that oxygen may be admitted to the mask cavity according to the demand of the person breathing and inhaling; damping means associated with the means for conveying gas between the datum pressure chamber and the second chamber of the transducer to allow stable operation of the apparatus throughout a desired range of operation; a biased relief valve, having a gas inlet and a gas outlet, and means, connected to the datum pressure chamber, for biasing the valve to a closed position; means connecting the inlet and the outlet of the relief valve to the mask cavity and to atmosphere, respectively, so that the relief valve will remain open so long as the pressure within the mask cavity exceeds that in the datum chamber, thereby allowing gas to exhaust from the mask cavity to the ambient atmosphere, when the pressure in the datum pressure chamber exceeds the ambient atmospheric pressure, and thereby releasing gas exhaled by the person breathing.

3,500,827
PORTABLE ENVIRONMENTAL CONTROL SYSTEM
T. O. Paine, Acting Administrator of the National Aeronautics and Space Administration, with respect to an invention of William J. O'Reilly, Los Angeles, Calif., Donald A. Myers, Lakewood, Colo., and Paul D. Peterson, Los Angeles, Calif.
Filed Jan. 16, 1969, Ser. No. 791,693
Int. Cl. A62b *7/02;* **A61m** *15/00;* **F24f** *7/06*
U.S. Cl. 128—142.5 **10 Claims**



A portable environmental control and life support system for a protective garment of the type having an inner plenum chamber and an outer liquid chamber. A breathable fluid flow system communicates with and provides

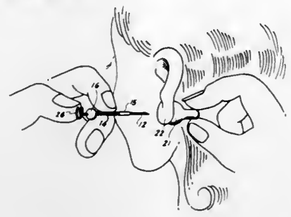
oxygen for purposes of supporting life within the plenum chamber and for pressuring said chamber. Means are provided for withdrawing the exhaust oxygen stream from the plenum chamber, removing carbon dioxide and odor, cooling the stream and recirculating it back to the plenum chamber. A cooling liquid system in heat exchange relation with the oxygen system communicates with the liquid chamber of the garment for purposes of circulating a cooling liquid therethrough. The liquid is withdrawn from such chamber, cooled by evaporative means and is passed in heat exchange relation with the oxygen stream to cool the oxygen stream where upon the liquid is again returned to the liquid chamber of the protective garment. Circulation of both the oxygen and cooling liquid systems is mechanically induced by a single motor driving a compressor and a pump wherein the motor is directly coupled to the compressor and coupled to the pump by means of a magnetic gear reducer and a magnetic clutch.

3,500,828
INTRAVENOUS CATHETER APPARATUS
Fred W. Podhora, 7429 SW. 59th Ave., Portland, Oreg. 97219
Filed Aug. 31, 1966, Ser. No. 576,290
Int. Cl. A61b *17/34*; A61m *5/18*
U.S. Cl. 128—214.4 **4 Claims**



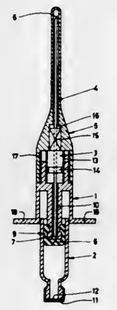
An intravenous catheter apparatus having a thin-walled hollow catheter of substantially uniform normal inner and outer diameter made of translucent flexible plastic and a surgical needle removably disposed within the catheter, the needle having an elongated hollow stem, also of uniform inner and outer diameter, and having a sharpened edge at one end to make a venipuncture. The outer diameter of the needle is equal to the normal inner diameter of the catheter. One end of the needle is removably adapted to protrude from the distal end of the catheter, and the end of the catheter is externally tapered to facilitate its introduction into the vein. The inner diameter of the catheter is reduced in the region of its distal end below that of its normal inner diameter thus snugly to grip the needle and facilitate entry of the catheter into the venipuncture following the end of the needle. A slot is formed in the wall of the needle intermediate its ends at a position within the catheter remote from the region of reduced inner diameter, whereby blood may flow between the catheter and the needle in the region of the slot, thus to be visible when the venipuncture is successfully completed.

3,500,829
EARHOLE PIERCING AND TREATING APPARATUS
Herbert Abramowitz, 143—19 25th Ave., Whitestone, N.Y. 11357
Filed Feb. 9, 1968, Ser. No. 704,413
Int. Cl. A61b *17/34*
U.S. Cl. 128—215 **6 Claims**



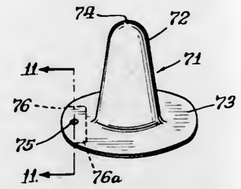
An apparatus for piercing the lobe of a human ear with a minimum of pain and with means for substantially eliminating the possibility of infection thereafter and while wearing the earring. The apparatus includes a hollow puncturing needle with slotted earring and short auxiliary cutting tubes sleeved thereon for piercing the lobe of the ear. The earring tube carries an ornamental ball at one end thereof and is forced into the pierced opening in the lobe with the needle and with the ball adapted to be positioned against the outer side of the lobe. The needle is thereafter removed from the sleeves and when removed another ball or a fastener is friction fitted over the other end of the tube at the inner side of the ear thereby to constitute an earring. A plastic anvil is applied against the inner side of the ear during the piercing operation to receive the pointed end of the needle and the short cutting sleeve and to protect the fingers of one hand while piercing the ear. The slotted earring tube allows air to enter the pierced opening at all times. A cleaning rod is provided for cleaning the tube and upon removing the inner ball a squeeze tube filled with a medicament or perfume can be applied to the earring tube to inject its contents into the pierced opening.

3,500,830
INJECTION SYRINGE
Johannes Marie van Eck, Leeuwarden, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,509
Claims priority, application Netherlands, Aug. 10, 1966, 6611226
Int. Cl. A61m *5/24*
U.S. Cl. 128—218 **5 Claims**



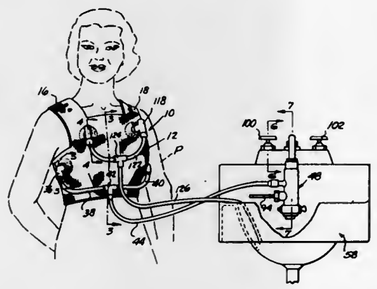
An injection syringe having a protective cap screw threaded on the syringe body over the injection needle. The unscrewing of this cap will by means of an oppositely threaded screw connection, axially displace the injection needle toward the reservoir such that the end of the needle can puncture the reservoir wall.

3,500,831
FILM WALLED RESILIENT NIPPLES AND CONTAINERS AND LIQUID CONTAINING PACKAGES INTEGRAL THEREWITH
Charles H. Schaar, Libertyville, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 367,353, May 14, 1964. This application Oct. 17, 1968, Ser. No. 781,675
Int. Cl. A61j *11/02*
U.S. Cl. 128—252 **6 Claims**



Infant feeding nipple in which the outer wall of the upstanding teat portion is a thin, limp film which is maintained in teat shape by a filling of resilient material through which liquid may flow, including a nipple with a stiff flange extending radially outwardly from the base of the teat providing a means of attachment to collapsible and non-collapsible containers and venting means in the flange of the nipple.

3,500,832
BREAST DEVELOPING JACKET
Carroll J. Nunnery, 2803 Sandwood St., Lakewood, Calif. 90712
Filed Oct. 27, 1967, Ser. No. 678,699
Int. Cl. A61f *7/00*
U.S. Cl. 128—379 **7 Claims**



A jacket for developing a woman's breasts having an inner and outer ply of fabric suspended from the shoulders and covering the chest. The inner ply is distensible relative to the outer ply. Warm water is circulated between the plies and causes the inner ply to distend and conform to the contour of the wearer's breasts. The circulation of warm water around the breasts enlarges the arteries and veins therein, by increasing blood circulation, and also causes the storage of fat tissue in the heated area.

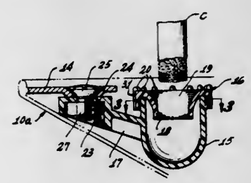
3,500,833
MANUFACTURE OF RECONSTITUTED TOBACCO PRODUCTS
Howard M. Halter, Norwalk, and Otto K. Schmidt, South Windsor, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
No Drawing. Filed Dec. 7, 1967, Ser. No. 688,663
Int. Cl. A24b *3/14*
U.S. Cl. 131—140 **4 Claims**

Process for making reconstituted tobacco that comprises mixing and then shaping finely divided tobacco and an adhesive comprising high viscosity ethylcellulose having an ethoxyl content of 45.5% to 46.8%, said ethyl cellulose viscosity at 5% concentration being at least 5,000 cps. at 25° C.

3,500,834
PROCESS FOR CURING TOBACCO
Miller Taylor and Clarence Taylor, Elizabethtown, N.C., assignors to Taylor Tobacco Enterprises, Inc., Elizabethtown, N.C., a corporation of North Carolina
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,482
Int. Cl. A24b *9/00*
U.S. Cl. 131—140 **9 Claims**

A process for curing tobacco which comprises freezing moisture containing tobacco leaves and stems, permitting any frozen water present in said frozen tobacco leaves or stems to thaw and removing the thawed alkaloid-containing water from said tobacco leaves or stems. Generally, it is preferable to freeze the tobacco leaves or stems as soon as possible after picking, and it is also preferred to remove the thawed water from the frozen tobacco leaves or stems as soon as possible. Tobacco cured by the novel process of the invention has a lowered alkaloid and sugar content, will not absorb substantial amounts of atmospheric moisture, and does not sponge or rot upon storage. In addition, no re-drying is required before commercial usage.

3,500,835
AUTOMOTIVE ASH TRAY AND SNUFFER
Edward J. Klassen, 2385 Roscomare Road, Los Angeles, Calif. 90024
Filed July 19, 1967, Ser. No. 654,651
Int. Cl. A24f *13/18, 19/14*
U.S. Cl. 131—235 **5 Claims**



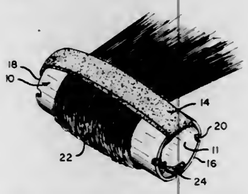
A sliding ash tray for automotive use includes a snuffing bowl having a removable apertured cover and an integral arm arranged to be attached to a resilient latching arm extending into the tray. The arm has a portion which extends radially outwardly of the bowl and upwardly to substantially the upper end of the same. The aperture in the cover is flared and has a diameter such that when the lit end of a cigarette is inserted therethrough and into the bowl it will be snuffed by the exclusion of oxygen.

3,500,836
HAIR CURLER WITH OBSCURING MEANS
Philip J. Jordan, 263 Lincoln St., Worcester, Mass. 01605
Filed Dec. 23, 1966, Ser. No. 604,429
Int. Cl. A45d *2/00, 8/00;* **A41g** *5/00*
U.S. Cl. 132—40 **2 Claims**



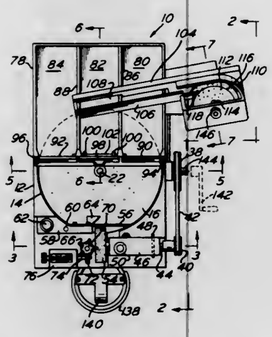
A hair curler including a cylindrical mandrel for receiving thereabout a coil of a person's hair. A split sleeve is provided for clamping the person's hair to the mandrel. On the outside of the sleeve is mounted a covering of artificial hair to conceal the curler from view while the hair is being set.

3,500,837
HAIR CURLERS
Marcella Ferens, P.O. Box 84, Darragh, Pa. 15625
Filed July 19, 1968, Ser. No. 746,182
Int. Cl. A45d *2/14*
U.S. Cl. 132—40 **3 Claims**



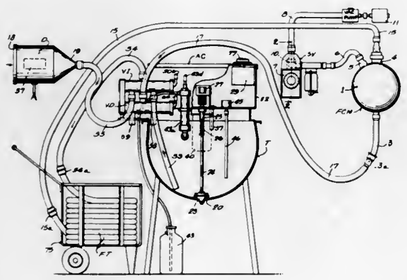
The application discloses a hair curler comprising a hollow tube having a strip of resilient, sponge-like material fixed at one end. The strip is adapted to pass over the hair curled on the tube and have its free end inserted in the end of the tube opposite the fixed end of the strip of sponge-like material.

3,500,838
UNITARY COIN SORTING AND COUNTING DEVICE
Maurice Seifert, 1201 Claridge Road, Wyndmoor, Pa. 19118
Filed Mar. 13, 1968, Ser. No. 712,726
Int. Cl. G07d *3/16, 19/04, 3/02*
U.S. Cl. 133—3 **6 Claims**



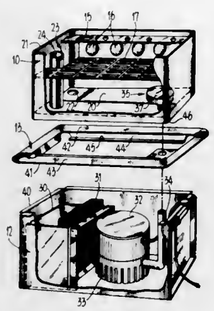
A unitary coin sorting and counting device wherein the sorting portion is operatively connected to the counting portion so that when a group of intermingled coins of different denominations are inserted at one end of the machine, the coins are sorted and a selected denomination of coin is separated and counted in a single operation without any intermediate handling.

3,500,839
AUTOMATED WASHING SYSTEM FOR CLEANING, SANITIZING AND DRYING FLEXIBLE TUBING OR THE LIKE
Lloyd F. Bender, Hayward, Wis. 54843
Filed May 7, 1968, Ser. No. 727,200
Int. Cl. B08b *3/10, 9/02*
U.S. Cl. 134—57 **5 Claims**



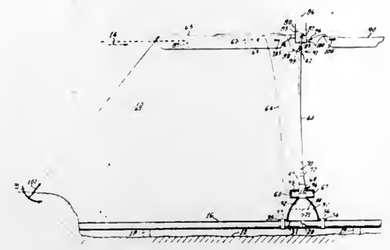
A washing apparatus includes a fluid circuit for conducting a cleansing solution through conveying conduits and also includes drying means for blowing heated air through the conduits after they are cleaned. The apparatus further includes a shiftable valve means for the fluids and electrical control means for sequentially operating the valve means and drying means in proper timed relationship.

3,500,840
CLEANING AND STERILIZING APPARATUS FOR BARBERING TOOLS
Harvey R. Maatz, 1076 40th St., Oakland, Calif. 94608
Filed Nov. 30, 1967, Ser. No. 686,961
Int. Cl. A61l *7/00;* **B08b** *3/00*
U.S. Cl. 134—111 **2 Claims**



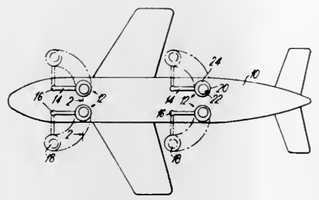
An apparatus for cleaning and sterilizing barbering tools and the like wherein a sterilizing fluid is circulated over the tools to remove the dirt, oil, and hair. The dirt, oil, and hair are washed away by the circulating cleaning fluid and collected and retained in a filter tank while the tools drain and dry in a sterile condition.

3,500,841
FLUID RECOVERY SYSTEM AND METHOD
Campbell F. Logan, 530 Goodwin St., Jacksonville, Fla. 32204
Filed Aug. 1, 1968, Ser. No. 749,415
Int. Cl. F17d *1/16, 1/18*
U.S. Cl. 137—13 **10 Claims**



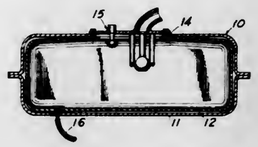
A method and system for recovering a fluid leaking from a crack in a submerged flowline or the like, in a flowing body of water wherein the fluid has a specific gravity less than the specific gravity of water and substantially immiscible therewith, the system includes a chamber positioned adjacently above the crack, and means are attached to the chamber to fix the relative position between the chamber and the crack. The chamber has an open bottom to permit ingress of the fluid leaking from the crack to flow into the chamber. An elongated conduit is attached to the chamber and extends upwardly to a position adjacent the water's surface, the conduit providing a protected path for the leaking fluid from the chamber to the water's surface. A disposal means, including a burner, is attached to the conduit adjacent the water's surface for disposing of the fluid which has been passed through the conduit. When the fluid being recovered is a liquid, the system may include a gas elevating means, having a gas source in the boat and another conduit between the gas source and chamber, to assist the liquid in moving from the chamber through the first mentioned conduit.

3,500,842
AIR INTAKES FOR GAS TURBINE JET PROPULSION ENGINES
Stanley William Birch, Spondon, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed July 12, 1968, Ser. No. 744,576
Claims priority, application Great Britain, Aug. 31, 1967, 39,791/67
Int. Cl. B64d *33/02;* **B64c** *15/12;* **F02b** *27/00*
U.S. Cl. 137—15.1 **3 Claims**



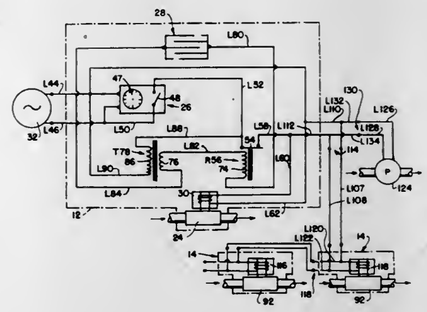
An air intake for a gas turbine jet propulsion engine comprising a member having inner and outer peripheries formed by two eccentric circles and in any radial section therethrough, said any section is convex, the convex shape being partly elliptical in the plane of said section when it passes through the broadest part of the annulus defined by the two eccentric circles, and changing symmetrically about the line of said section to semi-circular at the narrowest part of said annnlus.

3,500,843
FUEL TANK ASSEMBLY WITH GRAVITY VENT VALVE
Charles Eugene White, 603 Chinquopin Drive, Marietta, Ga. 30060
Filed Oct. 2, 1967, Ser. No. 672,216
Int. Cl. F16k *17/36;* **B65k** *51/16;* **B60k** *15/02*
U.S. Cl. 137—43 **8 Claims**



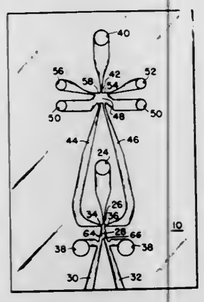
A filler assembly for an automobile fuel tank comprising an inlet filling conduit communicating at one of its ends with the inside of the tank, a vent conduit communicating with the inside of the tank, a valve for selectively closing the inlet conduit, and a valve for selectively closing the vent conduit. The valves include a spring urged closure member which opens the conduit when the tank is in an upright position, but close the conduits when the tank is tilted further than sixty degrees from the horizontal.

3,500,844
CONTROLS FOR LAWN SPRINKLING SYSTEMS AND THE LIKE
George E. Sanner, Cypress Hill, Sparks, Md. 21152
Filed May 18, 1965, Ser. No. 456,787
Int. Cl. A01g *25/00;* **F16k** *17/36, 21/18*
U.S. Cl. 137—78 **8 Claims**



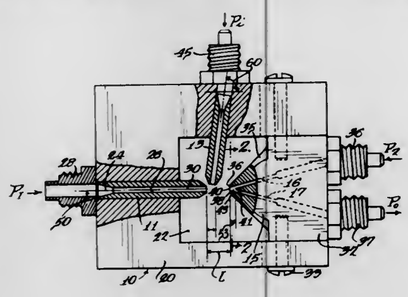
A lawn sprinkling system or the like including at least one solenoid actuated flow valve for controlling the flow of water to a sprinkling device, timer mechanism for regulating the operation of said valve and the flow of water therethrough, and an override arrangement for effecting the closing of said valve during periods of actual rainfall and for automatically restoring the operation of the valve to the control of the timer mechanism when the rainfall ceases.

3,500,845
PNEUMATIC TRIGGER
Robert H. Bellman and Thomas W. Bermel, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 27, 1966, Ser. No. 568,233
Int. Cl. F15c *1/04*
U.S. Cl. 137—81.5 **5 Claims**



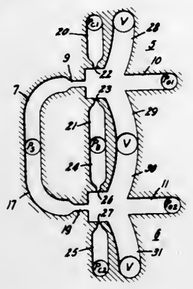
A fluid operated device for producing an output fluid stream in response to a fluid control signal which has attained a predetermined minimum threshold level. The device consists of at least one proportional amplifier, the two outlet passages of which are connected to the control passages of a bistable fluid amplifier. A source of biasing fluid is connected to one of the control orifices of the proportional fluid amplifier. The fluid control signal is connected to the opposing control orifice and causes the bistable fluid amplifier to switch when the control signal overcomes the bias.

3,500,846
FLUID DEVICE
Orin Lew Wood, Murray, Utah, assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Dec. 30, 1966, Ser. No. 606,238
Int Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 **24 Claims**



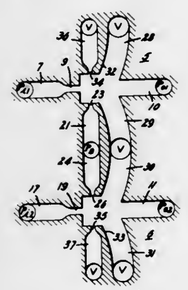
A fluid amplifier having high gain and high pressure recovery characteristics including a supply nozzle for providing a first fluid stream into a low pressure region, a receiver positioned opposite the supply nozzle having a conical configuration with an orifice at the apex of the cone with a first passage in the receiver communicating with the orifice for supplying a second supply stream which impacts with the main supply stream adjacent the tip of the receiver, a discrete outlet fluid passage in the receiver also communicating directly with the orifice the latter being angularly aligned in one state with the resulting flow vector between the first and second supply streams, such that as the momentum flux of the first supply stream is varied the flow stream resulting from the interaction of the first and second streams will move away from the discrete outlet passage toward the low pressure region.

3,500,847
VARIABLE GAIN FLUIDIC DEVICE
Martin C. Doherty, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 28, 1967, Ser. No. 619,361
Int. Cl. F15c *1/14, 1/12*
U.S. Cl. 137—81.5 **10 Claims**



A two-dimensional flow fluidic device has two interconnected analog fluid amplifiers of the single receiver type with the power fluid inlets connected to a common source of constant pressurized fluid and first control fluid inlets connected to a source of differentially pressurized fluid input signals to be amplified. Second control fluid inlets coplanar with the first control inlets and power fluid inlets are connected to a common source of pressurized fluid adjustable in pressure to determine the operating point and gain of the fluid amplifiers. A pair of opposed vent passages are located intermediate the receiver and control fluid inlets in each amplifier. The differential pressure of the fluid received in the fluid receivers is the output of the device representing the amplified input signal, and the gain is some value greater or less than unity as determined by the pressure of the fluid supplied to the second control fluid inlets.

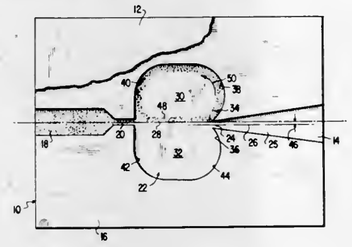
3,500,848
VARIABLE GAIN FLUIDIC DEVICE
Lonny R. Kelley, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 28, 1967, Ser. No. 619,362
Int. Cl. F15c *1/14, 1/12*
U.S. Cl. 137—81.5 **3 Claims**



A two-dimensional flow fluidic device has two interconnected analog fluid amplifiers of the single receiver type with the power fluid inlets connected to a source

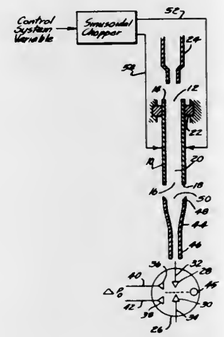
of differentially pressurized fluid input signals to be amplified. First control fluid inlets are connected to a common source of pressurized fluid adjustable in pressure to determine the operating region of the fluid amplifiers. A pair of opposed vent passages are located adjacent the fluid receiver in each amplifier. Additional venting may be provided by connecting another vent passage to a second control fluid inlet in each amplifier. The differential pressure of the fluid received in the fluid receivers is the output of the device representing the amplified input signal, and the gain is some value less than unity as determined by the pressure of the fluid supplied to the first control fluid inlets.

3,500,849
FREE-RUNNING OSCILLATOR
Paul C. McLeod, Jr., Little Rock, Ark., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 10, 1967, Ser. No. 637,540
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **7 Claims**



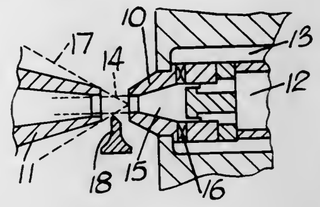
A free-running fluid oscillator including a single outlet port of approximately the same cross-sectional area, but axially offset slightly from an inlet nozzle located at opposite ends of a self-pressurized oscillator chamber.

3,500,850
FLUID SIGNAL VIBRATING REED APPARATUS
Lonny R. Kelley, Ballston Lake, N.Y., assignor to the United States of America
Filed Sept. 15, 1967, Ser. No. 668,754
Int. Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 **6 Claims**



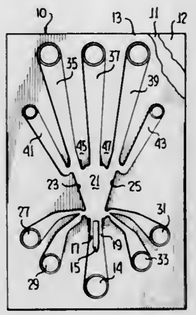
This invention relates to improved apparatus of the vibrating reed type in which a hollow vibrating reed is provided and positioned in cooperative relation to a fluid receiver to control the passage and interruption of a fluid flow from a fluid flow source to a fluid amplifier to thereby control the differential pressure output of the fluid amplifier in relation to the state of excitement of the vibrating reed.

3,500,851
FLUID FLOW CONTROL DEVICES
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Oct. 9, 1967, Ser. No. 673,862
Int. Cl. F15c *1/18*
U.S. Cl. 137—81.5 **2 Claims**



A fluid flow control device comprises a discharge nozzle and an aligned receiving nozzle, the discharge nozzle having two feed passages, one of which is arranged to produce a laminar jet and the other being arranged to disturb such laminar flow, and there being means for varying the proportion of flow to the feed passages and thus the flow pattern emitted, and hence the proportion of the total flow received in the receiving nozzle.

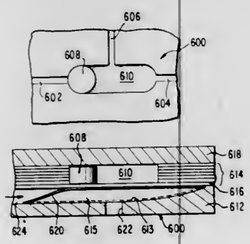
3,500,852
PURE FLUID AMPLIFIER HAVING A STABLE UNDEFLECTED POWER STREAM
Peter Bauer, Germantown, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Feb. 7, 1968, Ser. No. 703,659
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 **15 Claims**



A pure fluid amplifier has at least one stable state in which its power stream is undeflected. The stable undeflected power stream is formed from two parallel spaced streams issuing into the amplifier interaction region from two nozzles in sufficiently close proximity that mutual entrainment between the streams greatly reduces the pressure between the stream relative to the regions on the other

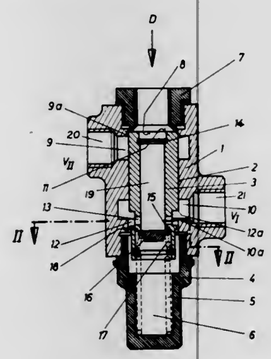
sides of the streams and causes them to merge downstream of the nozzles, stabilizing in a central position regardless of the sidewall effects. The wall surface between the nozzles is blunt rather than streamlined to enhance initial separation of the streams and faster mutual entrainment of fluid between the streams.

3,500,853
PILL-TYPE FLUIDIC DEVICES UTILIZING MAGNETIC MEMORY AND RESTRAINING MEANS
Peter A. Freeman, Baltimore, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Original application Oct. 22, 1965, Ser. No. 501,157, now Patent No. 3,362,633, dated Jan. 9, 1968. Divided and this application Aug. 24, 1967, Ser. No. 670,492
Int. Cl. F16c *3/00, 1/08*
U.S. Cl. 137—112 **3 Claims**



A fluidic device in which a permanently magnetized disc-like pill is ferromagnetically maintained in position in its non-operating state so as to provide a magnetic memory of its last position.

3,500,854
VALVE DEVICE
Johannes Altmeppen, Empelde, and Albert Steidl, Schwabisch, Gmund, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, a corporation of Germany
Filed Mar. 27, 1967, Ser. No. 626,076
Claims priority, application Germany, Mar. 25, 1966, Z 12,126
Int. Cl. G05d *11/03*
U.S. Cl. 137—118 **7 Claims**

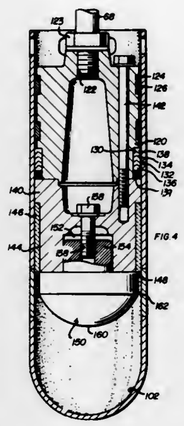


The invention is for an automatically acting distribution valve which provides flow to two systems which use hydraulic feed wherein continuous flow to one system must be maintained at a substantially constant pressure value and during the course of which flow the other system may be intermittently fed and exhausted, without causing any serious disturbance of pressure in the continuous flow system. The effect is accomplished by means of a sliding sleeve valve having an initial position biased to cut off flow to the intermittent system while permitting flow continuously to the other system. The valve is actuated in a manner heretofore known by a differential pressure diaphragm having a restricted flow orifice at one end of an axial passageway in the valve sleeve. The other end of the passageway is closed by a check valve so that when the valve sleeve is moving to open flow to the intermittent system, movement is retarded by the piston displacement effect in coaction with a restricted flow circumferential gap between the valve sleeve and housing which throttles flow to slow the opening movement, thus avoiding vibrations of the valve sleeve.

When pressure feed to the intermittently operating system is cut off there is ordinarily a pressure drop in the housing due to momentary connection with the exhaust line of the pressurizing system, aggravated by a slowly closing sleeve valve due to suction effect.

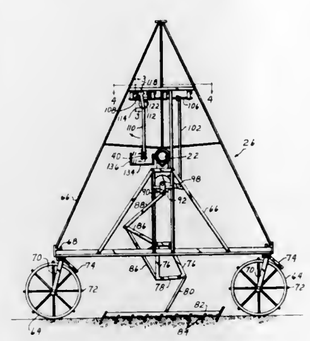
To eliminate this harmful effect the check valve opens when the sleeve valve moves to cut off the intermittently operable system. This permits large flow through the valve sleeve eliminating the suction that would otherwise slow the movement. The opening of the check valve thus permits rapid movement of the sleeve valve to closing position so that there is no large drop in pressure in the housing which would affect the continuously operating system.

3,500,855
CONCRETE PUMP VALVE WITH WALL SCRAPING MEANS
Aaron M. Schaible and Philip D. Wenzel, Rockford, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed May 1, 1967, Ser. No. 634,954
Int. Cl. F16k *3/36, 25/00, 51/00*
U.S. Cl. 137—242 **3 Claims**



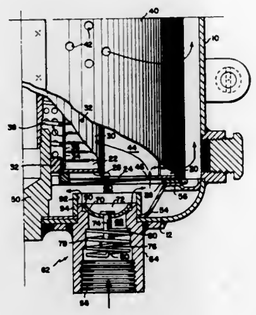
A pump and valve assembly for controlling the flow of aggregate containing concrete. The valve has a piston portion reciprocated in a valve chamber and carrying a nose portion on one end thereof with a wiping shoulder intermediate the two portions to prevent collection of aggregate in the valve chamber.

3,500,856
IRRIGATION SYSTEM WITH DRIVING CHALK LINE
Ralph D. Boone, Clovis, N. Mex., and Rufus J. Purtell, Brownfield, Tex., assignors to The J. B. Knight Co. Inc., Brownfield, Tex., a corporation of Texas
Filed Aug. 23, 1967, Ser. No. 662,802
Int. Cl. A01g *25/02*
U.S. Cl. 137—344 **16 Claims**



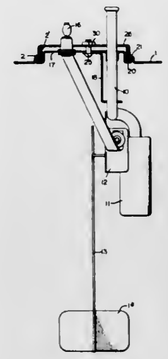
An irrigation system is driven by reciprocating a cable which extends the length of the irrigating pipe. The cable oscillates a lever on each vehicle which operates mechanism to move the vehicle forward. Depending upon the condition of alignment of the vehicle, the swinging of the lever will engage or disengage a dog to bring the vehicle into alignment with the remaining vehicles if misaligned.

3,500,857
VALVE CONSTRUCTION
Donald M. Gray, Kingston, N.Y., assignor to W. G. B. Oil Clarifier, Inc., Kingston, N.Y., a corporation of New York
Filed Oct. 27, 1967, Ser. No. 678,557
Int. Cl. F01d *27/08;* **F16k** *17/04;* **F01m** *1/10*
U.S. Cl. 137—516.25 **4 Claims**



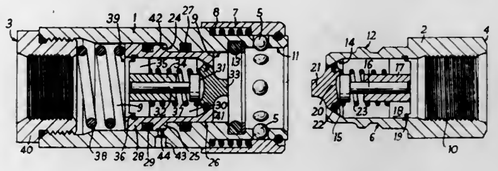
An inlet valve for an oil filter having a guide member on the downstream side of the valve member which directs the oil flow around the valve member during operation so as to maintain the valve member in position to avoid valve chattering.

3,500,858
MOUNTING STRUCTURE FOR A VEHICLE FUEL TANK SENDING UNIT
John W. Metcalf, 2728 Emmaus Ave., Zion, Ill. 60099
Filed June 27, 1967, Ser. No. 649,294
Int. Cl. B60k *15/02;* **G01f** *23/06;* **B65d** *25/56*
U.S. Cl. 137—560 **5 Claims**



A mounting device for a vehicle fuel tank sending unit wherein the tank is provided with an egg-shaped aperture. An internally positioned mounting plate and gasket, also egg-shape, are held against the inner surface of the tank by a similarly shaped externally positioned pressure cap and a nut and bolt drawing the plate and cap together. A fuel pipe and electrical connection extend through the device into the tank.

3,500,859
FLUID LINE SELF-SEALING COUPLING
Kenneth W. Pearson, Somerset, England, assignor to Exactor Sterling Limited
Filed Mar. 22, 1967, Ser. No. 625,169
Claims priority, application Great Britain, Mar. 29, 1966, 13,841/66
Int. Cl. F16l *37/28*
U.S. Cl. 137—614.05 **6 Claims**



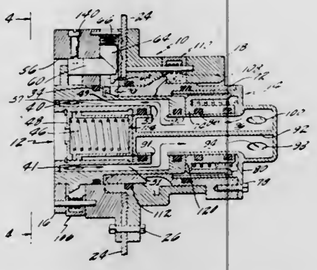
This disclosure relates to a fluid coupling defined by first and second body members each having means at remote ends for connection to associated conduits and means at adjacent ends for connection to each other, the first and second body members having respective first and second bores, a sleeve mounted for axial sliding movement in the first bore, the sleeve being housed entirely within the first bore between the connection means thereof, means for normally biasing the sleeve in a direction toward the second body member, first and second valve members in the sleeve and second bore respectively normally closing the same, cooperative means between the valve members for opening the same upon the connection of the body members to each other, the sleeve including axially oppositely facing radial end walls respectively adjacent and remote from the conduit connection means thereof, and the adjacent end wall being of a smaller surface area than the remote end wall whereby due to the differential

areas fluid pressure is operative in a direction tending to urge the sleeve toward the adjacent end of the second body member.

3,500,860
CONNECTOR

Frank R. Prosl, Jr., East Granby, and Bradford J. Booker, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 11, 1966, Ser. No. 564,116
Int. Cl. F16l *37/28*
U.S. Cl. 137—614.03 **6 Claims**

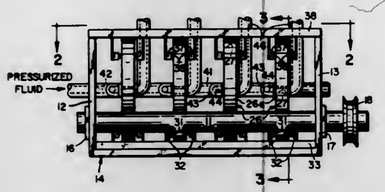


This invention relates to a fluid connector with two separate flow paths that automatically prevents leakage upon disconnection. The coupling consists of two male connectors and one female connector. The male connectors must be inserted into the female connector in a predetermined sequence.

3,500,861
TIMING APPARATUS

Charles W. Gregg, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Substituted for abandoned application Ser. No. 618,485, Feb. 24, 1967. This application Sept. 23, 1968, Ser. No. 767,909
Int. Cl. G05b *19/44*
U.S. Cl. 137—624.15 **6 Claims**



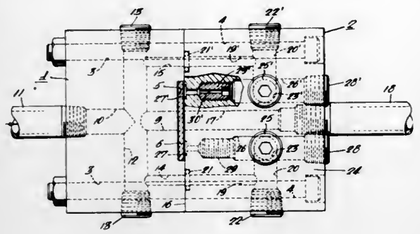
An apparatus for programming a plurality of pressurized fluid actuated devices, such as fluid amplifiers, and including a series of perforate members having circular peripheries bearing against a rotatable drive shaft under force of gravity for rotation therewith, such members being readily manually lifted and rotated for varying or adjusting program timing.

3,500,862
QUICK-ACTING VALVE

William B. Hansel, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 12, 1968, Ser. No. 721,001
Int. Cl. G05g *21/00;* **G06k** *7/02;* **F16k** *13/00*
U.S. Cl. 137—624.13 **11 Claims**

An impervious tape is driven at a high velocity between two aligned portions of a gas flow passage, the tape moving transversely with respect to the length of the passage. The tape has an aperture therein which comes into registry with the two passage portions to permit communication therebetween for opening of the valve. The

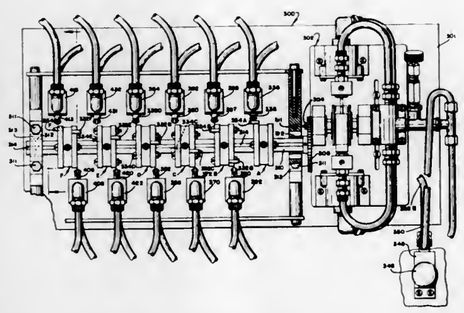


tape is maintained centered in a small gap between the juxtaposed passage portions, as the tape moves, by the application of (oppositely-acting) gas pressures to the respective opposite faces of the tape.

3,500,863
AUTOMATED PROGRAMMING DEVICE

John Hart Wilson, % Wilson Manufacturing Company, P.O. Box 1031, Wichita Falls, Tex. 76307

Original application Apr. 24, 1967, Ser. No. 633,232. Divided and this application Apr. 22, 1969, Ser. No. 818,343
Int. Cl. F17d *3/00;* **F16k** *51/00*
U.S. Cl. 137—624.17 **9 Claims**

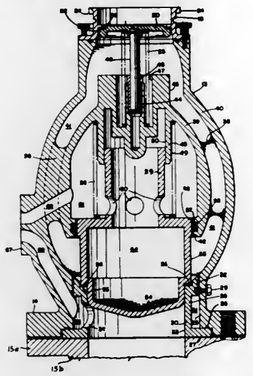


An automated programming device for operating a plurality of elements in timed sequence over a period of time. The invention includes cam plates with one or more cams on each cam plate with an abutment rigidly and permanently secured on the cam plate, which cam plate may be adjusted with respect to a hub in Vernier relation by rigidly securing the cam plate or plates to the hub, with the number of circumferentially spaced holes in the cam plate or disc of a different number than the circumferentially spaced holes in the hub, so, when the hub and the cam plate or plates are matched together, only two holes in the cam plate will register with two holes in the hub, thereby to enable Vernier setting of the rigid cam with respect to the timing of the cam shaft. The cams may operate switches, pilot valves or the like. In the present instance pilot valves are shown as being operated in sequence to operate a supply valve to enable fluid under pressure to be supplied to a fluid actuated mechanism, such as a double acting fluid actuated cylinder, a motor, or the like.

3,500,864
HYDRANT PRESSURE REGULATOR

James S. Elbogen, Encino, William Seiler, Jr., Los Angeles, and Ralph H. Lebow, Pacific Palisades, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Original application Feb. 2, 1961, Ser. No. 86,740, now Patent No. 3,286,725, dated June 12, 1964. Divided and this application Sept. 19, 1966, Ser. No. 608,236
Int. Cl. B67d *5/04, 5/34;* **F16k** *17/32*
U.S. Cl. 137—614.19 **4 Claims**

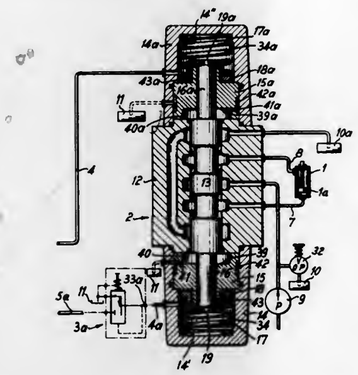


This disclosure relates to a hydrant pressure regulator which includes the housing having positioned therein a baffle with a fluid flow passage therethrough. The baffle, in turn, supports a lower fluid pressure operated valve and an upper spring loaded poppet valve. The housing also is provided at the lower end thereof with a loosely mounted sleeve defining an annular passage between it and the housing and which sleeve has an upper portion forming a seat for the fluid pressure operated valve.

3,500,865
HYDRAULICALLY OPERABLE CONTROL VALVE

Jürgen Gerber, Dortmund-Bodelschwingh, and Friedrich Fichtner, Bochum-Weitmar, Germany, assignors to Orenstein-Koppel und Lubecker Maschinenbau Aktiengesellschaft, Berlin, Germany

Filed Apr. 8, 1968, Ser. No. 719,392
Claims priority, application Germany, Apr. 19, 1967, O 12,446
Int. Cl. F16k *11/06;* **G05d** *11/035*
U.S. Cl. 137—625.6 **5 Claims**

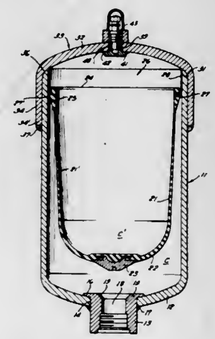


A valve system comprising a hydraulically operable main control valve, and a manually adjustable servovalve for controlling said main control valve, in which said main control valve in addition to a reciprocable main valve spool includes at each end of said main valve spool an auxiliary piston and a return spring, both return springs tending to hold said main valve spool in its neutral position, and in which the adjustment of the servovalve spool, which has an annular shoulder communicating with a conduit for feeding oil under pressure to said main control valve, is effected by a manually operable push rod through the intervention of a control spring preloaded by a screw and a spring dish.

3,500,866
PRESSURE VESSEL

Edward M. Greer, Beverly Hills, Calif., assignor to Greer Hydraulics, Inc., Los Angeles, Calif., a corporation of New York

Filed Aug. 1, 1967, Ser. No. 657,621
Int. Cl. F16l *55/04*
U.S. Cl. 138—30 **5 Claims**

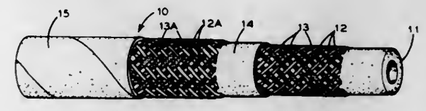


This invention relates to the art of pressure vessels, more particularly of the type having a cylindrical container, one end of which is closed and has a port and the other end of which defines an open mouth. The container has a deformable bladder of resilient material positioned therein, said bladder having a large mouth with an annular metal supporting member secured thereto and extending outwardly therefrom, the free edge portion of said supporting member which is longitudinally spaced from the region where the bladder is secured thereto, being fused to the mouth of the container. The container has suitable means closing the mouth thereof.

3,500,867
REINFORCED FLEXIBLE HOSE

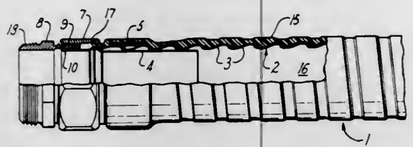
Arthur M. Elson, Hamilton Township, N.J., assignor to Acme-Hamilton Manufacturing Corporation, Trenton, N.J.

Filed Jan. 23, 1967, Ser. No. 610,876
Int. Cl. F16l *11/08*
U.S. Cl. 138—125 **5 Claims**



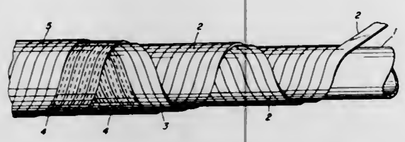
A flexible hose for use under high pressures; the hose being reinforced with glass fiber yarns arranged in noncontacting relation to each other within the hose carcass.

3,500,868
FLEXIBLE CONDUIT
Louis J. Hardt, Gilmer, Tex., and James M. Young, Pittsburgh, Pa., assignors to Robroy Industries, Verona, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1967, Ser. No. 664,680
Int. Cl. F16l *11/16*
U.S. Cl. 138—127 **7 Claims**



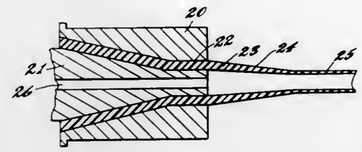
A flexible conduit having a flexible metal tube completely covered by a plastic insulating member. The plastic insulating member is bonded to the exterior of the flexible metal tube adjacent the ends of the tube, but not intermediate the ends. A metal sleeve frictionally engages the interior of the metal tube and extends outwardly therefrom securing a coupling member to the conduit and cooperating with a portion of the insulating member to provide a seal against entry of fluid into the conduit. A method of making a flexible conduit including providing a flexible metal tube, securing an annular compression band over the outer periphery of the tube at each end, placing an adhesive material on the exterior of the band and the exterior of the tube adjacent the ends and simultaneously establishing and bonding a continuous plastic insulating member over the tube exterior.

3,500,869
FLEXIBLE FLATTENED TUBULAR OPEN-ENDED ARTICLE
Bruno Bengt Skoggard, Cold Spring Harbor, William Clinton Post, Amityville, and Edward Peter Weierter, Massapequa, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Aug. 2, 1967, Ser. No. 657,980
Int. Cl. F16l *11/00*
U.S. Cl. 138—130 **6 Claims**



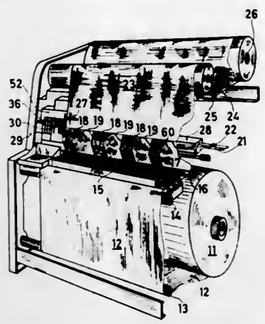
An article of manufacture comprising a flexible flattened tubular open-ended member which is convertible upon the application of internal fluid pressure and upon hardening of a settable plastic material therein to a hard permanently contoured conduit, said flattened tubular member containing (A) an inflatable imperforate flexible inner tubing surrounded by (B) at least one layer of polymeric material selected from the group consisting of (1) a polyethylene film, (2) a polyester film carrying on both sides a polyethylene film and (3) a paper web prepared predominantly from a synthetic polymeric fiber impregnated with a thermosetting resin and (C) surrounded by at least two layers of a flexible filamentary reinforcing material impregnated with a settable plastic, said filamentary reinforcing material having filaments which cross each other forming girthwise and axial components to accept both axial and girthwise stress, said outermost filamentary layer being covered with (D) at least one protective plastic film outerwrap.

3,500,870
FEP 160 FLUOROCARBON TUBING AND PROCESS
Berten E. Ely, Jr., Cheyney, and Ira T. Clement, Glen Mills, Pa., assignors to Pennsylvania Fluorocarbon Company, Inc., Clifton Heights, Pa., a corporation of Pennsylvania
Filed May 2, 1967, Ser. No. 635,441
Int. Cl. F16l *9/14*; B29c *17/04*
U.S. Cl. 138—177 **4 Claims**



The present invention relates to fluorocarbon tubing having unusually high ratios of expanded diameter to recovered diameter, which tubing possesses the properties of heat sealability, can be produced in long lengths, and can be produced in a wide variety of wall thicknesses. This result is obtained by using FEP 160 fluorocarbon which is a copolymer of tetrafluoroethylene and 5 to 50% by weight of hexafluoropropylene, preferably 5 to 15%, having a tensile strength between 4000 and 4500 p.s.i., and controlling the parameters so that unusually high ratios of expanded diameter to recovered diameter in the range of 2.05 to 2.50 and preferably 2.05 to 2.25 are obtained without bursting the tubing. It is necessary to expand against a surrounding restraining device.

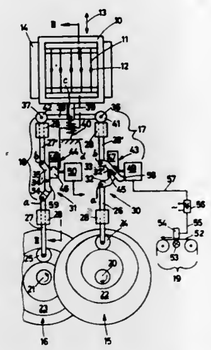
3,500,871
GUIDE ARRANGEMENT FOR PICK LAYING-IN MEMBERS
Edgar H. Strauss, Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Caspar Honegger, Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 26, 1968, Ser. No. 724,476
Claims priority, application Switzerland, May 3, 1967, 6,341/67
Int. Cl. D03d *47/26, 47/46*
U.S. Cl. 139—12 **9 Claims**



A guide arrangement for the weft yarn laying-in members on a wave-type loom wherein the members receive weft yarns of predetermined lengths and lay them into the sheds formed during the weaving operation, said members being continuously driven by drive means extending width-wise of the loom and being guided by the warp yarns, characterized in that on that side of the loom at which the laying-in members emerge or exit out of the warp yarns between the warp yarns and a run-out device for returning the laying-in members to the entry side of the loom, the members are guided by guide means,

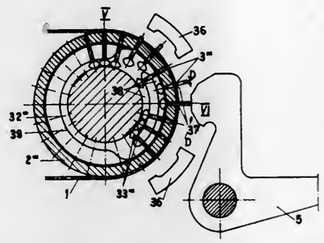
the individual guide elements of the guide means having intermediate spaces therebetween for the drive means which also extend width-wise across the guide elements.

3,500,872
CONTROL DEVICE FOR MOVABLE THREAD GUIDE
Hans Hopf, Dorfanger, Germany, assignor to Staylastic-Smith, Inc., New Bedford, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 575,297, Aug. 26, 1966. This application July 15, 1968, Ser. No. 744,937
Int. Cl. D03c *13/00*
U.S. Cl. 139—55 **11 Claims**



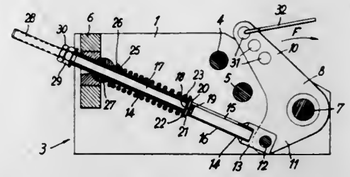
The present invention relates to a control device for movable thread guide devices such as harnesses of looms which are moved by an associated rotating eccentric cam with the interposition of an associated transmission element, the effective length of which may selectively be changed and is an improvement of the device shown in said copending application Ser. No. 575,297.

3,500,873
APPARATUS FOR CONTROLLING THE MOVEMENT OF A DOBBY JACK LEVER IN ACCORDANCE WITH A PATTERN CARD
Walter Kleiner, Horgen-Zurich, Switzerland, assignor to Gebr. Staubli & Co., Horgen-Zurich, Switzerland, a company of Switzerland
Filed Apr. 23, 1968, Ser. No. 723,366
Claims priority, application Switzerland, Apr. 27, 1967, 6,058/67
Int. Cl. D03c *1/06, 15/02*; D03d *49/00*
U.S. Cl. 139—71 **9 Claims**



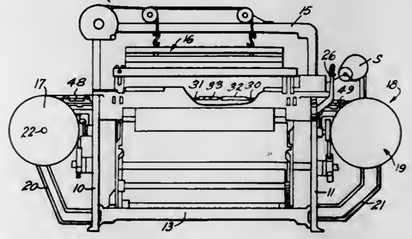
An apparatus for control of dobbies in which control needles are projected through perforations of the pattern card. The projected needles actuate the control of the loom healds and are retracted after execution of the control function. The needles are housed in the pattern card driving cylinder from which they are radially actuated.

3,500,874
TENSION DEVICE FOR WARP YARNS IN VELVET FABRIC LOOMS
Ramon Balaguer Golobart, Calle Valls y Taberner 11, Barcelona, Spain
Filed July 18, 1968, Ser. No. 745,722
Claims priority, application Spain, July 22, 1967, 343,795
Int. Cl. D03d *49/06, 39/16*
U.S. Cl. 139—102 **7 Claims**



A tension device for the pile warps of a velvet fabric loom comprises an adjustable compression spring arrangement for the guide bars.

3,500,875
SHUTTLELESS LOOM TENSION PAD STOP MOTION
Jept E. Brown, Calhoun Falls, S.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Oct. 17, 1967, Ser. No. 675,926
Int. Cl. D03d *51/00, 51/34, 51/40*
U.S. Cl. 139—336 **8 Claims**

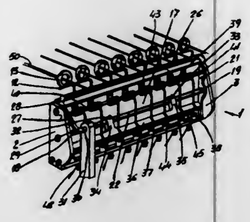


A tension pad stop motion for weaving looms of the shuttleless type wherein a receiving carrier has mounted thereon a resilient tension pad, comprising an electrode secured to and insulated from the receiving carrier guide in such a manner as to provide a substantial length of contact area spaced from said tension pad, when under normal operating conditions and parallel to the path of travel of said receiving carrier, and means electrically connecting the electrode to the electrically controlled stop motion apparatus for the loom whereby a sprung tension pad will contact the electrode to complete a circuit through the electrode to ground, which action will activate the stop motion apparatus to knock off the loom.

3,500,876
UNIVERSAL WEFT STOP MOTION
Ramon Balaguer Golobart, 86 Calle Caspe, Barcelona, Spain
Filed May 21, 1968, Ser. No. 730,860
Claims priority, application Spain, May 26, 1967, 341,521
Int. Cl. D03d *51/34*
U.S. Cl. 139—370 **5 Claims**

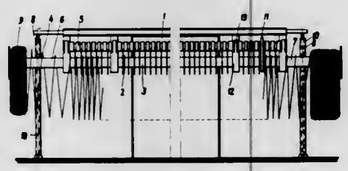
Universal stop motion mechanism for looms wherein each weft thread is engaged by a pivotally mounted detecting device which, in the absence of a thread is moved

to a position to permit completion of an electrical circuit for a stop mechanism by a switch whose actuation



is initiated at each cycle of operation of the bobbin; the completion of said circuit being prevented so long as a thread is present.

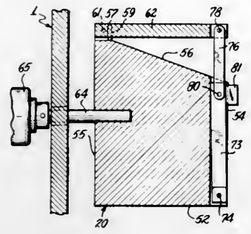
3,500,877
WIRE PROCESSING MACHINES
Dieter Lingen, St. Tonis, and Klaus Rum, Krefeld, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany
Filed Oct. 26, 1967, Ser. No. 678,309
Claims priority, application Germany, Nov. 2, 1966, D 51,448; Oct. 6, 1967, D 54,279
Int. Cl. B21f *23/00*
U.S. Cl. 140—2 **12 Claims**



A machine for processing wire coils of the type in which a wire coil to be processed is suspended on a feed shaft and separated turns of the wire pass through a processing chamber on a grooved roller on which are fitted concentrically disposed axially spaced discs, each one turn of the said separated turns being situated between adjacent discs; in which a bar is provided at a point preceding the point of entry of wire into the processing chamber, the said bar being disposed obliquely in the path of turns of wire between a suspended coil of wire and the said point of entry. The said oblique bar assists in the separation of the turns of wire from the wire coil. A further and similar oblique bar may be provided at the exit of the processing chamber, at a point before a coil of wire being reconstituted from the processed wire.

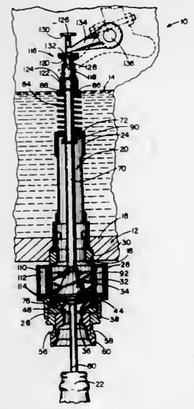
3,500,878
CORE WINDING APPARATUS
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,869
Int. Cl. B21f *3/00*; H01f *7/06*
U.S. Cl. 140—92.2 **3 Claims**

A supply spool supplies a strip of coil or core material through idle rollers and around a tension roller to a winding mandrel. A terminal attaching device is swingable into position to attach terminals to the end or intermediate points on the strip. The mandrel is rotated to wind a coil or core with a rectangular opening. A pressure roller is urged against the strip as it is wound on the mandrel.



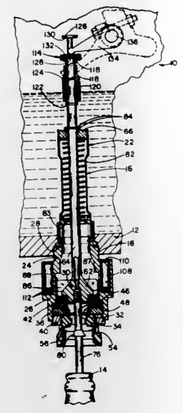
The pressure and tension rollers are controlled by pneumatic or hydraulic actuators.

3,500,879
CONTAINER FILLING APPARATUS
George L. N. Meyer, Milwaukee, Wis., assignor, by mesne assignments, to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 24, 1966, Ser. No. 588,420
Int. Cl. B65b *1/04, 31/00, 3/04*
U.S. Cl. 141—1 **11 Claims**



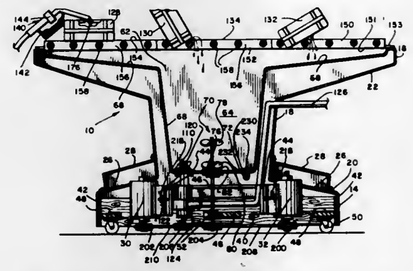
A counterpressure type filler valve for introducing liquids into containers from a filler bowl. A vertically extending liquid passage connected to the filler bowl and having a filling opening at its lower end. A reciprocally mounted vent tube member mounted in the liquid passageway for establishing an initial counterpressure within the container and for thereafter drawing off counterpressure gas from within the container until the liquid reaches a predetermined level in the container. A liquid control valve assembly is mounted on the vent tube which includes a liquid valve for controlling liquid flow through the liquid passage and a swirl inducing member positioned upstream of the liquid valve. The swirl inducing member is adapted to impart a swirling motion to the liquid upstream of the valve so that the liquid flowing past the valve will flow in close proximity to the inner surface of both the passageway and container to thus avoid substantial contact with the valve and vent tube to thus permit free flow of counterpressure gas from the container. A check valve is also provided to effect a gas seal in the liquid passageway upon the liquid reading the predetermined level in the container to prevent gas escape back up through the passageway.

3,500,880
CONTAINER FILLING APPARATUS
George L. N. Meyer, Sr., Milwaukee, Wis., assignor, by mesne assignments, to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 24, 1966, Ser. No. 589,482
Int. Cl. B65b *31/00*; F16k *15/00, 31/08*
U.S. Cl. 141—40 **3 Claims**



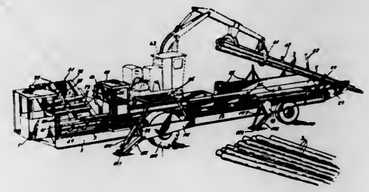
A counterpressure type filler valve for introducing liquids into containers from a filler bowl, comprising a liquid valve movable between open and closed positions in a liquid passage to control liquid flow to the containers, a central gas tube for initially introducing a counterpressure gas to the containers and for thereafter exhausting gas from the containers as liquid is flowed thereinto, and a generally cylindrical, movable check valve surrounding the liquid valve and cooperable therewith to effect a positive closing of the liquid passage to liquid and gas flow when a desired liquid level is reached in the containers. The check valve is adapted to be held in an inoperative position in the liquid passage during filling of the containers by the liquid flowing through the liquid passage and is movable to an operative, cut-off position against the liquid valve when a desired liquid level is attained in the containers by magnetic means located exteriorly of the liquid passage.

3,500,881
APPARATUS USED IN PRODUCING CERAMIC CASTINGS
Robert R. Salmans, Wichita, Kans., assignor to Ceramics of Kansas, Inc., Wichita, Kans., a corporation of Kansas
Filed July 10, 1968, Ser. No. 743,823
Int. Cl. B65b *43/52, 67/02*; B67d *5/02*
U.S. Cl. 141—88 **14 Claims**



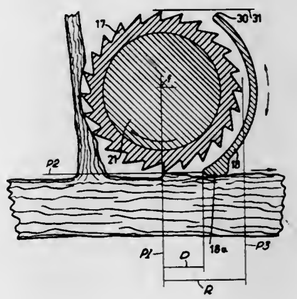
A horizontally elongated housing on wheels has a central, upwardly open chamber in which slip is mixed and stirred by a mixer upstanding from the bottom wall of the chamber. At each end of the top of the housing is a floor sloping to said chamber. Above the chamber and floors is a rack with roller type rails on which molds are positioned to be filled with slip by means of a hose connected to the bottom of said chamber and powered by a centrifugal pump. The configuration of the chamber and mixer feeds slip to the mixer in a manner avoiding air entrainment and avoiding deposits of unmixed or unstirred slip in the chamber.

3,500,882
MOBILE TREE SLASHER
Jean Paul Tanguay, Roberval, Quebec, Canada, assignor, by mesne assignments, to Placements Jean Paul Tanguay Ltee, St. Prime, Quebec, Canada, a corporation of Canada
Filed Jan. 18, 1968, Ser. No. 698,764
Claims priority, application Canada, Aug. 24, 1967, 998,652
Int. Cl. B27b *7/00*
U.S. Cl. 143—46 **13 Claims**



An apparatus for cutting tree stems into logs comprising, a horizontal conveyor for transporting the stems, a first rotary saw for cutting the stems into a first set of logs having twice their final length, an upwardly sloping conveyor for lifting the said first set of logs, a second rotary saw for cutting in half the first logs while the latter are raised.

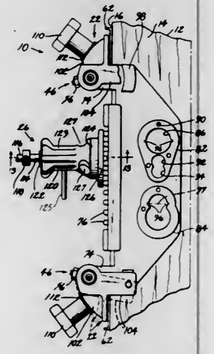
3,500,883
BRANCH REMOVING MACHINES
Kjell Olof Gunnar Herolf, Stig Arthur Johnsson, and Per-Gustaf Mellgren, Sundsbruk, Sweden, assignors, by mesne assignments, to Kockum Soderhamn Aktiebolag, Soderham, Sweden, a corporation of Sweden
Continuation-in-part of application Ser. No. 383,306, July 17, 1964. This application June 1, 1967, Ser. No. 642,743
Claims priority, application Sweden, July 18, 1963, 7,989/63
Int. Cl. B27m *1/00*
U.S. Cl. 144—2 **4 Claims**



A branch removing machine comprising a frame, substantially cylindrical branch removing tools journalling in bearing housings supported from the frame in such

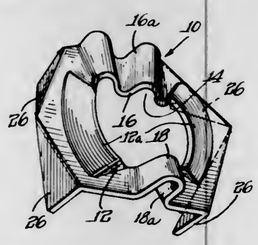
a manner that the tools are movable towards and away from the tree trunk and means for rotating said tools, the working depth of each tool being controlled by a feeler supported from the appertaining bearing housing and comprising an edge portion extending parallel with the axis of rotation of said tool and adapted to feel the position of the envelope surface of the trunk, the distance between said edge portion and a first plane containing the axis of rotation of the tool and perpendicular to a second plane parallel with said axis and extending in the longitudinal direction of the trunk being considerably less than the radius of the envelope of said tool.

3,500,884
LATCH INSTALLATION TOOL
Albert E. Hand, Southington, and Theodore H. Miller, New Britain, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 20, 1967, Ser. No. 684,567
Int. Cl. B27c *9/00*
U.S. Cl. 144—3 **28 Claims**



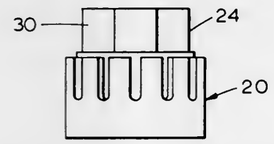
A latch installation tool having a frame including a pair of clamp plates is moved into clamping engagement with a door in orientation with a predetermined line of reference on the door by a pair of clamping elements which are pivotally supported on the frame and cammingly engage the plates. Various cutter assemblies supported in predetermined positions on the frame operably engage the door to form intersecting openings therein in orientation with the line of reference to receive various parts of a conventional latch or lock mechanism to be mounted on the door.

3,500,885
NUT LOCK
Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,282
Int. Cl. F16b *39/08*
U.S. Cl. 151—29 **5 Claims**



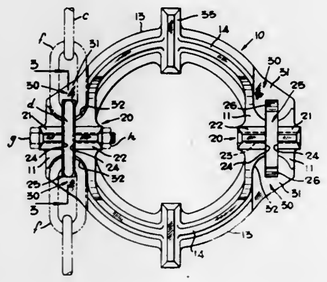
The present invention relates generally to nut locks and more particularly to cotter pin accommodating nut locks adapted to be formed from sheet metal. The embodiment disclosed herein includes a sheet metal washer member having an annular body section. Diametrically disposed U-shaped portions of the body section are deflected in opposite axial directions to provide transversely aligned cotter pin accommodating openings. The outer margin of the body section is provided with tab members for impinging the periphery of an associated nut member to prevent relative rotation of such nut and washer members.

3,500,886
LOCK NUT ASSEMBLY
Fred Dvorak, Bellwood, Nebr. 68624
Substitute for application Ser. No. 652,396, June 26, 1967, which in turn was a substitute for application Ser. No. 419,918, Dec. 21, 1964. This application Nov. 29, 1968, Ser. No. 784,526
Int. Cl. F16b *39/00*
U.S. Cl. 151—50 **4 Claims**



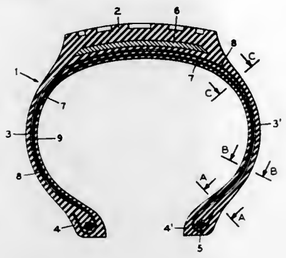
A lock nut and washer assembly comprising: a nut having an outer surface of a polygonal shape, said nut having an extension attached to one end thereof and having a substantially cylindrical exterior surface, and a washer clinging to the cylindrical extension to form a unit.

3,500,887
DETACHABLE CLEAT DEVICE FOR OFF-HIGHWAY USE OF SKID CHAINS
Arthur V. Woodward, Springfield, Ill., assignor to TRAK-power, Inc., Portland, Oreg., a corporation of Oregon
Filed Feb. 14, 1968, Ser. No. 705,451
Int. Cl. B60c *27/20*
U.S. Cl. 152—230 **8 Claims**



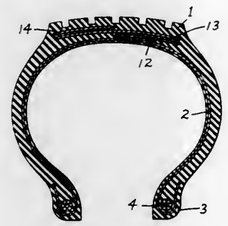
A detachable cleat device, intended principally for large automotive equipment, adapts ordinary cross-linked tire chains to off-highway use, to overcome lateral sliding. A ring-like frame extends between two adjacent cross chains. At each it has base portions with longitudinal cleat projections, cross-slotted to receive a link of the cross chain perpendicular to the tread. The cleat projections, bored longitudinally, permit bolting through the received link. Those links adjacent to the bolted links are supported parallel to the tread, in recesses which avoid localized wear.

3,500,888
PNEUMATIC TIRES AND MANUFACTURE OF THE SAME
Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed July 27, 1966, Ser. No. 568,222
Claims priority, application France, July 28, 1965, 26,414; June 20, 1966, 66,201
Int. Cl. B60c *9/06*
U.S. Cl. 152—356 **9 Claims**



A pneumatic tire having a carcass ply of mixed cords, some being composed of heat shrinkable cords and some being composed of less heat shrinkable cords.

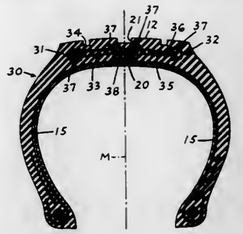
3,500,889
TIRES
Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed Oct. 17, 1966, Ser. No. 587,334
Claims priority, application France, Oct. 19, 1965, 35,515
Int. Cl. B60c *9/06*
U.S. Cl. 152—361 **3 Claims**



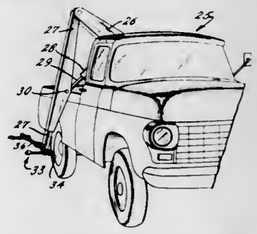
An asymmetric tire specially adapted for use on a particular side of a vehicle having a breaker belt of three plies wherein the innermost and outermost plies are half plies disposed on opposite sides of the median plane and the intermediate ply is substantially coextensive with the tread portion.

3,500,890
RADIAL PLY TIRES
Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed July 24, 1967, Ser. No. 655,576
Claims priority, application France, Aug. 1, 1966, 71,703
Int. Cl. B60c *9/06*
U.S. Cl. 152—361 **8 Claims**

A radial ply tire in which the tread contains separate circumferential tread reinforcements arranged in side by side relation and spanning the tread and providing a narrow zone therebetween imparting increased flexibility to the tire in a radial direction and articulating the tread reinforcements on opposite sides of the median plane of the tire so that they can flex independently when subjected to stresses to enhance the road-holding ability and riding comfort of the tire.

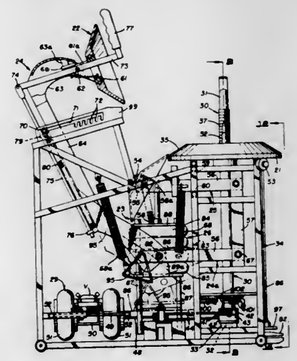


3,500,891
HEAVY EQUIPMENT TIRE REPAIR DEVICE
John J. Collins, Charlottesville, Va.
(Lake Shore Drive, Clear Lake, Iowa 50428)
Filed Feb. 23, 1968, Ser. No. 707,494
Int. Cl. B60c *25/06, 25/00*
U.S. Cl. 157—1.2 **4 Claims**



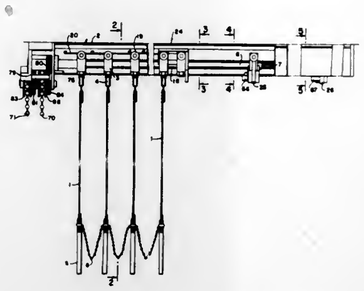
Apparatus for changing and repairing the tires of heavy equipment without removing the wheels from the vehicle. The apparatus includes an adjustable bar on which pushing and pulling members can be mounted for selective use.

3,500,892
AUTOMATIC TIRE-CHANGING MACHINE
John E. Lydle, P.O. Box 1094, Akron, Ohio 44305, Harry H. Whited, Barberton, and Robert R. Dunbar, Massillon, Ohio; said Whited and said Dunbar assignors to said Lydle
Filed Jan. 25, 1968, Ser. No. 700,537
Int. Cl. B60c *25/08*
U.S. Cl. 157—1.25 **20 Claims**



Tire-changing machine includes rotatable table for supporting wheel-rim and tire assembly, and power means

and a worm in each carriage. The worm is rotated by a worm gear engaging the grooved shaft. The carriage is moved longitudinally by the nut engaging the screw. The screw and the shaft are rotated by a chain and pulley



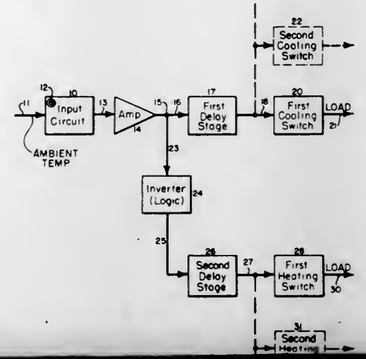
means, at the head end of the channel, connected by suitable gears to the screw and the shaft. A pair of adjustably positioned magnet carriages are positioned to support the shaft and screw to prevent sagging.

3,500,898

CONTROL SYSTEM FOR MULTI-STAGE HEATING AND COOLING SYSTEM

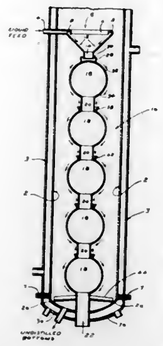
Carlton M. Gerhart, Jr., Dover, and Thomas C. Jednacz, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 26, 1968, Ser. No. 755,280
Int. Cl. F25b *29/00;* **G05d** *15/00*
U.S. Cl. 165—26 **7 Claims**



operable to move tools toward and from tire sidewalls and urge tire beads inwardly of respective rim seats, past safety locking ribs. Second power means simultaneously operable unidirectionally to turn table and wheel-rim with rapid succession of partial turns, effective to obviate inherent tendency of released tire beads to return to seated position on seats. Unidirectional rotation of table utilized while engaging other tools between rim flanges and tire beads to release tire beads past rim flanges for tire mounting or demounting purposes.

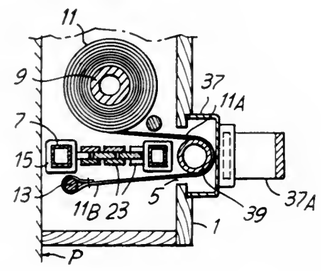
3,500,893
FALLING FILM EVAPORATOR
Earl E. McReynolds, La Porte, Tex., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 711,540
Int. Cl. B01d *1/22*
U.S. Cl. 159—13 **5 Claims**



A falling film evaporator, heater or vaporizer, is provided in which the liquid feed is caused to flow downwardly over a series of heated "globular" (spherical, frustoconical, cylindrical, ellipsoidal or other spheroidal) surfaces each of which is separated from its neighbors by a vertical connecting surface. After passage over each "globular" surface, the liquid passes down the said vertical connecting surface and is collected and redistributed over the next "globular" surface. The arrangement of alternating "globular" and vertical connecting surfaces provides an alternating stretching and compressing of the liquid film in its downward travel and thereby causes turbulence in the film surface. This facilitates escape of volatile material from the down flowing film. Advantages of the apparatus include low unit cost, simplicity of construction and of cleaning and maintenance, and smaller temperature difference between heating surface and film which results in less degradation of material. Additionally, the completely free escape area of the volatile vapors provides practically zero pressure drop allowing lower pressure and thus lower temperature for the evaporation process for a given vacuum source, again resulting in less degradation of heat sensitive materials.

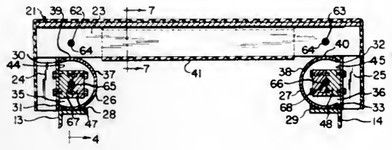
3,500,894
WALL-MOUNTED PARTITIONS
Giancarlo Pofferi, Pistoia, Italy, assignor to Ital-Bed Costruzioni Letti e Affini S.r.l., Pistoia, Italy, an Italian corporate body
Filed Aug. 8, 1968, Ser. No. 751,104
Claims priority, application Italy, Aug. 12, 1967, 4,138/67; Feb. 29, 1968, 3,907/68
Int. Cl. E04f *10/04;* **E06b** *3/94;* **A47g** *5/02*
U.S. Cl. 160—22 **1 Claim**

A wall-mounted partition can be moved between a collapsed and an extended position. The partition comprises a pantograph structure which lies within a panel and around which a length of cloth or the like extends from a roll of cloth mounted at one side. When the pan-



tograph structure is extended the cloth is caused to be payed out from the roller around the pantograph structure so maintaining the pantograph structure concealed even when fully extended.

3,500,895
RETRACTABLE CANOPY MECHANISM
Robert A. Silvernail, 17254 Valley Road, Mantua, Ohio 44255
Filed Mar. 11, 1968, Ser. No. 712,071
Int. Cl. E06b *3/94;* **B60j** *7/06*
U.S. Cl. 160—84 **3 Claims**

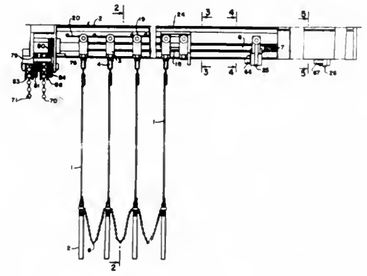


A canopy mechanism for use with an open top vehicle and including a pair of lengthwise extending trackways and a plurality of horizontally extending support members which span the open top of the vehicle body, and adapted for sliding movement on the trackways. A cover member is attached to the support members at spaced intervals lengthwise of the vehicle. Guide arms extends downwardly from the support members for guiding the support members lengthwise along the trackways. A reversible drive mechanism is connected to certain of the support members for selectively moving the support members toward and away from one another to retract and extend the cover member, respectively.

3,500,896
VERTICAL VENETIAN BLINDS
Hidehiro Endou, Noda, Japan, assignor to Yokota Kinzoku Kogyo Inc., Tokyo, Japan
Filed Nov. 6, 1967, Ser. No. 680,732
Int. Cl. E06b *09/26, 09/264*
U.S. Cl. 160—168 **2 Claims**

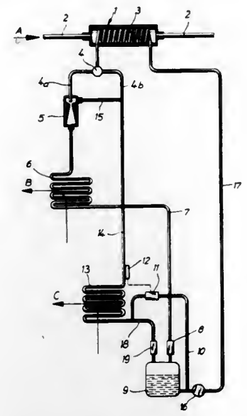
Vertical Venetian blind slats are slidably and rotatably mounted at their upper ends in a channel extending across the space over which the blinds are to be used. A carriage is at the head of each slat and has a rotatable hook at its lower end, receiving a loop at the end of the slat. A screw and a grooved shaft extend horizontally in the channel and have operative connection with a nut

and a worm in each carriage. The worm is rotated by a worm gear engaging the grooved shaft. The carriage is moved longitudinally by the nut engaging the screw. The screw and the shaft are rotated by a chain and pulley



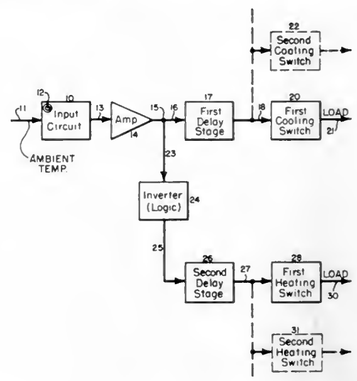
means, at the head end of the channel, connected by suitable gears to the screw and the shaft. A pair of adjustably positioned magnet carriages are positioned to support the shaft and screw to prevent sagging.

3,500,897
AIR TEMPERATURE CONTROL SYSTEM
Hans-Ludwig von Cube, Worms (Rhine), Germany, assignor to Robert Bosch Hauserate G.m.b.H., Giengen, Germany
Filed May 20, 1968, Ser. No. 730,391
Claims priority, application Germany, June 1, 1967, 1,551,286
Int. Cl. F29b *29/00*
U.S. Cl. 165—26 **11 Claims**



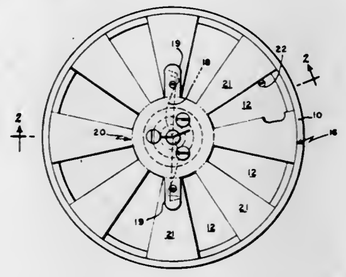
The steam of a heated medium is supplied by operation of a valve, either to a condenser whose condensate is supplied to one or two heat exchangers for cooling air, or directly to the heat exchangers for heating air. During the cooling operation, the steam of the medium passes through a steam jet compressor which provides suction for returning the evaporated condensate from the heat exchangers to the steam jet compressor. During heating, the condensate produced in the heat exchangers, during cooling, the condensate produced in the liquefying condenser, is pumped back into the steam generator in which steam of the medium is formed, preferably by the heat of exhaust gases of an engine so that a motorcar can be heated or cooled.

3,500,898
CONTROL SYSTEM FOR MULTI-STAGE HEATING AND COOLING SYSTEM
Carlton M. Gerhart, Jr., Dover, and Thomas C. Jednacz, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,280
Int. Cl. F25b *29/00;* **G05d** *15/00*
U.S. Cl. 165—26 **7 Claims**



An input circuit provides a control signal related both to ambient temperature and a pre-set control point. The control signal is amplified and passed to a first delay stage and to a logic inverter. This first delay stage provides a trigger signal delayed in time relative to the control signal, and this trigger signal is applied to all of the cooling switches to bring on the various stages at different levels determined by settings in the respective cooling switches. The logic inverter passes the inverted control signal to a second delay stage, which similarly provides a second trigger signal delayed in time with respect to the inverted control signal. One or more heating switches are coupled to the second delay stage for selective actuation to bring on the different stages of heating in accordance with the settings in the input portion of each heating switch.

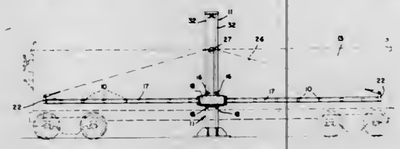
3,500,899
THERMAL VALVE
Ralph S. Shane, Jr., Saugus, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 11, 1968, Ser. No. 758,944
Int. Cl. G05d *23/00*
U.S. Cl. 165—32 **3 Claims**



One of three aligned, vaned, valve discs is rotatable with relation to the other two for the purpose of varying the area available for heat conductivity. Heat responsive

means such as a bi-metallic spiral spring, a servo drive chain, or any other effective heat responsive means moves the middle disc to vary the area of heat flow continuity, thereby maintaining temperature stability for the "package" whose heat output is being regulated.

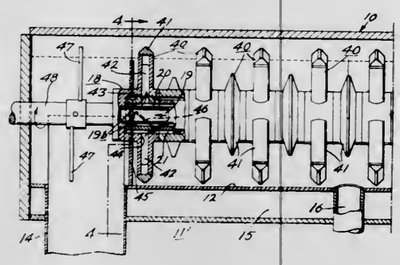
3,500,900
THAWING OR REDUCING VISCOSITY OF FROZEN OR CONGEALED CONTENTS OF RAILWAY CARS OR OTHER CONVEYANCES
John J. Kupka, Gladstone, N.J., assignor to KHG Associates, Merrick, N.Y., a partnership
Filed May 7, 1968, Ser. No. 732,798
Int. Cl. F24h *3/00*
U.S. Cl. 165—47 **5 Claims**



Superheated compressed air is used to thaw frozen loads of coal, iron ore, limestone and the like, or to liquify viscous fluids which have become congealed in tank cars or other carriers.

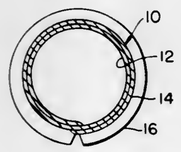
Discretion and mobility are thus attained without the hazards of fire or other loss and the heat may be conserved by carrying out these operations in a tunnel-like enclosure through which the conveyances may be passed.

3,500,901
MIXER
William L. Root 3rd, Bethlehem, Valentine Sturman, Quakertown, and Milton S. Mery, Danielsville, Pa., assignors to The Bethlehem Corporation, Bethlehem, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1967, Ser. No. 681,514
Int. Cl. F28d *11/00;* **F28f** *5/00*
U.S. Cl. 165—86 **13 Claims**



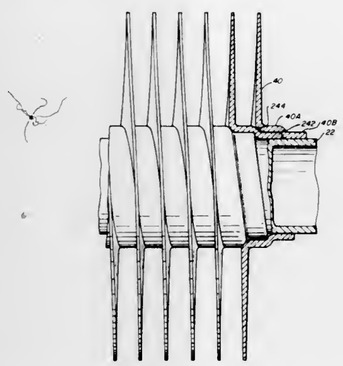
Apparatus for indirectly treating material including an elongated heat-exchanger-mixer having an inlet for charging the mixer with the material to be treated and an outlet for discharging the treated material therefrom. Interiorly of the mixer is means defining a hollow shaft assembly which extends longitudinally of the container and is rotatably supported therein. The hollow shaft assembly includes at least three axially extending fluid passageways, the first passageway having a heat transfer fluid inlet at one end thereof and an outlet at the other end thereof. The second passageway extends, in a manner similar to the first passageway, axially of the mixer and communicates with the outlet of the first passageway, while the third passageway is closed at one end and has a fluid outlet at the other end. Mounted about the shaft is a plurality of heat transfer and mixing assemblies, each comprising a radially extending, substantially hollow blade having fluid inlet means which are connected to the second passageway and in fluid communication therewith. In addition, each of the blades includes a fluid outlet which is connected to the third passageway so as to permit discharge of the fluid therefrom. Unlike other continuous mixers, where the blades are angulated in order to transport the material from the inlet to the outlet, each of the blades are permanently and fixedly connected to the hollow shaft assembly perpendicular to the longitudinal axis of the shaft assembly to thereby form a mixer between the inlet and the outlet. In addition, this patent discloses a novel purging device which injects, into a bed of material, a gas such as air adapted to purge the bed of entrained water, or vapor.

3,500,902
EXTENDED SURFACE, DOUBLE WALL TUBING FROM STRIP STOCK
Edward P. Habdas, Dearborn, Mich., assignor, by mesne assignments, to Calumet & Hecla Corporation, Allen Park, Mich., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,098
Int. Cl. F28f *1/14;* **B21d** *53/02;* **B21k** *29/00*
U.S. Cl. 165—184 **4 Claims**



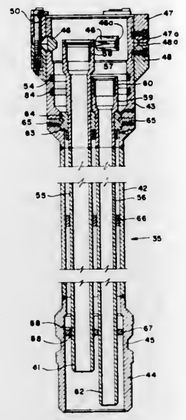
Finned tubing formed from strip having one edge slotted to provide fins, the strip being rolled into tubular configuration and the strips twisted through 90 degrees and wrapped around and attached to the outer surface of the tubing.

3,500,903
HEAT EXCHANGE ARTICLE
Arthur H. McElroy, 2789 E. 45th Place, Tulsa, Okla. 74105
Continuation-in-part of application Ser. No. 487,857, Sept. 16, 1965. This application Mar. 29, 1968, Ser. No. 717,228
Int. Cl. F28f *1/14;* **B21d** *53/00*
U.S. Cl. 165—184 **3 Claims**



A helically wound finned tubing used in heat exchange processes includes a double bent foot portion of the fin stock in which said foot portions overlap to provide efficient heat transfer surfaces.

3,500,904
MARINE CONDUCTOR PIPE
Bruce J. Watkins, San Pedro, Calif., and William W. Greentree, Victoria, British Columbia, Canada, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 690,996
Int. Cl. E21b *33/035;* **F16l** *35/00*
U.S. Cl. 166—.5 **8 Claims**



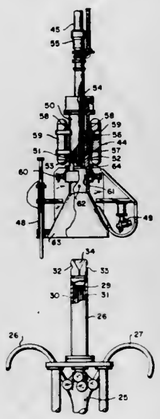
A marine conductor pipe for establishing communication with an underwater well wherein the conductor pipe is made up of a plurality of interconnecting pipe lengths each containing tubing string sections that mate when the pipe lengths are connected so that a composite marine conductor pipe is formed having longitudinal tubing strings extending therethrough. The lower end of the conductor is provided with coupling means for connecting the tubing strings to fluid passageways in the wellhead that communicate with the well.

3,500,905
APPARATUS FOR USE WITH UNDERWATER WELLS
William H. Petersen, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,496
Int. Cl. E21b *7/12, 15/02*
U.S. Cl. 166—.5 **6 Claims**



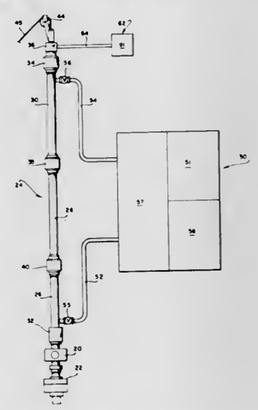
Apparatus for carrying out operations with respect to underwater wells from a floating vessel including a telescoping arrangement depending from the vessel and adapted to handle tools, apparatus, components, etc. for carrying out operations at the well site. Takeup means is provided on the telescoping means for taking up slack on control lines associated therewith and cushioning means is incorporated on the telescoping arrangement to dampen impact loads applied thereto.

3,500,906
SUBSURFACE WELLHEAD AND CONNECTOR
William H. Petersen, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,382
Int. Cl. E21b *7/12, 33/035*
U.S. Cl. 166—.6 **7 Claims**



Apparatus for making a remote operative connection between a floating vessel and an underwater wellhead assembly. The wellhead assembly and a wellhead connector lowerable from the vessel include cooperating orienting means and means to attach guide lines depending from the vessel to the assembly.

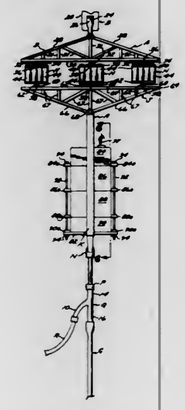
3,500,907
CLOSED FLUSHING AND VAPOR ELIMINATION SYSTEM FOR WIRELINE COMPONENTS
Larry L. Gentry, San Jose, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 5, 1968, Ser. No. 781,553
Int. Cl. E21b *33/05*
U.S. Cl. 166—70 **5 Claims**



A closed flushing and vapor elimination system is provided for cleaning wireline tools under conditions, such

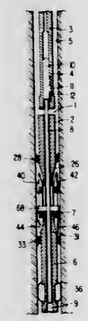
as a subsea chamber at an underwater wellhead, where toxic and unpleasant fumes could be harmful to human opeartors at the wellhead. The system further provides more efficient wireline operations since wireline tools may be cleaned without removing them from the closed system.

3,500,908
APPARATUS AND METHOD FOR FREEING WELL PIPE
Dennis S. Barler, 12031 Blackmer, Garden Grove, Calif. 92641
Filed Nov. 14, 1967, Ser. No. 683,395
Int. Cl. E21b *23/00*
U.S. Cl. 166—77.5 **3 Claims**



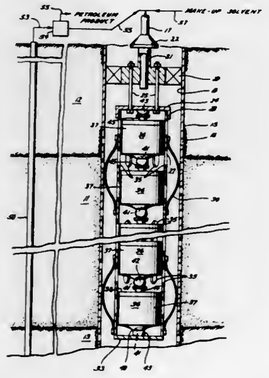
An apparatus including a number of rotatable power-driven eccentrics which are connected to an elongate member such as a drill pipe that is stuck in an oil well bore hole, and to a resiliently movable support suspended from the traveling block on an oil derrick. When the power-driven eccentrics are operated, the elongate member is subjected to vertically directed forces to free it from the stuck position.

3,500,909
OVERSHOT APPARATUS FOR MANIPULATING A BRIDGE PLUG IN A WELL
Kenneth W. Beyer, Powell, Wyo., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 11, 1968, Ser. No. 759,033
Int. Cl. E21b *23/06*
U.S. Cl. 166—134 **4 Claims**



An overshot tool for use in a well bore to transport and test the setting of a bridge plug. The overshot tool includes a pair of circumferentially and longitudinally displaced control slots. An L-shaped guide means extends between the two control slots and defines a portion of the boundary of a generally unimpeded transition zone. A pair of mutually converging guide surface means provides an entry path leading into the transition zone, with one of the guide surface means extending longitudinally of a well bore.

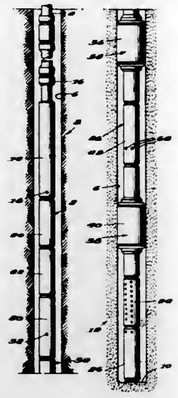
3,500,910
SOLVENT RECOVERY OF PETROLEUM
William C. Triplett and Walter H. Brauer, Ingleside, Tex., assignors to San Miguel Project, Inc., Ingleside, Tex., a corporation of Texas
Filed Jan. 26, 1967, Ser. No. 611,895
Int. Cl. E21b *43/24*
U.S. Cl. 166—247 **7 Claims**



Secondary recovery of petroleum products from subterranean formations. The process provides methods for dissolution of the petroleum products followed by displacement through the subterranean formation from one or more injeciton wells to one or more production wells. In addition, the process provides for down-hole heating of the liquid solvent in each injection well at the time the liquid solvent flows into the formation from the injection well. The liquid solvent is heated through use of heat generated by non-fissionable radioactive isotopes or radioactive waste material in general, as defined by the Atomic Energy Act of 1954 (as amended), Chapter 2, Section 11.

3,500,911
MULTIPLE PACKER DISTRIBUTION VALVE AND METHOD
David L. Farley and Harold R. Armstrong, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,461
Int. Cl. E21b *33/124, 47/06*
U.S. Cl. 166—250 **16 Claims**

In drill stem testing of wells, the formation to be tested is sealed from the hydrostatic pressure of fluid in the well. This seal is provided by a pair of expandable packers positioned above the formation. The packers are spaced apart in the tubing string and a port in the sub connecting the packers establishes fluid communication between the interior and exterior of the sub. A valve opens and closes the port in response to fluid pressure acting on the valve element. The valve opens while the string is being run to the depth of the formation in response to the hydrostatic pressure of the well fluid. After the packers have been expanded, the fluid pressure in the annulus below the upper packer drops as fluid bleeds through the port into the interior of the sub. The valve closes when the pressure reaches a certain minimum value. The hydrostatic pressure at the depth of the formation is determined and the valve is adjusted to close at a predetermined lower pressure to establish a pressure differential across the



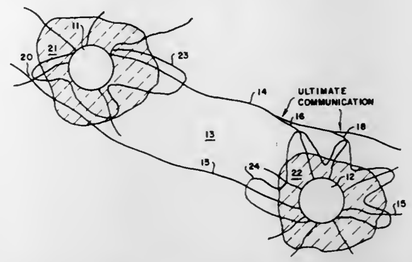
upper packer and pressure differential across the lower packer, so that the hydrostatic load is distributed between the packers.

3,500,912
MOLECULAR WEIGHT OF SURFACTANT INFLUENCING THE THERMOSTABILITY OF MICELLAR DISPERSIONS
John A. Davis, Jr., and William J. Kunzman, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed July 22, 1968, Ser. No. 754,524
Int. Cl. E21b *43/22, 47/06;* **B01j** *13/00*
U.S. Cl. 166—252 **19 Claims**

Thermostability range of micellar dispersions useful to recover crude oil in a secondary or a tertiary oil recovery process can be shifted to higher temperatures by increasing the molecular weight of the surfactant used to obtain the micellar dispersion. These dispersions are especially useful in flooding subterranean formations wherein the temperature is above 80° F.

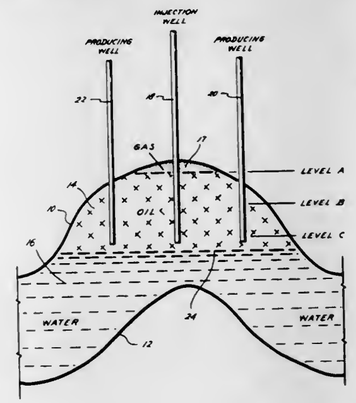
3,500,913
METHOD OF RECOVERING LIQUEFIABLE COMPONENTS FROM A SUBTERRANEAN EARTH FORMATION
Ronald P. Nordgren and Philip J. Closmann, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1968, Ser. No. 771,962
Int. Cl. E21b *43/24, 43/26*
U.S. Cl. 166—259 **8 Claims**

A method of recovering liquefiable components from a normally impermeable subterranean earth formation by extending at least a pair of well boreholes into the formation and forming generally vertical fractures extending along generally parallel paths from each of the boreholes. Hot fluid is injected through at least one of the well boreholes until flow into at least one of the fractures therein is thermally closed by the swelling-shut of the walls of the fracture. Fluid in at least one borehole in which fractures have been thermally closed is pressurized until at least one new fracture is formed and the steps of injecting hot fluid and pressurizing fluid are repeated at successively higher temperatures and pressures until the resultant fractures form a channel interconnecting the well boreholes through which channel fluid can flow from one well borehole to another. Finally, hot fluid is circulated, by injection into one of the boreholes opening into the fracture channel, with fluid being produced from another of the boreholes opening into the fracture channel, at a temperature below that at which the last fracture was opened in the well borehole into which the circulating fluid is injected but above that at which the last fracture



was thermally closed within the well borehole into which the circulating fluid is injected, so that most of the injected fluid is conveyed through fractures interconnecting the boreholes.

3,500,914
METHOD FOR RECOVERING OIL
John C. Petteway, Dallas, Tex., assignor to Hunt Oil Company, Dallas, Tex., a corporation of Delaware
Filed Apr. 19, 1967, Ser. No. 632,082
Int. Cl. E21b *43/20*
U.S. Cl. 166—268 **11 Claims**

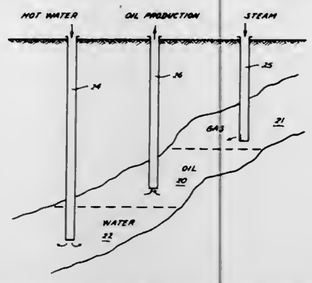


Oil recovery from a reservoir having unusually low recovery efficiency from a natural water drive can be improved by first sweeping the oil pool with a gas from top to bottom before producing oil from the oil pool by encroachment of water as a result of the natural water drive.

3,500,915
METHOD OF PRODUCING AN OIL BEARING STRATUM OF A SUBTERRANEAN FORMATION IN A STEEPLY DIPPING RESERVOIR
Benny M. Fitzgerald, Bakersfield, Calif., assignor to Tenneco Oil Company, Houston, Tex., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,708
Int. Cl. E21b *43/24*
U.S. Cl. 166—272 **1 Claim**

A method of producing an oil bearing stratum of a subterranean formation penetrated by first and second injection wells. The method includes the steps of generating steam of less than 100% quality, separating the hot water therefrom and injecting it into the formation and

simultaneously injecting the separated substantially 100% quality injection steam into another part of the formation

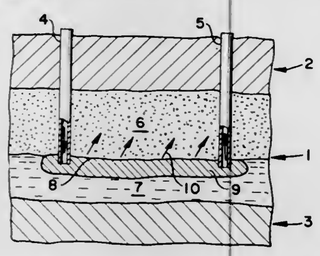


and producing hydrocarbon fluids from the heated stratum.

3,500,916
METHOD OF RECOVERING CRUDE OIL FROM A SUBSURFACE FORMATION
Willem van der Knaap, François van Daalen, and Florian Lehner, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 3, 1968, Ser. No. 764,693
Claims priority, application Netherlands, Dec. 29, 1967, 6717786
Int. Cl. E21b *43/24, 43/22*
U.S. Cl. 166—272 **5 Claims**

A method of recovering crude oil having a viscosity above 50 cp. from a subsurface formation through the use of a first component including a solvent for the crude oil and a second component including water. One of the components is injected into the formation through a first well until breakthrough at a second well, forming a passageway through the formation, and then both components are injected simultaneously through the first well and fluids including the crude oil are recovered at the second well. The second component may be heated prior to injection. The two components may be simultaneously iniected as an unstable emulsion.

3,500,917
METHOD OF RECOVERING CRUDE OIL FROM A SUBSURFACE FORMATION
Florian Lehner, François van Daalen, and Willem van der Knaap, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 28, 1968, Ser. No. 756,016
Claims priority, application Canada, Dec. 29, 1967, 8,852
Int. Cl. E21b *43/22*
U.S. Cl. 166—272 **10 Claims**

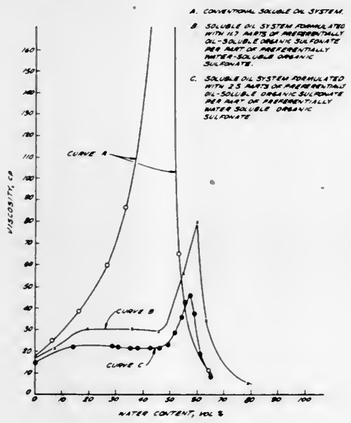


A method of recovering crude oil having a viscosity above 50 cp. from a subsurface formation having an oil-saturated zone overlying a water-saturated zone wherein a solvent/aqueous fluid mixture is injected into the water-saturated zone, said solvent having a density smaller than the density of the crude oil.

3,500,918
MISCIBLE FLOODING PROCESS USING IMPROVED SOLUBLE OIL COMPOSITIONS
Le Roy W. Holm, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 15, 1968, Ser. No. 713,294
Int. Cl. E21b *43/20, 43/22*
U.S. Cl. 166—273 **19 Claims**

A miscible flooding process for the recovery of oil from subterranean reservoirs in which an improved soluble oil composition comprising a mixture of liquid hydrocarbon, a surface active agent and secondary butyl alcohol is injected into the reservoir through an injection well, and thereafter an aqueous flooding agent is injected to drive the soluble oil composition towards a spaced production well. The soluble oil composition can be injected into the reservoir as a substantially anhydrous liquid or as a water-in-oil microemulsion.

3,500,919
MISCIBLE FLOODING PROCESS USING IMPROVED SOLUBLE OIL COMPOSITIONS
Le Roy W. Holm, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Mar. 15, 1968, Ser. No. 713,496
Int. Cl. E21b *43/16*
U.S. Cl. 166—273 **24 Claims**



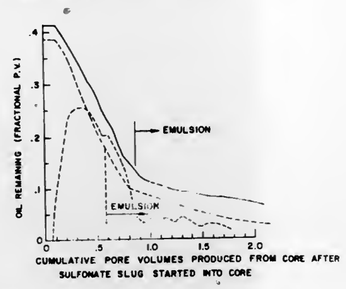
A miscible flooding process for the recovery of oil from subterranean reservoirs in which an improved soluble oil composition comprising a liquid hydrocarbon, a preferentially oil-soluble organic sulfonate, a preferentially water-soluble organic sulfonate, and a stabilizing agent is injected into the reservoir through an injection well, and thereafter an aqueous flooding agent is injected to drive the soluble oil composition towards a spaced production well. The soluble oil can be injected as a substantially anhydrous liquid or as a water-in-oil microemulsion.

3,500,920
CHEMICAL INJECTION OF SLUGS OF TWO DISSIMILAR AQUEOUS SOLUTIONS TO RECOVER OIL
Philip J. Raifsnider, Denver, Colo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,517
Int. Cl. E21b *43/22*
U.S. Cl. 166—273 **7 Claims**

An improved method for recovering oil from underground formations by treating said formations at lowered

injectivity pressures with slugs of an aqueous liquid resulting in a synergistic mixture of a nonionic surfactant and a sequestering agent.

3,500,921
POLYMER-PRECEDED CHEMICAL FLOOD
Albert Abrams and Jimmie B. Lawson, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 23, 1968, Ser. No. 746,817
Int. Cl. E21b *43/16, 43/22*
U.S. Cl. 166—273 **7 Claims**



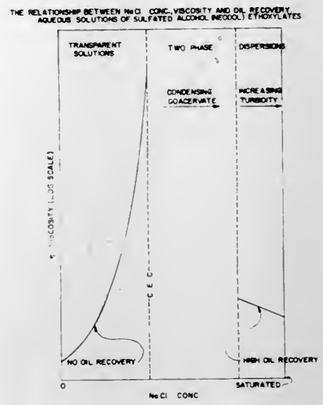
An improved method for oil recovery from an underground oil-bearing formation by pretreating the oil-bearing formation zone, prior to injecting a driving fluid therein, with sequential slugs (1) an aqueous solution thickened with a polymeric material containing in the molecule amide and —COOX units wherein X is an alkali metal or ammonia and the —COOX units comprise a significant proportion of the total polar constituents of the polymer and (2) a saline solution containing organic sulfonate surfactant micelles in combination with molecules of amphiphilic organic sulfonate of low water solubility.

3,500,922
FLOODING PROCESS USING A SUBSTANTIALLY ANHYDROUS SOLUBLE OIL
Leo J. O'Brien, Claremont, and Le Roy W. Holm, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Sept. 3, 1968, Ser. No. 757,153
Int. Cl. E21b *43/20*
U.S. Cl. 166—273 **25 Claims**

A process for recovering oil from subterranean reservoirs in which a slug of substantially anhydrous soluble oil and a slug of low salt-content water are injected into the reservoir through an injection well, and thereafter a thickened aqueous flooding medium is injected to drive the soluble oil and low salt-content water towards a production well spaced apart in the reservoir from the injection well. The low salt-content water can be followed by a substantially larger slug of thickened flood water, and then by flood water. Also, a series of slugs of substantially anhydrous soluble oil and low salt-content water can be alternately injected into the reservoir ahead of the thickened aqueous flooding medium.

3,500,923
USE OF HIGHLY SALINE ETHOXYLATED SURFACTANT SYSTEM FOR OIL RECOVERY
Joseph Reisberg, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,261
Int. Cl. E21b *43/22*
U.S. Cl. 166—274 **6 Claims**

An improved method for recovering oil from an underground formation by pretreating said formation prior to subjecting it to a drive fluid, with a slug of an aqueous solution containing a synergistic mixture of a sulfated polyoxylated organic compound and an in-



organic ionizable salt present in a critical electrolyte concentration capable of effecting a two-phase coacervate system.

3,500,924
SECONDARY RECOVERY PROCESS INVOLVING MOBILITY CONTROL
Fred H. Poettmann, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 26, 1968, Ser. No. 762,982
Int. Cl. E21b *43/22*
U.S. Cl. 166—274 **14 Claims**

Improved process for recovering crude oil from an oil-bearing subterranean formation wherein a micellar dispersion is injected to displace the crude oil toward a production means, the improved process comprising injecting after the micellar dispersion a mobility buffer fluid containing sufficient amounts of surfactant in the front portion thereof to facilitate emulsification of the back portion of the micellar dispersion with the mobility buffer fluid. The mobility buffer fluid is preferably an aqueous medium containing sufficient mobility imparting agent to impart viscous stability to the flooding process. The micellar dispersion contains aqueous medium, hydrocarbon, surfactant, and optionally cosurfactant and/or electrolyte. The surfactant within the front portion of the mobility buffer fluid is desirably more hydrophilic than oleophilic.

3,500,925
WATER-FLOODING PROCESS FOR SECONDARY OIL RECOVERY WITH POLYMERIC N-VINYL LACTAM AND METAL SALT TO CONTROL CLAY SWELLING
John P. G. Beiswanger and Andrew Stefcik, Easton, Pa., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed June 6, 1967, Ser. No. 643,842
Int. Cl. E21b *43/22*
U.S. Cl. 166—275 **8 Claims**

A process for improving the flow rate of injection water through oil-bearing formations containing water-sensitive clays during secondary oil recovery by including in the injection water a water soluble polymer of an N-vinyl lactam and a water soluble alkali metal salt or alkaline earth metal salt or a mixture of such salts.

3,500,926
ELECTROLESS METAL BONDING OF UNCONSOLIDATED FORMATIONS INTO CONSOLIDATED FORMATIONS
Edwin A. Richardson, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 579,223, Sept. 14, 1966. This application Dec. 22, 1967, Ser. No. 692,726
Int. Cl. E21b *33/138*
U.S. Cl. 166—292 **18 Claims**

A method of consolidating an incompetent formation by metalizing or metal plating the formation by an electroless metal plating process using a metal plating solution and a deactivation solution capable of controlling metal deposition rate.

3,500,927
ELECTROLESS METALIZATION OF UNCONSOLIDATED EARTH FORMATIONS
Warren C. Simpson, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 16, 1968, Ser. No. 705,907
Int. Cl. E21b *33/138*
U.S. Cl. 166—292 **6 Claims**

A method of consolidating an incompetent formation by metalizing or metal plating the formation by an electroless metal plating process using a metal plating solution. The formation is activated by contacting it with a metal-forming sol solution, the metal of this solution being the same as in the metal plating solution.

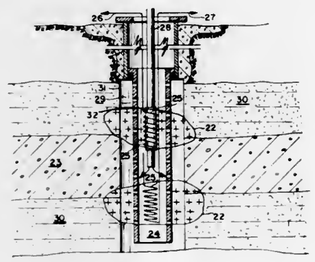
3,500,928
SAND CONSOLIDATION IN OIL WELLS WITH AMORPHOUS GUANIDINE SILICATE
Norman P. Rockwell, Greenville, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 13, 1968, Ser. No. 752,162
Int. Cl. E21b *33/138, 33/13*
U.S. Cl 166—292 **7 Claims**

A consolidation of sands in fluid producing wells has been accomplished by a novel process whereby amorphous ionic guanidine silicate or ammonium silicate having an average molecular weight of less than 25,000 is injected through the well into the surrounding sands and the guanidine silicate or ammonium silicate is set by ambient heat or by chemical reaction to bond the sand particles.

3,500,929
TEMPORARY DIVERTING AGENT AND USE THEREOF IN TREATMEINT OF SUBTERRANEAN STRATA
Louis H. Eilers and Caleb M. Stout, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 3, 1968, Ser. No. 757,139
Int. Cl. E21b *33/138*
U.S. Cl. 166—295 **10 Claims**

A composition of matter useful as a diverting agent in the treatment of subterranean strata penetrated by a wellbore such as is found in oil, gas, water wells, etc.; comprising: an aqueous suspension containing slowly water soluble particulate dextrin materials, slowly water soluble particulate aldehyde polymers and a thickening and/or suspending agent. The method of treating a subterranean formation penetrated by a wellbore to divert fluids from more porous strata to less porous strata which comprises: injecting said composition down the wellbore under sufficient pressure to force at least a portion of it into the more porous formation wherein said composition serves as a temporary plugging agent to divert fluids, such as fracturing fluids or other treating fluids to less porous, accessible or tighter portions of the formation.

3,500,930
PERMANENTLY PLUGGING THIEF ZONES BETWEEN TEMPORARY FROZEN PLUG AREAS
Bryant W. Bradley, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 648,350, June 23, 1967. This application Sept. 18, 1968, Ser. No. 760,463
Int. Cl. E21b *33/13*
U.S. Cl. 166—295 **6 Claims**



A process for recovering oil from underground formations containing thief non-productive zones comprising temporarily isolating the oil-productive zone(s) by freezing a thermally solidifiable liquid while maintaining a channel of communication with the thief non-productive zone(s) and thereafter plugging the thief non-productive zone(s) with a permanent plugging material, removing the temporary frozen plug from the oil-productive zone(s) by suitable means and recovering oil therefrom.

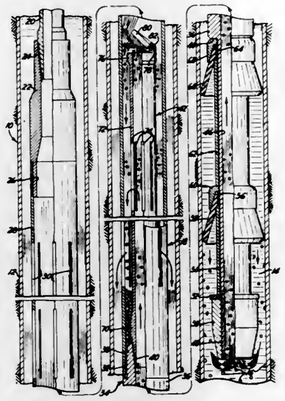
3,500,931
METHOD FOR HEATING AN OIL RESERVOIR BY INJECTING ALTERNATE SLUGS OF STEAM AND HIGHER SPECIFIC HEAT MATERIAL
Richard L. Sloan, Houston, Tex., assignor to Tenneco Oil Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed Aug. 20, 1968, Ser. No. 753,905
Int. Cl. E21b *43/24*
U.S. Cl. 166—303 **1 Claim**

A method of heating an oil reservoir penetrated by an injection well in order to recover hydrocarbons therefrom. It contemplates alternate injections of slugs of steam and slugs of another material, which other material has a higher specific heat than water, such as ammonium hydroxide, ammonia, butane, hydrogen, methane, or propane.

3,500,932
USE OF MICELLAR SOLUTION TO PRECEDE SANDFRAC TREATMENTS
Thomas O. Webb, Tulsa, Okla., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 24, 1968, Ser. No. 762,141
Int. Cl. E21b *43/26*
U.S. Cl. 166—308 **14 Claims**

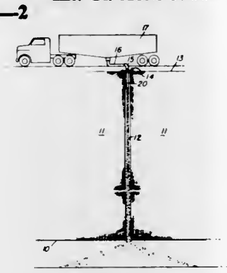
An improved method for fracturing a hydrocarbon-bearing subterranean formation is accomplished by injecting into the formation a micellar dispersion comprised of hydrocarbon, surfactant, and water previous to the injection of a fracturing fluid. Amounts within the range of 0.1 to about 10 barrels of a micellar dispersion per vertical foot of hydrocarbon-bearing formation are useful.

3,500,933
METHOD AND APPARATUS FOR REMOVING DEBRIS FROM CASED WELLS
John L. Burba, Jr., Monahans, and Robert S. Runyan, Odessa, Tex., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 16, 1968, Ser. No. 753,180
Int. Cl. E21b *37/00*
U.S. Cl. 166—311 **7 Claims**



A junk catcher for use in completing cased wells to be run on drill pipe comprising a pair of wiper cups to remove clinging particles from the casing wall, and an annular junk accumulation space between an inner mud upflow member and an outer cage member.

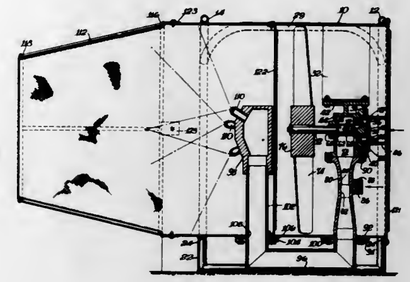
3,500,934
FLY ASH INJECTION METHOD AND APPARATUS
Malcolm O. Magnuson, Pittsburgh, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Sept. 9, 1968, Ser. No. 758,440
Int. Cl. A62c *3/00*
U.S. Cl. 169—2 **10 Claims**



Voids and caved areas in mine workings may be remotely filled by pneumatically injecting dry fly ash down boreholes drilled from the surface to intersect the workings. The process is particularly adapted to the sealing of fire areas in coal mines from all sources of oxidizing gases.

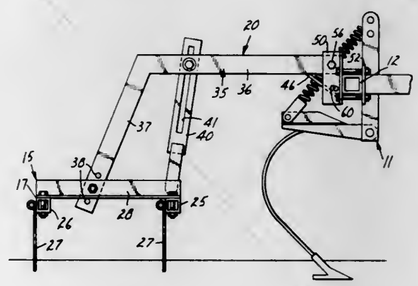
3,500,935
TURBINE-POWERED HIGH-EXPANSION FOAM GENERATOR
Paul H. Wiedorn, Radnor Township, Delaware County, Pa., assignor to National Foam System, Inc., West Chester, Pa., a corporation of Delaware
Filed Aug. 31, 1967, Ser. No. 664,690
Int. Cl. A62c *35/00;* **F01d** *5/00;* **F04d** *29/02*
U.S. Cl. 169—15 **2 Claims**

Such generators have fan driven by water turbine mounted within generator's tubular conduit. Water at pressures of 50 to 300 pounds per square inch is delivered to turbine intake which can be hose coupling on turbine located axially of conduit and pointing out from near intake end. Turbine discharge extends through proportioning mixer where foam concentrate is introduced, and then goes to spray arrangement for spraying the water mixed with concentrate toward foam-forming fabric net or generally frustoconical wire mesh assembly secured to outlet end of conduit. All turbine bearings, rotary and thrust, are



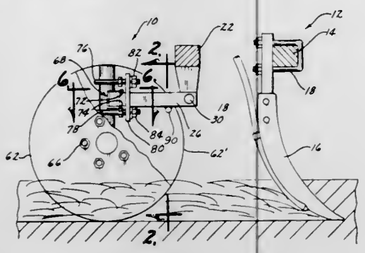
Teflon which can isolate rotor and rotor shaft, both of which can be of copper based alloy, from turbine casing which can be aluminum. Thrust bearing having at least 1/20 inch wide thrust edge face effectively minimizes turbine leakage around projecting rotor shaft. Other end of shaft can have bearing completely enclosed by turbine casing so that no external leakage is possible there, and this can be at inlet end of rotor.

3,500,936
CULTIVATOR ATTACHMENT
Murlan Arleigh Vigen, Portland, N. Dak. 58274
Filed Nov. 1, 1967, Ser. No. 679,766
Int. Cl. A01b *49/02, 35/22*
U.S. Cl. 172—198 **2 Claims**



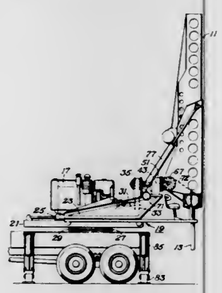
An attachment for connecting a harrow to a cultivator or the like having a rigid transverse beam including a plurality of rigid bars each having one end pivotally attached to the transverse beam and the other attached to the harrow. The end of the rigid bar pivotally attached to the transverse beam is connected to pivot about an axis parallel to but spaced from the axis of the transverse beam so that the pivotal movement is limited to engaging the harrow with the earth and disengaging it from the earth.

3,500,937
DISK MEANS FOR A FERTILIZER APPLICATOR IMPLEMENT
Martin R. Erickson and Lawrence P. Brincks, both of Auburn, Iowa 51433
Filed Apr. 3, 1967, Ser. No. 627,712
Int. Cl. A01b *23/06, 35/28;* **A01c** *5/06*
U.S. Cl. 172—600 **3 Claims**



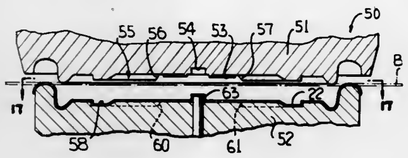
A disk means for a fertilizer applicator implement comprising, a pair of spaced apart disks rotatably mounted on a support means adapted to train behind a fertilizer applicator to cover the fertilizer to prevent its escape from the ground.

3,500,938
UNIVERSALLY MOUNTED DRILLING MAST
John V. Watson, Fort Worth, Tex., assignor to Watson Manufacturing Company, Fort Worth, Tex.
Continuation of application Ser. No. 619,671, Mar. 1, 1967. This application July 23, 1968, Ser. No. 751,002
Int. Cl. E21c *11/02, 5/00, 9/00*
U.S. Cl. 173—40 **4 Claims**



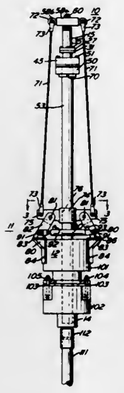
Disclosed herein is a drilling mast mounted on a truck by means of a support base which is adapted to move longitudinally along the truck bed. The support base and thus the mast are also adapted to rotate about an axis vertically disposed with respect to the truck bed. A power source secured to the support base rotates a beveled drive gear and horizontal shaft, the latter being positioned coaxially inside a sleeve rotatably mounted on the support base. The sleeve has a yoke which supports the shaft of a driven bevel gear which meshes with the beveled drive gear. The two shafts of the bevel gears are perpendicular with respect to each other, with the shaft of the driven beveled gear extending transversely across a lower region of the mast for rotatably supporting it. The beveled drive gear with assistance from a belt drive actuates a rotary table for rotating a kelly and a drill bit. Two mutually skewed fluid cylinders have their upper ends connected with upper portions of the mast and their lower ends spaced outward and rearward from the mast and connected with the support base. The cylinders are connected with separate hydraulic circuits such that they may be moved in opposite or the same directions to enable rotation of the mast about either or both the driven beveled gear shaft and the beveled drive gear shaft.

3,500,939
METHOD OF MANUFACTURING CAN END
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 345,615, Feb. 18, 1964. This application Jan. 11, 1968, Ser. No. 697,173
Int. Cl. B21d *51/00*
U.S. Cl. 113—121 **9 Claims**



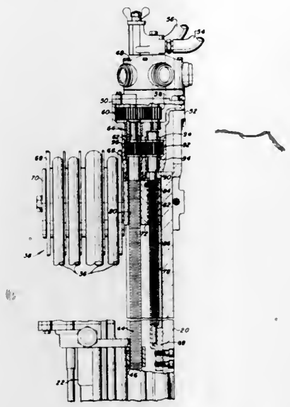
This disclosure relates to a method of manufacturing easy opening ends in a manner which avoids end panel and pull tab flipping by forming a score line defining a removable tear-out portion by compressing the material of a metallic blank between a pair of dies. The compression causes an excess portion of the compressed material to be displaced away from the tear-out portion, and this excess portion of the material is absorbed as it is being displaced by drawing the material adjacent the score line out of the normal plane of the blank.

3,500,940
FREE FALL HAMMER APPARATUS
George W. Guest, Benton Township, Lackawanna County, Pa., assignor to Sprague & Henwood, Incorporated, Scranton, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 737,443, June 17, 1968. This application Aug. 15, 1968, Ser. No. 752,909
Int. Cl. B25d *9/00;* **E21b** *1/00*
U.S. Cl. 173—124 **8 Claims**



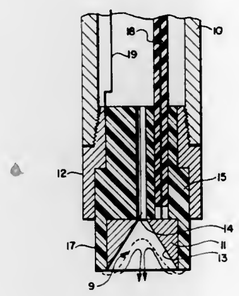
Free fall hammer apparatus for use in driving pipes or casing through overburden and in driving soil samplers into soil which is composed of a multi-part hammer, a tong assembly and a hydraulically operated lifting assembly.

3,500,941
FEED MECHANISM FOR ROCK DRILL HOSE GUIDE
Frederick R. Rudman, Edgewater, Colo., assignor to Gardner-Denver Company, Quincy, Ill., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,246
Int. Cl. E21c *5/06, 11/00*
U.S. Cl. 173—160 **7 Claims**



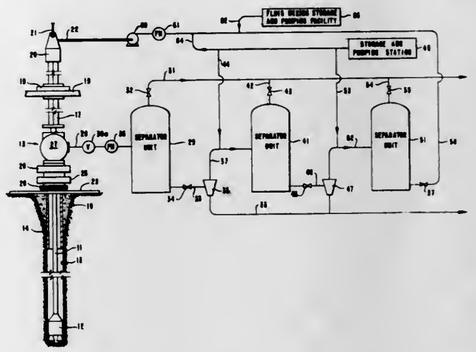
A feed mechanism for advancing and retracting a hose guide and tensioning reel on a screw feed type rock drill support. The mechanism comprises a separate feed screw for the hose reel mounted parallel to the feed screw for the drill proper. The hose reel feed screw is driven by the drill feed motor and drive train and has a thread lead proportioned according to the thread lead of the drill feed screw and the relative rotation rate of the two screws whereby the hose reel is advanced along the drill support at substantially one half the feed rate of the drill to maintain uniform tension in the motive fluid hoses leading to the drill.

3,500,942
SHAPED SPARK DRILL
Noyes D. Smith, Jr., Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,802
Int. Cl. E21b *7/00*
U.S. Cl. 175—16 **6 Claims**



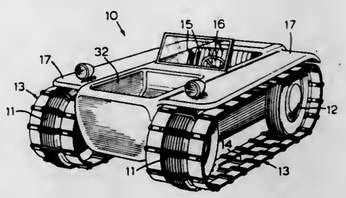
A shaped spark discharge for increasing the penetrating power of spark discharges. The spark is forced to jump between a pair of electrodes disposed so that the path along which the voltage is discharged is cone-shaped and causes the shock waves to converge. The electrodes and the surrounding dielectric are shaped and disposed to form a cone-shaped path between the electrodes having the least resistance with respect to an electrical discharge.

3,500,943
PRESSURIZED WELL DRILLING SYSTEM
William E. Bingman, Jr., Midland, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 20, 1968, Ser. No. 738,352
Int. Cl. E21b *21/04;* **F21c** *7/00*
U.S. Cl. 175—66 **10 Claims**



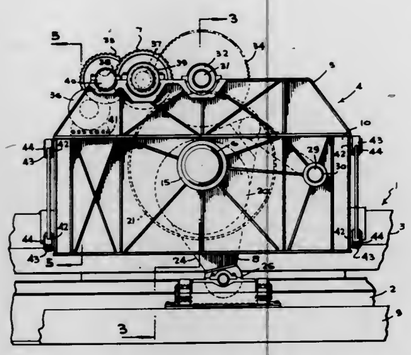
A system for drilling a well wherein a low viscosity drilling fluid is continuously circulated under pressure with the bottom hole pressure thereof being greater than the formation fluid pressure in the formations encountered during the drilling activity.

3,500,944
CONVERTIBLE WHEELED AND TRACKED VEHICLE
Ross D. Farnsworth, R.R. 2, Huntsville, Ontario, Canada
Filed Apr. 4, 1968, Ser. No. 718,833
Int. Cl. B26d *11/00, 55/08*
U.S. Cl. 180—6.24 **10 Claims**



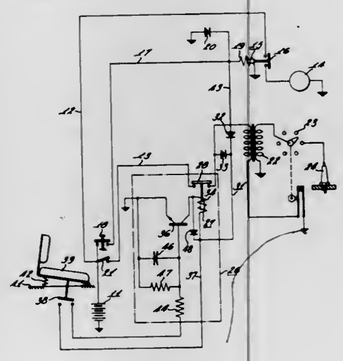
A vehicle adaptable for travelling on wheels or on tracks having two track members each of which comprises a pair of spaced apart rubber belts joined together in parallel relationship by a plurality of metal channel members. The channel members are of channel-shaped cross section throughout the entire length thereof, have straight portions at each end with a U-shaped portion at the middle and are attached to the inner sides of the belts with the open side of the channel-section facing outwardly on the track member. Spacing members are located between the straight portions of the channel members and the belts to maintain a spaced relationship therebetween.

3,500,945
WALKING MECHANISM ASSEMBLY
Kenneth L. Barden, Daniel J. Furey, and Edwin W. Sankey, Marion, Ohio, assignors to Marion Power Shovel Company, Inc., Marion, Ohio, a corporation of Delaware
Filed May 1, 1968, Ser. No. 725,627
Int. Cl. B62d *57/02*
U.S. Cl. 180—8 **10 Claims**



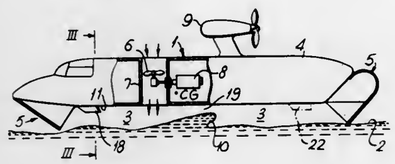
A walking mechanism subassembly for dragline machines, wherein the assembly includes a rigid frame having spaced front and back sections, with a shaft having an eccentric portion journalled at its ends in the frame. A walking arm has an antifriction bearing mounted on the eccentric and is coupled to a walking shoe and anchored to the frame. A drive from the shaft is also carried by the assembly frame. Means are provided for attaching the subassembly as a unit to the dragline machine rotatable frame.

3,500,946
SEAT OPERATED POWER CUTOFF TIME DELAY
Myron J. Boyajian, Chicago, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 2, 1968, Ser. No. 695,129
Int. Cl. B60r *21/00*
U.S. Cl. 180—101 **7 Claims**



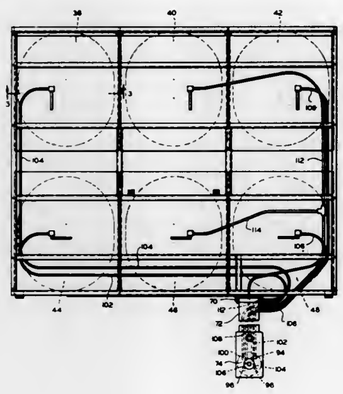
A time delay relay is used in a seat controlled safety circuit for interrupting the ignition system of a vehicle engine. A transistor is used in conjunction with the time delay relay and means are employed to positively disconnect the transistor from the power source when the relay is opened, even though the ignition switch at the operator's station is left on. The means employed include a bridging circuit with a diode between the starter and ignition circuits which are operable to initially energize the time delay relay.

3,500,947
GAS-CUSHION VEHICLES WITH WAVE RESTRAINING MEANS FOR OPERATION OVER WATER
Christopher Sydney Cockerell, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Feb. 7, 1968, Ser. No. 703,603
Claims priority, application Great Britain, Feb. 27, 1967, 9,230/67
Int. Cl. B60v *1/00*
U.S. Cl. 180—116 **6 Claims**



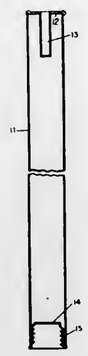
The undersurface of the body of an air-cushion vehicle operating over water carries rigid structure adapted to reduce height of large waves encountered by the vehicle, for example, by severing the wave tops, so that a clearance is maintained between the vehicle body and the water. The clearance provides for an exchange flow of cushion air from one side of the wave to the other, thus restraining the wave from sweeping air within the cushion space.

3,500,948
MATERIAL HANDLING DEVICE
William A. Williamson and Robert R. Rabbitt, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Oct. 3, 1967, Ser. No. 672,570
Int. Cl. B60v *1/10;* **B66f** *3/34*
U.S. Cl. 180—124 **1 Claim**



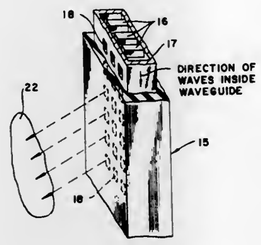
The combination of an industrial truck and a container handling pallet connected thereto. The pallet includes a frame to which six inflatable air pads are connected in generally rectangular relation, means for communicating the pads with a source of pressurized air and a valve for varying the flow of air to the corner pads.

3,500,949
MARINE SEISMOGRAPHIC PROSPECTING
Stewart Paterson, Ardrossan, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Dec. 18, 1967, Ser. No. 691,395
Int. Cl. G01v *1/38, 1/12, 1/13*
U.S. Cl. 181—.5 **6 Claims**



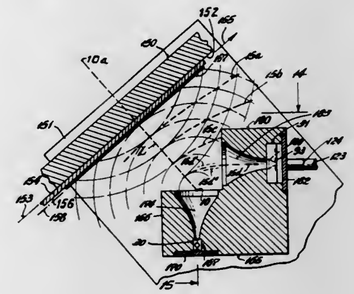
Underwater seismic prospecting is carried out by detonating an immersed bubble-forming explosive having a length-to-diameter ratio exceeding 5:1 thereby suppressing bubble pulsation which would normally occur unless the explosive is located close to the water surface.

3,500,950
RADIATION METHOD AND APPARATUS FOR MAPPING THE SURFACE CHARACTERISTICS OF AN OBJECT
William L. Roever, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1969, Ser. No. 806,635
Int. Cl. G01v *1/40*
U.S. Cl. 181—.5 **14 Claims**



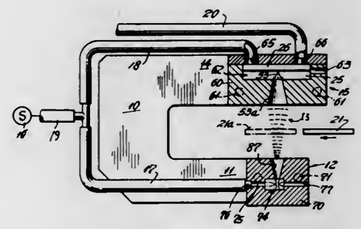
A method and apparatus for scanning the surface of an object adjacent to a fluid by transmitting a pulsed beam of energy through the fluid and into engagement with the surface. A pulsed beam of radiation is transmitted from a predetermined position with respect to the object and guided through a radiation waveguide wherein the phase velocity of the beam is greater through the waveguide than in the surrounding medium. The pulsed beam is directed from the waveguide through the surrounding medium at a known angle and into engagement with the surface of the object. Radiation reflected from the surface is detected through the waveguide at substantially the predetermined position and known angle. The radiation reflected from any irregularities a substantially constant distance from the waveguide appearing along the surface is detected and recorded.

3,500,951
ACOUSTICAL INTERFEROMETRIC SENSING DEVICE
Basil B. Beeken, New Haven, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 722,886
Int. Cl. G10k *5/00;* **F15c** *1/04, 4/00*
U.S. Cl. 181—.5 **24 Claims**



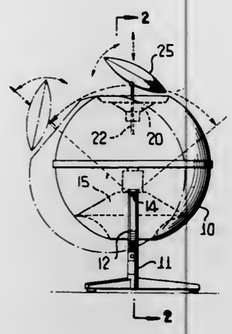
An acoustical interferometer including a generator that is adapted to direct ultra-sonic waves against the surface of an object to be sensed whereby the incident and reflected waves to and from said surface establish a predetermined pattern of interference fringes when said surface is in a predetermined position relative to said generator. An acoustically sensitive device is operatively located so as to be controlled by a predetermined one of said fringes whereby said device may precisely determine when said surface is in its said predetermined position.

3,500,952
ACOUSTICAL SENSING DEVICE
Basil B. Beeken, New Haven, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Dec. 20, 1967, Ser. No. 692,152
Int. Cl. G01v *1/00;* **F15c** *1/00*
U.S. Cl. 181—.5 **18 Claims**



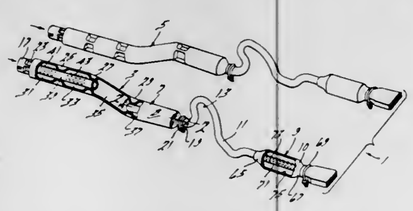
A sensing device having a sound wave generator that propagates an acoustical beam that is adapted to be impressed on an acoustically sensitive receiver. The sound wave generator comprised a novel whistle arrangement, while the receiver comprised a two stage fluidic unit that is operationally sensitive to the high sonic frequency of said acoustical beam. When an object to be sensed interrupts said acoustical beam the receiver initiates an output signal.

3,500,953
LOUDSPEAKER SYSTEM
Uolevi L. Lahti, 909 Sunset Road, Ann Arbor, Mich. 48103
Filed Dec. 4, 1968, Ser. No. 781,133
Int. Cl. G10k *13/00;* **H04r** *7/16*
U.S. Cl. 181—31 **2 Claims**



A loudspeaker system including an enclosure containing a downwardly directed low frequency loudspeaker provided with an inverted exponential horn, and an upwardly directed high frequency loudspeaker provided with a convex reflector which is adjustable in both height and angle of tilt, and which may include a pre-stressed soft reflecting surface.

3,500,954
EXHAUST SILENCING SYSTEM
Earl G. Willette, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Mar. 13, 1969, Ser. No. 806,964
Int. Cl. F01n *1/00*
U.S. Cl. 181—35 **9 Claims**



Each side of a dual exhaust silencing system for automobiles has first and second silencing units interconnected by a pipe with a kick-up section to go over the rear axle of an automobile, the first section including silencing arrangements for attenuating high frequency roughness, removing sounds in the vicinity of 125 c.p.s., and lowering the overall sound level whereas the second unit attenuates miscellaneous noise and roughness having a medium frequency level.

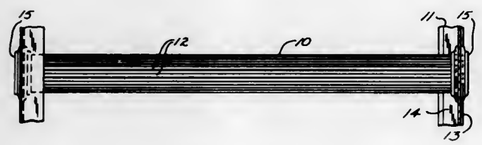
3,500,955
FIREARMS SILENCER WITH HELICAL SUPPRESSOR ELEMENTS
Mitchell L. Werbell, Powder Springs, Ga., assignor to Sionics, Inc., a corporation of Georgia
Filed Jan. 24, 1968, Ser. No. 700,239
Int. Cl. F01n *1/02, 1/12;* **F41c** *21/18*
U.S. Cl. 181—36 **5 Claims**

A silencer for use in conjunction with weaponry and as a muffler for internal combustion engines and the like is disclosed wherein a hollow tubular outer housing is divided into entry, suppression and resonant chambers arranged coaxially within the tubular housing. The entry chamber is separated from the suppression chamber by an axially apertured partition of progressively diminishing size and of stepped configuration. A plurality of helical suppressor elements are axially disposed in the suppression chamber and arranged in opposition to each other. The helical suppressor elements are disposed about



an axial passageway and a plurality of radial ports are utilized to establish communication from the axial passageway to the helical suppressor elements. The resonant chamber is defined by end walls whose interior surfaces are of dished concave configuration and this chamber is arranged immediately adjacent to the suppression chamber. An inwardly protruding throat portion is formed on the interior surface of the outer end wall of the resonant chamber.

3,500,956
LADDER CONSTRUCTIONS
Harold R. Lindesmith, Greenville, Richard P. Sulecki, Transfer, Charles R. Tuck, Greenville, and Richard L. Werner, Sharon, Pa., assignors to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Original application Oct. 19, 1967, Ser. No. 676,477. Divided and this application Nov. 1, 1968, Ser. No. 772,518
Int. Cl. E06c *7/08*
U.S. Cl. 182—228 **10 Claims**

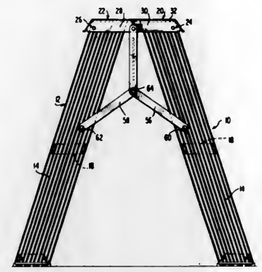


There is disclosed herein a rung-to-side-rail ladder joint construction and method therefor comprising providing the end portion of a rung with a sleeve shaped ferrule blank having a substantial wall thickness, projecting the end portion with the blank thereon through a pierced side rail, and shearing away portions of the blank inwardly from the ends thereof to form flanges on either side of the rail.

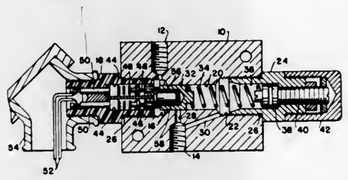
3,500,957
TWO-MAN STEPLADDER OR STEP STOOL
Melvin J. Stern, McComb, Miss., assignor to Craft Metal Products, Inc., McComb, Miss., a corporation of Mississippi
Filed Dec. 30, 1968, Ser. No. 787,757
Int. Cl. E06c *1/383, 7/16*
U.S. Cl. 182—104 **8 Claims**

The two-ladder sections of a stepladder or stool are pivotally joined at one end by top step members, one step member being pivoted to each ladder section and the two members being pivoted to each other. Spreader bars are pivotally connected to the side rails of the ladder sections and to each other, and a further link extends from the pivot joining each pair of spreader bars to the pivot joining the top step members to thus form a linkage system which controls the movements of the

ladder sections both during opening and during closing of the sections relative to each other. The further link is of T-shaped cross section to present a flange to extend between the ladder sections whereby to be clamped or sandwiched therebetween when the ladder is collapsed or folded.



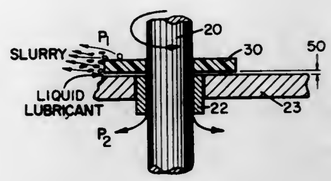
3,500,958
FLOW RESPONSIVE VALVE FOR LUBRICATING SYSTEMS
James J. Callahan, Bloomfield Hills, Ralph F. Urso, Grosse Pointe Farms, and John P. Snow, Royal Oak, Mich., assignors to McCord Corporation, Detroit, Mich., a corporation of Maine
Filed Nov. 16, 1967, Ser. No. 683,712
Int. Cl. F16n *29/04*
U.S. Cl. 184—6 **6 Claims**



A valve for use in lubricating systems to sense lubricant flow failure and actuate electrical or pneumatic means for giving a warning signal or shutting down operation of an engine or other machine in the event of failure of lubricant flow to the machine. A valve body is connected into a lubricant flow line and includes a reciprocable piston having one end exposed to inlet pressure and movable against a spring in response to lubricant flow through the line to open an outlet passage in the valve body to allow flow through the valve and lubricant line. A passage transmits the lower outlet pressure to the other end of the piston, and the pressure drop from the inlet to the outlet is balanced by the spring. When lubricant flow ceases, the spring moves the piston to close the outlet and at the end of such movement the piston closes an electrical warning or control circuit. In a modification, the piston actuates a pneumatic valve which performs a control function in the event of failure of lubricant flow.

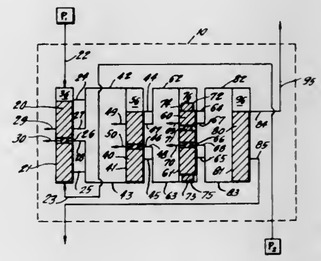
3,500,959
ROTARY PARTICLE FILTER FOR A BEARING
Ludwig W. Koch, Lakewood, Colo., and Dennis F. Keller, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,645
Int. Cl. F01m *1/00;* **F16j** *15/54;* **F16c** *1/24*
U.S. Cl. 184—6 **6 Claims**

A filter for the bearing of a flow meter which has a differential pressure is made by mounting a disc around the shaft over the high pressure side of the bearing in close proximity to the bearing. The disc should permit fluid to flow to the shaft and between the shaft and bearing to provide a lubricant. Rotation of the disc will throw



the particles in the fluid away from the shaft, preventing the particles from entering the bearing and causing excessive wear.

3,500,960
CENTRAL LUBRICATING SYSTEM OF THE SEQUENTIALLY OPERATING PISTON VALVE TYPE
Robert H. Jaggi, Bergenfield, N.J., assignor to Auto Research Corporation, Boonton, N.J., a corporation of Delaware
Filed Aug. 20, 1968, Ser. No. 754,050
Int. Cl. F01m *1/06;* **F16k** *11/00*
U.S. Cl. 184—7 **22 Claims**

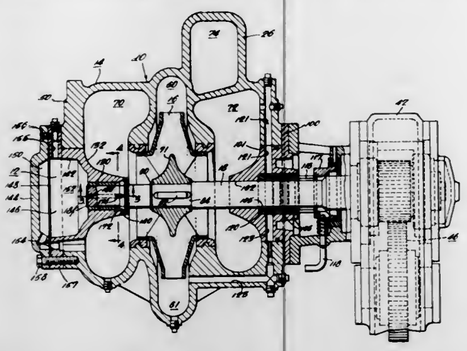


A central lubricating system having a plurality of sequentially operable reciprocating pistons controlling the flow of lubricating fluid to associated bearings to be lubricated; the pistons each being housed in individual cylinder blocks, and conduits joining successive blocks to form a unit; these conduits being divided into two separate branches, one for control of piston operation and one for supplying lubricating fluid to the bearings; each of the pistons may include means indicating its operative or inoperative condition and means for stopping the flow of lubricating fluid to the remaining pistons upon the occurrence of a fault in its operation; a plurality of units may be joined by conduits to form a system.

3,500,961
PRESSURE BALANCED BEARING LUBRICATION SYSTEM
Harry A. Eberhardt, Paoli, and Evert J. Wendell, Wayne, Pa., assignors to Hale Fire Pump Company, Conshohocken, Pa., a corporation of Pennsylvania
Filed Jan. 16, 1968, Ser. No. 698,174
Int. Cl. F16n *13/20;* **E04d** *29/00*
U.S. Cl. 184—31 **10 Claims**

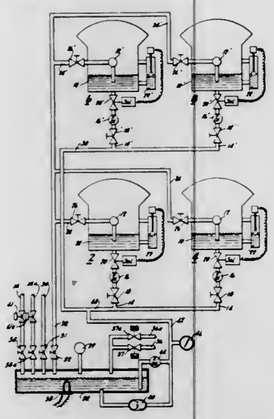
In apparatus for handling a primary fluid including a fluid chamber, a reservoir for a secondary fluid, and a seal for separating the primary and secondary fluids, means for substantially balancing the pressure of the secondary fluid

and the primary fluid in the region of the seal. In some instances a rotatable member is supported on a bearing



and the fluid in the reservoir is a lubricant wherein the lubricant is circulated from the reservoir through the bearing.

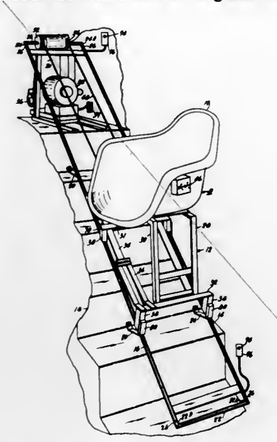
3,500,962
LUBRICATION SYSTEM FOR COMPRESSORS
Erich J. Kocher, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 599,498, Dec. 6, 1966. This application May 1, 1969, Ser. No. 820,831
Int. Cl. F25b *43/02*
U.S. Cl. 184—103 **8 Claims**



Lubrication systems for compressors, and particularly a lubrication system for maintaining a desired amount of lubricant in each of a plurality of reciprocating compressors by supplying such lubricant under pressure from a common sump. The lubricant is provided to each of the compressors independently, and in amounts dependent on the amount of lubricant existing in each of the compressors.

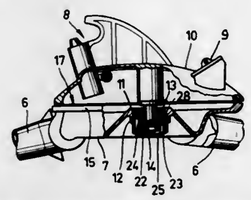
3,500,963
CONTROL SYSTEM FOR ELEVATORS AND THE LIKE
Arthur J. Beutler, Greendale, Wis., assignor to Stair Chair Corporation, Cleveland, Ohio, a corporation of Wisconsin
Filed June 11, 1968, Ser. No. 736,112
Int. Cl. B66b *9/06, 11/04;* **H02k** *17/02*
U.S. Cl. 187—12 **8 Claims**

A control system for an elevator mountable on a pair of rails and having a chair or platform on which a passenger may sit or stand. The control system permits both the passenger on the elevator and an operator located at the head or foot of the stairs to regular the up and



down movement of the chair. The control system may also be utilized to limit the travel of the chair along the rails.

3,500,964
DAMPING ARRANGEMENT FOR TRACKING DEVICE
Franz Pfister, Hochstadt, and Arnold Stangl, Ottobrunn, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, Germany
Filed Apr. 17, 1968, Ser. No. 722,122
Claims priority, application Germany, Apr. 25, 1967, B 92,216
Int. Cl. F16d *63/00*
U.S. Cl. 188—1 **10 Claims**

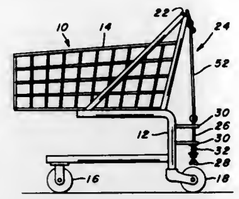


A damping arrangement, interposable between two relatively rotatable parts of a tracking device or the like, includes a ring consisting of a carbon fluoride resin fixed to rotate with one part and a polished steel ring fixed to rotate with the other part, the two rings being in engagement with each other. Adjustable spring means are provided to control the pressure between the two rings so that the maximum relative surface velocity of the two rings is always maintained at less than 30 m./min. Means are provided for limiting relative axial displacement of the two parts so as to limit the pressure on the carbon fluoride resin ring to a value sufficiently low to prevent flowing of the resin.

3,500,965
ANTIROLL DEVICE FOR SHOPPING CARTS AND THE LIKE
Arthur L. Nossokoff, 957 Flemington St., and Max Antin, 950 Flemington St., both of Pittsburgh, Pa. 15217
Filed Jan. 31, 1969, Ser. No. 795,426
Int. Cl. B60t *1/04, 13/04*
U.S. Cl. 188—29 **7 Claims**

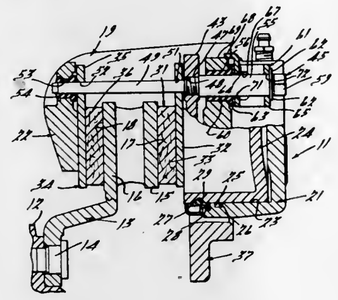
An antiroll device for the shopping carts and the like is disclosed. The antiroll device comprises at least one

rod having a friction means on its lower end which is selectively movable toward, against and away from a wheel of the cart. A biasing means associated with the rod urges the rod toward said one wheel, and a rod operating means, which is selectively movable between first and second positions, supported on the frame and operatively conected to the rod, controls operation of the



rod. The rod operating means when in the first position restrains movement of the rod in opposition to the biasing means, and when the rod operating means is moved to the second position, such movement moves the rod in concert with the biasing means whereby the friction means is moved into engagement with the one wheel, thereby restraining rotation of the wheel.

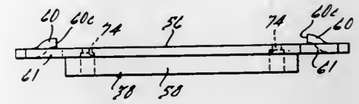
3,500,966
DISK BRAKE EMBODYING CALIPER POSITIONER
William T. Birge, Plymouth, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed May 29, 1968, Ser. No. 733,121
Int. Cl. F16d *55/18, 65/54, 65/22*
U.S. Cl. 188—73 **11 Claims**



A disk brake assembly of the sliding caliper type embodying resilient positioners for controlling the sliding movement of the caliper and for adjusting the at-rest position of the caliper. Each resilient positioner comprises a yieldable spring connected between the torque reaction member and the caliper, the spring being mounted on a pin which slidably supports the caliper.

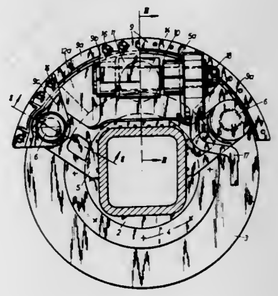
3,500,967
DISC BRAKE SHOE RETENTION MEANS
Terence M. Nolan, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,624
Int. Cl. F16d *55/224, 65/02*
U.S. Cl. 188—73 **5 Claims**

A sliding caliper type disc brake assembly for motor vehicles, wherein one brake shoe is slidably suspended relative to the caliper for direct piston actuation. The caliper has a reaction portion on its side opposite from the piston to which a second brake shoe is secured. A backing plate of the second brake shoe is formed with



abutment portions designed to engage shoulders on the reaction portion. Spring biased pins extend through the reaction portion and the second brake shoe to hold the second brake shoe on the reaction portion.

3,500,968
DISC BRAKE AND MOUNTING THEREFOR
Helmut Bosler, Wiehl, Germany, assignor to Bergische Achsenfabrik Fr. Kotz & Sohne, Wiehl, Bezirk-Cologne, Germany
Filed July 25, 1968, Ser. No. 747,550
Claims priority, application Germany, July 25, 1967, 1,630,140
Int. Cl. F16d *55/02*
U.S. Cl. 188—73 **5 Claims**

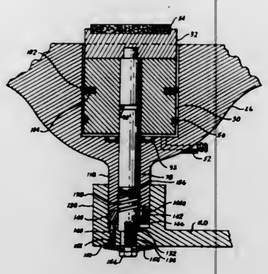


First and second brake-lining means are arranged on opposite sides of brake disc means connected to a wheel hub of a vehicle having an axle body on which a carrier is secured. Two bearing pins each have guide portions on opposite sides of the carrier. Pin guide portions permit sliding thereon both by first brake-lining and a caliper-type saddle carrying the second brake-lining means. A cam on a shaft is journalled by the carrier in a location between thrust and opposing members. Cam force is transmitted through the thrust member directly to one brake-lining means and through the opposing member secured to the caliper-type saddle with the other brake-lining means.

3,500,969
PLURAL ACTUATED DISC BRAKE MECHANISM AND ADJUSTING MEANS THEREFOR
George C. Asher, Northridge, Ohio, assignor of one-half to Forrest Ray Johnson, New Lebanon, Ohio
Filed Jan. 17, 1968, Ser. No. 698,525
Int. Cl. F16d *65/14, 65/38, 55/00*
U.S. Cl. 188—106 **7 Claims**

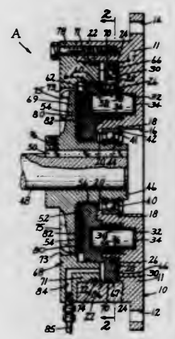
A mechanically operated "emergency" brake system for primarily hydraulically operated disc brakes includes a mechanically applied push rod passing through the hydraulic cylinder and piston. Using a caliper, pressure is

applied to both sides of a brake disc during both hydraulic and mechanical operation. A self-adjustment is provided by a drag ring encircling the hydraulically operated pis-



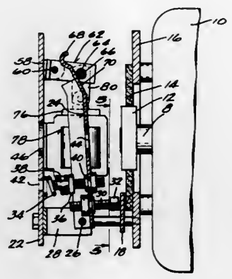
ton. In one embodiment the mechanism for mechanically operating the brakes includes a rotatable lever and a ratchet mechanism for intermittently adjusting the position of the rotatable lever.

3,500,970
BRAKE HAVING SPRING ENGAGEMENT AND FLUID PRESSURE RELEASE
Hugh K. Schilling, St. Paul, Minn., assignor to Horton Manufacturing Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 6, 1967, Ser. No. 688,509
Int. Cl. B60t *13/04, 13/22*
U.S. Cl. 188—170 **2 Claims**



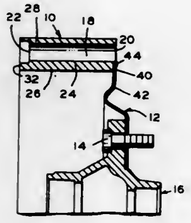
The disclosure relates to a brake having a stationary base member formed of first and second body portions, the body portions having an annular cylinder formed therein in which is positioned an annular piston formed as part of a circular plate which carries a friction ring. The circular plate is slidably mounted on a plurality of spaced shoulder pins secured to the stationary base member. Mounted on each of the shoulder pins is a coil spring which normally urges the friction ring of the circular plate into braking contact with a brake disc mounted on a shaft to be braked. The stationary base member has a conduit for fluid pressure leading to the cylinder for actuating the piston to position and hold the friction ring out of contact with the brake disc. Upon a lowering or loss of fluid pressure, the springs cause the friction ring of the circular plate to brake the brake disc and thereby brake the shaft.

3,500,971
ELECTROMAGNETICALLY RELEASED SPRING-APPLIED CALIPER BRAKE
Richard H. McCarthy, Milwaukee, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 12, 1967, Ser. No. 667,225
Int. Cl. B60t *13/04*
U.S. Cl. 188—171 **4 Claims**



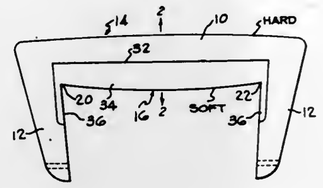
A brake plate applicable to the end of a motor has rearwardly projecting studs which support brake applying and releasing mechanisms for clamping to said plate a friction disk carried by the armature shaft of the motor. The said mechanism includes a lever having an adjustable brake-applying screw at its lower end, and cam surfaces at its upper end engageable by a solenoid-operated U-shaped lever for releasing the brake. Either one or two solenoids are employed, the arrangement permitting the brake to be applied to a motor having an armature shaft so long as to project through the brake mechanism. The spring which applies the brake, and the manually operable release cam, are both located to engage the lever below the level of an extended armature shaft.

3,500,972
SINTERED METAL BRAKEDRUM
Charles Robert Talmage, New Canaan, Conn., assignor to Motor Wheel Corporation, Akron, Ohio, a corporation of Ohio
Continuation of abandoned application Ser. No. 433,563, Feb. 18, 1965. This application June 14, 1968, Ser. No. 739,905
Int. Cl. F16d *65/10*
U.S. Cl. 188—218 **9 Claims**



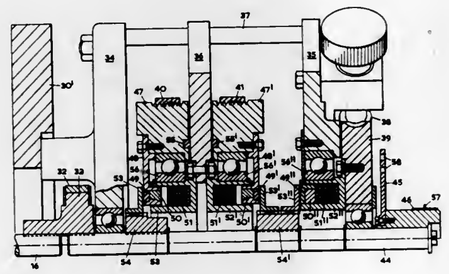
This invention relates to motor vehicle brakes and more particularly to a fade resistant brakedrum and method and apparatus for making the same. The drum comprises an annulus of inner and outer ring portions of sintered metal connected by axially and radially extending web portions. After the annulus has been sintered, a backing plate is joined thereto by a continuous weld.

3,500,973
FINGER-CUSHIONING PLASTIC LUGGAGE HANDLE
George W. Bush, Haddonfield, N.J., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey
Filed Mar. 13, 1968, Ser. No. 712,811
Int. Cl. A45c *13/26*
U.S. Cl. 190—57 **7 Claims**



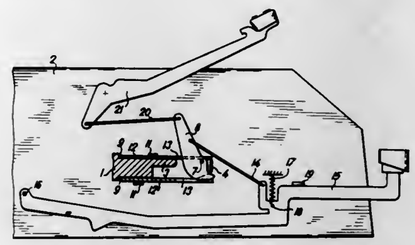
A handle for luggage, carrying cases and the like made entirely of plastic having an upper relatively rigid portion to engage the palm of the hand and a lower finger-cushioning portion which is softer than and fixedly secured to the upper portion by heat sealing or adhesion.

3,500,974
ELECTRIC CLUTCHES AND BRAKE
Cecil Bragg, Kidsgrove, Stoke-on-Trent, England, assignor to English Electric Computers Limited, London, England, a British company
Filed Apr. 29, 1968, Ser. No. 724,908
Claims priority, application Great Britain, May 2, 1967, 20,183/67
Int. Cl. F16d *11/06, 13/22, 67/02*
U.S. Cl. 192—18 **19 Claims**



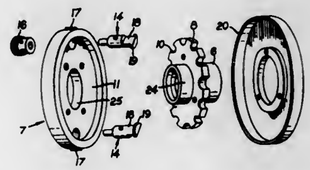
This invention relates to shaft driving mechanisms for use in for example high-speed line printers. Two clutches have flywheels journalled on annular bodies coaxially with an output shaft. Friction surfaces, carried by the flywheels cooperate with armatures keyed to the output shaft under the influence of clutch coils, disposed in slots in the annular bodies, to couple the output shaft to one or other of the flywheels. Belt drives rotate the flywheels at different speeds. A brake body carries a coil and a further friction surface, the coil being energizable to cause a further armature keyed to the output shaft to be gripped by the further friction surface to brake the shaft. A clocking disc and/or a control tape associated with the shaft may be used to control the energization of the clutch and brake coils.

3,500,975
LEVER-SUPPORTING ASSEMBLY FOR TYPEWRITERS AND THE LIKE
Miroslav Blaha, Brno, Czechoslovakia, assignor to Zavody Jana Svermy, narodni podnik, Brno, Czechoslovakia, a corporation
Filed Feb. 5, 1968, Ser. No. 702,839
Claims priority, application Czechoslovakia, Feb. 20, 1967, 1,213/67
Int. Cl. B41j *9/00, 7/22, 23/08*
U.S. Cl. 197—22 **5 Claims**



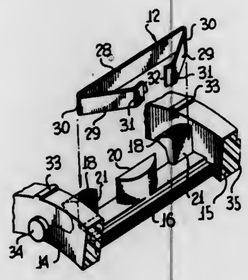
A lever-supporting assembly for typewriters and the like. The assembly includes a pair of coextensive guide plates formed with elongated registering guide openings, all of which radiate from a common center. A supporting body extends between and is fixed to the guide plates to carry the latter, and this supporting body has a plurality of ribs extending in the same general direction as the guide openings of the guide plates but spaced from each other by distances substantially greater than that between a pair of adjacent guide openings of each plate. A plurality of levers extend through the guide openings of one plate and at least partly into the guide openings of the other plate, and a common pivot shaft extends between the guide plates through all of the levers to support the latter for swinging movement. The ribs are interconnected at their outer ends by an elongated reinforcing member, and preferably they are formed with grooves, which receive the pivot shaft, one of the plates serving to retain the pivot shaft within these grooves.

3,500,976
ROTARY DRIVE COUPLINGS
Angus Murray Halley, Birmingham, England, assignor to James Halley & Sons Limited, West Bromwich, England, a British company
Filed May 17, 1968, Ser. No. 729,990
Claims priority, application Great Britain, May 23, 1967, 23,832/67
Int. Cl. F16d *11/06;* **F16l** *21/00*
U.S. Cl. 192—29 **6 Claims**



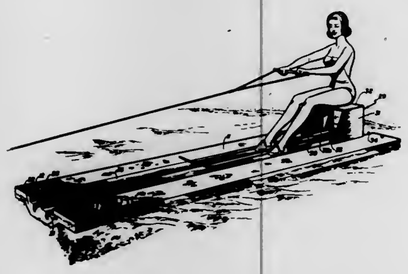
A rotary drive coupling, especially for coupling rotary web processing cylinders, and comprising first and second coupling members wherein one or more rotatable D-shape pins on one member are manually engageable with any of a plurality of equi-spaced recesses of the other member to effect engagement of the members in a selected one of a number of alternative angular positions.

3,500,977
RETAINER FOR OVERRUNNING CLUTCH WITH SPRING INSERT
Gerard W. Gehrke, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Feb. 21, 1968, Ser. No. 707,133
Int. Cl. F16d *13/04, 15/00, 41/06*
U.S. Cl. 192—45 11 Claims



This disclosure relates to a retainer for an overrunning roller clutch and specifically has to do with the construction and mounting the springs which react against the rollers. In overrunning clutches, it is desirable that all of the rollers simultaneously engage respective cam surfaces in driving relation when the clutch is engaged. In order to accomplish this, it is necessary that the rollers be spring loaded. While numerous retainers of this general type have been provided in the past, much difficulty from spring breakage has occurred, particularly with relatively small assemblies. It is now proposed to inexpensively form the retainer body of a readily moldable material, such as plastic, and to separately form the springs with the springs being of a construction which facilitates the mounting thereof in the retainer body and at the same time assures a long life under the intended loads.

3,500,978
FLOATING PLATFORM FROM WHICH TO START WATER SKIING
Paul L. Cormier, 40 Lincoln St., Spencer, Mass. 01562
Filed May 16, 1968, Ser. No. 729,617
Int. Cl. B65g *13/00*; B63h *17/00*; A63g *31/00*
U.S. Cl. 193—35 5 Claims

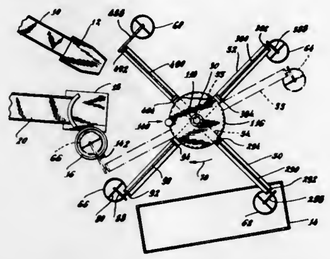


An apparatus to facilitate the take-off on water skis including flotation gear to support the skier at the water level for starting and having a seat or positioner associated with ski guides to initially establish a proper position and attitude of the skier relative to the skis and the water's surface.

ERRATUM

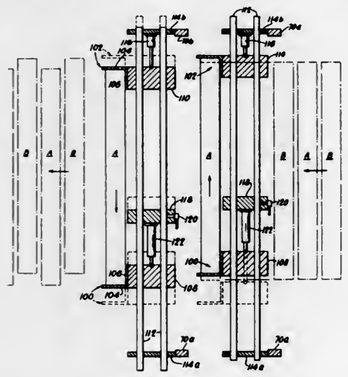
For Class 197—22 see:
Patent No. 3,500,975

3,500,979
SEMIAUTOMATIC GALVANIZING PROCESS APPARATUS
Thorvald F. Hammer, Branford, Conn., assignor to MIF Industries, Inc., Branford, Conn.
Filed Jan. 22, 1968, Ser. No. 699,386
Int. Cl. B65g *29/00*
U.S. Cl. 198—19 9 Claims



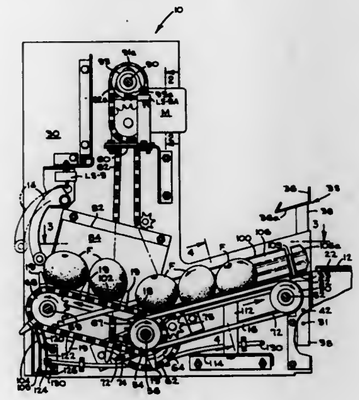
Machinery for the semiautomatic galvanizing of small parts. A number of processing stations, including a loading station, a galvanizing dip, a centrifuge, and a dumping station, are located at spaced points around a circular processing path. A central upstanding post has a number of arms radiating outwardly to the processing stations, and the arms are driven rotationally about the post. The parts to be galvanized are suspended from the radial arms and thus transported automatically to each processing station in turn. Means are provided for raising and lowering the parts according to the requirements of each processing station. The operator is able to pull the arms manually forward of their driven positions to accelerate certain processing steps, and also has manual control over additional power-assisted means for raising and lowering the parts at the centrifuge station.

3,500,980
STACKING SYSTEM FOR PAPERBOARD BLANKS
Mircea Calistrat, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Original application Sept. 11, 1967, Ser. No. 666,605, now Patent No. 3,447,696, dated June 3, 1969. Divided and this application Nov. 27, 1968, Ser. No. 810,866
Int. Cl. B65g *47/22*
U.S. Cl. 198—29 2 Claims



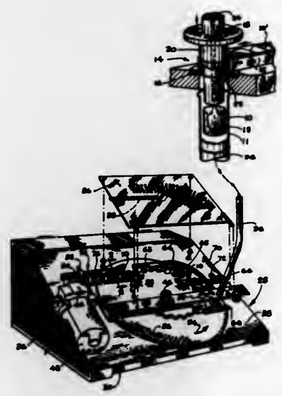
Apparatus for stacking alternate stacks of corrugated paperboard blanks discharged from a blank-forming machine face up and face down to reduce warping comprising an intermittently rotating transverse storage conveyor means for receiving and temporarily storing stacks of blanks in face-up position from an in-line conveyor adjacent the blank-forming machine; an inverter for sequentially receiving stacks from the storage conveyor and inverting alternate stacks to a face-down position on a rising conveyor comprising a guide for directing the stacks into a substantially vertical position with the stack resting on its leading edge on the rising conveyor where a pivoting finger carried by the rising conveyor engages the bottom edge of a first stack on the conveyor to advance it along the conveyor thereby positioning the first stack face up, an inverting lever adjacent the underside of a subsequent stack intermittently operable to engage the underside surface of this second stack to pivot it about its bottom edge so that it descends onto the rising conveyor with its underside up, said guide including movable opposed side members which can laterally offset the stacks relative to each other, first and second advancing fingers for sequential engagement with the trailing edges of the first and second stacks to advance them along the rising conveyor; a stacker for receiving stacks of blanks from the rising conveyor and stacking them one under the other to form a pile of blanks comprising a lifting conveyor including a stop for positioning each of the stacks, means for raising the lifting conveyor, with the stack thereon, a distance slightly greater than the height of the stack, a support for engaging the bottom face of the lifted stack to maintain the stack in its lifted position, means for lowering the lifting conveyor to receive another stack for repeating the foregoing lifting operation, and means rotating the lifting conveyor in its uppermost position when the pile of blanks reaches a selected height to discharge the pile on a skid or other conveyor for further handling.

3,500,982
FRUIT COUNTING MACHINE
Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,712
Int. Cl. B65g *47/26*
U.S. Cl. 198—30 6 Claims



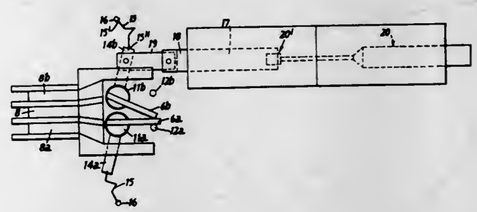
Fruit is diverted from a conveyor into the counting machine and into single-file arrangement in three parallel lanes each of which is provided with a fruit switch actuating arm arranged to be tripped by a fruit as it is discharged from the lane. The fruit in the lanes is discharged therefrom at staggered time intervals and a timing cam is provided to successively briefly close a circuit to a counter through each of the fruit switches at similar staggered time intervals and thereby obtain a count for each fruit that is discharged from the machine. Adjustable lane separators are provided which can be rotated to change the lane size so that the machine can handle both large and small fruit at different times without missing a count or permitting the machine to be jammed.

3,500,981
CAP SHELL ORIENTER
Carl C. Yann, Valley Station, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,237
Int. Cl. B65g *47/02*
U.S. Cl. 198—30 15 Claims



Apparatus for orienting shells from separated sources having a perforated rotary disc which is connected with a negative pressure source to move separated lines of the shells and arrange them into a single file without turning them over or creating a jam.

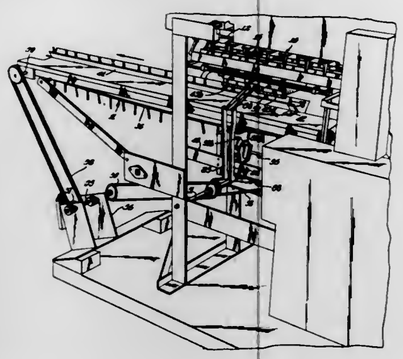
3,500,983
LINE DIVIDING CONVEYOR
David Vaughan Watkins, 66 Bedford Gardens, London, W. 8, England
Filed Oct. 16, 1967, Ser. No. 675,637
Claims priority, application Great Britain, Oct. 18, 1966, 46,622/66
Int. Cl. B65g *47/26*
U.S. Cl. 198—31 4 Claims



A line dividing conveyor comprises a plurality of slides held between flight bars connecting a pair of parallel drive chains, the slides being much shorter than the flight bars

and having projection pins for engagement with stationary guides, which can deflect the path of forward movement of the slides and the packages carried thereby.

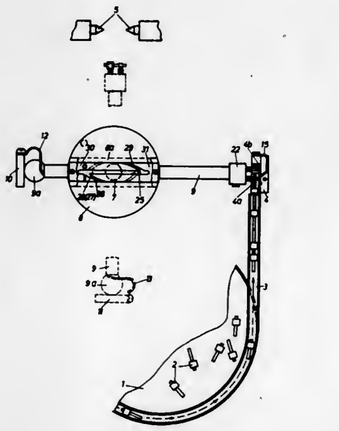
3,500,984
CONVERGER AND FEEDER FOR COOKIES FOR WRAPPING
Richard C. Talbot, Skokie, Ill., assignor to Peters Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 1, 1968, Ser. No. 717,688
Int. Cl. B65g 47/26
U.S. Cl. 198—32 **15 Claims**



Apparatus for coverging and feeding cookies for wrapping. The apparatus conveys two laterally spaced rows of cookies in counted groups to a single row with the same number of cookies in each group, to be wrapped by a conventional wrapping machine in pre-selected counted groupings. The converger includes a hopper disposed beneath the drop gates of the transfer conveyor of a counting and converging apparatus. The transfer conveyor transfers two rows of counted cookies in pre-selected groups to the hopper. The hopper has two drop bottoms on each side, each of which is aligned with a drop gate in the material carrying path of the transfer conveyor. A cam and linkage drive connection, driven in timed relation with respect to travel of the transfer conveyor is provided to operate the drop gates on opposite sides of the hopper and alternately drop a row of cookies in pre-selected groupings from one side of the hopper and then the other side of the hopper, to converge the cookies into a single row to a wrapping conveyor in the same pre-selected groupings. The drop gates may be operated to drop two rows of cookies into the hopper at one time, while the drop bottoms may operate in pre-selected timed relation with respect to each other, to converge and register the cookies with the spaces between the flights of the wrapping conveyor.

3,500,985
DEVICE FOR SORTING AND DIRECTING CONICAL BOBBINS
Johannes A. Roetgerink and Gerardus P. Muller, Hengelo, Netherlands, assignors to Machinefabriek M. Brouwer & Co. N.V., Hengelo, Netherlands
Filed Aug. 25, 1967, Ser. No. 663,430
Claims priority, application France, Sept. 2, 1966, 75,068
Int. Cl. B65g 47/24
U.S. Cl. 198—33 **11 Claims**

A device for sorting conical bobbins to bring them into a position in which all the ends with equal diameter are directed in the same direction, the bobbins being supplied to a sorting chute along which reciprocates a resiliently pressed down sorting member being able to pass over



the smaller end of a bobbin without moving the same but abutting against the wider end of a bobbin, moving it along.

3,500,986
LOADING DEVICE FOR MACHINE TOOLS
Wilhelm H. Schütt, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed July 11, 1968, Ser. No. 744,058
Claims priority, application Germany, July 13, 1967, P 42,588
Int. Cl. B65g 47/24
U.S. Cl. 198—33 **14 Claims**

This invention discloses a loading device for machine tools which includes a rotary bearing body and a bar axially guided in the bearing body. The bar is provided at one end with a gripping mechanism to remove individual roughed work-pieces from a loading station. The roughed workpieces have any desired cross section profile with at least on extension with a reduced cross section extending in a longitudinal direction. The workpieces are charged by means of a vibration conveyer over a feed trough in a continuous flow to the loading station and fed by the bar and gripping mechanism to the work receiver of the machine tool. The loading station has a

wall with an opening, the wall being subjected to a working load during the engagement of the workpiece by the gripping mechanism and the opening being shaped to the profile of the workpiece to permit a yielding movement of the workpiece by a distance Delta S in a certain relative position so that when the normal movement of the gripping mechanism is exceeded by the distance Delta S, a turning mechanism provided in the bearing body becomes effective to set the gripping bar into a rotary movement of 180 degrees to properly position the workpiece for reception by the work receiver of the machine tool.

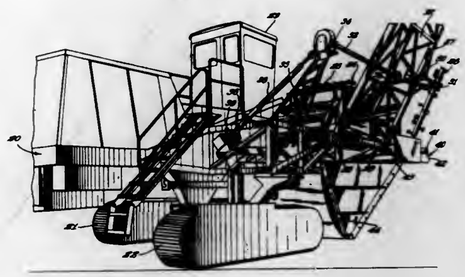
3,500,987
RECLAIMER
Fred T. Smith, Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Continuation of application Ser. No. 504,739, Oct. 24, 1965. This application May 8, 1969, Ser. No. 823,189
Int. Cl. B65g 65/28
U.S. Cl. 198—36 **29 Claims**



This disclosure concerns a machine for converting a stockpile of material into a moving stream of material for loading into another area. More specifically, a machine is provided having a main frame with front and rear propelling means as well as a wheel receiving area with a digging wheel mounted on the frame at one side. A conveyor is also carried on the frame positioned for receiving materials from the digging wheel, and a sloper is mounted on the frame and angled upwardly and away from one side of the digging wheel for causing materials to be moved from a stockpile into the path of the digging wheel and/or onto the conveyor.

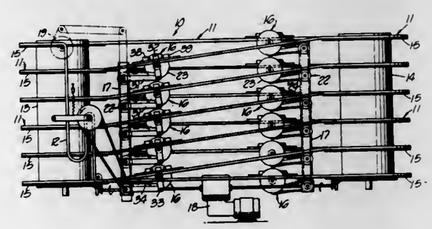
3,500,988
WHEEL RECLAIMER AND ITS CUTTERS
Fred T. Smith, Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 504,739, Oct. 24, 1965. This application Apr. 6, 1966, Ser. No. 540,715
Int. Cl. B65g 65/28
U.S. Cl. 198—36 **23 Claims**

This invention concerns a reclaimer having as a component, a sloper for resting on a pile of reclaimable material in a plane extending generally transversely of the longitudinal plane of the reclaimer and the path of travel of the reclaimer. The reclaimer and its sloper are provided to move alongside the pile, while the sloper cuts into the surface thereof at elevated points for releasing a stream of material onto a cross conveyor. The reclaimer



also utilizes a circular type digging wheel mounted at one side thereof, and the conveyor is extended transversely through the digging wheel for carrying material from the wheel to a loading receptacle.

3,500,989
AUTOMATIC TENSION COMPENSATION FOR CHAIN BELT IN A CONVEYOR SYSTEM
Robert W. Cripe, 1537 Highland Ave., Glendale, Calif. 91202, and George Koculyn, 3239 Altura Ave., La Crescenta, Calif. 91214
Filed May 20, 1968, Ser. No. 730,313
Int. Cl. B65g 15/00, 17/00, 19/00
U.S. Cl. 198—136 **7 Claims**

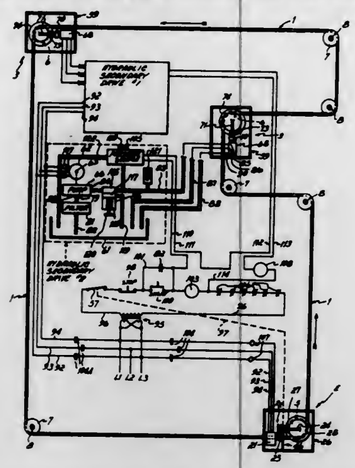


A conveyor system having multiple turns and using at least one variable speed drive device to provide uniform travel for a continuous flexible metal chain belt used in the system. The drive device responds automatically to the relative expansion of the chain belt to drive the chain belt at the speed necessary to compensate for excess slack and tension in the chain belt.

3,500,990
CONVEYOR DRIVING SYSTEM
Rudolph B. Vogt and Howard L. Kamman, Cincinnati, Ohio, assignors to The E. W. Buschman Company, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 29, 1967, Ser. No. 694,737
Int. Cl. B65g 23/36
U.S. Cl. 198—203 **15 Claims**

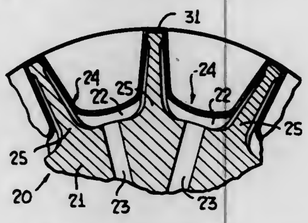
A driving system for overhead conveyors having trolleys connected to a cable and suspending the articles for transport. The system includes an electrically driven primary driving unit and one or more hydraulically powered secondary driving units, all in driving connection with the cable run at spaced points. The primary and second-

ary driving units are interconnected with one another through an electrical-hydraulic control circuit having adjustment means arranged to equalize the load among the



several driving units, such that each unit transmits a substantially equal driving force, in tension, to the cable run at the several points throughout its length.

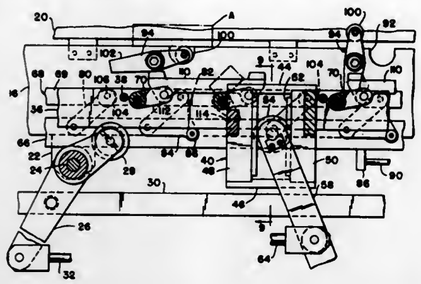
3,500,991
PRESSURE DIFFERENTIAL MATERIAL HANDLING DEVICE
Clarence W. Vogt, Box 232, Westport, Conn. 06880
Filed July 13, 1967, Ser. No. 653,261
Int. Cl. B65g *53/60;* **B01d** *39/16*
U.S. Cl. 198—211 **11 Claims**



A material handling apparatus of the pressure differential type having a pocket liner. The liner is formed of a porous material, preferably a material formed of discrete particles of plastic material which are suitably bonded together, such as by sintering. The liner may be formed either by molding a sheet of the porous plastic material or by spraying the discrete particles on a mold. In addition, the liner may be reinforced by a mesh reinforcement which is embedded in the plastic material.

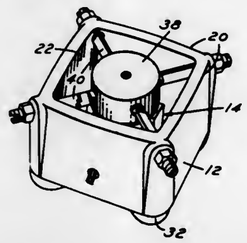
3,500,992
TRANSFER SYSTEM
Ralph L. Tabor, Birmingham, Walter Greenwood, Dearborn, and Peter J. Manetta, Warren, Mich., assignors to Simplex Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 22, 1967, Ser. No. 662,353
Int. Cl. B65g *25/04*
U.S. Cl. 198—219 **7 Claims**

A transfer system having multiple aligned stations, means at every station for sensing the presence or absence of an article, a carrier normally located at each station of the system except the final station, and means responsive to the sensing means for elevating the carrier at each station posterior to the foremost empty station, for moving such carriers forwardly to the next succeeding station, lowering the carriers at the next succeeding



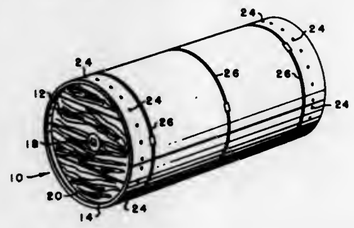
stations to deposit articles at the next succeeding stations, and for returning the carriers to their starting position.

3,500,993
VIBRATORY WORK-FEEDER DEVICE
George M. Tarzian, 1742 Rosehill Drive, Chicago, Ill. 60626
Filed Jan. 8, 1968, Ser. No. 696,407
Int. Cl. B65g *27/16*
US. Cl 198—220 **9 Claims**



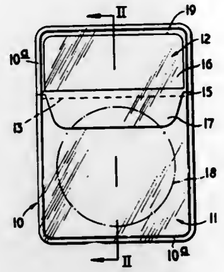
Vibratory parts feeder bowl mounted on base through opposed adjustably angled and tensioned spring bars for translating vertical electromagnetic vibratory drive into spiral bowl oscillation adjustable as to spring rate, pitch angle, clockwise or counterclockwise direction, and differential feed action in selected bowl areas.

3,500,994
FABRIC PACKAGE
Ralph Gillespie, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed July 19, 1968, Ser. No. 746,035
Int. Cl. B65d *85/66*
U.S. Cl. 206—59 **1 Claim**



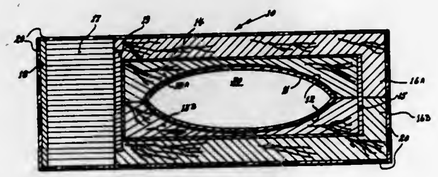
A roll of fabric enclosed in two semicircular tubes of relatively stiff paperboard and closed at the ends by wooden-like heads to protect the fabric during shipment.

3,500,995
NUMISMATIC STORAGE DEVICES
Michael Ralph Forman, 269 Broad St., Edgbaston, Birmingham 1, England
Filed June 13, 1968, Ser. No. 736,627
Claims priority, application Great Britain, July 14, 1967, 32,524/67
Int. Cl. B65d *85/00, 1/34, 85/02*
U.S. Cl. 206—0.84 **4 Claims**



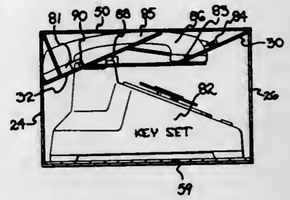
A numismatic storage device made of flexible transparent sheet material includes a coin pocket and an index card pocket the opening of which is opposed to the opening of the coin pocket. The two pockets have a single rear wall. A closure flap integral with the front wall of the index card pocket extends over the opening of the coin pocket.

3,500,996
SHIPPING CONTAINER
Francis T. Gorman, Lomita, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 28, 1968, Ser. No. 771,100
Int. Cl. B65d *81/06*
U.S. Cl. 206—46 **1 Claim**



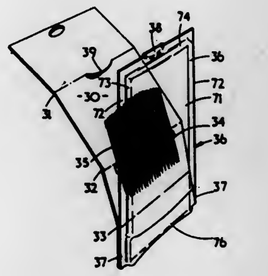
A container assembly for shipping, particularly by aircraft, a fragile or hazardous item, such as a chemical or a biological weapon. The container assembly includes: a pad of polyurethane material, having an outer lining of ablative material, in which is wrapped the item to be shipped; mating upper and lower cradle sections of balsa wood to hold and support the wrapped item; a stainless steel right circular cylinder open at one end to house the cradle sections and the wrapped item; a round stainless steel plate affixable to, removable from, and abutting with the periphery of the open end of the cylinder; mating upper and lower overpack sections of high energy-absorbing properties and low thermal conductivity, such as balsa wood, to house the cylinder; an energy-absorbing section, forward of the overpack sections and abutting the closed end of the cylinder, having an aluminum honeycomb core between a forward plate of steel and a back plate of aluminum; and a plywood case to house all of the foregoing.

3,500,997
TELEPHONE PACKAGE
Edgar A. Swift, Paxton, Mass., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 1, 1968, Ser. No. 772,692
Int. Cl. B65d *77/26, 81/02, 85/30*
U.S. Cl. 206—46 **8 Claims**



A telephone package which is adapted to hold several different styles of handset telephones and is formed from a single, folded, corrugated, fiberboard blank which includes top flaps that are foldable to lock or brace a telephone base within the package and simultaneously cradle a handset above the base.

3,500,998
HOLDERS FOR NEEDLES AND LIKE ARTICLES
Norman Thomas Sanders, Studley, England, assignor to Needle Industries Limited, Birmingham, England, a British company
Filed July 11, 1967, Ser. No. 652,573
Claims priority, application Great Britain, Feb. 9, 1967, 6,226/67, 6,230/67, 6,231/67
Int. Cl. B65d *85/24, 73/00*
U.S. Cl. 206—66 **5 Claims**

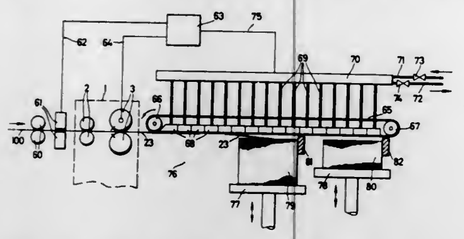


A needle pack comprising a card having moulded directly thereon a block of plastic material formed with slots or bores to receive the needles. A rigid transparent plastic cover is secured to the card and the latter is hinged to allow access to the needles.

3,500,999
PNEUMATIC CONVEYOR FOR DEPOSITING SHEETS
Paul Lippke, Neuwied (Rhine), Germany
Filed July 24, 1967, Ser. No. 655,518
Claims priority, application Germany, July 22, 1966, L 54,142
Int. Cl. B07c *5/34;* **B65h** *29/32, 29/58*
U.S. Cl. 209—74 **21 Claims**

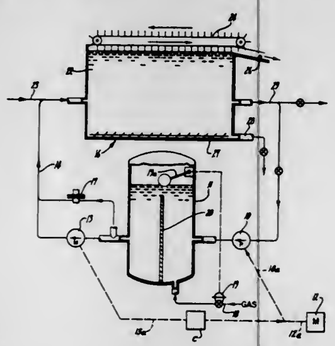
Method of and apparatus for conveying sheet-like members in which a pervious belt-like member forms the

conveyor and is subjected to suction on the side opposite the members to be conveyed for holding the members on the belt, while the members are released to a receiving



station past which the belt moves by reducing the suction applied to the belt within the range of the receiving station.

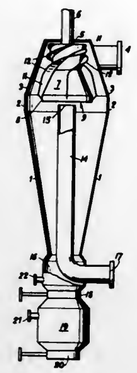
3,501,000
FLUID PUMPING METHOD AND APPARATUS
Thomas E. Roberts, Jr., Saratoga, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,536
Int. Cl. B03d *1/24;* **F16h** *41/04*
U.S. Cl. 209—170 **7 Claims**



A method and apparatus for delivering fluid (e.g. water) to a high pressure reservoir and for releasing fluid from the reservoir to a lower pressure level, all with a relatively small amount of power consumption. Power is supplied to a fluid pump to cause the pump to deliver fluid to the reservoir under pressure. During operation of this pump a stream of fluid is caused to flow from the reservoir to a lower pressure level with release of useful energy. This energy is utilized to provide a part of the power for driving the pump. In a particular embodiment, the invention is incorporated in a flotation method and apparatus, with air being dispersed into liquid effluent while in the pressure reservoir, and with the discharging liquid being routed to flotation separating equipment.

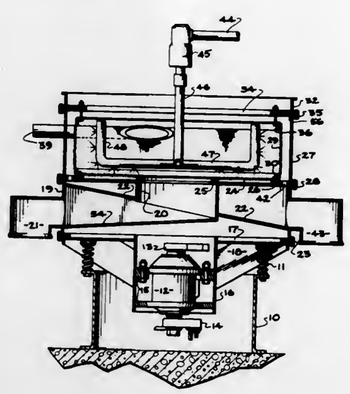
3,501,001
CENTRIFUGAL SEPARATOR
Jiří Müller and Rudolf Kmeco, Litovel, Czechoslovakia, assignors to Papcel Strojirny Pro Prumysl Celulosy a Papiru, narodni podnik, Litovel, Czechoslovakia
Filed Sept. 16, 1968, Ser. No. 759,874
Claims priority, application Czechoslovakia, Sept. 22, 1967, 6,747/67
Int. Cl. B01d *21/06;* **B03d** *1/14*
U.S. Cl. 209—211 **9 Claims**

A centrifugal separator for paper stock has a normally vertically elongated casing conically tapering in both axial directions from a central portion, a tangential feed conduit to the top portion, a coaxial rotor in the top portion carrying vanes which are helical at the top, almost axial at the lower end of the rotor, and a toroidally curved



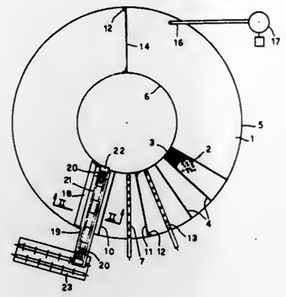
recess in the bottom face of the rotor which guides rising purified stock into the closely adjacent upwardly directed, axially centered orifice of a discharge conduit. Heavy impurities are collected at the casing bottom.

3,501,002
VIBRATORY SEPARATOR
Walter J. Talley, Jr., Los Angeles, Calif., assignor to SWECO, Inc., a corporation of California
Filed Nov. 28, 1966, Ser. No. 597,278
Int. Cl. B07b *1/50, 1/28*
U.S. Cl. 209—240 **11 Claims**



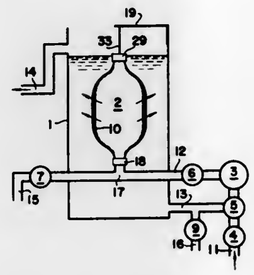
A vibratory separator, and screening structure therefor mounted in a housing, the screening structure including a first portion having a central discharge opening therein and a second portion upstanding at near the periphery of the first portion such that material which does not flow through the second portion is delivered to the first portion near the periphery thereof. A material feed arrangement is provided adjacent the second portion of the screening structure for delivering material adjacent the inside surface of the second portion, preferably substantially tangential thereto. Means also are provided adjacent said portions of the screening structure for cleaning the same.

3,501,003
METHOD FOR RECOVERING THE SOLID FROM A CLOGGING SLURRY, MORE PARTICULARLY IRON OXIDE SLURRIES IN STEELWORKS
Alfred Henri Parmentier, 3 La Bruyere, Lillois, Brabant, Belgium
Filed Mar. 17, 1967, Ser. No. 623,910
Claims priority, application Luxemburg, Mar. 21, 1966, 50,703; Jan. 24, 1967, 52,865
Int. Cl. B01d *37/02, 33/24*
U.S. Cl. 210—67 **7 Claims**



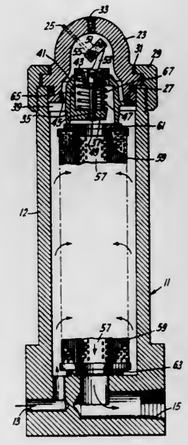
A method for recovering a solid from a slurry comprises depositing a foundation dust layer on a flat table rotating in a horizontal plane and forming a second, thin layer of dust on the foundation layer by depositing an aqueous suspension of the dust onto the foundation layer. A slurry is then deposited onto the second, thin layer and the solids in the slurry settle more quickly than the filter of the liquid so that a third layer of solids from the slurry is formed on the second thin layer while a clear filtrate forms on the surface of the third layer. The clear filtrate is removed and the third layer is dried, whereafter the second and third layers are removed together while leaving the foundation layer in place. The second and third layers are then mixed together after their removal.

3,501,004
METHOD AND APPARATUS FOR FILTRATION WITH INTERNALLY PRECOATED FILTER MEDIUM
Masatoshi Takahashi and Masatsugu Ide, Tokyo, Japan, assignors to Kabushiki Kaisha Sayama Seisakusho, Tokyo, Japan, a Japanese corporation
Filed Oct. 27, 1966, Ser. No. 590,051
Int. Cl. B01d *37/02*
U.S. Cl. 210—75 **5 Claims**



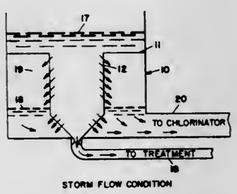
An open type internal pressure filtration apparatus using a soft filter bag of flexible filter cloth which has a free end without any support. Precoating material and filtered residues can be easily and completely removed from the flexible filter surface and, as the result, make the handling and treatment of the filter apparatus easy and efficient.

3,501,005
HYDRAULIC FILTER CARTRIDGE WITH INDICATOR
Francis Paul Russo, Waterbury, and Thomas William Spargo, Cheshire, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed May 19, 1969, Ser. No. 825,833
Int. Cl. B01d *35/14, 27/10, 41/00*
U.S. Cl. 210—90 **6 Claims**



A hydraulic filter cartridge having a one piece base and sump and a cover. The cover supports a pressure responsive by-pass means and indicating means responsive to the by-pass means.

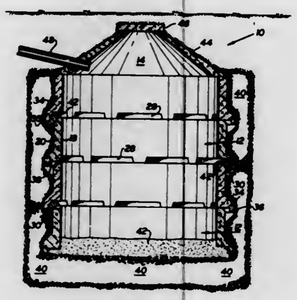
3,501,006
SELF-ADJUSTING AND SELF-CLEANING FILTRATION UNIT
William S. Adams, Cumberland, Md., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed June 21, 1968, Ser. No. 738,963
Int. Cl. B01d *35/14*
U.S. Cl. 210—131 **20 Claims**



A self-adjusting and self-cleaning filtration unit having a filament wound filter body impervious to normal pres-

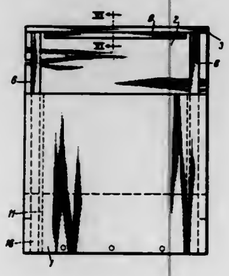
sure flow conditions of liquid and being pervious when expanded by an increase in hydraulic force as applied to the filter body.

3,501,007
DRAINAGE WELL
Cloyd Davis, Williston Park, N.Y., assignor to Modern Sewerage Systems, Inc., Roslyn, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 709,416, Feb. 29, 1968. This application Nov. 13, 1968, Ser. No. 775,451
Int. Cl. E02b *13/00*; B01d *21/10*
U.S. Cl. 210—170 **7 Claims**



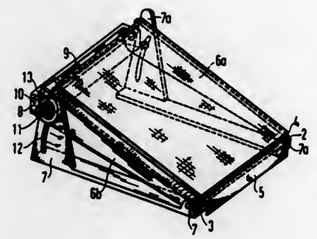
A drainage well having a plurality of enclosure members forming a tank chamber, each formed with a plurality of circumferential openings affording fluid exiting ports on spaced levels.

3,501,008
DEVELOPING CHAMBER FOR THIN LAYER CHROMATOGRAMS
Jiří Pliml and Jan Simonides, Prague, Czechoslovakia, and František Plzák, Ebikon-Lucerne, Switzerland, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Filed Mar. 3, 1969, Ser. No. 804,064
Claims priority, application Czechoslovakia, Mar. 4, 1968, 1,706/68
Int. Cl. B01d *15/08*
U.S. Cl. 210—198 **6 Claims**



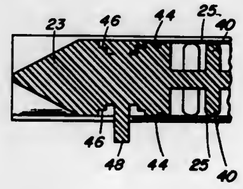
A developing chamber for chromatograms includes two glass plates which form the closely spaced front and back walls of the chamber, and another plate forming the top wall, the chamber bottom being open. The front and back plates are sealed to each other by interengaged, integral, upright rails and grooves, and the chromatogram is clamped in position between the back wall and an elongated, wedge-shaped ridge projecting from the top wall into the chamber cavity and a row of rounded projections on the front wall near the open end of the chamber cavity.

3,501,009
THIN LAYER CHROMATOGRAPHY APPARATUS
Dieter Jaworek, Tutzing, Upper Bavaria, Germany, assignor to Boehringer Mannheim G.m.b.H., Mannheim-Waldhof, Germany
Filed Apr. 14, 1969, Ser. No. 815,563
Claims priority, application Germany, Nov. 21, 1968, 1,810,216
Int. Cl. B01d *15/08*
U.S. Cl. 210—198 **13 Claims**



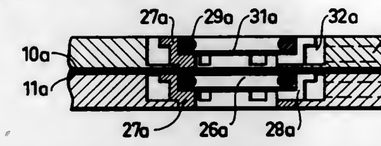
A thin layer chromatography apparatus adapted for carrying out thin layer gel and ion exchanger chromatography is provided comprising a sandwich chamber consisting of a gel plate, a cover plate and a pair of longitudinally slit tubes drawn over the lateral edges of either the gel or cover plate; a chamber holder provided with pivot means at one end thereof for pivotably holding the sandwich chamber at one end thereof and a washing agent trough mounted on the other end of the chamber, said trough being mounted for rotational movement about an axis located above its center of gravity.

3,501,010
DIALYZING APPARATUS AND METHOD OF MAKING THE SAME
Dean J. Critchell, Charles W. Conrose, and Cameron B. Estes, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 12, 1967, Ser. No. 608,921
Int. Cl. B01d *31/00*
U.S. Cl. 210—321 **7 Claims**



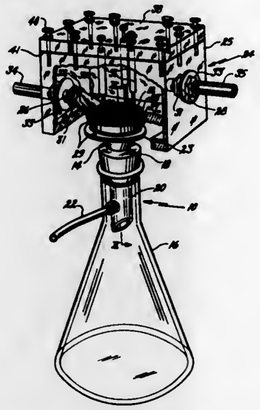
A dialyzer cartridge comprising a stacked assembly of dialyzing elements enclosed by a housing defining inlet and outlet manifolds. Each dialyzing element includes a frame defining perimeter segments. A plate extends between the frame segments and defines spaced projections extending from opposite sides thereof. Membranes, which have edges imbedded in the frame segments by a fusing process, engage the projections and are supported thereby.

3,501,011
LIQUID DISTRIBUTION MEANS IN DIALYSIS MEANS FOR PURIFYING BLOOD OR OTHER LIQUIDS
Nils Alwall, Nils Olov Vilhelm Hagström, and Bo Lennart Östergren, Lund, and Gerhard Riede, Eslov, Sweden, assignors to AB Gambro, Lund, Sweden, a company of Sweden
Filed Mar. 4, 1968, Ser. No. 710,254
Claims priority, application Sweden, Mar. 6, 1967, 3,013/67
Int. Cl. B01d *31/00, 13/00*
U.S. Cl. 210—321 **5 Claims**



A dialysis device having alternating spacing discs and pairs of membranes and an inlet channel for the dialysis liquid traversing the assembly with means for introducing and distributing the dialysis liquid into the space outside each pair of membranes while sealing the membranes together.

3,501,012
APPARATUS FOR CONTINUOUS HIGH FILTRATION WITH A FILTER
Michael J. Ryan, U.S. Air Force
(824 USAF Disp., APO, San Francisco, Calif. 96239)
Filed Mar. 18, 1968, Ser. No. 713,574
Int. Cl. B01d *35/22, 35/02*
U.S. Cl. 210—406 **5 Claims**



An apparatus for continuous high filtration with a Millipore filter having a box which has a nozzle therein and mounted on a filter head; the nozzle directing an incoming solution into a tangential flow pattern with an increased velocity across the filter so as to simultaneously supply the new mixture to be filtered as well as washing the filter clean of any collected material on the surface.

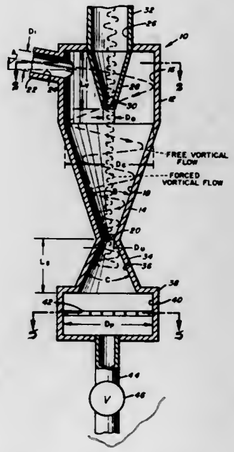
3,501,013
FILTER ASSEMBLY AND METHOD OF MANUFACTURING SAME
Per Madsen, Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware
No Drawing. Filed Nov. 7, 1968, Ser. No. 774,155
Int. Cl. B01d *29/06*
U.S. Cl. 210—497 **4 Claims**

A filter assembly consisting of a tubular filter element formed of pleated wire cloth and end caps brazed to the ends of the filter element. Each end cap is attached by positioning a layer of porous metal material, such as stainless steel felt, against the adjacent end face of the filter element. A braze material is located between and in engagement with the layer and the end cap following which the braze material is heated sufficiently to cause



it to permeate through the porous metal layer into the end face a distance sufficient to form a fluid tight joint between the end cap and the filter end face. The porous metal layer causes the braze material to distribute evenly and form a tight integral joint between the end cap and the filter element using a minimum amount of braze material.

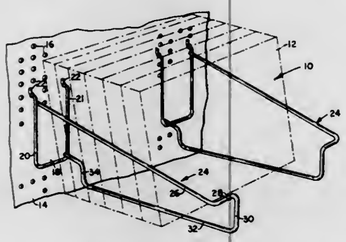
3,501,014
REGENERATIVE HYDROCYCLONE
Ernest C. Fitch, Jr., Robert E. Reed, and Alva G. Comer, Stillwater, Okla., assignors to Oklahoma State University, Stillwater, Okla., a corporation of Oklahoma
Filed June 13, 1968, Ser. No. 736,817
Int. Cl. B01d *43/00, 35/16*
U.S. Cl. 210—512 **11 Claims**



This invention relates to a regenerative hydroclone for the separation of entrained solid particles from a fluid medium. More particularly, the invention relates to a hydroclone for the separation of solid contaminant particles suspended in a fluid medium, the hydroclone being a closed vessel having a coaxial cylindrical and conical portion, the cylindrical portion providing a cylindrical interior surface closed at one end and having an axial clean fluid outlet opening in the closed end, a fluid inlet tangentically intersecting the interior cylindrical surface, the conical portion defining an internal conical surface coincident at one end with the internal cylindrical surface

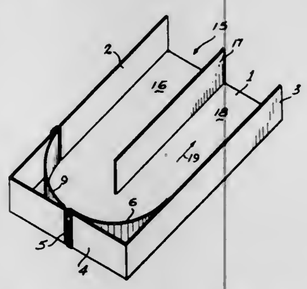
of the cylindrical portion and tapering to a reduced diameter contaminant discharge opening, and wherein the parameters for given rates of flow and densities of the fluid medium are established such that the effectiveness of the hydroclone for the separation of solid contaminants is increased.

3,501,015
DISPLAYER DEVICE FOR PACKAGED MERCHANDISE
Paul E. Behles, 1350 Lincoln Ave., San Rafael, Calif. 94901
Filed May 22, 1968, Ser. No. 731,064
Int. Cl. A47f *7/00*
U.S. Cl. 211—49 **5 Claims**



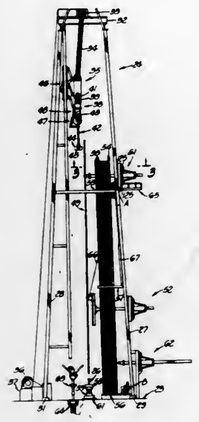
A system for displaying generally flat type packaged merchandise while supporting them on one edge in a substantially upright position comprising displayers or holders in pairs removably connectable to perforated upright material and spaced apart to support a plurality of packages of the same size on each pair. The displayers are formed from elongated material bent in a unique shape to hold a plurality of flat goods in a slightly tilted side-by-side arrangement, one end of each displayer having portions for removably retaining it firmly in place on the perforated upright material.

3,501,016
ARTICLE STORAGE APPARATUS
Kenneth C. Eaton, P.O. Box 401, Kingston, Ontario, Canada
Filed June 10, 1968, Ser. No. 735,624
Claims priority, application Canada, Feb. 5, 1968, 11,598
Int. Cl. A47f *7/00*
U.S. Cl. 211—49 **8 Claims**



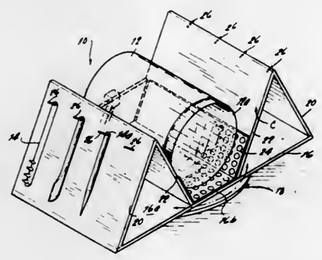
A storage rack for articles is disclosed in which the articles are received for storage at the front of a first channel and are delivered in series to the end of a second parallel channel, adjacent the point at which the articles are received, by the action of inserting the articles to be stored. The articles are prevented from jamming when passing from the first to the second channel by engagement with a resiliently deflectable surface which also urges the engaging article towards the second channel.

3,501,017
FINGER BOARD AND RACKER APPARATUS AND METHOD
Noal E. Johnson, Humble, and John W. Turner, Jr., Houston, Tex., assignors to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,820
Int. Cl. A47f *7/00*
U.S. Cl. 211—60 **5 Claims**



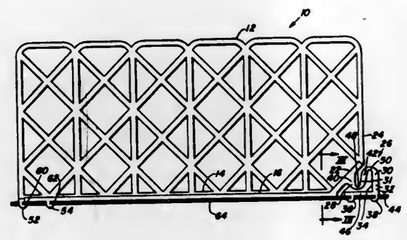
Apparatus for a drilling rig for oil wells primarily for use on drilling vessels with automated or semi-automated equipment, having a finger board with latch means individually operable automatically or semi-automatically for latching and releasing each stand of pipe or the like separably in racked position against displacement by forces created due to roll and pitch of the vessel, high winds, etc., and method and means for handling drill pipe and drill collars in a vertical racking operation on a vessel.

3,501,018
CLAY SUPPLY AND IMPLEMENT HOLDER
Alan J. Solo, Brooklyn, N.Y., assignor to Creative Environments Inc., New York, N.Y., a corporation of New York
Filed July 22, 1968, Ser. No. 746,405
Int. Cl. A47b *97/00*
U.S. Cl. 211—60 **4 Claims**



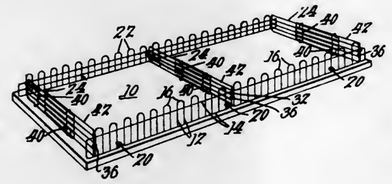
A holder for a clay supply container having a noteworthy compact construction including a rotatable base having spaced apart triangular structures thereon, the inner facing walls of which serve to firmly engage whichever one of a wide range of different diameter supply containers is wedged between these walls.

3,501,019
MEANS FOR BINNING AND BANDING DISPLAY SHELVES
Blair D. Armstrong and David M. Moore, Pittsburgh, Pa., assignors to Armstrong Store Fixtures Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 11, 1968, Ser. No. 744,123
Int. Cl. A47f *5/00*
U.S. Cl. 211—184 **9 Claims**



Merchandise barriers or partitions are disclosed for use in confining merchandise to an area of a store display shelf. The partitions are made entirely of a plastic and include means for securing them to a display shelf either through openings provided in the shelves or to the marginal or peripheral edges of the shelves. When the partitions are applied to a shelf, they will stand alone in an upright position and resist tiliting against an unbalanced pressure on their opposite sides. The partitions themselves are no thicker than glass partitions now commonly used and accordingly do not detract from the appearance of shelves or utilize substantial merchandise display space on the shelves.

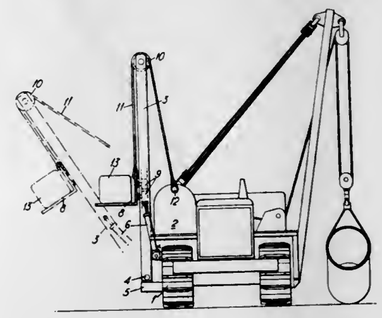
3,501,020
BIN CONSTRUCTION
George Krikorian, % Spencer Products Inc., 64 Main St., Spencer, Mass. 01562
Filed Dec. 27, 1967, Ser. No. 697,556
Int. Cl. A47f *5/01, 5/00*
U.S. Cl. 211—184 **8 Claims**



Bin construction particularly for already existing shelving providing a front retaining fence to contain goods in helter-skelter relation on the shelf and a set of adjustable dividers which extend at right angles to the front fence providing compartmentation for different kinds of goods along a single shelf, wherein each adjustable divider comprises a pair of parts which are exactly alike and which are easily assembled manually and longitudinally adjustably accommodating different widths of shelving, and including certain new and improved means interengaging with the fence for detachably maintaining the dividers anchored in upright position against the possibility of sidewise motion or dislodgment, and in some cases including means for maintaining one portion of the adjustable divider in upright position at a point remote from the front fence or alternatively including means for securing the same to a rear member such as a rear fence if present.

These dividers also have advantages in being placed at right angles to each other (parallel to the fencing), or at inclinations relative thereto, the dividers taking advantage of their capability to be adjusted, to suit the angle desired, relative to the fencing or to each other.

3,501,021
COUNTERBALANCE WEIGHTS
Bernard Dov Schreier and John Brown, both of 233 Regents Park Road, London, N. 3, England
Filed Dec. 20, 1967, Ser. No. 692,211
Claims priority, application Great Britain, Dec. 22, 1966, 57,473/66; Feb. 3, 1967, 5,367/67
Int. Cl. B66c *23/72*
U.S. Cl. 212—49 **5 Claims**

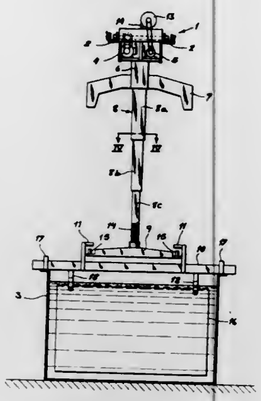


A weight-lifting and lowering vehicle, e.g. for pipe-laying, has a luffing boom on one side of the vehicle, and on the opposite side of the vehicle counterbalance means comprising a frame pivoted at its lower end to the vehicle, a weight mounted on, and movable longitudinally of, the frame, and separate hydraulic means respectively for varying the angle of the counterbalance frame, and for moving said weight along the frame.

3,501,022
OVERHEAD TRANSPORTER FOR ORIENTED GOODS
Adriano Rossi, Milan, Italy, assignor to Adriano & F. Lli Rossi S.p.A., Milan, Italy, a corporation of Italy
Filed July 28, 1967, Ser. No. 656,860
Claims priority, application Italy, Aug. 6, 1966, 18,296/66
Int. Cl. B66c *19/00*
U.S. Cl. 212—128 **4 Claims**

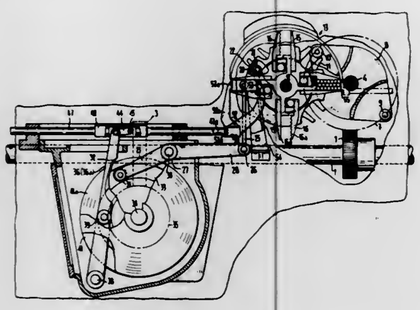
Transporter for oriented goods, such as sheet-metal plates to be immersed into a galvanizing bath in a predetermined position, with a carriage movable on elevated rails and a telescoping column depending from the carriage to hold the goods, the top section of the column being rigid with the carriage and the other sections being

nonrotatable with reference thereto; a horizontal carrying arm rigid with the bottom section is receivable, upon upward retraction, between depending prongs formed by



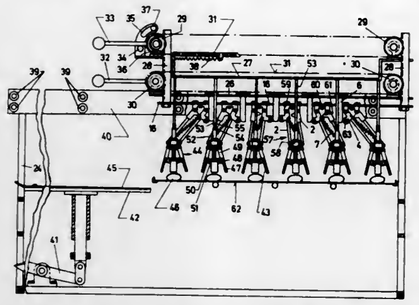
flanges of a downwardly open profile of a generally horizontal beam rigid with the top section to prevent dislodgment of the goods during transportation.

3,501,023
DEVICE FOR TRANSFERRING BATCHES OF CIGARETTES IN AN AUTOMATIC PACKING MACHINE
Ariosto Seragnoli, Via della Rose 50, Bologna, Italy
Filed Apr. 15, 1968, Ser. No. 721,526
Claims priority, application Italy, Apr. 20, 1967, 1,615/67
Int. Cl. B65g *29/00*
U.S. Cl. 214—1 **2 Claims**



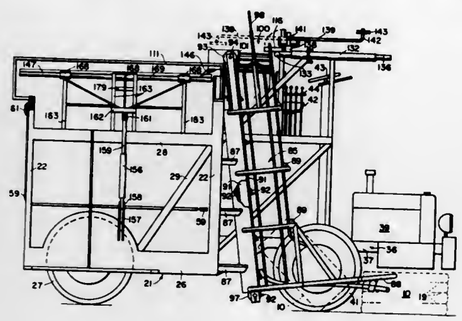
A device for the intermittent transfer of batches of cigarettes arranged in side-by-side relationship according to one or more parallel layers comprising a wheel or hub provided with radial pincers, means capable of rotating said hub intermittently about its own shaft in phase with the presentation of successive batches of cigarettes to the device, pusher means being provided for the introduction of the cigarettes inside said pincers, translator means removing the batch of cigarettes for the transfer of the batch to successive work stations.

3,501,024
EQUIPMENT FOR MANUFACTURING BAKERY PRODUCTS
Herbert Schroder, Angerstrasse, Staffelstein, Upper Franconia, Germany
Continuation-in-part of application Ser. No. 609,628, Jan. 16, 1967. This application Mar. 4, 1969, Ser. No. 804,245
Claims priority, application Germany, May 14, 1966, 1,532,348
Int. Cl. B66c *1/42;* **B25j** *15/00*
U.S. Cl. 214—1 **3 Claims**



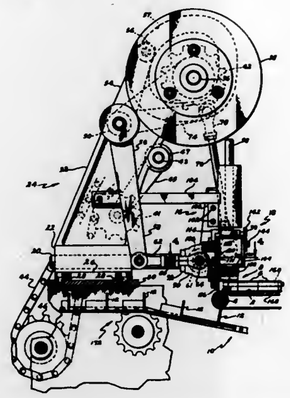
Holding means for picking up and depositing kneaded dough pieces are mounted on parallelogram linkages for movement towards and away from a centre under the action of reciprocable control rods, being closer together in the position nearer the centre. The control rods are actuated by a common control plate. The holding means are displaceable together horizontally relative to a working plate and a baking tray disposed below them.

3,501,025
BALE STACKING APPARATUS
George Jay and Everett V. Ranking, both % Jay and Rankins, 602 Merle Lane, Manteca, Calif. 95336
Continuation-in-part of application Ser. No. 569,503, Aug. 1, 1966. This application June 10, 1968, Ser. No. 744,281
Int. Cl. B65g *57/06, 57/22;* **B60p** *1/00*
U.S. Cl. 214—6 **10 Claims**



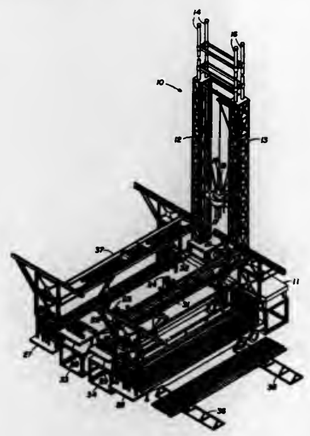
A mobile bale stacking machine provides a frame having a vertically movable elevator platform. Mounted adjacent the front of the machine is an elevator chute which lifts bales from the ground to the top of the machine adjacent one edge of the platform. Means is provided at the top of the machine for transferring the bales from the top of the elevator chute and positioning them in layers on the platform in a pattern. The pattern is unique in that some of the bales in some of the layers are disposed longitudinally of the machine whereas most of the bales are disposed transversely.

3,501,026
ARTICLE TRANSFER APPARATUS FOR CANDY BARS AND THE LIKE
Friedolf Kamila, Longmeadow, Earle M. Chase, Wilbraham, and David R. Barkman, Longmeadow, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed Feb. 6, 1968, Ser. No. 703,407
Int. Cl. B65g *49/00;* **B25j** *15/06*
U.S. Cl. 214—1 **16 Claims**



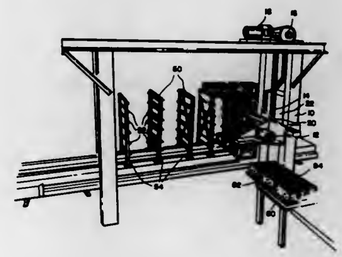
Article transfer apparatus for candy bars and the like having a carriage reciprocating between pick up and deposit stations and a reciprocating suction head slidably mounted on the carriage having suction passages between the carriage and head with a nozzle to pick up, transfer and deposit the candy bars, the travel of the suction head at the deposit station separating the passages and releasing the bars from the nozzle onto the flights of a moving wrapping machine infeed conveyor.

3,501,027
PIPE RACKING AND TRANSFER ASSEMBLY
Henry J. Dea, Oakland, Calif., and Paul E. Lynch, Richardson, Tex., assignors, by mesne assignments, to Kendrick Cattle Company, Sheridan, Wyo., a corporation of Wyoming
Filed Mar. 11, 1968, Ser. No. 712,061
Int. Cl. B65g *1/00;* **B60p** *1/46;* **E21b** *19/00*
U.S. Cl. 214—16 **19 Claims**



A self-contained portable pipe racking and transfer apparatus including a pipe handling crane operable in a collapsible rail mounted to a frame telescoping from a lower position to an upper position when operating in conjunction with a portable drilling rig. The telescoping operation of the crane rail permits storage of extra sections of drill pipe in a plurality of pipe storage bins during transportation of the entire assembly. A control system automatically sequences the pipe crane operation to transport sections of drill pipe from the storage bins to the drilling rig and return pipe from the rig to the racks. Limit switches advance the automatic control system from one sequence to the next for both the "in" and "out" functions of the pipe crane such that the entire operation is completely controlled without human intervention.

3,501,028
PALLET HANDLING MACHINE
Eugene E. Crile, Phoenix, Ariz., assignor to Builders Equipment Company, Glendale, Ariz., a corporation of Arizona
Filed Mar. 14, 1968, Ser. No. 713,132
Int. Cl. B65g *1/06*
U.S. Cl. 214—16.4 **5 Claims**

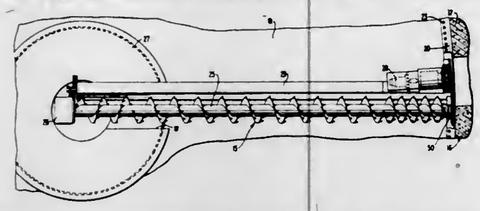


A pallet handling machine particularly adapted for use in handling pallets normally used for supporting concrete blocks; said machine comprising a pallet carrying means movable into and out of a position between vertical members of pallet supporting racks and having means wedgeably adapted to pass between a pair of horizontally spaced members of a rack, the pallet carrying means also comprising means to permit said pallet carrying means to move freely laterally of its direction of movement into and out of the racks; said last mentioned means vertically movably operable on a main frame so that the pallet carrying means may successively be moved vertically with respect to a plurality of superimposed shelves in a pallet supporting rack; the said means adapted to be wedgeably engaged between the horizontally spaced members of the racks being adapted to force the pallet carrying means laterally of its movement direction and into alignment with a shelf of the pallet rack.

3,501,029
SILO BOTTOM UNLOADER APPARATUS
Richard L. Weaver and Benjamin K. Smoker, both of Rte. 3, Myerstown, Pa. 17067
Filed Apr. 17, 1968, Ser. No. 722,073
Int. Cl. B65g *65/30*
U.S. Cl. 214—17 **7 Claims**

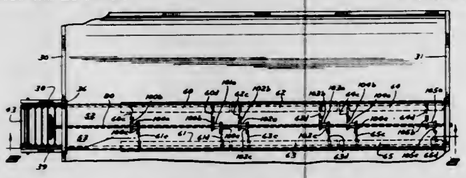
A supporting arrangement is provided for the outer end of an auger used in sweeping the bottom of a silo wherein a plate runner slides within a U-channel and has a cutter means on its forward end formed by a plurality of vertically spaced skew chisel-type cutters with their straight substantially horizontal cutting edges extending from an outer pointed tip rearwardly and inwardly, this skew chisel system coacting with auger blades within the U-channel to cut and remove silage and thereby prevent

silage densification on forward movement. The auger is supported within a bearing-adapter assembly which facilitates replacement and lubrication. The sweep means for



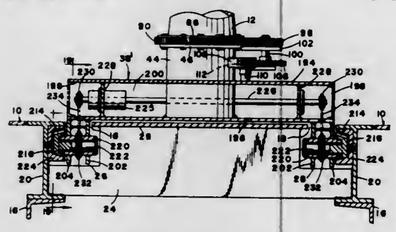
the auger means is removably supported in a non-circular aperture in the runner by means of a mating base lock plate which transfers sweeping torque forces through the runner to the anchored U-channel.

3,501,030
CAM OPERATING MECHANISM FOR UNLOADING BOX
Vernon J. Flink, Cambridge, Minn., assignor to Braco, Inc., Braham, Minn., a corporation of Minnesota
Filed June 7, 1968, Ser. No. 735,264
Int. Cl. B65g *65/42;* **B61d** *7/26;* **B60p** *1/56*
U.S. Cl. 214—17 **9 Claims**



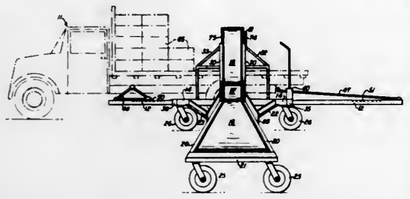
A bulk loading box having an end discharge outlet and a bottom disposed endless discharge conveyor, an elevated cover overlying said conveyor, a plurality of opposed pairs of gates hinged to depend at either side of said cover, linkage in connection with opposed pairs of said gates, an operating rod for said linkage, cam members carried by said rod actuating said linkage to operate said pairs of gates in sequential order and spring members returning said gates to an initial position when released by said cam members.

3,501,031
CARRIAGE MECHANISM FOR A LOAD HANDLING DEVICE
Joseph E. Whitfield, York, Pa., assignor, by mesne assignments, to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Original application Mar. 3, 1967, Ser. No. 620,441. Divided and this application Jan. 16, 1969, Ser. No. 803,518
Int. Cl. B60p *1/50*
U.S. Cl. 214—75 **8 Claims**



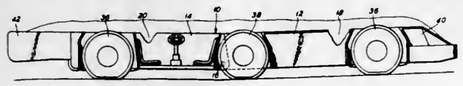
A mobile vehicle having a lateral boom extending from a mast extending upward from a carriage which is supported by roller means for movement along track means which extend longitudinally below the bed of the vehicle, the roller means all being driven for unidirectional engagement with either upper or lower portions on the track means to provide positive driving engagement therewith regardless of incidental canting of the carriage relative to the bed of the vehicle and said mast being rotatable through a full circle while supporting said boom from the upper portion thereof.

3,501,032
SOD LOADING APPARATUS AND METHOD
Willis Lambert Cissel, Jr., Box 79AA, Brookeville, Md. 20729
Filed Dec. 6, 1967, Ser. No. 688,485
Int. Cl. B66p *1/36;* **B65g** *67/08*
U.S. Cl. 214—83.26 **6 Claims**



A sod loader attachment for a truck comprising a conveyor belt system extending normally to the truck bed adapted to convey sod rolls placed on the conveyor to the bed of the truck where they are manually removed and loaded. A bar parallel to the longitudinal axis of the truck is firmly secured thereto and the loader is movably connected to the bar. Locking means detachably secures the loader to the bar so as to permit selective movement between the bar and the loader. When the truck moves forward, temporary unlocking of the locking means results in the loader relocating itself farther back relative to the truck bed whereby the sod rolls are delivered to the area of the truck bed where they are being stacked.

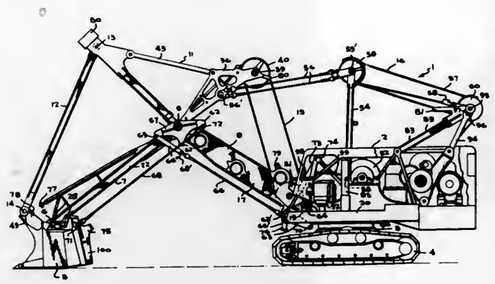
3,501,033
TRACKING AND BRAKING IMPROVEMENT IN 6-WHEEL SHUTTLE CAR
William G. Bunchak, Chicago Ridge, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 1, 1968, Ser. No. 741,420
Int. Cl. B60p *1/38*
U.S. Cl. 214—83.36 **6 Claims**



A mine haulage vehicle with a pair of body sections interconnected for up and down relative movement about a pivot joint and supported on three pairs of wheels, a center pair of which is driven and braked and is located adjacent the pivot joint. Springs above the joint draw the adjacent body sections together to press the center wheels against the ground for improved traction and braking.

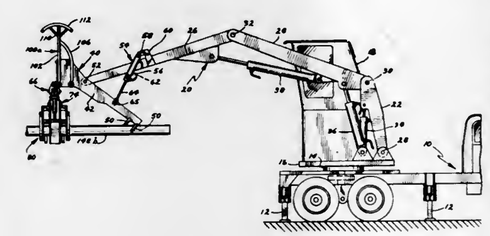
3,501,034
POWER SHOVEL
George B. Baron, Marion, Ohio, assignor to Marion Power Shovel Company, Inc., Marion, Ohio, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,304
Int. Cl. E02f *3/62, 3/30, 3/38*
U.S. Cl. 214—138 **14 Claims**

A revolvable power shovel for low bank digging, wherein the dipper can follow a long horizontal path during a digging stroke by reason of being mounted on a handle pivotally connected at its top to stiffleg which, in turn, is pivotally mounted at its base to the machine. Means permit simultaneous outward pivotal movement



of the stiffleg and forward pivotal movement of the handle to give a straight-line movement to the dipper. A control pantograph linkage permits holding the dipper pitch during a digging pass. A pivoted mast is included as part of the crowd mechanism.

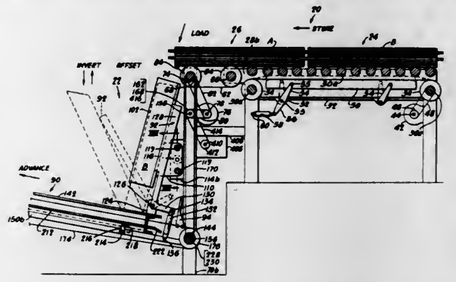
3,501,035
POLE GRAPPLING APPARATUS WITH HEEL MEANS AND LATERAL STABILIZERS
Charles L. Whiting, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed July 22, 1968, Ser. No. 746,631
Int. Cl. B66c *1/42*
U.S. Cl. 214—147 **7 Claims**



Suspended from the free end of an articulated boom assembly is a grapple that can be swiveled through at least 90°. When the grapple opening is aligned or parallel with the boom assembly, a heel member can be lowered to then effect the leveling of the pole or log held by the grapple. On the other hand, when the grapple is turned through 90° so that its opening extends transversely, a pole or log laying crosswise can then be readily picked up by the grapple and leveled by means of a pair of laterally extending stabilizing arms.

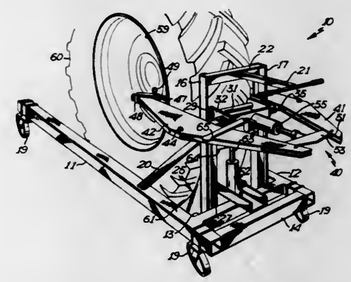
3,501,036
STACKING SYSTEM FOR PAPERBOARD BLANKS
Mircea Calistrat, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Original application Sept. 11, 1967, Ser. No. 666,605, now Patent No. 3,447,696, dated June 3, 1969. Divided and this application Nov. 27, 1968, Ser. No. 810,865
Int. Cl. B65g *47/24, 57/081*
U.S. Cl. 214—152 **2 Claims**

Apparatus for stacking alternate stacks of corrugated paperboard blanks discharged from a blank-forming machine face up and face down to reduce warping comprising an intermittently rotating transverse storage conveyor means for receiving and temporarily storing stacks of blanks in face-up position from an in-line conveyor adjacent the blank-forming machine; an inverter for sequentially receiving stacks from the storage conveyor and inverting alternate stacks to a face-down position on a rising conveyor comprising a guide for directing the stacks into a substantially vertical position with the stack resting on its leading edge on the rising conveyor where a pivoting finger carried by the rising conveyor engages the bottom edge of a first stack on the conveyor to advance it along the conveyor thereby positioning the first stack face up, an inverting lever adjacent the underside of a subsequent stack intermittently operable to engage the underside surface of this second stack to pivot it about its botom edge so hat it descends onto the rising conveyor with its underside up, first and second advancing fingers for sequential



engagement with the trailing edges of the first and second stacks to advance them along the rising conveyor; a stacker for receiving stacks of blanks from the rising conveyor and stacking them one under the other to form a pile of blanks comprising a lifting conveyor including a stop for positioning each of the stacks, means for raising the lifting conveyor, with the stack thereon, a distance slightly greater than the height of the stack, a support for engaging the bottom face of the lifted stack to maintain the stack in its lifted position, means for lowering the lifting conveyor to receive another stack for repeating the foregoing lifting operation, and means rotating the lifting conveyor in its uppermost position when the pile of blanks reaches a selected height to discharge the pile on a skid or other conveyor for further handling.

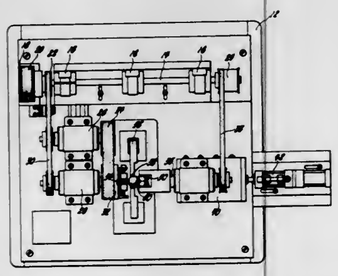
3,501,037
TRACTOR TIRE TRANSPORT HOLDER
George T. Donovan, Le Center, Minn., assignor to Le Center Implement Company, Le Center, Minn., a corporation of Minnesota
Filed Aug. 29, 1968, Ser. No. 756,096
Int. Cl. B60b *29/00;* **B75b** *5/08*
U.S. Cl. 214—331 **7 Claims**



A support rack for retaining and moving rimmed tractor tires which includes a support frame having secured thereto jaw means for engaging the inner diameter of a

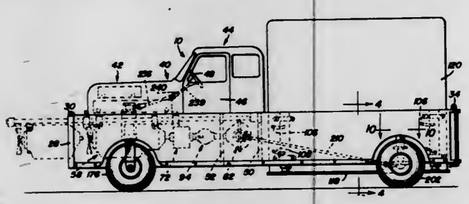
tractor tire to retain the tire in firmly engaged relationship therewith, means for urging said jaw means into clamping engagement with the tractor tire, and means for elevating the firmly clamped and engaged tractor tire from the ground surface. Pivotal mounting means are provided for the arms forming the jaw means to enable the rack means to be employed with a variety of sizes of tractor tires.

3,501,038
BALL ROTATOR FOR BALL INSPECTION AND/OR SORTING APPARATUS
William Blinder, Newington, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,629
Int. Cl. B65g 7/10; B24b 5/18
U.S. Cl. 214—340 **4 Claims**



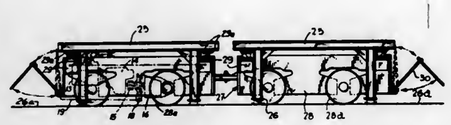
My disclosure relates generally to ball inspection mechanisms and/or sorting apparatus and more particularly to a mechanism for speedily rotating a ball simultaneously about two intersection axes so that its total surface may be scanned.

3,501,039
CONTAINER HANDLING AND TRANSPORTING VEHICLE
Robert U. Mitsuyasu 91–710 Makule Road, Ewa Beach, Oahu, Hawaii 96706
Filed Feb. 13, 1968, Ser. No. 705,131
Int. Cl. B60p 1/02; B60g 11/14; B60k 5/00
U.S. Cl. 214—390 **12 Claims**



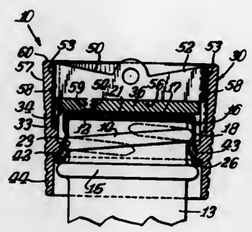
An elongated vehicle including front steerable wheels and rear opposite side wheels, the rear end portion of the vehicle including a pair of rearwardly projecting opposite side portions of the vehicle from which the rear wheels are supported and between which is defined a vertically extending area opening both above and below the vehicle and also rearwardly of the vehicle with the opposite side portions of the vehicle from which the rear wheels are journalled being provided with load engaging and lifting means whereby a load to be lifted and transported may be straddled by the rear end portion of the vehicle, engaged, lifted and then transported to a remote location.

3,501,040
TRACTION VEHICLE WITH INTERCHANGEABLE BODIES
Ghislain Antoine Jean-Marie Martelee, Liege, Belgium, assignor to Cockerill-Ougree-Providence, Seraing-les-Liege, Belgium
Filed May 2, 1966, Ser. No. 546,642
Claims priority, application Belgium, May 19, 1965, B 6,860, Patent 664,190
Int. Cl. B61f 13/00; B61g 11/00; B60p 1/64
U.S. Cl. 214—515 **10 Claims**



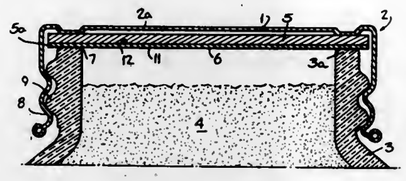
For moving or conveying heavy loads disposed on a load-carrying means, there is provided a traction vehicle having a rigid frame carrying a driving motor of low power with operating controls, a torque converter, a clutch and a reduction gear. A transmission drives at least one set of metal tired drive wheels which can run on rails and which vehicles can fully be positioned under the load-carrying means from either direction. The load-carrying means, in effect, is like a removable vehicle body in the form of a strong platform table on legs which straddle the rails or other vehicle roadway. A hydraulic device on the vehicle cooperates with and lifts the load-carrying means whereby it is then transported by the vehicle.

3,501,041
SAFETY BOTTLE CAP
Edward E. Schaefer, 1134 Oak Knoll Drive, Lake Forest, Ill. 60045
Filed Apr. 29, 1968, Ser. No. 725,107
Int. Cl. A61j 1/00; B65d 55/02
U.S. Cl. 215—9 **17 Claims**



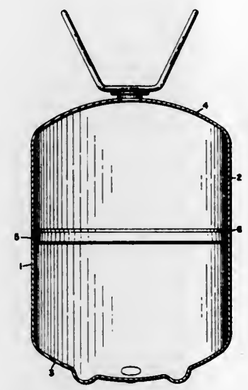
A safety bottle cap for preventing unauthorized opening or access to the contents of a bottle. An inner cap member is enclosed by a sleeve member, and connecting means carried by the members provides for relative rotational and axial movement therebetween. Engagement of a separable locking means with the cap and sleeve members locks the members against relative rotational movement and thus permits threaded engagement or disengagement of the cap from the bottle. Disengagement of the locking means from the cap and sleeve members frees the members for relative rotational movement and thus prevents removal of the cap by rotation of the sleeve member. The length of the sleeve member and the arrangement of the connecting means is such that the latter conceals different length threads on different bottles when the cap is engaged therewith.

3,501,042
CLEAN RELEASE INNERSEAL
William E. Risch and Samuel C. Grumbles, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed June 5, 1968, Ser. No. 734,700
Int. Cl. B65d 23/00
U.S. Cl. 215—40 **7 Claims**



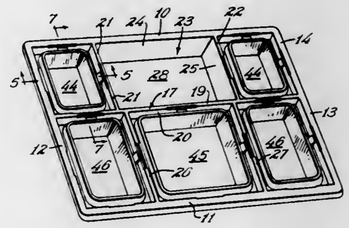
A method and means for providing a clean release safety innerseal for products packaged in open mouthed containers comprising the provision of a polymer coating on the underside of the innerseal material, which coating is bonded by a selected adhesive to the rim of the container while preventing the adhesive from penetrating into the innerseal material. The bond between the adhesive and the coating while hermetically sealing the container is substantially weaker than the bond between the coating and the innerseal material so that no innerseal material clings to the rim of the container upon the breaking of the adhesive bond permitting an easy clean release of the seal when the material in the container is to be used.

3,501,043
HIGH PRESSURE VESSEL
Robert H. Jernberg, Worcester, Mass., assignor to Worcester Pressed Steel Company, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 712,133, Mar. 11, 1968. This application Apr. 23, 1969, Ser. No. 818,846
Int. Cl. B65d 7/04
U.S. Cl. 220—5 **4 Claims**



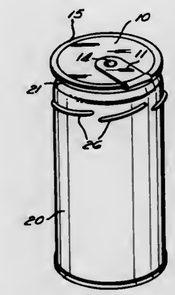
A cylindrical steel vessel with closed ends for holding fluids under high pressure comprising two cylindrical halves of circular cross section assembled and welded to each other in end-to-end telescopic abutment, the two halves having the same inside and outside diameters in the immediate neighborhood of their junction, one of said halves terminating abruptly at the junction while the other half is formed integral with a tapered peripheral flange adapted to fit telescopically inside the adjacent end of the other half, the abutting ends being welded to each other on the outside of the vessel, the steel at the ends of the vessel being softer than the steel in the cylindrical portions.

3,501,044
DISPOSABLE TRAY WITH REMOVABLE INSERTS
Stanford Clinton Stone, South St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,280
Int. Cl. B65d 21/02
U.S. Cl. 220—23.4 **14 Claims**



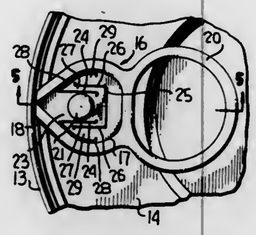
A frame of light weight plastic is provided having a series of partitions designed to divide the frame into a series of open compartments. Legs are provided to support the frame on a flat surface. Dishes or food receptacles are engageable into each of the compartments, to rest on suitable supports. Locks are provided to automatically lock the receptacles in the compartments.

3,501,045
SEALED CONTAINER ASSEMBLY
Richard W. Asmus, 3628 W. 28th St., and Andrew E. Jecker, 3610 W. 49th St., both of Cleveland, Ohio 44102
Filed Apr. 8, 1968, Ser. No. 719,301
Int. Cl. B65d 51/18
U.S. Cl. 220—29 **7 Claims**



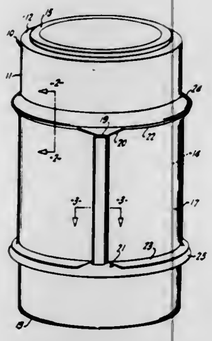
Easily opened sealed container comprising a rigid container body preferably having an opening provided with a beaded edge, a rigid outer cover for the opening, the outer cover being readily releasably mechanically interlocked over the opening, an inner peelable sealing diaphragm equipped with an integral pull-tab disposed between said outer cover and said edge, and a plasticized resinous sealant adhering said diaphragm to said edge The sealant, preferably of a solventless heat activated type, is characterized by relatively weak shear strength. The diaphragm is preferably cut from sheet material with areas to be cut from sheet "packed" to provide a quadrilateral "scrap" area from which an integral tab is formed.

3,501,046
PULL TAB CONFIGURATION
John C. Jasper, Chicago, and Millard L. Robertson, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 2, 1968, Ser. No. 749,808
Int. Cl. B65d *17/20*
U.S. Cl. 220—54 **7 Claims**



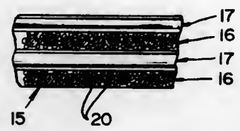
This subject relates to a pull tab which is particularly adapted for use with easy opening containers to facilitate the opening thereof. The pull tab includes a securing portion, which is adapted to have a rivet passed therethrough, which is connected to the remainder of the pull tab in hinged relation and by means of connecting strap means whereby a grip portion of the pull tab may be initially lifted with a minimum of force until it reaches an elevated position wherein it may be readily grasped, after which a lifting force will be directed to the securing portion to facilitate the opening of the associated container.

3,501,047
REINFORCED CONTAINER
Erwin M. Raabe, Westfield, N.J., assignor to Rheem Manufacturing Company, Richmond, Calif., a corporation of California
Filed June 10, 1968, Ser. No. 736,941
Int. Cl. B65d *7/44*
U.S. Cl. 220—71 **12 Claims**



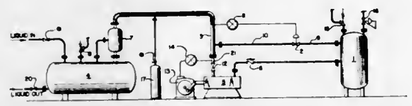
A plastic container adapted to hold a fluent material (fluid materials, and semi-fluid materials such as granular and pulverulent matter). The container is provided centrally with a relatively stiff reinforcing band thereabout to prevent deformation of the container side wall under stress as when a plurality of filled containers are stacked one upon another. The band is constrained in its circumjacent relation with the container against translational displacements with respect thereto in vertical directions, and it is of sufficient vertical width to enclose the center of pressure of any fluent material filling the container.

3,501,048
CONSTRUCTION MATERIAL OR MEMBER
Edward T. Strickland and Homer C. Amos, Palm Springs, Calif., assignors to Brunswick Corporation, a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 594,761
Int. Cl. B65d *7/42*
U.S. Cl. 220—83 **19 Claims**



An article capable of withstanding high temperatures, said article being formed of filaments of a first material having a high modulus of elasticity and a high annealing temperature and a second material having a lower modulus of elasticity than that of said first material and a softening temperature below the annealing temperature of the first material with said second material diffusion bonding the said filaments together.

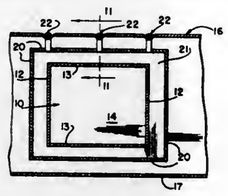
3,501,049
APPARATUS FOR PROVIDING STORAGE TANKS WITH A GAS BLANKET
Heinz G. Ediger and Georg Mielke, Hamburg, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 10, 1968, Ser. No. 735,660
Claims priority, application Germany, June 9, 1967, D 53,305
Int. Cl. B65d *25/00*
U.S. Cl. 220—85 **5 Claims**



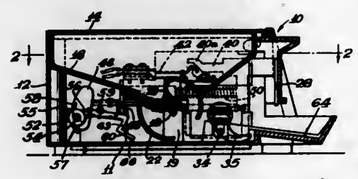
Apparatus and method for providing a liquid storage tank with a gas blanket comprising a storage tank for storing therein a liquid and a pressurized gas supply means for supplying gas under pressure to the tank. A supply line is coupled to both the tank and the gas supply means. Pressure control valve means is coupled to the supply line and regulated by the pressure within the storage tank. A return line is coupled to both the supply line and the gas supply means. Compressor means is disposed in the return line for compressing the gas therein and second-mentioned pressure control valve means is coupled to both the compressor means and the return line wherein the pressure in the supply line regulates the pressure of both pressure control valve means.

3,501,050
AUTOGENOUS IGNITION SUPPRESSOR
Edward F. Versaw, La Canada, and Walter W. Spoecker, Van Nuys, Calif., assignors to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Administration
Filed Feb. 29, 1968, Ser. No. 709,619
Int. Cl. B65d *25/00*
U.S. Cl. 220—88 **4 Claims**

The disclosure describes a confining passageway for removing leaked fuel vapors, whereby the ignition temperature of the vapors in the structure is raised considerably from the temperature that would exist without the presence of the removal passageway, and autogenous ignition due to high structural temperatures is prevented.

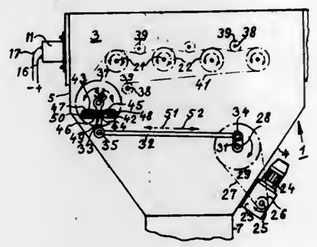


3,501,051
CIGARETTE LIGHTER AND DISPENSER
Boris N. Kovacevic, Chicago, Ill., assignor to B & S Engineering & Mfg. Corp., a corporation of Illinois
Filed Mar. 29, 1968, Ser. No. 717,087
Int. Cl. B65d *83/00*
U.S. Cl. 221—147 **8 Claims**



A cigarette lighter and dispenser apparatus including a reciprocable lever movable between a first position and a second position and releasably retained in said second position. Movement of the lever energizes a heater and actuates a motor. Provided in the housing of the apparatus is a motor actuated cam adapted to cooperate with a cam follower or latch on the lever to release the latch and permit the lever to return from said second position to said first position, thereby deenergizing the heater and deactuating the motor.

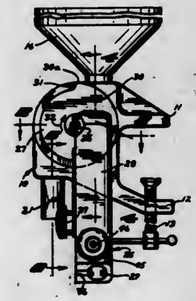
3,501,052
MAGAZINE FOR CIGARETTES OR THE LIKE
Willy Rudszinat, Dassendorf, Germany, assignor to Hauni-Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Feb. 13, 1968, Ser. No. 705,183
Claims priority, application Great Britain, Feb. 20, 1967, 7,959/67
Int. Cl. B65g *59/00*
U.S. Cl. 221—175 **14 Claims**



A magazine for cigarettes or like rod-shaped articles comprises a hopper which accommodates a variable supply of stacked articles and several reciprocable or swingable agitating members receiving motion from a motor by way of one or more yieldable components, such as springs, friction couplings or the like, so that they agitate the articles in order to level the stack in the hopper with a force which is opposed by resistance offered by articles to such agitation.

One of the agitating members or the drive for the agitating members cooperates with a signal generating device which can produce visible or otherwise detectable signals to indicate the extent or frequency of movement of agitating members or to regulate the admission of fresh articles at a rate which is a function of the extent or frequency of movement of agitating members. The agitating members may move in the same sense or in different directions and may but need not be directly connected with the yieldable component or components.

3,501,053
POWDER MEASURE APPARATUS
Clarence E. Purdie, Faribault, and William C. Schaffner, Minneapolis, Minn., assignors to Bonanza Sports, Inc., Faribault, Minn., a corporation of Minnesota
Filed July 30, 1968, Ser. No. 748,831
Int. Cl. B67d *5/22*; **G01f** *11/10*
U.S. Cl. 222—47 **18 Claims**

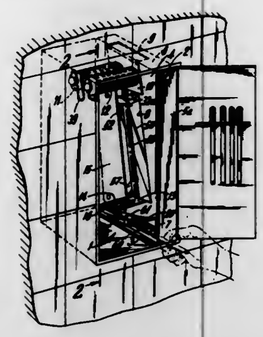


A powder measure including a main body having a top opening, a bottom opening, spaced first and second powder passageways opening to a main body surface vertically intermediate said top and bottom openings, a hopper for discharging powder through the top opening, a handle assembly pivotally mounted on the main body to in a first position receive powder from the first passageway, and in a second position discharge the received powder to the second passageway, said handle assembly including vernier charge bar means for selectively adjusting the volume of powder that can be transferred by pivoting the handle assembly between its positions.

3,501,054
COLLAPSIBLE TUBE DISPENSING MECHANISM
Reginald E. Maurice, 58 Ranney St., Springfield, Mass. 01108
Filed Jan. 2, 1969, Ser. No. 788,385
Int. Cl. B65d *35/28*
U.S. Cl. 222—102 **13 Claims**

A dispensing mechanism in which the closed end of an inverted collapisble tube is inserted between a pair of freely vertically mounted, intermittently unidirectionally driven, pressure rollers, whereby the rollers travel linearly down the length of the tube in step-wise fashion, intermittently expelling the contents thereof through the tube nozzle. The pressure rollers are driven, and a variable, predetermined quantity of material expelled, by pivoting a bell crank through an arc of adjustable length. The pressure rollers are mounted so as to spring apart during reloading to facilitate inserting the collapsible tube therebe-

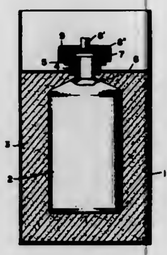
tween. The mechanism also dispenses the contents of the tube with a delaying action so that material expelled therefrom may be removed only during the return stroke of the bell crank.



3,501,055
PACKAGE FOR STORING AND DISPENSING CAUSTIC SUBSTANCES

Roland Jurion, Bobigny, and Maurice Nicolas, Rueil-Malmaison, France, assignors to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture, Paris, France

Filed Feb. 27, 1968, Ser. No. 709,592
Claims priority, application France, Feb. 27, 1967, 96,536
Int. Cl. B67d *5/64, 3/00, 25/18*
U.S. Cl. 222—131 10 Claims



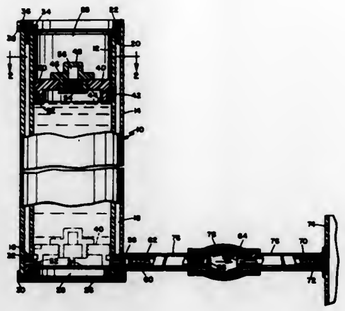
A package is provided having spaced inner and outer containers with an energy absorbing material therebetween. A transverse portion of the outer container substantially encloses the inner container and has a sleeve disposed therethrough to substantially enclose a neck on the inner container. A resilient seal is provided between the sleeve and the neck to isolate the space between the containers, and a cap with an interchangeable central insert engages the sleeve. By interchanging a blind insert and a dispensing insert, the cap selectively seals the inner container or provides for dispensing the contents of the package.

3,501,056
SELF-CONTAINED UNDERWATER SUIT HEATER

Mitchell F. Mead, 5527 Baltimore Drive, La Mesa, Calif. 92041

Filed May 6, 1968, Ser. No. 726,821
Int. Cl. B67d *5/60, 5/42;* B65d *37/00*
U.S. Cl. 222—131 7 Claims

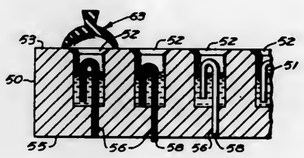
The suit heater utilizes hot water carried in an insulated container which is readily attached to a diver, the hot water being transferred as needed by a small hand pump to the interior of the diver's wet suit. A piston-like follower in the container is drawn in as the hot water is removed, the follower being exposed to ambient pressure which thus maintains the ambient pressure on the hot water, so that the pump operates easily at any depth, the follower and container having co-acting stop means to facilitate opening, closing and refilling.



3,501,057
LIQUID DISPENSER

Gerald F. Binnings, Arcadia, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed July 17, 1968, Ser. No. 745,456
Int. Cl. B67d *5/06, 5/60*
U.S. Cl. 222—132 1 Claim



This disclosure relates to liquid dispensers, and particularly to liquid dispensers for dispensing liquid such as blood serum.

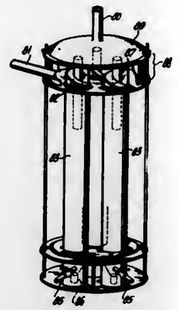
A liquid dispenser according to the present disclosure comprises a housing having a cavity. A cavity opening is formed in the upper surface of the housing, and a bore is provided between the cavity and a lower surface of the housing. A siphon tube is supported within the bore in such a manner that its upper end opens into the cavity and its lower end opens into the region below the housing. Means is provided for increasing the fluid pressure within the cavity so as to force liquid in the cavity through the siphon tube.

3,501,058
FILTER-AID SUPPLYING DEVICE

Anton Pfeuffer, 301 E. 78th St., New York, N.Y. 10021

Application Aug. 23, 1967, Ser. No. 662,834, which is a continuation-in-part of abandoned application Ser. No. 435,540, Feb. 26, 1965. Divided and this application Feb. 3, 1969, Ser. No. 795,851
Int. Cl. B67d *5/60*
U.S. Cl. 222—145 2 Claims

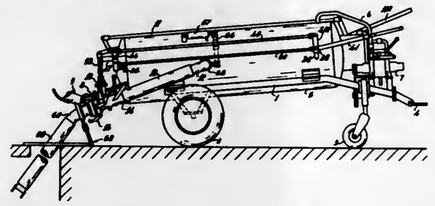
An apparatus for supplying one or more types or grades of filter-aid material at an even and controlled rate to the fluid in a filtration system, including one or more cyclones for conditioning the material between its source of supply and a hopper from which it is fed to the fluid.



3,501,059
IMPLEMENTS FOR TRANSPORTING MATERIALS

Ary van der Lely, 10 Weverskade, Maasland, Netherlands

Filed May 1, 1968, Ser. No. 725,631
Claims priority, application Netherlands, May 5, 1967, 6706287; June 12, 1967, 6708120; Nov. 9, 1967, 6715180
Int. Cl. A01c *15/00;* B67d *5/64*
U.S. Cl. 222—176 26 Claims



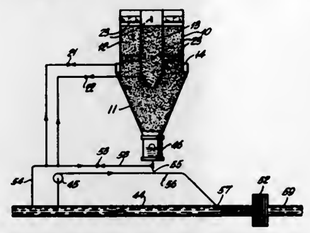
This invention relates to implements for transporting materials, such implements comprising a mobile container provided with a port for the loading or discharging of the material.

A duct can be connected to the port through a coupling member and the latter can be remotely controlled.

3,501,060
APPARATUS FOR SUPPLYING A FILTER-AID MATERIAL

Anton Pfeuffer, 301 E. 78th St., New York, N.Y. 10021

Continuation of application Ser. No. 435,540, Feb. 26, 1965. This application Aug. 23, 1967, Ser. No. 662,834
Int. Cl. B61d *5/54;* B01d *31/02*
U.S. Cl. 222—189 4 Claims

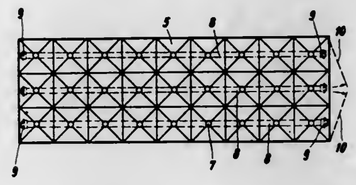


An apparatus comprising a material storing hopper, at least one hollow cylinder connected to the lower end of said hopper, movable wire screens disposed at both ends of said hollow cylinder, drive means for imparting motion to said screens, and means for collecting and mixing the filter-aid material with the fluid in the main line of filtration system.

3,501,061
CONTAINER FOR TRANSPORTING POWDERY SUBSTANCES OR MIXED CARGO

Wilhelm Hermanns, Frankfurter Str. 6–14, Porz (Rhine), Germany

Filed Nov. 2, 1967, Ser. No. 680,193
Claims priority, application Germany, July 28, 1967, H 63,428; Oct. 9, 1967, H 64,120
Int. Cl. B67d *5/60*
U.S. Cl. 222—144.5 5 Claims

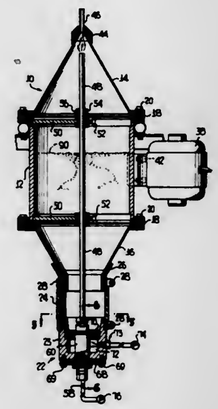


A shipping container for powdery material or mixed cargo, the carrier including an apertured grate member disposed above a plurality of funnels, the funnels being provided with means for discharging powdery material, and the grate member being capable of supporting cargo other than powdery material.

3,501,062
POWDER DISPENSING DEVICE

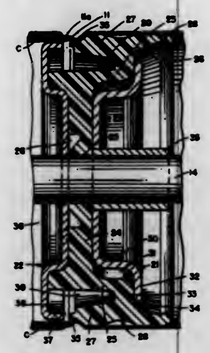
Ernest W. De Witt, Chicago, Edward D. Higgins, Palos Heights, and Philip F. Catalano, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Sept. 22, 1967, Ser. No. 669,897
Int. Cl. B67d *5/64, 5/54;* B65g *3/12*
U.S. Cl. 222—161 5 Claims



An apparatus for dispensing fine powder through a small conduit by entraining the powder in a stream of air. An aspirator tube is adjustably mounted so that the powder flow can be shut off and the flow of air continues to prevent powder from settling in and clogging the conduits.

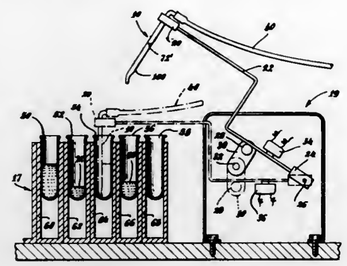
3,501,063
PLUNGER ASSEMBLY FOR MULTILOADING HAND GREASE GUNS
Edwin P. Sundholm, Albert City, Iowa, assignor to Superior Manufacturing Co., Albert City, Iowa, a corporation of Iowa
Filed Apr. 5, 1968, Ser. No. 719,088
Int. Cl. G01f *11/06;* **F16j** *9/00*
U.S. Cl. 222—326 **7 Claims**



A plunger assembly is provided for hand grease guns intended for use with both cartridge-packaged greases and bulk-loaded greases, particularly pressure filling or both pressure and suction filling. The assembly utilizes an integral molded plunger which is characterized by an annular flexing section projecting rearwardly from the peripheral portion of the web section and carrying sealing section means providing at least one annular lip inclined outwardly and forwardly. The assembly also includes a rear washer of cup-shaped configuration with a forward transverse wall rigidly supporting the plunger web section, and an annular wall spaced inwardly from the plunger flexing section to permit the flexing section to yield as the sealing section means adapts to a range of diameters. Where the barrel or grease container of the gun provides an inwardly-formed portion toward the rear thereof for contracting the plunger to assist insertion in a grease cartridge, the plunger also preferably provides a relatively thin annular fin at the outer forward end of the forwardly projecting lip, the fin maintaining sealing engagement with the container inwardly-formed portion. Other operational features are provided by the specific design and cooperation of the front and rear washers with the molded plunger.

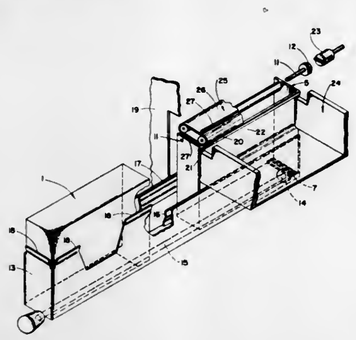
3,501,064
LIQUID SAMPLE DISPENSING MEANS
Marvin W. Gaumer, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 20, 1967, Ser. No. 676,784
Int. Cl. G01f *11/10*
U.S. Cl. 222—358 **3 Claims**

This concerns an improved hollow probe for dispensing liquid samples, which probe moves into two positions, namely, a sample-engaging and a raised, sample-free position. The tip of the probe is curved or bent so that the plane of the orifice is horizontal when the probe is in the up, sample-free position, thereby substantially, eliminating any tendency to drip. The interior of the probe tip is both smooth and substantially untapered near the orifice to avoid both air bubble formation and sample drop entrapment. Elimination of air bubble formation avoids errors in dispensing or sucking up measured quantities of sample; while avoiding sample drop entrapment is particularly important when the probe



is used first to suck up some liquid sample and then discharge it plus a measured amount of additional solvent, in order to avoid errors in the dilution ratio.

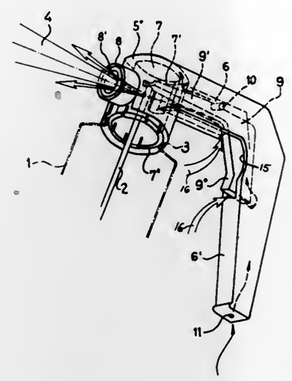
3,501,065
CONTAINER AND DISPENSING MECHANISM FOR TONER POWDER
Conrad Altmann and Donald D. Leenhouts, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 1, 1968, Ser. No. 725,810
Int. Cl. G01f *11/00*
U.S. Cl. 222—392 **12 Claims**



A toner container and dispenser usable with electrographic apparatus has an outer cover from which an inner container is mechanically slid to a dispensing position. The inner container has an inside lining restricting the volume of toner in the container and a shaft for taking up the lining thereby making the toner available for dispensing. A rupturable seal is also linked to the shaft to enable opening of the container as the shaft is turned. After the container is empty, it is slid back into the still-clean cover for removal.

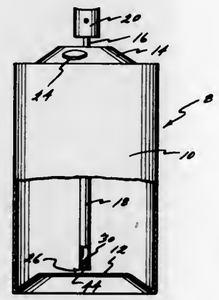
3,501,066
ATTACHABLE SPRAY CAN ACTUATION MECHANISM
Gianni Andreoli, Lucerne, Switzerland, assignor, by mesne assignments, to Spray-Boy GmbH, Seerose, Stansstad, Switzerland
Filed Mar. 11, 1968, Ser. No. 712,048
Claims priority, application Switzerland, Mar. 17, 1967, 3,939/67
Int. Cl. B65d *83/00*
U.S. Cl. 222—402.13 **14 Claims**

An actuation mechanism capable of being attached to a spray can having a valve knob member constructed as a spray nozzle provided with a nozzle opening. This actuation mechanism incorporates an actuation member for actuating the spray nozzle. A negative pressure chamber encloses the spray nozzle in order to commingle dosed directed air with the spray jet coming from the spray nozzle. A spray jet discharge tube is provided at the negative pressure chamber and such discharge tube is located in front of the nozzle opening and at least ap-



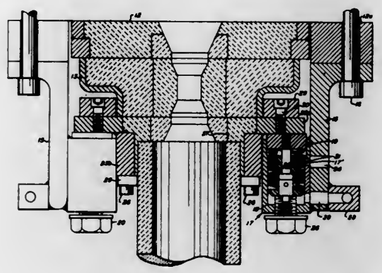
proximately in alignment with its spray jet. An air infeed channel faces away from the spray nozzle and such air infeed channel is approximately aligned with the spray jet. Further, means are provided which are actuatable by the actuation member or formed by the latter and which permit regulation of the quantity of air which is sucked through the air infeed channel.

3,501,067
SAFETY VALVE FOR AEROSOL DISPENSERS
Herbert W. Rigor, 685 Quartz Way, Broomfield, Colo. 80020
Filed Aug. 13, 1968, Ser. No. 752,377
Int. Cl. B65d *53/06*
U.S. Cl. 222—464 **10 Claims**



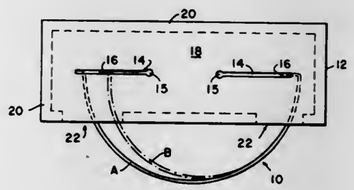
This invention relates to a magnetic stop valve and permanent magnet actuator therefor that cooperate to prevent children from emptying the contents from an aerosol dispenser. The stop valve automatically plugs the intake end of the tube leading to the dispensing valve as soon as the latter is actuated unless said stop valve is retained in open position by a permanent magnet placed in close proximity thereto on the bottom of the container.

3,501,068
BOTTOM-POUR TEEMING VESSEL WITH SLIDING GATE AND POURING TUBE
James T. Shapland, Wilkenstownship, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,870
Int. Cl. B67d *3/00*
U.S. Cl. 222—512 **2 Claims**



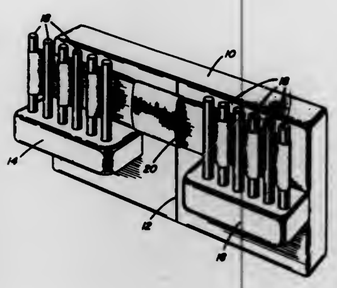
A bottom-pour teeming vessel for pouring molten metal into a mold is provided with a sliding gate or valve controlling the flow of metal and a nozzle extension tube depending below the gate. A nozzle plate is secured to the vessel bottom and the sliding gate is urged thereagainst by spring cushions mounted on spaced rails one on each side of the vessel nozzle, and secured to the vessel bottom. The cushions also mount an extension-tube holder below the gate and the upper end of the tube is secured thereon by a split clamping collar. The gate is thus free to slide between the nozzle plate and the upper end of the tube.

3,501,069
CUFF ALIGNING DEVICE
Robert E. Boyd, 303 S. Plumas, Willows, Calif. 95988
Filed June 15, 1967, Ser. No. 646,362
Int. Cl. A41h *43/00;* **A41b** *7/00*
U.S. Cl. 223—2 **2 Claims**



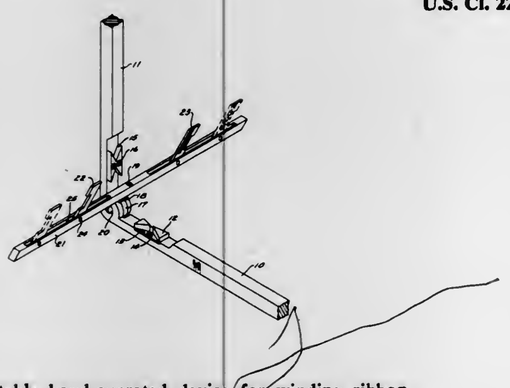
A device for holding French shirt cuff button holes in alignment for folding and creasing the cuff in which a pair of fingers is mounted at opposite ends of a spring member in which there may be provided a slotted base for retention of the spring member.

3,501,070
BOW MAKING DEVICE
Wanda M. Shattuck, 4251 Shamrock Ave., Baltimore, Md. 21206
Filed Jan. 30, 1969, Ser. No. 795,245
Int. Cl. A41h *43/00*
U.S. Cl. 223—46 1 Claim



The construction of ribbon bows is facilitated by the disclosed hand-held device comprising a mandrel of aligned, spaced, pegs. The base of the device is provided with an index marker which accurately defines the center of the convoluted ribbon. The pegs are mounted on spaced brackets which hold them away from the base to provide a generous working space for the notching and securing processes for bow ties, rosettes, or pompons.

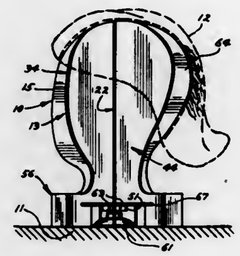
3,501,071
BOW FORMER
Leo M. Zadosko, 6072 Cochise Drive, Birmingham, Mich. 48010
Filed July 2, 1969, Ser. No. 838,479
Int. Cl. A41h *43/00*
U.S. Cl. 223—46 5 Claims



A portable hand-operated device for winding ribbon into a hank and opposedly notching the hank at its longitudinal edges. Embodiments comprise a pair of opposed, pivotally-connected, elongated lever arms. Supported on said arms are (1) opposed notching means and (2) rotatable ribbon-winding, holding and positioning means. The latter means operate to so position the hank of ribbon relative to the opposed notching means that hand closure of the lever arms brings the opposed notching means against the hank of ribbon and opposedly notches edges of the hank by a grasping and shearing action.

The notched hanks are useful in forming bows and pompons for ornamental and decorative purposes.

3,501,072
COLLAPSIBLE SUPPORT
Ronald R. Kovener, Minnetonka Beach, Minn. (Rte. 1, Box 3A, Wayzata, Minn.)
Filed Nov. 18, 1968, Ser. No. 776,627
Int. Cl. D06c *15/00*
U.S. Cl. 223—66 14 Claims



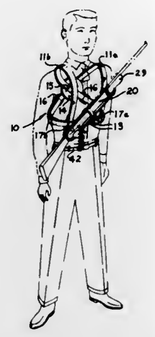
A knock-down head-shaped support for holding a head piece having a plurality of interlocked sheet-like members. Each member has a head-shaped outline with a neck portion and arms adapted to rest on a surface. A holder interlocks with the arms to retain the members in a relative spaced radial relation forming a globular or head-shaped support for holding a head piece. A releasable fastener connected to one of the members holds the support on a surface.

3,501,073
SHOEHORN WITH AN ELONGATED HANDLE
Joachim-Hans Breithor, Johann-Kunckel-Weg 2, Bad Driburg, Germany
Filed Aug. 23, 1968, Ser. No. 754,822
Int. Cl. A45j *51/03*
U.S. Cl. 223—118 7 Claims



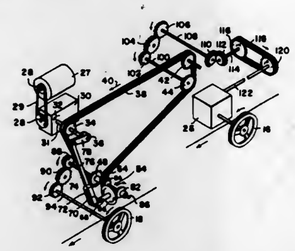
A long-handle shoehorn formed with an elongated tapered shank and a narrow end portion and a wide end portion. The wide end portion is provided with a comb-shaped member extending laterally and cross-wise of the wide end portion. The narrow end portion of the shank is provided with a hook.

3,501,074
GUN CARRIER
Robert David Emerick, 825 Head St., San Francisco, Calif. 94132
Substituted for abandoned application Ser. No. 224,792, Sept. 19, 1962. This application May 31, 1968, Ser. No. 733,644
Int. Cl. F41c *33/00*
U.S. Cl. 224—1 6 Claims



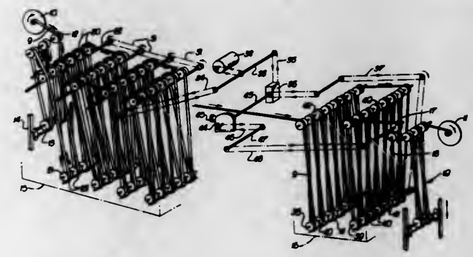
A gun carrier comprised of a harness, a trough-like cradle for holding a rifle or shotgun, and portions engaging the gun to prevent it from longitudinally slipping out of the trough, but yet permitting the gun to be readily released from the cradle.

3,501,075
WIRE TENSION CONTROL DEVICE
Herbert D. Scharf, 437 Merwyn Road, Merion, Pa. 19066
Filed Nov. 28, 1967, Ser. No. 686,239
Int. Cl. B65h *25/00*
U.S. Cl. 226—25 3 Claims



A wire tension control device for maintaining the tension exerted upon electrically insulated wire within desired limits during its travel from a delivery wheel to a feed wheel of a terminal affixing machine. The wire tension control device operates upon the delivery wheel of the terminal affixing machine and includes regular drive means and fast drive means. Tension responsive means are provided to become operative when the speed of the delivery wheel is inadequate to prevent excessive tension from building up in the wire during its travel between the delivery wheel and feed wheel of the terminal affixing machine. When the upper limit of allowable tension is exceeded, tension responsive means actuate fast drive means which rotate the delivery wheel at a faster rate than the regular drive means and thereby cause the delivery wheel to deliver wire at a faster rate to the feed wheel, and in this way lessen the wire tension between the delivery wheel and the feed wheel. When the wire tension has fallen sufficiently into the allowable range, the tension responsive means disconnects the fast drive means so that the delivery wheel is again driven by regular drive means. The tension responsive means serves to operate a clutch face to establish or disestablish a driving connection between the fast drive means and the delivery wheel of the terminal affixing machine.

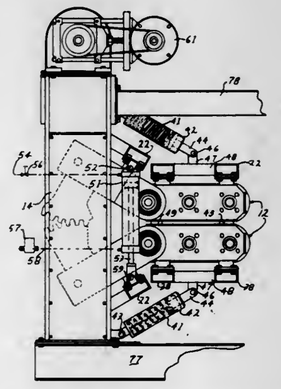
3,501,076
DRIVE SYSTEM FOR FILM PROCESSING APPARATUS
James L. Stuart, Middlesex, Thomas English, St. Albans, and Arthur J. Gibson, Hertfordshire, England, assignors to Photomec (London) Ltd., St. Albans, England, a British company
Filed Jan. 25, 1968, Ser. No. 700,432
Claims priority, application Great Britain, July 21, 1967, 33,722/67
Int. Cl. B65h *25/00, 23/18*
U.S. Cl. 226—25 5 Claims



A film processing apparatus having a pair of sets of rollers arranged for repeated passage of a continuous strip of film from one roller of one set to a roller of the other set and back to a succeeding roller of the one set through a processing zone located between the sets. Means in addition to commonly used elevators is provided for minimizing the buildup of tension in the film passing through the apparatus.

3,501,077
LOG FEEDING APPARATUS
Bernard J. Wigner and Robert N. Ross, Birmingham, Ala., assignors to Beloit Corporation, a corporation of Wisconsin
Filed Feb. 26, 1968, Ser. No. 708,020
Int. Cl. B65h *17/22*; B27b *31/00*
U.S. Cl. 226—108 1 Claim

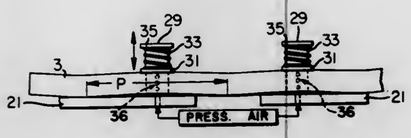
Apparatus having opposed sets of driven log conveying



units disposed to engage a log between them and move it axially, together with apparatus effective to cause the log feeding units to move apart equally and oppositely, where-

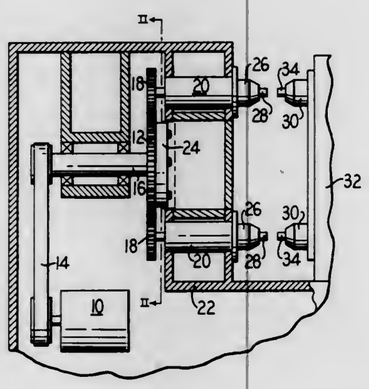
by a log is conveyed through the apparatus with the longitudinal center line of the log passing substantially along a theoretical median line between the two units. The apparatus is especially effective for conveying logs to and from ring type debarkers wherein it is desired to feed the log through the ring at substantially the geometrical center of the ring.

3,501,078
SINGLE-EDGE TROUGH TAPE GUIDE
David T. L. Chang, Altadena, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 2, 1967, Ser. No. 672,248
Int. Cl. B65h *23/32*
U.S. Cl. 226—198 **13 Claims**



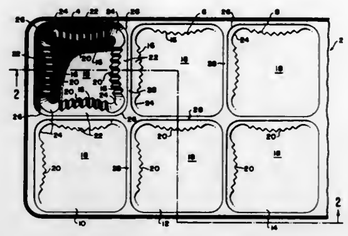
A guide means adapted for a digital tape transport to minimize dynamic skew, the guide means being in the form of a single-edge trough guide and including a flat plate member normal to the surface of the tape and adjacent to one tape edge along a substantial length of the tape, at least two urging members, e.g. spring loaded washers, spaced apart and engaging the other tape edge constantly urging the tape against the plate.

3,501,079
MULTIPLE SPINDLE FRICTION WELDER
Eugene R. Martin, East Peoria, and Claude F. White, Creve Coeur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 5, 1968, Ser. No. 703,173
Int. Cl. B23k *27/00*
U.S. Cl. 228—2 **16 Claims**



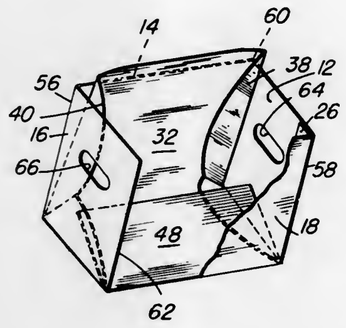
A friction welder having a plurality of rotatable spindles coupled to a motor by a common primary drive and a plurality of secondary drives for simultaneous friction welding of a plurality of workpieces. Means are also disclosed for positioning the structures to be welded and for cyclically coupling two independent sets of spindles to the motor.

3,501,080
TRAY FOR HOLDING ARTICLES
Charles A. Govatsos, Wellesley, Mass., assignor to Bestpak, Inc., Natick, Mass., a corporation of Massachusetts
Filed July 30, 1968, Ser. No. 748,834
Int. Cl. B65d *1/36, 1/00*
U.S. Cl. 229—15 **8 Claims**



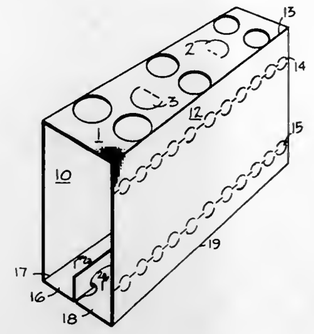
The invention is a one-piece tray molded from synthetic plastics, the tray being either a single or plural pocket structure, each pocket being formed by a plurality of sidewalls and a bottom, the meeting corners of the sidewalls being rounded outwardly, and the top edges of the sidewalls being flared upwardly and outwardly. Each sidewall bows inwardly, and is provided with vertical corrugations to provide resiliency in holding articles in the pockets.

3,501,081
COLLAPSIBLE CARTON AND BLANK FOR FORMING IT
Richard E. Paige, New York, N.Y., assignor to The Paige Company Containers, Inc., New York, N.Y., a corporation of New York
Filed Jan. 14, 1969, Ser. No. 791,081
Int. Cl. B65d *5/36*
U.S. Cl. 229—39 **14 Claims**



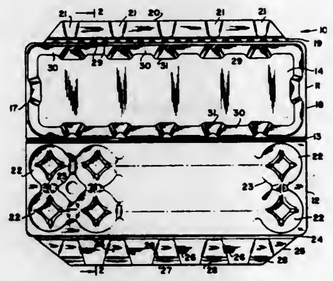
A collapsible carton, formed from a unitary blank having a smooth bottom comprising a first flap attached to a side wall and coextensive with the carton bottom, two generally triangular flaps attached to opposite sides of the first flap and to the adjacent end walls and a fourth flap attached to the remaining side wall. The triangular flaps fold upon themselves and trap the fourth flap therebetween providing a reinforced, completely supported, smooth bottom structure. A plurality of parallel fold lines are provided at specific locations to accommodate the several layers of material which overlie one another due to the structure of the carton.

3,501,082
PANEL INTERLOCKING MEANS
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Continuation of application Ser. No. 663,730, Aug. 28, 1967. This application Sept. 18, 1968, Ser. No. 768,593
Int. Cl. B65d *5/04*
U.S. Cl. 229—40 **4 Claims**



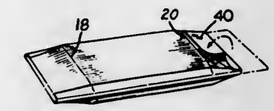
An open ended tubular type article carrier having top, bottom and side wall panels is disclosed wherein the bottom panel is a composite panel in which locking tabs are formed along an edge of one bottom panel and inserted through locking apertures formed in a locking panel foldably joined to the other bottom panel and disposed medially of the wrapper and in perpendicular relation to the bottom panel. The locking tabs are arranged with a wide shoulder portion and with a narrow throat portion for cooperating with the locking apertures which in turn are provided with a wide entry portion and a narrow locking portion.

3,501,083
EGG CARTON CONSTRUCTION
Connie Lake, Pittsford, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed Feb. 19, 1968, Ser. No. 706,338
Int. Cl. B65d *85/32*
U.S. Cl. 229—45 **4 Claims**



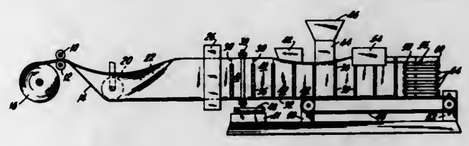
A molded egg carton including closable cover and bottom egg-receiving sections and integral foldable flanges operating cooperatively to provide a carton closing arrangement. The inwardly folding cover locking flange incorporates hinge perforations to facilitate rotation of the locking flange without damage thereto. The molded egg cartons also include raised projections or lands in the cover portions adapted to provide means for preventing jamming or wedging between the open cartons when nested for shipping or storage.

3,501,084
PACKAGING STRUCTURES
Bruce E. Harrison, Burlington, Ontario, Canada, assignor to Allpak Products Limited, Toronto, Ontario, Canada
Filed June 14, 1968, Ser. No. 737,122
Claims priority, application Canada, June 19, 1967, 993,281
Int. Cl. B65d *65/44*
U.S. Cl. 229—68 **6 Claims**



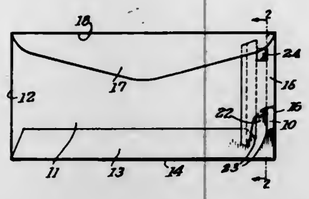
Folding lines are provided in an envelope comprising overlying sheets of material and having two spaced-apart side edges, a bottom edge, a top edge spaced-apart from the bottom edge and an opening providing access to a compartment defined by the sheets of material and within the confines of the side edges, the bottom edge and the top edge for receiving an object to be packaged in the envelope. The folding lines comprise a first folding line formed in one of the sheets of material and a second folding line formed in one of the sheets of material. The folding lines each extend at least part way across the envelope between the side edges and are in spaced-apart relationship with respect to each other. One of the folding lines is positioned closer to the bottom edge than to the top edge and the other of the folding lines is positioned closer to the top edge than to the bottom edge. The folding lines constitute bending lines about which each sheet of material in which a folding line is formed folds to accommodate a bulky object packaged in the envelope.

3,501,085
CONTINUOUS ENVELOPES
Arnold Dohmeier, Dorfbauer 160a, Lienen, Kreis, Tecklenburg, Germany
Continuation of application Ser. No. 604,494, Aug. 12, 1966, which is a division of application Ser. No. 492,404, Oct. 4, 1965. This application Oct. 25, 1968, Ser. No. 770,869
Claims priority, application Germany, Oct. 30, 1964, D 45,751
Int. Cl. B65d *27/10, 31/00*
U.S. Cl. 229—69 **3 Claims**



A packing bag or chain of bag elements comprising for example, a web sheet folded to include side wall portions on each side of the fold which are arranged in juxtaposition. Heat sealed areas or seams are defined at spaced locations and extend from adjacent the fold line toward the end edges of the web to compartment the same into bag elements, but terminate at a spaced location from the end edges to leave spreadable flaps. A line of weakness, such as a perforation line, extends from the flap region to adjacent the fold line such that the bags are readily separable after filling. The bag elements may be filled when connected together, using means for separating the flaps of the bags from the end edges down to the beginning of the heat seal line.

3,501,086
ENVELOPE WITH OPENING TEAR STRIP
Frank H. Kuniyuki, 1218 W. 182nd St., Gardena, Calif. 90247
Filed Mar. 11, 1969, Ser. No. 806,066
Int. Cl. B65d *27/36*
U.S. Cl. 229—85 **9 Claims**



An envelope formed and folded from a single sheet which is integrally provided with a tear strip terminating in a pull tab which, when pulled, serves to tear through a wall of the envelope to open the same closely adjacent one of the closed edges of the envelope.

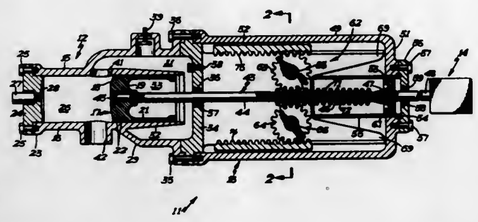
3,501,087
TANDEM, FREE-PISTON MACHINES
Henry Benaroya, 41 Boulevard du Commandant Charcot, 92 Neuilly-sur-Seine, France
Filed May 20, 1968, Ser. No. 730,290
Claims priority, application France, May 24, 1967, 107,680
Int. Cl. F02b *71/06;* **F04b** *31/00*
U.S. Cl. 230—56 **17 Claims**

Two cylinders are aligned, in each of which work two opposed pistons. The two inner pistons (one from each cylinder) are mechanically interconnected; and the two outer pistons are mechanically interconnected by a conjugation rod or rods. Each of the outer pistons is connected to a compensator piston for creating, in a compensator cylinder, a resistance to the movement of its corresponding outer piston during the inward (compression) stroke of this outer piston, in order to avoid compression stresses in the conjugation rods.

3,501,088
BALANCED FREE PISTON ENGINE
Anton Braun, 6421 Warren Ave., Minneapolis, Minn. 55435
Filed July 22, 1968, Ser. No. 746,541
Int. Cl. F02b *71/06;* **F04b** *31/00*
U.S. Cl. 230—56 **19 Claims**

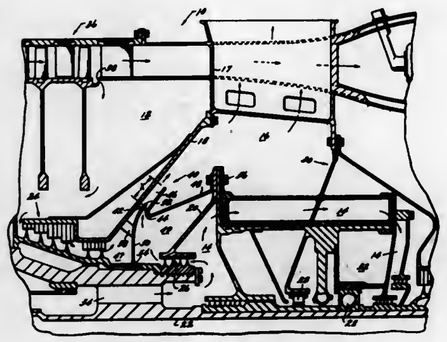
A balanced, free piston engine in which the power piston is connected to a reciprocally movable member of a driven energy absorbing device, such as the compressor piston in a gas compressor, so that all main pistons in the engine, including the power piston and the movable member move together as a unit during the operation of the engine. In some embodiments, a separate control piston is also connected with the power piston and is reciprocally movable therewith in a control cylinder so as to provide and/or regulate the energy necessary for satisfactory operation of the engine through a range of different operating conditions.

Dynamic balance of the engine is achieved by utilizing a balancing and synchronizing assembly having a counterbalancing movable weight which is arranged for translational movement with respect to the engine housing in an opposite direction to the power piston during the operation of the engine and which is constructed so that the absolute product of the weight of the counter-balancing movable weight of the balancing and synchronizing assembly times the length of its stroke is equal to the absolute product of the sum of the weights of the power



assembly, i.e., the power piston and all other elements which are connected to and move with the power piston, times the corresponding length of the stroke of the power piston. The balancing and synchronizing assembly is connected with the power assembly by a rack and pinion arrangement, and is positioned and supported within the engine housing so that the losses, due to friction, resulting from the interconnection of the power assembly and the balancing and synchronizing assembly and from the movement of balancing and synchronizing assembly in the engine housing are minimized.

3,501,089
JET PUMP EJECTOR
Joseph S. Alford, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed July 17, 1968, Ser. No. 745,446
Int. Cl. F04d *29/58;* **F01d** *25/12;* **F16f** *15/48*
U.S. Cl. 230—132 **8 Claims**



Ejector pump means for use between spaced high and low pressure chambers which are formed, in part, by seals having some characteristic leakage and including a mixing throat, a primary nozzle for delivery of fluid into the mixing throat, a secondary nozzle for delivery of fluid into the mixing throat and means for directing fluid leakage from the high pressure seal to the primary nozzle and fluid leakage from the low pressure seal to the secondary nozzle whereby the pressure adjacent the low pressure seal is reduced by ejector pump action.

3,501,090
COMPOSITE BLADED ROTORS
Lewis J. Stoffer, Cincinnati, Ohio, and Dudley O. Losee, La Mesa, Calif.; said Stoffer assignor to General Electric Company, a corporation of New York; said Losee assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 29, 1968, Ser. No. 701,300
Int. Cl. F04d *29/26*
U.S. Cl. 230—134 **10 Claims**

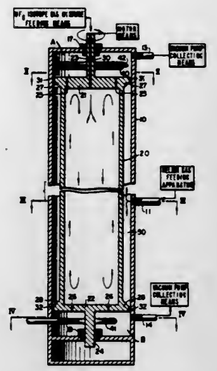


The disclosure shows a compositely formed integral, light weight bladed rotor for use in the compressor section of a gas turbine engine. The central portion of the blades are formed by filaments extending radially of the blade, through a central disc and then radially through another blade. Pedestals are respectively disposed at the bases of these blades to provide platform surfaces defining the inner bounds of the air flow path. The pedestals are restrained in a radial direction against the effects of centrifugal force by a pair of hoops which are wound into grooves fore and aft of the central portion of the blades. The remainder of the blade form is provided by "patch pieces" which, in part, overlie the wound hoops and which further have strands woven into the fibers forming the central disc. An outer shroud defines the outer bounds of the air flow path and is formed by folding extensions of the blade fibers in opposite circumferential directions and winding a hoop structure thereabout. The several portions of the bladed structure, through which are flows, are surfaced with a sheet material. All of these components are bonded together to form an integral composite structure.

3,501,091
GAS CENTRIFUGE AND A PROCESS FOR CONCENTRATING COMPONENTS OF A GAS MIXTURE
Yoshitoshi Oyama and Yoichi Takashima, Tokyo, Japan, assignors to Atomic Fuel Corporation, Tokyo, Japan
Filed Mar. 21, 1967, Ser. No. 624,932
Int. Cl. B01d *45/12*
U.S. Cl. 233—1 **15 Claims**

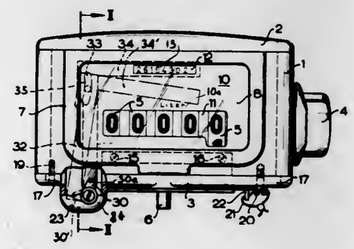
A gas centrifuge having a rotary chamber within an outer chamber, holes in each end of the rotary chamber for the draining of respectively enriched gas and poor gas and a means to flow a gas of relatively low molecular weight into the region between the outer chamber and the surface of the rotary chamber, thence to sweep toward the ends of the rotary chamber.

A process for separating a gas mixture in the above type of centrifuge, including the step of flowing a gas of relatively low molecular weight into the space between the surface of the rotary chamber and the outer



chamber, thence to sweep toward the ends of the cylinder.

3,501,092
SHUTTER ARRANGEMENT FOR A RECORDING TOTALIZER
Helmut Müeller, St. Georgen, Black Forest, Germany, assignor to Kienzle Apparate GmbH, Villingen, Black Forest, Germany
Filed Jan. 24, 1968, Ser. No. 700,307
Int. Cl. G06c *5/02;* **G07b** *13/02*
U.S. Cl. 235—1 **10 Claims**

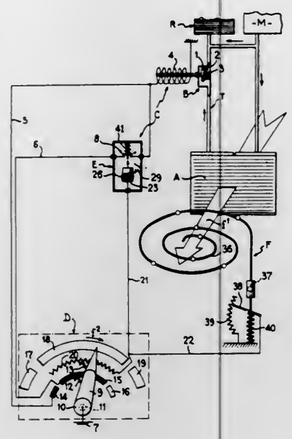


An instrument has a closed casing with a window through which indicator means representing information for the public, and the number wheels of a recording totalizer, representing information unsuitable for the public, are arranged. A shutter is locked in a position masking the number of wheels and can be opened only by an authorized person using a key. The carrier wall of the shutter, the lock, and the shutter form a detachable unit.

3,501,093
AIR HEATING CONTROL SYSTEM
Hubert Yves de Lavenne, Meudon-Bellevue, France, assignor to Automobiles Peugeot, Paris, France, a French body corporate, and Regie Nationale des Usines Renault, Billancourt, France, a French body corporate
Filed Mar. 22, 1968, Ser. No. 715,440
Claims priority, application France, May 10, 1967, 105,852
Int. Cl. G05d *23/00*
U.S. Cl. 236—68 **6 Claims**

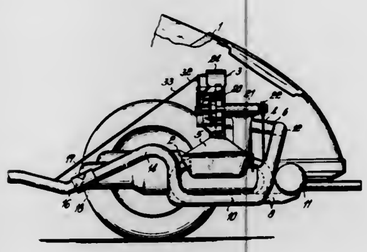
A method and device for setting an air conditioning installation in particular for an automobile vehicle, said method comprising admitting, by an all-or-nothing system,

the fluid supplying the air conditioning power, that is, by alternately allowing and stopping in a complete manner, the circulation of said fluid so that the flow is alternately



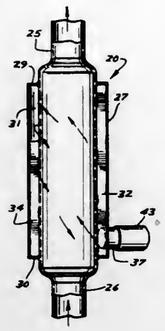
maximum or zero, and setting the air conditioning power furnished by manually setting the duration and frequency of the interruptions of the circulation of said fluid.

3,501,094
SPEED RESPONSIVE MOTOR VEHICLE HEATING
Ferdinand Anton Ernst Porsche, Stuttgart, Germany, assignor to Firma Porsche, Stuttgart, Germany
Filed July 25, 1967, Ser. No. 655,924
Claims priority, application Germany, July 29, 1966, 1,580,548
Int. Cl. B60h *1/02;* **A01k** *31/20*
U.S. Cl. 237—12.3 **11 Claims**



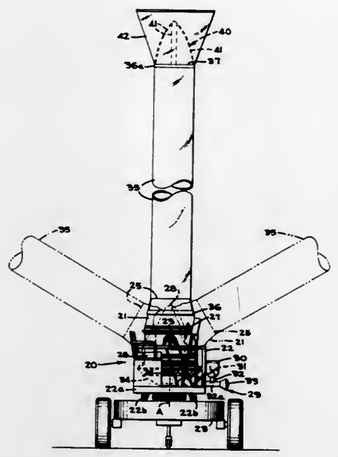
A blower for supplying cooling air to an-cooled engine and heating air to the passenger compartment through a heat exchanger. The flow of the heated air to the passenger compartment is controlled by means of a valve actuated from the passenger compartment and the quantity of air delivered by the blower is controlled by a shroud that is shiftable simultaneously with actuation of the valve to control the effective width of the blower blades. A shifting control movement of the shroud is superimposed on the valve responsive control movement by means of a centrifugal governor so that the quantity of air delivered by the blower is also controlled by the speed of the blower; the two controlled shifting movements are superimposed by means of a spring in the drive train of the valve actuation responsive shifting.

3,501,095
HOT AIR HEATING APPARATUS FOR TRACTOR
Randall A. Peterson, R.R. 1, Dassel, Minn. 55325
Filed Mar. 13, 1968, Ser. No. 712,814
Int. Cl. B60h *1/18*
U.S. Cl. 237—12.3 **1 Claim**



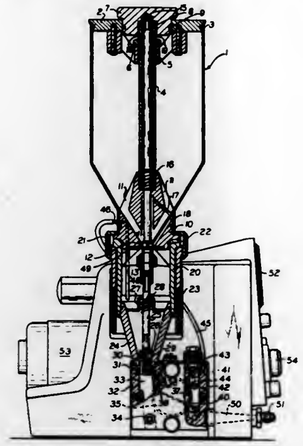
A hot air heating apparatus for a cab equipped farm tractor type of vehicle consisting of an integral structure comprising a muffler for the tractor forming an air heating chamber, lines connecting said chamber and the cab of said tractor and a fan moving air through said lines and chamber into said cab.

3,501,096
FOG DISPERSION DEVICE
Robert E. Stilwell and Dean T. McDonald, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 11, 1968, Ser. No. 697,045
Int. Cl. A01g *15/00*
U.S. Cl. 239—14 **10 Claims**



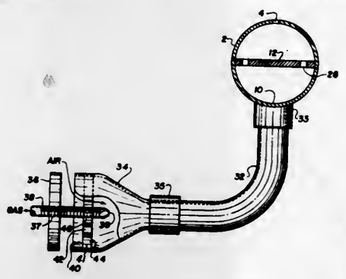
A tube of plastic-material such as polyethylene when secured to a blower such as an axial flow fan is extendable into the air for 125 feet or more to discharge air, chemicals and the like from the end of the tube for dispersing fog, spraying trees, and the like.

3,501,097
POWDER FEED DEVICE FOR FLAME SPRAY GUNS
Horace S. Daley, Clifton, N.J., assignor to Metco Inc., Westbury, N.Y.
Filed Dec. 29, 1966, Ser. No. 605,647
Int. Cl. F23k *1/02*
U.S. Cl. 239—85 **16 Claims**



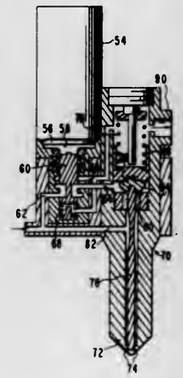
An apparatus for feeding powder at a controlled rate to a flame spray gun having an enclosed supply hopper which gravity-feeds powder to a rotating bucket wheel which conveys the powder into a carrier gas flowing at a constant rate for entrainment and transportation to the flame spray gun. The pressure drop along the feed line past the point of powder introduction is utilized to indicate the powder flow rate and/or control the same. The powder being conveyed is passed through a conically narrowing accumulating chamber in which a certain amount of powder deposits out and is maintained, the quantity of powder being en- or detrained varying the average cross section of the chamber and thus the flow velocity therethrough to automatically maintain a uniform powder feed.

3,501,098
GAS BURNER FOR ROTARY DRYER DRUM
John W. Evans, Sunray, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed June 28, 1968, Ser. No. 741,092
Int. Cl. F23d *13/40*
U.S. Cl. 239—561 **4 Claims**



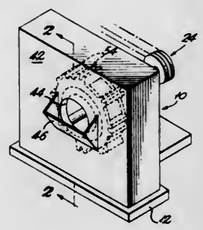
An efficient and long-lasting gas burner adapted for horizontal disposition is provided by an elongate and enclosed cylindrical manifold having in its topwall a series of longitudinally extending equidistantly spaced slots; a flat and coextensive plate disposed in the cylindrical manifold and secured to the sidewalls thereof; oppositely disposed and parallel apertures along but spaced inwardly of the side edges of the flat plate with the size and spacing of the apertures progressively increasing toward the ends thereof; and a fuel inlet in the bottom wall of the cylindrical manifold adjacent its transverse centerline.

3,501,099
ELECTROMECHANICAL ACTUATOR HAVING AN ACTIVE ELEMENT OF ELECTROEXPANSIVE MATERIAL
Glendon M. Benson, Danville, Calif., assignor, by mesne assignments, to Physics International Company, San Leandro, Calif., a corporation of California
Filed Sept. 27, 1967, Ser. No. 671,065
Int. Cl. H01v *7/00;* **F02b** *15/00*
U.S. Cl. 239—585 **3 Claims**



An electromechanical transducer having an active module of electroexpansive material, such as piezoelectric material. A chamber filled with noncompressible fluid that is bounded by first and second plungers or diaphragms, the first plunger being operatively connected to the module. The area of the second plunger is established at a size smaller than the first plunger so as to provide for motion amplification of the relatively small mechanical displacement of the electroexpansive module. An improved electroexpansive module and a method for making the same are also disclosed.

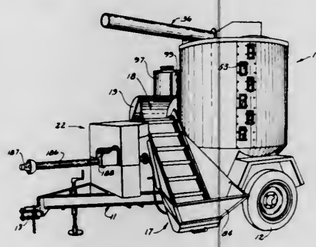
3,501,100
CRUSHER APPARATUS
Charles D. Schellberg, 491 Terrace St., Meadville, Pa. 16335
Filed Nov. 7, 1967, Ser. No. 681,191
Int. Cl. B02c *13/09, 13/28*
U.S. Cl. 241—91 **7 Claims**



The present invention relates to crusher apparatus wherein a novel one-piece homogeneous cast cage structure is provided, the cage structure including a pair of

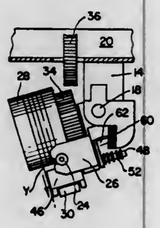
spaced ring portions having pin means extending therebetween, the radially outermost portions of the pin means being disposed radially outwardly of the outer periphery of said ring portions and extending across substantially the entire width of said cage structure.

3,501,101
MOBILE FEED GRINDING AND MIXING AND DISTRIBUTING APPARATUS
Edgar K. Lindstrom, Manhattan, Kans., assignor to Viking Manufacturing Company, Inc., Manhattan, Kans., a corporation of Kansas
Filed Dec. 4, 1967, Ser. No. 687,543
Int. Cl. B02c *9/04, 17/16;* **B03b** *7/00*
U.S. Cl. 241—98 **12 Claims**



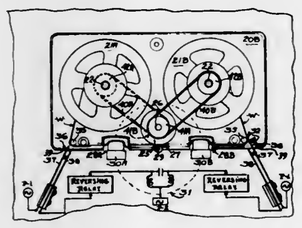
Mobile apparatus having a grinding mill thereon for grinding natural feeds. The ground feed is fed through a first screw conveyor into a second upright screw conveyor and is then deposited into the upper end of a mixing tank. A hopper containing feed supplements is positioned adjacent a third screw conveyor to permit supplements to be deposited therein and transported to the second upright screw conveyor for mixing with the natural feed fed from the first screw conveyor. The first screw conveyor passes beneath the mixing tank with a feed opening being provided therebetween to permit material from the tank to be deposited into the first screw conveyor so as to mix same with the feed being supplied by the grinding mill. A valve is provided adjacent the upper end of the second upright screw conveyor to permit the mixed material to be selectively discharged either into the mixing tank or to an external discharge station by means of a swingable discharge conveyor mounted adjacent the upper end of the upright screw conveyor.

3,501,102
STRAND ADVANCING APPARATUS
Malcolm C. Long, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Apr. 24, 1968, Ser. No. 723,776
Int. Cl. B65h *51/08*
U.S. Cl. 242—47.09 **9 Claims**



Strand is advanced around a driven roll and a separator roll and also between the driven roll and a pinch roll. Movement of the rolls is provided for between an operating position in which the driven roll is coupled with a drive member, a threading position in which the rolls are conveniently positioned for threading with the pinch roll out of engagement with the driven roll, and an idle position as near to the operating position as is practical, for starting the advance of the yarn to a take-up with the pinch roll out of engagement with the driven roll. During movement between these positions the pinch roll is automatically cammed to its proper position.

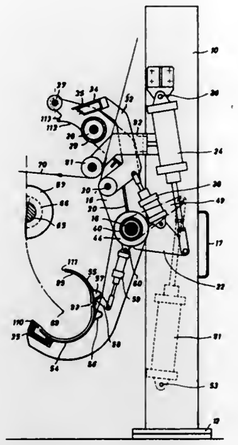
3,501,103
REVERSE DRIVE PINCH ROLLER FOR SOUND TAPE
Jerry O. Kelley, Chicago, Ill., assignor to Cart-Trac, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,775
Int. Cl. G11b *15/32;* **B65h** *17/23*
U.S. Cl. 242—188 **14 Claims**



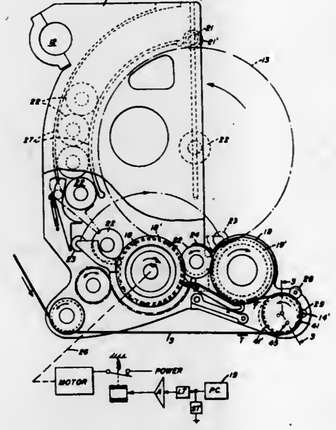
The disclosure relates to reel-to-reel sound tape apparatus, especially of the cartridge adapted for use with a capstan spindle driven by a reversing motor wherein a composite pinch roller and pulley system has a reel pulley coaxially rotatable with the roller at each axial end thereof, and the pulleys have hubs cooperating with part of the confronting pinch roller hub with complex clutch means between the confronting hub elements and sensitive to both direction of drive and position of the cartridge to drive a particular reel in a particular direction responsive either to reversal of the motor or turning the cartridge over from one side to the other.

3,501,104
WEB WINDING APPARATUS
Albert Joseph Hellemans, Berchem, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
Filed Feb. 2, 1968, Ser. No. 702,609
Claims priority, application Great Britain, Feb. 2, 1967, 5,168/67
Int. Cl. B65h *19/28*
U.S. Cl. 242—56 **14 Claims**

A web winding apparatus in which the web is transferred from one rotating core to another without interruption. An arcuate guide plate extends partially around the periphery of the new core to define with the core periphery a narrow passageway into which the web end is threaded after being severed from the remainder of the web. A nozzle situated on the web path opposite the guide plate emits a stream of air under presure as the web end is severed, the stream of air entering the entrance of the threading passageway generally in the direction of the passageway, the effect of the air stream being to direct the severed web end into the pasageway and bias the same into contact with the rotating core periphery so that the web end becomes wound upon the core. Preferably, the guide plate extends around a portion of the core periphery in excess of 180° and is formed in two sections so as to be separable from one another to permit the guide plate to be moved to inoperative position remote from the web core so that unconfined winding can take place. A web cutter may be formed integrally with the air nozzle.

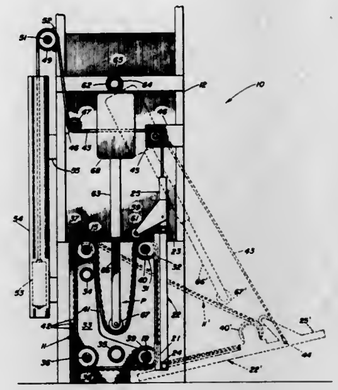


3,501,105
TENSION SENSING DEVICE
Thomas J. Perconti, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 9, 1968, Ser. No. 766,242
Int. Cl. B65h *19/28, 25/10, 25/32*
U.S. Cl. 242—56.9 **8 Claims**



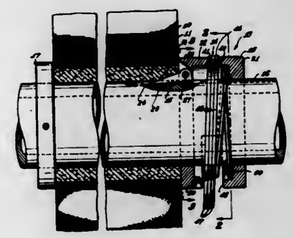
An automatic apparatus for winding a first plurality of webs simultaneously and for subsequently winding a second plurality of webs simultaneously. The automatic winding apparatus has a photoelectric means for detecting when the tension in any one of the plurality of webs is absent or is below a predetermined minimum level. The apparatus is stopped if either of these tension conditions are present because they are indicative of malfunctions in the automatic apparatus.

3,501,106
CORELESS AND CENTERLESS COILER
John S. Case, Towson, Md., assignor to The Anchor Post Products, Inc., Baltimore, Md., a corporation of New Jersey
Filed June 25, 1968, Ser. No. 739,770
Int. Cl. B65h *17/02*
U.S. Cl. 242—67.1 **8 Claims**



This disclosure relates to a machine for winding web upon itself in which the rollup is accomplished in the embrace of a loop in an endless moving belt. The rollers carrying the belt on one side of the roll-forming loop are mounted on a swinging framework continuously biased toward the area to form the roll-forming loop into a pocket and increase the embrace. As the roll of material grows in size, this framework is forced outwardly against the bias until the pocket is lowered sufficiently on the one side to cause the roll of material to revolve by gravity and be ejected from the machine.

3,501,107
CORE CHUCK FOR MOUNTING PAPER ROLLS ON COLLATORS OR PRINTING PRESSES
Edward M. Assony, La Puente, Calif., assignor to Western Gear Corporation, Lynwood, Calif., a corporation of Washington
Filed May 29, 1968, Ser. No. 733,175
Int. Cl. B65h *17/02*
U.S. Cl. 242—68.4 **5 Claims**



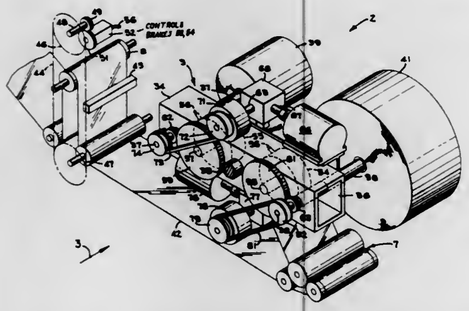
A chuck for securing rolls of paper on a collating machine or web-fed printing press. The chuck is slidable on a rotatable spindle onto which the roll of paper is mounted and has, in addition to automatically set but quickly releasable means for clamping it against axial movement on the spindle, a wedge means which is adapted to be jammed under or into the end of the pulp or paperboard tube on

which the paper is wound, so as to secure the chuck and paper roll against rotation. The chuck is also keyed or splined onto the spindle, so as to secure the chuck against rotation relative to the spindle.

3,501,108
AUXILIARY TORQUE DRIVE FOR TENSION BRAKE SYSTEM IN HIGH SPEED PRINTING PRESS

Howard E. Roscoe and Daniel A. White, Green Bay, Wis., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 27, 1968, Ser. No. 732,205
Int. Cl. B65h *77/00*
U.S. Cl. 242—75.5 **7 Claims**

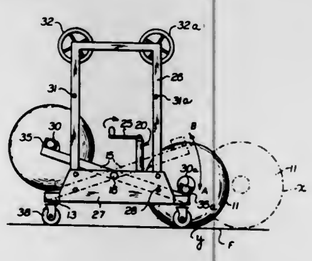


Presented is a method and means for applying a driving torque to a mill roll of material fed continuously through a printing press at speed from about 600 feet per minute to 1200 feet per minute. To maintain a constant and uniform tension on the web being printed it is essential that the mill roll from which the web is unwound incorporate a brake system which accommodates the accelerated rotation and varying degrees of drag on the roll as the web is unwound therefrom. As the diameter of the mill roll decreases, a mill roll diameter is reached where the brake in the sense of a retarding force is no longer applied and instead of a retardation force a varying driving torque must be applied to maintain the web tension constant down to core diameter.

3,501,109
COMBINATION LOADING ROLL-UP AND DISPLAY APPARATUS FOR CARPETS

Sydney Edson, New York, N.Y., assignor to Howard Displays, Inc., New York, N.Y., a corporation of New York

Filed Nov. 19, 1968, Ser. No. 777,124
Int. Cl. B65h *17/46*
U.S. Cl. 242—86.52 **10 Claims**

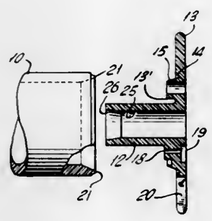


The apparatus possesses a rack having a stationary lower framework and stationary upper framework. Between these frameworks extends a rocker bar assembly to load rolls of sheet material on the rack.

3,501,110
PLASTIC SPOOL AND METHOD OF MAKING SAME

Robert B. Hopgood, Thompson, Ivar Green, Litchfield, and David W. Knowles, Jr., Danielson, Conn., assignors to Nicholson File Company, a corporation of Rhode Island

Filed Jan. 24, 1967, Ser. No. 622,847
Int. Cl. B65h *75/14*
U.S. Cl. 242—118.7 **9 Claims**



The invention contemplates an improved roll, spool, or the like construction featuring the greatest possible use of thermoplastic material and avoiding the disadvantages of a molded assembly. This is achieved by employing two molded end pieces, flanges or hubs appropriately contoured to receive and accurately locate a thin-walled elongated tubular member, secured to and concentrically located on each of the two end hubs. The end hubs are so configurated as to receive and concentrically locate a spindle or shaft and to provide the sole support of the tubular outer surface of the roll or spool, whatever its length. Additionally, the ends of the tubular member, and the cooperating parts of the end flanged hubs are so configurated as not only to achieve an extensive connection upon spin-welded assembly but also to achieve an inherently accurate length determination between end flanges.

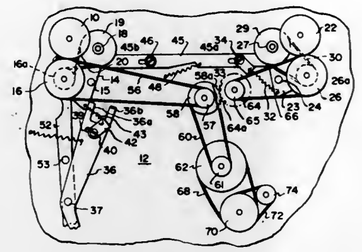
3,501,111
WEB WINDING APPARATUS INCLUDING MEANS FOR PREVENTING SPILL OF THE WEB

Alex J. Procop, Lake Oswego, Oreg., assignor to GAF Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 619,992, Mar. 2, 1967. This application July 5, 1968, Ser. No. 742,777
Int. Cl. B65h *17/14, 17/02;* **F16h** *5/52*
U.S. Cl. 242—202 **9 Claims**

The moving picture projector has take-up and supply spindles. First and second rollers of diameters different from each other are shiftably mounted adjacent the take-up spindle for being brought into alternate driving engagement with the latter. Third and fourth rollers of diameters different from each other are shiftably mounted adjacent the supply spindle for alternate driving engagement with the same. A drive system including a series of belts is provided for rotating all of these rollers. A manually-operated linkage system is provided for selectively locating one of the rollers in driving engagement with the associated spindle for establishing one of a plurality of operational modes. A braking or stopping action is achieved by operating the linkage system to bring the first and third rollers into engagement with respective take-up and supply spindles just prior to disengaging the

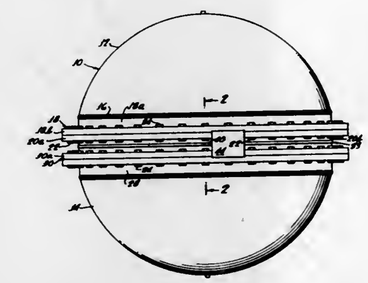
drive to the rollers. The direction of rotation of the first and third rollers is such that both the take-up and supply spindles are momentarily urged in a web-winding direction thereby to make the film taut and prevent spilling of the same from either the take-up or supply reels mounted on the spindles.



3,501,112
SEALED SEPARABLE CONNECTION

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert M. Bamford, Los Angeles, Calif.

Filed Sept. 15, 1967, Ser. No. 668,755
Int. Cl. B64g *9/00*
U.S. Cl. 244—1 **3 Claims**



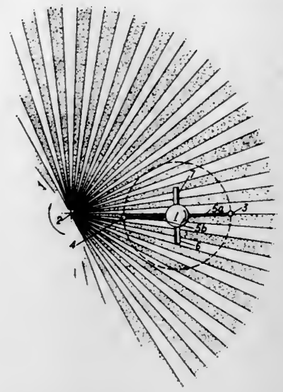
A thin wall metal tube is collapsed between mating edges of two connectors to provide a sealed joint. By applying high pressure fluid to the sealed interior of the tube, the tube expands to sever the means joining the connectors and hence separates the connector members.

3,501,113
ROTATING BEAM MISSILE GUIDANCE SYSTEM

Gordon J. R. Maclusky, Harpenden, England, assignor to British Aircraft Corporation Operating Limited, London, England, a British company

Continuation-in-part of application Ser. No. 417,244, Dec. 9, 1964. This application Jan. 2, 1968, Ser. No. 695,278
Claims priority, application Great Britain, Dec. 12, 1963, 49,227/63
Int. Cl. F41g *7/00*
U.S. Cl. 244—3.13 **2 Claims**

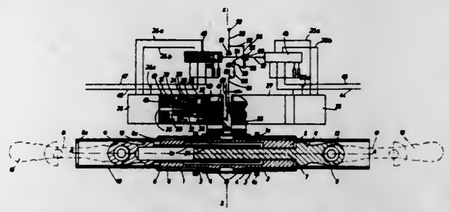
A missile is guided by a beam radiated in the required direction of flight. The beam comprises a rotating pattern of radiation. The missile is rotated about its axis during flight and a radiation detector is mounted on the missile offset with respect to its axis of rotation. When the missile flight path is offset with respect to the axis of rotation of the pattern of radiation, the detector output includes a frequency modulated component which is used to guide the missile back towards the beam pattern axis.



3,501,114
JACK SYSTEM APPLICABLE TO WING CONTROL OF VARIABLE GEOMETRY AIRCRAFT

Henri Deplante, Paris, France, assignor to Avions Marcel Dassault, Saint-Cloud, France, a company of France

Filed Dec. 18, 1967, Ser. No. 691,348
Claims priority, application France, Feb. 28, 1967, 96,823
Int. Cl. B64c *3/40, 13/42*
U.S. Cl. 244—46 **2 Claims**



This invention relates to a mechanical jack device for controlling elements to be moved in a related manner, for example the wings of a variable geometry aircraft, and comprises two coaxial nut and screw assemblies simultaneously operable by means of a drive element, the coupling between the drive element and the nuts being arranged, in conjunction with the threading in said assemblies, to produce translational movements of the screws in mutually opposite directions in accordance with the direction of operation of said drive element.

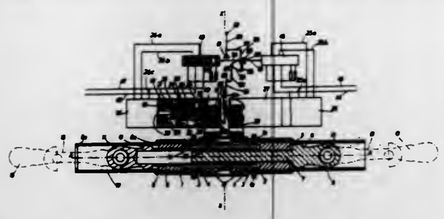
3,501,115
AIRFOIL POSITION CONTROL FOR VARIABLE GEOMETRY AIRCRAFT

Henri Deplante, Paris, France, assignor to Avions Marcel Dassault, Saint-Cloud, France, a company of France

Filed Dec. 18, 1967, Ser. No. 691,349
Claims priority, application France, Feb. 28, 1967, 96,822
Int. Cl. B64c *3/40, 13/42*
U.S. Cl. 244—46 **3 Claims**

This invention relates to a device in a variable geometry aircraft for controlling the positions of the wings, said

device comprising a jack mounted on the airframe and having symmetrically arranged movable jack members



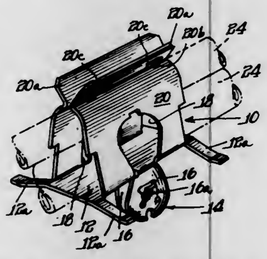
for pivoting the wings, and a rotary hydraulic motor for driving said jack under the control of the pilot.

3,501,116
STRUTTED LINE-TYING DEVICE
David P. Eppinger, Medina, and Richard L. Frantz, Cleveland, Ohio, assignors to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Apr. 28, 1969, Ser. No. 819,573
Int. Cl. H01b *17/16*
U.S. Cl. 248—63 **19 Claims**



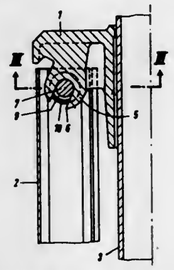
A device for tying a line to an annular support. The device includes a wrapping member and a strut member, each formed of one or more helically preformed elements. The wrapping member has a central section formed into a bight for wrappingly engaging the support and a pair of legs extending from the bight for wrappingly engaging the line on each side of the support. The strut member is engaged with the central section of the wrapping member and has a pair of arms for wrappingly engaging the line on each side of the support, and wrapped in the interval between the wraps of the legs of the wrapping member. The pitch length of the elements of the strut member, for at least a portion thereof, is different than that of the wrapping member.

3,501,117
CLIP DEVICE
Edmund John Soltysik, Chicago, Ill., assignor to Illinois Tool Works, Inc., Chicago, Ill., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,619
Int. Cl. F16l *3/22*
U.S. Cl. 248—71 **9 Claims**



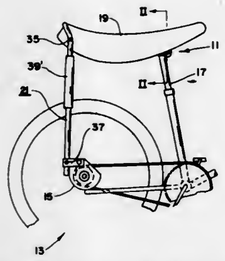
The present invention relates generally to snap-on type clips for mounting elongated elements such as conduits and the like. This application discloses a spring clip of the above-mentioned type which may be stamped and formed from flat stock such as sheet metal. The disclosed clip device is of one piece construction having a snap-in type shank portion for interlocking with one side of an apertured workpiece and an oppositely disposed base portion adapted for coaction with the opposite side of the workpiece. A pair of spaced wall sections extending from opposite margins of the base portion define an area for accommodating gripping elongated workpieces such as conduits, conductors and the like. The aforesaid wall sections are adapted to be temporarily spread apart for accommodating the workpieces, the free extremities or margins of said wall sections being provided with novel abutment means for preventing unauthorized lateral separation of the workpieces from the clip.

3,501,118
JOINT FOR LEGS OF SUPPORTS
Hellmut Meinunger, Ispingrader-Strasse 29, Radevormwald, Germany
Filed Sept. 29, 1967, Ser. No. 671,725
Claims priority, application Germany, Sept. 30, 1966, K 60,357
Int. Cl. F16m *11/38, 11/02, 11/16*
U.S. Cl. 248—166 **9 Claims**



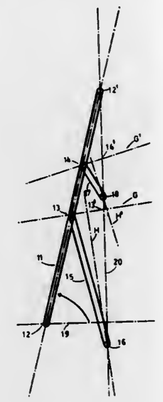
A joint for supports having a head with slotted flanges mounted thereon. The support legs have a pivot pin therein and are formed to fit over the flanges with the pin fitted into the slot. The pin has, disposed thereon, annular discs which engage opposed surfaces of the flange to engage and retain the pin in the slot and provide pivotal connections between the head and the legs.

3,501,119
BICYCLE SEAT SUPPORTING PIVOT MEANS
Maurice E. Rich, Jr., Memphis, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn., a corporation of Ohio
Filed Aug. 1, 1968, Ser. No. 749,357
Int. Cl. B62j *1/04*; F16m *11/00, 11/06, 11/10, 11/12, 13/04*
U.S. Cl. 248—221 **2 Claims**



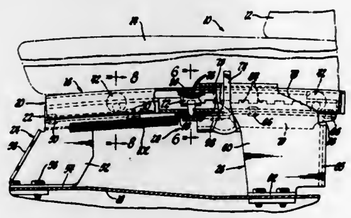
Means for pivotally anchoring the forward end portion of an elongated seat on a bicycle frame structure seat post. The pivot axis of the seat supporting structure being arranged horizontally and the rearward end portion of the bicycle seat being sprung upwardly in a swinging arc about the pivot axis arranged on the forward end of the seat. The bicycle seat pivot means being adapted to pivotally anchor the forward end portion of the seat for permitting free up-and-down pivotal movement of the rear portion of the bicycle seat.

3,501,120
SUPPORTING LINKAGE FOR STRAIGHT LINE MOVEMENT
James A. Daniel, Jr., R.D. 2, Box 66, Newton, N.J. 07860
Continuation-in-part of application Ser. No. 601,096, Dec. 12, 1966. This application Feb. 10, 1969, Ser. No. 798,091
Int. Cl. A47f *5/08*
U.S. Cl. 248—276 **19 Claims**



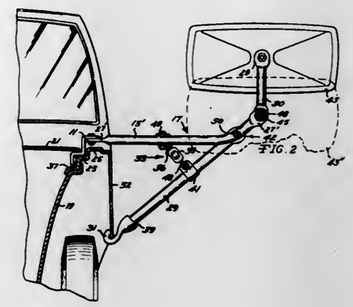
A linkage for translating straight line movement includes a traveller carried on a first elongated leg wtih two supporting arms pivoted to the leg. The arms are also pivotally connected to a support member. Means for keeping the traveller moving in a plane may include another supporting arm parallel to one of two supporting arms, and another leg parallel to the first leg. The supporting arms define sides of parallelograms.

3,501,121
SEAT ADJUSTER
Charles S. Lautenbach, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,468
Int. Cl. B60n *1/08*; F16m *13/00*
U.S. Cl. 248—430 **3 Claims**



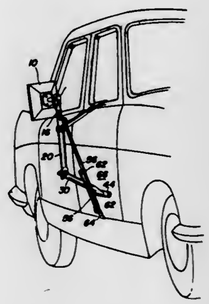
A seat support and adjusting device of the type using longitudinally telescoping channel members and characterized in that the operating handle has a portion that normally cams a separate locking member into wedging, latching engagement between the channel members and thereby longitudinally positions the associated seating structure.

3,501,122
REAR VIEW MIRROR CONSTRUCTION
James M. Barker, Battle Creek, Mich., assignor, by mesne assignments, to S. H. Leggitt Company, Inc., Marshall, Mich., a corporation of Michigan
Filed May 8, 1967, Ser. No. 636,937
Int. Cl. A47g *1/24*
U.S. Cl. 248—486 **4 Claims**



An automotive rearview mirror construction with a three-legged support arm for tripodal connection to the exterior of an automotive body, wherein one of the upper of the arms includes a bend beyond the apex of the tripod, a mirror mounted on the bent leg outboard of the apex of the tripod, and tensioning means applied to draw the legs together for gripping of the automotive frame between the feet of the tripod and in which two of the three legs are positionally securable to the vehicle.

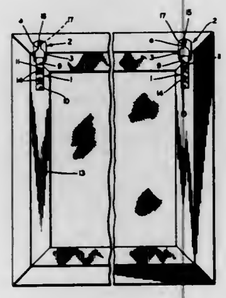
3,501,123
ADJUSTABLE MIRROR
John C. Abromavage, Jamison, and Harry J. Reichardt, Philadelphia, Pa., assignors to Arcoa, Incorporated, Portland, Oreg., a corporation of Oregon
Filed May 23, 1967, Ser. No. 640,702
Int. Cl. B60r *1/06*
U.S. Cl. 248—487 **4 Claims**



An adjustable rear view mirror of the type attachable to an auto door by a temporary clamp and flexible strap

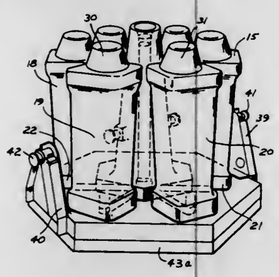
means, such as used in the auto rental industry. Improvements consist in the provision of an adjustable dog-leg extension, abutting the car door, for regulation of the height of the mirror with respect to the auto window.

3,501,124
MIRROR OR PICTURE HANGER
James W. Goss, 410 South St. SW., Warren, Ohio 44482
Filed Apr. 8, 1968, Ser. No. 719,372
Int. Cl. A47g *1/24, 1/16*
U.S. Cl. 248—495 6 Claims



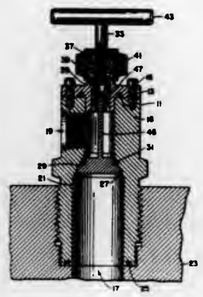
A two-piece hanger for mirrors and pictures comprising an attaching member and a hinging member pivotally connected thereto. The attaching member has means for attaching it to the back of a mirror or picture frame in vertically adjusted position. A keyhole slot in the hanging member receives the head of a nail or similar fastening device in a wall or other supporting surface. In use, one of the hangers is attached to each upper corner of a rectangular mirror or picture frame.

3,501,125
MULTIPLE CHILL MOLD DEVICE
Torgny Eric Charles Fransson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish corporation
Filed May 18, 1967, Ser. No. 639,552
Claims priority, application Sweden, May 27, 1966, 7,364/66
Int. Cl. B22d *7/06, 29/00*
U.S. Cl. 249—106 1 Claim



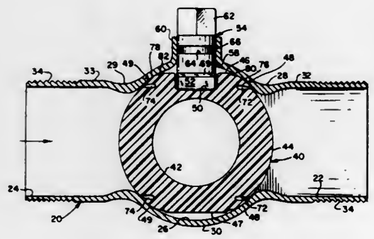
A multiple chill mold device in which ingots formed in the molds are made externally accessible for withdrawal from the molds by removing hot tops from the molds. The casting burrs are also made externally accessible by removing the upper part of a pouring tube or gate and can be detached as a unit from the device by turning the same upside down and applying a sharp impact to a burr part protruding from the pouring tube.

3,501,126
HIGH CONDUCTANCE, HIGH PRESSURE VALVE
Bruce J. Williams, Arvada, and Johney Katich, Boulder, Colo., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 9, 1967, Ser. No. 681,684
Int. Cl. F16k *31/50*
U.S. Cl. 251—77 1 Claim



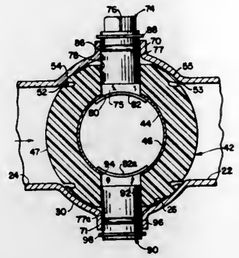
A high conductance valve capable of high pressure shutoff comprising a body, a cap or bonnet fastened thereto, a tapered disk with mating seat, and plural stems loosely interconnected by a floating stem coupling.

3,501,127
BALL VALVE
Mathew L. Freeman, Mars, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 527,291, Feb. 14, 1966. This application Apr. 12, 1966, Ser. No. 542,064
Int. Cl. F16k *5/06, 25/00*
U.S. Cl. 251—175 26 Claims



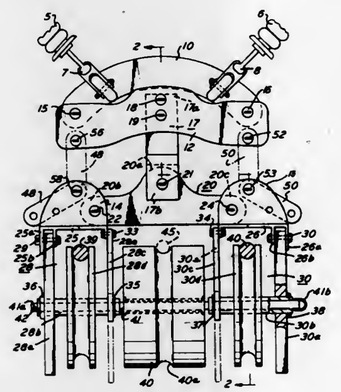
A valve assembly having a ported ball type valve plug rotatably mounted in a valve body cavity between upstream and downstream fluid flow passages and having at least one annular, protruding, elastically deformable sealing lip defined along its inner periphery by an annular groove in fluid communication with an opening axially outwardly toward the upstream passage when the plug is turned to its fluid-blocking position. Upstream fluid entering the groove applies pressure to the inner periphery of the lip to firmly deform the lip in sealing relation against a mating surface in the valve body. A second optional lip coaxial with the valve stem is deformed against the interior of the valve body to provide a seal surrounding the valve stem and is defined by a further annular groove opening radially outwardly relative to the rotational axis of the stem.

3,501,128
BALL VALVES
Eldert B. Pool, Pittsburgh, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 7, 1966, Ser. No. 563,540
Int. Cl. F16k *25/00, 31/44, 5/06*
U.S. Cl. 251—175 25 Claims



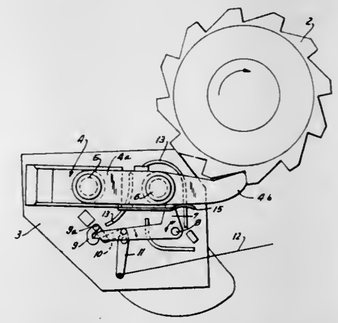
A ball valve having a ported, ball type valve plug assembly rotatably mounted in a valve body cavity and comprising an elastically deformable plug structure delimiting the fluid port in the assembly and a relatively rigid tube coaxially received in and beng substantally coextensive with the port for stiffening the plug structure. An operating stem is operatively connected directly to the stiffening tube, whereby valve-operating torque applied to the stem is transmitted directly to tube for turning the plug assembly between its valve opened and closed positions.

3,501,129
BUNDLE CONDUCTOR STRINGING-SAGGING BLOCK
James B. Simmonds, Honey Brook, Pa. (P.O. Box 282, Oxford, Pa. 19363)
Filed Dec. 11, 1967, Ser. No. 689,711
Int. Cl. B61b *7/10*
U.S. Cl. 254—134.3 8 Claims



Two adaptor plates are attached to each side of a conventional yoke plate that is suspended by insulators from one arm of a wire supporting tower. Suspended from the middle of the adaptor plates is an assembly comprising a pivoting "coat hanger" member which releasably supports at each end a sheave subassembly. A removable wire shaft passes through horizontally mounted tubular members in each subassembly which support the respective sheaves therein. There is also a central drum mounted on said inner shaft between the subassemblies. Each subassembly also includes an inner rotatable mounting plate which is mounted about the respective tubular assembly and which is rotated to an upright position and bolted when the wires have been drawn through the assembly and rest on the sheaves. Straps of a predetermined length are pinned between each subassembly and the adaptor plates. Eventually the central drum, the coat hanger and the means by which the latter is suspended from the adaptor plates are removed. A corresponding method is also explained.

3,501,130
LOCKING TOGGLE ARRANGEMENT FOR A CAPSTAN
Adolf Utermöhle, Bremerhaven, Germany, assignor to Aktiengesellschaft Weser, Bremen, Germany
Filed Mar. 14, 1968, Ser. No. 713,078
Claims priority, application Germany, Mar. 17, 1967, A 55,185
Int. Cl. B66d *1/30;* F16d *53/00*
U.S. Cl. 254—150 9 Claims

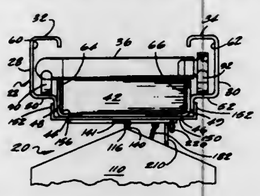


A capstan which is to be turned under load in one direction about its axis includes an annulus of the teeth coaxial with the axis of rotation of the capstan. A locking pawl is provided in form of a toggle lever pivotally mounted in such a manner that in a first position of the two lever sections with reference to one another, in which they are slightly out of alignment with each other, a free end of the toggle lever engages one of the gear teeth and prevents turning the capstan end in the one direction, the reaction force provided by the load acting on the free end of the toggle lever tending to move the same from the first position to a collapsed position. A releasable blocking arrangement engages one portion of the toggle lever and is movable between a blocking position in which it prevents the collapse of the toggle lever and a releasing position in which it permits such collapse.

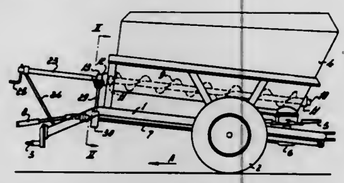
3,501,131
BLOOD SAMPLE HANDLING APPARATUS
Donald Ralph Grantham, Miami Springs, Fla., assignor to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed July 23, 1968, Ser. No. 746,788
Int. Cl. B01f *11/00*
U.S. Cl. 259—55 6 Claims

An elongate liquid sample container handling apparatus in the form of a tray with oppositely disposed tracks along the elongate dimension thereof for receiving a plurality of containers in side-by-side relationship. Flexible retaining tongues are provided at one end of the tray to prevent the containers from moving out of the tray except upon pressure of a container being manually pulled outward

from said tray. An automatic rocking apparatus is adapted to receive said tray and rock the same along the lengthwise centerline thereof to permit convenient removal of said containers from the tray while the same is in motion.

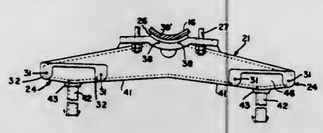


3,501,132
SPREADING IMPLEMENTS
Cornelis van der Lely, Bruschenrain 7, Zug, Switzerland, and Hendricus Jacobus Cornelis Nieuwenhoven, Baar, Switzerland
Filed May 18, 1967, Ser. No. 639,428
Claims priority, application Netherlands, June 3, 1966, 6607702; Dec. 28, 1966, 6618232
Int. Cl. B01s *7/08, 11/00;* **F16h** *35/08*
U.S. Cl. 259—101 **27 Claims**



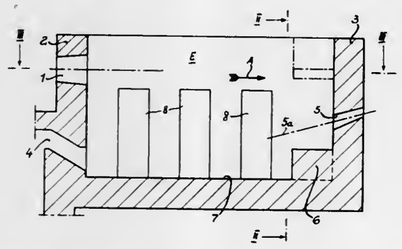
A spreading implement includes a hopper with a turnable agitator in the hopper which is driven by a rotary shaft. Driving mechanism including eccentric devices connects the rotary shaft to the agitator through a plurality of interconnecting rods. By varying the relative positions of one or more of the interconnecting rods, the speed and extent of rotation of the agitator responsive to the revolutions of the rotary shaft are adjustable.

3,501,133
SPARGERS WITH AUXILIARY TUBES FOR DEPENDABLE DRAIN AND WIDE RANGE AIR FLOW
Douglas E. Dreier, North Aurora, and James Donald Walker, Aurora, Ill., assignors to Chicago Bridge & Iron Company, a corporation of Illinois
Continuation-in-part of applications Ser. No. 581,632, Sept. 23, 1966, and Ser. No. 699,524, Jan. 22, 1968. This application Apr. 23, 1969, Ser. No. 818,616
Int. Cl. B01d *47/02*
U.S. Cl. 261—124 **17 Claims**



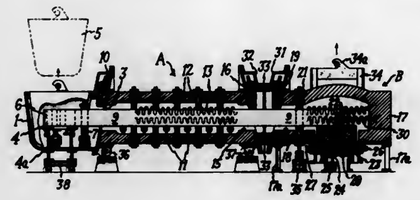
Efficient aeration and stirring are achieved by concentrated air-lift columns each developed by discharging air through a cluster of orifices deep in a body of liquid. In each cluster, four orifices are arranged to form an effective air-lift pattern. Great variation of air volume is made possible by a downwardly extending secondary orifice-and-drain tube. At minimum volumes of air the tube is almost water-sealed so that nearly all air is discharged through the pattern-forming orifices. With greater volumes of air most of the additional air discharges through this auxiliary tube, with relatively little increase in back pressure. All air from this tube rises into the pattern and supplements the air-lift force. Air supply passages leading to the pattern orifices are reliably drained even at low pressure because when both pattern orifices and secondary tubes are below the air supply passages, there is no water to settle. In double spargers, adjacent supply passages slope downwardly toward the drain tubes. After shutdowns in which liquid fills the air supply pipes, it is discharged almost entirely through drain tubes, including a larger and longer one provided for this purpose. Plastic members may provide single or double spargers.

3,501,134
SOAKING PIT AND BURNER ARRANGEMENT
Rüdiger Knaak, Neuss, Günter Hepp, Oberhausen, Lothar Hartwig, Essen, and Hans Christoph Pohl, Norf, near Neuss, Germany, assignors to Koppers-Wistra-Ofenbau G.m.b.H., Dusseldorf-Heerdt, Germany
Filed May 28, 1968, Ser. No. 732,701
Claims priority, application Germany, June 15, 1967, K 62,564
Int. Cl. F23c *5/00*
U.S. Cl. 263—40 **14 Claims**



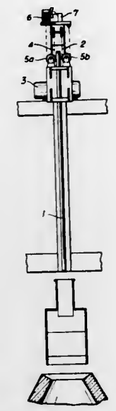
A soaking pit wherein the primary burner or burners are installed in a first end wall and discharge hot gases at a level above the charge toward a second end wall which deflects hot gases toward one or more evacuating openings provided in the first end wall at a level below the primary burners. The second end wall supports one or more secondary burners which are started when the primary burners operate at less than maximum capacity and discharge hot gases toward the evacuating opening.

3,501,135
FURNACE WITH SEPARABLE SECTIONS FOR HEATING SILICON STEEL STRIP
Herbert B. Forslund, Williamstown, Mass., assignor to General Electric Company, a corporation of New York
Original application Jan. 7, 1965, Ser. No. 424,081, now Patent No. 3,409,480. Divided and this application May 13, 1968, Ser. No. 752,085
Int. Cl. C21d *9/56, 9/68;* **C22c** *39/44*
U.S. Cl. 266—3 **12 Claims**



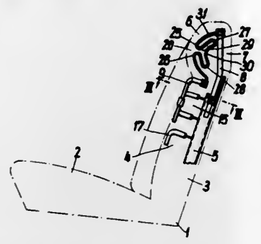
Furnace apparatus for heating silicon steel strip comprises a first furnace section for heating the steel strip in strand form as it moves through this section, and an adjoining second furnace section for heating the strand in coiled form at a higher temperature, the furnace sections being separable.

3,501,136
DEVICE FOR LIFTING AND LOWERING OXYGEN LANCES FOR TOP-BLOWING CONVERTERS
Otto Schweng, Linz-Dornach, and Karl Steinmair, Schiedlberg, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Oct. 16, 1967, Ser. No. 675,513
Claims priority, application Austria, Nov. 4, 1966, A 10,214/66
Int. Cl. C21c *7/06;* **B66d** *1/54;* **B66b** *5/02*
U.S. Cl. 266—34 **1 Claim**



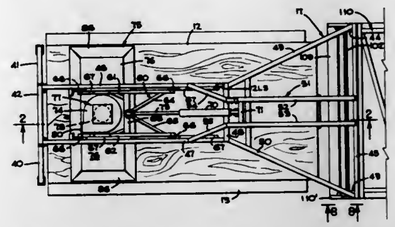
The invention comprises a means for safeguarding against cable breaks including a service cable carrying the load during normal operation and a spring-mounted auxiliary cable which takes over the load when said service cable breaks, both cables being wound on a common drum. A limit switch is arranged so as to be actuated by said spring when the load is transferred to said auxiliary cable, whereby movement of the lance is arrested.

3,501,137
UPHOLSTERING SPRING, ESPECIALLY FOR THE BACK OF MOTOR VEHICLE SEATS
Herbert A. Burgert, Porza, Ticino, Switzerland, assignor to Unitechnik AG., Chur, Switzerland
Filed Oct. 13, 1967, Ser. No. 675,106
Claims priority, application Germany, Oct. 22, 1966, U 13,208
Int. Cl. F16f *3/02;* **A47c** *7/36*
U.S. Cl. 267—102 **15 Claims**



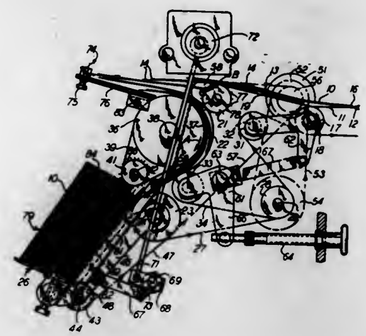
A spring system for a motor vehicle seat having a back supporting portion and a head supporting portion. Primarily spring means in the back supporting portion are connected to spring means in the head supporting portion so that both spring means form a spring unit with each other.

3,501,138
SHEET DISPENSER
Arthur L. McGee, San Jose, and Donald W. Chamberlin, Los Gatos, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,472
Int. Cl. B65h *3/08, 5/00*
U.S. Cl. 271—11 **5 Claims**



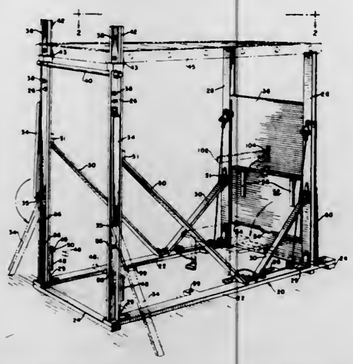
Sheets of plywood veneer are dispensed automatically as required. A suction housing with a lower perforated plate and an encircling flexible skirt lifts one end of the top sheet of plywood veneer from a stack and feeds the sheet between guide plates to a pair of pinch rollers which strip the sheet from the housing. Slanted driven rolls carry the sheet from the pinch rollers, along an edge guide, to a movable stop, which, when down, arrests the sheet. A control, responsive to movement of a previous sheet, raises the stop, and the driven rollers move the sheet beyond the stop. As the trailing edge of the sheet passes the stop, the stop is again lowered and a new sheet is picked off the top of the stack.

3,501,139
METHOD AND MEANS FOR STACKING SIGNATURES
Anton R. Stobb, R.D. 1, Pittstown, N.J. 08867
Filed Nov. 16, 1967, Ser. No. 683,546
Int. Cl. B65h *29/68, 31/34*
U.S. Cl. 271—68 **5 Claims**



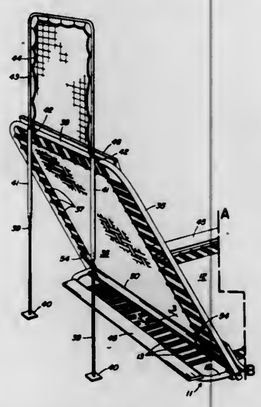
A method and means for stacking signatures through the use of means and a method for conveying signatures in a stream, and then having the signatures reversed in a stream, and then having the signatures reversed in their end-to-end relation so that the original trailing edge becomes the leading edge. The reversed stream of signatures is conveyed to a receiver where the signatures are stacked in alignment, and the receiver is jogged for final alignment of the signatures in the stack.

3,501,140
COMBINED COLLAPSIBLE PHYSICAL FITNESS APPARATUS INCLUDING A HORIZONTAL BAR AND OTHER EXERCISING DEVICES
George J. Eichorn, 162 Crystal Ave., Buffalo, N.Y. 14240
Filed Jan. 2, 1968, Ser. No. 694,931
Int. Cl. A63b *23/06, 21/02*
U.S. Cl. 272—58 8 Claims



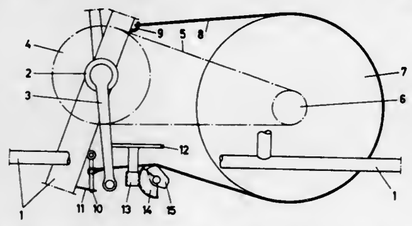
An exercising apparatus for home or gymnasium use or the like in performing body-building exercises; featuring in combination form, a compactly collapsible support structure and certain appurtenances thereto, providing an improved versatility with respect to use of the apparatus and transport and storage thereof. The included exercising apparatuses are a "horizontal ladder," handlebar members for usage in connection with push-up exercises, a reclined plate for use with "sit-up" exercises, cable members and springs attached thereto for "weight-pulling" exercises and a treadmill.

3,501,141
TRAMPOLINE AND BACKSTOPS
George P. Nissen and Lawrence H. Conover, Cedar Rapids, Iowa, assignors to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Continuation of application Ser. No. 508,881, Oct. 1, 1965, which is a division of application Ser. No. 381,872, July 10, 1964, now Patent No. 3,256,021, June 14, 1966, which in turn is a continuation of application Ser. No. 210,861, July 18, 1962. This application Sept. 5, 1968, Ser. No. 781,647
Int. Cl. A63b *5/00*
U.S. Cl. 272—65 4 Claims



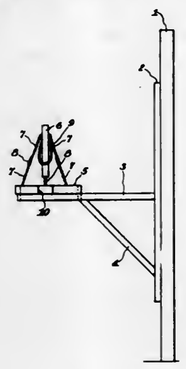
A single trampoline is fitted with an inclined backstop adjacent each end of its bed. Each backstop comprises an inverted U-shaped frame within which is disposed a backstop panel resiliently attached to and stretched between the margins of the backstop frame. Each backstop panel is positioned and sufficiently strong and resilient to rebound a performer back onto the trampoline bed as well as to permit him to run thereup. Additionally a piece of material is provided for closing the gap between the lower ends of the backstop panels and the trampoline bed formed when the latter is deflected downwardly.

3,501,142
BICYCLE EXERCISER WITH CYCLICALLY VARYING RESISTANCE
Bengt Ingvar Johansson, Varberg, Sweden, assignor to Monark-Crescent Aktiebolag, Varberg, Sweden, a corporation of Sweden
Filed Apr. 1, 1968, Ser. No. 717,594
Claims priority, application Sweden, Dec. 4, 1967, 16,611/67
Int. Cl. A63b *23/04, 69/16, 21/00*
U.S. Cl. 272—73 2 Claims



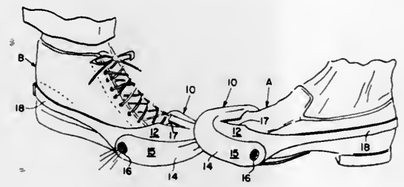
A bicycle exerciser having a stand and pivoted in said stand a brake wheel and a pedal crank with pedals, said pedal crank being in driving engagement with said brake wheel to rotate it when said exerciser is pedaled by the user. In engagement with or adapted to be brought into engagement with said brake wheel is a brake band which may consist of a strip or friction material. An automatically cyclically varying braking force is applied to the brake wheel by way of a cam wheel being brought into and out of engagement with the brake band.

3,501,143
SPRING TYPE JUDO EXERCISING DEVICE
Harold Raymond Guerin, P.O. Box 49, Plaquemine, La. 70764
Filed June 10, 1968, Ser. No. 735,711
Int. Cl. A63b *21/02*
U.S. Cl. 272—83 4 Claims



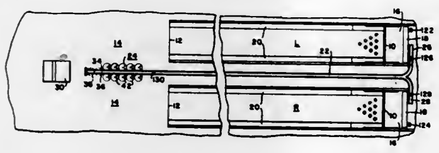
Apparatus adapted for use by an individual practising the art and sport of judo which permits the individual, without using the services of a partner as previously required, to practice each of the eight different positions in breaking an opponent's balance, as must be done prior to a successful throw, as well as permitting the individual to practice the entire movements of different judo throws. The apparatus comprises a main upright supporting member with an extended arm supporting a board on its edge that is spring mounted so as to resist movement from various directions.

3,501,144
TOE TOY
Bernd S. Schmidt, Greensboro, N.C. (Box 256, Norfolk State College, Norfolk, Va. 23504)
Filed Feb. 24, 1967, Ser. No. 618,481
Int. Cl. A63b *67/00*
U.S. Cl. 273—1 6 Claims



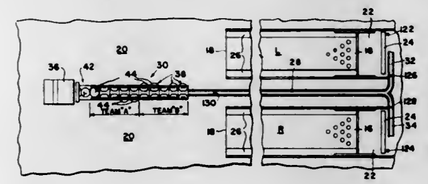
This invention is directed to an amusement device which is adapted to be attached to a shoe, and more specifically comprises a pressure-responsive signalling device releasably attached to the toe of a shoe. The signalling member is secured to the shoe by a pocket shaped member in which the toe of the shoe is inserted and which has straps which pass around the heel of the shoe and are fastened together. The pressure-sensitive portion is disposed laterally outward or in front of the shoe, so that the pressure-sensitive portion may be stepped upon, without actually engaging the toe or foot of the participant. The amusement device is intended for use in a game wherein both contestants are provided with the toy device on their feet, and attempt to produce a sound or signal from the other participant's device by stepping on his toe.

3,501,145
APPARATUS FOR SELECTIVELY RETURNING BOWLING BALLS TO STORAGE POCKETS
Robert L. Miller, Olmsted Falls, Ernest C. Webb, Bay Village, Everett K. Mentzer, Struthers, and Stephen C. Peplin, North Olmsted, Ohio, assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed July 16, 1963, Ser. No. 295,433
Int. Cl. A63d *5/02*
U.S. Cl. 273—49 10 Claims



9. In combination, a bowling ball return track, at least one storage pocket at the end of said track for each ball used in a game, means for determining the completion of a frame by each bowler in a bowling game, a ball storage and pickup area at said end of the track to which balls returned on the track may be directed before completion of a frame, means responsive to said determining means for directing a ball returned on said track to said storage and pickup area when a frame has not been completed by a bowler using that ball, and means responsive to said determining means for depositing and storing a ball returned on said track in its associated storage pocket when a frame has been completed by the bowler using that ball.

3,501,146
BALL STORAGE POCKETS AND MEANS FOR SELECTIVELY TILTING SAME TOWARD ADJACENT ALLEYS
Vernon C. Becks, Westlake, and Stephen C. Peplin, North Olmsted, Ohio, assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,958
Int. Cl. A63d *5/02*
U.S. Cl. 273—49 21 Claims

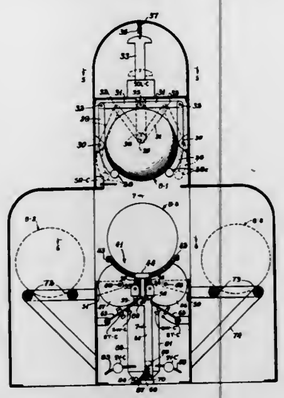


7. In combination with a bowling alley, ball return track means; a plurality of ball supporting means at the forward end of said track means, one of said ball supporting means for each ball used in a bowling game, each of said ball supporting means being mounted for movement toward said bowling alley; transfer means on said track means for directing a bowling ball from said track means and onto one of said ball supporting means along a substantially vertical path; means for causing the movement of said ball supporting means toward said bowling alley; and selectively operable means for energizing said last recited means.

3,501,147
BALL RETURN APPARATUS WITH SELECTIVE DIRECTION OF BALLS TO ACCESSIBLE PICK-UP AREAS
Donald F. Uecker, Spring Lake, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Apr. 10, 1964, Ser. No. 358,759
Int. Cl. A63d *5/02*
U.S. Cl. 273—49 23 Claims

3. A bowling ball handling apparatus associated with a pair of adjacent bowling lanes each having a pit, comprising a bowling ball storage means located adjacent the bowler's end of a pair of adjacent bowling lanes including a plurality of separate bowling ball storage stations from which bowling balls may be selected for bowling on either lane, ball return means including a common ball return track for delivering balls from the pits of adjacent lanes to the storage means, a ball receiving pocket at each of said separate storage stations adapted to receive a ball and hold the ball in the storage station, means for directing balls from said return means to said separate storage stations, means for selecting a ball storage station for release of a ball therefrom, means for ejecting a ball from said ball receiving pocket, ball delivery path means for each of said adjacent lanes adapted to receive a ball ejected from said ball storage stations for delivery to a ball pickup station more accessible than said ball storage stations, and means associated with said

ball return means for delaying return of one of two coincident or immediately subsequent balls sufficient to permit directing of the other ball to its separate storage station without interference from said one ball.

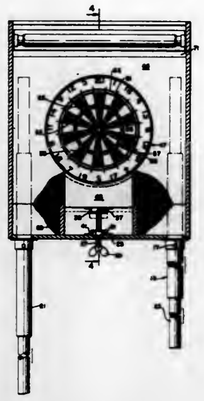


3,501,148
TENNIS RACKET HANDLE
Maynard H. Cheris, Chicago, Aloise A. Bigos, Berwyn, and Dana W. Mox, Glenview, Ill., assignors, by mesne assignments, to Charger Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 708,876
Int. Cl. A63b *49/08*
U.S. Cl. 273—75 **9 Claims**

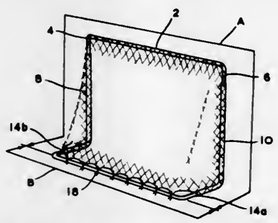
A handle for a steel frame tennis racket including elongated end portions, the handle including a pair of like elongated pallet pieces having projections extending inwardly from each of such pallet pieces engaging in opening means in a brace secured between the frame end portions for retaining the pallet pieces in predetermined position on the frame end portions. The pallet pieces are secured to one another by means including an end cap having a recess therein engaging over the end portions of the pallet pieces and a bolt remote from the end cap. A flexible strip of material, as, for example, leather is then spirally wound over the assembled pallet pieces to complete the handle assembly.

3,501,149
DART GAME ASSEMBLY
Richard J. Meyer, 4731 Massachusetts Ave. NW., Washington, D.C. 20016
Filed Nov. 13, 1967, Ser. No. 682,058
Int. Cl. A63b *67/00*
U.S. Cl. 273—102 **3 Claims**

A dart game in the form of a cabinet comprising a circular target board, mounted so it can be rotated from time to time to present a fresh surface. A friction element bearing against the rim of the circular target by which the rotatable circular target piece can be fixed at any desired angle of rotation. Darts, which when thrown would not land and stick to the target board as intended may be caught by a horizontally swinging protective door suitably positioned in the cabinet.



3,501,150
COLLAPSIBLE GOAL STRUCTURE WITH MESH NET
Arnold Frischman, 43 Ridgevale Drive, Toronto, Ontario, Canada
Filed Oct. 18, 1967, Ser. No. 676,307
Int. Cl. A63b *71/00*
U.S. Cl. 273—127 **7 Claims**



A collapsible hockey goal having tubular members cooperable to form a goal frame, and a net. Much of the net periphery is defined by closed meshes threaded onto one of the tubular members, the net thus being telescoped onto such member. To assemble the goal, the tubular members are assembled to form the frame; the telescoped part of the net periphery is stretched out over the frame as far as it will go, and the remainder of the net periphery is tied to the frame.

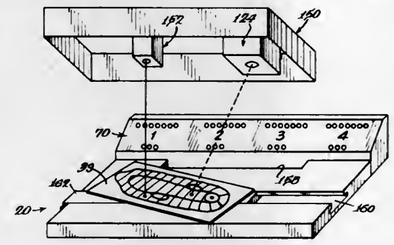
3,501,151
BOARD GAME APPARATUS WITH ALIGNABLE TRAY AND OBJECT DISCHARGE MEANS
Northrop H. Ketchum, 23071 Mulholland Drive, Woodland Hills, Calif. 91364
Filed Nov. 17, 1967, Ser. No. 683,898
Int. Cl. A63f *3/00*
U.S. Cl. 273—130 **9 Claims**



A game apparatus including a housing defining two adjacent playing areas. Mounted within each playing area are two horizontally disposed plates, one below the other,

each including a plurality of openings, and receiving means translatable beneath said plates and including a plurality of chambers each of which may be individually selectively opened or closed. The lower plates are movable from first initial positions disaligning corresponding openings in said plates to second positions aligning said corresponding openings to permit objects to pass therethrough and into respectively aligned opened chambers. The receiving means are translatable between first positions permitting selective opening or closing of the chambers to second positions beneath respective plates to permit alignment of respective openings and chambers.

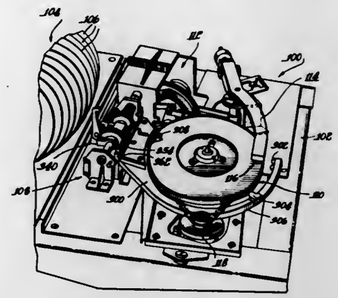
3,501,152
GOLF GAME
Robert M. Conklin and Ralph E. Witucki, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,856
Int. Cl. A63b *67/02*
U.S. Cl. 273—176 **13 Claims**



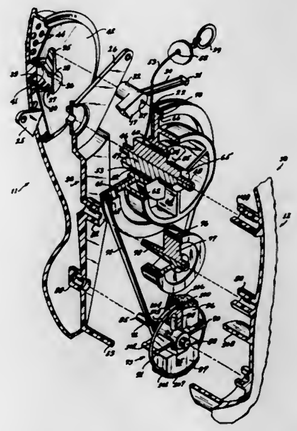
An indoor golf game including a scene projector, a screen for receiving scenes projected by the projector, a tee spaced from the screen from which a golfer may hit balls, data acquisition means for obtaining data relative to the probable flight trajectory of balls hit from the tee, a computer responsive to the data for computing the theoretical free flight trajectory of the ball, means for displaying the trajectory to the golfer, means for providing a map of the hole on a golf course divided into a plurality of discrete zones with each zone having a unique code number, means responsive to the computer for indicating on the map the zone in which a shot terminates and manually operable control means for the projector and being provided with unique indicia corresponding to the code numbers of the zones so that a golfer may use the control means for selecting a proper scene for projection on the screen in readiness for his next shot; and a method of playing a golf game using the above apparatus. In one form of the invention, spot projecting means are utilized as both the trajectory display means and the indicating means and move the spot of light on the screen and thus on any scene projected thereon to provide a visual simulation of a ball in flight and also project a spot of light on the map to indicate the point of termination of the ball flight.

3,501,153
CHANGER AND SELECTOR MECHANISM
Fred H. Osborne, Williamsville, Robert S. Tuttle, Eggertsville, and Michael J. Corbett, North Tonawanda, N.Y., assignors to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Mar. 1, 1967, Ser. No. 619,687
Int. Cl. G11b *17/08, 17/22*
U.S. Cl. 274—10 **31 Claims**

An automatic record changer assembly having a record storage magazine, a turntable and pickup arm, and a transfer mechanism all mounted on a common base. The record storage magazine is of a toroidal shape, and is rotatable about a vertical axis. The record storage magazine has a central conical surface, while the record transfer mechanism has a record clamp arm engageable with a record to roll it up the conical surface into engagement with record engaging members on the transfer mechanism. The transfer mechanism pivots away from the record storage magazine toward the turntable, and is provided with a differential gear set which flips the record transfer mechanism, and hence the record, with one face or the other of the record up on the turntable. The axis of the turntable likewise is vertical, and is shiftable laterally of the record storage magazine to disengage the record from the record engaging member of the record transfer mechanism. Operation is in the reverse upon termination of playing of a record to return the record to the storage magazine.



3,501,154
MULTIPLE SEQUENCE SOUND REPRODUCER
James E. Marshall, Westminster, Jack L. Barcus, Palos Verdes Peninsula, Lester T. Stormon, Manhattan Beach, and John W. Ryan, Los Angeles, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Jan. 25, 1968, Ser. No. 700,563
Int. Cl. G11b *17/06, 3/68*
U.S. Cl. 274—14 **4 Claims**



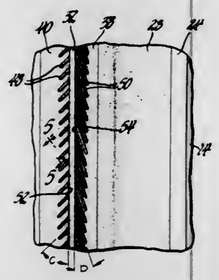
A sound recording having a plurality of spiral sound tracks, each track having a separate starting point and having a discrete sound sequence, and a portion of the tracks on which a sound pickup can be positioned to make a selection of one of the tracks at a part of the selected

track to provide sound reproduction of the entire selected track, said portion of each track normally having no recording thereon, but possibly having recordings thereon which would be compatible with the discrete sound sequences.

A low cost, light weight, easy to assemble and install centrifugal governor having two diametrical weights supported on pins extending from a rotor and having a spring means extending around the rotor to bias the weights radially inwardly, the spring means being supported axially by the weights and being supported radially by the weights and diametrical spring contacting members extending from the rotor; and the spring contacting members, the weight supporting members and the rotor being formed of one piece; the spring being formed of a single wire having overlapping free ends.

A sound reproducing device for use in a figure toy, the device having a movably mounted recording of the type described above, and in which there is a manually controlled means for energizing a means to drive the recording, and having means responsive to the operation of the manually controlled means to position the tone arm so as to make an at random selection of one of the tracks, and which in the course of repeated operations of the manually controlled means the tracks will be selected so that all of the sound sequences may be reproduced.

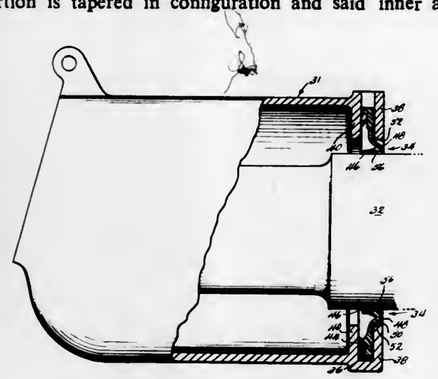
3,501,155
BI-DIRECTIONAL SEAL
Robert L. Dega, Mount Clemens, and Louis H. Weinand, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1967, Ser. No. 639,972
Int. Cl. F16j *15/32, 15/54*
U.S. Cl. 277—1 **6 Claims**



A fluid seal for sealing the space between two relatively rotating members characterized by having ribs transversely inclined to the axis of rotation formed on conical walls adjacent a static seal lip. The ribs are adapted to develop a positive pumping force opposing fluid leakage regardless of the direction of relative rotation.

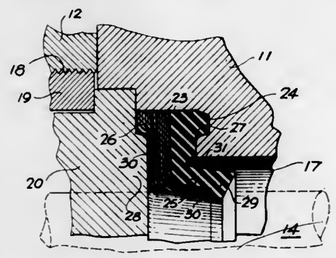
3,501,156
JOURNAL BOX SEAL
David A. Rose, Littleton, Colo., assignor to Superior Seal Devices, Littleton, Colo., a company of Colorado
Continuation of application Ser. No. 510,257, Nov. 29, 1965. This application Sept. 30, 1968, Ser. No. 766,375
Int. Cl. F16j *15/32, 15/54*
U.S. Cl. 277—130 **3 Claims**

A ring seal for use in a railway journal box dust guard well, said ring seal having a body portion and a lip portion disposed radially inwardly of said body portion, said lip portion having an inner and outer surface and a lubricant-receiving recess portion formed on said inner surface adjacent the inner periphery of said lip portion, at least a part of said inner surface being constructed for disposition in sealing engagement with the axle whereby said recess portion is maintained in communication with the interior of the journal box when said ring seal is installed in the journal box and around the axle. The body portion of the ring seal is constructed from a flexible material and has annular fin means formed on the first side thereof and annular bead means formed on the second side thereof, said bead means projecting outwardly an amount substantially less than said fin means. The lower portion of the annular fin means has a larger cross sectional area than the upper portion thereof. The lip portion is tapered in configuration and said inner and



outer surfaces are formed convergently in a direction proceeding radially inwardly whereby, in the unflexed position of said lip portion, an extension of said inner surface forms an included angle of approximately fifteen degrees with a plane disposed substantially perpendicular to the longitudinal axis of the ring seal and an extension of said outer surface forms an included angle of approximately ten degrees with a plane disposed substantially perpendicular to the longitudinal axis of said ring seal. The lip portion and the body portion are interconnected by a web portion. The wheel side of the body portion intersects the adjacent surface of the web portion at an angle substantially larger than ninety degrees.

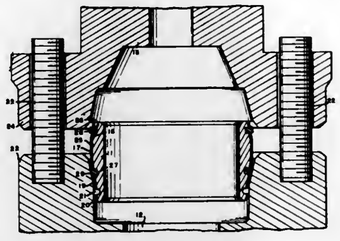
3,501,157
PISTON ROD SEAL FOR HYDRAULIC PISTON AND CYLINDER ASSEMBLIES
Kingsley A. Doutt, 115 Maple St., Alpena, Mich. 49707
Filed May 18, 1967, Ser. No. 643,792
Int. Cl. B65d *53/00;* **F16j** *9/00, 15/00*
U.S. Cl. 277—168 **1 Claim**



A piston rod seal for a hydraulic piston and cylinder assembly having a piston rod bushing arranged to receive said seal, said piston rod seal comprising an annular one-piece member integrally formed of resilient material having a thick lip portion extending along the piston rod and

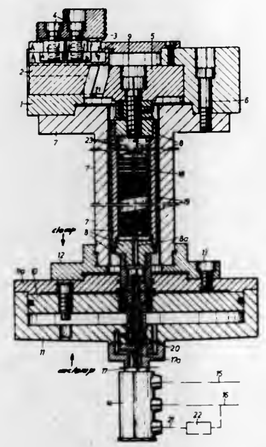
a configuration such that the sealing relation of the lip portion is unaffected by distortion of the piston rod seal resulting from high fluid pressures directed thereagainst.

3,501,158
TUBULAR SEAL
Cassius L. Tillman III, % Precision Engineering Inc., P.O. Box 808, Harvey, La. 70058
Filed July 3, 1967, Ser. No. 650,691
Int. Cl. F16j *9/00;* **F16r** *41/00*
U.S. Cl. 277—171 **6 Claims**



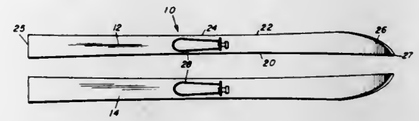
A ring seal for the joint between two tubular members has a convex surface adapted to be disposed in adjacent interior recesses of the joint between the tubular members. Portions of the seal have diameters different from that of the adjacent parts of the recesses to require stressing within the elastic limit of the seal to seat the seal in the recesses. A surface coating may be applied to the seal of a relatively soft material so as to be redistributed under pressures between the seal and the recesses in order to provide a more effective sealing.

3,501,159
DEVICE FOR ACTUATING CLAMPING TOOLS, ESPECIALLY JAW CHUCKS ON MACHINE TOOLS
Hans Scharfen, Buderich, near Dusseldorf, Germany, assignor to Paul Forkardt Kommanditgesellschaft, Dusseldorf, Germany
Filed Apr. 22, 1968, Ser. No. 722,947
Int. Cl. B23b *31/30, 31/10*
U.S. Cl. 279—4 **5 Claims**



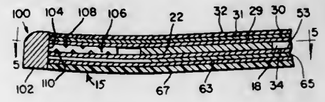
Jaw chuck for machine tools having a cam connected to the jaws to move them in opening and closing directions and a fluid pressure operated actuator for the cam, and an impact device operable to deliver an impact to the cam, at least upon closing of the jaws, when a certain pressure has built up in the actuator thereby to assist the actuator in overcoming friction encountered by the cam and jaws.

3,501,160
OFFSET SKI TIP
Robert B. Lange, P.O. Box 741, Dubuque, Iowa 52001
Filed Nov. 3, 1967, Ser. No. 680,556
Int. Cl. A63c *5/04, 5/00*
U.S. Cl. 280—11.13 **3 Claims**



A pair of skis wherein each ski has its forward, upturned tip offset inwardly from the longitudinal axis of the ski.

3,501,161
HEEL PROTECTOR FOR SNOW SKIS
Hartvig E. Holmberg and Harry E. Holmberg, St. Paul, Minn., assignors, by mesne assignments, to Beatrice Foods Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 18, 1968, Ser. No. 713,863
Int. Cl. A63c *11/00, 5/00*
U.S. Cl. 280—11.13 **13 Claims**

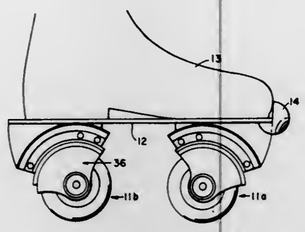


A heel protector for a ski has parallel fingers that are press fitted into slots provided in the heel plate of the ski, thereby allowing the protector to be detached and readily replaced. In a second embodiment, the fingers on the protector are inserted into slots in the heel plate having diverging portions so that the fingers are forcibly spread apart, thereby fixedly retaining the protector in place and effectively preventing removal.

3,501,162
ROLLER SKATE CONSTRUCTION
Dean W. Toone, 664 Edna Way, San Mateo, Calif. 94402
Filed Feb. 7, 1968, Ser. No. 703,666
Int. Cl. A63c *17/04, 17/14*
U.S. Cl. 280—11.23 **9 Claims**

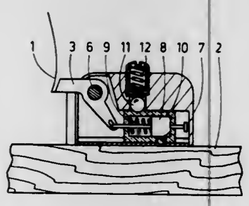
A two-wheel skate has means for attaching each wheel to the shoe plate to provide for adjustability in the position of the wheel relative to the plate, for turning of the wheel and for variation in camber as the wheel turns. Adjustability of position varies the longitudinal and vertical position of the wheel axle relative to the shoe plate to accommodate for variations in weight of the skater and the type of skating performed. Turning of the wheel is confined about an upward-forward directed wheel turning axis, rather than a vertical axis. The weight of the skater is transmitted to the wheel through a pair of curved

plates, the surfaces of which are in direct contact with each other, and the wheel axle. As the wheel is rotated about the wheel turning axis the axle of the wheel tips



relatively to the horizontal, thus varying the degree of camber of the wheel which results in the turning or guidance action of the skate.

3,501,163
SAFETY BOOT BINDING FOR SKIS
Georges P. J. Salomon, 34 de Loverchy Ave., Annecy, Haute-Savole, France
Filed Feb. 14, 1968, Ser. No. 705,558
Int. Cl. A63c *9/082, 9/24*
U.S. Cl. 280—11.35 **4 Claims**



The present invention concerns a safety boot binding for skis in which a boot retaining element is capable of a certain elastic play before release and characterized by the fact that an interlocking means is disposed between the safety locking mechanism and the element allowing elastic movement of the boot retaining member, whereby said element will remain blocked in its limit position reached at the time of release of the safety locking mechanism and will not come back to its initial position of its elastic movement until the safety locking mechanism is re-cocked.

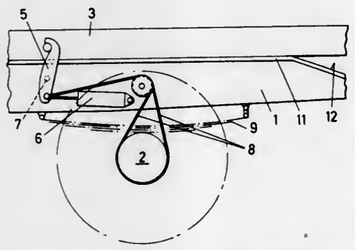
3,501,164
GROCERY CARTS
Gary J. Peterson, 923 E. El Camino, Space 20, Sunnyvale, Calif. 94087
Filed Dec. 11, 1967, Ser. No. 689,643
Int. Cl. B62b *3/00, 5/04*
U.S. Cl. 280—33.99 **6 Claims**

A brake mechanism for grocery carts is provided to prevent runaways where the grocery cart is used on an inclined surface such as a grocery store parking lot, and for permitting effective braking action while the grocery cart is being used within the store premises. Locking mechanisms or brake mechanisms for grocery carts should provide for manipulation of the brake mechanism by a shopper during the act of pushing the grocery cart, and should permit actuation by the checker when the grocery cart is presented at the checkout counter. Additionally, the brake mechanism functions when a multiplicity of the grocery carts are telescoped in train-like fashion as when



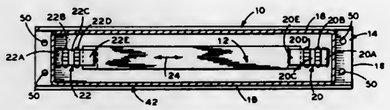
the carts are collected on the parking lot and returned for use to the store premises.

3,501,165
CONVERTIBLE TRANSPORT VEHICLE
Ola Nordby, Abbedlengvelen 19, Oslo 2, Norway
Filed Dec. 8, 1967, Ser. No. 689,058
Int. Cl. B62d *21/14, 33/08, 61/12*
U.S. Cl. 280—43.23 **2 Claims**



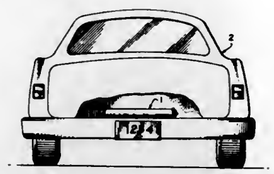
A removable loading platform with support legs is detachably secured to the chassis frame of a vehicle by means of clamps locking the platform to the frame. A hydraulic mechanism compresses the springs of the vehicle to permit the platform to rest on the support legs and concurrently releases the clamps from locking position and to release the platform.

3,501,166
AUTOMOBILE STABILIZER
Charles George, Great Neck Estates, N.Y., assignor to Lee Myles Corp., Maspeth, N.Y., a corporation of New York
Filed Apr. 10, 1968, Ser. No. 720,241
Int. Cl. B60r *27/00*
U.S. Cl. 280—150 **4 Claims**



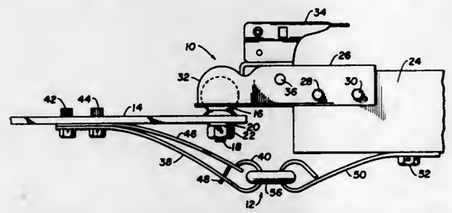
An automobile stabilizer comprising an elongated support adapted to be connected to the trunk floor and upon which a weight is pivotally mounted by means which include an intermediate arm. Springs extend outwardly from the respective ends of the weight and bear against the arms to produce opposed forces on the weight to maintain the weight in a central position.

3,501,167
VEHICLE STABILIZER
Stanley R. Palowsky, Monroe, La., assignor to Gyro-Bar, Inc., North Hollywood, Calif., a corporation of California
Filed Aug. 27, 1968, Ser. No. 755,708
Int. Cl. B60r *27/00;* **B62d** *63/00*
U.S. Cl. 280—150 **6 Claims**



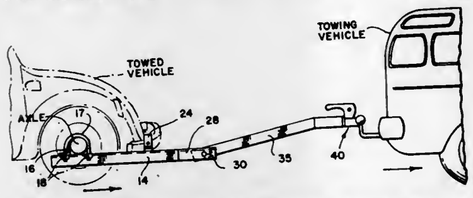
A vehicle stabilizer having an inertia actuated mass which applies a counteracting force in the opposite direction to not only sudden lateral movements of the vehicle but also front-to-rear pitching movements of the vehicle.

3,501,168
TRAILER SAFETY HITCH
Hampton Heffington, 2808 Blanton St., Dallas, Tex. 75227
Filed Sept. 20, 1968, Ser. No. 761,207
Int. Cl. B60d *1/16*
U.S. Cl. 280—457 **10 Claims**



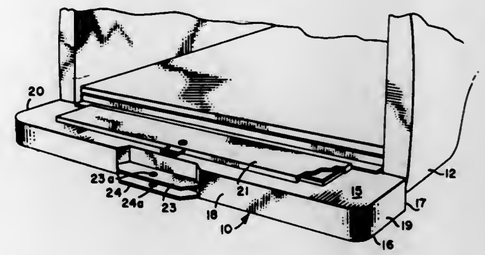
A safety hitch transmits pulling forces between a towing vehicle and a trailer should the primary coupling fail for any reason. A hook-shaped member attached to the towing vehicle section of the primary coupling and an eye-shaped member attaches to the trailer towing bar. These two members are interconnected by a coupling ring which is retained in place in the hook member by means of a spring latch.

3,501,169
AUTOMOTIVE TOW-BAR
Thomas O. Nutt, Jr., 3536 Queen Anne Drive, Fairfax, Va. 22030
Filed Sept. 13, 1968, Ser. No. 759,568
Int. Cl. B60d *1/14;* **B60g** *1/16*
U.S. Cl. 280—491 **9 Claims**



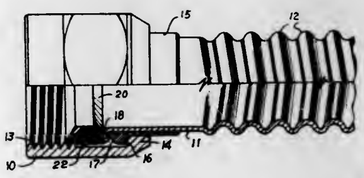
A tow-bar comprising a bed portion having a set of inverted U-shaped clamps for engaging the front axle of a towed vehicle and a set of inverted U-shaped channels for engaging the rods of the towed vehicle connecting the front bumper to the vehicle. Vertically pivotable means connect the bed portion to the towing vehicle.

3,501,170
COMBINED HOLLOW BUMPER AND TRAILER HITCH FOR MOTOR VEHICLES
Bruno Da Valle, 85 Tully Road, San Jose, Calif. 95112
Filed Dec. 26, 1967, Ser. No. 693,357
Int. Cl. B60r *19/02*
U.S. Cl. 280—500 **1 Claim**



A hollow rear bumper, the wall structure of which is made of two pieces of sheet metal shaped and welded to provide a strong rigid bumper structure which may be used for a trailer hitch as well as a bumper. The hollow bumper is provided with an opening on the top thereof through which tools, etc. may be placed into it for storage, and a suitable cover is attached to the top to close said opening.

3,501,171
CONNECTOR ASSEMBLY FOR FLUID CONDUITS
Alfred Morton Baron, 3063 Patricia Ave., Los Angeles, Calif. 90064
Filed July 10, 1967, Ser. No. 652,237
Int. Cl. F16l *19/02, 55/20, 59/16*
U.S. Cl. 285—52 **5 Claims**

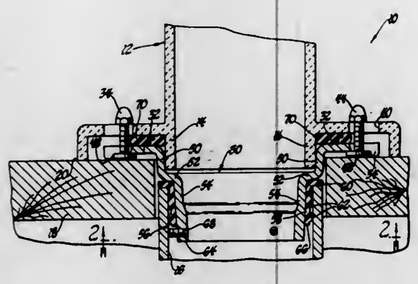


This application discloses a connector assembly for connecting a fluid conduit to a nipple or the like. The assembly comprises a union nut which has a collar at one end to fit around the conduit with the end of this conduit being reverse flanged. This reverse flange bears upon a reverse seat provided at the inside edge of the collar, the seat preferably being a part of an insulating sleeve which is interposed between the collar and the conduit. A sealing washer having a reverse slanted face is forced against the reverse flange by threading a nipple into the other end of the union nut, the material of the washer being displaced into a recess as the nipple is tightened.

3,501,172
CLOSET ASSEMBLY
Robert B. Pickard, 30227 Oakview, Livonia, Mich. 48154
Filed Nov. 12, 1968, Ser. No. 774,706
Int. Cl. F16l *55/00*
U.S. Cl. 285—59 **8 Claims**

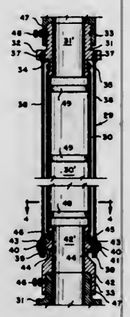
A closet assembly including a water closet having an exhaust flange, a soil pipe and a closet ring interconnecting the soil pipe and the exhaust flange of the water closet.

The closet ring has a radial flange for resting upon a surface surrouding the soil pipe. The closet ring includes a first annular portion extending from the radial flange and a second annular portion extending from the first annular portion with a smaller diameter than the first annular portion and connected thereto by a radially extending



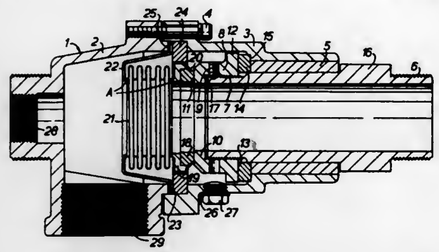
section. An annular seal is disposed about the second annular portion of the ring and includes a pair of ribs for sealing engagement with the interior of the soil pipe and a radially extending lip for disposition on the end of the soil pipe and in sealing engagement with the radially extending section of the closet ring.

3,501,173
TUBULAR CONNECTOR FOR LIGHTWEIGHT MARINE CONDUCTOR PIPE
William H. Petersen, Houston, Tex., and William H. Linder, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporaton of Delaware
Filed Apr. 10, 1968, Ser. No. 720,245
Int. Cl. F16l *35/00, 33/04*
U.S. Cl. 285—114 **2 Claims**



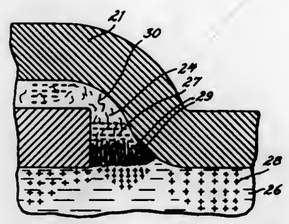
A marine conductor pipe constructed of a plurality of lightweight pipe sections releasably attachable to one another in an end-to-end manner. Each pipe section includes a conduit member constructed of lightweight material and defining a throughbore. Each end of the conduit is attached in a fluid-tight manner to relatively rigid coupling members defining throughbores axially aligned with each other and with the throughbore defined by the conduit member. Suitable reinforcing members are used to limit the maximum distance between the two coupling members to substantially the effective operative length of the conduit member. The reinforcing members extend lengthwise along the entire length of the conduit member and are attached to both of the coupling members.

3,501,174
ROTARY UNION
Gordon Richard Walker, Leamington Spa, England, assignor to Filton Limited, Leamington Spa, England
Filed Aug. 21, 1968, Ser. No. 754,202
Claims priority, application Great Britain, Aug. 23, 1967, 38,909/67
Int. Cl. F16l *27/00*
U.S. Cl. 285—279 **8 Claims**



A rotary fluid-conveying union comprising a casing of high-strength metal castings and a hollow shaft member journalled in a bearing in said casing, the casing and hollow shaft member having a rotary sliding contact seal interposed therebetween the elements of which have opposed smooth flat sealing faces transverse to the axis of rotation which run one on the other, one of the elements being a floating element and being urged against the other element which is rotatable, the rotatable element being secured to said shaft so as to rotate therewith and having a thrust face engaging a thrust bearing separate from said journal bearing.

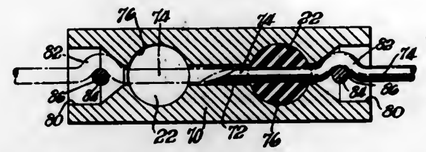
3,501,175
SEALED VESSELS
Robert Lee Roach, West Chester, Pa., assignor to West Chester Chemical Company, West Chester, Pa., a partnership
Application Sept. 24, 1957, Ser. No. 685,784, which is a division of application Ser. No. 115,099, June 6, 1961, now Patent No. 3,272,894, dated Sept. 13, 1966. Divided and this application Sept. 8, 1966, Ser. No. 577,954
Int. Cl. F16l *13/00*
U.S. Cl. 285—295 **15 Claims**



A vessel and a joint which is sealed against gas escaping therefrom by means of a cured cationic neoprene latex sealant composition of a specific type which adheres to and coats the interior wall of said vessel or joint and plugs their interstices, fissures or other structural defects.

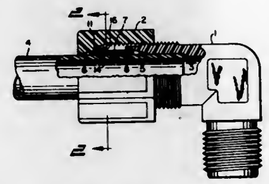
3,501,176
CONNECTOR ASSEMBLY
Richard A. Arms, Kennett Square, Pa., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 11, 1968, Ser. No. 720,712
Int. Cl. F16l *37/14*
U.S. Cl. 285—305 **5 Claims**

A connector assembly uses a continuous septum to effect a fluid seal. In one application, the conventional disc shaped septum in the injection port of a gas chromatograph is replaced by an elongated strip of septum material which is disposed transversely across the inlet of the injection port. A hypodermic needle or syringe may then be inserted through the elongated septum material and liquid or gas samples introduced therethrough. After



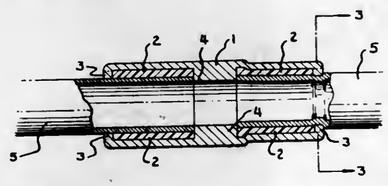
each or several insertions of the needle, the elongated septum may be repositioned along its axis so as to present a new untouched portion of septum material to the needle. In another application, continuous strip-like septums are positioned at either end of a cavity to permit the interconnection of capillary sized tubes.

3,501,177
TUBE COUPLING
Arthur W. Jacobs, 5994 Columbia Road, North Olmsted, Ohio
Filed Oct. 14, 1968, Ser. No. 767,404
Int. Cl. F16l *21/06*
U.S. Cl. 285—322 **14 Claims**



A tube coupling especially for flexible plastic tubing characterized in the provision of a unitary tube gripping and sealing ferrule having tubular and split ring end portions which are adapted to be radially contracted into tube sealing and gripping relation. The invention is further characterized in that the tube coupling body and nut members and the ferrule are molded of plastic material, the ferrule being made of a tough and horny plastic material which is harder than the flexible plastic tubing which is adapted to be gripped thereby.

3,501,178
TUBULAR COUPLING MEMBER
William Sewell Watts, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 3, 1967, Ser. No. 672,552
Int. Cl. F16c *21/02*
U.S. Cl. 285—369 **3 Claims**



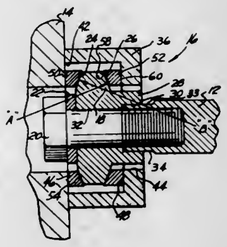
A tubular coupling member for coupling tubular members together comprises inwardly directed lugs at the ends of a sleeve which deform tubular members when the sleeve is decreased in diameter thereby providing anti-torque means to prevent turning of the tubular members.

3,501,179
HELICALLY CORRUGATED SPIRAL PIPE AND COUPLING THEREFOR
Jerald H. Boynton, Franklin, and Dale D. Felton and Joseph Moffa, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Aug. 1, 1968, Ser. No. 749,418
Int. Cl. F16l *21/02, 19/00, 17/00*
U.S. Cl. 285—373 **13 Claims**



An improved helically corrugated, spiral pipe for use with coupling means to provide a substantially soil tight joint, the pipe being provided with at least one annular, circumferentially continuous, corrugation at each end thereof, the crests adjacent the annular corrugations being adapted for sealing purposes and providing continuous surface-to-surface seals with the coupling means about the entire circumference of the pipe.

3,501,180
COUPLING TO PROVIDE ANGULAR AND LATERAL ORIENTATION
William A. Waara, Detroit, Mich., assignor to Visi Trol Engineering Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 16, 1968, Ser. No. 759,860
Int. Cl. F16c *11/00;* **F16b** *27/00;* **B25g** *3/38*
U.S. Cl. 287—21 **1 Claim**

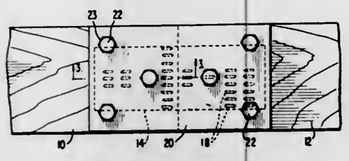


A coupling for connecting the rod of an air or hydraulic cylinder to a driven member which is to be reciprocated along an axis that is laterally as well as angularly misaligned with respect to the axis of motion of the rod comprises spherically convex bearing surfaces which mate with floating conical surfaces.

3,501,181
DECORATIVE STRUCTURAL WOODEN JOINT
John Calvin Jurelt, Coral Gables, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Oct. 14, 1968, Ser. No. 767,441
Int. Cl. E04c *3/00;* **F16b** *5/00, 7/00, 9/00*
U.S. Cl. 287—20.92 **18 Claims**

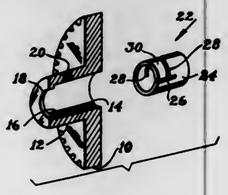
The decorative joint includes a pair of structural plates having a plurality of teeth struck normal thereto for embedment into opposite side faces of a pair of butting joint members. A decorative plate overlies each structural

plate and portions of the butted members beyond the edges of the structural plate on each side of the joint, thereby blocking the sheet metal plate from view. Decorative nails are embedded into the joint members through the decorative plate and either the holes left by the



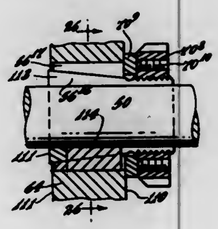
struck teeth in the structural plate or directly into the wooden members beyond the lateral edges of the structural plate. To provide an appearance of thickness to the joint construction, a box-type decorative overlay may be provided.

3,501,182
GEAR HUB CLAMP
Frank Buchsbaum, 75—04 195th St., Flushing, N.Y. 11366
Filed July 12, 1968, Ser. No. 744,567
Int. Cl. F16d *1/06;* **F16b** *17/00;* **F16c** *3/00*
U.S. Cl. 287—52.04 **9 Claims**



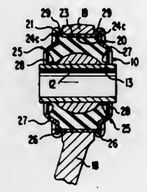
A sleeve, having a deflectable tab is inserted in the bore of a gear hub and is brought into gripping engagement with the gear shaft by means of a set screw extending through the gear hub.

3,501,183
LINEAR SELF-INTERLOCKING WEDGE DEVICE
Andrew Stratienko, 5139 N. 15th St., Philadelphia, Pa. 19126
Continuation-in-part of application Ser. No. 197,770, May 25, 1962. This application June 29, 1965, Ser. No. 468,089
Int. Cl. F16d *1/06;* **B60b** *27/06*
U.S. Cl. 287—52.06 **4 Claims**



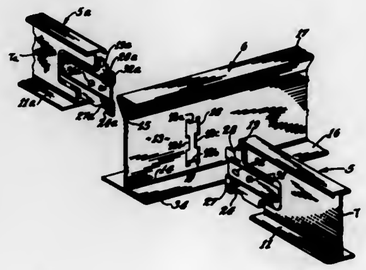
The present invention deals with a self-interlocking wedge device that relates the coefficient of starting friction of the wedge on the straight surface of a member to the frictional angle of the inclined wedge surface and the angle of inclination of its inclined surface with respect to the direction of motion and also includes a mechanism for positively holding the wedge against the straight surface of a member which extends in the direction of motion during at least initial engagement for self-tightening.

3,501,184
ELASTIC COUPLING METHOD AND APPARATUS
Friedrich H. van Winsen, Kirchheim unter Teck, and Hans-Karl Daur, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 14, 1966, Ser. No. 601,624
Claims priority, application Germany, Dec. 14, 1965, D 48,905
Int. Cl. F16c *11/06;* **F16b** *7/00;* **B25g** *3/38*
U.S. Cl. 287—88 **9 Claims**



The present disclosure relates to an elastic coupling wherein the elastic coupling includes an annular rigid outer member, a rigid inner member, an annular elastic intermediate member and side members. The inner, outer and intermediate members are constructed and assembled so that there is substantially no stressing of the intermediate elastic member. Thereafter, the side members are axially forced together to axially compress the elastic member and expand the elastic member into engagement with both the inner and outer members. At least one of the members is radially deformed to hold the side members in their axially displaced positions to produce a final assembly.

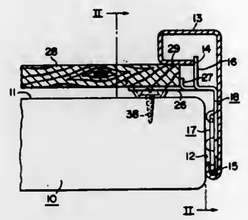
3,501,185
CROSS BEAM CONNECTOR
Donald A. Brown, Westlake, and Lucien R. Downing, Jr., Avon Lake, Ohio, assignors to Donn Products, Inc., a corporation of Ohio
Filed July 11, 1966, Ser. No. 564,070
Int. Cl. F16b *1/00;* **E04b** *1/08*
U.S. Cl. 287—189.36 **24 Claims**



A ceiling composed of panels supported in a suspended grid system. The grid system is comprised of a plurality

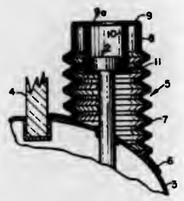
of parallel main beams supporting a plurality of intersecting cross beams. The cross beams are secured in slots formed in the web of the main beams. Means are provided at the extremities of the cross beams for connecting the cross beams to the main beams, such means including a tongue extending from the cross beam for interlocking engagement in the slot of the main beam.

3,501,186
TRIM MOUNTING CLIP
Charles A. Wilcox and Carl L. Trump, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1969, Ser. No. 791,086
Int. Cl. F16b *5/06*
U.S. Cl. 287—189.35 **6 Claims**



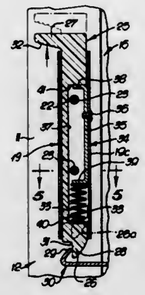
Trim mounting structure for a refrigerator door, or the like, wherein a replaceable surface or front panel is captivated by the trim member. The mounting structure is characterized by a pair of complementary wall structures one of which is attached to one wall of the door and the other of which comprises a resilient member. The wall structure attached to the door has tabs which engage one end of the trim structure to be mounted, which tabs cooperate with the resilient member to retain the trim structure in place.

3,501,187
AUTO-SAFETY SLEEVE
John A. Saksa, 810 Laurann Ave., Tallmadge, Ohio 44278, and Theodore A. Zuppa, 3885 Neville Drive, Brimfield, Ohio 44240
Filed Aug. 15, 1968, Ser. No. 752,905
Int. Cl. E05b *1/04;* **E05c** *21/00*
U.S. Cl. 292—1 **1 Claim**



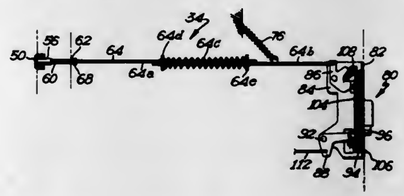
There is provided by the present invention a simple, inexpensive device adapted to be fitted over the locking plunger of an automobile door latch to prevent actuation thereof by persons desiring to gain illegal access to the automobile. The device comprises a tubular, resilient, corrugated device having a portion adapted to engage the knob portion of the plunger and a portion conforming to the configuration of the window rail.

3,501,188
DOOR RETAINING UNIT
George A. Korkos, 1912 Moray Ave., San Pedro, Calif. 90732
Filed Feb. 26, 1968, Ser. No. 708,366
Int. Cl. E05b *15/02;* **E05c** *1/04*
U.S. Cl. 292—175 **4 Claims**



The disclosure concerns a retainer unit for a door of a compact cooler or refrigerator, and characterized as not projecting outwardly from the door while being mountable and operable at either right or left side locations, to accommodate ready opening and closing of the door as well as fool-proof latching.

3,501,189
SAFETY REAR DOOR LOCK FOR AUTOMOBILES
Albam M. Vik, New Brighton, Minn., assignor, by mesne assignments, to Dempco, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 8, 1968, Ser. No. 703,981
Int. Cl. E05c *13/04;* **E05b** *65/40*
U.S. Cl. 292—216 **7 Claims**

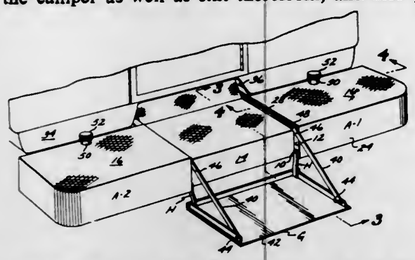


A rear door lock for automobiles consisting of a striker plate resiliently mounted on the forward vertical edge of the center post of the vehicle in position to engage the rearward vertical edge of the front door as the front door closes such that the movement of the rear vertical edge of the front door towards its closed position shifts the striker plate rearwardly. Engaged on the rearward surface of the strike plate is a lock operating rod that extends rearwardly through the rear door and is secured at its rearward end to the door lock supplied by the manufacturer of the automobile. The rearward movement of the rod shifts the latch portion of the door lock to its locked position by disconnecting outside and inside door handles from the latch actuating member.

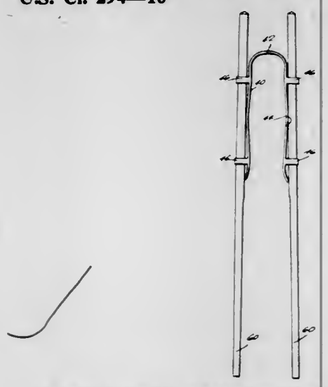
3,501,190
BUMPER FORMING A RESERVOIR WITH FOLDABLE STEP
Samuel E. McCrea, Compton, Calif., assignor of one-fourth to Mattie E. Handy, Bellflower, Calif.
Filed June 3, 1968, Ser. No. 734,047
Int. Cl. B60r *3/02, 19/04*
U.S. Cl. 293—69 **8 Claims**

A bumper, auxiliary fluid reservoir and step combination that may be removably mounted on the rear of a

truck camper to protect the same, facilitate ease of entry into the camper as well as exit therefrom, and also provides storage facilities for a fluid such as fuel, water, or the like.

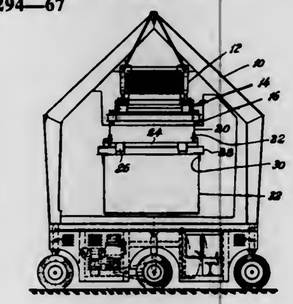


3,501,191
TONG STICKS FOR USE AS CHOPSTICKS AND THE LIKE
Leslie Darr, Rte. 3, S. 9th, Walla Walla, Wash. 99362
Filed Dec. 28, 1967, Ser. No. 694,312
Int. Cl. B25b *9/00;* **B66c** *1/00*
U.S. Cl. 294—16 **6 Claims**



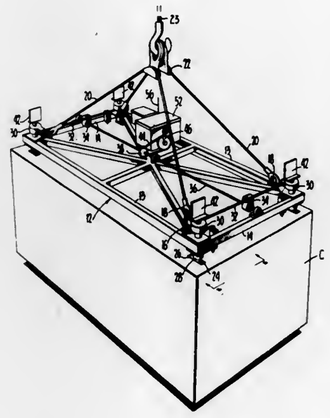
A spring device mechanism that is contoured for receiving in a fixed relation conventional or special type of chopsticks for holding the chopsticks in place while in use, and to facilitate one's eating with the tong sticks or chopsticks which is much easier than use of ordinary chopsticks without the advantage of the present invention.

3,501,192
LIFTING CONTAINERS
Hans Tax, Potsdamer Strasse 3, Munich 23, Germany
Filed Nov. 21, 1967, Ser. No. 684,761
Claims priority, application Germany, Nov. 23, 1966, T 32,565
Int. Cl. B66c *1/00, 5/02*
U.S. Cl. 294—67 **2 Claims**



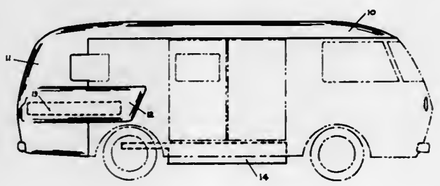
The specification describes freight container lifting equipment having a number of different sizes of spreaders for different-sized containers and a single adapter frame for carrying the spreaders.

3,501,193
SYSTEM FOR ENGAGING CARGO CONTAINERS
Robert L. Gray, Metairie, La., assignor to States Steamship Company, San Francisco, Calif., a corporation
Filed Feb. 7, 1968, Ser. No. 703,633
Int. Cl. B66c *1/24*
U.S. Cl. 294—67 **5 Claims**



In combination with a spreader frame of the type employed for engaging cargo containers during loading and unloading of such containers, a radio control system for effecting automatic engagement and disengagement with the container. A control system having interlocks that prevent the inadvertent disengagement of a container and also prevent engagement with a container except when perfect alignment between the spreader frame and the container is achieved. Indicator flags for mounting on rotatable shafts of container locking pins which indicator flags indicate to bystanders the condition, i.e., locked or unlocked, of the locking pins with respect to the container.

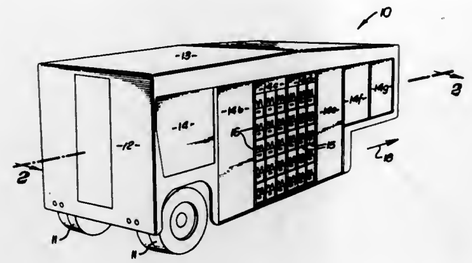
3,501,194
MOTOR HOME CONVERSION UNIT
Raymond C. Frank, Sanilac County, Mich., assignor to Environetics, Inc., Gardena, Calif., a corporation of California
Filed Oct. 3, 1967, Ser. No. 672,653
Int. Cl. B60p *3/32*
U.S. Cl. 296—23 **5 Claims**



A conversion unit for small van-like vehicles which raises the roof line and provides an extension at the end

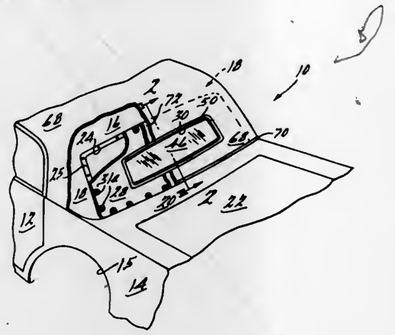
of the vehicle that is particularly suited for accommodating a bed therewithin.

3,501,195
SUSPENDED LOAD TRANSPORT TRAILER
Theodore W. Kramer III, 6826 Topke, Tucson, Ariz. 85715
Filed June 26, 1967, Ser. No. 648,807
Int. Cl. B62d *33/04*
U.S. Cl. 296—28 **16 Claims**



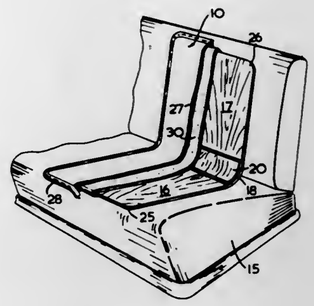
The disclosed transport vehicle incorporates an integral frame having elongated upper beam structure supported by forward and rearward frame columns, which are in turn supported as by wheel structure. Various load carrying structures, as for example container case racks, pallets, platforms, etc., are suspended from the upper beam structure between the forward and rearward columns, to provide ease of access to the load and full utilization of space.

3,501,196
METHOD OF FORMING MOTOR VEHICLE REAR WINDOW
Robert J. Megargle, Grosse Pointe Park, and Daniel J. Jozwiak, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 611,215
Int. Cl. B23p *21/00*
U.S. Cl. 296—145 **7 Claims**



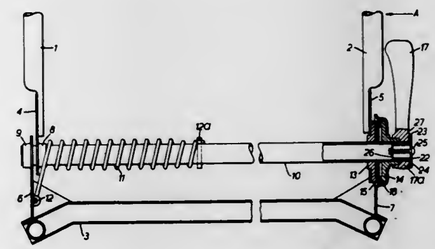
A method of forming motor vehicle bodies in a continuous process wherein a sheet metal body structure having a relatively large rear window opening is first formed whereafter a fiber glass plug is inserted into the large rear window opening to provide a smaller rear window opening as defined by an opening in the plug. Also, the rear window construction resulting from this method.

3,501,197
SEAT SUPPORT
Arnold F. Burton, 27 Kerry Crescent, Ottawa 5, Ontario, Canada
Continuation-in-part of application Ser. No. 626,125, Mar. 27, 1967. This application June 20, 1968, Ser. No. 744,245
Claims priority, application Canada, Mar. 25, 1966, 955,936
Int. Cl. A47c *5/12, 5/14*
U.S. Cl. 297—232 **4 Claims**



A portable seat and back support panel for chairs, automobiles and the like. The seat and back portion are generally planar and are interconnected by an intermediate curved portion which provides support for the ischial tuberosities, gluteal area and inferior pad of muscles of a user. Therefore, the lower back of the user is prevented from becoming pinched between the back and seat cushions of a main suppporting surface. The panel is preferably manufactured from a mouldable material and is of sufficient thickness to support a user without flexing appreciably.

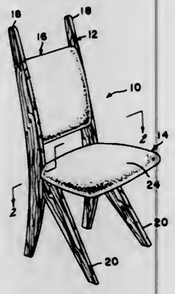
3,501,198
SEAT ADJUSTING ARRANGEMENTS
Frederick C. Boyce, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Aug. 8, 1967, Ser. No. 659,116
Claims priority, application Great Britain, Sept. 28, 1966, 43,449/66; June 28, 1967, Ser. No. 29,920/67
Int. Cl. B60n *1/06*
U.S. Cl. 297—373 **18 Claims**



An adjustable seat arrangement for providing angular adjustment of the back of a seat relatively to the base structure thereof attached to the floor of a road vehicle say, the arrangement comprising an elongate cross member to which the back frame structure is fixedly attached and which is pivotally coupled to said base structure so as to constitute a hinge member enabling said angular

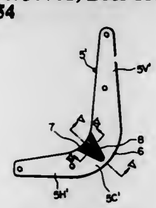
adjustment, back locking means located adjacent one end of said cross member and comprising two toothed locking members one of which is coupled to said cross member and the other of which is coupled to said base structure, and an actautor including means effective when actuated to slide one of said toothed locking members relatively to the other toothed locking member, the arrangement being such that in one position of said cam means the teeth of the two locking members are in engagement with one another to preclude pivotal movement of said cross member with respect to said base structure, whilst in another position of said means the teeth of the two locking members are disengaged from one another to permit said pivotal movement.

3,501,199
CHAIR
Bertram H. Kapnek, 8106 Douglas Road, Philadelphia, Pa. 19118
Filed Apr. 1, 1968, Ser. No. 717,873
Int. Cl. A47c *1/12, 7/16*
U.S. Cl. 297—446 **13 Claims**



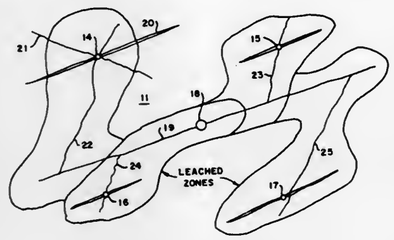
A chair in which the seat is held in cantilever relative to a substantially vertical supporting frame. A plurality of rods is secured in the supporting frame and projects substantially perpendicularly therefrom. The seat is secured to said rods with the rods lying parallel to the axis of said seat.

3,501,200
SEAT REINFORCING PLATE CONSTRUCTION
Seizo Ohta, Toyota-shi, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-shi, Aichi-ken, Japan
Filed July 1, 1968, Ser. No. 741,490
Claims priority, application Japan, July 12, 1967, 42/59,756
Int. Cl. A47c *7/02*, **B60r** *21/00*; **B60n** *1/02*
U.S. Cl. 297—454 **8 Claims**



A seat construction, particularly for automobiles, includes an L-shaped metal plate on at least one side or between the seat sides which joins a seat back portion to a seat bottom portion. The metal plate is made with a transverse corrugation or projection adjacent the transition area between the upwardly extending back portion and the horizontally extending bottom portion. The transverse corrugation is located and constructed to permit the relative bending of the two portions of the L-shaped metal plate in order to provide a shock force absorption while permitting collapse of the seat parts during an impact such as would occur in an automobile collision.

3,501,201
METHOD OF PRODUCING SHALE OIL FROM A SUBTERRANEAN OIL SHALE FORMATION
Philip J. Closmann and Ronald P. Nordgren, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1968, Ser. No. 771,961
Int. Cl. E21b *43/24, 43/26, 43/28*
U.S. Cl. 299—4 **13 Claims**

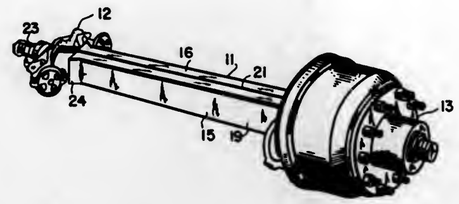


A method of recovering shale oil from a normally impermeable subterranean oil shale formation by extending at least a pair of well boreholes into at least one layer of water-soluble minerals disposed in the formation and forming generally vertical fractures extending along generally parallel paths from each of the boreholes. Hot fluid is injected through at least one of the well boreholes until flow into at least one of the fractures therein is thermally closed by the swelling-shut of the walls of the fracture. Fluid in at least one borehole in which at least one fracture has been thermally closed is pressurized until at least one new fracture is formed and the steps of injecting hot fluid and the pressurizing of fluid are repeated at successively higher temperatures and pressures until the resultant fractures form a channel interconnecting the well boreholes through which fluid can flow from one well borehole to another. The walls of the fractures interconnecting the boreholes are leached at a controlled temperature until channels provided between the well boreholes are capable of remaining open while hot fluid is circulated between the boreholes. Finally, a leaching fluid is injected into the well-interconnected fracture channel into a fracture and fluid is produced from another of the boreholes opening into the fracture channel, with the fluid being injected at a temperature below that at which the last fracture was opened into the well borehole into which the circulating fluid is injected but above that at which the last fracture was thermally closed within the well borehole into which the circulating fluid is injected so that most of the injected fluid is conveyed through the channels interconnecting the boreholes.

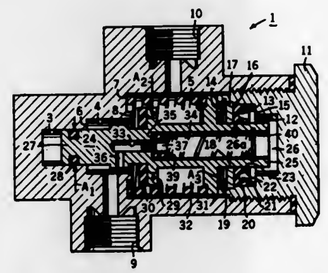
3,501,202
AXLE BEAM FORMED FROM A SINGLE PIECE OF METAL
William G. Hanley and John Pa!ovcik, Kenton, Ohio, assignors to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 672,926, Oct. 4, 1967, which is a continuation of application Ser. No. 483,550, Aug. 30, 1965. This application June 5, 1969, Ser. No. 830,718
Int. Cl. B60b *35/08*
U.S. Cl. 301—124 **4 Claims**

A hollow axle beam formed integrally from a single piece of metal, the axle beam including a center section of rectangular cross-section of uniform size from end to end and identical opposite end sections. Each end section includes a cylindrical brake mechanism mounting section and is connected to the adjacent end of the

rectangular center section by a transition section longitudinally outwardly changing from rectangular to cylindrical shape, the transition section having a vertical portion adjacent the brake mounting section, the entire periphery of which is spaced from the axis of the brake mounting section a distance at least equal to the radius of the brake mounting section.



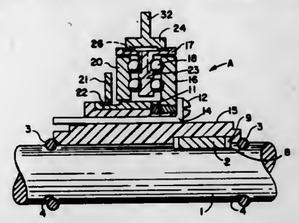
3,501,203
CONTROL VALVE
Edward J. Falk, St. Louis, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,101
Int. Cl. B60t *13/18*
U.S. Cl. 303—6 **18 Claims**



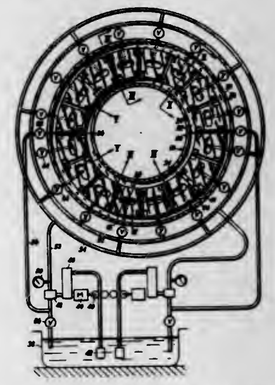
A proportioning valve for controlling the application of fluid pressure supplied thereto from a master cylinder to a vehicle brake motor. The proportioning valve initially effects a first predetermined ratio between the supplied and applied fluid pressures up to a first predetermined value of the supplied fluid pressure and then effects a second predetermined ratio different than the first predetermined ratio in response to the supplied fluid pressure between the first predetermined value and another predetermined value in excess of the first predetermined value, said proportioning valve also being responsive to supplied fluid pressure in excess of the other predetermined value to effect a third predetermined ratio different than said first and second predetermined ratios.

3,501,204
ELECTRIC CONDUCTOR BEARINGS
Robert Z. Schreffler, Chester, Pa., assignor to Electric Conductor Bearings, Incorporated
Filed June 30, 1966, Ser. No. 562,956
Int. Cl. F16c *9/00, 19/00, 27/00*
U.S. Cl. 308—1 **3 Claims**

An assembly for conducting electrical current between rotating and non-rotating members is provided wherein a plurality of conductive roller or ball bearing members ride in races formed by grooves in opposed surfaces of a conductive shaft-mounted inner member and a conductive non-rotary outer member. The bearing members may be of split form including a biasing washer located between the halves thereof to ensure continuous electrical contact with the race surfaces. A coolant gas may be supplied to the bearing surfaces through a hollow terminal post which also provides a current take-off point for the assembly.



3,501,205
LUBRICATION SYSTEM FOR HEAVY-DUTY BEARINGS
Josef Trubáček and Jan Sedlak, Blansko, Czechoslovakia, assignors to CKD Blansko, norodni podnik, Blansko, Czechoslovakia
Filed Mar. 15, 1968, Ser. No. 713,360
Claims priority, application Czechoslovakia, Mar 16, 1967, 1,904/67
Int. Cl. F16c *17/06, 17/08*
U.S. Cl. 308—160 **5 Claims**

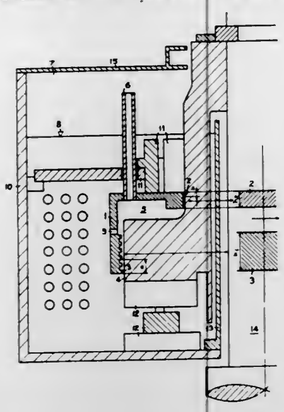


The annular lower bearing face of a horizontal turntable is divided into land portions by radial grooves which connect upwardiy open annular channels having overflow edges above the level of the bearing face. Each land portion has a central recess supplied with lubricant under high pressure from two pumps connected with circumferentially alternating recesses, and also feeding lubricant under lower pressure directly to the grooves.

3,501,206
COMBINED AXIAL AND RADIAL BEARING WITH LIQUID LUBRICATING FLUID FOR VERTICAL AXIS MACHINE
Kalman Nagy Lehoczky, Hyggen, Norway, assignor to Aktiengeselischaft Brown, Boveri & Cie, Baden, Switzerland, a Swiss joint-stock company
Filed Sept. 11, 1968, Ser. No. 759,108
Claims priority, application Norway, Sept. 29, 1967, 169,924
Int. Cl. F16c *17/06, 17/08*
U.S. Cl. 308—160 **3 Claims**

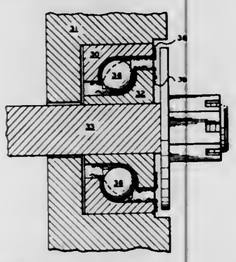
A combined radial and axial bearing structure using liquid lubricant is provided for the shaft of a machine which rotates on a vertical axis. The diameter of the

radial bearing is smaller than the diameter of the axial bearing and the bearing parts are enclosed by a shield which is provided at both ends with spiral grooves. A



chamber is established between the shield and the rotating parts and this chamber is emptied of the lubricating liquid by the pumping action of the hydrodynamic packings in order to reduce the rotating losses.

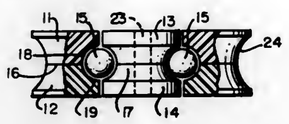
3,501,207
PROTECTION OF BEARINGS FROM IMPACT DAMAGE
James E. Pritchard, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 690,568, Dec. 14, 1967. This application Apr. 10, 1968, Ser. No. 720,207
Int. Cl. F16c *29/08, 33/00, 7/04*
U.S. Cl. 308—187 **13 Claims**



Impact damage on races of vehicle wheel bearings caused by repeated impact of rolling members thereupon, for example, caused by vibrations induced by rail shipment of motor vehicles, is prevented by inserting a sleeve of a mesh made from threads of material made from certain polymers and copolymers of 1-olefins between the race and rolling members in the bearings. Alternatively olefin polymer filaments are incorporated in grease which is used for packing wheel bearings at the factory prior to shipment.

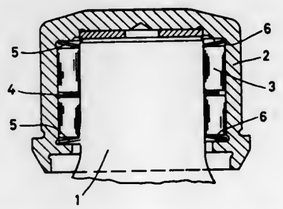
3,501,208
PLASTIC BALL BEARINGS
Milton Kessler, 6690 Harrington, Youngstown, Ohio 44512
Filed Mar. 5, 1968, Ser. No. 710,549
Int. Cl. F16c *33/00;* **B21h** *1/12, 1/14*
U.S. Cl. 308—190 **1 Claim**

An all-plastic ball bearing comprises an inner race and an outer race; the former comprising two identical mating parts which when attached together form on the outer circumference thereof an annular semi-race; the latter comprising two identical mating parts which when attached together form on the inner surface a second



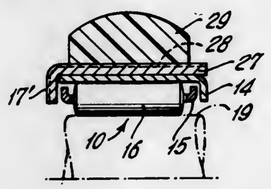
annular semi-race matching and complementing the first semi-race, said bearing being assembled with bearing balls in the race and with the respective mating members firmly joined to each other.

3,501,209
ROLLER BEARING FOR THE STAR PINS OF UNIVERSAL JOINTS OR THE LIKE
Eberhard Ende, Essen, Germany, assignor to Gelenkwellenbau G.m.b.H., Essen, Germany, a corporation of Germany
Filed Jan. 26, 1968, Ser. No. 700,996
Claims priority, application Germany, Feb. 3, 1967, G 49,174
Int. Cl. F16c *13/00, 33/00, 35/06*
U.S. Cl. 308—207 **4 Claims**



The ring-shaped arrangement of rollers in a star-pin bearing for a universal joint is bordered on each axial side by a frusto-conical spring ring whose outer peripheral edge bears against a shoulder of the bearing bushing and whose inner peripheral edge presses against the rollers. The rollers follow each other so closely as to require no retainer and are arranged in axially sequential groups separated from each other by a floating ring.

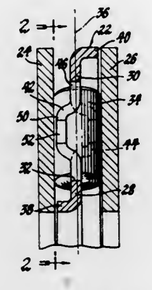
3,501,210
SHELL-TYPE ROLLER BEARING
Hans W. Deutsch, West Hartford, Conn., assignor, by mesne assignments, to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a partnership of Germany
Filed May 21, 1968, Ser. No. 730,735
Int. Cl. F16c *13/00, 33/46, 27/00*
U.S. Cl. 308—212 **2 Claims**



The invention contemplates a roller-bearing subassembly of elemental simplicity, comprising a hardened drawn raceway sleeve, integrally inwardly flanged at one end, and carrying a plurality of rollers or needles. This subassembly, as a unit, is interference-fitted, clamped or

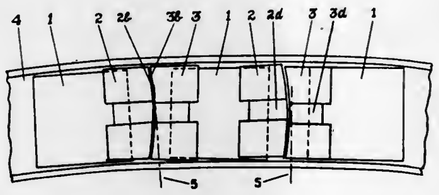
otherwise held to the bore of a relatively soft outer member which carries an inward flange at one end. The latter flange locates the unflanged end of the raceway sleeve; it also, in conjunction with the flange of the raceway sleeve, provides axial-locating or thrust-sustaining functions for the roller complement. The relatively soft outer member may be variously formed for completion of multiple-row combinations of the roller subassemblies, and for ultimate location of the bearing unit on a frame or other structure.

3,501,211
BEARING CAGE
Edward W. Molloy, Port Clinton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 11, 1968, Ser. No. 759,056
Int. Cl. F16c *19/20*
U.S. Cl. 308—217 **16 Claims**



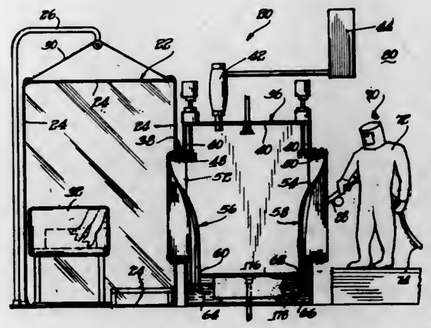
A unit-handled assembly of cage and rolling contact antifriction elements in which the case is of a one-piece sheet metal construction. The two-way retention is provided by designing the cage with an even number of cross bars with adjacent cross bars having generally U-shaped portions bent alternatively in opposite directions out of the general plane of the cage.

3,501,212
AXIAL OR THRUST ROLLER BEARING HAVING SPACING MEMBER BETWEEN EACH TWO ROLLERS
Alois Stenert, Lippstadt, Josef Bracht, Erwitte, and Werner Husten, Eickelborn, Germany, assignors to Eisenwerk Rothe Erde GmbH, Dortmund, Germany, a corporation of Germany
Filed Apr. 22, 1968, Ser. No. 723,063
Claims priority, application Germany, Apr. 28, 1967, R 45,896
Int. Cl. F16c *33/46*
U.S. Cl. 308—235 **9 Claims**



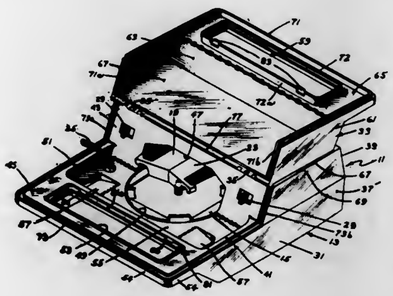
The invention relates to an axial or thrust roller bearing in which between each two bearing rollers spacing members are positioned. These two spacing members have respectively convex and concave surfaces, at least one of these surfaces being in the form of a circular arc about a center which is parallel to the axial direction of the bearing. The intermediate spacing members are formed of a circular arc about a center which is parallel to the axial direction of the bearing. The intermediate spacing members are formed to move with the bearings in races. By such a construction, the same rollers and intermediate members can be used in thrust bearings of differing diameter.

3,501,213
ISOLATOR ASSEMBLY AND METHOD OF ENTERING SAME
Philip C. Trexler, Stoneham, Mass., assignor to Snyder Manufacturing Company, Inc., New Philadelphia, Ohio, a corporation of Ohio
Filed May 19, 1967, Ser. No. 639,669
Int. Cl. E04h *1/12;* **E06b** *7/28;* **A61l** *1/00*
U.S. Cl. 312—1 **9 Claims**



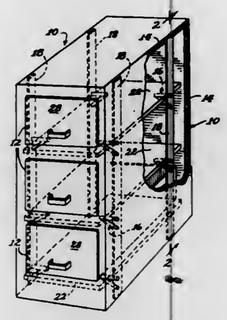
A method and means for enabling a person to leave an isolator room while preventing contaminants from entering the area or room, including an isolator structure having a sterile locker or anteroom with a pair of entrances which are sealed by troughs or reservoirs of fluid.

3,501,214
LID LATCH FOR PHONOGRAPH
Ronald K. Wlandt, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1968, Ser. No. 695,089
Int. Cl. A47b *81/06;* **B65d** *43/16*
U.S. Cl. 312—8 **3 Claims**



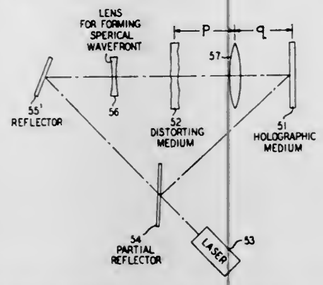
A latching mechanism for a recording and reproducing device which involves at least two housing members and a simple detent arrangement integrally associated with these two members for maintaining the two members in a closed relationship with respect to each other.

3,501,215
SUPPORT DEVICE FOR INSULATED STORAGE CONTAINER
William J. Gartner, Schaumberg, Ill., assignor to De Soto, Inc., a corporation of Delaware
Filed Mar. 6, 1968, Ser. No. 711,132
Int. Cl. A47b 55/00, 63/00
U.S. Cl. 312—214 21 Claims



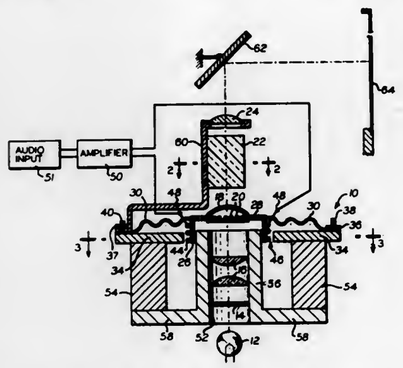
A container assembly having an outer frame enclosing a major portion of the assembly, at least one inner container, and heat protection means between the outer frame and the inner container. The inner container is held within the outer frame by support members which are attached at one end to the outer frame and which carry the inner container in a spaced relation to the frame. Each support member has heat-retarding material for providing resistance to the conduction of heat along the support member from its end attached to the frame to the inner container.

3,501,216
CONTROLLED TRANSMISSION OF WAVES THROUGH INHOMOGENEOUS MEDIA
Herwig W. Kogelnik, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 21, 1966, Ser. No. 603,551
Int. Cl. G02b 27/02
U.S. Cl. 350—3.5 6 Claims



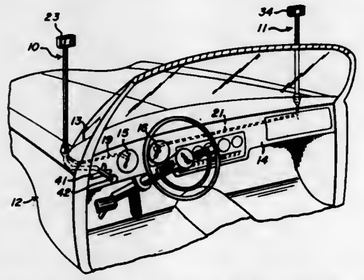
Holographic methods are disclosed for compensating for the effects of a sufficiently thin diffuser. For example, a hologram of the diffuser is first made in the image plane of the diffuser by recording in that plane the interference between a first light beam that is directed through the diffuser and a converging lens and a second light beam that is a reference. If light that has illuminated an object is then directed through the diffuser, the lens and the hologram, and if the hologram is located in the image plane of the diffuser, a viewer can see an image of the object with little, if any, of the distortions introduced by the diffuser.

3,501,217
ELECTRICALLY ACTUATED KALEIDOSCOPE
Angelo Bottani, Milan, Italy, assignor to Societa Internazionale Fonovisione S.p.A., Milan, Italy, a corporation of Italy
Continuation-in-part of application Ser. No. 635,022, May 1, 1967. This application Oct. 22, 1968, Ser. No. 769,566
Claims priority, application Italy, May 3, 1966, 17,477
Int. Cl. G02b 27/08; G03b 21/00
U.S. Cl. 350—4 10 Claims



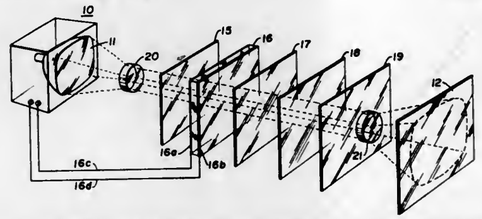
Apparatus for projecting kaleidoscopic images which are varied continually in accordance with an electrical signal supplied thereto. The electrical signal may, for example, be supplied by a phonograph amplifier, the images produced by the present apparatus serving as visual accompaniment to the phonograph music. Comprises an electrical coil disposed within an annular gap between the poles of a magnetic circuit which may be substantially toroidal. A transparent housing containing the multicolored light transmitting chips of the kaleidoscope is secured to the coil. The axial passage through the magnetic elements is preferably defined by a hollow magnetically permeable cylinder containing such optical elements as a heat absorbing filter, and an optical condenser; the housing containing the multicolored chips is desirably supported resiliently over one end thereof. A prism or other multi-image reflecting means, and objective lens form the kaleidoscopic images, which may be projected on a screen.

3,501,218
VIEWING SYSTEM FOR VEHICLES
Don Zitzelberger, 2137 Catalpa Drive, Dayton, Ohio 45406
Filed July 11, 1966, Ser. No. 564,274
Int. Cl. G02b 5/16
U.S. Cl. 350—96 10 Claims



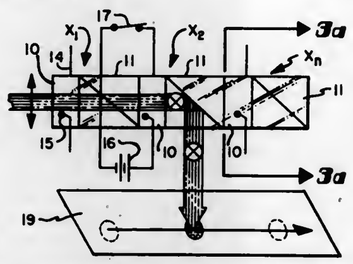
A viewing system for vehicles utilizing at least one pylon-type objective lens mounting exteriorly of the vehicle and a related viewing screen within the vehicle, with intermediate light image transmitting means. Manipulative means are accessible within the vehicle to both rotate and to effect an oblique positioning of the objective lens. Motion of the lens in the latter sense is accompanied by an automatic appropriate readjustment of the viewing screen for stable image reflection.

3,501,219
COLOR CONTROL FOR DYNAMIC DISPLAYS
Henry John Caulfield, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex.
Filed Sept. 8, 1966, Ser. No. 577,956
Int. Cl. G02f 1/26
U.S. Cl. 350—150 2 Claims



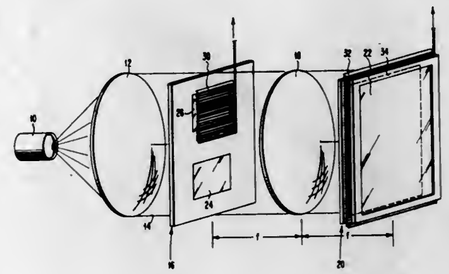
Disclosed is a system for changing a black and white image to a color image in which the light from the black and white image is directed through a first polarizer, an electro-optic body having a time-varying voltage applied to it to change the elliptical polarization of the light passing through it in accordance with the desired color to be obtained, a quarter-wave plate, an optically active body to rotate the plane of polarization an amount depending upon the elliptical polarization effected by the electro-optic body, and a second polarizing sheet having its axis of polarization at an angle of 90° with respect to the angle of polarization of the first polarizing sheet, such that an observer will see a color representation of the black and white image at the output of the second polarizing sheet.

3,501,220
MULTIDIMENSIONAL OPTICAL DATA DISPLAY APPARATUS
Enrique Bernal G. and Di Chen, Minnetonka, and Wayne L. Walters, Bloomington, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,258
Int. Cl. G02f 1/26, 3/00
U.S. Cl. 350—150 11 Claims



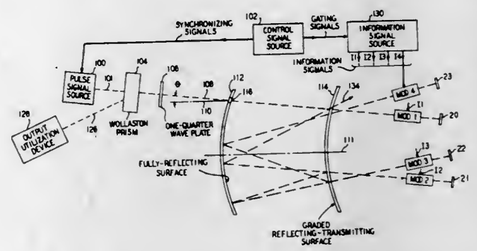
A digital light positioning apparatus having an electro-optic (E-O) crystal for modifying the polarization state of an incident light beam and a Glan-Thompson prism for passing the light over either of two paths. Internal reflection or transmission of the light beam in the Glan-Thompson prism, depending on the orientation of the polarization vector of the light, determines the beam path. Three preferred embodiments are disclosed: a linear digital display apparatus a two-dimensional digital display apparatus and a three-dimensional digital display apparatus.

3,501,221
OPTICAL FILTERING
Adolf W. Lohmann, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 29, 1967, Ser. No. 649,895
Int. Cl. G02b 5/18, 5/20, 27/38
U.S. Cl. 350—162 8 Claims



Optical apparatus in which object and desired image transparencies are positioned side by side in the input plane of a lens. Illumination through the lens falls on a photochromic plate and thence on a photographic film. During a first exposure, of the photochromic plate, the image transparency and photographic film are shuttered so that only the Fourier transform of the object transparency excites the photochromic plate. During a second exposure, the shutters are opened so that the Fourier transforms of both the object and image transparencies excite the photochromic plate and photographic film. Upon development, the photographic film will store the filter required in an optical system to convert the object to the image.

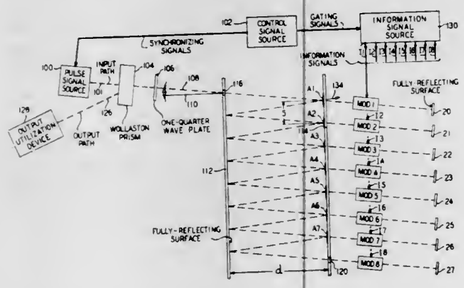
3,501,222
OPTICAL PULSE GENERATOR
Donald R. Herriott, Morris Township, Morris County, and Harry J. Schulte, Jr., Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 23, 1965, Ser. No. 509,388
Int. Cl. H01s 3/10
U.S. Cl. 350—171 7 Claims



An optical pulse generator includes two spaced-apart spherical mirror members oriented in a nested facing relationship along a common main axis. The facing concave surface of one member is fully reflecting, whereas the facing convex surface of the other member exhibits a graded reflecting-transmitting characteristic. Optical energy transmitted through the other member is propagated along a plurality of paths, each of which includes a modulator unit and a fully reflecting mirror. A single optical pulse directed at the structure along an input path

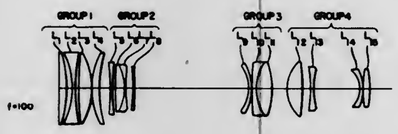
is successively divided by the other member. Pulses propagated through the modulators are reflected back to the spherical members and subsequently directed toward the input path via paths of different lengths. In turn, a dispersive arrangement in the input path directs selected ones of the reflected pulses along a spatially distinct output path.

3,501,223
OPTICAL PULSE GENERATOR
Alois J. Rack, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 23, 1965, Ser. No. 509,387
Int. Cl. G02b *27/14, 5/08;* **G02f** *1/26*
U.S. Cl. 350—171 **6 Claims**



An optical pulse generator responds to each of a set of widely-spaced pulses to generate a series of equal-amplitude pulses suitable for efficient use in an information processing system. The generator comprises two parallel spaced-apart mirror members. The inner surface of one member is fully reflecting, whereas the inner surface of the other member exhibits a graded reflecting-transmitting characteristic. Optical energy transmitted through the other member is propagated along a plurality of paths each of which includes a modulator and a fully-reflecting mirror. A single optical pulse directed at the structure along an input path is successively divided by the other member. Pulses propagated through the modulators are reflected back to the members and subsequently directed toward the input path via paths of different lengths. In turn, a dispersive arrangement in the input path directs the reflected pulses either along a spatially distinct output path or along the input path itself, depending respectively on the conditions of the associated modulators.

3,501,224
ZOOM LENS HAVING FOUR LENS GROUPS
Yasuo Takahashi, Tokyo-to, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed Jan. 24, 1967, Ser. No. 611,411
Int. Cl. G02b *15/00, 9/00*
U.S. Cl. 350—184 **2 Claims**

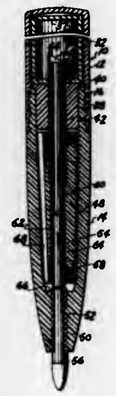


A variable focus photographic lens of four groups including a four lens positive first group, a four lens negative second group, a three lens positive third group and a four lens fourth group and satisfying the following conditions:

$$0.15<F_1/f_6<0.65$$
$$|n_{10}-n_{11}|<0.1$$
$$0.12<|r_{16}|/|F_3|<0.2$$
$$n_9>1.62$$
$$0.2<|r_{21}|/|F_4|<0.3$$
$$n_{12}>1.62$$
$$0.45>r_7/|F_1|>0.28$$

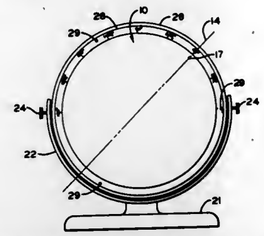
wherein the lenses are designated 1 to 15 consecutively and the faces or surfaces of lenses 1 to 6 are designated 1 to 12 consecutively, the faces of lenses 7 to 10 are designated 12 to 19 and the faces of lenses 11 to 15 are designated 19 to 28, F_n is the focal length of the subscript designated lens group, n_n is the index of refraction of the subscript designated lens, r_n is the radius of curvature of the subscript designated lens face and f_6 is the resultant focal length of the first three lenses. The second and fourth lens groups are simultaneously movable relative to the first and second lens groups.

3,501,225
FOUNTAIN PEN
Lynn P. Martin and Thomas P. Evans, Fort Madison, Iowa, assignors, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Continuation of application Ser. No. 474,083, July 22, 1965. This application July 19, 1968, Ser. No. 755,485
Int. Cl. B43k *5/18*
U.S. Cl. 401—198 **8 Claims**



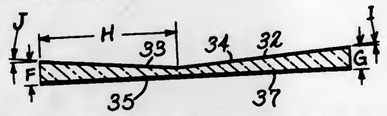
In a novel fountain pen having a vacuum type ink reservoir, a writing or marking point, and a capillary ink feed; an improved fluid control member arranged for releasably retaining ink to prevent leakage from the point in the event of excess ink discharge from the reservoir. The fluid control member comprises a porous plastic matrix, wettable by writing fluid, and defining a multiplicity of interconnected randomly disposed capillary storage cells of irregular configuration communicating with the atmosphere, with one another and with the ink feed means. The storage cells are lower in capillarity than the ink feed and normally remain free of fluid. In operation, ink is drawn from the reservoir by the ink feed and transferred directly to the point for deposit on a writing surface. In the event excess ink enters the feed, however, such ink will be transferred to the control member for retention in the storage cells until the feed requires additional ink for writing. As compared with the usual "comb cut" type control member, the present control member provides significantly greater fluid storage efficiency and is substantially less costly to manufacture while being considerably less susceptible to breakage during manufacture and assembly.

3,501,226
CORRECTIVE COSMETIC MIRROR
Florence M. Scott, 5910 Radcliffe Drive, Fort Wayne, Ind. 46806
Filed Feb. 3, 1967, Ser. No. 613,925
Int. Cl. G02b *5/10*
U.S. Cl. 350—293 **1 Claim**



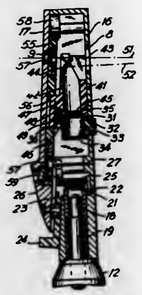
A cosmetic mirror is provided with a concave spherical surface to accommodate for a user's hyperopia or myopia, and with an additional concave cylindrical surface along an axis that can be oriented to correct for a user's astigmatism.

3,501,227
REARVIEW MIRROR
William J. Landen, Cheshire, Conn., assignor to Landen Corporation, Cheshire, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 432,640, Feb. 15, 1965. This application Nov. 3, 1967, Ser. No. 685,228
Int. Cl. G02b *5/08*
U.S. Cl. 350—303 **4 Claims**



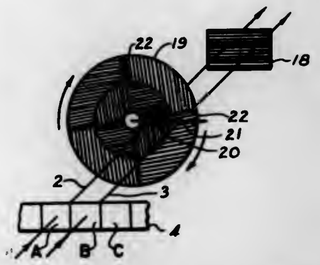
This disclosure relates to a rear-view mirror for a vehicle. The mirror body is formed of a unitary base material defining surfaces in two different planes, which planes intersect to define a straight line on said base material. The surfaces define a large obtuse angle and are coated with a metallic reflective material to provide two mirror surfaces residing on the same base material.

3,501,228
MULTI-FOCUS OPHTHALMOSCOPE
Irving A. Speelman, Roslyn Heights, N.Y., assignor to Propper Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York
Filed Nov. 13, 1967, Ser. No. 682,085
Int. Cl. A61b *3/12*
U.S. Cl. 351—16 **1 Claim**



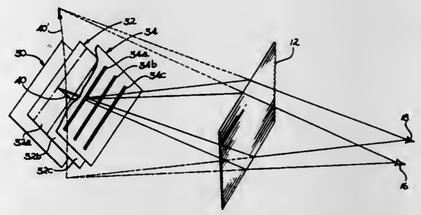
An opthalmoscope for opthalmological examination which projects an illuminating beam from a light source substantially on a sight axis which utilizes a lense system which maximizes the intensitity of illumination and permits multiple focal points of the light beam.

3,501,229
METHOD AND APPARATUS FOR PROJECTING MOTION PICTURES
Jean Véran Dejoux, Paris, France, assignor, by mesne assignments, to Optical Systems Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 621,562
Int. Cl. G03b *21/36, 21/32, 41/00*
U.S. Cl. 352—91 **7 Claims**



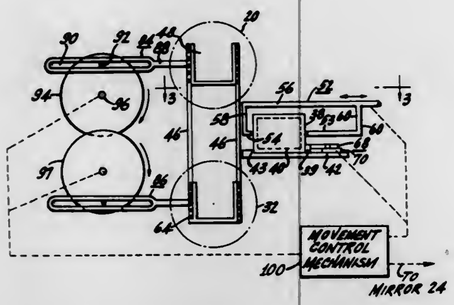
A method and apparatus for projecting motion pictures for direct viewing, for viewing on a screen, for photographic reproduction, or for transmission by television. A series of pictures recorded in sequence on a single film strip are projected as pairs with the projected images of each pair in superposed relation. The superposed images are dissolved, one into another, between successive advancing movement of the film strip, and the luminous intensities of the respective projected images are adjusted at the beginning of each dissolve.

3,501,230
THREE-DIMENSIONAL DISPLAY SYSTEM
Robert J. Johnston, 408 Grove Lane, Santa Barbara, Calif. 93105
Filed Nov. 7, 1966, Ser. No. 592,367
Int. Cl. G03b *35/24*
U.S. Cl. 353—10 **9 Claims**



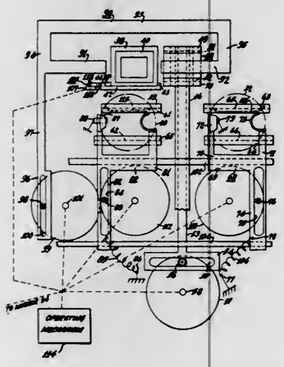
A three-dimensional viewing system has a viewing surface which diffuses incident light rays in a vertical direction only. A plurality of images are projected from image sources onto the viewing surface simultaneously such that the images are superimposed. Each image is a view of the same photographed scene but represents the view as seen from a different vertical plane through the scene. Each image source is displaced from the viewing surface by a different distance, the source farthest away from the viewing surface representing the view of the scene from the greatest distance such that as a viewer moves from side to side of the viewing surface the elements shown by the different image sources will appear to move with respect to each other.

3,501,231
SLIDE PROJECTOR INCLUDING TWO LIGHT PATHS AND ONE SLIDE MAGAZINE
William F. Fisher, Philadelphia, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,366
Int. Cl. G03b 21/14
U.S. Cl. 353—82 4 Claims



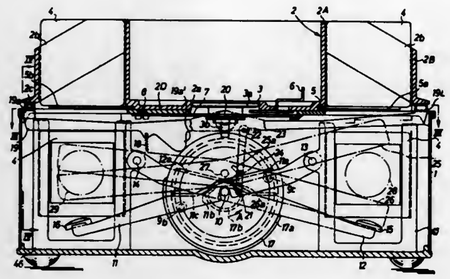
A slide projector is disclosed having two light paths each including a slide gate and extending from a light source to a screen, the light paths being so arranged that one light path is above the other. Slides, which are taken out of a single magazine are positioned in the two slide gates and are projected alternately and are put back into the magazine in the same order that they were originally placed in the magazine.

3,501,232
SLIDE PROJECTOR INCLUDING TWO LIGHT PATHS AND ONE SLIDE MAGAZINE
Arnel E. Jackson, Audubon, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,368
Int. Cl. G03b 21/14
U.S. Cl. 353—82 9 Claims



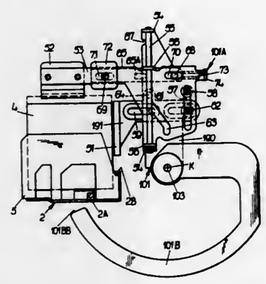
A slide projector for projecting slides alternately from two slide gates onto the same screen area. The slide projector has a single light source, two light paths each having a slide gate and a single magazine. The slides are taken out of the one side only of the magazine and positioned in the two slide gates, projected alternately and put back into the magazine in the same order in which they were originally placed in the magazine.

3,501,233
SLIDE PROJECTOR
Alfred Winkler, Munich, and Karl Deeg, Unterhaching, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 6, 1967, Ser. No. 665,758
Claims priority, application Germany, Sept. 10, 1966, A 53,476
Int. Cl. G03b 21/14, 23/06
U.S. Cl. 353—89 20 Claims



Slide projector with two lamps and two projection lenses which throw images onto the same area. A carrousel type magazine accommodates slides in two groups so that each oddly numbered slide is located diametrically opposite the next following or preceding evenly numbered slide. The magazine is indexed by alternately rocking about two eccentric axes to place successive pairs of oddly and evenly numbered slides into registry with two platforms each located in front of one of the lamps. Two levers receive motion from a shaft to move slides between the magazine and the platforms so that a fresh slide is held ready on one platform when the projection of the slide on the other platform is completed. Two shutter blades operate in synchronism with the levers to intercept light from one lamp when the image of the slide in front of the other lamp is being projected and vice versa.

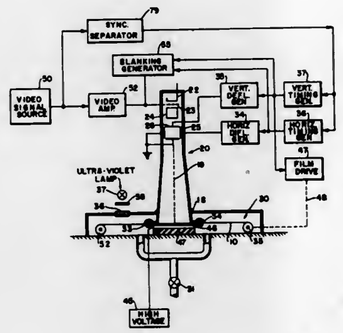
3,501,234
PROJECTOR FOR PHOTOGRAPHIC TRANSPARENCIES
Hans Werner Johannsen, Frankfurt am Main, and Erich Hofmann, Kriftel, Germany, assignors to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Dec. 19, 1967, Ser. No. 691,903
Claims priority, application Germany, Dec. 22, 1966, B 90,423
Int. Cl. G03b 23/00
U.S. Cl. 353—104 20 Claims



A universal slide projector which can accept magazines for small or medium sized slides. The slide changer comprises a shaft which is movable sideways in parallelism

with the optical axis toward or away from the guide channel and can move and turn two grippers provided with jaws which can engage slides to transport them to a projection position in which the center of a slide is located on the optical axis irrespective of the size of the slide. The jaws of at least one of the grippers are detachable from the respective gripper or are movable with reference to the remainder of such gripper, either by hand or in automatic response to sidewise displacement of the shaft of the slide changer so that they can properly engage a larger slide or a smaller slide.

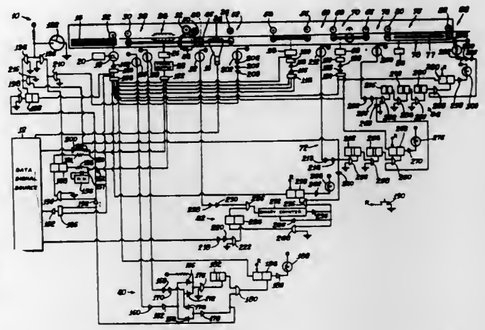
3,501,235
APPARATUS FOR DEVELOPING THERMOPLASTIC RESIN TYPE FILMS
Nicholas Anton, Brooklyn, and Myron Youdin, Flushing, N.Y., assignors to Eon Corporation, a corporation of New York
Filed Nov. 17, 1964, Ser. No. 411,909
Int. Cl. H01j 37/22
U.S. Cl. 355—9 10 Claims



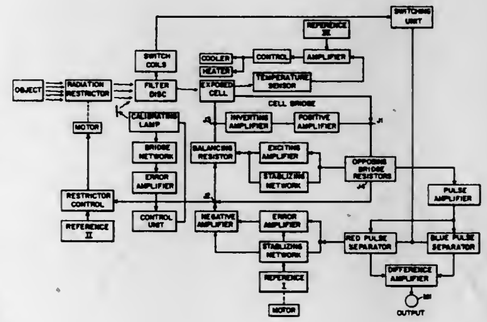
An apparatus for developing film of the thermoplastic resin type in which the film is first pre-exposed by energy of a suitable wavelength and then subjected to the heat produced by electrons in the stream of a cathode ray tube to develop the film.

3,501,236
PHOTOELECTROSTATIC PRINT-OUT MACHINE
William R. Maloney, Lake Forest, Arthur L. Hallquist, Mundelein, and Daniel B. Granzow, Arlington Heights, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,094
Int. Cl. G03g 15/00
U.S. Cl. 355—14 15 Claims

A photoelectrostatic print-out machine receives data signals which are used to image copy sheets at an exposure station. The machine monitors the movement of the copy sheets and senses the movement in accordance with a copy order. A pair of photoelectric sensing devices are placed along a common line transverse to the path of the copy sheets, at various locations. The sensors are responsive to light outside the range of radiation to which the copy sheets is sensitive. If the sensors are not activated simultaneously by the copy sheet a skewed condition is indicated. Counter circuitry along the path of the copy sheets monitors the movement in accordance with data signals received at the exposure station. A pair of sequentially operated nonstable timing circuits sense the movement of copy sheets between the sensor positions. If the copy sheets do not move as prescribed, the transport is inhibited and the further transmission of data signals is prevented.



3,501,237
APPARATUS FOR AND METHOD OF DETERMINING TEMPERATURE
Basil M. Lide III, Pittsburgh, Pa., assignor, by mesne assignments, to Industrial Development Fund, a Pennsylvania development credit corporation
Filed Apr. 28, 1964, Ser. No. 363,093
Int. Cl. G01j 5/60
U.S. Cl. 356—45 19 Claims



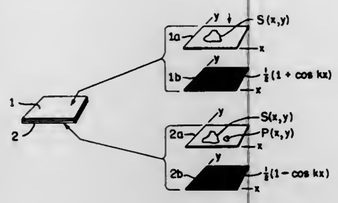
A plural wavelength radiation pyrometer including a photo-conductive element (Exposed Cell; FIG. 6A) subject for short time intervals, determined by rotating disc FD (FIG. 2), to radiation in the two wavelengths (called red and blue) through filters FR and FB. The Cell is connected in a bridge (FIG. 6B) including the Cell, a compensating photo-resistor R2, controlled by lamp LA, and resistors R9 and R10. The bridge has input terminals J1, J2 and output terminals J3, J4. The output terminals are connected through amplifiers A1 and PA in a feedback network to maintain point J3 at ground potential and through A2, Red Pulse Separator, A4, NA, in a feedback network to maintain the magnitude of the red electrical signal constant. The temperature is measured by meter M1 (FIG. 6A) in circuit: A2, Blue Pulse Separator, A3, M1.

3,501,238

METHOD AND APPARATUS FOR ENHANCING DIFFERENCES BETWEEN SIMILAR SPATIAL SIGNALS

Karl A. Stetson, West Acton, and Herbert A. Elion, Wellesley Hills, Mass., assignors to GCA Corporation, Bedford, Mass., a corporation of Delaware

Filed Sept. 6, 1966, Ser. No. 577,498
Int. Cl. G06k *9/08*; G02b *5/18*; G03b *27/02*
U.S. Cl. 356—71 2 Claims



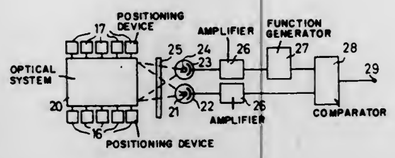
In the method disclosed herein, differences between a pair of images are enhanced by making a transparency from each image and a periodic transmission grating, placing the transparencies together so that the image components are substantially in registry and the grating components are in phase opposition, and then illuminating the transparencies with collimated monochromatic light in an optical system including a frequency plane filter to form, from a first order diffracted beam an image having enhanced difference components.

3,501,239

MEASURING DEVICE FOR THE MAXIMUM VISUAL DISTANCE IN THE FOG

Paul O. C. Rouet, Marcinelle, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium

Filed Oct. 11, 1965, Ser. No. 494,537
Claims priority, application Belgium, Oct. 14, 1964, 654,344; Apr. 7, 1965, 662,165
Int. Cl. G01n *21/22*
U.S. Cl. 356—103 5 Claims



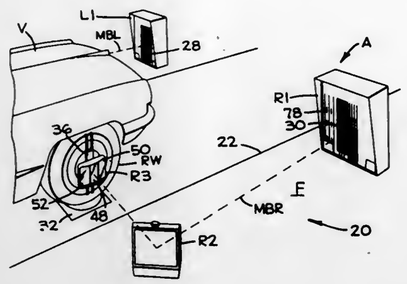
This invention relates to an installation for measuring the maximum visual distance in the fog comprising a series of signal elements and at least one observation apparatus in which an optical system is arranged for observing the series of signal elements, a screen on which the optical system projects the image of certain signal elements of the series as well as an image of their surroundings, and a control device for operating certain signalling elements of the series to render them visible and simultaneously modify the focal distance of the optical system in such a manner that when the visibility is perfect, the image of at least one signal element and of its surrounding appear on the screen always about the same size independent of the distance between the operated signal element and the optical system.

3,501,240

OPTICAL WHEEL ALIGNMENT APPARATUS

Don A. Haynes, Okemos, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,391
Int. Cl. G01b *11/26*
U.S. Cl. 356—155 13 Claims



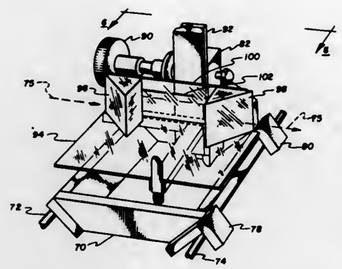
There is disclosed, for each front wheel of a vehicle, optical wheel alignment apparatus which has a projector to project a beam to a relay mirror and from there to a pendulous three face mirror on the front wheel of the vehicle. The wheel mirror is damped by a silicone substance which quickly brings the mirror to rest. The relay mirror reflects a reference beam back to the projector and passes a measuring beam to the vehicle wheel. The apparatus includes a fixed chart and a movable chart at the projector, the latter controlled from a station adjacent the vehicle steering wheel. The projectors and charts for the two wheels are spaced apart to permit passage of a vehicle therebetween for diagnostic lane testing.

3,501,241

SINGLE AND MULTIPLE INTERNAL REFLECTION CELLS

Wilford N. Hansen, Richmond, Utah, and James A. Horton, Thousand Oaks, Calif., assignors to North American Rockwell Corporation

Continuation-in-part of application Ser. No. 397,195, Sept. 17, 1964. This application Dec. 12, 1968, Ser. No. 783,232
Int. Cl. G01n *21/16*
U.S. Cl. 356—244 7 Claims



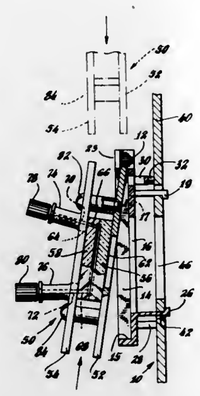
Spectrometer cells for single and multiple internal reflection studies are disclosed where each cell utilizes a pair of prism members to direct a light beam to a sample contacting surface or a reflecting surface. The unit is arranged such that the prism members are movable with respect to the light beam so that the sample contacting and reflecting surfaces may be selectively scanned to obtain a background reflection spectrum as well as the absorbance spectrum of the sample.

3,501,242

PIVOTING SAMPLE CELL HOLDER

Charles F. de Mey II, West Redding, and Igor E. Dolgen, Monroe, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Nov. 6, 1967, Ser. No. 680,868
Int. Cl. G01n *1/10*
U.S. Cl. 356—246 4 Claims



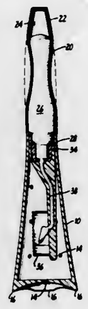
An improved holder for sample cells of the type used for example in spectrophotometers, can accept existing cell assemblies either by the present technique of sliding the cell assembly (generally downwardly) into the holder, or by a new, pivoting motion in conjunction with a short upward movement. The sample holder is provided with short, inwardly extending ears on its top, which not only act as short tracks for accepting slide engagement of the cell flanges, but also act analogously to a releasable pair of hinge ears for accepting the upper edge of the cell assembly flanges for the pivoting hinge-like connection.

3,501,243

FOUNTAIN TOOTHBRUSH

Raymond H. Heiskell, 30 Laurel Court, San Mateo, Calif. 94402, and William A. Anderson, 1659 29th Ave., San Francisco, Calif. 94122

Filed Nov. 9, 1966, Ser. No. 593,023
Int. Cl. A46b *11/02*
U.S. Cl. 401—131 5 Claims



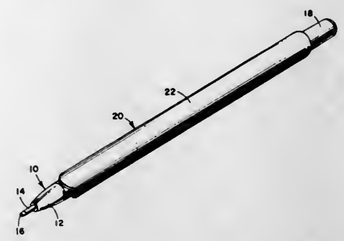
An improved fountain toothbrush having a replaceable dentifrice reservoir in the form of a simple toothpaste tube.

3,501,244

CLEANING ATTACHMENT FOR BALL POINT PEN

Thomas S. Kulka, 200 Film Bldg., 2108 Payne Ave., Cleveland, Ohio 44114

Filed Aug. 14, 1968, Ser. No. 752,527
Int. Cl. B43k *7/00, 29/00*
U.S. Cl. 401—195 6 Claims



An attachment for a ball point pen adapted to be removably retained on the exterior of said pen, said attachment being provided with means adapted to be firmly engaged by and to frictionally resist movement of the point of said pen when said attachment is removed from said pen thereby to reactivate the pen to writing condition.

ERRATUM

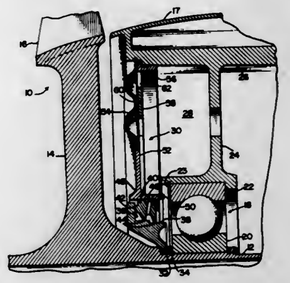
For Class 401—198 see:
Patent No. 3,501,225

3,501,245

SEAL ASSEMBLIES

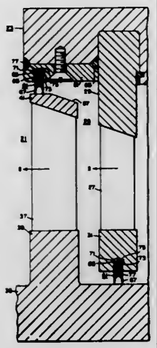
Theodore Ivanko, Fairfield, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware

Filed Mar. 4, 1968, Ser. No. 710,306
Int. Cl. B01d *11/00, 1/00*
U.S. Cl. 415—113 9 Claims



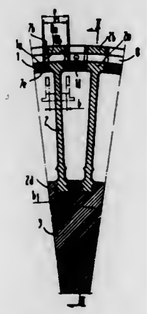
The disclosure illustrates a seal for an annular sump chamber in which a rotor of a gas turbine engine is journaled. The seal assembly comprises a convoluted diaphragm secured around its periphery to the annular sump chamber and around its inner edge to a seal element which is urged forward by the diaphragm to abut an axial sealing face for relatively low operating conditions of the engine and during rest. During operation of the engine, pressurized air extracted from the engine flow path deflects the diaphragm and seal ring element away from the axial sealing face to function either as a fixed gas face seal or as a radial seal assembly. Stops are provided to limit the displacement of the diaphragm and seal element to limit the stress of the diaphragm.

3,501,246
AXIAL FLUID-FLOW MACHINE
Herbert A. Hickey, Philadelphia, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1967, Ser. No. 694,456
Int. Cl. F01d 5/00, 7/00; F16j 9/06
U.S. Cl. 415—170 13 Claims



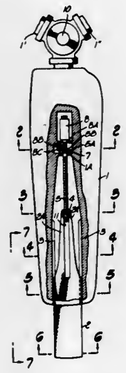
A turbine 21 (FIG. 1) having a readily removable snap-on vapor-leakage seal 61 interposed in the space between the rotor 35 and the diaphragm 25 and its support 23. The seal may be made up of a plurality of arcuate coextensive segments or strips (FIGS. 2 through 6), each segment having yieldable legs 63 which snap into a grooved opening 71 in the diaphragm 25 or its support 23 as required. The segments 61 may be fed into the opening 71 by compressing the legs 63 and pushing the section radially into the opening 71 with a snap-in action. The seal segments are movably disposed in the opening and are urged outwardly by a spring 77 into firm engagement with the lips of the opening so that the seal seals itself against leakage.

3,501,247
BLADE FIXING ARRANGEMENT
Marcel Joseph Tournere, Paris, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed July 5, 1968, Ser. No. 742,658
Claims priority, application France, July 7, 1967, 113,959
Int. Cl. F01d 9/02
U.S. Cl. 415—189 5 Claims



A device for fixing a set of blades to the wall of a turbine, openings being provided in said wall to permit the individual introduction or extraction of the blades, said device comprising mounting inserts which close off the spaces formed between the blade roots and the periphery of the openings, and a keeper which locks together the blades, the mounting inserts and the wall.

3,501,248
VARIABLE DIAMETER PROPELLERS
Friedrich W. Brocker, 39147 N. 11th St. W., Palmdale, Calif. 90355
Filed May 14, 1968, Ser. No. 729,029
Claims priority, application Germany, May 17, 1967, 1,506,623
Int. Cl. B64c 27/72
U.S. Cl. 416—89 15 Claims



A variable diameter propeller for cruising and hovering has an outer section mounted for guided movement within an inner section by a mechanism inside said inner section. Such outer section has a flat profile and is of substantially constant width along its length and contacts its guides only at its leading and trailing edge portions. Also there is progressively larger contact area between the sections when and as the outer section is extended to thereby provide increased structural stability and integrity. The actuating mechanism involves an elongated threaded member cooperating with a nut member, the elongated threaded member being of two parts for assembly and disassembly purposes.

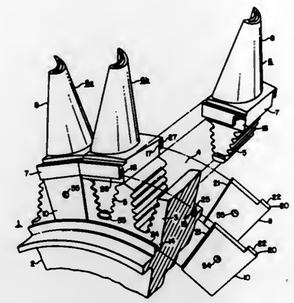
3,501,249
SIDE PLATES FOR TURBINE BLADES
Augustine J. Scalzo, Philadelphia, and Andrew Zabrodsky, Boothwyn, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 24, 1968, Ser. No. 739,274
Int. Cl. F01d 5/08, 5/18, 7/00
U.S. Cl. 416—95 15 Claims

The invention comprises novel structure for retaining turbine blades in the periphery of a rotor disc and for controlling air or other cooling fluid past root portions of the blades secured within the periphery of the disc.

The periphery of the disc is provided with axially extending, side entry channels for receiving blade root portions. The channels and/or the root portions are formed to provide axially extending passageways which permit a cooling fluid to flow therethrough.

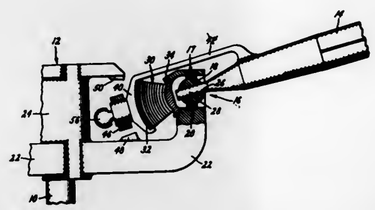
Plate structure is provided comprising two apertured plates for each turbine blade, one plate secured on the upstream side of the blade and one secured on the downstream side for controlling the flow of cooling fluid through the passageways. Each blade is provided with an indexing slot, and each plate is provided with a corresponding indexing tab for maintaining the plates in proper

orientation with the blades. The plates are further provided with lip portions provided on opposed edges thereof for interlocking adjacently disposed plates together. The



first and last plate on each side of one blade is provided with a bevelled edge and is locked in place by indexing lockscrews and suitable lockwashers.

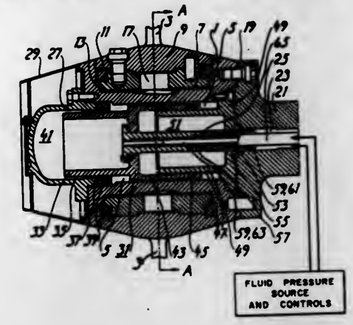
3,501,250
ROTOR HUB
Victor S. Mosinskis, Springfield, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 715,325
Int. Cl. B63k 1/06, 5/12
U.S. Cl. 416—140 9 Claims



A rotor hub assembly for a vertical lift aircraft in which a universal bearing having a fixed center supports a rotor blade on a rotatable hub for pivotal movement about lag and flapping axes and for rotational movement about a pitch axis, all of which axes intersect at the fixed center. A resilient bearing restrains the blade against centrifugal forces and cooperates with the universal bearing to permit movement of the blade about the lag, flapping, and pitch axes.

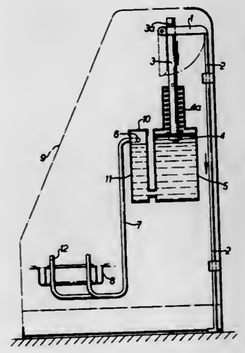
3,501,251
VARIABLE PITCH PROPELLER
Kjell Haglund and Olof Johan Gerhard Hedberg, Karlstad, Sweden, assignors to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden
Filed Jan. 24, 1968, Ser. No. 700,151
Claims priority, application Sweden, Mar. 22, 1967, 3,987/67
Int. Cl. B63h 1/06, 3/00
U.S. Cl. 416—157 6 Claims

The blades of a variable pitch propeller are rotated to vary their pitch by a double-acting, fluid-operated drive unit composed of a unitary double piston structure which is driven axially in either direction by fluid pressure in two opposed cylinders which coact with respective ones of two piston portions of the piston structure. The piston structure is coupled to the propeller blades to impart rotary motion to them upon axial



movement. The guiding and sealing surfaces of the two piston elements are preferably cylindrical, are coaxial with each other and are of equal diameters.

3,501,252
SAFETY ARRANGEMENTS FOR LIQUID FUEL BURNING DEVICES
Arthur Whittaker Richardson, New Malden, England, assignor to Karma (New Malden) Ltd., New Malden, Surrey, England, a British company
Filed Dec. 4, 1967, Ser. No. 687,566
Claims priority, application Great Britain, Dec. 5, 1966, 54,408/66
Int. Cl. F23q 25/00; F23m 5/24
U.S. Cl. 431—33 6 Claims

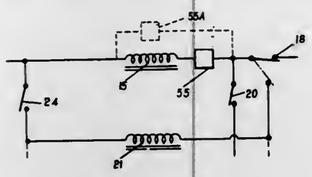


A liquid fuel burning appliance in which provision is made for applying pressure to a flame extinguishing medium in response to abnormal conditions of the appliance to discharge the medium into the burner.

3,501,253
AUTOMATIC IGNITION SYSTEMS
Kenneth R. Wade, Liverpool, England, assignor to United Gas Industries Limited, London, England, a British company
Filed Jan. 22, 1968, Ser. No. 699,546
Claims priority, application Great Britain, Feb. 9, 1967, 6,313/67
Int. Cl. F23q 9/08
U.S. Cl. 431—43 1 Claim

A gas appliance ignition apparatus wherein a main burner is ignited by a pilot flame, which is lit by an electrical igniter coil. When the pilot flame lights a flame

switch is moved from the "cold" to the "hot" position which disconnects the igniter coil and connects the solenoid to open the main burner valve. A safety switch which is closed when potential exists across the pilot

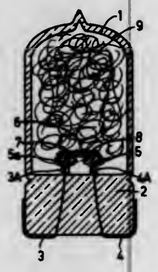


valve solenoid is then in circuit with the main and pilot valve solenoids. Upon electrical failure the safety switch opens, closes both valves and stops the pilot valve opening until the flame switch has moved to "cold."

3,501,254
COMBUSTION FLASH LAMP WHICH CAN BE ARRANGED IN A HOLDER IN PARALLEL CONNECTION

Louis Marius Nijland, Emmasingel, Eindhoven, Netherlands, and Johann Schroder, Aachen, Germany, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 22, 1967, Ser. No. 669,888
Claims priority, application Netherlands, Sept. 30, 1966, 6613815
Int. Cl. F21k *5/02*
U.S. Cl. 431—95 **19 Claims**



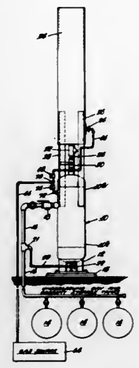
A combustion flash lamp employing a combustible metal wool and an oxidizing gas in a transparent envelope has an ignition means which permits several of these lamps to be connected in parallel to a source of transient ignition voltage so that with the application of a voltage pulse, only one lamp is ignited, and after ignition, the succeeding lamp can be ignited as required. The ignition means includes a pair of lead-in conductors connected within the lamp by an oxidizable conductive material, e.g. superficially oxidized metal powder, a semiconductor material and a binder; externally, the lead-in conductors of all lamps are connected in parallel with a pulse generator which generates heavily damped oscillations.

3,501,255
GAS BURNER APPARATUS

Bobby H. Greene, Rte. 2, Malvern, Pa. 19355

Filed Mar. 25, 1968, Ser. No. 715,825
Int. Cl. B23b *5/00*
U.S. Cl. 431—202 **28 Claims**

A gas burner apparatus is provided which includes a vessel having an upper portion and a lower portion and first conduit means for introduced gas into the upper portion of the vessel to provide a swirling motion of the gas in the chamber. A burner head is employed having a plurality of ports for directing gas outwardly from the burner head. The apparatus includes a tubular burner chamber having a sidewall surrounding the burner head and supported to provide a space between the burner head and the chamber, the chamber extending above the burner head and being open at its ends to permit flow of air

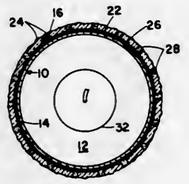


through the chamber. The ports of the burner head are adapted to direct gas into the chamber for creating a turbulence to draw air into the chamber. Second conduit means including valve means is provided for venting gas upwardly from the vessel to the burner head and third conduit means is provided for permitting withdrawal of liquid from the lower portion of the vessel.

3,501,256
DECORATIVE CONTAINER

Kenneth Leslie Milliken, Galesburg, Ill. (2409 Highland View Ave., Burnsville, Minn. 55378)

Filed May 9, 1968, Ser. No. 727,982
Int. Cl. F23d *3/16*
U.S. Cl. 431—291 **7 Claims**



A cup shaped container encloses a candle and is made by applying a thin coating of vinyl material suspended in a solvent to the exterior of the cylindrical wall of a conventional drinking glass. After the solvent evaporates, elongated rectangular colored glass panels are bonded to the coated wall of the glass in an adjacent, upright, side by side relationship and the space between the panels is filled with black grout.

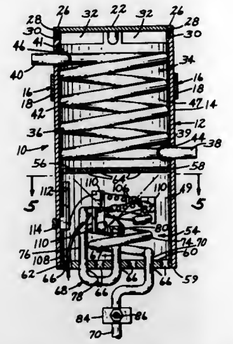
3,501,257
HEATER FOR AUTOMOBILE COOLING SYSTEM

Chester W. Hilton and Walter E. Hebert, both of 1525 Cloquet Ave., Cloquet, Minn. 55720

Filed Jan. 22, 1968, Ser. No. 699,657
Int. Cl. F23d *13/14, 11/44;* **F24h** *1/00*
U.S. Cl. 431—347 **4 Claims**

An auxiliary heater for liquid cooled internal combustion engines, or the like, having a housing, the upper end of which is provided with a cap, a liquid conduit,

having a portion thereof disposed within the housing and opposite ends connected to the cooling system of the internal combustion engine, a perforate plate in the housing adjacent the liquid conduit dividing the housing into an upper heating chamber and a lower mixing and combustion chamber, the plate being composed of a catalytic agent, a fuel supply conduit supplying fuel

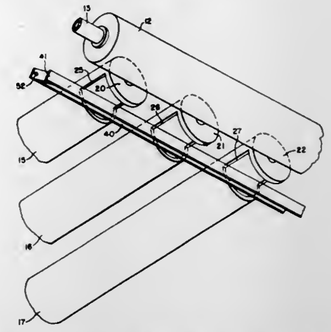


to a vaporizer below and adjacent the plate and heating means in the mixing and combustion chamber for initially igniting fuel from the fuel vaporizer and for heating the vaporizer and the catalyst plate to reach an operating temperature to burn the fuel and means for terminating the igniting means when the catalyst plate has reached an operating temperature.

3,501,258
GAS-FIRED BURNER UNIT WITH GANG TYPE AIR DAMPER SHUTTER

Richard J. Vales, Elyria, Ohio, assignor to Luxaire, Inc., Elyria, Ohio, a corporation of Delaware

Filed May 13, 1968, Ser. No. 728,542
Int. Cl. F23d *13/40*
U.S. Cl. 431—354 **3 Claims**



A gas-fired burner unit having a plurality of elongated burner tubes each closed at both ends with burner openings along its length and with means to inject fuel gas at one end together with a damper air opening in the side of the tube near the injection means, there being a single damper member in bridging relation to and simultaneously movable into the damper openings of all burner tubes to provide a ganged air adjustment for all tubes.

CHEMICAL

3,501,259
PROCESS FOR SIMULTANEOUS COLORATION AND FINISHING OF CELLULOSE FIBERS AND REACTIVE DYES THEREFOR

Robert S. Long, Bound Brook, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 769,995, Oct. 28, 1958. This application Apr. 11, 1961, Ser. No. 102,100
Int. Cl. D06p *3/66*
U.S. Cl. 8—18 **26 Claims**

Process for simultaneous coloring and finishing of cellulose fibers and other active hydrogen containing substrates from an aqueous solution containing a resin forming substance, an acid catalyst and a fiber reactive dyestuff.

Fiber-reactive dyes for cellulose and other substrates containing active hydrogen have the formula

$$D(—X—B—)_n(—CH_2OZ)_n$$

wherein:

D is the chromophoric aromatic residue of a member selected from the group consisting of azo dyes, anthraquinone dyes, phthalocyanine dyes, anthrone dyes, indigoid dyes, xanthene dyes, triarylmethane dyes, diarylmethane dyes, nitro dyes, nitroso dyes, oxazine dyes, thiazine dyes, azine dyes and acridine dyes with *n* free valences;

X is a divalent bridging group, joining the aromatic moiety of C with B, selected from the group consisting of a covalent bond, —NR"—, —NAcyl—, —O—, —S—, $—(CH_2)_m—$, $—(CH_2)_mNR"—$, —CO—, $—SO_2—$, —CONR"— and $—SO_2NR"—$ wherein R" is a member selected from the group consisting of hydrogen and lower alkyl and *m* is a positive integer;

B is a dehydro radical of a group with an active hydrogen, said group being selected from carbamyl, carbamoylalkyl, carbamoylaryl, ureido, cyclized ureido, imido, sulfamoyl, aminotriazinyl and ortho-unsubstituted hydroxyphenyl, the radical (CH_2OZ) being attached to B at the position of the active hydrogen;

Z is a member selected from the group consisting of hydrogen and lower alkyl; and

n is a positive integer less than seven.

3,501,260
POLYVINYL ALCOHOL AND STARCH BOUND TO CELLULOSIC TEXTILE SUBSTRATE THROUGH REACTION WITH BETA-OXYETHYL SULFONES

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 20, 1960, Ser. No. 77,027. Divided and this application Mar. 18, 1964, Ser. No. 352,946
Int. Cl. D06m *11/18, 13/54*
U.S. Cl. 8—115.6 **2 Claims**

Treatment of soluble polymers containing free hydroxyl groups with polyfunctional beta-oxyethyl sulfones. Sizing of textiles is included.

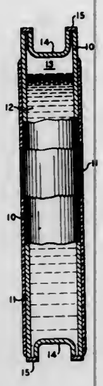
3,501,261
CORROSION CONTROL IN SEALED HEAT STORAGE MODULES

Richard E. Rice and Willis Thompson Lawrence, Arlington, Mass., assignors, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Sept. 26, 1967, Ser. No. 670,544
Int. Cl. C23f *11/06, 15/00;* **F28d** *13/00*
U.S. Cl. 21—2.5 **9 Claims**

The corrosion of the internal surfaces of a steel container for alkali metal hydroxide heat storage compositions is controlled by the generation of atomic hydrogen

in the proximity of the outer surface of the steel container. Atomic hydrogen may be generated by the reaction of a metal with atmospheric moisture. Atmospheric moisture may be attracted to the outer surface of the heat storage module by a hyroscopic material. The outer surface of the heat storage module may act as the metal for the production of atomic hydrogen.



3,501,262

OXIDATION PROCESS

Kenneth Arkless, Eaglescliffe, and Dennis Cleaver, Saltburn, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom

Continuation of application Ser. No. 256,386, Feb. 5, 1963. This application Apr. 10, 1967, Ser. No. 629,820

Claims priority, application Great Britain, Feb. 6, 1962, 4,609/62

Int. Cl. C01g *57/00*; C01f *7/00*; C22b *59/00*

U.S. Cl. 23—21 25 Claims

The vapor phase oxidation of a metal halide to form a normally solid particulate metal oxide is effected in a reaction zone containing gas heated by electrical discharge to a temperature of 2000° C.

3,501,263

PROCESS FOR THE MANUFACTURE OF GERMANIUM-(II)-PHOSPHITE

Peter Schweizer, Konigsbrunn, near Augsburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 8, 1967, Ser. No. 681,570

Claims priority, application Germany, Nov. 11, 1966, F 50,648

Int. Cl. C01b *25/26*; C01g *17/00*

U.S. Cl. 23—23 3 Claims

Germanium - (II) - phosphite is obtained by reacting germanium-(IV)-oxide, hypophosphorous acid and phosphorous acid in a molar ratio of 1:1: at most 1 in an aqueous solution containing 200 to 800 milliliters of water for each mole of germanium-(IV)-oxide at a temperature of from 50 to 100° C. After separation of the crystalline germanium - (II) - phosphite precipitate the mother liquor is used for a new reaction and the originally used amount of germanium-(IV)-oxide and hypophosphorous are added.

3,501,264

GLASSY ALKALIZED ALUMINA

Joseph M. Pilato, Silver Spring, and William P. Hettinger, Jr., Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Aug. 25, 1967, Ser. No. 663,224

Int. Cl. C01f *7/00*

U.S. Cl. 23—52 5 Claims

An improved alumina alkalate adsorbant having an increased adsorption capacity for sulfur compounds such as sulfur dioxide, sulfur trioxide, hydrogen sulfide and the like, and a process of preparing this alkalized alumina which process is characterized by the novel step of adding sodium gluconate to one of the initial reactant solutions prior to admixing and reaction are disclosed. Adsorption processes for the removal of sulfur compounds from gases are also disclosed.

3,501,265

METHOD FOR PREPARING AND ISOLATING CYANONICKELATES OF SODIUM AND POTASSIUM

Edward A. Sullivan, Beverly, Mass., assignor to Ventron Corporation, Beverly, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 548,353, May 4, 1966. This application Feb. 24, 1969, Ser. No. 801,866

Int. Cl. C01c *3/08*

U.S. Cl. 23—77 4 Claims

The invention provides a method for preparing and isolating in a single step synthesis a cyanonickelate of an alkali metal selected from the group consisting of sodium and potassium. The method comprises reacting a nickel salt with a cyanide of the selected alkali metal in relative proportion of about one mole of said salt and about four moles of said cyanide in an amount of water sufficient to dissolve the reactants while permitting precipitation of the major portion of the formed alkali metal cyanonickelate upon cooling the reaction mixture to a temperature between room temperature and about 5° C. The nickel salt used is selected from those which form corresponding alkali metal salts having a water solubility in excess of about 25 grams per 100 grams of water at 25° C.

3,501,266

METHOD OF SEPARATING POTASSIUM HALATES FROM POTASSIUM HALIDES BY ADDITION OF AMMONIA

Remigius A. Gaska and Robert D. Goodenough, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 541,058, Apr. 8, 1966. This application Nov. 5, 1968, Ser. No. 773,624

Int. Cl. C01d *3/14, 3/16*

U.S. Cl. 23—89 4 Claims

This invention relates to a method of separating potassium halate salts from aqueous solutions containing potassium halide salts by adding sufficient ammonia to precipitate, selectively, the potassium halate salt and separating the precipitate from the purified potassium halide solution.

3,501,267

REACTION OF COAL AND AMMONIA TO MAKE HYDROGEN CYANIDE

Glenn E. Johnson, Pittsburgh, Albert J. Forney, Coraopolis, and William A. Decker, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Mar. 13, 1968, Ser. No. 712,596

Int. Cl. C01c *3/02*; C01b *1/02*

U.S. Cl. 23—151 6 Claims

Hydrogen cyanide is produced by reacting ammoniated coal with ammonia at temperatures of about 1000 to 1300° C.

3,501,268

PROCESS FOR THE PRODUCTION OF ANHYDROUS HYDROGEN FLUORIDE

Roy J. Laran, Greenwell Springs, and Albert P. Giraitis and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 18, 1967, Ser. No. 639,271

Int. Cl. C01b *7/22*

U.S. Cl. 23—153 2 Claims

The present invention relates to an integrated process for the production of hydrogen fluoride, trichlorofluoromethane, and dichlorodifluoromethane via the intermediate production of ammonium bifluoride. Ammonium bifluoride is prepared by the decomposition of ammonium cryolite, which latter compound results from the reaction of aluminum sulfate and ammonium fluoride, aluminum oxide and ammonium fluoride, or aluminum fluoride and ammonium fluoride. Ammonium fluoride and aluminum fluoride may be prepared, in turn, by reaction of fluosilicic acid with ammonia and aluminum hydroxide, respectively. The principal intermediate compound of the present invention, ammonium bifluoride, may be utilized either to prepare hydrogen fluoride by reaction with sulfuric acid or as a direct fluorinating agent for preparing trichlorofluoromethane and dichlorodifluoromethane by reaction with carbon tetrachloride in the presence of a catalyst.

3,501,269

PROCESS FOR PREPARING SILICA GEL

Milton E. Winyall, Ellicott City, and Ellsworth G. Acker, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,172

Int. Cl. C01b *33/16, 33/00*

U.S. Cl. 23—182 7 Claims

A commercial process of preparing intermediate density silica gel, which process is characterized by a unique aging and washing step which only requires as little as one-tenth of the amount of time required by the corresponding steps of the processes of the prior art. The product produced has wide application particularly as a filter in varnishes, lacquers, paper, etc.

3,501,270

REDUCTION OF ALKALI SULFATES TO CAUSTIC ALKALI WITH CRACKABLE GASES

Wilhelm Deiters, Chur, Grison, Switzerland, assignor to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

Filed June 14, 1967, Ser. No. 645,909

Claims priority, application Switzerland, June 17, 1966, 8,826/66

Int. Cl. C01d *1/04*

U.S. Cl. 23—184 9 Claims

A process for the production of caustic alkali from alkali sulfate solutions with crackable gases and steam. The gases are burned, and the cracked components furnish the heat supply needed for the process. The contact of the caustic alkali with higher concentrations of CO_2 simultaneously is prevented, so that a substantially pure end product is obtained.

3,501,271

TiO_2 PRECIPITATION PROCESS

Walter Twist, Hartlepool, Leslie John Lawrence, Nunthorpe, Middlesbrough, and Tom Lloyd Cordey, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom

No Drawing. Filed Oct. 4, 1967, Ser. No. 672,747

Claims priority, application Great Britain, Nov. 5, 1966, 49,696/66

Int. Cl. C01g *23/04, 23/06, 23/08*

U.S. Cl. 23—202 17 Claims

A process for the thermal hydrolysis of aqueous titanium sulphate solution comprising nucleating the solution; heating it to a substantially constant temperature in the range 90° to 108° C. for a period of time sufficient to hydrolyse between 15% and 60% of the titanium sulphate thereafter raising the temperature of the solution by an amount in the range 2° C. to 18° C. and maintaining the temperature of the solution at a value such that the rate of hydrolysis is not greater than 1% (of the initial titanium sulphate content) per minute.

3,501,272

CARBON PURIFICATION PROCESS

James L. Benak, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 28, 1966, Ser. No. 530,681

Int. Cl. C01b *31/02*

U.S. Cl. 23—209.9 4 Claims

The invention described herein is a process for the purification of carbon. That process provides for the treatment of carbon with hydrofluoric acid, or a mixture of hydrofluoric acid and nitric acid, followed in each case by treatment with hot aqueous hydrochloric acid. The carbon thus purified is notably effective for use as electrode material in a demineralization cell, i.e., one used for the demineralization of water.

3,501,273

APPARATUS FOR AUTOMATIC ANALYSIS

Kjell Agner, Angsholmen, Drottningholm, Sweden

Continuation-in-part of application Ser. No. 630,624, Apr. 13, 1967. This application June 20, 1967, Ser. No. 660,538

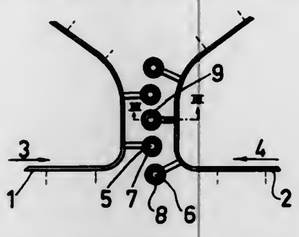
Claims priority, application Sweden, Apr. 15, 1966, 5,157/66; Dec. 1, 1966, 16,466/66

Int. Cl. G01n *33/00, 31/00*

U.S. Cl. 23—253 1 Claim

An apparatus for automation of chemical, serological and other analogous types of quantitative analyses having

two conveyor belts, one for sample vessels and the other for reaction vessels, said vessels alternately passing one and the same point, where the two types of vessels by a special arrangement will become placed in position for enabling in a first period of a two period cycle the filling

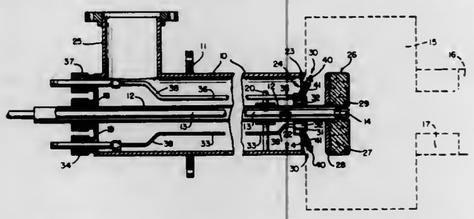


of a stationary, self-rinsing, measuring device with liquid from sample vessels and in a thereupon following period the delivery of the measured quantity into reaction vessels the properties of the sample thereafter being determined in a manner known per se.

3,501,274
FUEL OIL INJECTOR FOR CARBON BLACK REACTOR

Donald Whittle and David C. Williams, Houston, Tex., assignors to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed Oct. 30, 1967, Ser. No. 678,962
Int. Cl. C09c *1/48;* **C01c** *31/02;* **C10b** *47/04*
U.S. Cl. 23—259.5 **10 Claims**



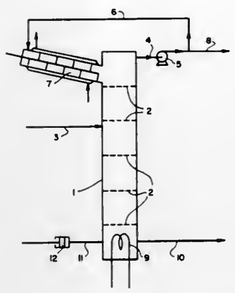
A furnace-type carbon black reactor having a heating zone is provided with a feedstock inlet for discharging a feedstock into said zone, and with a burner having a combustion-supporting gas inlet and fuel introduction means for burning said fuel to heat the feedstock in said zone without intimate contact between said feedstock and the burning fuel. The fuel introduction means includes a fuel distributing ring disposed closely adjacent to the central axis of the burner and heating zone at a position shielded from heat in the zone, and a plurality of elongated nozzles extend from the distributing ring past the gas inlet to a combustion orifice for mixture with the introduced combustion-supporting gas.

3,501,275
APPARATUS FOR CONTINUOUSLY SEPARATING MIXTURES OF SUBSTANCES BY MULTISTAGE RECTIFYING COLUMN CRYSTALLIZATION

Richard Sailer, Hanswerner Philipp and Clau Berther, Domat, Ems, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, a corporation of Switzerland

Filed May 27, 1968, Ser. No. 732,396
Claims priority, application Switzerland, May 26, 1967, 7,508/67
Int. Cl. B01d *9/00;* **C07c** *37/22;* **C07b** *29/00*
U.S. Cl. 23—273 **1 Claim**

An apparatus for fractional crystallization including a column of axially spaced screen plate disposed therein, a pulse means connected to the base of said column, crystallizer means connected at one end to the head of the column, and means for recirculating part of the removed



lower melting point product to the other end of the crystallizer.

3,501,276
APPARATUS FOR SULFONATION OF ORGANIC COMPOUNDS

John E. Vander Mey, Cresskill, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Original application Feb. 4, 1964, Ser. No. 342,485, now Patent No. 3,328,460, dated June 27, 1967. Divided and this application Apr. 12, 1967, Ser. No. 656,609
Int. Cl. B01j *4/00, 4/02*
U.S. Cl. 23—284 **5 Claims**



Apparatus for sulfonation of organic compounds comprising in combination a vertically disposed elongated enclosed reaction chamber, a separating chamber associated with the lower end thereof for separately discharging gas and liquid therefrom, means providing a slot in the upper portion of the reaction chamber wall extending entirely around the periphery thereof, means for cooling said wall extending entirely around the periphery thereof from and below said slot, means for supplying organic liquid through said slot at a velocity sufficiently low that all of the organic liquid forms a smooth, thin film extending entirely around the periphery of said wall and descending downwardly in quiescent flow while adhering thereto, and an inlet for a gaseous mixture of inert gas and sulfur trioxide arranged and adapted to discharge a stream of the same downwardly through said reaction chamber around the periphery thereof and in contact with the downwardly flowing film thereon. Preferably, the means for supplying organic liquid comprises an organic liquid supply chamber, disposed above the slot, and an organic supply inlet to the organic liquid chamber which together is adapted to provide the liquid through orifices to the slot at predetermined head uniform throughout slot length and through a laterally extending periphery channel terminating in this slot.

3,501,277
DUCTILE COBALT STRIP

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

Original application Mar. 11, 1966, Ser. No. 533,423, now Patent No. 3,425,828, dated Feb. 4, 1969. Divided and this application Jan. 13, 1969, Ser. No. 790,888
Int. Cl. B22f *7/00;* **C22c** *19/00*
U.S. Cl. 29—182 **2 Claims**

A ductile cobalt strip or the like is formed from a cold-formable mechanical mixture consisting of cobalt powder and iron powder, the iron powder forming from about 2% to about 4% by weight of the mixture. The cobalt has an hexagonal close-packed crystal structure.

3,501,278
PROCESS FOR ELECTRODEPOSITION OF PAINT COATINGS ON ZINC-PLATED STEEL SHEET

Hiromu Uchida, Hajime Nagino, and Kunihiko Yokoyama, Himeji-shi, Japan, assignors to Fuji Iron & Steel Co., Ltd., Tokyo, Japan

Filed Mar. 29, 1968, Ser. No. 717,293
Claims priority, application Japan, Apr. 3, 1967, 42/21,103
Int. Cl. C23f *17/00*
U.S. Cl. 29—195 **8 Claims**

In a process for the electrodeposition of paint on zinc-plated steel, the improvement which comprises plating chromium on the zinc-plated surface of said steel and electrodepositing the paint on the chromium plating. By applying an intermediate chromium plating, contamination of the paint composition by zinc dissolving from the plating during paint electrodeposition is greatly diminished and excellent adhesion and rust prevention is obtained.

3,501,279
DIESEL FUEL ANTISMOKE ADDITIVE

Roy L. Allen, Wrexham, North Wales and Ronald Burt, Cheshire, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 12, 1967, Ser. No. 608,925
Claims priority, application Great Britain, Jan. 18, 1966, 2,342/66
Int. Cl. C10l *1/18*
U.S. Cl. 44—70 **7 Claims**

Alkaline earth metal salts of alpha-alkylalkane monocarboxylic acid and diesel fuels containing said salts as an antismoke agent.

3,501,280
SLITTER KNIVES

George E. Myers, McKeesport, Pa., assignor to Metal Carbides Corporation, Youngstown, Ohio, a corporation of Ohio

Filed Oct. 21, 1959, Ser. No. 847,836
Int. Cl. B26d *1/00;* **C08h** *17/12*
U.S. Cl. 51—298 **4 Claims**

1. A rotary slitter knife for slitting metal strip and sheet comprising a bonded hard metal carbide rim as the cutting element of said knife, said rim being mounted on a metal bushing by a supporting member disposed between at least a part of said bushing and said rim, said supporting member consisting essentially of a hardened

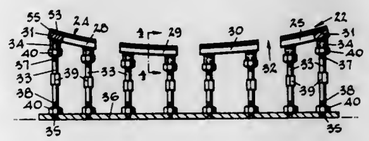


material of a powdered metal and an epoxy resin, said resin being characterized by high dimensional stability during curing and good bonding properties, said supporting member effecting a bond with said rim and said bushing.

3,501,281
METHOD OF FORMING AN INSULATED SHAPING SURFACE ON A BENDING MOLD

Paul T. Mattimoe, Toledo, and William L. Elton, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Oct. 6, 1965, Ser. No. 493,408
Int. Cl. C03b *23/02*
U.S. Cl. 65—288 **13 Claims**



A mold for bending glass sheets that is made up of a rigid part having a surface conforming generally in contour to the curvature desired in a finished bent glass sheet, an insulating refractory cover on this generally conforming surface that has an exposed surface that accurately conforms to the desired curvature, and a layer of adhesive providing a compensating "glue line" between the rigid part and the cover; together with a method of producing such covered mold parts which involves supporting a flexible refractory cover with its supported surface accurately conforming to the desired curvature, applying a silicone polymer to the unsupported surface, pressing the generally conforming rigid mold part into and then curing the polymer.

3,501,282
PREPARATION OF PELLETIZED POTASSIUM CHLORIDE-UREA-SULFUR FERTILIZER

Paul E. Titus, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,249
Int. Cl. C05d *1/02;* **C05g** *1/00*
U.S. Cl. 71—28 **2 Claims**

Fertilizer pellets are produced from a mixture of finely divided potassium chloride, urea and sulfur by agglomerating the mixture in the presence of an appropriate

amount of water, drying at a temperature below the melting point of the urea and sulfur. The dried pellets are hardened by heating to the melting temperature of the sulfur and/or urea, then cooled to provide the pellets with a hard glaze of fused sulfur and/or urea. In preparing the pellets, the materials, such as the potassium chloride or sylvite, are pulverized to a particle size of preferably 10 microns to 1000 microns, and to a fineness such that at least 20% by weight but no more than 50% by weight passes through a 325 mesh U.S. Standard sieve. To produce potassium chloride pellets glazed with a mixture of urea and sulfur, the dried pellets formed as above indicated, are heated for a short residence time at a temperature sufficient to melt the urea, which will likewise melt the sulfur, the melting temperature of urea being about 171° F., and on cooling, the pellets are provided with a urea-sulfur glaze. The amount of the components utilized in preparing these pellets is such that the finished pellets contain at least 35% by weight of potassium chloride and 5%–40% by weight of the sulfur-urea mixture, the sulfur to urea weight ratio being between about 1:2 to 2:1.

3,501,283
METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

Henry G. Braxton, Jr., Franklin Village, Mich., and Evelyn J. Lajiness, Caledonia, Wis., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 31, 1968, Ser. No. 772,372
Int. Cl. A01n *9/38*
U.S. Cl. 71—70 **2 Claims**

Plants are defoliated and desiccated by contacting with a composition containing as an active ingredient organomercury compounds having the formula:

R—Hg—Z

wherein R is selected from the group consisting of alkyl, cycloalkyl, aryl, alkaryl, and aralkyl groups and Z is a halogenated alkyl group having up to about 12 carbon atoms.

3,501,284
METHOD OF DEFOLIATING PLANTS WITH ORGANOMERCURIALS

Henry G. Braxton, Jr., Franklin Village, Mich., and Evelyn J. Lajiness, Caledonia, Wis., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 31, 1968, Ser. No. 772,412
Int. Cl. A01n *9/38*
U.S. Cl. 71—72 **2 Claims**

Plants are defoliated and desiccated by contact with a formulation containing an organomercury compound having the general formula:

$$R{-}Hg{-}X{-}(CH_2)_y{-}\overset{O}{\overset{\|}{C}}{-}NR^1_2$$

wherein R is an alkyl group having from 1 to 6 carbon atoms, R^1 is hydrogen or an alkyl group having up to 12 carbon atoms, X is oxygen or sulfur, and *y* is an integer from 1 to about 12.

3,501,285
2,1,3-BENZOTHIADIAZOLE-DICARBONITRILES AS DEFOLIANTS

Richard W. W. Baldwin, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 10, 1968, Ser. No. 735,543
Int. Cl. A01n *9/12;* **C07d** *91/56*
U.S. Cl. 71—73 **4 Claims**

General vegetation and economic crops are desiccated and defoliated using certain substituted benzothiadiazoles, benzofurazans and benzoselenadiazoles.

3,501,286
PLANT GROWTH CONTROL

Wilfried Draber, Ippendorf, Jurgen F. Falbe, Bonn, and Karl Heinz Büchel and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 29, 1964, Ser. No. 379,005
Int. Cl. A01n *9/22*
U.S. Cl. 71—92 **4 Claims**

Herbicidal composition and method employing certain substituted imidazole compounds.

3,501,287
METAL-METAL OXIDE COMPOSITIONS

Frank Mercer Lever, Pinner, England, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

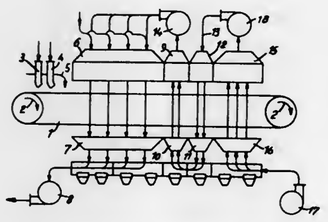
No Drawing. Continuation-in-part of application Ser. No. 421,104, Dec. 24, 1964. This application July 31, 1968, Ser. No. 748,919
Int. Cl. B22f *9/00;* **C22b** *5/00*
U.S. Cl. 75—.5 **4 Claims**

A method of making a uniformly mixed metal-metal oxide composition. An aqueous solution containing an unstable-oxide-forming metal and another metal is mixed with an aqueous solution containing a soluble hydroxide or carbonate causing co-precipitation of the metals as metal hydroxides or metal carbonates. The precipitate is then heated at an elevated temperature to form a mixed metal-metal oxide composition. Alternatively, a reducing agent can be added to the solution causing co-precipitation of the unstable-oxide-forming metal as a metal and the other metal as a metal hydroxide or metal carbonate. This precipitate can then be heated to form a mixed metal-metal oxide composition.

3,501,288
METHOD OF PREREDUCING SINTERS AND PELLETS

Helmut Krainer, deceased, late of Essen, Germany, by Erika Krainer, Selma Krainer, and Wolfram Krainer, heirs, Essen, Germany; and Gunter Meyer, Essen, and Harry Serbent, Mulheim (Ruhr), Germany; said Meyer and said Serbent assignors to Fried. Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 451,265, Apr. 27, 1965. This application May 22, 1968, Ser. No. 763,032
Claims priority, application Germany, Apr. 30, 1964, B 76,601
Int. Cl. C21b *1/18*
U.S. Cl. 75—5 **11 Claims**

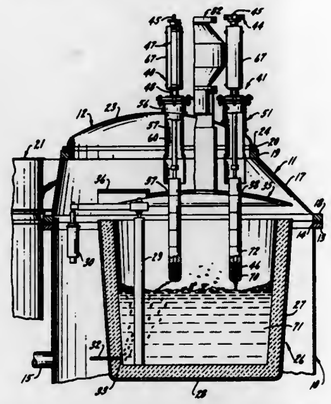


A method of producing ore-sinters and pellets to be reduced in a furnace, which comprises the steps of sintering fine ores containing oxygen bound to iron and pellets formed therefrom, respectively, at sintering temperature by feeding the same in form of a hot moving layer on a travelling grate to a strength sufficient for their reduction in the furnace. The pellets are subjected thereafter without prior cooling to a pre-reduction by feeding reducing gases crosswise through the hot moving layer of sinters and pellets respectively; starting the step of pre-reduction at a temperature range of about between 1000° C. to 1300° C. and terminating the step of pre-reduction at about 700° C.. reducing the oxygen bound to the iron between about 30% to 80% in the pre-reduction step, and performing the final reduction in the furnace.

3,501,289
METHOD AND APPARATUS FOR ADDING HEAT TO MOLTEN METAL UNDER VACUUM

C. W. Finkl and Herbert S. Philbrick, Jr., Chicago, Ill., assignors to A. Finkl & Sons Co., Chicago, Ill., a corporation of New Jersey

Filed June 9, 1965, Ser. No. 462,559
Int. Cl. C21c *7/10, 5/52*
U.S. Cl. 75—12 **17 Claims**

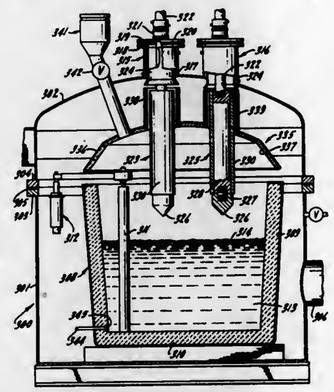


A method and apparatus for adding heat to molten metal under vacuum by use of an alternating current arc struck between non-consumable electrode means and the molten metal.

3,501,290
METHOD OF TREATING MOLTEN METAL WITH ARC HEAT AND VACUUM

Charles W. Finkl and Herbert S. Philbrick, Jr., Chicago, Ill., assignors to A. Finkl & Sons Co., Chicago, Ill., a corporation of New Jersey

Continuation-in-part of application Ser. No. 462,559, June 9, 1965. This application Aug. 29, 1966, Ser. No. 575,897
Int. Cl. C21c *7/10, 5/52*
U.S. Cl. 75—12 **5 Claims**



A method of treating molten metal in which heat is added to a charge by an AC heating arc struck between non-consumable electrode means and the metal charge, the temperature of the metal is regulated to the proper range by the heating arc, and the metal is simultaneously subjected to a degassing vacuum during at least a portion of the time the time the arc is operated. After treatment the metal may be poured.

3,501,291
METHOD FOR INTRODUCING LITHIUM INTO HIGH MELTING ALLOYS AND STEELS

Hans Schneider, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland

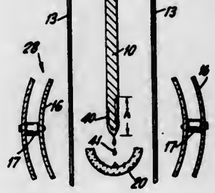
No Drawing. Filed Oct. 17, 1967, Ser. No. 675,766
Claims priority, application Switzerland, Oct. 19, 1966, 15,125/66
Int. Cl. C21c *7/00;* **C22b** *9/00;* **C22c** *33/00*
U.S. Cl. 75—53 **23 Claims**

Lithium is added to the metal melt after placement of the melt in a treatment vessel lined with a material which is more stable than lithium oxide at the melt temperature in order to scavange out excess oxygen. Also, the melt can first be formed by skull melting techniques before the lithium is added. The lithium can be added to the melt by means of a porous carrier body containing the lithium in distributed form.

3,501,292
PURIFICATION OF ELECTROLYTIC COPPER

Thomas Gordon Hart, San Francisco, Calif., assignor to Phelps Dodge Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 551,828
Int. Cl. C22b *15/00, 9/02*
U.S. Cl. 75—72 **12 Claims**



Copper cathode plates are suspended and heated in a hydrogen atmosphere for such purposes as oxygen removal. The hot plates are melted in a vacuum to remove volatile and gaseous impurities by progressively melting with radiant heat the lower region of the suspended plates to create a thin molten film which drips off the plate.

3,501,293
PHOTOCONDUCTIVE BENZOBISTHIAZOLES AND THEIR USE IN ELECTROPHOTOGRAPHIC PROCESSES

Nicholas J. Clecak, San Jose, Robert J. Cox, Los Gatos, Samuel L. Solar, San Jose, and Herbert K. Wurster, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

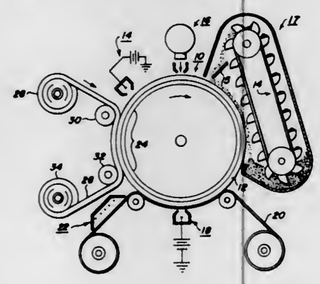
No Drawing. Filed Sept. 18, 1967, Ser. No. 668,696
Int. Cl. G03g *5/06, 13/22;* **C07d** *91/46*
U.S. Cl. 96—1 **9 Claims**

The organic photoconductors are of the class of amino-p-benzobisthiazoles and include both linear and angular compounds. The amino substituent contains aryl, arylalkenyl, substituted aryl or substituted arylalkenyl groups. These compounds are useful as photoconductors in electrophotographic processes.

3,501,294
METHOD OF TREATING THE SURFACE OF A XEROGRAPHIC PLATE WITH A METAL SALT OF A FATTY ACID TO IMPROVE IMAGE TRANSFER

Robert John Joseph, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 14, 1966, Ser. No. 594,249
Int. Cl. G03g *13/16*
U.S. Cl. 96—1.4 **4 Claims**

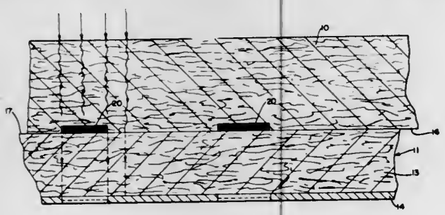


A method of image reproduction is disclosed wherein the surface of a xerographic plate is treated with a metal salt of a fatty acid. The plate is then charged, exposed, and developed. The developed image is then transferred to a receiving sheet. The fatty acid salt is added to facilitate toner transfer.

3,501,295
ELECTROPHOTOGRAPHIC REPRODUCTION SYSTEM UTILIZING LIGHTWEIGHT COPY PAPERS

Donald E. Hanson, Flemington, N.J., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

Filed June 17, 1966, Ser. No. 558,503
Int. Cl. G03g *5/08, 13/22*
U.S. Cl. 96—1.8 **4 Claims**



A light-weight zinc oxide coated paper is used in a reverse contact electrophotographic process. The paper has an at least partially transparent base sheet with a zinc oxide-binder coating of from 5–15 pounds per ream.

3,501,296
PRODUCTION OF LIGHT-SENSITIVE COATINGS FOR USE IN THE MANUFACTURE OF COPYING MATERIALS SUCH AS PRINTING PLATES

Gerard Albert Delzenne, 's-Gravenwezel, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,932
Claims priority, application Great Britain, Mar. 23, 1967, 13,823/67
Int. Cl. G03c *1/68, 1/52;* **G03f** *7/08*
U.S. Cl. 96—33 **10 Claims**

A light-sensitive, alkali-soluble composition comprising a mixture of an alkalai-soluble polymer and a 3-diazooxindole or a 1-diazo-benz (e)-indoline-2-one which finds use as a copy material in the preparation of negative working printing plates when the composition is in a layer on a support by imagewise actinic light exposure and subsequent solvent development.

3,501,297
PHOTOGRAPHIC PROCESS USING POLYACETYLENEICDIOIC ACID CRYSTALS

George E. Cremeans, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

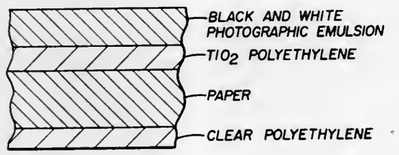
No Drawing. Filed June 6, 1966, Ser. No. 555,229
Int. Cl. G03c *5/24, 1/72*
U.S. Cl. 96—48 **3 Claims**

Image-receptive elements with fixedly positioned photosensitive crystals of polyacetylenic compounds having at least two acetylenic linkages in a conjugated system. Radiant-energy exposure photographically providing a visual print-out image in part of exposed discrete portions of the crystals differing in color from discrete unexposed portions. Positive imaging employing crystals of an alkali metal salt of polyacetylenicdioic acid. Pressure imaging employing crystals of polyacetylenic hydrocarbon compound. Employing radiant-energy induced images for photocopying and also changing image color through heat or solvent for unexposed crystals.

3,501,298
PHOTOGRAPHIC PAPERS

Irvin H. Crawford, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 8, 1966, Ser. No. 541,204
Int. Cl. G03c *1/86, 1/76, 3/00*
U.S. Cl. 96—85 **4 Claims**



Photographic elements have a support comprising a paper base having thereon polyolefin coating which contains titanium dioxide and bis(alkylbenzoxazole) thiophenes.

3,501,299
STABILIZING PRINT-OUT MATERIAL

Henry W. Pestalozzi, Binghamton, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,802
Int. Cl. G03c *1/34, 1/86*
U.S. Cl. 96—85 **4 Claims**

This invention is directed to print-out materials carrying a silver halide emulsion in which a latent image formed by the high intensity pattern produced by an oscillograph is photolytically developed by a prolonged exposure to light of low intensity. The formation of fog which is normally formed during storage or upon prolonged exposure to light is avoided by placing a colloid layer containing lead bromide between the support and the print-out layer. The images can be made permanent by development and fixing, the presence of the lead bromide in the undercoating again prevents the formation of fog.

3,501,300
PHOTOGRAPHIC MATERIALS

Fumihiko Nishio, Nobuo Yamamoto, Kikuo Yamagishi, and Masazumi Aono, Ashigrara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

No Drawing. Filed Nov. 2, 1965, Ser. No. 506,131
Claims priority, application Japan, Nov. 9, 1964, 39/63,102
Int. Cl. G03c *1/80, 1/84*
U.S. Cl. 96—87 **3 Claims**

A photographic material which has on a cellulose ester support, at least one silver halide emulsion layer, and at least one subbing layer containing 1,3-dihydroxybenzene between the support and the emulsion layers.

3,501,301
COATING COMPOSITIONS FOR POLYESTER SHEETING AND POLYESTER SHEETING COATED THEREWITH

Gale F. Nadeau, Clemens B. Starck, and Frederick J. Jacoby, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 495,018, Sept. 27, 1965, which is a continuation-in-part of application Ser. No. 320,597, Oct. 7, 1963, which in turn is a division of application Ser. No. 199,058, May 31, 1962. This application Nov. 29, 1966, Ser. No. 597,669
Int. Cl. G03c *1/80*
U.S. Cl. 96—87 **10 Claims**

Hydrophilic photographic layers are anchored to polyester film supports by coating upon the film support compositions prepared by emulsion polymerization of several monomers in the presence of gelatin. The compositions further contain adhesion promoters, such as a phenol, and sufficient acid to make the compositions acidic. In a representative process, an aqueous acrylo-nitrile-vinylidene chloride-acrylic acid-gelatin polymerization product containing resorcinol is coated on a polyester film support and a gelatin-silver halide emulsion is coated directly thereon.

3,501,302
PHOTOSENSITIVE POLYACETYLENIC SYSTEM AND METHOD OF EXPOSURE

Rodger L. Foltz, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio

No Drawing. Filed June 6, 1966, Ser. No. 555,230
Int. Cl. G03c *1/72*
U.S. Cl. 96—88 **13 Claims**

Image-receptive elements with fixedly positioned photosensitive crystals of polyacetylenic compounds having at least two acetylenic linkages in a conjugated system. Radiant-energy exposure photographically providing a visual print-out image in part of exposed discrete portions of the crystals differing in color from discrete unexposed portions. Positive imaging employing crystals of an alkali metal salt of polyacetylenicdioic acid. Pressure imaging employing crystals of polyacetylenic hydrocarbon compound. Employing radiant-energy induced images for photocopying and also changing image color through heat or solvent for unexposed crystals.

3,501,303
PHOTOSENSITIVE CRYSTALLINE POLYACETYLENIC SYSTEM AND METHOD OF EXPOSURE

Rodger L. Foltz, Columbus, and Donald E. Trent, Grove City, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed June 6, 1966, Ser. No. 555,238
Int. Cl. G03c *1/72*
U.S. Cl. 96—88 **14 Claims**

Image-receptive elements with fixedly positioned photosensitive crystals of polyacetylenic compounds having at least two acetylenic linkages in a conjugated system. Radiant-energy exposure photographically providing a visual print-out image in part of exposed discrete portions of the crystals differing in color from discrete unexposed portions. Positive imaging employing crystals of an alkali metal salt of polyacetylenicdioic acid. Pressure imaging employing crystals of polyacetylenic hydrocarbon compound. Employing radiant-energy induced images for photocopying and also changing image color through heat or solvent for unexposed crystals.

3,501,304
PHOTOGRAPHIC GELATINOUS LIQUID COMPOSITIONS

Kenichi Koda, Tokyo, Sadao Sugita, Hanno-shi, and Shoji Kikuchi and Katsumi Nishimura, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 7, 1967, Ser. No. 621,131
Claims priority, application Japan, Mar. 17, 1966, 41/16,095
Int. Cl. G03c *1/02*
U.S. Cl. 96—94 **2 Claims**

Photographic gelatinous liquid compositions containing as an anti-foaming agent a compound of the general formula

$$HOCH_2CHCH_2O-(C_nH_{2n}O)_m-CH_2CHCH_2OH$$
$$\quad\quad\quad

3,501,307
PHOTOGRAPHIC REVERSAL MATERIALS CONTAINING ORGANIC DESENSITIZING COMPOUNDS

Bernard D. Illingsworth, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 533,448, Mar. 11, 1966. This application Mar. 2, 1967, Ser. No. 619,936

Int. Cl. G03c *1/28*

U.S. Cl. 96—101 **34 Claims**

Very high speed direct-positive photographic emulsions comprising silver halide grains fogged with both reduction and gold fogging agents are described. For some applications other fogging agents, e.g. compounds of metals more electropositive than silver, can be substituted for the gold fogging agent. Photographic elements employing such emulsions and processes for preparing them are also disclosed.

3,501,308
PHOTOSENSITIVE CRYSTALLINE POLYACETYLENIC SENSITIZED WITH A π-ACID

Albert H. Adelman, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed July 1, 1966, Ser. No. 562,125

Int. Cl. G03c *1/72, 5/24*

U.S. Cl. 96—88 **17 Claims**

A radiant-energy sensitive composition of enhanced photosensitivity comprised of: a photosensitive crystalline polyacetylenic compound having a minimum of two acetylenic linkages as a conjugated system; and an organic π-acid electron acceptor in an amount effective to provide enhanced sensitivity. Preparation of the composition of enhanced photosensitivity by commingling the polyacetylenic compound and the electron acceptor; and preparing a visual image by exposing to daylight the composition of enhanced photosensitivity.

3,501,309
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING HALOGENATED CYANINE DYES

Paul B. Gilman, Roberta A. Litzerman, and Bernard D. Illingsworth, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 533,458, Mar. 11, 1966. This application Jan. 17, 1967, Ser. No. 609,734

Int. Cl. G03c *1/10, 1/28*

U.S. Cl. 96—106 **20 Claims**

Halogenated cyanine dyes are incorporated in direct positive emulsions as electron acceptors.

3,501,310
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING COMPOUNDS WHICH ACCEPT ELECTRONS AND SPECTRALLY SENSITIZE THE EMULSION

Bernard D. Illingsworth and Harry E. Spencer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 17, 1967, Ser. No. 609,761

Int. Cl. G03c *1/36, 1/10*

U.S. Cl. 96—106 **11 Claims**

Compounds which function both as electron acceptors and spectral sensitizers are incorporated in direct positive photographic silver halide emulsions fogged with the combination of a reducing agent and a compound of a metal more electropositive than silver.

3,501,311
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING CARBOCYANINE DYES HAVING A NITRO-SUBSTITUTED 3H-INDOLE NUCLEUS

Lewis L. Lincoln and Donald W. Heseltine, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 17, 1967, Ser. No. 609,793

Int. Cl. G03c *1/36, 1/10*

U.S. Cl. 96—106 **19 Claims**

Direct positive silver halide emulsions contain carbocyanine dyes having a nitro-substituted 3H-indole nucleus.

3,501,312
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING TRIMETHINE CYANINE DYES

John D. Mee and Donald W. Heseltine, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 609,792, Jan. 17, 1967. This application July 22, 1968, Ser. No. 746,260

Int. Cl. G03c *1/12, 1/28*

U.S. Cl. 96—106 **13 Claims**

Trimethine cyanine dyes are provided which contain a 3-indole nucleus which contains either a fused aromatic ring, an alkylene bridge or a 2-heterocyclic substituent. Direct positive emulsions containing these dyes are also provided.

3,501,313
PHOTOGRAPHIC SILVER HALIDE EMULSIONS WHICH INCLUDE HIGH EFFICIENCY SULFUR-CONTAINING SENSITIZERS

Jozef Frans Willems, Wilrijk-Antwerp, Paul Faelens, Schilde, Frans Henri Claes, Edegem, Hendrik Alfons Borginon, Mortsel-Antwerp, and Walter Camiel Pattijn, Hemiksem, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

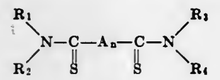
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,732

Claims priority, application Great Britain, Oct. 11, 1965, 42,974/65

Int. Cl. G03c *1/28*

U.S. Cl. 96—107 **12 Claims**

Photographic light-sensitive emulsions are disclosed which include a sensitizer having the formula



wherein:

A is a sulphur atom,

each of R_1, R_2, R_3, and R_4 is hydrogen, alkyl, or aryl, or R_1 and R_2 and/or R_3 and R_4 together are the atoms necessary to close a heterocyclic ring, and

n is zero or one.

3,501,314
SODIUM ALUMINUM PHOSPHATES AND LEAVENING COMPOSITIONS CONTAINING SAME

Thomas P. Kichline, Chesterfield, Mo., and Norman Earl Stahlheber, Columbia, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,540

Int. Cl. A21d *2/00*

U.S. Cl. 99—95 **19 Claims**

5. A leavening composition comprising (1) from about 50% to 95% by weight of a sodium aluminum acid orthophosphate material formed from the elements sodium, aluminum, hydrogen, oxygen and phosphorus in such proportions as to correspond, disregarding any water of hydration, to from about 40 to 73 weight percent phosphoric acid, 17 to 50 weight percent aluminum phosphate, and 10 to 30 weight percent trisodium phosphate, (2) from about 1% to 25% by weight of calcium carbonate, and (3) from about 1% to 10% by weight of a conditioning agent selected from the group consisting of calcium hydroxide, aluminum oxide, alkali metal phosphates, and alkaline earth metal phosphates.

9. An anhydrous crystalline sodium aluminum acid orthophosphate having the empirical formula

$$Na_3Al_2H_{15}(PO_4)_8$$

10. A crystalline sodium aluminum acid phosphate having the empirical formula $Na_5Al_4H_{22}(PO_4)_{13}$.

11. A crystalline sodium aluminum acid phosphate having the empirical formula

$$Na_5Al_4H_{19}(PO_4)_{12}\cdot 2.5H_2O$$

3,501,315
CYCLOHEXYLSULFAMIC ACID AS A TASTE IMPROVER FOR RAW POTATO PRODUCTS

Albin Joseph Slakis, Hinsdale, and Wayne Kenneth Kuhr, Waukegan, Ill., and Richard Lawrence Hughes, Roxbury, and Anne Josephine Neilson, Cambridge, Mass., assignors, by direct and mesne assignments, to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 418,873, Dec. 16, 1964. This application July 12, 1968, Ser. No. 744,334

Int. Cl. A23l *1/12, 1/26*

U.S. Cl. 99—100 **1 Claim**

The addition of a subthreshold level of cyclohexylsulfamic acid to a potato product significantly improves its texture and improves its flavor.

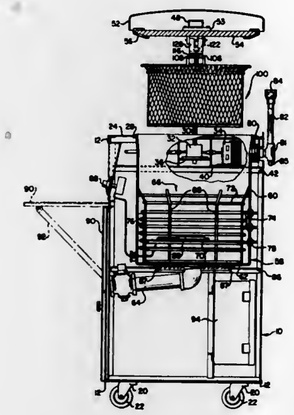
3,501,316
METHOD OF FRYING CHICKEN

Clifton W. Guthrie, Sr., Richmond, Va., assignor to Golden Skillet Corporation, Richmond, Va., a corporation of Virginia

Filed July 27, 1967, Ser. No. 656,500

Int. Cl. A22c *21/00;* **A47j** *37/12*

U.S. Cl. 99—107 **5 Claims**



A method of and apparatus for frying chicken so as to produce the equivalent of a covered pan fried product. Chicken parts are marinated and breaded prior to cooking in a preheated apparatus. Following immersion in a cooking oil, the chicken parts are stirred, hermetically sealed and then cooked automatically according to a preselected cooking cycle. Pressure relief means insures that the pressure within a sealed cooking container is maintained within one pound per square inch of atmospheric pressure. Motor driven screw means automatically lifts the chicken parts from the cooking apparatus at the conclusion of the cooking cycle.

3,501,317
SHRIMP COOKING PROCESS

Preston L. Veltman, Severna Park, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 12, 1967, Ser. No. 645,463

Int. Cl. A23l *1/33, 29/00*

U.S. Cl. 99—111 **7 Claims**

Shrimp are cooked by heating the shrimp with steam under pressure at a temperature of from about 200° F. to about 260° F. for a period of from about 1 to about 12 minutes and thereafter cooling the hot shrimp under pressure with water at a temperature below about 125° F.

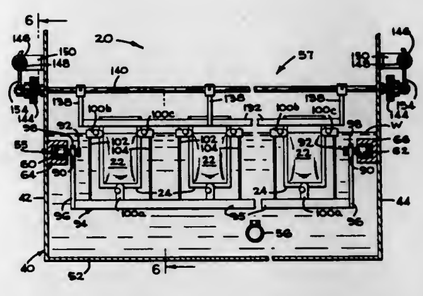
3,501,318
METHOD AND APPARATUS FOR PROCESSING PRODUCTS IN FLEXIBLE CONTAINERS

Donald C. Wilson, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 26, 1967, Ser. No. 693,330

Int. Cl. A23c *3/02*

U.S. Cl. 99—185 **33 Claims**



A method and apparatus for heat treating a flexible container which includes gripping a filled flexible resilient container near its unsealed mouth to transversely tension the container thereby providing a one-way valve near the upper end thereof which prevents entry of fluid into the container but permits passage of gas out of the container. Moving the container through a heating medium whereby cooking gases and steam will form within the container due to the heat treatment. Squeezing the container by submerging a portion of the container in a liquid heating medium which reduces the size of the container head space thereby increasing the pressure of gases within the container causing the air, cooking gases and steam to flow from the container through the one-way valve. Thereafter sealing the upper end of the container by application of heat and pressure while the container is gripped and is either in the steam atmosphere above the liquid or is partially submerged.

3,501,319
METHOD OF PREPARING ARTIFICIALLY SWEETENED FREEZE DRIED FRUITS

Dale J. Ewalt, 300 Briarhill Drive, and Ralph E. Kenyon, 56 N. 27th St., both of Battle Creek, Mich. 49015

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,472

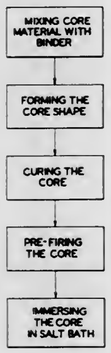
Int. Cl. A23b *7/02*

U.S. Cl. 99—204 **11 Claims**

Enhancing the flavor of freeze-dried fruit by freezing the fruit, adjusting the temperature of the frozen surface of the fruit to just below the melting point, contacting the

frozen fruit with a water solution containing a flavor enhancer, hereby effecting the melting of the liquefiable constituents at the fruit surface with the resultant intermingling of the flavoring solutes with the fruit constituents present in said melted fruit surface, reducing the temperature of the fruit to a point well below the crystallization temperature of the water solution thereby refreezing said solution, and freezing-drying the frozen fruit. The flavor enhancer solution may contain a freezing point depressant to accelerate the melting of the fruit surface.

3,501,320
DIE CASTING CORE
Robert J. Pietryka, Warren, and Raymond S. Amala, Oak Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,257
Int. Cl. B28b *7/34;* **B22d** *17/20*
U.S. Cl. 106—38.27 **6 Claims**



A leachable core body suitable for use in high pressure metal casting operations and a method of preparing the same is disclosed. The outer surface portion of a sand core is impregnated with a water soluble inorganic sealing salt having a high melting point such as a sodium chloride-potassium chloride mixture. The sealing salt impregnated outer sand core layer prevents molten metal from penetrating the core body during high pressure metal casting. This sealing salt mixture has a melting point higher than the temperature of the metal during the metal casting operation. The core is bonded with a water soluble inorganic binder such as sodium silicate which has a melting point higher than the melting point of the sealing salt.

3,501,321
GLAZE AND BODY COMPOSITIONS FOR THE MANUFACTURE OF VITREOUS CHINA FLATWARE BY A FAST SINGLE FIRING PROCESS
Gianni B. Margola, Milan, Italy, assignor to Societa Ceramica Italiana Richard-Ginori S.p.A., Milan, Italy
Filed Oct. 28, 1966, Ser. No. 590,318
Int. Cl. C04b *33/34*
U.S. Cl. 106—45 **4 Claims**

A process for preparing vitreous china comprising preparing a body composition consisting of 30–50% china clay, up to 20% ball clay, 10–40% quartz, 20–50% of feldspar or nepheline syenite and up to 15% of dolomite, whiting or talc and then coating the body composition with a glaze composition consisting essentially of 30–50% of feldspar or nepheline syenite, 20–30% quartz, 3–20% dolomite, 3–15% zinc oxide, 0.5–10% china clay, up to 12% boric acid, up to 25% whiting, and up to 10% of barium carbonate and firing the thusly coated body composition with no more than one firing at a temperature sufficient to result in a vitrified and non-porous mass but up to a maximum of 1125–1225° C. for a period of no more than five hours.

3,501,322
GLAZED CERAMIC SUBSTRATE FOR ELECTRONIC MICROCIRCUITS
William H. Dumbaugh, Jr., Corning, N.Y., and Joseph W. Malmendier, Piscataway, N.J., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Aug. 16, 1967, Ser. No. 660,940
Int. Cl. C03c *5/02*
U.S. Cl. 106—48 **9 Claims**

A substrate material for use in microcircuit work, and more particularly a substantially alkali free improved glazed ceramic substrate of high alumina content for thin-film circuitry, said glaze consisting essentially of: 60–75 mole percent silica, 2.5–12.5 mole percent alumina, 2.5–10.0 mole percent lanthanum oxide, 15–30 mole percent barium oxide, and 0–5 mole percent boric oxide.

3,501,323
METHOD OF MANUFACTURING BUILDING STRUCTURAL AND PAVING PRODUCTS USING A CALCIUM SILICATE HYDRATE BONDING MATRIX
David R. Moorehead, Elanora Heights, New South Wales, Australia, assignor to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales
No Drawing. Continuation-in-part of application Ser. No. 389,480, Aug. 13, 1964. This application July 9, 1968, Ser. No. 743,330
Claims priority, application Australia, Aug. 19, 1963, 34,332/63
Int. Cl. C04b *7/02;* **C08h** *17/00*
U.S. Cl. 106—97 **10 Claims**

A method of making building, structural and paving products of high compressive strength in which a mixture comprising calcareous material (for example, finely divided hydrated lime), siliceous material (for example, finely divided silica) and water is formed into the shape of the required product and is subjected in that shape to a superatmospheric pressure and a temperature of at least 250° C., the formed product then being returned to atmospheric pressure and ambient temperature, characterized in that the total reaction time at superatmospheric pressure is of the order of half an hour. Compressive strengths which can be achieved by the practice of the invention can be of the order of 20,000 to 30,000 pounds per square inch.

3,501,324
MANUFACTURING AQUEOUS SLURRY OF HYDROUS CALCIUM SILICATE AND PRODUCTS THEREOF
Kazuhiko Kubo, Gifu-ken, Japan, assignor to Kabushiki Kaisha Osaka Packing Seizosho, Naniwa-ku, Osaka-shi, Japan
No Drawing. Filed June 27, 1967, Ser. No. 649,114
Claims priority, application Japan, July 15, 1966, 41/46,442; Nov. 2, 1966, 41/72,539; Dec. 26, 1966, 41/85,472, 41/85,471
Int. Cl. C04b *1/00, 7/34*
U.S. Cl. 106—120 **10 Claims**

A method for manufacturing an aqueous slurry of hydrous calcium silicate being useful for the production of various calcium silicate products comprises heating an aqueous slurry of lime and a reactive siliceous material under a steam pressure to effect and complete reaction between line and silica. From such aqueous slurry of hydrous calcium silicate various useful calcium silicate products can be prepared by simple procedure, e.g. by shaping the slurry into desired shape and drying the shaped article under atmospheric pressure without applying any steam pressure.

3,501,325
GELLED PHOSPHATE ESTERS
James P. Hamilton, Pasadena, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 9, 1968, Ser. No. 782,489
Int. Cl. C09d *1/00;* **C09k** *3/22*
U.S. Cl. 106—287 **3 Claims**

This application discloses triorganic phosphate coating compositions suitable for coating dust filter media in air filters in which the triorganic phosphate is thickened by pyrogenic silica or a combination of pyrogenic silica and a chemically modified magnesium silicate, and about 0.01 to 0.08% by weight of an amine, based on the total mixture of triorganic phosphate and the particulate gelling agent.

3,501,326
GLOSSY MICROPOROUS SHEET MATERIAL
Jerome Hochberg, Nashville, Tenn., and John L. Palermo, Springfield, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 490,093, Sept. 24, 1965. This application Oct. 28, 1966, Ser. No. 590,213
Int. Cl. B44d *1/14;* **D21h** *5/00*
U.S. Cl. 117—76 **7 Claims**

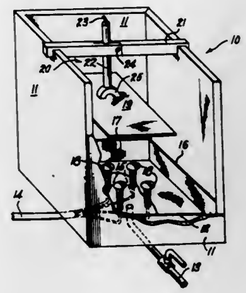
A glossy vapor permeable microporous sheet material is the subject of this invention that comprises a porous fibrous substrate having adhered thereto a microporous synthetic polymeric coating and in adherence with the microporous coating is a smooth, glossy, non-porous vapor permeable coating that has a surface reflectance of at least 50% at 60° measured according to ASTM Test No. D–523–62–T.

3,501,327
ADHESIVE COATED ARTICLES
George Andrew Brennan, 7100 W. Chester Pike, Upper Darby, Pa. 19082
No Drawing. Filed Aug. 11, 1967, Ser. No. 659,944
Int. Cl. D21h *1/36;* **B44c** *1/08*
U.S. Cl. 117—12 **5 Claims**

The invention is an improvement upon pebble wax coated adhesive articles. Originally, the articles of the prior art were susceptible to disfigurement during handling, shipping, storage, etc., due to scratches upon the wax surface. The improvement consists of reproducing a graphic representation on the outer surface for example, by a halftone printing process and then overcoating with a wax adhesive.

3,501,328
ELECTROSTATIC ADHERENT DEPOSITION OF RESINOUS POWDERS
Lester L. Spiller, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana
Filed Apr. 28, 1966, Ser. No. 545,959
Int. Cl. G03g *13/00;* **B44d** *1/094*
U.S. Cl. 117—17 **5 Claims**

The adhesion of electrostatically deposited insulating resin particles to a grounded unheated piece is improved by surrounding the insulating particle with a surface layer of intermediate conductivity provided by coating with a plasticizer having a D.C. conductivity measured at 100



kilovolts of from 0.5–20 microamperes, such plasticizer being illustrated by tricresyl phosphate.

3,501,329
PROCESS FOR PREPARING FLOCKED MATERIAL
Edward W. Kent, Lynnfield, Mass., assignor to General Latex & Chemical Corporation, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Dec. 3, 1964, Ser. No. 415,796
Int. Cl. B44d *1/09, 1/20;* **C09d** *3/48*
U.S. Cl. 117—33 **14 Claims**

Improved adhesives for use in preparing flocked materials wherein the adhesive is coated on a porous base such as woven or non-woven cloths, paper, etc., the flock is applied to the coated base and oriented so that a substantial portion of the lengths of the flock are generally perpendicular to the base and the adhesive is cured to set the flock in the oriented position. The flocking adhesives disclosed comprise a prepolymer having reactable isocyanato groups, a linear-polymer-forming polyol and a small amount of a diamine in which both amino groups are reactive with the isocyanato groups of the prepolymer. The diamine is selected from the group consisting of cycloaliphatic diamines, aromatic diamines, mixed alkyl-cycloaliphatic diamines, mixed alkyl-aromatic diamines and aliphatic diamines in which at least one of the amino groups in the aliphatic diamine is secondary. The flocking compositions are shown to have enough open or tack time to allow a sufficient amount of the flock to attach itself and then become oriented while having sufficient body to hold the flock in its oriented state prior to the cure. Additionally, these materials have controlled permeation through the porous base so that they will remain on the surface where they are needed. Further, the disclosed flocking adhesives do not become fluid whereby the flock would be caused to lose its orientation when the coated base is exposed to heat during the curing cycle.

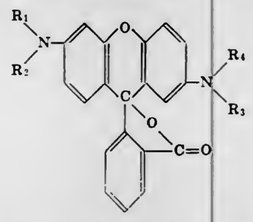
3,501,330
MANUFACTURE OF ELECTROPHOTOGRAPHIC MATERIALS
Paul Maria Cassiers, Mortsel-Antwerp, and Felix Frederick De Smedt, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
Filed Oct. 22, 1965, Ser. No. 502,150
Claims priority, application Great Britain, Oct. 26, 1964, 43,597/64
Int. Cl. C03c *3/26;* **B44d** *1/092, 1/094*
U.S. Cl. 117—34 **14 Claims**

A method of making electrophotographic materials in the form of either a coating on a supporting sheet or a self-supporting sheet wherein inorganic photoconductive

materials are incorporated into a hot melt of a polyethylene or polyester and the mixture is extruded to form a film. Additives such as lubricants, sensitisers, etc. may be used.

3,501,331
PRESSURE SENSITIVE FLUORAN DERIVATIVE CONTAINING COPYING PAPER
Shiro Kimura, Teruo Kobayashi, and Sadao Ishige, Kanagawa, and Shizuo Katayama, Fujimiya-shi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Jan. 29, 1968, Ser. No. 701,118
Claims priority, application Japan, Jan. 27, 1967, 42/5,327
Int. Cl. B41m *5/02*
U.S. Cl. 117—36.2 **2 Claims**

A pressure sensitive copying paper having thereon a layer containing as a color former at least one of the fluoran derivatives represented by the general formula,



wherein R_1 and R_2 each represents an alkyl group having less than 5 carbon atoms and R_3 and R_4 each represents a member selected from the group consisting of a hydrogen atom, a benzyl group and an alkyl group having less than 5 carbon atoms.

3,501,332
METAL PLATING OF PLASTICS
Trent D. Buckman, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 28, 1967, Ser. No. 634,449
Int. Cl. B44d *1/22*
U.S. Cl. 117—47 **5 Claims**

Organic polymer substrates are conditioned for electroless deposition of metal coatings by impregnating their surface layer to a depth of at least about 5 microns with a metal such as copper or nickel, diffused into the surface layer from solution of a complex which contains said metal in zero-valent form dissolved in an organic solvent which has a dissolving or swelling action on the plastic.

3,501,333
ALUMINUM COATING OF PARTICULATE SUBSTRATE MATERIALS
Kenneth O. Groves, Midland, and Reinhold Hellmann, Coleman, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 14, 1967, Ser. No. 667,643
Int. Cl. B44d *1/02, 1/46*
U.S. Cl. 117—47 **13 Claims**

A method for coating particulate substrate materials with aluminum which comprises: agitating a body of individual particles in a solution containing a transition metal catalyst; drying the particles; agitating the catalyst coated body of particles in a solution containing an aluminum hydride compound; removing the particles from the aluminum hydride solution, and heating the particles to a sufficient temperature to decompose the aluminum hydride compound and deposit an aluminum coat on the surface of the individual particulate substrate materials.

3,501,334
RAZOR BLADES
Francis Edward Flaherty, Canton, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
No Drawing. Filed Mar. 16, 1966, Ser. No. 534,651
Int. Cl. C21d *1/00, 1/18, 9/52*
U.S. Cl. 117—49 **8 Claims**

Improved carbon steel razor blades are provided by passing carbon steel strip through a hardening furnace followed by quenching and hardening so that the strip has a retained austenite content in excess of 23%. The blade strip is then sharpened and a fluorocarbon coating is sintered to the sharpened edge.

3,501,335
FABRIC CONDITIONER
Arno Cahn, Pearl River, Thaddeus John Kaniecki, Brooklyn, and Oscar Walter Neiditch, Fair Lawn, N.Y., and Jerome Rudy, Livingston, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,103
Int. Cl. B05c *9/08*
U.S. Cl. 117—66 **10 Claims**

A novel process of fabric conditioning is disclosed employing N-2-hydroxyalkylamine oxides, and ethylene oxide adducts thereof as the fabric conditioning agents. The use of the ethylene oxide adducts of the N-2- hydroxyalkylamine oxides has been found especially advantageous because these compounds possess self-emulsifying properties.

3,501,336
METHOD FOR ETCHING SINGLE CRYSTAL SILICON SUBSTRATES AND DEPOSITING SILICON THEREON
Lawrence D. Dyer and Ronald C. Bracken, Richardson, and Guy W. Taylor, Granite, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,289
Int. Cl. C23c *11/06*
U.S. Cl. 117—106 **12 Claims**

The method for hot vapor etching a single crystal silicon substrate including the steps of elevating the substrate to a temperature of about 1325° C. while being maintained in a hydrogen environment. After being elevated to temperature, the substrate is exposed for a period of from one-half to four minutes to a gaseous mixture containing hydrogen and 20 mole percent (based on the hydrogen) hydrogen chloride after which the substrate is again exposed to a relatively pure hydrogen atmosphere. After exposure to the relatively pure hydrogen atmosphere for one to thirty minutes, the substrate is again exposed to a gaseous mixture of hydrogen and 10 mole percent (based on the hydrogen) hydrogen chloride for a period of 15 minutes. Following the above etching steps, silicon may be deposited upon the subtrate by increasing the flow rate of the hydrogen stream and over a short period, for example five minutes, introducing into the stream a second stream containing hydrogen and trichlorosilane. The hydrogen chloride concentration is then reduced to about half its former concentration. Following reduction of the hydrogen chloride concentration, the temperature of the filament is lowered to about 1200° C. Silicon is then deposited upon the substrate for a period sufficient to produce a silicon rod of desired diameter. Before deposition is commenced by addition of the

trichlorosilane, the second etching step which comprises passing the gaseous stream of hydrogen and 10 mole percent hydrogen chloride over the substrate, may be followed by yet further etching steps which include the flowing of a pure hydrogen stream over the substrate for a period of one to thirty minutes followed by again contacting the surface of the substrate with a hydrogen and 20 mole percent hydrogen chloride stream for a period of from one to four minutes after which the deposition steps as described above may be employed.

3,501,337
TUNGSTEN SEAL COAT
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of James R. Lindgren, San Diego, Alfred J. Weinberg, El Cajon, and Robert A. Holzl, La Canada, Calif.
No Drawing. Filed Dec. 27, 1966, Ser. No. 605,088
Int. Cl. C23c *13/02*
U.S. Cl. 117—107.2 **1 Claim**

A two-step process for cladding nuclear fuels with tungsten, comprising first vapor depositing a thin seal coat of tungsten onto the fuel element in an evacuated chamber under reaction conditions suitable for the application of such a thin coat. This is followed by the vapor deposition of a final heavier main outer coating of tungsten over the seal coating under conditions more suitable for such cladding.

3,501,338
ALUMINUM PLATING PROCESS
Norman E. Matzek, Midland, Donald F. Musinski, Bay City, and Herbert C. Roehrs, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 15, 1967, Ser. No. 617,764
Int. Cl. C23c *13/02, 17/00*
U.S. Cl. 117—107.2 **3 Claims**

This invention relates to a process for coating a substrate with metallic aluminum by contacting such substrate with α-aluminum hydride which has been treated with ethanol. Upon heating, the treated α-aluminum hydride will decompose to produce a film of metallic aluminum. Such decomposition will take place below the decomposition temperature of α-aluminum hydride which has not been so treated.

3,501,339
PROCESS FOR IMPROVING THE FLAME RETARDANCY OF WOOD
Arthur E. Gurgiolo, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 9, 1966, Ser. No. 592,965
Int. Cl. C09d *5/18*
U.S. Cl. 117—118 **3 Claims**

Process for treating natural wood materials to impart flame resistance thereto which comprises impregnating the wood material with an alkyl or aryl halogenated phosphite, or phosphonate and thereafter heating.

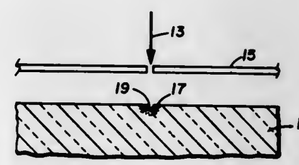
3,501,340
METHOD OF CLEANING GLASS AND QUARTZ SURFACES
Milton Burton, Mishawaka, Ind., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 1, 1967, Ser. No. 679,639
Int. Cl. C03c *17/00*
U.S. Cl. 117—124 **5 Claims**

A method of treating glass and quartz containers to reduce spontaneous decomposition of labile compounds stored therein by contacting the surfaces of said containers with hydrazine and baking the contacted surfaces to remove all traces of hydrazine.

3,501,341
METHOD OF PERMANENTLY STERILIZING TEXTILES WITH A SOLUTION OF AT LEAST ONE N - PENTACHLOROPHENYLAMINE COMPOUND
Arno Spange, Dusseldorf-Benrath, and Horst-Gunter Bellinger, Dusseldorf, Germany, assignors to Bohme Chemie Gesellschaft mit beschrankter Haftung, Dusseldorf-Benrath, Germany
No Drawing. Filed June 15, 1965, Ser. No. 464,203
Claims priority, application Germany, Aug. 7, 1964, B 78,007
Int. Cl. A61l *1/00, 13/00*
U.S. Cl. 117—138.5 **12 Claims**

A process for making textiles permanently sterile by treatment with a pentachlorophenylamine compound and to the novel impregnated textiles produced thereby.

3,501,342
SEMICONDUCTORS HAVING SELECTIVELY FORMED CONDUCTIVE OR METALLIC PORTIONS AND METHODS OF MAKING SAME
Rolf R. Haberecht, Richardson, and Thomas H. Ramsey, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 436,421
Int. Cl. B44d *1/18*
U.S. Cl. 117—212 **24 Claims**



Disclosed is a process for preparing a comparatively planar, conductive zone on an exposed surface of a semiconductor body made of a semiconductor compound composed of at least two elements by removing constituent from the compound in the zone. Removal of the constituent from the zone may be accomplished, at least in part, by exposing the zone to localized concentration of energy such as produced, for example, by an electron beam. Disclosed also are articles made by the foregoing process, which articles may include a semiconductor body having conductive paths thereon, with resistors and/or capacitors autogenously formed on the body and interconnected by the conductive paths.

3,501,343
LIGHT INSENSITIVE XEROGRAPHIC PLATE AND METHOD FOR MAKING SAME
Paul J. Regensburger, West Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 16, 1966, Ser. No. 527,904
Int. Cl. C23c *3/00;* **B44d** *1/14, 1/18*
U.S. Cl. 117—215 **6 Claims**

A light insensitive xeroradiographic plate comprising a conventional photoconductive insulating layer overlaying

an electrically conductive support member, and a thin layer consisting of light insenstive selenium overlaying said photoconductive insulating layer.

3,501,344

MAGNETIC RECORDING TAPE SUPPORTED ON POLY(ETHYLENE 2,6 - NAPHTHALENEDICARBOXYLATE)

Marshall T. Watson and William D. Kennedy, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 28, 1967, Ser. No. 656,706
Int. Cl. B29d 7/24; H01f 10/04
U.S. Cl. 117—236 **7 Claims**

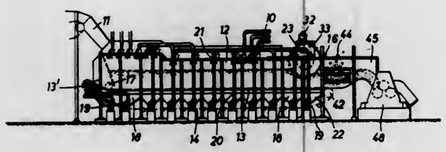
An improved magnetic recording tape comprising a thin layer of a magnetically susceptible material dispersed in a nonmagnetic binder coated on a flexible support consisting essentially of an asymmetrically oriented high-melting linear polyester of substantially equimolar proportions of a dicarboxylic acid and a glycol, said dicarboxylic acid being essentially composed of 2,6-naphthalenedicarboxylic acid and said glycol being essentially composed of ethylene glycol, which support is characterized in that it has a lengthwise tensile strength of at least 60,000 p.s.i. at a high strain rate of 1000% per minute and has a lengthwise modulus of elasticity of at least 12×10^5 p.s.i. Longitudinal stretch is in the range of about 3.5–6.0 times; widthwise adjustment is in the range of about 0.9–1.4 times original width; stretching is in the range of about 105°–150° C. and heat setting and relaxing is in the range of about 120°–250° C.

3,501,345

APPARATUS AND METHOD FOR THE CONTINUOUS EXTRACTION OF SUGAR FROM BAGASSE

Willy Kaether, Braunschweig-Melverode, and Walter Dietzel, Braunschweig, Germany, assignors to Braunschweigische Maschinenbauanstalt, Braunschweig, Germany

Filed Dec. 14, 1965, Ser. No. 513,691
Claims priority, application Germany, June 4, 1965, B 82,267
Int. Cl. C13d 1/12
U.S. Cl. 127—5 **19 Claims**



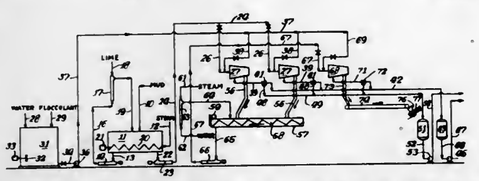
Apparatus for the continuous extraction of sugar from bagasse includes a stationary diffusion trough having side walls and a perforated bottom wall; conveyor means having a carrying surface displaceable along and above the perforated bottom wall for transporting the bagasse from the inlet to the outlet end of the trough; means for spraying the layer of bagasse with liquid in its passage through the trough; pressure applying means located downstream of the spraying means, the pressure applying means, which is spaced from the trough bottom to permit the discharge of bagasse as a consolidated cake layer, extending transversely of the trough walls at the outlet end as to form an end closure sealing the trough against outflow of liquid, the trough bottom extending upwardly to prevent outflow of liquid at the inlet end, and discharge means located at the outlet end of the trough and spaced from the pressure applying means, the discharge means including a horizontal shredding roll for discharge of the cake layer from the trough.

3,501,346

TREATMENT OF SUGAR MILL CLARIFIER MUD

Raphael Katzen and Allan E. Hokanson, Cincinnati, Ohio, assignor to Sugar Cane Growers Cooperative of Florida, Inc., Belle Glade, Fla., a corporation of Florida

Filed Dec. 22, 1966, Ser. No. 603,819
Int. Cl. C13d 3/00; C13f 1/06
U.S. Cl. 127—56 **13 Claims**



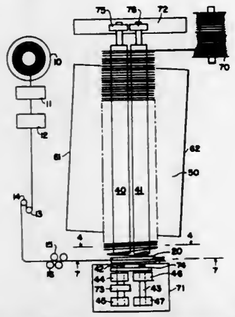
Sugar-containing muds from a clarification operation in the treatment of cane sugar juices are treated under controlled temperature, pH and flocculant addition conditions in a continuous solid bowl centrifugal separator to separate and recover the valuable sugar juice contained therein with a minimum suspended solids content. The separated thickened mud cake is then subjected to one or more counter-current washing operations with water to recover the major part of the sugar content of the mud cake, the washings being combined with the recovered clarified sugar juice from the first stage separation. The washed cake is discharged at minimum moisture content in a form suitable for recovery of by-product waxes or for burning as a fuel.

3,501,347

REMOVING SCALE FROM WIRE AND SIMILAR STRIP MATERIAL

Herbert Kenmore, 10 E. 40th St., New Milford, Conn. 10016

Filed Aug. 22, 1966, Ser. No. 574,015
The portion of the term of the patent subsequent to Sept. 3, 1985, has been disclaimed
Int. Cl. B08b 3/08, 3/10
U.S. Cl. 134—14 **10 Claims**



A process of pickling wire by passing the wire in the form of a helix in and out of one or more pickling baths a multiplicity of times, the wire speed being at least 50 meters per minute so that the scrubbing action of the pickling liquid promotes the removal of scale; the wire being continuously removed from the pickling bath at the end of the treatment, so that each portion of the wire is subjected to the pickling liquid for the same period of time. Preferably, the wire is subjected to a mechanical operation for breaking the scale before being formed into the helix for the pickling treatment. After passing the pickling bath the wire is passed through water rinsing baths and preferably coating baths. Such baths are operated hot, so that the heat of the wire and a passage through air dries the coating. The hot rinse water is fed counter-current, eventually ending in a pickling bath.

3,501,348

METHOD FOR DESEALING INTEGRAL FUEL TANKS

Hans Frischknecht, Downey, Calif., assignor, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,061
Int. Cl. B08b 9/08
U.S. Cl. 134—22 **7 Claims**

Rapid removal of dried and cracked synthetic rubber sealing compounds that line integral fuel tanks by spraying a water-borne chemical formulation of organic solvents, emulsifiers and activating agents thereon for approximately the same period of time as would be required to remove such a sealing liner by means of said chemical formulation alone, and water-flushing away the particles thus dissolved and removed from the liner.

3,501,349

METHOD OF TREATING ALUMINUM-LITHIUM ELECTRODE

James L. Benak, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed May 16, 1966, Ser. No. 550,239
Int. Cl. H01m 43/00, 13/08
U.S. Cl. 136—20 **5 Claims**

Removal of the surface film of a lithium-aluminum alloy renders it particularly useful as an anode in a secondary cell, i.e., one which can be recharged. Such cells, in this instance, are characterized by a relatively constant potential.

3,501,350

METHOD OF MAKING A SILVER ELECTRODE

Carl Horowitz, 1299 Coney Island Ave., Brooklyn, N.Y. 11230

Filed Apr. 12, 1967, Ser. No. 630,430
Int. Cl. H01m 43/02, 13/04
U.S. Cl. 136—20 **1 Claim**

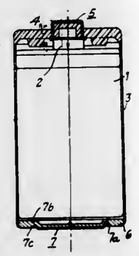
A zinc-silver storage battery having a positive electrode made of a copper screen plus a layer of pressed zinc oxide. The negative electrode is made of a carbonized vinyl screen plus a layer of pressed sintered silver powder. The electrodes are separated by a film of cellophane and layers of paper. The electrolyte is a water solution of sodium or potassium hydroxide. The cells are packed in a container which keeps the electrodes under pressure.

3,501,351

GALVANIC PRIMARY CELL

Ernst Karobath, Vienna, Austria, assignor to Telephon- und Telegraphen-Fabriks-Aktiengesellschaft Kapsch & Sohne, Vienna, Austria, a corporation of Austria

Filed May 26, 1967, Ser. No. 641,572
Claims priority, application Austria, May 27, 1966, A 5,082/66
Int. Cl. H01m 1/02, 5/00
U.S. Cl. 136—133 **5 Claims**



A galvanic primary cell having positive and negative electrodes is sealed by a tightly surrounding plastic envelope. Apertured sheet metal contacts for the electrodes extend through, and are embedded in, the envelope and the plastic penetrates in rivet-like manner through the apertures.

3,501,352

COMPOSITION AND METHOD FOR TREATING ZINC SURFACES

Vinod D. Shah, Detroit, Mich., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,693
Int. Cl. C23c 1/10; C23f 7/26, 7/02
U.S. Cl. 148—6.2 **8 Claims**

A method and rinse composition suitable for rinsing complex oxide coated zinc surfaces to provide an improved paint base. The rinse composition comprises at least 0.001% by weight of trivalent chromuim, at least 0.01% by weight of zinc and at least 0.005% by weight of fluoride ions.

3,501,353

METHOD OF INHIBITING OXYGEN UPTAKE AND PRODUCTS FORMED THEREBY

Archibald N. Wright, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 27, 1966, Ser. No. 604,800
Int. Cl. C23f 7/00
U.S. Cl. 148—6.14 **9 Claims**

A product has a clean copper surface, and an oxidation inhibiting layer thereon. The oxidation inhibiting layer is formed from a fluid which has a high heat of absorption and which is not subject to auto-oxidation. Such fluids include nitrosyl chloride, nitropropane and nitrosobenzene. A method of forming such a layer comprises contacting under vacuum conditions a clean copper surface with a gaseous medium of the above type.

3,501,354

ALKALI METAL ALUMINATE BONDED WELDING FLUX AND MANUFACTURE THEREOF AND COATED WELDING ELECTRODE

William T. De Long, West Manchester Township, York County, Pa., assignor to The McKay Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 19, 1968, Ser. No. 706,681
Int. Cl. C23c 1/08
U.S. Cl. 148—23 **3 Claims**

An alkali metal aluminate bonded welding flux usable as a flux in submerged arc welding or as an electrode core wire flux coating comprising finely divided flux material and a binding agent comprising alkali metal aluminate (one or both of sodium aluminate and potassium aluminate) in an amount of from 1 to 7.5%, preferably 1.5 to 5%, of the weight of the finely divided flux material, both calculated on a water-free basis. The alkali metal aluminate may have a molecular ratio of alkali metal oxide to aluminum oxide between .9 and 1.4 and preferably about 1.1. In making the flux the alkali metal aluminate may be mixed with water to form a uniform liquid whereafter the uniform liquid may be added to and mixed with the finely divided flux material and the mixture dehydrated.

3,501,355

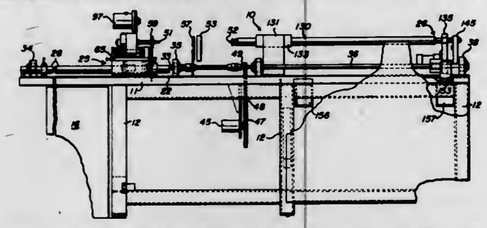
METHOD FOR HEAT TREATING ELONGATED WORKPIECES

Ralph S. Easley and Donald J. Meyer, Cincinnati, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio

Original application Sept. 8, 1966, Ser. No. 577,979. Divided and this application Apr. 21, 1969, Ser. No. 817,821
Int. Cl. C21d 1/00
U.S. Cl. 148—146 **2 Claims**

An induction heating apparatus, particularly useful in heat treating cam shafts, includes a pair of carriage mem-

bers for supporting a workpiece as it moves from a loading zone to a heating zone including at least one induction heating coil. A lead screw moves both carriage members in unison and provides accurate control over the rate of movement so that selected portions of the cam shaft may be heat treated. The lead screw is formed in two sections

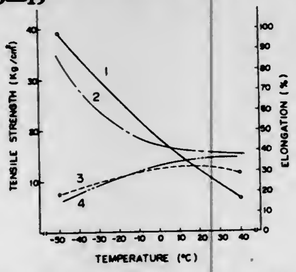


which may be rotated relative to each other to vary the spacing between the carriages to accommodate workpieces of various sizes. A spindle supporting the workpiece may be rotated to assist in distributing heat, and spring means may be associated with one of the spindles to allow for expansion of the workpiece during heating.

3,501,356
PROCESS FOR THE EPITAXIAL GROWTH OF SILICON CARBIDE
Ting Li Chu, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1966, Ser. No. 549,648
Int. Cl. C23c *11/00, 13/00*
U.S. Cl. 148—175 **8 Claims**

Silicon carbide is epitaxially grown on a suitable substrate by a pyrolytic chemical reaction occurring between a reactant gas mixture consisting of a mixture of two compounds, one compound being selected from the group consisting of halogenated aliphatic hydrocarbons, halogenated aromatic hydrocarbons, and hydrides of carbon, and one compound being selected from the group consisting of halides of silicon and hydrides of silicon in at least one gas selected from the group consisting of hydrogen, helium, and argon. A silicon carbide substrate surface may be etched in situ by hydrogen gas prior to the epitaxial growth process.

3,501,357
COMPOSITE PROPELLANTS CONTAINING BLOCK COPOLYMERS
Kenichi Suzuki, Saitama-ken, Saburo Minekawa, Yokohama-shi, Koretaka Yamaguchi, Kawasaki-shi, and Kazuo Toyomoto and Einosuke Fujimoto, Yokohama-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan
Filed Apr. 1, 1968, Ser. No. 717,556
Claims priority, application Japan, Apr. 12, 1967, 42/22,861
Int. Cl. C06d *5/00, 5/06*
U.S. Cl. 149—19 **10 Claims**

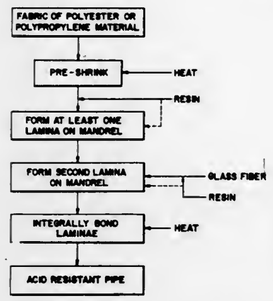


A composite propellant comprising a fuel binder, oxidizer and, if desired, additives, said fuel binder mainly comprising a thermoplastic elastomer which is a block copolymer comprising conjugated diolefin blocks and vinyl-substituted aromatic hydrocarbon blocks and having a general formula selected from the group consisting of $(X—Y)_n$, $(X—Y)_n—X$ and $Y—(X—Y)_m$, wherein X represents a conjugated diolefin block, Y represents a vinyl-substituted aromatic hydrocarbon block, n is an integer of 2–10, inclusive, and m is an integer of 1–10, inclusive.

3,501,358
METHOD OF MAKING PERMANENT MAGNET MATERIAL POWDERS HAVING SUPERIOR MAGNETIC CHARACTERISTICS
Joseph J. Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 30, 1967, Ser. No. 664,295
Int. Cl. C23f *1/00*; H01f *1/00*
U.S. Cl. 156—7 **4 Claims**

The grinding of bulk permanent magnet material to powder can result in a relatively low value of the maximum coercive force obtainable and can also limit the extent to which it is possible to align the powder particles in a binding medium to produce a composite permanent magnet material. By the present method involving immersion of such bulk material for a short time in a hydrochloric acid solution containing thiourea, powder particles are produced which have high coercive forces and excellent alignability characteristics.

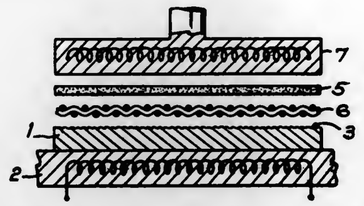
3,501,359
METHOD OF MAKING A REINFORCED FILAMENT WOUND PIPE
Gerald J. Gillespie, Jeannette, and Lawrence C. Couchot, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,467
Int. Cl. B29c *27/26*
U.S. Cl. 156—84 **7 Claims**



Acid-resistant, filament-wound pipe is prepared by a process which provides an outer shell of resin-impregnated glass fiber over a pre-shrunk polypropylene or polyester fabric. The pipe is resistant to sulfuric, phosphoric, and fluosilicic acid over wide ranges of temperature and concentration.

3,501,360
METHOD OF MAKING DRY FRICTION MEMBERS
Raymond Mancel, 3 Rue Jules Cloquet, Paris, France
Filed Apr. 19, 1965, Ser. No. 449,139
Claims priority, application France, Apr. 17, 1964, 971,248
Int. Cl. B32b *31/06*
U.S. Cl. 156—153 **12 Claims**

A method of manufacturing a dry friction member comprising the steps of taking a metal support member, roughening one surface of the support member, and applying to the roughened surface a layer of Teflon FEP. Then the steps of locating a tissue of graphite over the layer of Teflon FEP to form a multi-layer member, applying heat and pressure to said multi-layer member to impregnate the graphite tissue with the Teflon FEP and

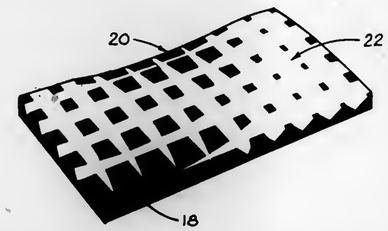


bring parts of said graphite tissue into contact with said roughened surface of the metal support member. Finally, cooling the multi-layer member, and lightly machining the exposed surface of the graphite tissue to remove any Teflon FEP appearing on the exposed surface as a result of the impregnation. The invention also includes the dry friction member produced by the method.

3,501,361
METHOD FOR PRODUCING CIGARETTE FILTERS
George P. Touey, Kingsport, Tenn., and Robert C. Mumpower, Bristol, Va., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application Sept. 22, 1965, Ser. No. 489,329, now Patent No. 3,393,120, dated July 16, 1969. Divided and this application Oct. 18, 1967, Ser. No. 688,291
Int. Cl. D04h *3/16*
U.S. Cl. 156—167 **1 Claim**

Method for producing a tobacco smoke filter element in a continuous manner from a polyolefin-polystyrene tow material.

3,501,362
ART BOARD OF INTERFITTING TAPERING ELEMENTS OF DIFFERENT COLORS
Brooks L. Walker, 1824 Augustine Ave., Elkridge, Md. 21227
Filed June 16, 1966, Ser. No. 558,003
Int. Cl. B43l *1/12*; B44f *1/00*; G09b *11/04*
U.S. Cl. 161—6 **2 Claims**

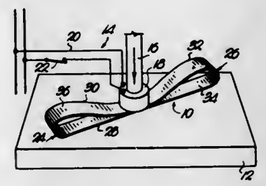


This invention comprises an artboard composed of interfitting matrices of oppositely tapering elements having their bases in one face of the artboard and extending to a sharp point or ridge at substantially the other face, the color of the upper face of this paper material normally being white, and the color of the lower matrix material being normally black but may be of any other color, or may be transparent, so that erasure of the white surface of the artboard to different depths in various areas will produce screen tones of different shades of color or degrees of transparency in the corresponding areas of the artboard in accordance with the design desired.

3,501,363
PACKAGING FILM
George F. Kirkpatrick, Middlesex, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,648
Int. Cl. B32b *3/00*
U.S. Cl. 161—125 **2 Claims**

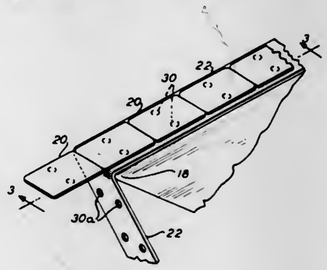
A transparent self-supporting thermoplastic film is disclosed of the kind strongly clinging to itself and to smooth other surfaces wherein the film is embossed in a manner such that the handleability of the film is increased without reducing the cling property of the film to an ineffective level.

3,501,364
PLASTIC BOW AND METHOD OF MAKING THE SAME
Homer C. Rowland, Lawrence, Kans., assignor to Hallmark Cards Incorporated, Kansas City, Mo., a corporation of Missouri
Filed July 18, 1966, Ser. No. 565,948
Int. Cl. D04d *7/10*; B32b *1/04, 31/04*
U.S. Cl. 161—10 **2 Claims**



A decorative bow made from a plurality of strips of synthetic resin material, the strips being rebent upon themselves and fused together by the application of heat and pressure to form a pair of opposed loops, the looped, fused strips being arranged with a common junction and fused together at the junction by the application of pressure and heat to form the finished bow.

3,501,365
PRESSURE SENSITIVE LABEL STRIP CONSTRUCTION
Edward C. Marshall, Upper Montclair, N.J., assignor to Litton Business Systems, Inc., a corporation of New York
Continuation-in-part of application Ser. No. 562,771, July 5, 1966. This application July 11, 1969, Ser. No. 841,100
Int. Cl. G09f *3/00*
U.S. Cl. 161—38 **15 Claims**



A plurality of labels with pressure sensitive adhesive thereon are disposed along a supporting material of release paper in either spaced or juxtaposed relationship and with feed holes formed in the release paper so that all the feed holes lie within the peripheral limits of associated labels and so that some release paper also lies within the peripheral limits of the feed holes; said

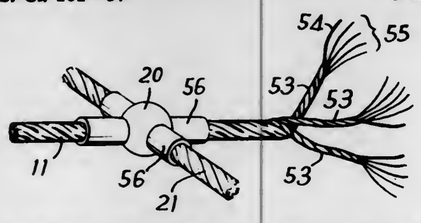
periphery of said feed holes either being formed in a complete geometric shape or an incomplete geometric shape. When the label and supporting material is thereafter fed by a pin feed drum about a stripping edge, in those situations where the feed holes are defined by a complete geometric periphery the portion of the supporting material therewithin travels with the label as it is stripped from support material; while in those situations where the feed holes are defined by an incomplete geometric shape the support material lying therewithin remains with the web of supporting material and is moved out of the plane thereof when said supporting material coacts with the pin feed drum in a chadless type operation.

3,501,366

PRODUCTION OF NETTING

Anthony Bramley, Gosford House, Gosford, Kidlington, Oxford, England, and John F. Gilbert, Chalford, Stroud, England; said Gilbert assignor to said Bramley

Filed May 25, 1965, Ser. No. 458,591
Int. Cl. B32b *5/12, 3/10*
U.S. Cl. 161—57 **5 Claims**



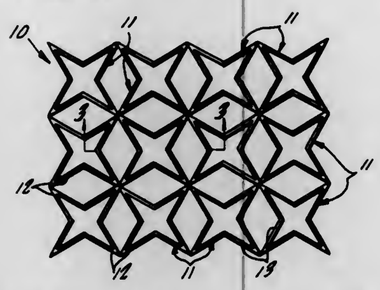
A netting construction and a method of producing same wherein a first plurality of flexible threads of plastic material are positioned in spaced parallel relationship. A second plurality of spaced, parallel and flexible threads extend transversely across the first threads. A plurality of small masses of plastic material are individually molded about the intersections of the two pluralities of threads and welded to the plastic material of each thread. Portions of some of the longitudinal threads are preferably electrically conductive and have exposed conductive surfaces to permit the netting to be used for electrified fencing.

3,501,367

HONEYCOMB CORE STRUCTURE

Boyd J. Parker, 401 Manhattan Ave., Hermosa Beach, Calif. 90254

Filed Nov. 14, 1966, Ser. No. 593,991
Int. Cl. B32b *3/12*
U.S. Cl. 161—68 **9 Claims**



A honeycomb core structure having a plurality of interconnected cells having walls in a star-like arrangement is provided. Adjacent star-like cells are interconnected at their points so that between connected points the walls of the cell diverge to provide a structure having a plurality of alternate acute and obtuse angles in each cell wall. The honeycomb core therefore has bidirectional flexibility as compared with the unidirectional flexibility of a conventional honeycomb core.

3,501,368

INTERLINING

Robert Schabert, Weinheim an der Bergstrasse, and Wilhelm Büchsenstein, Schriesheim, Bergstrasse, Germany, assignors to Carl Freudenberg Kommanditgesellschaft auf Aktien, Weinheim an der Bergstrasse, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 387,912, Aug. 6, 1964. This application July 12, 1968, Ser. No. 747,422
Claims priority, application Germany, Aug. 6, 1963, F 40,424
Int. Cl. B32b *3/10, 7/14;* **D04h** *1/04*
U.S. Cl. 161—112 **10 Claims**

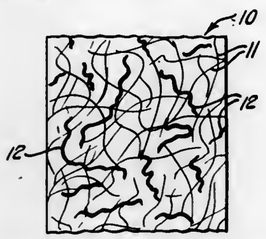
Iron-on fabric composed of thermoplastic fleece material having a resin in the form of a cobweb deposited on one side thereof. The resin contains a plasticizer for the sheet material, and upon heating the material for ironing-on, plasticizer passes to the sheet material, softening it, and the softened sheet material is then adhesive on both sides thereof.

3,501,369

NONWOVEN FABRIC AND METHOD OF MAKING THE SAME

Arthur H. Drelich, Plainfield, and Michael R. Fechillas, Linden, N.J., assignors to Johnson & Johnson, a corporation of New Jersey

Continuation-in-part of application Ser. No. 416,041, Dec. 4, 1964. This application Nov. 17, 1965, Ser. No. 515,288
Int. Cl. D04h *1/04*
U.S. Cl. 161—150 **12 Claims**



A new nonwoven fabric having improved wet strength and comprising from 25 to 95 percent of cellulosic fibers and 5 to 75 percent of polypropylene fibers. The polypropylene fibers are partially fused but maintain their fibrous identity and are uniformly distributed throughout the cellulose fibers in bonding relationship. The fabric is made by forming a web of the combination of fibers and heating the web to a temperature of from about 325° F. to 400° F. and applying from about 2 to 20 pounds per linear inch of pressure to the web to partially fuse the polypropylene fibers and bond the polypropylene fibers and cellulose fibers together.

3,501,370

TOP-COATED AND COLOR-STABILIZED FOAMED PVC ARTICLE AND PLASTISOL LIQUID COMPONENT THEREOF

Gordon M. Juredine, Cleveland Heights, Ohio, assignor to Synthetic Products Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 20, 1967, Ser. No. 617,365
Int. Cl. B32b *5/18*
U.S. Cl. 161—160 **19 Claims**

Laminated articles having foamed designs and outstanding color permanence and clarity are produced by

incorporating into the plastisol, from which the top-coating is formed, 100 parts of PVC, zinc and barium soaps having 6 to 12, inclusive, carbon atoms to provide 0.003 to 0.08 part each of zinc and barium, a mixture of about equal parts of an alkyl diaryl phosphite with a linear polyaryl polyalkylene ether-polyphosphite to provide .04 to 0.8 part of phosphorus and preferably .001 to 0.5 part of a higher fatty acid.

3,501,371

DYEABLE POLYOLEFIN BULK TEXTILE FIBERS AND PROCESS FOR THEIR PREPARATION

Floriana Bertinotti and Ezio Danielli, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed May 11, 1967, Ser. No. 643,780
Claims priority, application Italy, May 13, 1966, 11,013/66
Int. Cl. D02g *3/24;* **B32b** *5/02*
U.S. Cl. 161—169 **12 Claims**

Dye-receptive synthetic high bulk textile fibers obtained by blending drawn and crimped dye-receptive staple fibers comprising a polyolefin consisting at least prevailingly (over 50%) of isotactic macromolecules and from about 1–25% by weight of said polyolefin of an epichlorohydrin-amine polycondensate, from 10 to 90 percent of these fibers having been subjected to a thermal stabilization treatment at a temperature of about 100–150° C. after drawing and crimping and, correspondingly, from about 90 to 10% of the fibers being unstabilized to heat, having been exposed to temperatures not higher than about 50° C. after drawing and crimping, spinning the resulting blend and then subjected it to a thermal treatment at a temperature of from about 100–140° C. Shrinkage of the unstabilized portion of the blend upon thermal treatment of the blend causes the "bulking" of the fibers.

3,501,372

PENCIL PITCH

Gale G. Kenney, Ingomar, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Original application Nov. 13, 1963, Ser. No. 323,342, now Patent No. 3,334,167, dated Aug. 1, 1967. Divided and this application Mar. 16, 1967, Ser. No. 644,034
Int. Cl. C10c *3/18*
U.S. Cl. 161—180 **1 Claim**



Pitch in a convenient solid form for shipment and further processing is provided which is in the shape of a solid rod having a peripheral surface with a twisted spiral contour, said surface being bright and shiny, and having a non-circular cross section.

3,501,373

DE-INKING WASTE PRINTED CELLULOSIC STOCK

Robert H. Illingworth, Madison, N.J., assignor to Garden State Paper Co. Inc., Garfield, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 193,448, May 9, 1962. This application Nov. 4, 1966, Ser. No. 591,972
Int. Cl. D21c *5/02*
U.S. Cl. 162—5 **15 Claims**

This invention provides an improved method of de-inking waste printed paper. The improved method comprises utilizing as the de-inking agent in aqueous solution a small effective amount of non-ionic surface active agent and a hydrocarbon component, the non-ionic surface active agent corresponding to the formula

$$R—(—CHR^1—CHR^1—O—)_n—H$$

wherein R represents the residue of an alkyl phenol in which the total number of carbon atoms is between 7 and 24, R^1 represents hydrogen or lower alkyl, and n is an integer of from 2 to 100, and the hydrocarbon component being an aliphatic hydrocarbon having a boiling point above about 100° F. and a melting point below about 40° F. or a chlorinated aromatic hydrocarbon having at least one chlorine atom attached to an aromatic carbon atom the weight ratio of non-ionic surface active agent to hydrocarbon component being between 10:1 and 1:10.

3,501,374

SEQUENTIAL BLEACHING OF KRAFT PULP WITH CHLORINE DIOXIDE AND CHLORINE

Walter Q. Jack, Youngstown, N.Y., and Loyd V. Johnson, Tacoma, Wash., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 467,697, June 28, 1965. This application Dec. 26, 1968, Ser. No. 787,267
The portion of the term of the patent subsequent to Mar. 18, 1986, has been disclaimed
Int. Cl. D21c *3/02, 3/26*
U.S. Cl. 162—89 **10 Claims**

There is provided a process for the sequential bleaching of kraft pulp comprising reacting kraft pulp with chlorine dioxide until the chlorine dioxide is at least partially depleted, reacting the kraft pulp with chlorine, and treating the kraft pulp with caustic.

Via this process bleached kraft pulps with exceptionally good brightness and strength characteristics are obtained.

3,501,375

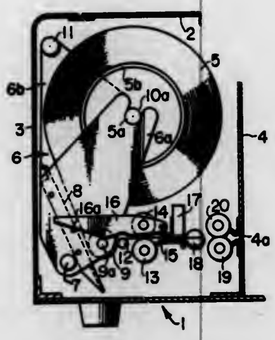
DECURLING DEVICE FOR ROLLED COPY PAPER IN A COPIER

Shigeru Suzuki, Yokohama-shi, and Tadaaki Kanno, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan

Filed Oct. 2, 1967, Ser. No. 672,251
Claims priority, application Japan, Oct. 24, 1966, 41/98,466
Int. Cl. D21f *7/00, 7/04;* **D41f** *13/54*
U.S. Cl. 162—271 **5 Claims**

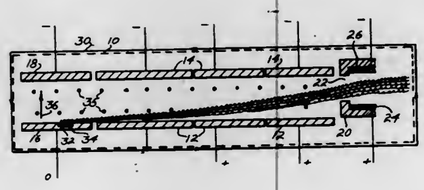
A decurling device for rolled copy paper wherein a paper pressing roller which presses copy paper drawn from a copy paper roll against a decurling roller is journaled at a fixed location at a lower part of a paper mounting

bracket, the paper pressing roller being separated from the decurling roller when the bracket is tilted downwardly to mount a roll of copy paper thereon, whereby difficulty



in the loading of the printing paper caused by the mounting of the decurling roller, which bends the path of the copy paper, is avoided.

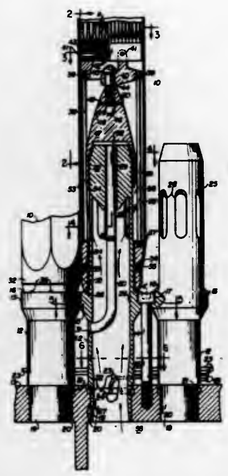
3,501,376
METHOD AND APPARATUS FOR PRODUCING NUCLEAR FUSION
William G. Dow, Ann Arbor, and Irving W. Rozian, Plymouth, Mich., assignors to Consumers Power Company, Jackson, Mich., a corporation of Maine
Filed July 21, 1967, Ser. No. 655,114
Int. Cl. G21b *1/00*; H05h *1/00*
U.S. Cl. 176—1 **8 Claims**



A method and apparatus for the generation of largely rotational kinetic energies of high magnitude in a slowly-drifting stream of electrically charged particles of one electrical polarity only in which the direct-current space-charge forces are neutralized by the combined action of crossed direct-current electric and magnetic fields, such a high kinetic energy stream being herein called a monopolar, crossed-field-neutralized plasma, and when using ion particles the generated kinetic energy may be used in producing nuclear fusion due to collisions of the particles, or when using electrons the created energy is usable for electronic purposes.

3,501,377
PRESSURE BALANCED FUEL BUNDLE INLET
John H. Germer, San Jose, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 10, 1969, Ser. No. 797,744
Int. Cl. G21c *3/04, 19/28*
U.S. Cl. 176—19 **9 Claims**

A nuclear reactor fuel bundle inlet including means for preventing lifting forces due to hydrostatic pressure differential at the entrance to the fuel bundle, while permitting radial misalignment, as well as the possibility of monitoring coolant flow to the individual fuel bundles. This is accomplished by utilizing seals of approximately



equal areas, where the seals are exposed to the pressure differential in opposing directions, thus the pressure forces are essentially balanced. In addition, a rocking motion is provided to allow for misalignment.

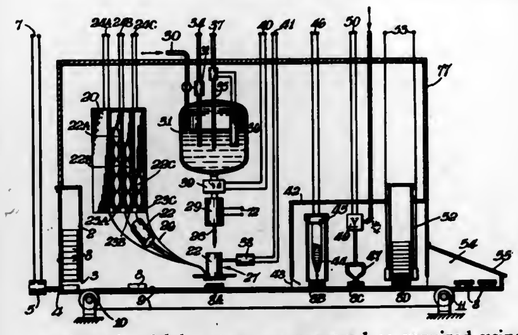
3,501,378
METHOD FOR RECOVERING SILVER HALIDE FROM PHOTOGRAPHIC SOLUTIONS
Noboru Shinkai, Kanagawa, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed June 22, 1967, Ser. No. 648,081
Claims priority, application Japan, June 24, 1966, 41/41,118
Int. Cl. C12b *1/00*
U.S. Cl. 195—2 **3 Claims**

In the recovery of silver halide from a wash water solution, coming from a washing step of a process for the production of photographic gelatino silver halide light-sensitive materials, by adding a coagulant followed by settling the improvement comprising reserving the waste solution in a reservoir open to the air, for from about 10 to 20 hours before the addition of the coagulant. The gelatin in the waste solution is decomposed by the fermentation with bacteria in the air. This facilitates settling of silver halide and gelatin with a reduced amount of coagulant.

3,501,379
APPARATUS FOR PREPARATION OF MICROBIOLOGICAL CULTURE MEDIA
Kenneth B. Tate, Port Washington, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,676
Int. Cl. C12b *3/00*
U.S. Cl. 195—127 **10 Claims**

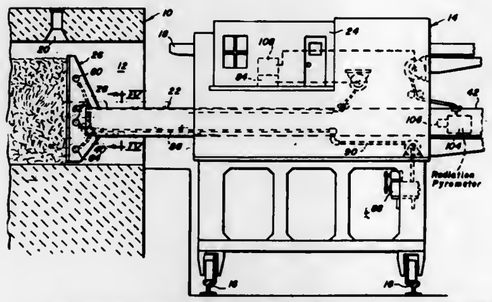
Apparatus for preparing sterile containers filled with solidified or semisolid sterile culture media for use in culturing bacteria or other microorganisms. Programmed device automatically prepares media by mixing contents of puncturable canister containing dehydrated agar or other media with hot sterile water or by heating canister of reconstituted media. Sterile containers are filled with

prepared media and may be cooled to solidify the media. By use of canisters containing media of various types,



total needs of laboratory are prepared as required using single apparatus.

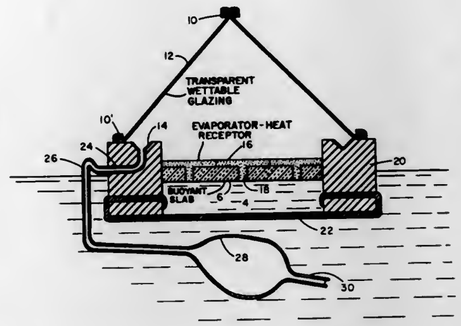
3,501,380
METHOD AND APPARATUS FOR MEASURING THE TEMPERATURE OF COKE OVEN WALLS
Michael Perch, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 30, 1968, Ser. No. 787,825
Int. Cl. C10b *33/10, 41/00*; G01j *5/02*
U.S. Cl. 201—1 **10 Claims**



The pusher ram has a plurality of openings or windows in the sidewalls and a plurality of reflective surfaces inside the pusher ram. A radiation pyrometer is positioned inside the hollow horizontal arm of the pusher ram adjacent the end portion that does not enter the coke oven and has its sensing head focused on one of the reflective surfaces. The other reflective surfaces are arranged to reflect the radiant energy emitted by the coke oven wall onto the intermediate reflective surface and the intermediate reflective surface in turn reflects the radiant energy along an unobstructed path through the horizontal arm to the radiation pyrometer positioned outside of the coke oven. Suitable means are provided to adjust the reflective surfaces so that the temperature of one or both of the coke oven walls may be measured at different elevations as the coke is being removed from the coke oven by the pusher ram.

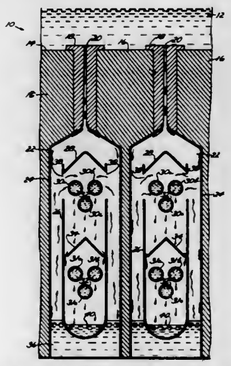
3,501,381
SOLAR STILL WITH FLOATING SLAB-SUPPORTING PARTICULATE RADIANT ENERGY RECEPTOR
William R. P. Delano, P.O. Box 96, Setauket, N.Y. 11785
Filed Jan. 18, 1967, Ser. No. 616,997
Int. Cl. C02b *1/08, 1/06*; B01d *3/00*
U.S. Cl. 202—83 **11 Claims**

A greenhouse type solar still which can be floated in brine has sidewalls enclosing a surface area of the brine. Floating slabs insulate the enclosed area and support a wettable evaporator radiant energy receptor. Spaced passages in each slab which are filled with capillary active material interconnect the evaporator and the brine to sup-



ply fresh brine for complete wetting of the evaporator and to provide sufficient back flow of brine concentrated in the evaporator to prevent salt formation while minimizing heat losses.

3,501,382
DISTILLATION-CONDENSER WITH VERTICALLY DISALIGNED TUBES
Ralph C. Roe, Tenafly, N.J., assignor, by mesne assignments, to Saline Water Conversion Corporation, Oradell, N.J., a corporation of New York
Filed Feb. 21, 1967, Ser. No. 617,642
Int. Cl. B01d *3/28*; F28b *9/10*
U.S. Cl. 202—185 **6 Claims**

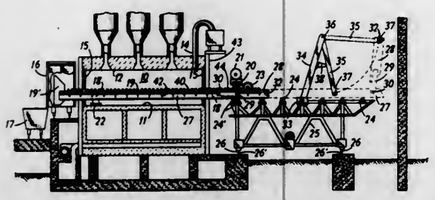


Surface condensers with coolant tubes arranged in vertical disalignment and occupying only small percentage of condenser volume. Surface condensers integrated in multistage controlled flash evaporation system.

3,501,383
ARTICULATED PUSHER RAM FOR COKE OVENS
Frans Wethly, Manhasset, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Nov. 24, 1967, Ser. No. 685,506
Int. Cl. C10b *33/06*
U.S. Cl. 202—262 **7 Claims**

This application relates to an articulated pusher ram construction for use in expelling coke from coke ovens. The ram is horizontally reciprocable and is driven by a pinion engaging with a rack on the top of the ram. The

ram comprises a forward section and a rear section pivotally connected thereto. As the ram is retracted from an oven a slot on the rear section engages a pivotable constraining linkage which causes the rear section to pivot upwardly into a substantially vertical position. A thrust

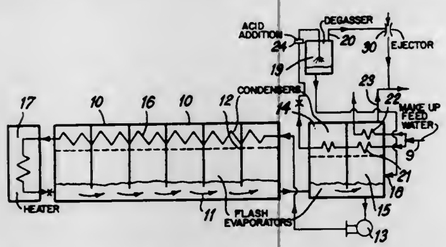


roller is provided on top of the ram adjacent and to the rear of the pinion to prevent undesirable vertical movement of the rear section of the ram when the ram is in its extended position, thus allowing further extension of the ram than has heretofore been possible and consequently also allowing use of a shorter ram.

3,501,384
LOW PRESSURE DEGASSING OF FEED WATER IN MULTI-STAGE FLASH EVAPORATORS

Roy Starmer, Peterlee, County of Durham, England, assignor to Applied Research and Engineering Limited, Peterlee, County of Durham, England, a British company

Filed Dec. 15, 1966, Ser. No. 601,960
Claims priority, application Great Britain, Dec. 21, 1965, 54,157/65
Int. Cl. B01d *3/06, 3/10;* **C02b** *1/06*
U.S. Cl. 203—11 **1 Claim**



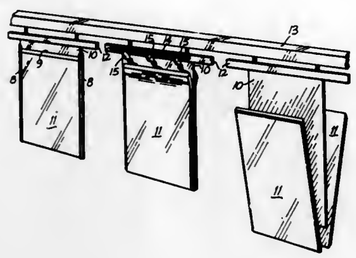
A multi-stage flash evaporator in which heated water to be evaporated is passed through a succession of flash chambers, make-up feed water is mixed with a least some of the water remaining in one of the cooler stages and the water mixture is fed in contra flow heat exchange relation with vapour from water passing through the flash chambers and with additional heating to the first stage, is provided with a degasser for the make-up feed water, means for heating the make-up feed water before it passes through the degasser and means for maintaining the pressure in the degasser lower than that of the stage of the evaporator at which the make-up feed water is added.

3,501,385
PROCESS FOR STRIPPING METAL FROM A CATHODE

Peter M. Jasberg, Kellogg, Idaho, assignor to The Bunker Hill Company, Kellogg, Idaho, a corporation of Delaware

Filed May 8, 1967, Ser. No. 636,797
Int. Cl. C23b *7/08*
U.S. Cl. 204—12 **10 Claims**

The disclosure herein is directed to the stripping of electrolytically deposited sheets from a plate cathode in metal recovery processes. It is particularly described with respect to recovery of zinc. The sheets are stripped by application of fluid jets at the interface between sheet

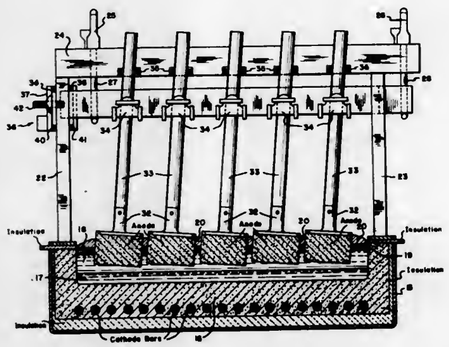


surfaces. Auxiliary mechanical rapping and wedging steps to facilitate stripping is also described.

3,501,386
APPARATUS AND PROCESS FOR THE REDUCTION OF ALUMINUM

Arthur F. Johnson, 203 Creole Lane, Franklin Lakes, N.J. 07417

Filed May 17, 1966, Ser. No. 550,653
Int. Cl. C22d *3/12, 3/02*
U.S. Cl. 204—67 **4 Claims**



1. In the aluminum reduction from fused electrolytes in which an oxide of aluminum is dissolved and in which at least one anode having an active under surface is employed, the process which comprises raising one longitudinal edge of said under surface of an anode while lowering the opposite longitudinal edge of the surface an amount sufficient to cause gas bubbles to be evolved in the direction of the raised longitudinal edge and maintaining the edge raised for a period at least until the lowered under surface is flattened with respect to the horizontal by electrolysis.

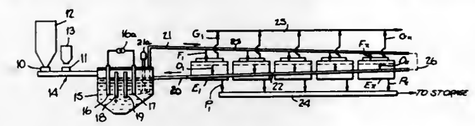
3,501,387
CONTINUOUS PROCESS FOR THE ELECTROLYTIC PRODUCTION OF ALUMINUM

Frank E. Love, Henderson, Nev., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed July 11, 1967, Ser. No. 652,579
Int. Cl. C22d *3/12, 3/02*
U.S. Cl. 204—67 **7 Claims**

Method and apparatus for producing aluminum metal by forming in a charging cell a feed solution of alumina

in a molten solvent bath, introducing the feed solution to electrolysis cells and recirculating electrolysed solution



from the cells to the charging cell therein to be replenished by and become part of the feed solution.

3,501,388
PROCESS FOR THE ELECTROCHEMICAL PRODUCTION OF OLEFIN OXIDES

Walter Kronig and Peter Konrad, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1967, Ser. No. 608,742
Claims priority, application Germany, Jan. 25, 1966, F 48,245
Int. Cl. B01k *1/00, 3/10;* **C07b** *3/00*
U.S. Cl. 204—79 **9 Claims**

Electrochemical conversion of olefins to their corresponding oxides in an electrochemical cell having an anode, a cathode and a textile diaphragm therebetween, wherein the diaphragm is a fabric having a resistance to liquid flow therethrough of about 2 to 60 kg. per hour per dm.² of area of a 5-percent aqueous potassium chloride solution at a temperature of about 20° C. and a pressure differential of about 200 mm. water.

3,501,389
IRRADIATED OLEFIN OXIDE POLYMERS

William W. Spooncer, Richmond, and Ronald S. Bauer, San Pablo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

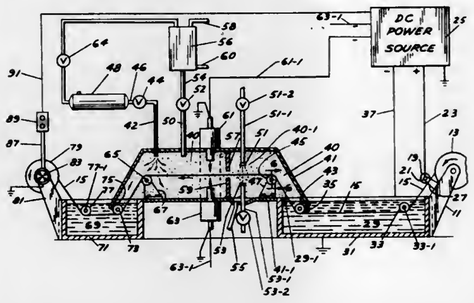
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,128
Int. Cl. C08f *1/16;* **B01j** *1/10*
U.S. Cl. 204—159.22 **1 Claim**

Olefin epoxide monomers are polymerized by exposure to high energy ionizing radiation to yield linear thermoplastic polymers. A novel copolymer of isobutylene oxide and bicyclo-[2.2.1]-2,5-heptadiene is produced.

3,501,390
PROCESS FOR ELECTROCOATING AND POLYMERIZING BY RADIATION

Allen H. Turner, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,834
Int. Cl. C23b *13/00;* **B01k** *5/02*
U.S. Cl. 204—181 **13 Claims**

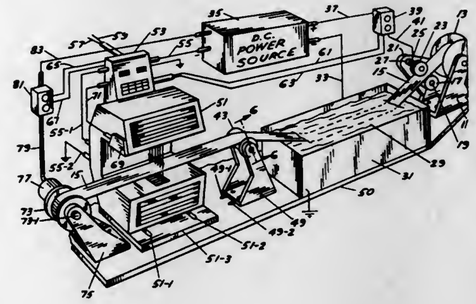


Electroconductive objects are electrocoated with a water-ionizable amino compound and a film-forming, polymerizable, organic coating material, at least a major proportion of which is a polycarboxylic acid resin. The coated article is passed through a liquid seal into an inert gas-containing irradiation zone and is subjected to high energy ionizing radiation to effect polymerization of the coating.

3,501,391
ELECTROCOATACURE PROCESS AND PAINT BINDERS THEREFOR

Arthur G. Smith, Livonia, and Allen H. Turner, Ann Arbor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 583,885, Oct. 3, 1966. This application Sept. 7, 1967, Ser. No. 666,338
Int. Cl. B01k *5/02;* **C23b** *13/00*
U.S. Cl. 204—181 **21 Claims**

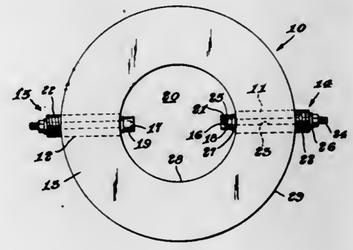


A method for coating wherein a film-forming, polymerizable, organic coating material is electrodeposited upon an electrically conductive object immersed in an aqueous medium and the resultant coating polymerized on said object by ionizing radiation before significant post deposition dehydration of said film is effected.

3,501,392
ELECTROMOTIVE SENSING DEVICE

James E. Ayers, St. Louis, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 28, 1967, Ser. No. 649,521
Int. Cl. B01k *3/00*
U.S. Cl. 204—195 **2 Claims**



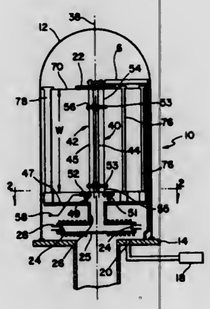
An electromotive sensing device comprising two electrodes engaged in the walls of a washer shaped support member, the reference electrode characterized in that the electrode cap is jacketed with a substantially inert material. An improved method of automatically controlling

chemical processes by placing the electromotive sensing device in a chemical process stream containing species which exhibit electrical potential responses; detecting the oxidation-reduction potential created by the oxidation-reduction response of the system, and automatically controlling the ratio of reactants in accordance therewith.

3,501,393
APPARATUS FOR SPUTTERING WHEREIN THE PLASMA IS CONFINED BY THE TARGET STRUCTURE

Gottfried K. Wehner, Minneapolis, and Gerald S. Anderson, St. Paul, Minn., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed May 5, 1967, Ser. No. 636,331
Int. Cl. C23c *15/00*
U.S. Cl. 204—298 **22 Claims**



The sputtering apparatus consists of an anode electrode and a cathode electrode mounted at spaced locations in an airtight chamber. A target cage mounted between the anode and the cathode consists of a plurality of spaced sections which define a given volume in a central part of the chamber and an outer region between the target cage and the walls of the chamber. The cage may be open at the top and bottom and is made from parallel rods or turns of a spiral member which define the given volume.

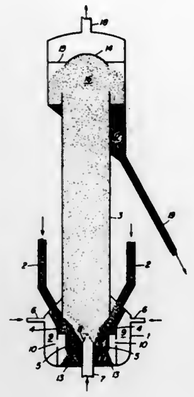
The method of using the target cage includes establishing a gas discharge plasma in the chamber and applying a negative voltage (with respect to the plasma) to the target cage. The plasma enters the given volume within the target cage and upon increasing the negative voltage applied to the cage, ion sheaths which form around the spaced sections overlap and confine the plasma to the given volume. Positive ions in the confined plasma bombard the spaced sections to sputter material. The sputtered material passes between the sections on substrates located in the outer region.

3,501,394
GAS LIFT RETORTING PROCESS FOR OBTAINING OIL FROM FINE PARTICLES CONTAINING HYDROCARBONACEOUS MATERIAL

Thomas C. Lyons, Rifle, Colo., assignor to Mobil Oil Corporation, a corporation of New York

Filed Apr. 17, 1967, Ser. No. 631,264
Int. Cl. C10g *1/02, 1/00, 31/14*
U.S. Cl. 208—11 **4 Claims**

A process for retorting fine particulate solids such as shale or Athabasca tar sands containing hydrocarbonaceous material to recover oil. The fine solids are mixed with a hot non-combustion supporting lift gas in a lift pot and the resultant mixture is passed upwardly through a riser as a dilute phase. Contact time and temperature in the riser are regulated to effect thermal decomposition of the hydrocarbonaceous material to oil vapor which is subsequently recovered. Spent fines can be burned in a



separate combustion zone and at least a portion of the hot gas therefrom is recycled to the lift pot.

3,501,395
MANGANESE CARBONATE-CONTAINING MINERALS AND THEIR USE IN HYDROCARBON CONVERSIONS

Joseph N. Miale, Trenton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 28, 1966, Ser. No. 597,244
Int. Cl. C10g *13/04*; B01j *11/32*
U.S. Cl. 208—112 **18 Claims**

A catalyst for hydrocarbon conversion comprising a base exchanged calcined manganese carbonate-containing mineral having hydrogen ions bonded thereto.

3,501,396
HYDRODESULFURIZATION OF ASPHALTENE-CONTAINING BLACK OIL

John G. Gatsis, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 560,068, June 24, 1966. This application Apr. 14, 1969, Ser. No. 816,101
Int. Cl. C10g *23/02*
U.S. Cl. 208—216 **3 Claims**

Desulfurization of an asphaltene-containing black oil in admixture with 2.0% to about 30.0% by weight of water. A catalytic process in which an acidic catalyst containing 1.0% to 20.0% by weight of molybdenum and 0.2% to about 10.0% by weight of nickel is utilized. Selected desulfurizing conditions include a maximum catalyst temperature below about 800° F. and above the critical temperature of water.

3,501,397
REMOVAL OF ELEMENTAL SULFUR FROM PETROLEUM OIL CONTAMINATED WITH SULFUR

William H. Thompson, St. Louis, Mo., and Eldred E. Young, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 684,507, Nov. 20, 1967. This application Mar. 21, 1969, Ser. No. 809,376
Int. Cl. C10g *29/28*
U.S. Cl. 208—236 **3 Claims**

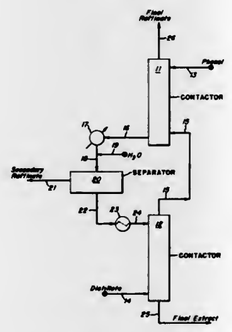
A method of purifying elemental sulfur contaminated oil separated and recovered from sulfur-oil slurries by

contacting such elemental sulfur contaminated oils with an aqueous solution containing polysulfide forming compounds and preferably ammonium polysulfide forming compounds, said solution having preferably a pH above 7.

3,501,398
METHOD FOR IMPROVING THE EFFICIENCY OF A MULTIPLE-STAGE PHENOL EXTRACTION PROCESS

Roland L. Menzl, Hammond, Ind., and Fred W. Schnessler, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed May 29, 1968, Ser. No. 733,165
Int. Cl. C10g *21/02*
U.S. Cl. 208—316 **9 Claims**



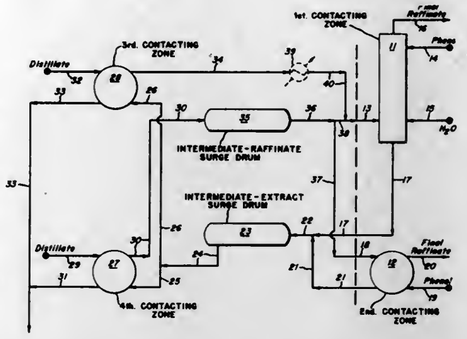
The method comprises adding continuously a small amount of water to the intermediate-extract stream which flows between two serially-connected contactors. The added water decreases the solvency of the phenol in the intermediate-extract stream to release secondary-raffinate material. The secondary-raffinate material is separated from the intermediate-extract stream and is withdrawn as a product. Subsequently, the remainder of the stream is heated to a temperature between about 150° F. and about 200° F. prior to being introduced into the succeeding contacting zone. The added water is an amount that will bring the water content of the phenol-rich phase to a level that is within the range of about 1 weight percent to about 12 weight percent, based on the total amount of phenol being added to the process.

3,501,399
METHODS FOR IMPROVING A PHENOL EXTRACTION PROCESS

Roland L. Menzl, Hammond, Ind., Frederick W. Schuessler, Chicago, Ill., and Lowell T. Dodds, Lake Village, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed May 29, 1968, Ser. No. 733,166
Int. Cl. C10g *21/00*
U.S. Cl. 208—317 **12 Claims**

These methods improve the operation of a phenol extraction process having two parallel contacting zones of unequal capacities. The method for improving the efficiency of the process comprises connecting two contacting zones in series with the existing two contacting zones. The method for improving the capacity and the efficiency of the process comprises connecting two contacting zones

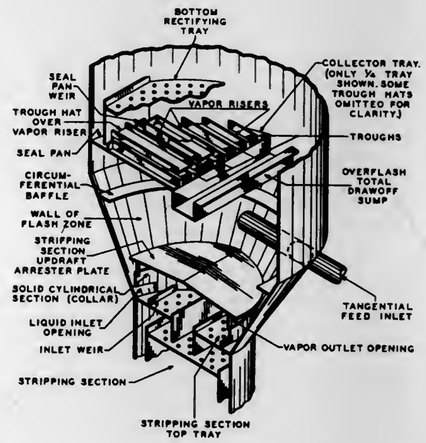


in series with the existing two contacting zones and employing interstage cooling.

3,501,400
DEENTRAINMENT DISTILLATION OF HYDROCARBONS IN STRIPPING COLUMN HAVING ARRESTER PLATE AND COLLAR

Gerald L. Brody, Kensington, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Feb. 8, 1968, Ser. No. 703,964
Int. Cl. B01d *3/06, 3/18*
U.S. Cl. 208—361 **8 Claims**



To reduce entrainment of residuum into distillate products an arrester plate is installed above the top tray of the stripping section of a vacuum or atmospheric crude oil distillation column. The arrested plate arrests direct upward vapor draft from the top stripping tray. A cylindrical collar beneath the arrester plate has lower openings to allow residuum liquid from the flash zone to enter the liquid inlet area of the top tray of the stripping section and upper openings to allow arrested vapor from the stripping section top tray to escape from beneath the arrester plate.

3,501,401
CONDENSATION PURIFICATION PROCESS

Calvin Calmon, Arneys Mount, Springfield Township, N.J., assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York

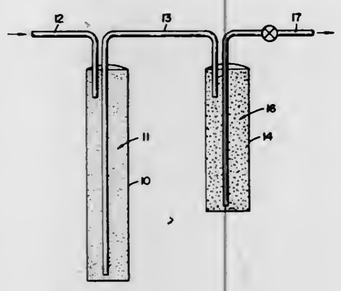
No Drawing. Filed May 22, 1969, Ser. No. 827,055
Int. Cl. B01d *15/06*
U.S. Cl. 210—33 **10 Claims**

Regeneration of the anion exchange resin portion of a mixed bed demineralizer with caustic followed by contacting the anion exchange resin particles with a solution containing ions having a rational thermodynamic equilibrium constant greater than either sodium or the ammonium ion substantially reduces sodium ion leakage into condensate water effluent due to replacement of sodium ions from cation exchange resin particles entrained in the anion exchange resin on separation of the mixed bed to its constituents. Calcium hydroxide solution is preferred.

3,501,402
PROCESS FOR THE PRODUCTION OF ORCHID WATER

Ortha M. Console, Glendale, Calif., assignor to Foremost-McKesson, Inc., San Francisco, Calif., a corporation of Maryland

Filed Oct. 23, 1968, Ser. No. 769,978
Int. Cl. C02b *1/16, 1/46, 7/00*
U.S. Cl. 210—38 **2 Claims**



Process for the production of orchid water for orchid culture. City tap water is treated by contact with cation exchange resin operating on the hydrogen cycle, and thereafter its pH adjusted by contact with lime.

3,501,403
ORGANIC COMPOSITIONS CONTAINING OXIDATION RETARDERS

James Keith Jacques, Walsall, England, and William John Owen, Penarth, Wales, assignors to Electric Reduction Company of Canada, Ltd., Islington, Ontario, Canada, a Canadian company

No Drawing. Filed Mar. 21, 1967, Ser. No. 624,690
Claims priority, application Great Britain, Mar. 21, 1966, 12,392/66
Int. Cl. C10m *1/50;* **C07f** *9/28*
U.S. Cl. 252—46.7 **3 Claims**

The invention provides a mineral oil composition having superior oxidation resistance consisting of a mineral oil and between about 0.02 and 0.25% by weight of an oxidation retarder having the formula

$$R_{(4-n)}Si(CH_2PS_{(m-1)}R'_2)_n$$

wherein each R is selected from halogen atoms and alkyl, aryl, aralkyl and alkoxyl groups each having from 1 to 18 carbon atoms, each R' is selected from alkyl, aryl, alkaryl, alkoxyl and mercaptyl groups each having from 1 to 18 carbon atoms, *n* is an integer from 1 to 4, and *m* is an integer from 1 to 2.

3,501,404
AQUEOUS LUBRICANTS FOR METAL WORKING

Morton H. Klaiber, Tonawanda, and Anton S. Pater, Williamsville, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of applications Ser. No. 514,121, Dec. 12, 1965, and Ser. No. 742,981, June 27, 1968. This application May 5, 1969, Ser. No. 830,181
Int. Cl. C10m *1/06*
U.S. Cl. 252—49.5 **9 Claims**

A lubricant for metal working which is an aqueous emulsion containing an emulsifier and an olefin polymer having a molecular weight in the range of about 1,500 to 25,000, the olefin polymer being the major organic constituent of the emulsion and being present in an amount of about 0.1 to about 25 weight percent of the emulsion.

3,501,405
LUBRICATING AND FUEL COMPOSITIONS COMPRISING COPOLYMERS OF N-SUBSTITUTED FORMAMIDE-CONTAINING UNSATURATED ESTERS

Gordon L. Willette, Philadelphia, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 11, 1967, Ser. No. 659,898
Int. Cl. C10l *1/14;* **C10m** *1/28*
U.S. Cl. 252—51.5 **5 Claims**

This invention relates to useful esters of unsaturated carboxylic acids, their addition polymers, and methods of preparing the esters. The invention further deals with lubricating and fuel compositions having incorporated therein the polymers which impart thereto dispersant and other beneficial properties.

3,501,406
METHOD FOR PRODUCING ROD-SHAPED SILICON MONOCRYSTALS WITH HOMOGENEOUS ANTIMONY DOPING OVER THE ENTIRE ROD LENGTH

Rudolf Kappelmeyer, Oberhaching, and Max Hugo Kellerbauer, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed June 8, 1967, Ser. No. 644,638
Claims priority, application Germany, June 13, 1966, S 104,258
Int. Cl. B01j *17/18, 17/00;* **H01l** *3/14*
U.S. Cl. 252—62.3 **9 Claims**

Described is a method of producing rod-shaped silicon monocrystals having homogeneous antimony doping over the entire rod length, by pulling from a melt. The monocrystal is pulled by a crystal seed from a melt contained in a crucible, with an appropriately selected antimony content, whereby a portion of the antimony present in the melt is vaporized during the growth of the crystal. The pulling process is carried out in an evacuable reaction vessel, in a gaseous atmosphere and at a reduced pressure.

3,501,407
PIEZOELECTRIC CERAMIC COMPOSITION

Tsuneo Akashi, Masao Takahashi, and Norio Tsubouchi, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Original application Oct. 17, 1966, Ser. No. 587,241. Divided and this application Apr. 16, 1969, Ser. No. 817,286
Int. Cl. C04b *35/00;* **H01v** *7/02;* **H03h** *9/00*
U.S. Cl. 252—62.9 **4 Claims**

A piezoelectric ceramic composition of the formula $(Pb_uA_v)(Zr_xTi_ySn_z)O_3$, where A represents at least one member selected from a group consisting of calcium, strontium, and barium and *u*, *v*, *x*, *y* and *z* are given by: u=0.75–1.00, v=0.00–0.25, $u+v$=1.00, x=0.00–0.90, y=0.10–0.60, z=0.00–0.65, and $x+y+z$=1.00, contains a set of additional constituents consisting of a manganese compound equivalent in amount to a maganous oxide of from 0.02 to 1.0 weight percent and a nickel compound equivalent in amount to a nickel oxide of from 0.02 to 2.0 weight percent, each of the weight percentages being the percentage of the total weight of said ceramic composition.

3,501,408
PROCESS FOR THE MANUFACTURE OF PULVERULENT DETERGENT FORMULATIONS CONTAINING SODIUM TRIPOLYPHOSPHATE

Hellmut Gäbler, Knapsack, near Cologne, Gerhard Hartlapp, Hermulheim, near Cologne, Helmut Klee, Knapsack, near Cologne, and Karl Merkenich, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Feb. 3, 1967, Ser. No. 613,749
Claims priority, application Germany, Feb. 26, 1966, K 58,573
Int. Cl. C11d *3/06, 11/00*
U.S. Cl. 252—135 **6 Claims**

Pulverulent washing, cleansing, rinsing and degreasing agents are produced by spraying a wash-active substance, in the presence of water, on sodium tripolyphosphate having a bulk density higher than 550 grams/liter, preferably higher than 600 up to 700 grams/liter, and containing 20 to 100% by weight, preferably 40 to 80% by weight phase-I material. Flowable material free from stickiness is obtained.

3,501,409
DETERGENT-HYDROTROPE COMPOSITION

Ted P. Matson and Henry T. Watanabe, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Oklahoma, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 384,539, July 22, 1964. This application July 10, 1967, Ser. No. 652,017
Int. Cl. C11d *3/065, 1/12, 3/34*
U.S. Cl. 252—137 **9 Claims**

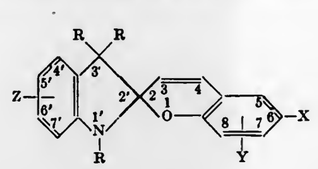
A slurry, light-duty liquid or heavy-duty liquid detergent composition containing a water-soluble alkylethoxy sulfate as a hydrotrope.

3,501,410
BENZOPYRYLOSPIRAN PHOTOCHROME CONTAINING AN ELECTRON ACCEPTOR

Gordon C. Newland and John W. Tamblyn, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 6, 1966, Ser. No. 563,040
Int. Cl. F21v *9/10;* **G02b** *1/04*
U.S. Cl. 252—300 **12 Claims**

A phototropic composition comprising a mixture of (A) a phototrope having the general formula:



wherein X, Y and Z are the same or different monovalent radicals selected from the group consisting of hydrogen, carboxyl, alkoxy, nitro, hydroxyl, alkoxycarbonyl, cyano, halogen, amido, alkylsulfone arylsulfone, acyl, and acylamido, in which the hydrocarbyl groups attached to functional moieties containing such have not more than 8 carbon atoms, at least one of said X, Y and Z substituents being other than hydrogen, said substituent Z being located at positions 5' to 7', inclusive, and said substituents X and Y being located at positions 5 to 8, inclusive, and wherein R is a hydrocarbyl radical of not more than 20 carbon atoms; and (B) an electron acceptor selected from the group consisting of oxalic acid; mono- or poly-substituted benzene compounds wherein the substituents are hydroxyl, carboxyl, cyano, aldehyde, nitro, combinations thereof with alkoxy groups or combinations thereof with each other; compounds containing a cyano group and a carboxyalkoxy group attached to a methylene radical; aliphatic compounds containing at least two cyano groups attached to an ethylenic bond; and oxidizing agents selected from the group consisting of peroxides and benzoquinones.

3,501,411
PROCESS OF PREPARING NUCLEAR FUEL

Leonard V. Triggiani, Silver Spring, Norton Haberman, Bethesda, and Moises G. Sanchez, Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 21, 1967, Ser. No. 647,606
Int. Cl. G21c *21/02, 3/00;* **B01j** *13/02*
U.S. Cl. 252—301.1 **8 Claims**

A process for preparing a nuclear fuel containing small but significant amounts of a burnable poison by direct impregnation of a suitable matrix.

3,501,412
METHOD OF PREPARING DYSPROSIUM-ACTIVATED RARE-EARTH METAL VANADATE PHOSPHOR

Richard C. Ropp, North Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 29, 1967, Ser. No. 650,098
Int. Cl. C09k *1/44*
U.S. Cl. 252—301.4 **6 Claims**

To prepare improved dysprosium-activated yttrium vanadate, lanthanum vanadate, or gadolinium vanadate phosphor, particularly for use with discharge devices, dysprosium and the rare-earth metal matrix material are precipitated as oxalates in the relative proportions as desired in the phosphor. Vanadium oxide is added to the oxalate precipitate along with an alkali-metal chloride or bromide, or alkaline-earth metal chloride or bromide, which serves as a flux. This mixture is fired to form the phosphor and the flux then separated therefrom.

3,501,413
PHOSPHOSULFURIZED PARTIAL ESTER-PARTIAL METAL SALTS OF UNSATURATED DICARBOXYLIC ALIPHATIC ACIDS AND LUBRICATING OILS CONTAINING THE PARTIAL ESTER-PARTIAL SALTS

Howard J. Matson, Harvey, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

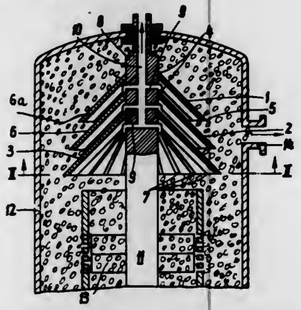
No Drawing. Original application May 27, 1966, Ser. No. 553,316. Divided and this application Mar. 6, 1968, Ser. No. 730,968
Int. Cl. C10m *1/48, 3/42*
U.S. Cl. 252—32.7 **7 Claims**

Extreme pressure additives, especially for use in a lubricant composition, are provided comprising the class of materials produced by reacting an unsaturated dibasic aliphatic acid and an alcohol such as an alkanol of 4 to 24 carbon atoms, to obtain a partial ester, followed by subsequent neutralization with a metal oxide, e.g., lead oxide, and then treating with phosphorus and sulfur.

3,501,414
SEPARATING DEVICE

Hans Mueller, Erlenbach, Zurich, Switzerland, assignor to Process Engineering Company, S.A., Mannedorf, Zurich, Switzerland

Filed Jan. 31, 1968, Ser. No. 702,053
Claims priority, application Switzerland, Feb. 28, 1967, 3,018/67
Int. Cl. B01d *45/00;* B01f *7/20*
U.S. Cl. 252—361 12 Claims



A housing defines an inner chamber which is adapted to contain a quantity of foam consisting of a gaseous phase and a liquid phase in intimate dispersion. A shaft is rotatable in the housing and carries at least two funnel-shaped members one of which is nested within the other and together these define between their respective outer and inner circumferential surfaces an annular gap in which separation of the gaseous phase from the liquid phase is effected by centrifugal deposition of the liquid phase on the inner circumferential surface of the outermost member.

3,501,415
METAL ALLYL CATALYST FOR HOMO- AND COPOLYMERIZING OLEFINICALLY UNSATURATED COMPOUNDS

Walter Herwig and Albert Gustav Martin Gumboldt, Frankfurt am Main, and Klaus Weissermel, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormal Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,790
Claims priority, application Germany, Mar. 6, 1965, F 45,441, F 45,442, F 45,443; Apr. 3, 1965, F 45,722
Int. Cl. B01j *11/84, 11/00;* C08l *1/28*
U.S. Cl. 252—429 2 Claims

Homo- and copolymerizing olefinically unsaturated compounds with a catalyst comprising a mixture of an allyl compound of chromium, tungsten, molybdenum or zirconium and a halide, oxyhalide, ester halide or ester of an element of sub-groups IV^A to VII^A or Group VIII of the Periodic Table.

3,501,416
LOW-MELTING CATALYST

Milton M. Wald, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,018
Int. Cl. C07c *5/24, 5/28*
U.S. Cl. 252—429 2 Claims

A low-melting Friedel-Crafts catalyst having the composition

(1) 5–50% wt. aluminum chloride,
(2) 0–70% wt. antimony chloride, and
(3) either
  (A) 5–80% wt. of a C_4–C_{20} quaternary ammonium tetrachloroaluminate, or
  (B) at least 2% wt. of each of at least two alkali metal tetrachloroaluminates and 1–50% wt. of at least one of the group consisting of zinc, calcium, and barium tetrachloroaluminates.

3,501,417
CHEMICAL PROCESS CATALYST

Dennis A. DeMaio, Staten Island, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed May 27, 1966, Ser. No. 553,312
Int. Cl. B01j *11/20;* C07d *1/14*
U.S. Cl. 252—443 7 Claims

The invention relates to the production of ethylene oxide and particularly to an improved catalyst therefor. The improved catalyst has as an inventive feature the use of a support material having barium chemically combined therewith. The use of the improved catalyst in the controlled oxidation of ethylene oxide permits the operation of the oxidation zones at reduced temperatures, thereby increasing catalyst life without incurring penalties in ethylene conversion or ethylene oxide yield.

3,501,418
PROCESS FOR PREPARING CRACKING CATALYSTS

John S. Magee, Jr., Baltimore, George J. Surland, Woodbine, and Warren S. Briggs and Frank G. Ciapetta, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 14, 1967, Ser. No. 653,331
Int. Cl. B01j *11/62, 11/40*
U.S. Cl. 252—450 13 Claims

A clay and silica-alumina semi-synthetic low surface area catalyst and an intimate admixture method of making the catalyst wherein the alumina content is supplied by acid leaching the clay and then mixing the slurry resulting from the acid leaching with a sodium silicate solution to precipitate the catalyst. In a further embodiment, the catalyst is promoted by the addition of an aluminosilicate molecular sieve.

3,501,419
CELLULOSE MICROSPHERICAL PRODUCT

Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois

Continuation-in-part of applications Ser. No. 200,621, June 7, 1962, and Ser. No. 416,795, Dec. 8, 1964. This application Dec. 12, 1966, Ser. No. 601,202
Int. Cl. B01j *13/02;* C08b *29/16*
U.S. Cl. 260—2.5 5 Claims

A hollow microspherical product consisting of a regenerated polymeric alcohol, such as cellulose, starch, amylose, polyvinyl alcohol, polyallyl alcohol, etc., is produced by spray drying a solution of a polymeric alcohol xanthate under temperature conditions which effect a regeneration of the polymeric alcohol from the xanthate. A preferred embodiment utilizes solutions of polymeric alcohol xanthates which have been decausticized, as by dialysis, dilute or weak acid neutralization, cation exchange, or anion exchange, under conditions which do not regenerate the polymeric alcohol from the xanthate, as a feed in the spray drying process. The use of decausticised solutions avoids the depolymerization of the polymeric alcohol which may result from the presence of excess alkali during the spray drying process. The small hollow spheres of various regenerated polymeric alcohols, ranging in size from a fraction of a micron up to several hundred microns in diameter, are disclosed as novel products. A variety of uses are disclosed for these small hollow spheres, including the use as pigments or opacifiers, either alone or in admixture with a dye or pigment, fillers in paper compositions, encapsulation of dyes and other materials, ion exchange beads, catalyst supports,

precursors for the preparation of graphite in hollow spherical form, components of insulating board, filler for molded plastic articles of extremely low density, etc.

3,501,420
HIGH PURITY POLYESTER DEPOLYMERIZATION PRODUCTS FROM POLYESTER SCRAP BY POLISH HYDROGENATION

George Miller Stevenson, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 20, 1967, Ser. No. 676,708
Int. Cl. C08g *17/18, 53/22*
U.S. Cl. 260—2.3 10 Claims

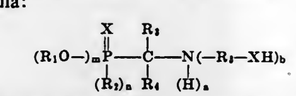
This invention relates to the production of high purity polyester depolymerization products from polyester scrap materials. More particularly, this invention relates to the production of substantially colorless solutions of difunctional dicarboxylic acids and difunctional glycols from dye- or other impurity-containing waste polyester, which acids and glycols may be employed in the production of high quality polyester products.

3,501,421
POLYMERS CONTAINING AMINOALKYL-PHOSPHONATES

Raymond R. Hindersinn, Lewiston, N.Y., and Miltiadis I. Iliopulos, Stuttgart, Germany, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Dec. 12, 1961, Ser. No. 158,877, now Patent No. 3,385,914, dated May 2, 1968. Divided and this application Nov. 9, 1967, Ser. No. 714,370
Int. Cl. C08g *22/14, 22/10;* C07f *9/28*
U.S. Cl. 260—2.5 8 Claims

Selected phosphorus compounds, carbonyl compounds and alkanolamines are reacted to produce compounds of the formula:



wherein m and n are zero to two and $m+n$ equals two; a is zero to one, b is one to two and $a+b$ equals two; X is oxygen or sulfur; R_1, R_2, R_3, and R_4 are organic radicals and R_3 and R_4 can also be hydrogen, and R_5 is an alkyl group. Such compounds can be reacted with carboxylic compounds to produce polyesters, or with epoxides to form polyethers. Such polyesters and polyethers, as well as the compounds themselves, can be reacted with isocyanates to produce polyurethane compositions. When the reaction is carried out in the presence of a foaming agent, cellular products are produced.

3,501,422
HIGH TEAR STRENGTH VULCANIZATES BASED ON CIS-POLYBUTADIENE

Karl-Heinz Nordsiek, Hamm, Upper Marl, and Franz-Peter van de Kamp, Friedrich Zeppernick, and Günter Simon, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany

No Drawing. Filed July 13, 1965, Ser. No. 471,750
Claims priority, application Germany, July 14, 1964, 1,745,673
Int. Cl. C08d *9/00*
U.S. Cl. 260—5 25 Claims

A high tear strength vulcanized composition comprising on a weight basis 0.5–1.2 parts of N-substituted benzthiazyl sulfenamide, 1.2–2.7 parts sulfur, 40–80 parts carbon black, about 90–70 parts cis-polybutadiene and about 10–30 parts of an elastomer selected from the group consisting of polybutadiene having other than a 1,4-cis-structure, natural rubber, polyisoprene, poly-2-chloro-butadiene, polyisobutylene, butyl rubber, polybutadiene - styrene, polybutadiene - acrylonitrile, polybutadiene - styrene - acrylonitrile, and polyethylene-propylene, and 5–15 parts of an ethylenically unsaturated hydrocarbon carboxylic acid salt of 10–30 carbon atoms of a metal selected from the group consisting of alkali metal, alkaline earth metal, zinc and aluminum.

3,501,423
LIQUID VULCANIZABLE RUBBER COMPOSITION OF MATTER

David P. Tate, Northfield, and Edward L. Carr, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,196
Int. Cl. C08c *11/22;* C08d *13/00;* C08f *47/12*
U.S. Cl. 260—8 19 Claims

The invention relates to a flowable composition consisting of rubber particles in a liquid soluble in the rubber, the rubber and liquid being separated by an encapsulating barrier. The rubber may comprise curing, reinforcing and/or extending agents. The liquid may be naphthenic, paraffinic and/or aromatic hydrocarbons. The barrier material ceases to be a barrier at elevated temperature. It may be gelatin, gelatin-gum arabic film, an alkylene oxide polymer polyvinyl alcohol or an esterification derivative thereof, self-micellized particles, a hydrophilic polymer or a polymer one portion of which is lyophilic toward the liquid and the other is lyophobic toward the liquid.

3,501,424
COATING COMPOSITION CONTAINING ALKALINE AND NON-ALKALINE PIGMENT WITH BINDER AND DISPERSANT

Saburo Imoto, Kyoichiro Ikari, and Tatsuaki Hattori, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed July 8, 1966, Ser. No. 563,715
Claims priority, application Japan, July 14, 1965, 40/42,499; Sept. 9, 1965, 40/55,281
Int. Cl. C09d *3/74, 7/00*
U.S. Cl. 260—17.0 5 Claims

A coating composition for high grade paper comprising a major amount of a mixture of an alkaline pigment, such as satin white and a non-alkaline pigment, such as clay, and a minor amount of polyvinyl alcohol as a pigment binder. The mixture of pigments and binder is provided with a minor amount of a dispersant which is a high molecular weight carboxyl or sulfo radical-containing compound or a compound having at least one —OH, N—, NH— or NH_2— radical and at the same time at least two —COOX radicals wherein X denotes H, Na, K or NH_4. The dispersant is provided in an amount sufficient to reduce the viscosity of the coating composition, the amount being at least 2% by weight of the total amount of alkaline pigment.

3,501,425
PROCESS FOR PREPARING THIXOTROPIC SOLUTIONS OF OIL-MODIFIED ALKYD RESINS AND RESULTING PRODUCT

Hermann Dellus, Ahrensburg, Holstein, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed July 2, 1965, Ser. No. 469,315
Claims priority, application Germany, July 30, 1964, R 38,493
The portion of the term of the patent subsequent to Feb. 27, 1985, has been disclaimed
Int. Cl. C08g *22/10;* C09d *5/04*
U.S. Cl. 260—22 8 Claims

Thixotropic solutions of oil-modified alkyd resins are prepared as follows: monohydric alcohols are reacted with organic polyisocyanates in such a manner that the resultant condensation products have free isocyanate groups; these condensation products are subsequently condensed with oil-modified alkyd resins bearing free hydroxyl groups.

3,501,426

DIFFUSION PROCESS FOR MAKING FOAMABLE STYRENE POLYMER GRANULES

John Yu, Edmonton, Alberta, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,314
Int. Cl. C08f 47/10; C08g 53/10; C08j 1/26
U.S. Cl. 260—2.5 4 Claims

The invention relates to the manufacture of foamable styrene polymer particles by a diffusion process which comprises contacting said polymer particles with a volatile organic fluid foaming agent while dispersed in a predominantly aqueous medium containing an insoluble zinc oxide, hydroxide, or carbonate, and a tertiary amine oxide as dispersing agents.

3,501,427

THERMOPLASTIC SPLINTS COMPRISING VINYL CHLORIDE VINYL ACETATE COPOLYMER AND EPOXIDIZED OIL

Martin I. Edenbaum, Somerset, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Apr. 21, 1966, Ser. No. 544,261
Int. Cl. C08f 45/50, 45/36
U.S. Cl. 260—23 8 Claims

Thermoplastic resin sheets formed of plasticized vinyl chloride vinyl acetate copolymers are utilized for forming casts and the like in immobilizing body members. The length of time during which the materials remain moldable, after being heated to a moldable state, is substantially lengthened through the inclusion of a monomeric solid plasticizer and a small amount of epoxidized olefinic oil.

3,501,428

METHOD OF MAKING HIGH DENSITY POLYETHYLENE FOAM

Nelson S. Marans, Silver Spring, and Forest A. Wessells, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation of application Ser. No. 626,966, Mar. 30, 1967. This application Mar. 25, 1969, Ser. No. 810,932
Int. Cl. C08f 47/10; C08g 53/00; C08j 1/14
U.S. Cl. 260—2.5 10 Claims

A high density polyethylene foamed by the decomposition product of polyoxymethylene or paraformaldehyde. A high density polyethylene and polyoxymethylene or paraformaldehyde are blended and heated to a temperature above the melting point of the high density polyethylene to cause shaping of the mixture while decomposing the polyoxymethylene or paraformaldehyde to form the foamed product.

3,501,429

PROCESS FOR PREPARING STABLE CONDENSATION RESINS OF ALDEHYDES, AMINOTRIAZINES AND POLYHYDROXYL COMPOUNDS AND PRODUCTS OBTAINED THEREBY

Francis A. Bonzagni, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,051
Int. Cl. C08g 9/34
U.S. Cl. 260—17.3 5 Claims

Disclosed herein is a process for producing solution stable resins which comprises the steps of reacting together under alkaline conditions a resin forming amino compound and an aldehyde, the molar ratio of aldehydes to amino compounds being at least 8:1, further reacting the mixture under acid conditions with a polyhydroxyl containing compound; and then reacting the mixture under neutral conditions with additional amino compounds until the resins have a water dilutability endpoint of 30–45%. Laminating syrups and laminates prepared therefrom employing the products of the claimed process are also claimed as are the products themselves.

3,501,430

VINYL CHLORIDE RESINS STABILIZED WITH COMBINATIONS OF A ZINC SALT AND A POLYPHOSPHITE

Lewis B. Weisfeld, Highland Park, N.J., assignor to Carlisle Chemical Works, Inc., Reading, Ohio

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,283
Int. Cl. C08f 45/62
U.S. Cl. 260—23 3 Claims

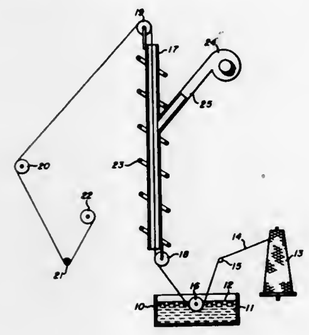
The reaction product of a poly(alkylene oxy) glycol with a tri hydrocarbyl phosphite having a molecular weight in excess of 1500 is useful to improve the long term heat stabilizing of halogen-containing resins having an organic zinc salt stabilizer.

3,501,431

SIZING SYSTEM FOR HIGH MODULUS FIBERS AND METHOD AND APPARATUS FOR APPLYING SAME

Jack H. Ross and Raymond G. Spain, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 25, 1966, Ser. No. 597,144
Int. Cl. C09d 3/78; C08f 45/52
U.S. Cl. 260—28.5 4 Claims



This application describes a unique sizing system consisting of a fluorinated elastomer, urethane or vinyl resin with a paraffin wax intended for carbon and graphite yarns which will make it possible for them to be woven or otherwise formed into fabrics or to be bent or flexed during use without premature failure resulting from their poor abrasion resistance. In addition, a method and apparatus for application of such a sizing system to strands of brittle fibers is described.

3,501,432

PROCESS FOR PREPARING STABLE SURFACTANT-FREE POLYMER DISPERSION AND RESULTING PRODUCT

Howard J. Wright, John F. Bremmer, and Nitin Bhimani, Kansas City, Mo., and Robert M. Fitch, Fargo, N. Dak., assignors to Cook Paint & Varnish Company, Kansas City, Mo., a corporation of Delaware

No Drawing. Filed Feb. 3, 1967, Ser. No. 613,731
Int. Cl. C08f 1/13, 1/60
U.S. Cl. 260—29.6 7 Claims

A process for preparing a surfactant-free stabilized dispersion of water-insoluble polymer particles which comprises polymerizing partially water-soluble monomers in water in the presence of a free radical initiator and in the absence of any surfactant while incorporating in the growing polymer chain electrically charged and/or hydratable stabilizing groups whereby the polymer particles are stabilized in the dispersed state, at least some of the stabilizing groups being obtained from the initiator.

3,501,433

POLYVINYL CHLORIDE COMPOSITIONS CONTAINING A RUBBER POLYESTER PLASTICIZER AND VINYL CHLORIDE-VINYL ACETATE COPOLYMER

Albert C. Condo, Jr., Newtown Square, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 11, 1968, Ser. No. 711,893
Int. Cl. C08f 45/38; C08k 1/38
U.S. Cl. 260—31.6 10 Claims

This invention relates to polyvinyl chloride compositions containing an acrylonitrile-butadiene rubber having about 20 weight percent bound acrylonitrile, a liquid polyester plasticizer of adipic acid and 1,3-butylene glycol and a vinyl chloride-vinyl acetate copolymer having a bound vinyl acetate content ranging from 5 to 20 weight percent. These polyvinyl chloride compositions have a unique combination of outstanding low temperature properties coupled with high oil extraction resistance.

3,501,434

EPOXY-NEOPRENE COMPOSITIONS

Alfred C. Chadwick, Birmingham, and Robert W. Hocher, Livonia, Mich., assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 311,968, Sept. 27, 1963. This application Sept. 26, 1966, Ser. No. 586,594
Int. Cl. C08f 45/28, 51/28; C08g 45/04
U.S. Cl. 260—33.6 5 Claims

This invention relates to adhesive compositions comprising mixtures of 100 parts by weight of a sulfur interpolymerized rubbery chloroprene polymer stabilized with thiuram disulfide, about 30 to 140 parts by weight of a liquid epoxy resin and an aliphatic tertiary amine curing agent.

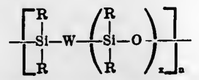
3,501,435

PROCESS FOR CURING POLYCARBORANYLENE-SILOXANES

Trescott B. Larchar, Sr., Hamden, Theodore L. Heying, North Haven, and Stelvio Papetti, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

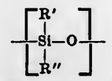
No Drawing. Filed Nov. 28, 1967, Ser. No. 686,302
Int. Cl. C08g 51/04; C08k 1/02
U.S. Cl. 260—37 7 Claims

Polycarboranylenesiloxanes comprising repeating units having the formula



wherein W is a p-carboranyl or m-carboranyl moiety, each R is an independently selected alkyl or aryl, x is an integer from 2 to 4 and n is an integar greater than 1;

said polycarboranylenesiloxane containing from 0 to 10 mole percent of a vinyl-containing unit having the formula



wherein R' is hydrogen, alkyl, aryl, vinyl or a vinyl-containing moiety and R'' is vinyl or a vinyl-containing moiety; are cured according to the process of this invention by heating at atmospheric pressure at a temperature greater than about 150° C. A metal oxide anti-oxidant and/or an inorganic filler can be admixed with the polycarboranylenesiloxane prior to curing. The cured compositions are useful in the fabrication of gaskets, O-rings, bushings, etc. for applications where high temperature resistance is required.

3,501,436

FLAME-RESISTANT POLYEPOXIDE COMPOSITIONS

Paul R. Avis and Jurrianus Bekooy, Delft, Netherlands, Harald H. O. Cherdron, Ittenbach (Rhine), Germany, Tette J. Dijkstra, Delft, Netherlands, and Hans H. W. Ohse, Oberdollendorf (Rhine), and Richard A. Palm, Niederdollendorf (Rhine), Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 25, 1966, Ser. No. 537,289
Claims priority, application Germany, May 19, 1965, S 97,183
Int. Cl. C08g 30/02
U.S. Cl. 260—37 10 Claims

This invention relates to flame-resistant polyepoxide compositions which can be converted with epoxy curing agents to form non-flammable insoluble infusible products, which compositions comprise a mixture of a polyepoxide, and preferably a glycidyl polyether of a polyhydric phenol or alcohol, and a flame-proofing amount of a halogenated beta-lactone, and preferably a beta-(alkyl-halogenated)-beta-lactone.

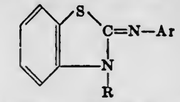
3,501,437

PVC COMPOSITIONS CONTAINING BENZOTHIAZOLINE LIGHT STABILIZERS

Matthew Peter DiGiaimo, Old Bridge, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut

No Drawing. Filed June 20, 1967, Ser. No. 647,319
Int. Cl. C08f 45/60
U.S. Cl. 260—45.8 4 Claims

Rigid vinyl chloride polymers and copolymers are stabilized against the degrading effects of ultraviolet light with compounds represented by the following formula:



2-Aryliminobenzothiazolines

wherein R is hydrogen or alkyl and Ar is an aryl group (e.g., phenyl or naphthyl). The aryl group can be unsubstituted or else substituted with a lower-alkoxy group and/or a lower-alkyl group in a position ortho and/or para to the point of attachment of the 2-amino or 2-imino group of Formula I or Formula II.

3,501,438

PROCESS FOR THE PRODUCTION OF THERMOSTABLE TRIOXANE COPOLYMERS IN FORM OF PARTICLES OF REGULAR SIZE

Stanislaw Penczek, Sady Zoliborskie 9m3; Jerzy Fejgin, Al. Wyzwolenia 9m157; Maria Tomaszewicz, Wiejska 9m157; and Wanda Sadowska, Kubanska 8m13, all of Warsaw, Poland

No Drawing. Filed May 8, 1967, Ser. No. 636,635
Claims priority, application Poland, May 13, 1966, P 114,555
Int. Cl. C08g 1/04
U.S. Cl. 260—67 3 Claims

A process in which trioxane is copolymerized in a solvent suspension together with dioxolane in the presence of 0.01 to 20% by weight of a non-ionic surface-active agent.

3,501,439
PROCESS OF MAKING CYANO-SUBSTITUTED POLYVINYL ACETALS
Faber B. Jones, Nowata, and Donald G. Kuper, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 3, 1967, Ser. No. 650,617
Int. Cl. C08f *27/08*
U.S. Cl. 260—73 13 Claims
Cyano-substituted polyvinyl acetals are produced by admixing polyvinyl alcohol with cyano aldehydes or cyano acetals in the presence of an acid catalyst at a temperature within the range of about 0 to 200° C. These cyano-substituted polyvinylacetals are useful as adhesives, coatings, films, specialty dielectrics, and the like.

3,501,440
PROCESS FOR PREPARING VINYL CHLORIDE/ETHYLENE COPOLYMERS
Kosaku Kamio, Tatsuro Tadasa, and Tomio Hakozaki, Toyama-ken, Japan, assignors to Nippon Carbide Kogyo Kabushiki Kaisha, Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 610,738, Jan. 23, 1967. This application Apr. 16, 1968, Ser. No. 721,625
Int. Cl. C08f *15/02, 15/40*
U.S. Cl. 260—77.5 11 Claims
A copolymer of vinyl chloride and ethylene is prepared by copolymerizing ethylene with vinyl chloride or monomers consisting of at least 80% by weight of vinyl chloride and at most 20% by weight of other copolymerizable compounds in the presence of a free radical catalyst, at a reaction temperature between the critical temperature of ethylene (i.e. 9.9° C.) and 60° C., and at an ethylene pressure between 5 kg./cm.² and 150 kg./cm.² which pressure is maintained substantially constant by withdrawing excess ethylene out of the reaction vessel during the polymerization. The copolymer has improved properties, in particular, a more homogeneous composition, a high degree of polymerization, excellent transparency and workability, even when the ethylene content is high (e.g. more than 35 wt. percent), and the copolymer can be obtained easily and conveniently even on a large scale.

3,501,441
PROCESS FOR PREPARING A POLYAMIDE
Edmond P. Brignac, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Application Aug. 24, 1962, Ser. No. 219,324, which is a continuation-in-part of application Ser. No. 426,574, Jan. 19, 1965. Divided and this application May 6, 1968, Ser. No. 726,773
Int. Cl. C08g *20/20*
U.S. Cl. 260—78 5 Claims
In a process wherein an aqueous solution of polyamide-forming reactants is heated in a reaction zone to for a mixture of water and low molecular weight polyamide having a relative viscosity between about 4 and about 20, the pressure on the mixture is lowered in a flashing zone to vaporize a substantial proportion of the water in the mixture, and the polyamide is thereafter heated in a finishing zone to form a high molecular weight polyamide having a relative viscosity of at least about 40, the relative viscosity of the high molecular weight polyamide can be substantially increased by removing vaporized water from the mixture, prior to heating the polyamide in the finishing zone, by downwardly swirling the mixture from the flashing zone in a thin film against the inner surface of a vessel having a substantially vertical axis and a substantially circular horizontal cross-section so as to maintain an axial vapor space within said vessel, and sweeping the swirling mixture in said film with a gas inert to the polyamide by passing the inert gas through the axial vapor space within said vessel.

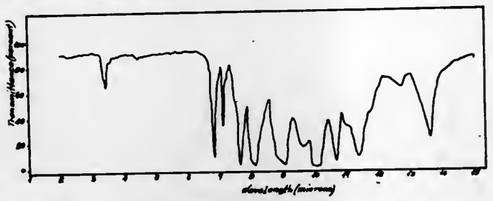
3,501,442
POLYMERIZATION OF LACTAMS IN THE PRESENCE OF AN ORGANIC OXY-ACID OF PHOSPHORUS
Harold George Burrows and Stephen John Hepworth, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 15, 1966, Ser. No. 557,623
Claims priority, application Great Britain, June 23, 1965, 26,596/65
Int. Cl. C08g *20/10, 20/12*
U.S. Cl. 260—78 8 Claims
A method for producing an improved polyamide from a lactam and the product produced thereby, whereby the polyamide is readily produced at higher molecular weights and whiter colors than previously known polymerizations. The process is effective by the addition of an effective amount of an organic phosphonic acid to the polymerization mixture and effecting the polymerization in the presence of said acid.

The produced polyamides are particularly useful for extrusion into shaped articles, particularly fibers.

3,501,443
PROCESS FOR PREPARING A POLYIMIDE COMPRISING REACTING 3,4 - DICARBOXY - 1,2,3,4-TETRAHYDRO - 1 - NAPHTHALENE SUCCINIC DIANHYDRIDE WITH A DIPRIMARY DIAMINE IN THE PRESENCE OF CERTAIN ORGANIC SOLVENTS
Roland Ralph Di Leone, Rowayton, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 20, 1968, Ser. No. 730,635
Int. Cl. C08g *20/32*
U.S. Cl. 260—78 7 Claims
A process for preparing a polyimide comprising reacting a 3,4-dicarboxy-1,2,3,4-tetrahydro-1-naphthalene succinic dianhydride with a diprimary diamine in the presence of a solvent selected from the group consisting of acetophenone, cyclohexanone, isopharone, propiophenone and benzophenone until substantially all of the theoretical water of imidization has been removed.

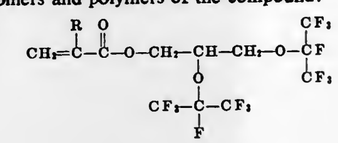
3,501,444
AROMATIC AZOPOLYMERS CONTAINING AMIDE LINKAGES
Hartwig C. Bach, Durham, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 530,356, Feb. 28, 1966. This application Dec. 23, 1968, Ser. No. 786,459
Int. Cl. C08g *20/20, 33/02*
U.S. Cl. 260—78 7 Claims
Thermally resistant fibers and films have been prepared from a novel class of high molecular weight wholly ordered, wholly aromatic azopolymers containing interlinear azo linkages.

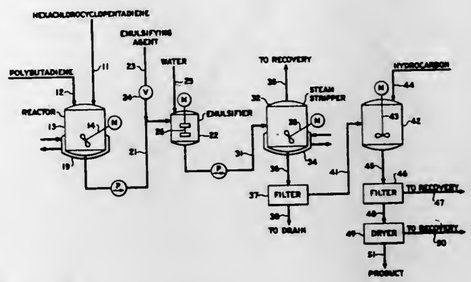
3,501,445
POLYACRYLATE THICKENERS AND COPOLYMERS USED TO PRODUCE SAME
Ellsworth E. Faust, Berkeley Heights, and Arnold G. Wilbur, Summit, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 28, 1968, Ser. No. 708,748
Int. Cl. C08f *15/18, 27/24*
U.S. Cl. 260—86.1 12 Claims
Improved water soluble polyacrylate thickeners are produced by saponifying copolymers comprising an alkyl acrylate and from 0.005 to 0.1% of an acrylate ester which contains, in addition to the acrylate ethylenic unsaturation, at least one additional substituent having monoethylenic unsaturation.

3,501,446
ETHYLENE-MONOCHLOROTRIFUOROETHYLENE CRYSTALLINE COPOLYMERS
Mario Ragazzini and Donato Carcano, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Continuation of application Ser. No. 568,227, July 27, 1966, which is a continuation-in-part of application Ser. No. 178,576, Mar. 9, 1962. This application Mar. 4, 1968, Ser. No. 711,164
Claims priority, application Italy, Mar. 10, 1961, 4,527/61, Patent 648,753
Int. Cl. C08f *15/02*
U.S. Cl. 260—87.5 2 Claims

The invention consists in ethylene-monochlorotrifluoroethylene copolymers which are crystalline in structure, have a melting point remarkably higher than the melting points of polyethylene and polymonochlorotrifluoroethylene, and a molar ratio of ethylene to monochlorotrifluoroethylene between 1 and 2, the melting point being a function of the monochlorotrifluoroethylene content of the copolymer, the maximum corresponding to a molar ratio of monochlorotrifluoroethylene to ethylene equal to 1. The copolymers are produced by contacting the monomers with a catalyst selected from the group consisting of boron alkyls, boron hydrides, alkyl boron hydrides and their complexes in the presence of a substance yielding oxygen.

3,501,447
SOLID POLY-2-VINYLPYRIDINE-N-OXIDE AND ITS PRODUCTION
Gustav Pieper, Cologne-Stammheim, and Jurgen Johannis, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 30, 1966, Ser. No. 574,896
Claims priority, application Germany, July 3, 1965, F 46,517
Int. Cl. C08f *7/16*
U.S. Cl. 260—88.3 5 Claims
Solid poly-2-vinylpyridine-N-oxides, useful for the treatment of silicosis, are obtained from a solution of poly-2-vinylpyridine-N-oxide by reacting the solution with an acid having a dissociation constant K_c above 10^{-4}, and isolating the precipitated poly-2-vinylpyridine-N-oxide.

3,501,448
FLUORINATED ACRYLIC AND METHACRYLIC ESTERS
Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Original application June 7, 1966, Ser. No. 555,703, now Patent No. 3,480,664. Divided and this application Nov. 22, 1967, Ser. No. 703,198
Int. Cl. C08f *3/64, 3/66*
U.S. Cl. 260—89.5 5 Claims
Monomers and polymers of the compound:



3,501,449
POLYMER RECOVERY AND PURIFICATION PROCESS
Donald H. Thorpe, Williamsville, and Gilbert Witschard, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Continuation of application Ser. No. 489,957, Sept. 24, 1965. This application Mar. 13, 1969, Ser. No. 809,473
Int. Cl. C08d *5/02*
U.S. Cl. 260—94.7 15 Claims


Polymers of a butadiene polymer and polyhalogenated cyclopentadiene are recovered and purified by a process which comprises contacting a mixture comprised of a polyhalogenated cyclopentadiene and a solid polymer of a butadiene polymer and a polyhalogenated cyclopentadiene, with an acyclic hydrocarbon to remove unreacted polyhalogenated cyclopentadiene from the polymer, and separating the acyclic hydrocarbon and unreacted polyhalogenated cyclopentadiene from the solid polymer.

3,501,450
PROCESS FOR POLYMERIZATING ETHYLENE WITH A CATALYST CONSISTING OF AN ORGANOTIN HYDRIDE, A TRANSITION METAL COMPOUND AND AN ORGANOTIN PHENOXIDE
Kazuo Itoi, Kurashiki Japan, assignor to Kurashiki Rayon Co., Ltd., Kurashiki, Japan
No Drawing. Filed July 8, 1965, Ser. No. 470,603
Claims priority, application Japan, July 14, 1964, 39/39,107
Int. Cl. C08f *1/42, 3/04*
U.S. Cl. 260—94.9 6 Claims
High molecular weight polyethylene is produced in high yields by polymerizing ethylene in the presence of a three-component catalyst consisting of an organotin hydride, a transition metal compound and an organotin phenoxide.

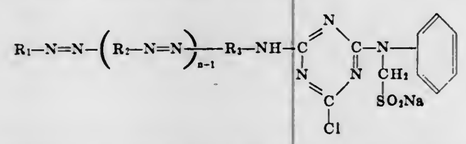
3,501,451
PREPARATION OF PROTEIN CONCENTRATES FROM A WHEAT SLURRY
David A. Fellers, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Original application June 8, 1966, Ser. No. 556,823, now Patent No. 3,463,770, dated Aug. 26, 1969. Divided and this application Dec. 20, 1968, Ser. No. 798,556
Int. Cl. A23j *1/12*
U.S. Cl. 260—112 5 Claims
Protein concentrates are prepared from wheat flour by the following technique: The flour is slurried with water and an edible gluten-modifying agent such as soybean protein or non-fat milk solids. The slurry is then centrifuged, yielding a supernatant liquid which contains essentially all the proteins of the flour. This liquid may be dried and used as a protein supplement in bread and other foods.

3,501,452
REACTIVE MONOCHLOROTRIAZINE AZO DYESTUFFS CONTAINING A SODIUM SALT OF AN ANILINE-N-OMEGA-METHANE SULFONIC ACID GROUP

Mario Bertin and Ugo Moiso, Cesano Maderno, Milan, and Giulio Craia, Saronno, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Aug. 24, 1967, Ser. No. 662,871
Claims priority, application Italy, Aug. 29, 1966, 19,701/66
Int. Cl. C09b *62/44;* **C07d** *55/12;* **D06p**
U.S. Cl. 260—146 **8 Claims**

Reactive dyestuff having the formula:



wherein R_1, R_2 and R_3 are each selected from the group consisting of benzene and naphthalene radicals containing substituents selected from the group consisting of —OH, —SO_3H, —NO_2, halogen radicals, alkyl radicals containing about 1–3 carbon atoms and alkoxy radicals containing about 1–3 carbon atoms, and n is 1 or 2, said dyestuff containing at least three —SO_3H radicals and which are suitable for dyeing wool, silk, superpolyamides and polyhydroxylated fibers with purity and brightness of shade and good fastness to wet treatments and to chlorine treatment.

3,501,453
BASIC DYES

Willy Steinemann, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,712
Claims priority, application Switzerland, Nov. 12, 1965, 15,665/65; Feb. 8, 1966, 1,754/66
Int. Cl. C09b *29/02, 43/12;* **D06p** *1/02*
U.S. Cl. 260—156 **9 Claims**

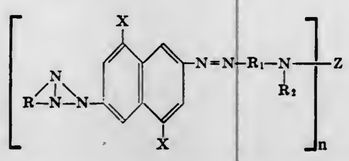
Pyridinium - carbonamidobenzene - azo - (o-hydroxybenzene) dyes free from sulfonic acid groups yield dyeings with deep level shades having good light and wetfastness when applied to acrylonitrile polymers.

3,501,454
AZO DYESTUFFS CONTAINING A TRIAZOLE GROUP

Horst Nickel and Fritz Suckfull, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,716
Claims priority, application Germany, Aug. 13, 1965, F 46,887
Int. Cl. C09b *39/04, 62/08;* **D06p** *3/60*
U.S. Cl. 260—157 **8 Claims**

Dyestuffs of the formula:



wherein R is an ortho-divalent benzene or naphthalene or sulphonic acid substituted benzene or naphthalene radical; R_1 is a paradivalent substituted or unsubstituted benzene or naphthalene radical; R_2 is hydrogen or methyl; X is hydrogen or sulphonic acid at least one being sulphonic acid; n is 1 or 2 and Z is a mono- or divalent acyl radical are prepared by condensing the amino dyestuff corresponding to the bracketed portion of the structure with a mono- or di-functional acylating agent (e.g. cyanuric chloride, phosgene).

3,501,455
PHENYLAZOTHIOFORMAMIDE-S-OXIDES

Christofeel Willem Pluijgers, Utrecht, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,901
Claims priority, application Netherlands, Oct. 10, 1964, 6411821
Int. Cl. C07c *161/06;* **A01m** *9/12;* **A61k** *27/00*
U.S. Cl. 260—192 **5 Claims**

Phenylazothioformamide-S-oxides substituted with chlorine, alkyl, alkoxy, hydroxy or alkylmercapto radicals on the benzene ring. Examples are phenylazothioformamide-S-oxide and 4-methylphenylazothioformamide-S-oxide. The compounds have fungicidal and bactericidal activities.

3,501,456
ARABINOFURANOSYL NUCLEOSIDES AND INTERMEDIATES

Tsung-Ying Shen, Westfield, and Thomas Neilson and William V. Ruyle, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 8, 1967, Ser. No. 659,045
Int. Cl. C07c *47/18, 95/04*
U.S. Cl. 260—211.5 **11 Claims**

(5-amino-5-deoxyarabinofuranosyl)purines and pyrimidines are prepared by reacting a blocked 5-amino-5-deoxyarabinofuranosyl halide with the appropriate purine or pyrimidine compound. The 5-amino-5-deoxyarabinofuranosyl halide intermediate is prepared by reacting the known methyl 5-deoxy-5-tritylarabinofuranoside with benzyl chloride to obtain the 2,3-di-O-benzyl derivative, and then removing the 5-trityl-group to give methyl 2,3-di-O-benzylarabinofuranoside. The latter compound is then treated with mesyl chloride to obtain the 5-mesyl-derivative, which is treated with potassium phthalimide to produce methyl 2,3-di-O-benzyl-5-deoxy-5-phthalimidoarabinofuranoside. The latter compound is then converted to the 2,3-di-O-benzyl-5-deoxy-5-phthalimidoarabinofuranosyl halide by treatment with hydrogen halide in glacial acetic acid.

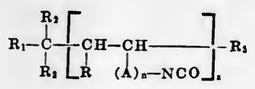
The (5-amino-5-deoxyarabinofuranosyl)purines and pyrimidines have antiviral activity, and are useful as nucleoside antimetabolites, and as nucleic acid biosynthesis inhibitors.

3,501,457
PROCESS FOR RENDERING CELLULOSIC MATERIAL FIRE RETARDANT

William J. Farrissey, Jr., North Branford, Francesco P. Recchia, New Haven, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 478,737, Aug. 10, 1965. This application Dec. 11, 1968, Ser. No. 783,147
Int. Cl. C08b *15/06, 27/72;* **D06m** *13/42*
U.S. Cl. 260—212 **4 Claims**

Cellulosic material (especially cotton) is rendered fire retardant by reaction with 2 to 15% by weight of a halogenated isocyanate having the formula:



where

R=H, alkyl, isocyanatoalkyl
R_1 and R_5=Cl or Br
R_2 and R_3=Cl, Br, CN, alkoxycarbonyl
A=lower-alkylene or arylene
n=0 or 1
x=1, 2, or 3

3,501,458
PREPARATION OF N,N-DIALKYL-1-AZIRIDINECARBOXAMIDES

Donald A. Tomalia and Janet N. Paige, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,041
Int. Cl. C07d *23/06*
U.S. Cl. 260—239 **8 Claims**

N,N-dialkyl-1-aziridinecarboxamides are prepared by contacting a trialkylamine with phosgene and then contacting the intermediate product thus formed with an aziridine. The process is desirably carried out in an inert solvent at a temperature of from —10° to 100° C.

3,501,459
NEW 5H-DIBENZ[B,F]AZEPINE DERIVATIVES

Walter Schindler, Riehen, and Hans Blattner, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 399,120, Aug. 25, 1964. This application July 11, 1966, Ser. No. 564,004
Int. Cl. C07d *41/08, 57/00;* **A61k** *27/00*
U.S. Cl. 260—239 **39 Claims**

10-aminoalkyl-5H-dibenz[b,f]azepines and the corresponding 10,11-dihydro compounds, optionally bearing an alkyl substituent in the 5 position, possess pharmacological properties, e.g., they are antidepressants.

3,501,460
DEHYDRATION PROCESS FOR FORMING BENZODIAZEPINES

Hans Heinrich Kaegi, Passaic, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 3, 1966, Ser. No. 554,964
Int. Cl. C07d *53/06*
U.S. Cl. 260—239 **11 Claims**

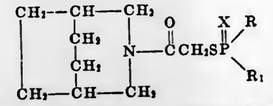
Process for preparing 1-lower alkyl-2,3-dihydro-1,4-benzodiazepines involving dehydrating a N-(phenyl)-N-lower alkyl-N'-benzoylethylenediamine.

3,501,461
AZABICYCLIC PHOSPHONATE

Peter E. Newallis, Overland Park, Kans., and Zafarullah Khan Cheema, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 18, 1968, Ser. No. 698,728
Int. Cl. C07f *9/40;* **C07d** *41/04;* **A01n** *9/36*
U.S. Cl. 260—239 **1 Claim**

A new class of azabicyclic phosphates, which are useful as insecticides and herbicides, having the general formula:



wherein X represents oxygen or sulfur, R represents an alkoxyl group having 1–5 carbon atoms, and R_1 represents an alkoxyl or alkyl group having 1–5 carbon atoms.

The above compounds are prepared by reacting ammonium salts of phosphoric acid monoesters and diesters with N-chloroacetyl 3-azabicyclo [3.2.2] nonane.

3,501,462
17-CYCLOPROPYL STEROIDS

Robert G. Christiansen, Schodack, and John W. Dean, Sand Lake, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,514
Int. Cl. C07c *173/10, 169/20, 169/08*
U.S. Cl. 260—239.5 **25 Claims**

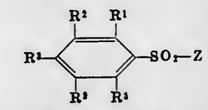
17-cyclopropyl steroids of the androstane and estrane series, having hormonal properties, are prepared by reacting the appropriate 17-oxo-steroids with cyclopropyllithium to give 17 - cyclopropyl - 17 - hydroxy - steroids, which can then be dehydrated to produce 17-cyclopropyl-16,17-unsaturated steroids.

3,501,463
1-PHENYLSULFONYL-2-LOWERALKYLOXY AND -THIO PYRROLIDINES

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 21, 1966, Ser. No. 536,479, now Patent No. 3,453,289, dated July 1, 1969. Divided and this application Feb. 3, 1969, Ser. No. 816,436
Int. Cl. C07d *27/02*
U.S. Cl. 260—239.6 **4 Claims**

1. A compound of the formula:



wherein R^1 and R^5 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro and lower alkanoylamino; R^2 and R^4 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro, amino and lower alkanoylamino; R^3 is selected from the group consisting of alkyl, nitro, amino and lower alkanoylamino; and Z is



wherein R^6 is selected from the group consisting of lower alkyl, (lower)alkylthio(lower)alkyl, phenyl and cyclo-(lower)alkyl, with the proviso that when R^3 is methyl, R^6 is other than ethyl; and Y is selected from the group consisting of oxygen and sulfur.

3,501,464
PYRAZINE DERIVATIVES

Bruno Camerino and Giorgio Palamidessi, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed June 5, 1967, Ser. No. 643,400
Claims priority, application Italy, June 6, 1966, 18,725/66
Int. Cl. C07d *51/76*
U.S. Cl. 260—239.7 **3 Claims**

Disclosed are the pyrazine derivatives, 2-sulfanilamido-pyrazine-4-oxide (I) and 2-sulfanilamido-pyrazine-1-oxide (II). These compounds have a high antibacterial activity on gram-positive and gram-negative schizomycetes and a very low toxicity so as to be usefully employed in human and veterinary therapy. The products are prepared by condensation of 2-chloro-pyrazine-4-oxide and -1-oxide respectively with sulfanilamide in the presence of a base, such as potassium carbonate, at about the melting point of the mixture, or by condensation with a sulfanilamide alkali salt in the presence of a solvent, such as acetamide.

3,501,465

3-INDOLYL LOWER ALIPHATIC AMINES

Tsung-Ying Shen, Westfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 380,020, July 2, 1964. This application Nov. 29, 1967, Ser. No. 687,911

Int. Cl. C07d *27/56*

U.S. Cl. 260—240 8 Claims

The invention concerns 3-indolyl lower aliphatic amines having an aroyl or heteroaroyl radical of less than three fused rings attached to the nitrogen atom of the indole nucleus. Also covered are novel intermediates for the preparation of the above compounds. These intermediates are the 3-indolyl nitro aliphatic compounds and 3-indolyl alkylimines having an aroyl or heteroaroyl radical of less than 3 fused rings attached to the nitrogen atom of the indole nucleus.

3,501,466

3-CARBAMOYL AND 3-ALKOXYCARBONYL BENZOTHIAZINE-1,1-DIOXIDES

Chris Royce Rasmussen, Ambler, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Filed Nov. 30, 1967, Ser. No. 688,298

Int. Cl. C07d *93/02;* A61k *27/00;* C08k *1/56*

U.S. Cl. 260—243 17 Claims

The compounds herein are:

(I) 3 - carbamoyl-4-hydroxy-2H-1,2-benzothiazine-1,1-dioxide;

(II) 2-(lower alkoxycarbonyl-lower alkyl) and 2-(carbamoyl-lower alkyl) derivatives of (I);

(III) 4-hydroxy and 4-(lower alkoxy) derivatives of 3-carbamoyl - 2-(lower alkyl)-2H-1,2-benzothiazine-1,1-dioxide;

(IV) 4-hydroxy-3-(lower alkoxycarbonyl)carbamoyl-2H-1,2-benzothiazine-1,1-dioxides which may be substituted in the 2-position with lower alkyl or lower alkoxycarbonyl; and

(V) 3-ethoxycarbonyl-4-hydroxy-2H-1,2-benzothiazine-1,1-dioxide which may be substituted in the 2-position with lower alkyl or lower alkoxycarbonyl-lower alkyl.

All the compounds (I) through (V) are useful for their ultraviolet absorbing properties. Compounds (V) are useful in the syntheses of compounds (I) through (IV). Compound (I) is useful in the syntheses of compounds (II) through (IV). Pharmacological properties are also observed with certain of the foregoing compounds.

3,501,467

ORGANIC TRIAZINONE COMPOUND

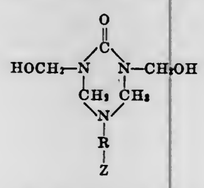
Edward Griffin Shay, Belle Mead, and Sidney Cohen, Hillsdale, N.J., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Jan. 18, 1965, Ser. No. 426,422, now Patent No. 3,437,419. Divided and this application Mar. 26, 1968, Ser. No. 715,962

Int. Cl. C07d *55/14;* D06m *13/40*

U.S. Cl. 260—248 8 Claims

The organic triazinone compound having the structure:



wherein R is a radical selected from the group consisting of aliphatic, alicyclic and aromatic radicals bearing the residue of an acidic group, and Z is the cation of a microbiologically active quaternary ammonium salt.

3,501,468

PROCESS FOR PREPARING CHLOROCYANURATE COMPOUNDS

Edward L. Moore, St. Louis, and William F. Symes, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 580,883, Sept. 21, 1966. This application Dec. 9, 1968, Ser. No. 785,030

Int. Cl. C07d *55/40*

U.S. Cl. 260—248 2 Claims

A sodium-potassium cyanurate compound having a sodium to potassium to cyanuric acid ratio of from about 0.5:2:1 to about 3:1:1 is prepared by reacting cyanuric acid with an aqueous solution containing a mixture of potassium hydroxide and a sodium containing compound selected from the group consisting of sodium hydroxide, sodium oxide, and sodium carbonate in proportions sufficient to provide the required mole ratio at a temperature of less than 100° C. Chloroisocyanurate complex compounds selected from the group consisting of [(monotrichloro) tetra-(monopotassium dichloro)] penta-isocyanurate, and (monotrichloro)(monopotassium dichloro) di-isocyanurate and mixtures thereof which are useful as bleaching, sterilizing, oxidizing and disinfecting agents are prepared by introducing chlorine and an aqueous solution of the sodium potassium cyanurate into an aqueous slurry of the chloroisocyanurate complex compound maintained at a temperature between 0° C. and 50° C. at a rate sufficient to maintain the pH of the reaction medium from about 2.1 to less than 6.0.

3,501,469

SYNTHESIS OF 2-AMINO-s-TRIAZINE

William G. Billings, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 19, 1968, Ser. No. 706,627

Int. Cl. C07d *55/18*

U.S. Cl. 260—249.5 4 Claims

2-amino-s-triazine is prepared by the reaction of guanidine carbonate and formamide in the presence of an acidic medium.

3,501,470

DIGUANAMINES

Robert K. Grasselli, Garfield Heights, and James L. Callahan, Bedford Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 30, 1966, Ser. No. 588,665

Int. Cl. C07d *55/20*

U.S. Cl. 260—249.9 2 Claims

Novel diguanamines are formed from aromatic dinitriles and a process for their preparation is disclosed. A typical diguanamine is 1,4 bis [2,6 diamino-s-triazinyl]-1-phenyl-1,2,3,4 tetrahydronaphthalene more commonly referred to as atroponitrile dimer diguanamine, which is particularly useful in imparting stain resistance to articles molded from a heat curable aminoplast.

3,501,471

NOVEL 2,3-HETEROCYCLIC FUSED QUINUCLIDINES, AND 3-SUBSTITUTED QUINUCLIDINE-2-CARBOXYLATE DERIVATIVES

William Alan Remers, Suffern, and Gabriel Joseph Gibs, Pearl River, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,894

Int. Cl. C07d *51/04*

U.S. Cl. 260—250 6 Claims

The preparation of 2,3-heterocyclic fused quinuclidines and 3-substituted quinuclidine-2-carboxylate derivatives are described. The heterocyclic fused derivatives are prepared by reacting a 3-ketoquinuclidine-2-carboxylate with hydrazine, guanidine and the like, and also by reaction of a 2-dehydroquinuclidine with certain 1,3-dipolar reagents. The 2-carboxylate derivatives are prepared from a 3-ketoquinuclidine-2-carboxylate by reaction with appropriate reagents. These compounds are useful as central nervous depressants and analgesic agents.

3,501,472

PYRAZINE PESTICIDES AND THEIR PREPARATION

Robert D. Wilcox, Palo Alto, Dorothy J. Horne, Oakland, and Howard Johnston, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 29, 1968, Ser. No. 701,055

Int. Cl. C07d *51/176;* A01n *9/12, 9/22*

U.S. Cl. 260—250 22 Claims

Disclosed are, as new compounds, halochlorinated methyl pyrazines and their corresponding ethers and thioethers and N-oxides, compositions incorporating them, methods for their preparation, and methods for their use as pesticides.

3,501,473

DISUBSTITUTED - 11H - QUINAZOLINO - [2,3-b] QUINAZOLINE - 11,13(5H) - DIONES AND THE PROCESS FOR THEIR PREPARATION

Stanley C. Bell, Narberth, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,885

Int. Cl. C07d *51/48;* A61k *27/00*

U.S. Cl. 260—256.4 5 Claims

This invention is concerned with disubstituted-11H-quinazoline-[2,3-b]quinazoline-11,13(5H) diones which are pharmacologically active as central nervous system depressants. Further, this invention is concerned with a one step process for the preparation of these compounds by the interaction of an anthranilamide and thiophosgene.

3,501,474

CERTAIN 1,3,4,5-TETRAHYDRO-2H-1,4-BENZODIAZEPIN-2-ONES

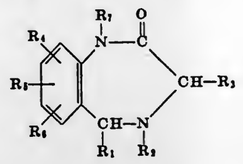
Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 357,295, Apr. 3, 1964. This application Apr. 22, 1968, Ser. No. 723,296

Int. Cl. C07d *53/06, 29/26;* A61k *27/00*

U.S. Cl. 260—239.3 1 Claim

The preparation of a compound of the formula



wherein R_1 is selected from the group consisting of hydrogen, lower alkyl, phenyl, and halophenyl;

R_2 is selected from the group consisting of hydrogen, lower alkyl, benzyl and substituted benzyl; R_3 is selected from the group consisting of hydrogen and lower alkyl and R_4, R_5 and R_6 are selected from the group consisting of lower alkoxy, lower alkyl and hydrogen

is described. These compounds are useful as anticonvulsants, muscle relaxants and sedative agents.

3,501,475

N-AMINOBENZO[6,7]CYCLOHEPTA [1,2,3,d,e]ISOQUINOLINES

Leslie G. Humber, Dollard des Ormeaux, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 17, 1967, Ser. No. 653,635

Int. Cl. C07d *35/36*

U.S. Cl. 260—286 4 Claims

There are disclosed herein the compound N-amino-1,2,3,7,8,12b - hexahydrobenzo[1,2]cyclohepta[3,4,5 - d,e]isoquinoline and its hydrochloride salt, as well as the corresponding N-nitrose compound from which the former compound is prepared. The compounds have antibacterial and trichomonacidal activities and methods for their preparation and use are also given.

3,501,476

PHENAZINEDIONE DERIVATIVES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 20, 1968, Ser. No. 714,433

Int. Cl. C07d *51/80*

U.S. Cl. 260—266 3 Claims

Polycyclic derivatives of phenazinediones (I), particularly 11,12-dihydroxy-dibenzo[a-c]phenazine-10,13-dione (*Ia*) and 4,5-dihydro - 9,10 - dihydroxyindo[4,3a,3 - ab] phenazine-8,11-dione (*Ib*) are prepared by reacting rhodizonic acid (II) with diaminophenanthrene (III) or diaminoacenapthene (IV), respectively. Compounds (I) are biocidally-active, especially as amebicides.

3,501,477

SUBSTITUTED 1 - (4 - METHOXYBENZYL)-2-METHYL-1,2,3,4-TETRAHYDROISOQUINOLINES

Guenter Grethe, Cedar Grove, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey,

No Drawing. Filed Mar. 29, 1967, Ser. No. 626,696

Int. Cl. C07d *35/10*

U.S. Cl. 260—286 6 Claims

Process for the preparation of novel 1-(4-methoxybenzyl)-8-R-7-methoxy - 2 - methyl - 1,2,3,4 - tetrahydroisoquinolines (R=hydroxy or benzyloxy) utilizing novel 8-benzyloxy-7-methoxy-2-methyl - 3,4 - dihydroisoquinolinium salts. The disclosed novel compounds are useful as sequential intermediates for the preparation of petaline, a natural product of known pharmacological activity.

3,501,478

8-BENZYLOXY - 7 - METHOXY-2-METHYL-1,2,3,4 - TETRAHYDROISOQUINOLINES AND INTERMEDIATES

Guenter Grethe, Cedar Grove, and Fausto Eugenio Schenker, Bloomfield, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1967, Ser. No. 626,695

Int. Cl. A61k *27/00;* C07d *5/10*

U.S. Cl. 260—286 8 Claims

The preparation of novel hypotensives, i.e., 8-benzyloxy - 7 - methoxy-2 - methyl - 1,2,3,4 - tetrahydroisoquinoline and 8-benzyloxy-6,7-dimethoxy-2-methyl-1,2,3,4-isoquinoline, is disclosed utilizing as intermediates the corre-

sponding novel 8-hydroxy and 8-benzyloxy-2-formyl-7-methoxy-1,2,3,4-tetrahydroisoquinolines, and 8-hydroxy and 8 - benzyloxy - 2 - formyl - 6,7 - dimethoxy - 1,2,3,4 - tetrahydroisoquinolines.

3,501,479

DIHYDROQUINOLINES AND SUBSTITUTED DIHYDROQUINOLINES AND METHOD OF PREPARING THE SAME

William Alan Remers, Suffern, and Gabriel Joseph Gibs, Pearl River, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 19, 1967, Ser. No. 639,602
Int. Cl. C07d *33/38*
U.S. Cl. 260—289 **8 Claims**

Novel dihydroquinolines and ketotetrahydroquinolines which may have substituents in the 2-, 6- or 7-positions are described along with methods of preparing the same. These novel compounds are useful for their central nervous system activity.

3,501,480

POLYCYCLIC ISOQUINOLYL OXADIAZOLES AND AMIDOXIME ESTERS

Leslie G. Humber, Dollard des Ormeaux, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 18, 1967, Ser. No. 654,070
Int. Cl. C07d *35/34*
U.S. Cl. 260—287 **22 Claims**

There are disclosed herein the compounds 5-methyl-, 5-ethyl-, 5-propyl-, 5-phenyl-, 5-(4-chlorophenyl)-, 5-(4-fluorophenyl)-, 5-(3-methoxyphenyl)-, 5-(3,4-dimethoxyphenyl-, 5-(4-methylphenyl), and 5-(4-ethylphenyl)-3-(7,8 - dihydrobenzo[1,2]cyclohepta[3,4,5-d,e]-isoquinolyl-3)-1,2,4-oxadiazoles and the intermediates O-acetate O-propionate, O-butyrate, O-benzoate, O-(4-chlorobenzoate), O-(4-fluorobenzoate), O-(3-methoxybenzoate), O-(3,4-dimethoxybenzoate), O-(4-methylbenzoate), and O-(4-ethylbenzoate) of 7,8-dihydrobenzo[1,2]cyclohepta-[3,4,5-d,e]-isoquinolyl-3-amidoximes. The compounds are useful as antibacterial and antifungal agents and methods for their preparation and use are also given.

3,501,481

QUASI-14-AZASTEROIDS

John L. Archibald, Windsor, England, and Meier E. Freed, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 22, 1966, Ser. No. 605,140
Int. Cl. C07d *33/38*
U.S. Cl. 260—289 **5 Claims**

Quasi-14-azasteroids, such as naphtho[1,2-c]quinolizin-12-ones and bezno[b]pyrrolo[2,1-a]quinolin-11(1H)-ones are prepared having useful pharmacological activity, particularly as C.N.S. depressants and cardiovascular.

3,501,482

2-(CYCLIC AMINO)-2H-INDAZOLES

Ernest F. Le Von, Evanston, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 9, 1968, Ser. No. 704,245
Int. Cl. C07d *49/20, 57/00, 99/04*
U.S. Cl. 260—293 **4 Claims**

2H-indazoles having piperidino, hexamethylenimino, and morpholino groups as substituents at the 2-position are described herein. They possess anti-bacterial, anti-protozoal, anthelmintic, anti-fungal, and anti-algal activity. The compounds are prepared by the thermal decomposition of the appropriate N-(2-azidobenzylideneamino) amines.

3,501,483

NOVEL 11-(4-PIPERIDYL)DIBENZ(b,f)(1,4) OXAZEPINES AND THIAZEPINES

Charles Frederick Howell, Upper Saddle River, N.J., Paul Ramirez, Spring Valley, N.Y., and Robert Allis Hardy, Jr., Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 542,738, Apr. 15, 1966. This application Oct. 23, 1967, Ser. No. 677,012
Int. Cl. C07d *29/36, 27/28*
U.S. Cl. 260—293.4 **9 Claims**

The preparation of 11-substituted dibenz[b,f][1,4]-oxazepines and thiazepines from intermediates, such as, substituted 2'-aryloxy or 2'-arylthio-1-substituted isonipecotanilides, is described. These compounds are physiologically active on the central nervous system and therefore useful as tranquilizers, hypnotics etc.

3,501,484

CERTAIN SUBSTITUTED 3 - (2-INDOLYL)-1,2,5,6-TETRAHYDROPYRIDINES AND DERIVATIVES THEREOF

Robert Norman Schut, Edwardsburg, Mich., and Frederick Edmund Ward, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Jan. 15, 1968, Ser. No. 697,619
Int. Cl. C07d *31/40;* **A61k** *27/00*
U.S. Cl. 260—295 **4 Claims**

A series of indolyltetrahydropyridines that are useful for inducing antihistamine and antiserotonin action and preparation thereof by reducing an appropriate 3-(2-indolyl)-1-lower alkyl pyridinium halide.

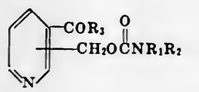
3,501,485

CERTAIN PYRIDINEMETHANOL CARBAMATE DERIVATIVES

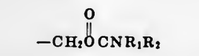
Takio Shimamoto, 13, Kitamachi, Shinjuku-ku, Tokyo, Japan; and Masayuki Ishikawa and Hisako Ishikawa, both of 17, 4-chome, Tokiwadaira, Matsudo-shi, Japan; Michiro Inoue, 26, 6-chome, Kokuryocho, Chofu-shi, and Tatsuo Shimamoto, 1–53 Kotakecho, Nerima-ku, both of Tokyo, Japan

No Drawing. Filed Feb. 6, 1968, Ser. No. 703,259
Claims priority, application Japan, Feb. 16, 1967, 42/9,533; Apr. 17, 1967, 42/24,028
Int. Cl. C07d *31/44*
U.S. Cl. 260—295.5 **7 Claims**

New carbamates of pyridine-methanol derivatives for pharmaceutical use, which are represented by the general formula:



wherein R_1 and R_2 each represent a hydrogen atom, or an alkyl, aryl, or aralkyl group, or R_1 and R_2 together form a divalent alkylene group, R_3 represents an alkyl, hydroxy, alkoxy, amino, alkylamino, or dialkylamino group, and the group



is in the 2- or 6-position, and their manufacture.

3,501,486

PROCESS FOR THE PRODUCTION OF 2-PYRIDINE ALDOXIMES

Arthur B. Ash, Detroit, Mich., Francis A. Daniher, Westfield, N.J., and Brennie E. Hackley, Jr., Joppa, Md., assignors to Ash Stevens, Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 28 1967, Ser. No. 634,453
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **10 Claims**

A process for preparing 2-pyridine aldoximes by the reaction of 2-chloromethylpyridines with hydroxylamine in solution in a mixture of water and a water-miscible organic solvent in the pH range of 5 to 9. A process for preparing the 2-chloromethylpryridine precursors by the reaction of 2-methylpyridine N-oxides with p-tolylsulfonyl chloride or methylsulfonyl chloride is disclosed.

3,501,487

CERTAIN HETERO-ARYL LOWER ALKYLENE DERIVATIVES OF 1 - LOWER ALKYL - 2-IMINO-PYRROLIDINES

George Ireland Poos, Ambler, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 409,563, Nov. 6, 1964. This application June 29, 1967, Ser. No. 649,867
Int. Cl. C07d *85/38, 57/00*
U.S. Cl. 260—296 **8 Claims**

The compounds are of the class of 1-alkyl-2-imino-pyrrolidines bearing a heterocyclic or heterocyclicalkyl substituent on the imino nitrogen, which compounds are useful for their blood pressure lowering activity.

3,501,488

PRODUCTION OF THIAZOLES BY DEHYDROGENATION AND CYCLISATION OF A NITROGENOUS ORGANIC COMPOUND WITH SULPHUR

Neville Colebourne, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 545,524, Apr. 21, 1966. This application July 22, 1966, Ser. No. 567,090
Claims priority, application Great Britain, May 7, 1965, 19,402/65; Aug. 26, 1965, 36,684/65
Int. Cl. C07d *91/30*
U.S. Cl. 260—302 **4 Claims**

There is provided a process for the production of thiazoles by heating together in the gas phase sulphur and a secondary amine or imine at temperatures, preferably in the range of 400° C. to 700° C.

3,501,489

1-PHENYLSULFONYL-2-(2-THIAZOLIN-2-YL-OXY AND THIOL) PYRROLIDINES

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 21, 1966, Ser. No. 536,479, now Patent No. 3,453,289, dated July 1, 1969. Divided and this application Feb. 3, 1969, Ser. No. 816,439
Int. Cl. C07d *91/24, 91/28*
U.S. Cl. 260—306.7 **2 Claims**

This invention relates generally to 2-substituted 1-arylsulfonyl pyrrolidine compounds and to starting materials for preparing the former, and, more particularly, to novel p-substituted-phenylsulfonyl pyrrolidine derivatives having pharmacological activity, and to valuable intermediates for preparing said novel derivatives.

3,501,490

AZOLE COMPOUNDS

Erwin Maeder, Aesch, Basel-Land, and Adolf Emil Siegrist, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,882
Claims priority, application Switzerland, Oct. 4, 1965, 13,643/65
Int. Cl. C07d *85/48, 87/38*
U.S. Cl. 260—307 **7 Claims**

The invention provides new 3-phenyl-7-[benzoxazolyl-(2')]-coumarins which may be substituted in the benzoxazolyl moiety with alkyl, alkoxy, halogen, cycloalkyl, carboxyl, carboxylic acid ester or amide, carbalkoxyalkyl, cyanoalkyl, phenylalkyl or phenyl or wherein to the benzene ring may be attached a fused-on six-membered carbocyclic ring. The said compounds are useful as optical whitening agents.

3,501,491

3-CYCLOPROPYL-5-DICHLOROMETHYL-1,2,4-OXADIAZOLE

Lee V. Phillips and Archie J. Latham, Overland Park, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Original application May 2, 1966, Ser. No. 546,509. Divided and this application Mar. 17, 1969, Ser. No. 834,579
Int. Cl. C07d *85/52*
U.S. Cl. 260—307 **1 Claim**

3 - cyclopropyl - 5 - dichloromethyl - 1,2,4 - oxadiazole, useful in controlling nematodes.

3,501,492

PREPARATION OF BENZIMIDAZOLES

Douglas Floyd, Geelong, Victoria, Australia, assignor to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, Australia, a company of Australia

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,510
Claims priority, application Australia, Mar. 21, 1966, 3,162/66
Int. Cl. C07d *49/38;* **C07c** *87/58;* **A01n** *9/22*
U.S. Cl. 260—309.2 **9 Claims**

Process for the preparation of 2-trichloromethylbenzimidazoles which comprises reacting an appropriate o-phenylene-diamine with an alkyl trichloroacetimidate in the presence of an aliphatic monocarboxylic acid.

3,501,493

PURIFICATION OF LOWER N-POLYHALOALKYL-THIOLIMIDES OF 1,2-DICARBOXYLIC-C_6-CARBOCYCLES

Charles C. Oldenburg, Mill Valley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Apr. 27, 1967, Ser. No. 634,329
Int. Cl. C07d *27/52*
U.S. Cl. 260—326 **9 Claims**

Continuous crystallization process for the purification of certain N-substituted imides of 1,2-dicarboxylic-C_{4-6}-carbocyclic compounds employing a circulating slurry, direct refrigeration and controlled supercooling.

3,501,494

CYCLOPENTANETETRACARBOXYLIC ACID DIIMIDES

David P. Hansell, Tonbridge, and Barry D. Jones, Worthing, England, assignors to Bridge Chemicals Limited, Welwyn Garden City, Hertfordshire, England, a British company

No Drawing. Filed July 6, 1966, Ser. No. 563,083
Claims priority, application Great Britain, July 13, 1965, 29,743/65
Int. Cl. C07d *27/08*
U.S. Cl. 260—326.3 **1 Claim**

N,N' - disubstituted - 1,2,3,4 - cyclopentanetetracarboxylic acid diimides are prepared from the corresponding

tetra-amides by heating. The diimides are useful as intermediates, gasoline additives, polymer stabilizers, and fungicides. A specific compound disclosed in bis-N,N'-(trichloromethylthio) - 1,2,3,4 - cyclopentanetetracarboxylic acid diimide.

3,501,495
N-PHENYLSULPHONYL-N'-(3-AZABICYCLOALKYL) UREA DERIVATIVES
Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jacques Duhault, Suresnes, France, assignors to Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society
No Drawing. Filed Jan. 25, 1967, Ser. No. 611,584
Claims priority, application Great Britain, Feb. 10, 1966, 5,870/66
Int. Cl. A61k *27/00;* **C07d** *41/02, 29/02*
U.S. Cl. 260—326.3 **9 Claims**

N-arylsulphonyl-N'-(3-azabicycloalkyl) ureas wherein the aryl group represents a phenyl radical substituted by a halogen atom or a lower alkyl radical, and the bicycloalkyl group represents a bicyclohexyl, a bicycloheptyl or a bicyclooctyl radical.

These compounds possess hypoglycemic properties, and they are used perorally in the treatment of diabetes mellitus.

3,501,496
1-PHENYLSULFONYL-2-LOWERALKYLOXY AND -THIO PYRROLIDINES
Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Original application Jan. 21, 1966, Ser. No. 536,479, now Patent No. 3,453,289, dated July 1, 1969. Divided and this application Feb. 3, 1969, Ser. No. 816,435
Int. Cl. C07d *27/04*
U.S. Cl. 260—326.5 **3 Claims**

This invention relates generally to 2-substituted 1-arylsulfonyl pyrrolidine compounds and to starting materials for preparing the former, and, more particularly, to novel p-substituted-phenylsulfonyl pyrrolidine derivatives having pharmacological activity, and to valuable intermediates for preparing said novel derivatives.

3,501,497
(1-INDOLINYL)-LOWER ALKYLAMIDOXIMES AND -AMIDINE
Malcolm R. Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 519,458, Jan. 10, 1966. This application Apr. 19, 1967, Ser. No. 631,862
Int. Cl. C07d *27/56;* **C07c** *131/00, 129/08*
U.S. Cl. 260—326.11 **4 Claims**

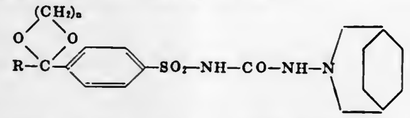
New indolinyl-lower-alkylamidoximes, -amidines, and -guanidines useful as hypotensive agents, tranquilizers, and sedatives.

3,501,498
NITRO- AND AMINO-SUBSTITUTED 1-p-CHLOROBENZYL-2-METHYL-3-INDOLYLACETIC ACIDS
John Martin Chemerda, Watchung, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 26, 1967, Ser. No. 656,021
Int. Cl. C07d *27/56*
U.S. Cl. 260—326.13 **4 Claims**

This invention relates to a novel method for preparing certain α-(1-aroyl-3-indolyl)alkanoic acids which compounds are potent anti-inflammatory agents. Also included are novel nitro or amino substituted α-(1-aroyl-3-idolyl)alkanoic acids and esters thereof.

3,501,499
SULFONYLUREA DERIVATIVES
Erhard Schenker, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.,) Basel, Switzerland
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,304
Claims priority, application Switzerland, Feb. 16, 1966, 2,256/66; Sept. 2, 1966, 12,792/66; Oct. 5, 1966, 14,379/66; Nov. 30, 1966, 17,127/66
Int. Cl. C07d *99/04, 41/08*
U.S. Cl. 260—340.7 **5 Claims**

The present invention provides heterocyclic sulphonylsemicarbazide derivatives of formula:



in which R is alkyl of 1 to 3 carbon atoms, and *n* is 2 or 3, and the alkali metal, alkaline earth metal and ammonium salts thereof.

3,501,500
PHOSPHORUS-CONTAINING γ-VALEROLACTONES
Arthur John Floyd and Roy Cyril Hinton, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 16, 1962, Ser. No. 187,925
Claims priority, application Great Britain, Apr. 26, 1961, 15,097/61
Int. Cl. C07f *9/02*
U.S. Cl. 260—343.6 **4 Claims**

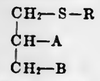
1. β - Methoxy(methyl)phosphinothioylthio - γ-valerolactone.

3,501,501
EXTRACTION OF MALTOL
Daniel N. Heintz, Bridgeton, Mo., Charles W. Roos, Belleville, Ill., and William S. Knowles, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 547,418, May 4, 1966. This application Feb. 14, 1969, Ser. No. 799,532
Int. Cl. C07d *7/16*
U.S. Cl. 260—345.9 **19 Claims**

A process wherein maltol is obtained from the maltol-containing bark of certain trees.

3,501,502
DITHIO AMINO ALKANES
Michihiko Sakai and Masayuki Kato, Kyoto, Hikoichi Hagiwara, Osaka, and Kazuo Konishi, Kyoto, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Original application June 25, 1962, Ser. No. 205,088, now Patent No. 3,318,936. Divided and this application Sept. 22, 1966, Ser. No. 612,059
Claims priority, application Japan, June 27, 1961, 36/23,009
Int. Cl. C07c *153/07;* **A01m** *9/12*
U.S. Cl. 260—347.2 **7 Claims**

Compounds of the formula:



wherein one of A and B is a radical of



and the other radical —S—R', and R and R' represent a member selected from the group consisting of acetyl, benzoyl and furoyl groups, are useful as pesticides.

3,501,503
[4-(2,3-EPOXYALKANOYL)PHENOXY]ACETIC ACIDS
Edward J. Cragoe, Jr., Lansdale, and Otto W. Wolters-dorf, Jr., Chalfont, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 12, 1967, Ser. No. 667,066
Int. Cl. C07d *1/20, 1/22*
U.S. Cl. 260—348 **11 Claims**

[4-(2,3-epoxyalkanoyl)phenoxy]acetic acids which may be substituted at the 2-carbon of the alkanoyl chain by a lower alkyl, trifluoromethylalkyl, cycloalkyl, aryl or aralkyl radical and which may also contain in the benzene ring one or more substituents selected from the group consisting of halogen and lower alkyl or a divalent hydrocarbylene chain such as trimethylene, tetramethylene or 1,3-butadienylene. Also include are the salts, esters and amide derivatives of the said acids. The products are diuretic and saluretic agents which are useful in the treatment of conditions associated with electrolyte and fluid retention.

The [4-(2,3-epoxyalkanoyl)phenoxy]acetic acids are obtained by treating an appropriate [4-(2-alkylidenealkanoyl)phenoxy]alkanoic acid with a reagent capable of oxidizing the alkylidene group therein to the corresponding epoxide. Suitable reagents include, for example, hydrogen peroxide and the per acids such as peracetic acid, performic acid, etc.

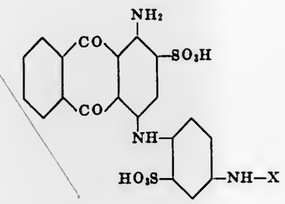
3,501,504
1-METHYLEN-5α-ANDROSTAN-17-ONE AND DERIVATIVES THEREOF
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,464
Int. Cl. C07c *169/20, 167/14;* **A61k** *17/06*
U.S. Cl. 260—397.3 **10 Claims**

Novel steroidal derivatives of the androstane family characterized by a 1-methylene and a 17-oxygenated substituent and useful as pharmacological agents as is evidenced by their anabolic, androgenic and anti-estrogenic properties.

3,501,505
1 - AMINO - 4[4'α,β-DIBROMOPROPIONYLAMINO AND α - BROMOACRYLAMINO)-ANILINO] - 2,2'-ANTHRAQUINONEDISULFONIC ACIDS
Arthur Buehler, Rheinfelden and René de Montmollin, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Nov. 1, 1966, Ser. No. 591,109
Claims priority, application Switzerland, Nov. 11, 1965, 15,570
Int. Cl. C09b *1/40*
U.S. Cl. 260—372 **3 Claims**

Dyestuffs of the anthraquinone series which correspond to the formula:

(1)



wherein X is either α,β-dibromopropionyl or α-bromoacryl fiber reactive radical, are suitable for dyeing a wide variety of materials and in particular polyhydroxylated fibrous materials, cellulose and nitrogenous textile materials to provide dyeings of outstanding light and wet fastness properties.

3,501,506
2-MERCAPTO-3-METHOXYESTRA-1,3,5(10)-TRIEN-17β-OL AND CONGENERS
James R. Deason, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 2, 1969, Ser. No. 788,610
Int. Cl. C07c *169/08*
U.S. Cl. 260—397.4 **10 Claims**

Preparation of 17-oxygenated 3-alkoxy-2-thia-estra-1,3,5(10)-trienes having valuable biological properties including estrogenic, antiinflammatory, and antihypercholesterolemic activity is disclosed.

3,501,507
PHOTODIMERS OF $\Delta^{4,9}$-STEROIDS
Manuel Debono, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Sept. 6, 1968, Ser. No. 758,104
Int. Cl. C07c *169/22, 171/08*
U.S. Cl. 260—397.4 **2 Claims**

Photodimers of 3-keto $\Delta^{4,9}$-steroids are produced by ultraviolet irradiation. The compounds are useful as hormones or anti-hormones.

3,501,508
STEROIDAL ADAMANTATES
Arvin Pranlal Shroff, Piscataway, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey
No Drawing. Filed Jan. 12, 1967, Ser. No. 608,728
Int. Cl. C07c *169/12, 167/128;* **A61k** *17/06*
U.S. Cl. 260—397.5 **3 Claims**

The compounds herein are adamantate esters of 17α-ethynyl-19-norandrost-4-en-3-one-17β-ol and its 3-oxime and 3-oxime esters. They are antilittering agents.

3,501,509
13-ALKYLGONA-1,3,5(10)-TRIENE-17-ONE INTERMEDIATES AND PROCESS
Chan H. Kuo, South Plainfield, David Taub, Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,624
Int. Cl. C07c *167/02, 167/12, 169/08*
U.S. Cl. 260—397.5 **2 Claims**

The invention disclosed herein relates to novel intermediate compounds useful in preparing steroid compounds of the estrane series which have utility as intermediates in the preparation of optically active estrone, estradiol and other 3-hydroxy or substituted oxy-13-lower alkylgona-1,3,5(10)-trien-17-one steroids which are physiologically active substances possessing estrogenic activity, and to novel intermediate compounds which are useful in the total synthesis of optically active steroids, and to methods for the preparation of these novel intermediates by reducing 3-oxy-13-alkyl-8(14)-secogna-1,3,5(10),9(11),15-pentaene-14,17-dione [obtained by condensation of 2-alkyl-4-acyloxy-cyclopentane-1,3-dione and 1-vinyl-1-hydroxy-6-oxy-1,2,3,4,-tetrahydronapthalene] to the racemic 17α-hydroxy derivative, followed by resolution of the racemate and hydrogenation of the resulting d- and l-isomers, the action of the latter with an acid thereby closing the C-ring to form d- and l-isomers of 3-oxy-13-alkyl-1,3,5(10),8,14-pentaene-17α-ol, electively reducing the Δ^{14} double bond by catalytic hydrogenation, and the Δ^{8} by sodium or potassium in liquid ammonia, followed by sodium chromate oxydation of the 17α-hydroxy to form the desired d- and l-isomers of 3-oxy-13-alkylgona-1-3, 5(10)-triene-17-one.

3,501,510
ESTRIOL DERIVATIVES

Eugene E. Galantay, Morristown, N.J., assignor to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 656,672, July 28, 1967. This application Nov. 13, 1967, Ser. No. 682,657

Int. Cl. C07c *169/08*

U.S. Cl. 260—397.5 29 Claims

The compounds are of the class of substituted-acylated estra-1,3,5(10)-trien-3,16*a*,17-triols. The compounds have estrogenic and progestational activity and hypocholesteremic activity.

3,501,511
ADAMANTYL SULFONAMIDE COMPOUNDS

Venkatachala L. Narayanan, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,781

Int. Cl. C07c *143/80*

U.S. Cl. 260—397.7 10 Claims

This invention relates to new adamantyl sulfonamide compounds which are useful as antimicrobial agents.

3,501,512
N-(4,4-DILOWERALKYLOXY AND THIO BUTYL) BENZENE SULFONAMIDES

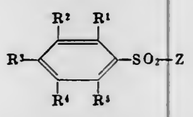
Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 21, 1966, Ser. No. 536,479, now Patent No. 3,453,289, dated July 1, 1969. Divided and this application Feb. 3, 1969, Ser. No. 816,437

Int. Cl. C07c *143/78*

U.S. Cl. 260—397.7 3 Claims

1. A compound of the formula:



wherein R^1 and R^5 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro and lower alkanoylamino; R^2 and R^4 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro, amino and lower alkanoylamino; R^3 is selected from the group consisting of alkyl, nitro, amino and lower alkanoylamino; and Z is

$$—NH(CH_2)_3CH(OR^7)_2$$

wherein R^7 is lower alkyl.

3,501,513
PREPARATION OF 17-DESOXY STEROIDS FROM CORRESPONDING 17α,21-DIHYDROXY - 20 - OXO STEROIDS AND 21-ESTERS THEREOF

Imre Bacso, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 29, 1968, Ser. No. 709,206

Int. Cl. C07c *169/34, 167/30;* A61k *17/12*

U.S. Cl. 260—397.45 6 Claims

Preparation of 17-desoxy-20-oxo - 21 - hydroxy steroids from the corresponding 17α,21-dihydroxy-20-oxo-steroids and the 21-esters thereof by sequentially treating the latter with (1) alkanolic hydrogen halide, (2) acetic acid and an aqueous hydrogen halide at elevated temperatures, and (3) zinc-copper couple in alkanlolic acetic acid.

3,501,514
SUBSTITUTED BIS ORGANO SULFONES AND SULFOXIDES AND METHOD FOR THE PREPARATION THEREOF

Robert A. Grimm, Savage, and Robert C. Slagel, Burnsville, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Continuation-in-part of application Ser. No. 458,375, May 24, 1965. This application Apr. 22, 1966, Ser. No. 544,391

Int. Cl. C07c *143/90, 147/00*

U.S. Cl. 260—400 12 Claims

A class of bis organo sulfone and sulfoxide derivatives are provided by the reaction of an ethylenically unsaturated compound with sulfur dichloride to form the corresponding dichloride diadduct of which the chloro substituents are converted to a variety of other functional groups and thereupon the thioether is oxidized to either the corresponding sulfone or sulfoxide.

3,501,515
BICYCLIC HETEROCYCLIC TERTIARY PHOSPHINE-COBALT-CARBONYL COMPLEXES

John L. Van Winkle, San Lorenzo, Rupert C. Morris, Berkeley, and Ronald F. Mason, Mill Valley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 468,573, June 30, 1965, and Ser. No. 493,555, Oct. 6, 1965. This application Aug. 28, 1968, Ser. No. 755,796

Int. Cl. C07f *15/06;* C07c *45/02*

U.S. Cl. 260—439 20 Claims

Novel catalysts of cobalt in complex combination with carbon monoxide and a bicyclic heterocyclic tert-phosphine for use in an improved hydroformylation process to effect the direct, single-stage production of reaction products consisting predominantly of primary alcohol by reacting an olefinic compound with carbon monoxide and drogen at a temperature between about 100° and 300° C. and superatmospheric pressure in the presence of said catalyst.

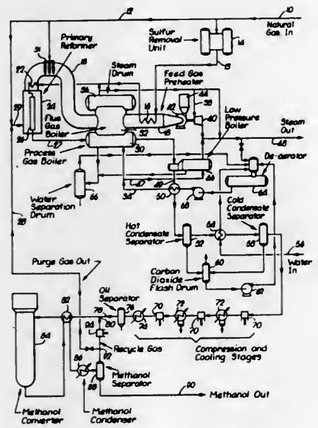
3,501,516
METHOD FOR PRODUCTION OF METHANOL

Roger W. Parrish, Independence, Mo., assignor to J. F. Pritchard and Company, a corporation of Missouri

Continuation-in-part of application Ser. No. 614,538, Feb. 8, 1967. This application Nov. 29, 1968, Ser. No. 779,735

Int. Cl. C07c *29/16*

U.S. Cl. 260—449.5 6 Claims



Hydrocarbons are reformed in the presence of a reforming catalyst with steam as the sole added oxidant at

a pressure between about 200 p.s.i.a. and approximately 1,000 p.s.i.a. and at a ttmperature correlated therewith in the range of about 1350° F. to approximately 1650° F to produce methanol synthesis gas comprising hydrogen, carbon monoxide, carbon dioxide, water and from 0 to about 18% inerts. The synthesis gas has an effective hydrogen to carbon monoxide ratio within the range of about 2.06 to approximately 3. After compression of the synthesis gas it is fed into the recycle loop of a methanol converter operated at a pressure within the range of about 500 p.s.i.a. to approximately 10,000 p.s.i.a. The effluent from the converter is treated to remove crude methanol and the remaining gas is then split with one portion being purged while the remainder is returned to the recycle loop. The proportions of the purge gas and that returned to the recycle loop are controlled so as to maintain the effective hydrogen to carbon monoxide ratio in the converter supply stream at a level of at least about 10:1 and preferably above 12:1.

3,501,517
FLUID-BED QUENCHING AMMOXIDATION REACTION PROCESS FOR NITRILE PREPARATION

Mack F. Hughes, Albany, and John R. B. Ellis, Kentfield, Calif., assignors to Chevron Research Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 294,838, July 15, 1963. This application Mar. 8, 1965, Ser. No. 437,674

Int. Cl. C07c *151/50, 121/30, 121/02*

U.S. Cl. 260—465 3 Claims

A fluid-bed reaction system is used both as a reaction quenching means and as a reactor. Air, ammonia and hydrocarbon feed, one or more of which is preheated, are contacted concurrently in the fluid bed and a local short duration ammoxidation condition is generated. An indirect heat exchanger located in the dense phase of the fluid bed maintains the quenching temperature in the balance of the bed resulting in short contact times at ammoxidation temperatures and substantial reductions in overoxidation, i.e., improved selectivities for the production of nitriles.

3,501,518
PRODUCTION OF CARBOXYLIC ACIDS OR CARBOXYLIC ESTERS

Nikolaus von Kutepow, Karlsruhe, and Knut Bittler and Dieter Neubauer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,848

Claims priority, application Germany, Dec. 19, 1964, B 79,815

Int. Cl. C07c *69/28, 69/24*

U.S. Cl. 260—468 8 Claims

Process for the production of carboxylic acids or carboxylic esters by reacting an exclusively olefinically unsaturated hydrocarbon of 2 to 20 carbon atoms and 1 to 4 olefinic double bonds with carbon monoxide and water or an alcohol or phenol of 1 to 20 carbon atoms and 1 or 2 hydroxyl groups at a temperature of 30–180° C. and a pressure of 25–1000 atmospheres in the presence of metallic palladium or a palladium chalcogenide, a strong or medium strength acid (dissociation constant $K>10^{-4}$) and an organic phosphine or nitrile. The products of this process are known, e.g. ethylene when reacted with carbon monoxide and water yields propionic acid.

3,501,519
α-SUBSTITUTED-(2,5-DIACYLOXYPHENYL) ACETALDEHYDE

Louis L. Skaletzky, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Sept. 25, 1964, Ser. No. 399,368, now Patent No. 3,412,109, dated Nov. 19, 1968. Divided and this application June 19, 1968, Ser. No. 738,095

Int. Cl. C07c *69/78, 69/24*

U.S. Cl. 260—476 4 Claims

New 2-lower-alkoxy-2,3-dihydro-3-substituted-5-benzofuranols are prepared from α-substituted-(2,5-dihydroxyphenyl) acetaldehyde diacylate intermediates by reacting the latter diester-aldehyde with an alkanol and an alkali metal alkoxide or hydroxide. The α-substituted-(2,5-dihydroxyphenyl)acetaldehyde diacylate intermediates are prepared from 2-amino-2,3-dihydro-3-substituted-5-benzofuranols by esterifying and deaminating the benzofuranol with an excess of a hydrocarboncarboxylic acid halide. The final product compounds are central nervous system depressants and can be used as sedatives.

3,501,520
THIO AND DITHIODICARBOXYLIC ACID THIOETHER ESTERS

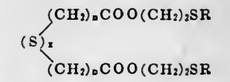
Silvio L. Giolito, Whitestone, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 23, 1965, Ser. No. 504,189, now Patent No. 3,398,116, dated Aug. 20, 1968. Divided and this application Mar. 21, 1968, Ser. No. 734,508

Int. Cl. C07c *153/07, 149/20;* C08f *45/58*

U.S. Cl. 260—481 9 Claims

Thiodicarboxylic acid thioether esters of the formula:



wherein R is an alkyl of from 8 to 18 carbon atoms, x is an integer of from 1 to 2, and n is an integer from 1 to 3. The above thioether esters are useful as antioxidants for poly-alpha-olefins.

3,501,521
6-OXYGENATED-TETRAHYDRONAPHTHYLIDINE ETHYL SULFONIUM SALTS

Chan Hwa Kuo, South Plainfield, David Taub, Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,864

Int. Cl. C07c *149/46*

U.S. Cl. 260—501.14 19 Claims

The invention disclosed herein is concerned generally with a novel method for the preparation of intermediate compounds useful in the synthesis of known steroids of the estrane series which have utility in the pharmaceutical field as estrogenic and progestational agents. More particularly, this invention relates to the formation of a sulfonium salt of a 1-vinyl-1-hydroxy-6-hydroxy or substituted oxy - 1,2,3,4 - tetrahydronaphthalene by reaction of a 1-vinyl-1-hydroxy-6-(hydroxy or substituted oxy)-1,2,3,4-tetrahydronaphthalene with thiourea or a dialkyl sulfide.

The resulting sulfonium salt is reacted with an alicyclic-1,3-diketone, to provide intermediate compounds of the 3-hydroxy or substituted oxy-8,14-seco-1,3,5(11),9(11)-D-homogona- or gonatetraene-14,17a-or-14,17-dione series, intermediate compounds of the 3-hydroxy or substituted

oxy - 8,14 - seco - 13 - lower alkyl-1,3,5(10),9(11)-D-homogonatetraene - 14,17a - dione series, intermediate compounds of the 3 - hydroxy or substituted oxy-8,14 - seco - 13 - lower alkyl - 1,3,5(10),9(11) - gonatetraene-14,17-dione series, which may also have a carboxamido, carbalkoxy, or carbaralkoxy substituent on the 15-position, and intermediate compounds of the 3-hydroxy or substituted oxy-8,14-seco-13-lower alkyl-1,3,5(10),9(11), 15-gonapentaene-14,17-dione series.

ERRATUM

For Class 260—501.17 see:
Patent No. 3,501,769

3,501,522
DERIVATIVES OF 1,3-BIS(HEPTAFLUOROISOPROPYL)BENZENE

Basil S. Farah, West Seneca, N.Y., and Everett E. Gilbert and Benjamin Veldhuis, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,607
Int. Cl. C07c *143/40, 143/24, 143/70*
U.S. Cl. 260—505 **8 Claims**

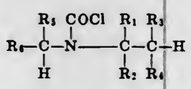
5-sulfo - 1,3 - bis(heptafluoroisopropyl)benzene and its corresponding metal and ammonium salts, sulfonyl chloride and sulfonyl fluoride are derived from 1,3-bis(heptafluoroisopropyl)benzene. 5-sulfo - 1,3 - bis(heptafluoroisopropyl)benzene and its metal and ammonium salts are useful as a surface tension reducing agent, wetting agents and dispersing agents. The metal and ammonium salts are also useful as insecticides. The sulfonyl chloride and fluoride are useful for treating fabrics to render them stain repellent.

3,501,523
SECONDARY CARBAMYL CHLORIDES

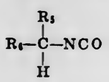
Adnan A. R. Sayigh, New Haven, and James N. Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application June 4, 1963, Ser. No. 285,206, now Patent No. 3,311,654, dated Mar. 28, 1967. Divided and this application Oct. 12, 1966, Ser. No. 586,018
Int. Cl. C07c *51/58;* **C07d** *5/46, 63/12*
U.S. Cl. 260—544 **9 Claims**

Secondary carbamoyl chlorides having the following formula are described:



R_1, R_2=lower-alkyl; R_3 and R_4=H, lower-alkyl; R_5 and R_6=H, lower-alkyl, alkenyl (1–18C), alkynyl (2–18C), cycloalkyl (3–10C), cycloalkenyl (5–10C), aryl (6–18C), aralkyl (7–18C), aralkenyl (7–18C), furyl, furfuryl, thenyl, pyridyl and 2-quinolyl. The compounds are obtained by phosgenation of the corresponding secondary amine. The compounds are intermediates in that upon heating at 50° to 250° C. they yield the isocyanate



and alkene



3,501,524
METHOD FOR PRODUCING THIOUREA

Leon F. Krulik, Lakewood, and Thomas I. Gilbert, Lorain, Ohio, assignors to The Elco Corporation, Cleveland, Ohio, a corporation of Ohio

Filed May 19, 1966, Ser. No. 551,299
Int. Cl. C07c *157/00*
U.S. Cl. 260—552 **1 Claim**

A method of and apparatus for producing thiourea wherein an aqueous calcium cyanamide slurry is continuously fed into a closed chamber and caused to flow through the chamber in one direction. Hydrogen sulfide gas is fed into the chamber downstream from the introduction of the slurry and caused to flow in the chamber in a direction opposite to the direction of the flow of the slurry to form thiourea and calcium hydrosulfide. Carbon dioxide gas is fed into the chamber downstream from the introduction of the hydrogen sulfide and caused to flow in the chamber in a direction opposite to the flow of the slurry to produce calcium carbonate and regenerate hydrogen sulfide gas which gas is caused to flow in the chamber in a direction opposite to the direction of flow of the slurry to form further thiourea and calcium hydrosulfide and the feed rates are controlled to balance the system, and the thiourea is recovered from the withdrawn reaction products.

3,501,525
PROSTAGLANDIN UREIDES

Milton Lapidus, Rosemont, Norman H. Grant, Wynnewood, Marvin E. Rosenthale, Havertown, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 4, 1967, Ser. No. 672,728
Int. Cl. C07c *127/00*
U.S. Cl. 260—553 **2 Claims**

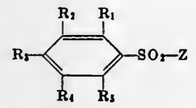
Novel prostaglandin ureides (I) are prepared by treating prostaglandins with appropriately-substitued carbodiimides. Said prostaglandin ureides have valuable pharmacological properties, especially as bronchodilators.

3,501,526
N-(4,4-DILOWERALKOXYBUTYL)-BENZENE SULFONAMIDES

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 21, 1966, Ser. No. 536,479, now Patent No. 3,453,289, dated July 1, 1969. Divided and this application Feb. 3, 1969, Ser. No. 816,438
Int. Cl. C07c *143/50*
U.S. Cl. 260—556 **2 Claims**

1. A compound of the formula:



wherein R^1 and R^5 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro and lower alkanoylamino; R^2 and R^4 are each selected from the group consisting of hydrogen, lower alkyl, halogen, nitro, amino and lower alkanoylamino; R^3 is halogen and Z is $—NH(CH_2)_3CH(OR^7)_2$ wherein R^7 is lower alkyl.

3,501,527
PROCESS FOR PREPARING ALKALINE EARTH SALTS OF HYDROXYARYLALKYL AMINES

Randel Q. Little, Jr., Munster, and Eli W. Blaha and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,288
Int. Cl. C07c *87/28;* **C10m** *1/32*
U.S. Cl. 260—570.9 **6 Claims**

Oil-soluble neutral and basic alkaline earth metal salts of hydroxyarylalkyl amines are the direct products of reacting at one time either the four reactants (1) alkaline earth metal oxide, hydroxide or alcoholate, (2) alkyl and hydroxy substituted aromatic hydrocarbon, (3) aldehyde and (4) amine; or the three reactants (1) alkaline earth metal oxide, hydroxide or alcoholate, (2) alkyl and hydroxy substituted aromatic hydrocarbon and (3) aldehyde-ammonia or aldehyde-amine condensation product; or the three reactants (1) alkaline earth metal oxide, hydroxide or alcoholate, (2) alkyl, hydroxy and methylol substituted aromatic hydrocarbon and (3) amine. For example oil-soluble neutral calcium salt of N,N'-bis(nonyl and hydroxy substituted benzyl) ethylene diamine is the direct product of reacting at one time at a temperature of 190° to 200° F. the four reactants used in the proportions of (1) one mole of calcium hydroxide (2) two moles of nonylphenol, (3) two moles of formaldehyde and (4) one mole of ethylene diamine.

3,501,528
PREPARATION OF PRIMARY AMINES BY HYDROGENATION OF NITRILES

Horst Rutzen, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie., G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Oct. 31, 1967, Ser. No. 679,516
Claims priority, application Germany, Dec. 7, 1966, H 61,209
Int. Cl. C07c *85/14*
U.S. Cl. 260—583 **4 Claims**

A continuous process for the preparation of primary amines by catalytic hydrogenation of nitriles with excess hydrogen containing 3 to 15% by volume of ammonia.

3,501,529
19-SUBSTITUTED B-NORTESTOSTERONES

Francis Pfeiffer, Delran, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,338
Int. Cl. C07c *49/00, 69/02, 69/00*
U.S. Cl. 260—586 **4 Claims**

19-halo-B-nortestosterones, prepared by reaction of a lithium halide with a 19-p-toluenesulfonyloxy-B-nortestosterone, are disclosed. The products are androgenic agents. 17-keto and hydroxy compounds, and esters and ethers are also disclosed.

3,501,530
SUBSTITUTED NAPHTHALENONES, NAPHTHALENEDIONES AND D-HOMO - β - NOR ESTRA-1,3,5(10),9(11)-TETRAENES

Marinus Los, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 27, 1968, Ser. No. 708,488
Int. Cl. A61k *17/06*
U.S. Cl. 260—590 **8 Claims**

This invention relates to steroid-like compounds prepared by a series of reactions from 3,4,8,8a-tetrahydro-5,8a-dimethyl-1,6(2H, 7H)-naphthalenedione which have utility as antiovulatory and estrogenic agents in treatment of warm-blooded animals and to a novel process for synthesizing said compounds.

3,501,531
HYDROFORMYLATION PROCESS

Geoffrey Wilkinson, London, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,132
Claims priority, application Great Britain, Dec. 15, 1964, 50,983/64
Int. Cl. C07c *45/02*
U.S. Cl. 260—604 **6 Claims**

A process for preparing aldehydes and alcohols is disclosed. This process comprises reacting an olefin with carbon monoxide and hydrogen, featuring the use of a rhodium/tin/halide complex in a non-reactive solvent as the catalyst.

3,501,532
PROCESS FOR PREPARING AROMATIC SULFONES

John T. Minor, Ponca City, Okla., and George C. Feighner, Franklin Lakes, N.J., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,294
Int. Cl. C07c *147/06*
U.S. Cl. 260—607 **8 Claims**

Aromatic sulfones of the general formula $ArSO_2Ar'$ wherein Ar and Ar' represent like or unlike aromatic residues devoid of substituents or having reactively inert substituents are prepared by reacting an aromatic sulfonic acid with an aromatic compound having a replaceable hydrogen atom in the presence of a polyphosphoric acid.

3,501,533
RECOVERY OF FLUORINATED ETHER

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 6, 1967, Ser. No. 665,712
Int. Cl. C07c *43/12, 121/18;* **B01d** *3/36*
U.S. Cl. 260—614 **1 Claim**

This invention relates to a process for separating hexafluoromonochloroisopropyl,2' - iodotetrafluoroethyl ether from a mixture containing 1,2-diiodotetrafluoroethane as a by-product. According to the invention, the mixture is made to contain at least about 8 mols of acetonitrile per mol of hexafluoromonochloroisopropyl,2' - iodotetrafluoroethyl ether and the mixture is then fractionally distilled to give an azeotrope of hexafluoromonochloroisopropyl, 2'-iodotetrafluoroethyl ether and acetonitrile as an overhead fraction, while leaving the 1,2-diiodotetrafluoroethane as a residue. The acetonitrile is then separated from the hexafluoromonochloroisopropyl,2' - iodotetrafluoromonochloroisopropyl,2' - iodotetrafluoroethyl ether by water extraction.

3,501,534
AZEOTROPIC DISTILLATION OF FLUORINATED ETHER

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Sept. 27, 1966, Ser. No. 582,258, now Patent No. 3,409,512, dated Nov. 5, 1968. Divided and this application May 29, 1968, Ser. No. 807,137
Int. Cl. C07c *43/12, 121/18;* **B01d** *3/36*
U.S. Cl. 260—614 **1 Claim**

This invention relates to a novel composition which is an azeotrope of heptafluoroisopropyl,2'-iodotetrafluoroethyl ether and acetonitrile. Formation of this azeotrope makes possible separation by fractional distillation of heptafluoroisopropyl,2'-iodotetrafluoroethyl ether from impurities having boiling points close to that of said ether.

3,501,535

METHOD FOR STABILIZING REFINED ETHANOL AGAINST DEGRADATION CAUSED BY POLYVALENT METAL IONS

George R. Stringer, Hurricane, and Harold K. Andrews, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,535
Int. Cl. C07c *29/24*
U.S. Cl. 260—632.5 12 Claims

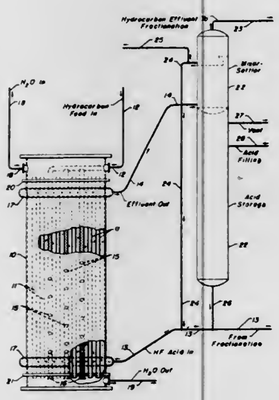
Refined ethanol is stabilized against the formation of odor and color, caused by the presence of free copper ions, by the addition of a small amount of a metallic salt of an acid derivative of an ethylene polyamine.

3,501,536

ALKYLATION WITH SPIRALLING FLOW PATH OF REACTANTS AND ALKYLATE

William B. Borst, Jr., Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 581,600, Sept. 23, 1966. This application Feb. 26, 1969, Ser. No. 802,424
Int. Cl. C07c *3/54*; B01j *11/00, 1/00*
U.S. Cl. 260—683.48 9 Claims



Alkylation process utilizes a reactor with heat exchange tubes and with a plurality of conduits, or tubes, which carry the hydrocarbon reactants into the reactor space for intimate mixing and cooling of the reactants and catalyst. The reactants enter the reactor through a series of spaced openings in the tubes which jet the reactants into an upwardly spiraling flow path around the heat exchange tubes.

3,501,537

PROCESS FOR SEPARATING HIGH-BOILERS OF THE OXO PROCESS

Sam H. Johnson, Jr. and Jack C. Vander Woude, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 1, 1964, Ser. No. 356,494
Int. Cl. C07c *27/26, 27/28, 29/16*
U.S. Cl. 260—643 8 Claims

High-boiling by-products Oxo process are recovered as useful products by a particular process comprising distillation of the high-boiling still bottoms from the aldehyde splitter to obtain an overhead distillate which is hydrogenated and subsequently purified and separated into desired product streams.

3,501,538

STABILIZATION OF 1,1,1-TRICHLOROETHANE

Wesley L. Archer, Midland, and Elbert L. Simpson, Auburn, Mich., and George Richard Graybill, Honolulu, Hawaii, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 24, 1968, Ser. No. 700,682
Int. Cl. C07c *17/40*
U.S. Cl. 260—652.5 4 Claims

The reaction of 1,1,1-trichloroethane with aluminum is inhibited by the presence in the 1,1,1-trichloroethane of a small amount of a dissolved 4,7-dihydro-1,3-dioxepin compound. Concentrations of the order of 0.01–1 gram mole per liter provide significant inhibition.

3,501,539

PROCESS FOR THE PRODUCTION OF VINYLICALLY CHLORINATED OLEFINS

Danford H. Olson and George M. Bailey, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,041
Int. Cl. C07c *21/06*
U.S. Cl. 260—656 6 Claims

A method for the production of vinyl chloride by the reaction of ethylene in the gas phase with cupric chloride at a temperature in the range of from 475° C. to 525° C. and at a flow rate of from 12 to 20 cc. of gas stream per minute per gram of cupric chloride. A second embodiment comprises reaction at a temperature within the range 525° C. to 550° C. at a flow rate of from 17 to 24 cc. of gas stream per minute per gram of cupric chloride.

3,501,540

ISOMERIZATION OF ACYLIC TRIENES

Ernest A. Zuech, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 661,185, Aug. 17, 1967. This application Jan. 27, 1969, Ser. No. 794,371
Int. Cl. C07c *5/30, 13/02, 11/12*
U.S. Cl. 260—666 10 Claims

Acyclic trienes undergo double bond isomerization and/or isomerization to cyclic dienes upon contact with a base-solvent catalyst system prepared by the admixture of a base selected from alkali metal hydrides, hydroxides and alkoxides with a polar aprotic solvent selected from dialkyl sulfoxides, hexaalkyl phosphoramides, cyclic sulfones, and cyclic sulfoxides.

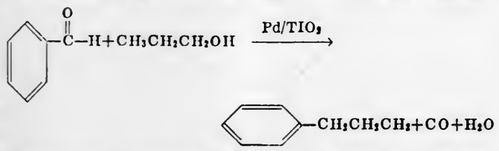
3,501,541

PROCESS FOR INTRODUCING AN ALKYL GROUP

Michael Dubeck, Birmingham, and James G. Jolly, Lathrup Village, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 14, 1968, Ser. No. 712,954
Int. Cl. C07c *15/02, 3/52*
U.S. Cl. 260—668 6 Claims

An alkyl group is introduced into a molecule by the reaction of an aldehyde and an alcohol in the presence of a catalytic quantity of a Group VIII metal dispersed on titanium dioxide. Apparently the reaction takes place as illustrated and exemplified by the following equation:



A preferred catalyst is palladium dispersed on titanium dioxide. The process can comprise either a batch or continuous method and is preferentially conducted at a temperature within the range of 150° to 275° C.

3,501,542

DEHYDROCYCLIZATION PROCESS

Norman L. Carr, Allison Park, and Robert E. Kline and Allen E. Somers, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Feb. 29, 1968, Ser. No. 709,175
Int. Cl. C07c *13/00*
U.S. Cl. 260—673.5 10 Claims

Nonaromatic hydrocarbons containing at least six carbon atoms in the molecule are aromatized in a dehydrocyclization process wherein said hydrocarbons are mixed with an aromatic hydrocarbon, preferably the aromatic end product of said process and this mixture is contacted with a dehydrocyclization catalyst in the presence of added hydrogen at an elevated temperature. Hexane can be converted to benzene, heptane can be converted to toluene.

3,501,543

DETERGENT ALKYLATE TREATING PROCESS

George L. Hervert, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,760
Int. Cl. C07c *7/00*
U.S. Cl. 260—674 5 Claims

The fluoride content and/or olefin content of a detergent alkylate can be reduced by treatment with substantially anhydrous hydrogen fluoride in the liquid phase.

3,501,544

PROCESS FOR TREATING DETERGENT ALKYLATE

George L. Hervert, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 592,760, Nov. 8, 1966. This application Nov. 13, 1967, Ser. No. 682,659
Int. Cl. C07c *7/00*
U.S. Cl. 260—674 5 Claims

A linear alkylaromatic detergent alkylate fraction that is substantially free of benzene is reduced in olefinic and nonlinear alkylaromatic and alkylanthacene content by contacting with a removal agent consisting essentially of hydrogen fluoride.

3,501,545

PROCESS FOR RECOVERING THE AROMATIC VALUE OF SULFUR-CONTAINING STILL BOTTOMS FORMED DURING THE REFINING OF STYRENE

Joseph Peter Henry, South Charleston, W. Va., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 27, 1968, Ser. No. 787,553
Int. Cl. C07c *15/10*; C10c *1/08*; C10g *23/02*
U.S. Cl. 260—674 12 Claims

Sulfur-containing tars, produced during the refining of styrene, are hydrotreated to recover their aromatic value as well as their sulfur value. These tars are diluted with benzene, filtered, and the resulting filtrate hydrotreated to convert the tars to readily recoverable products.

3,501,546

PREPARATION OF PARAFFINIC HYDROCARBONS FROM ACYCLIC, MONOHYDRIC, PRIMARY ALKANOLS AND ALDEHYDES HAVING UP TO 24 CARBON ATOMS WITH A CATALYST CONSISTING OF PALLADIUM DISPERSED ON TITANIUM DIOXIDE

Michael Dubeck, Birmingham, and James G. Jolly, Lathrup Village, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 14, 1968, Ser. No. 712,907
Int. Cl. C07c *1/20*
U.S. Cl. 260—676 7 Claims

Alcohols and aldehydes are converted to hydrocarbons when contacted with a catalytic quantity of palladium on titanium dioxide. For example, n-dodecanol yields undecane and tricosane.

3,501,547

DEHYDROGENATION

George J. Nolan, Robert J. Hogan, and Floyd Farha, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 19, 1967, Ser. No. 639,617
Int. Cl. C07c *5/18*; B01j *11/50*
U.S. Cl. 260—680 10 Claims

Dehydrogenation process using an improved catalyst formed from a phosphorus-containing compound such as phosphoric acid, a tin compound such as tin chloride, and one of boron, a boron-containing compound, bismuth, and a bismuth-containing compound.

3,501,548

DEHYDROGENATION

George J. Nolan, Elliott P. Doane, and Robert J. Hogan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 19, 1968, Ser. No. 706,617
Int. Cl. C07c *5/18*; B01j *11/78, 11/82*
U.S. Cl. 260—680 10 Claims

Dehydrogenation process using a catalyst formed from a phosphorus-containing compound such as phosphoric acid, a tin compound such as tin chloride, and at least one of a Group VI–B metal or Group VI–B metal-containing compound.

3,501,549

BASIC PRECIPITATION WITH NICKEL PHOSPHATE CATALYST

Charles R. Noddings, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

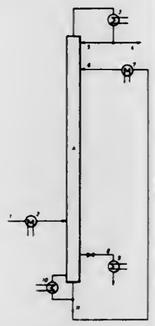
No Drawing. Filed May 1, 1967, Ser. No. 634,888
Int. Cl. C07c *5/20*; B01j *11/34, 11/82*
U.S. Cl. 260—680 11 Claims

A calcium-nickel co-precipitated complex salt of phosphoric acid which is prepared by co-precipitating the calcium and nickel with the phosphate in the presence of both sodium ion and a nitrogen containing compound. The new catalytic material is useful in the dehydrogenation of alkanes and olefins to their respective dienes.

3,501,550
PROCESS FOR THE PRODUCTION OF PURE ISOPRENE BY EXTRACTIVE DISTILLATION OF CYCLOPENTADIENE WITH AQUEOUS ANILINE

Hans-Walther Brandt, Cologne-Flittard, Bruno Engelhard, Cologne-Stammheim, Walter Krönig, Leverkusen, and Wulf Schwerdtel, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Sept. 3, 1968, Ser. No. 756,976
Claims priority, application Germany, Sept. 6, 1967, F 53,423
Int. Cl. C07c 7/08, 11/18
U.S. Cl. 260—681.5 12 Claims

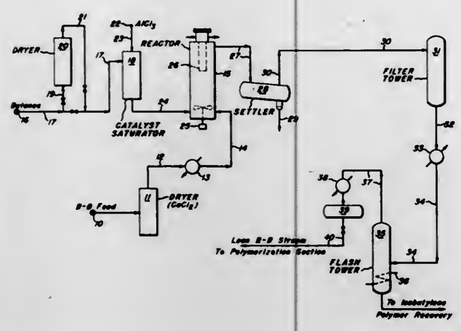


Extractive distillation with aniline, or aniline containing up to 5% water, of a crude isoprene containing C_5-diolefins, and optionally also C_5-mono-olefins, C_6-hydrocarbons and oxygen compounds, as main impurities, such crude isoprene being obtained by the reaction of i-butene and formaldehyde to form 4,4-dimethyl-m-dioxane followed by splitting of such dioxane to form crude isoprene as well as formaldehyde, whereby to produce an isoprene head product of at least about 99.5% purity.

3,501,551
PROCESS FOR PRODUCING NORMAL BUTENE POLYMERS

John C. Heidler, Highland, Ind., and Robert J. Lee, Dolton, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 564,218, July 11, 1966. This application Mar. 19, 1969, Ser. No. 809,479
Int. Cl. C07c 3/18, 5/28; C08f 1/30
U.S. Cl. 260—683.15 3 Claims



Preparation of normal butylene polymers having molecular weights in the range of about 200–750, comprises reacting in liquid phase a C_{3-5} hydrocarbon mixture containing isobutylene and normal butylenes as substantially the only olefins present with an aluminum chloride catalyst to form a reaction mixture containing only isobutylene polymers; separating the isobutylene polymers from the reaction mixture and thereafter treating the mixture with a Friedel Crafts catalyst to form a reaction mixture containing normal butylene polymers; and recovering said normal butlyene polymers from the last reaction mixture. The polymerization of the normal butylene is shown using an equimolar mixture of aluminum chloride and isopropyl chloride as the catalyst system and temperatures of 50–150° F.

3,501,552
PHENOLIC BENZYLIC ETHER COATING COMPOSITIONS AND METHOD OF CROSSLINKING SAME

Janis Robins, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Continuation-in-part of application Ser. No. 536,180, Mar. 14, 1966. This application Jan. 10, 1969, Ser. No. 790,473
Int. Cl. C08g 5/06, 5/10
U.S. Cl. 260—831 11 Claims

Tough, flexible, solvent resistant phenolic coatings are produced by heating optionally in the presence of a weak acidic or basic catalyst a coating composition containing a benzylic ether resin whereby formaldehyde is split from the benzylic ether resin and is utilized to crosslink the resulting methylene linked phenolic resin.

3,501,553
AMIDE-EPOXIDE COMPOSITIONS

Hugh A. Farber and John C. Safranski, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 423,855, Jan. 6, 1965. This application Mar. 18, 1968, Ser. No. 714,045
Int. Cl. C08g 45/04
U.S. Cl. 260—836 9 Claims

Novel crosslinkable compositions are prepared by combining an interpolymer having pendant carboxamide and/or sulfonamide groups with a polyepoxide having more than one oxirane group per molecule. The interpolymers may contain from 15 to 30% by weight of pendant carboxamide, as exemplified by vinyl aromatic sulfonamides, vinyl aliphatic sulfonamides, acrylamide and methacrylamide. In an example 10 g. of a solution of a copolymer of 30% acrylamide and 70% butyl acrylate were reacted with a stoichiometric amount of an epoxide, e.g. 0.89 g. of vinyl cyclohexene dioxide.

3,501,554
POLYESTER PLASTICIZER FOR POLYVINYL CHLORIDE FABRICS

Robert D. Aylesworth, Thomas B. Hilton, Philip A. Froehlich and Herbert G. Rodenberg, Cincinnati, Ohio, assignors to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,483
Int. Cl. C08f 45/38; C08g 39/10
U.S. Cl. 260—873 8 Claims

This invention relates primarily to drycleanable vinyl fabrics and other vinyl constructions and to novel plasticizers for polyvinyl chloride resins having an improved resistance to extraction in drycleaning solvents, such as perchloroethylene. More particularly, the invention relates to new polymeric plasticizers and polyvinyl chloride resins

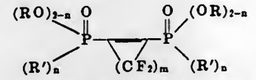
plasticized therewith. The plasticizers comprise non-chain terminated polyesters having a molecular weight range of from about 1500 to 30,000 resulting from esterification of a dibasic acid-glycol reaction mixture consisting essentially of two or more alkanedioic acids having from 4 to 12 carbon atoms, and two or more different alkylene glycols having from 2 to 6 carbon atoms, at least one having 2 or 3 carbon atoms and at least one having 3 to 6 carbon atoms in which the content of dibasic acids below C_8 is from about 0–50 equivalent percent, the content of C_8 to C_9 dibasic acids is from about 50–100 equivalent percent, and that of C_{10} to C_{12} dibasic acids is from 0–50 equivalent percent, based on the total equivalents of dibasic acid, and the content of C_2 to C_3 and C_3 to C_8 glycols each being from 20–80 equivalent percent based on the total equivalents of glycol in the reaction mixture. The plasticizers of this invention may also include from 1 to about 40% by weight based on the weight of the polyester of a super polyester polymer having a molecular weight of above 15,000.

3,501,555
PERFLUORO-1-CYCLOALKEN-1,2-YLENE-DIPHOSPHORYL COMPOUNDS

Arlen W. Frank, Grand Island, N.Y., and Charles F. Baranauckas, Memphis, Tenn., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,105
Int. Cl. C07f 9/50, 9/40, 9/32
U.S. Cl. 260—932 9 Claims

1. A perfluoro-1-cycloalken-1,2-ylenediphosphoryl compound having the formula



wherein R and R' are each members independently selected from the group consisting of alkyl of 1–12 carbon atoms, chloroalkyl of 1–12 carbon atoms, lower alkoxyalkyl, wherein the alkyl is of 1–12 carbon atoms, aryl of 6 to 15 carbon atoms, aralkyl of 7 to 20 carbon atoms, alkenyl of 2 to 12 carbon atoms, and cycloalkyl of 3 to 15 carbon atoms, *m* is 2 to 4, and *n* is 0 to 2.

3,501,556
POLYCHLORO-α-HYDROXYBENZYLPHOSPHONIC AND -PHOSPHINIC COMPOUNDS

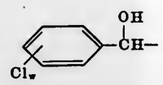
Edward D. Weil, Yonkers, Edwin Dorfman, Grand Island, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,792
Int. Cl. C07f 9/30; A01m 9/36; C08k 1/76
U.S. Cl. 260—953 5 Claims

Polychloro-α-hydroxybenzylphosphonic and phosphinic compositions are useful as plant growth regulants, fire retardant ingredients of resins and polymers, and chemical intermediates, and have the following general formula:



where at least one and a maximum of two of the substituents, X, Y and Z is



where *w* is an integer from two to five, and the remaining substituents are selected from the group consisting of hydrogen, alkoxy, and no more than one hydroxy.

3,501,557
PROCESS FOR PREPARING 2-AMINOETHYL-THIOPHOSPHATE SALTS

Stanley J. Brois, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

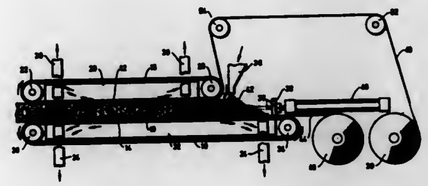
No Drawing. Filed May 2, 1966, Ser. No. 546,573
Int. Cl. C07f 9/16
U.S. Cl. 260—978 6 Claims

2-aminoethylthiophosphates are prepared in a suitable solvent at low temperatures by reacting an aziridine with thiophosphoric acid. The resulting products have utility as antiradiation and antiarthritic agents.

3,501,558
METHOD OF MANUFACTURING COHERENT BODIES OF FOAMED SYNTHETIC PLASTIC MATERIAL

Carl Georg Munters, Stocksund, and Nils Gunnar Sjöberg, Goteborg, Sweden, assignors to W.M.B. International AB, Stockholm, Sweden, a corporation of Sweden

Continuation of application Ser. No. 319,059, Oct. 25, 1963. This application Apr. 16, 1968, Ser. No. 721,873
Claims priority, application Sweden, Nov. 1, 1962, 11,743/62
Int. Cl. B29h 7/20; B29j 5/00
U.S. Cl. 264—47 10 Claims



A method of producing coherent bodies of foamed synthetic plastic material wherein separate compact granules of polystyrene, containing an expanding agent, are expanded in a series of steps to equalize the pressure differences within the particles. The expansion is continued until the separate granules are completely expanded and substantially all expanding agent has escaped, the granules in loose mass having a weight per unit volume substantially less than the desired density of the final coherent body. The surface of said separate expanded granules is then rendered adhesive, the mass is compacted to a final density wherein the interspaces are substantially filled without the said granules collapsing and becoming soft, and setting of the mass then forms the final coherent body.

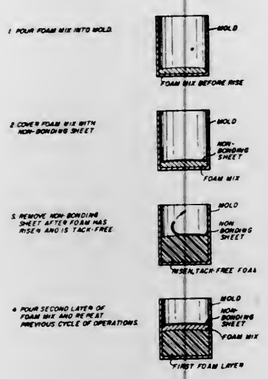
3,501,559
MULTIPLE-POUR POLYURETHANE FOAMS

Samuel Chess, San Pedro, and Burnell E. Brown, Torrance, Calif., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,388
Int. Cl. B29d 27/04
U.S. Cl. 264—51 3 Claims

The separation which takes place between successive layers of polyurethane foam when making multiple pours of rigid high density polyurethane foam (e.g. in filling large cavities for insulation, flotation in maritime vessels, packaging delicate instruments) is prevented by main-

taining a sheet of non-bonding maetrial in contact with the rising foam surface of each layer as it is poured and

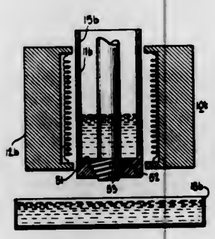


removing the non-bonding sheet before the next pour is made.

3,501,560
METHOD AND APPARATUS FOR PRODUCING FIBERS FROM MOLTEN METALS OR CERAMICS

Maurice A. H. Howes, Hinsdale, and Harry Schwartzbart, Evergreen Park, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Filed Sept. 27, 1967, Ser. No. 675,741
Int. Cl. D01d *5/08;* **B28b** *3/20*
U.S. Cl. 264—85 **17 Claims**



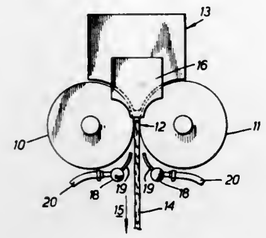
A method and apparatus for producing fibers from the molten state. In the preferred embodiment the molten material traverses a clearance between a container and a spinning body inserted into an opening in the container. The spinning body is provided with grooves on its outer surface and the molten fibers form within these grooves and are thrown off by centrifugal force as they cool and solidify.

3,501,561
FORMATION OF METALLIC STRIP MATERIAL

Derek Cyril Oxley, Halfway, near Sheffield, and George McHardy Sturgeon, Dore, Sheffield, England, assignors to The British Iron and Steel Research Association

Filed Dec. 1, 1967, Ser. No. 687,378
Claims priority, application Great Britain, Dec. 1, 1966, 53,849/66
Int. Cl. B22f *3/02, 3/20*
U.S. Cl. 264—111 **7 Claims**

In a method of forming metallic strip by the compaction of metal powder, which comprises compacting metal powder in the nip between two compacting rolls arranged with their axes parallel in a horizontal plane, to form a self-supporting strip which is withdrawn downwards from the nip, variation in the speed of rolling can be accom-

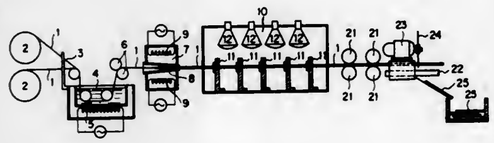


modated and production conditions rendered less critical by directing a plurality of liquid or gas jets arranged on either side of the strip into the roll nip.

3,501,562
METHOD OF FORMING A RIGID TUBULAR BODY FROM A FLAT WOVEN SLEEVE

Takashi Onoyama, Tsu, and Sadayoshi Ichino, Mie Prefecture, Japan, assignors to Nippon Glass Fiber Co., Ltd., Tsu, Mie Prefecture, Japan, a corporation of Japan

Filed Jan. 18, 1968, Ser. No. 698,808
Int. Cl. B29g *5/00*
U.S. Cl. 264—137 **1 Claim**



A flat bi-layered woven sleeve is impregnated with an appropriate adhesive agent and is then passed through a conical expanding device which separates the layers of the sleeve to form a continuous tubular body. The tubular body then passes through forming dies, and finally into a heat zone which dries the adhesive agent forming a rigid tube. The tube so formed is then cut to any length desired.

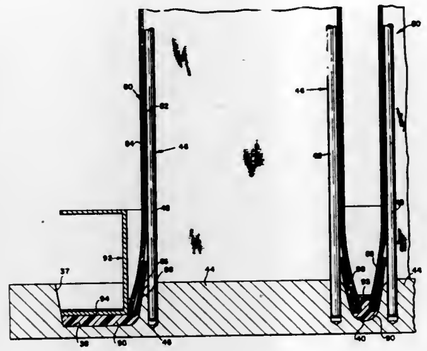
3,501,563
METHOD FOR MAKING EXTENDED AREA TYPE FILTER ASSEMBLIES

Jacob K. Brixius, Parma, and James P. Ryan, Painesville, Ohio, assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 14, 1967, Ser. No. 622,977
Int. Cl. B32b *31/06;* **B29c** *6/04*
U.S. Cl. 264—261 **2 Claims**

The open ends of a plurality of elongated bag-like filter elements, known variously as pockets or socks, are imbedded and anchored within a molded grating-like panel in sealed association with the panel air admission apertures during the molding operation that forms the panel. A hollow rigid mounting frame is also bonded around the panel periphery during the molding operation. The method is carried out by an apparatus wherein molds are distributed around the periphery of a rotatable platform or table and successively indexed at stations where each mold in turn is supplied with liquid molding compound,

the filter elements and mounting frame are placed on and in the mold, the assembly is integrally united as by heat



curing the compound to solid state, and the completed filter assembly is unloaded from the platform.

3,501,564
METHOD FOR BONDING POLYURETHANE TO OTHER MATERIALS

David R. Snoeyenbos, Dayton, Ohio, and Brage Golding, West Lafayette, Ind., assignors to Malleable Research and Development Foundation, Dayton, Ohio, a corporation of Ohio

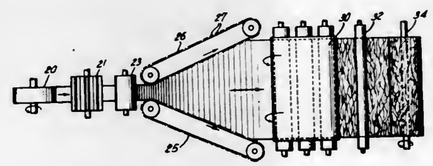
No Drawing. Continuation of application Ser. No. 125,371, July 20, 1961. This application Dec. 16, 1966, Ser. No. 602,424
Int. Cl. B29h *9/00;* **B32** *7/04;* **B32b** *27/40;* **H01b** *1/02*
U.S. Cl. 264—255 **4 Claims**

This invention relates to a method of applying to a molding surface a parting agent and forming against the parting agent a layer of uncured resin material other than polyurethane resin. A layer of uncured polyurethane resin is next applied over and on said layer of resin material. The resin materials are integrally cured and bonded together and are removed from the mold surface.

3,501,565
METHOD OF TRANSVERSE STRETCHING ORIENTABLE SHEET MATERIAL

Frank Kalwaites, Somerville, and William Sibbach, Ridgewood, N.J., assignors to Johnson & Johnson, a corporation of New Jersey

Filed Feb. 23, 1967, Ser. No. 618,188
Int. Cl. B29d *7/24;* **B31f** *1/08;* **D06c** *3/00*
U.S. Cl. 264—288 **9 Claims**



Orientable film is stretched transversely while being decelerated in the longitudinal direction. When performed under certain specified conditions of transverse stretching and longitudinal deceleration, the process results in a fibrillatable film.

3,501,566
SEX ATTRACTANT OF THE BLACK CARPET BEETLE

Wendell E. Burkholder, Madison, Wis., Robert M. Silverstein and John O. Rodin, Menlo Park, Calif., and John E. Gorman, Madison, Wis., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,101
Int. Cl. A01n *17/14*
U.S. Cl. 424—84 **3 Claims**

The principal sex attractant in female black carpet beetles was isolated and identified as trans-3,cis-5-tetradecadienoic acid. This compound, or various other geometric (cis-trans) isomers thereof, can be employed as an attractant in traps to detect and control infestations of the insects.

ERRATUM

For Class 424—89 see:
Patent No. 3,501,770

3,501,567
EUGLOBULINIC PROTEIN FRACTION FOR SENSITIZATION OF FIBRINOLYTIC PROENZYMES IN HUMAN BLOOD AND PREPARATION THEREOF FROM HUMAN PLACENTAL TISSUE

Jean Choay, Neuilly-sur-Seine, and Maurice Thely and Edmond G. Vairel, Paris, France, assignors to Laboratoire Choay, Paris, France

No Drawing. Continuation-in-part of applications Ser. No. 304,643, and Ser. No. 304,654, both filed Aug. 26, 1963. This application Jan. 24, 1966, Ser. No. 544,320
Claims priority, application France, Aug. 30, 1962, 908,329; Nov. 30, 1962, 917,205
Int. Cl. A61k *17/00, 25/00*
U.S. Cl. 424—95 **4 Claims**

An extract capable of activating fibrinolytic proenzymes under conditions when such proenzymes cannot be activated by streptokinase is prepared from the euglobulin fraction from human placental tissue by precipitation of proteins from the fraction from saturated sodium chloride solution followed by controlled lysis of insoluble inactive proteins with alphachymotrypsin to concentrate the active protein fraction. The active agent thus prepared is extremely complex and difficult to analyze and its composition has not as yet been determined. It is characterized by the biochemical properties of activating profibrinolysins under conditions where streptokinase is ineffective and, more importantly, by a rapid and specific lysis of pathological fibrin formations, more particularly thrombi and emboli, without altering the coagulation factors of the blood.

3,501,568
NOVEL ANTIBIOTIC A3823 COMPLEX AND PROCESS FOR PRODUCTION THEREOF

Michael E. Haney, Lafayette, and Marvin M. Hoehn and James M. McGuire, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Continuation-in-part of application Ser. No. 399,706, Sept. 28, 1964. This application Oct. 24, 1968, Ser. No. 770,280
Int. Cl. A61k *21/00;* **C07g** *11/00*
U.S. Cl. 424—115 **8 Claims**

Antibiotic and coccidiostatic complex A3823 comprising four factors produced by fermentation of *Streptomyces cinnamonensis* ATCC 15413 and fractionation of the product so obtained.

3,501,569
ANTIBIOTICS NOGALAROL, O-METHYL-NOGALAROL AND NOGALARENE AND PRODUCTION THEREOF
Paul F. Wiley, Texas Township, Kalamazoo County, and Edgar Louis Caron, Jr., Kalamazoo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed June 29, 1967, Ser. No. 649,939
Int. Cl. A01n *9/20;* A61k *21/00*
U.S. Cl. 424—119 9 Claims

Antibiotics nogalarol (U–24,489) and nogalarene (U–23,041) produced by acid hydrolysis of the antibiotic nogalamycin, and O-methylnogalarol (U–23,482) produced by acidic methanolysis of nogalamycin or nogalarol. These compounds can be used to inhibit the growth of various microorganisms, for example, *Bacillus subtilis, Staphylococcus aureus, Streptococcus fecalis,* and *Lactobacillus casei.*

3,501,570
CHROMOMYCIN A_3 DERIVATIVES AND PRODUCTION THEREOF
Komei Mizuno, Norio Sugita, and Mitsuko Asai, Osaka, and Akira Miyake, Hyogo, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
Continuation of application Ser. No. 413,401, Nov. 20, 1964. This application Nov. 18, 1968, Ser. No. 778,010
Int. Cl. A61k *21/00*
U.S. Cl. 424—119 3 Claims

Chromomycin A_3 hemisuccinates and water soluble salts thereof are provided herein having antibiotic properties. The present invention also provides for a method for the production of chromomycin A_3 hemisuccinates which comprises reacting chromomycin A_3 with either succinic anhydride or succinyl chloride in a solvent at a temperature below about 10° C.

3,501,571
NOVEL SILICONE COMPOSITIONS AND METHOD OF PREPARING SAME
John Kai-Ching Yen, Lachine, Quebec, Canada, assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 18, 1966, Ser. No. 595,336
Claims priority, application Canada, Dec. 6, 1965, 947,065
Int. Cl. A61k *27/00*
U.S. Cl. 424—157 8 Claims

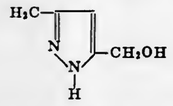
Silicone-antacid compositions having rapid defoaming action and a method of preparing said compositions whereby separate granulations containing an antacid and an adsorbent inert filler on which silicone is adsorbed are prepared.

3,501,572
COMPOSITIONS AND METHOD FOR CONTROLLING PARASITES IN ANIMALS WITH A COMBINATION OF A PHOSPHATE PESTICIDE, CASTOR OIL AND A LOWER ALKANE
Melvin F. Handley, Freeport, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 460,841, June 2, 1965. This application Feb. 20, 1968, Ser. No. 706,776
Int. Cl. A01m *9/36*
U.S. Cl. 424—220 12 Claims

The disclosure is directed to a pesticide formulation composed of a phosphate pesticide, castor oil and a lower alkanol. The formulation is adapted to be applied to the exterior of animals and is harmless to the animal while toxic to insects and related pests.

3,501,573
METHOD FOR LOWERING SERUM LIPID CONCENTRATION
Ake John Erik Helgstrand, Berndt Olof Harald Sjoberg, and Nils Erik Stjernstrom, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a corporation of Sweden
No Drawing. Original application Jan. 12, 1967, Ser. No. 608,932. Divided and this application Mar. 7, 1969, Ser. No. 805,372
Int. Cl. A61k *27/00*
U.S. Cl. 424—273 1 Claim

The use of the compound of the formula



or a therapeutically acceptable salt thereof for lowering of excessive serum lipid concentrations.

3,501,574
TREATMENT OF RESPIRATORY DEPRESSION WITH 2 - HYDROXY - 2,6,6 - TRIMETHYLCYCLOHEXYLIDENE ACETIC ACID, 2-LACTONE OR 2-HYDROXY-2,6,6 - TRIMETHYLCYCLOHEXYL ACETIC ACID, γ-LACTONE
Edward Crosby Tompkins, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Apr. 17, 1968, Ser. No. 722,080
Int. Cl. A61k *27/00*
U.S. Cl. 424—279 3 Claims

Administration of 2 - hydroxy - 2,6,6 - trimethylcyclohexylidene acetic acid, γ-lactone and 2-hydroxy-2,6,6-trimethylcyclohexyl acetic acid, γ-lactone to increase the rate of respiration in mammals.

3,501,575
ANTACID COMPOSITION CONTAINING BIMETALLIC SALTS OF GLUCONIC, GLUCURONIC AND GALACTURONIC ACIDS AND METHOD OF USING THE SAME
Alfred Halpern, Great Neck, and Ernest J. Sasmor, Yonkers, N.Y., assignors to Synergistics, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 339,443, Jan. 22, 1964. This application Sept. 25, 1967, Ser. No. 674,051
Int. Cl. A61k *27/00*
U.S. Cl. 424—283 19 Claims

Pharmaceutical compositions comprising compounds of the class, XAlOH2R, wherein X may be the magnesium or calcium ion and R is either the gluconic, glucuronic or galacturonic acid radical and the methods for achieving antacid, anti-peptic, astringent and protein precipitation effects.

3,501,576
METHOD OF TREATING HYPERTENSION WITH ALKALI METAL SALTS OF ZINC TRANS - 1,2 - DIAMINOCYCLOHEXANE-N,N,N',N'-TETRAACETATE
Robert C. O'Neill, Newark, N.J., assignor to Cooper Laboratories, Inc., a corporation of Delaware
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,576
Int. Cl. A61k *27/00*
U.S. Cl. 424—289 3 Claims

The sodium and potassium salts of the zinc chelate of trans-1,2 diaminocyclohexane-N,N,N',N'-tetraacetic acid ($Na_2ZnCDTA$ and $K_2ZnCDTA$); therapeutic combinations containing $Na_2ZnCDTA$ or $K_2ZnCDTA$ or both; and methods of treating hypertension utilizing $Na_2ZnCDTA$ or $K_2ZnCDTA$ or both.

3,501,577
METHOD OF TREATING HYPERTENSION WITH ALKALI METAL SALTS OF ZINC DIETHYLENETRIAMINEPENTAACETATE
Robert C. O'Neill, Newark, N.J., assignor to Cooper Laboratories, Inc., Mystic, Conn., a corporation of Delaware
No Drawing. Filed Nov. 21, 1967, Ser. No. 684,637
Int. Cl. A61k *27/00*
U.S. Cl. 424—289 3 Claims

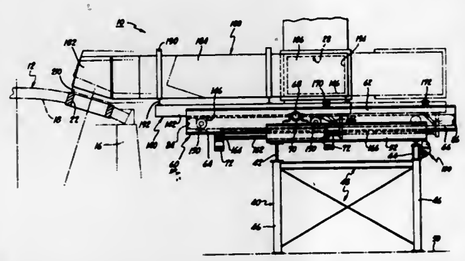
The sodium and potassium salts of the zinc chelate of diethylenetriaminepentaacetic acid ($Na_3ZnDTPA$ and $K_3ZnDTPA$); therapeutic combinations containing $Na_3ZnDTPA$ or $K_3ZnDTPA$ or both; and methods of treating hypertension utilizing $Na_3ZnDTPA$ or $K_3ZnDTPA$ or both.

3,501,578
FUNGICIDAL COMPOSITION CONTAINING PHENYL - MERCAPTOMETHANE-SULFONAMIDE AND METHOD OF USING THE SAME
Hans Helmuth Schlor, Wuppertal-Barmen, and Ferdinand Grewe, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Original application Mar. 11, 1966, Ser. No. 533,449, now Patent No. 3,412,149, dated May 3, 1968. Divided and this application Feb. 27, 1968, Ser. No. 708,500
Claims priority, application Germany, Mar. 12, 1965, F 45,504
Int. Cl. A01n *9/16;* C07c *149/44*
U.S. Cl. 424—321 5 Claims

Phenyl-mercaptomethane-sulfonamide composition and method which possesses fungicidal properties.

ELECTRICAL

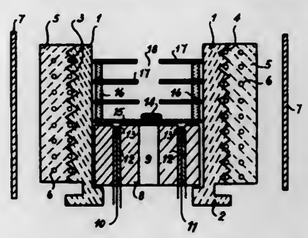
3,501,579
METALLURGICAL FURNACE EFFLUENT CONDUCTING APPARATUS
Eugene Henry Nasierowski, Aliquippa, and William Albert Schmucker, Bethel Park, Pa., assignors to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Aug. 14, 1968, Ser. No. 752,569
Int. Cl. H05b *7/18*
U.S. Cl. 13—1 14 Claims



An apparatus for mounting a duct or elbow adjacent to but separate from a metallurgical furnace for fore and aft and tilting movements so as to enable limited movement of the furnace relative to the duct with the duct in operating position, to enable adjustment of the gap between the duct and the exhaust opening of the furnace without appreciably affecting the gap at the opposite end of the duct, and to enable movement of the duct away from the furnace to allow for full movement of the furnace and its roof and for maintenance purposes.

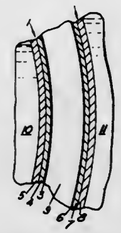
3,501,580
MICRO-FURNACE FOR USE IN A MICROSCOPE HOT-STAGE
Alwig Stingele, Alkmaar, Netherlands, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Feb. 19, 1968, Ser. No. 706,449
Claims priority, application Germany, Mar. 13, 1967, E 33,585
Int. Cl. H05b *3/62;* G01n *25/00*
U.S. Cl. 13—20 6 Claims

A microfurnace for use in a microscope hot stage permitting a high thermal precision and an open observation channel. In order to reduce the temperature gradient due to the channel the tubular furnace has above the specimen holder and mutually spaced from each other several radiation plates. The remaining temperature gardient is taken



into account by measuring the sample holder surface temperature with a multileg thermocouple, the legs of which are welded to that surface in spaced distribution.

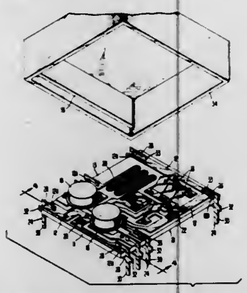
3,501,581
ELECTRIC CONDUCTORS AND ELECTRIC POWER CABLES INCORPORATING THEM
Derek R. Edwards, Windsor, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed May 21, 1968, Ser. No. 730,842
Claims priority, application Great Britain, May 23, 1967, 23,897/67
Int. Cl. H01b *7/34*
U.S. Cl. 174—15 19 Claims



A superconductor for transmitting high power at high voltage, especially for cables and busbars, is a composite bonded structure comprising a superconductive layer, a metal layer e.g. copper or aluminium having high conductivity when in the non-superconducting state, and a layer of an alloy having high mechanical strength and

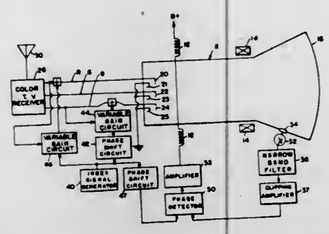
small thermal expansion coefficient, for example 36% nickel-steel. Coaxial power cables may incorporate at least two of the conductors in tubular form arranged with their superconducting surfaces facing each other and the annular space between them evacuated or filled with liquid helium or super-critical helium gas.

3,501,582
ELECTRICAL ASSEMBLY
Glen R. Heidler, Paoli, and Ralph Saunders, Havertown, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 18, 1968, Ser. No. 722,422
Int. Cl. H05k *3/30, 5/06*
U.S. Cl. 174—52 **5 Claims**



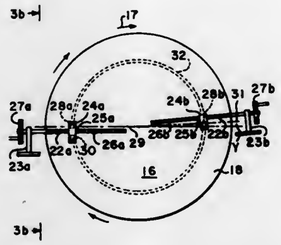
An electrical substrate containing flat conductors and electrical components is provided with electrical connectors which in one form afford horizontal mounting of the substrate and in another form affords vertical mounting of the substrate. In either case, the substrate with its attached connectors is inserted into a housing. The housing is then filled with an electrical insulating encapsulating material to an extent so as to leave the connector terminals exposed, and so as to rigidly secure and protect the substrate and connectors.

3,501,583
APPARATUS FOR CORRECTING VERTICAL DRIFT IN COLOR TELEVISION INDEX TUBE
James W. Schwartz, Western Springs, Ill., assignor to National Video Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 16, 1966, Ser. No. 594,895
Int. Cl. H04n *5/44*
U.S. Cl. 178—5.4 **8 Claims**



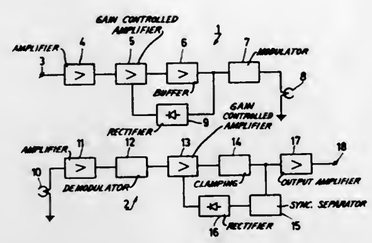
An electrical feedback system for correcting vertical drift in a color television receiver provided with electron beams scanning horizontal strips of color-producing phosphor. Index signals are superimposed on two of the video beams for generating an error signal representative of the vertical drift of the beams from a given set of horizontal strips, the amplitude of the index signals is modulated as an inverse function of the instantaneous amplitude of the video signal on its associated beam thereby eliminating intermodulation products due to the nonlinear transfer characteristic of the kinescope and permitting narrow band signal processing techniques to be employed in the feedback loop to enhance the signal to noise ratio of the feedback signal.

3,501,584
APPARATUS FOR PRODUCING A SINGLE PICTURE SIGNAL FROM A COMPOSITE VIDEO SIGNAL FOR DISPLAY IN A TELEVISION RECEIVER
Kurt R. Machein, Palo Alto, and John T. Phan, Redwood City, Calif., and Arturo E. Stosberg, Regensdorf, Switzerland, assignors, by mesne assignments, to Data Memory, Inc., Mountain View, Calif., a corporation of California
Filed Apr. 20, 1966, Ser. No. 543,915
Int. Cl. H04n *5/78;* **G11b** *5/56, 5/82*
U.S. Cl. 178—6.6 **27 Claims**



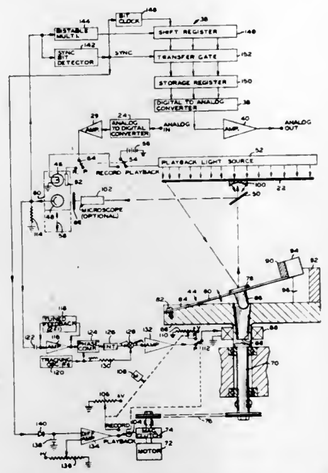
An apparatus for selecting a single still picture from a moving picture television signal to be repetitively reproduced and to be immediately substituted for the television signal. The single still picture is formed by duplicating the first field and interlacing the duplicated first field as the second field with the first field to display a frame.

3,501,585
AUTOMATIC LEVEL CONTROL FOR RECORDING AND REPRODUCING VIDEO INFORMATION
Herman Kasper Adriaan de Lange, Klosterneuburg, Austria, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 18, 1967, Ser. No. 610,119
Claims priority, application Austria, Jan. 19, 1966, A 485/66
Int. Cl. H04n *5/17, 5/76*
U.S. Cl. 178—6.6 **5 Claims**



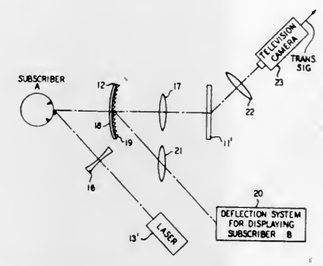
A video recording channel is provided with an adjustable gain amplifier and a feedback rectifier for controlling the level of the video information signal applied to a modulator and in turn to a recording head. The reproducing channel includes a demodulator followed by a variable gain amplifier and a clamping circuit, both of which are provided with a common peak voltage rectifier feedback channel for insuring that the synchronizing pulses are maintained at a constant amplitude.

3,501,586
ANALOG TO DIGITAL TO OPTICAL PHOTOGRAPHIC RECORDING AND PLAYBACK SYSTEM
James T. Russell, Richland, Wash., assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,580
Int. Cl. H04n *5/84*
U.S. Cl. 178—6.7 **16 Claims**



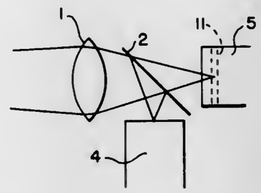
A signal recording and playback system is described in which an analog input signal is converted to a digital signal that pulses a light source to form a single, series-recorded track of binary coded digital information on a photographic film which is played back in a similar manner. The photographic film is a compact, permanent record of long, useful lifetime which may be photographically copied to provide a plurality of inexpensive copies A spiral track photographic record is used in one embodiment which can be employed to provide a music system of high quality.

3,501,587
IN-LINE HOLOGRAPHIC ARRANGEMENT FOR IMAGING A PERSON VIEWING A TELEVISION SCREEN
Donald R. Herriott, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 21, 1966, Ser. No. 603,550
Int. Cl. H04n *3/00, 5/84*
U.S. Cl. 178—6.7 **4 Claims**



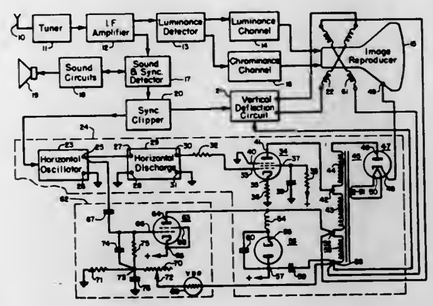
Methods are disclosed whereby a camera can obtain a clear image, through a television screen, of a person watching that screen. For example, between the television screen and the camera there is located a focusing device and a hologram that is a record of the interference between focused light that previously passed through the screen and a coherent reference beam. The camera is oriented to receive the conjugate order light diffracted by the hologram.

3,501,588
TELEVISION CAMERA TUBE SYSTEM UTILIZING A PLURALITY OF IMAGE PICKUP DEVICES TO PRODUCE A SUPERIOR QUALITY IMAGE
Willard John Elliott, Ste. 705, 1205 Grant Ave., Winnipeg 9, Manitoba, Canada
Continuation-in-part of application Ser. No. 403,313, Oct. 12, 1964. This application Nov. 6, 1967, Ser. No. 680,750
Int. Cl. H04n *5/26, 9/08*
U.S. Cl. 178—7.2 **4 Claims**



This invention relates to television cameras and produces a picture with a Vidicon tube having most of the advantages of a picture produced with a more expensive image orthicon tube. This result is obtained by using two Vidicon tubes, one with a translucent element just before its image plate. A beam splitter is so arranged as to form similar images on the two tubes. One image is of low resolution and the other of normal resolution. The signals produced from the two Vidicon tubes are combined in a mixing circuit so that the resulting signal when reproduced as a television picture will have the broad area contrast reduced and therefore the fine detail contrast will be relatively greater.

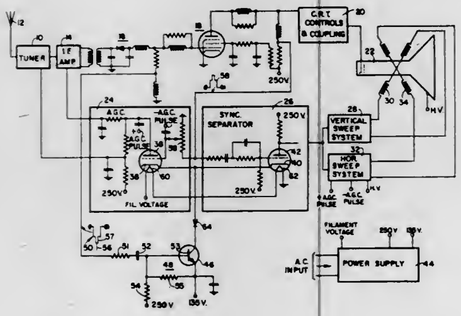
3,501,589
REGULATED POWER SUPPLY
Stanley Bart, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,466
Int. Cl. H04n *3/18*
U.S. Cl. 178—7.3 **6 Claims**



A regulated reaction-scanning type high voltage power supply for supplying accelerating potential to the cathode-ray tube of a television receiver. A regulator tube, shunt-connected across a portion of the primary winding of the

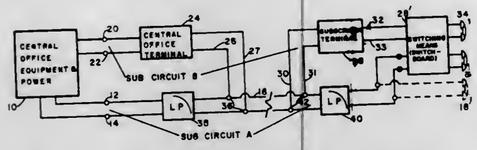
horizontal output transformer, regulates the power supply by variably loading the transformer windings in response to changes in accelerating potential. Conduction of the regulator tube is limited to the first half cycle of the accelerating potential determining oscillation present in the transformer tertiary winding so as to have a minimal effect on the lower frequency scan-width determining flyback oscillation present in the primary winding.

3,501,590
TRANSISTOR PROTECTION CIRCUIT
Donald E. Griffey, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 3, 1966, Ser. No. 591,799
Int. Cl. H04n *5/08, 5/56*
U.S. Cl. 178—7.3 **6 Claims**



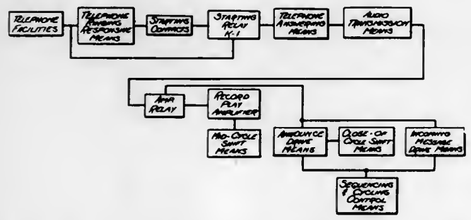
The circuit utilizes a diode to connect a transistor to the cathode of a vacuum tube so that a voltage of undesirably large amplitude is avoided across the transistor if the cathode is shorted to the filament in the tube.

3,501,591
SUBSCRIBER CARRIER FOR SPECIAL SERVICE APPLICATIONS
Lester Q. Krasin, Dallas, and Clifford E. Greene, Fort Worth, Tex., assignors to Superior Continental Corporation, Hickory, N.C., a corporation of Delaware
Continuation-in-part of application Ser. No. 660,165, Aug. 2, 1967. This application July 5, 1968, Ser. No. 742,832
Int. Cl. H04b *1/00*
U.S. Cl. 179—2.5 **28 Claims**



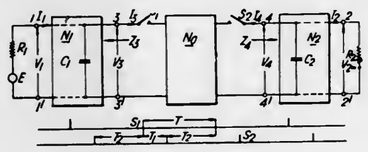
The instant disclosure relates to a telephone communication system wherein additional facilities are added to the normal cable transmission pair of lines without affecting the original system. This is provided by adding central office carrier units and subscriber carrier units, the latter powered by electrical sources independent of a central office, both units operable at frequencies different from that of the communication system (physical cable pair). Filter means to separate system signals from those of the additional facilities are also included. In addition, the subscriber carriers are connected to a switching device (switchboard) to provide a special service circuit for private line service, PBX, PAX service, or foreign exchange service. Such is provided in the subscriber carrier unit by a ring control circuit, a ring-trip circuit, a dialing switch, a single relay, an independent source of ringing voltage in combination with transmitter and receiver sections. In order to take care of various types of inward signaling that may be present in key, PAX, switchboard, PBX, or foreign exchange equipment, ringing voltage is simultaneously applied across the drop side (output) leads of the subscriber carrier unit and also from one of these leads to ground so as to operate switchboard signal equipment (bells, lights, gongs and etc.) whether or not such equipment is grounded.

3,501,592
TELEPHONE ANSWERING APPARATUS WITH CUEING AND WARNING SIGNALS
Herbert Waldman, Brooklyn, N.Y., assignor to Electrospace Corporation, Glen Cove, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 766,746 Oct. 13, 1958. This application Mar. 30, 1964, Ser. No. 355,746
Int. Cl. H04m *11/10*
U.S. Cl. 179—6 **4 Claims**



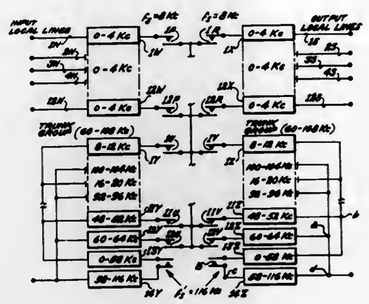
In an apparatus for automatically answering a telephone call including a sound carrier tape having recorded thereon an outgoing announcement message and and a tone signal of a pre-selected frequency for the balance of said tape following the announcement message. The function of the tone signal is to serve in the capacity of cueing and warning tones to a calling party indicating to him the mode of operations the apparatus is about to perform, the mode of operation the apparatus is about to terminate or the failure of the apparatus to perform a mode of operation as required of it.

3,501,593
RESONANT TRANSFER NETWORKS WITH REACTIVE LOADS
Alfred Leo Maria Fettweis, Mol, Belgium, assignor to International Standard Electric Corporation
Continuation of application Ser. No. 410,533, Nov. 12, 1964. This application Sept. 30, 1968, Ser. No. 764,047
Int. Cl. H04j
U.S. Cl. 179—15 **4 Claims**



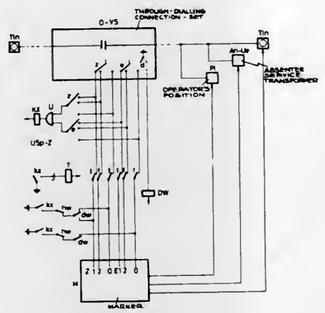
Resonant transfer networks terminated in reactive loads are nonetheless made frequency independent by proper selection of ratio of input and load reactances. The transfer characteristic can also be tailored to a desired frequency dependency when such a characteristic is desired to counteract load frequency characteristics.

3,501,594
APPARATUS FOR FORMING AN ALL-LOWER SIDEBAND GROUP SIGNAL OUTPUT
Paul M. Thrasher, Bethesda, and Kuno M. Roehr, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 1, 1967, Ser. No. 635,976
Int. Cl. H03j *3/00*
U.S. Cl. 179—15 **3 Claims**



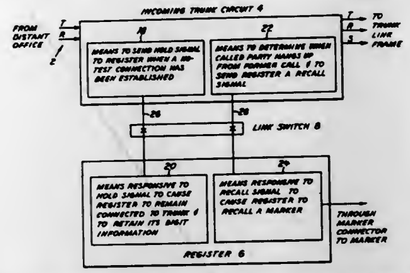
In combination with a voice channel communication system which utilizes the ISAM (Integrated Switching and Multiplexing) modulation principle, a low-pass filter and a wideband pass filter are added to form a group of all channels having inverted sidebands by using two modulation steps for odd-numbered bandpass filters and one modulation step for the even-numbered bandpass filters. An all-upper sideband group can be similarly formed by proper selection of filter pass bands.

3,501,595
DISCONNECTION OF ABSENTEE SERVICE IN TELEPHONE EXCHANGES
Hoeckley Oden, Korntal-Wurttemberg, and Herbert Siegel, Munchingen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 29, 1966, Ser. No. 538,265
Claims priority, application Germany, Apr. 15, 1965, St 23,698
Int. Cl. H04m *3/60*
U.S. Cl. 179—18 **4 Claims**



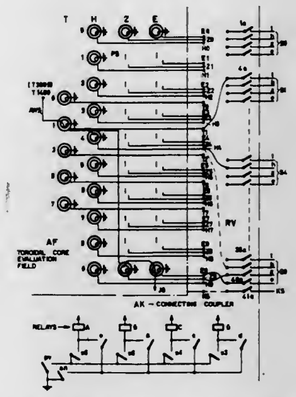
An arrangement is provided in a PBX by which individual extensions can be provided with internal absentee service. As a part of the arrangement, if a terminating call reaches an extension which is switched for such absentee service, the terminating call is automatically advanced to the operator's position.

3,501,596
CALL OFFERING CIRCUITS
Eric Bierman, Toronto, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed May 29, 1967, Ser. No. 641,824
Int. Cl. H04m *3/00, 3/60*
U.S. Cl. 179—18 **14 Claims**



A common control telephone system, employing an incoming trunk, a register connectible to the trunk, and a marker connectible to the register, for establishing a no-test connection to a busy called party and then for automatically establishing a normal connection to such party after termination of his existing call. Establishment of a no-test connection to the called party operates a trunk relay which signals the register to retain its digit information and remain attached to the trunk, after the marker releases. Release of the called party's existing call releases the trunk relay, signalling the register to recall a marker, which then establishes a normal connection to the called party.

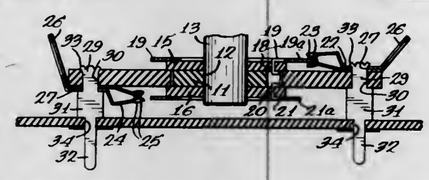
3,501,597
NUMBER IDENTIFICATION SYSTEM USING IDENTICALLY WIRED EVALUATION FIELDS
Gerhard Polensky, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Continuation of application Ser. No. 571,133, Aug. 8, 1966, which is a continuation of application Ser. No. 227,611, Oct. 1, 1962. This application Oct. 28, 1968, Ser. No. 771,690
Claims priority, application Germany, Sept. 29, 1961, S 76,045
Int. Cl. H04m *3/22*
U.S. Cl. 179—18 **2 Claims**



A circuit arrangement for determining the call numbers of subscriber stations which is formed of a plurality of toroidal core evaluation fields, identically wired with respect to one another, evaluation loops on the toroidal

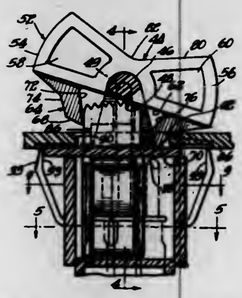
cores of the fields and connected to respective subscriber stations, and an evaluating circuit connected between the cores and a metering apparatus for converting the state of excitation of the cores into the call number associated with the respective excited cores. Respective ones of the evaluation loops are connected together to form evaluation circuits. The evaluation circuits which are connected in the same core combination in the different fields are associated with call numbers which differ from one another by the number of evaluation loops in each field. The re-evaluating circuit includes a plurality of switches which are actuated in response to the excitation of the cores associated with one evaluation circuit. These switches connect a signal corresponding to the excitation of the cores to the metering apparatus in such an order that the metering apparatus records the exact call number regardless of the identical wiring of each of the evaluation fields.

3,501,598
ELECTRIC SWITCH ASSEMBLY FOR PRINTED CIRCUIT INSTALLATIONS
Theodore M. Lis, Aurora, Ill., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Aug. 20, 1968, Ser. No. 753,918
Int. Cl. H01h *19/58;* **H05k** *7/04*
U.S. Cl. 200—11 **5 Claims**



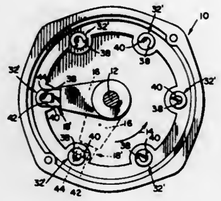
An electric switch having an insulated stator to which stator contact members are secured by means of a flat fastener projected through aligned openings in the stator and the stator contact member with which the fastener is associated, and each fastener has a terminal pin defined by an integral extension thereof whereby said fastener is operable to establish electrical connection between a connection point of a printed circuit panel and the stator contact member with which the fastener is associated.

3,501,599
ELECTRICAL SLIDE SWITCH WITH PREWIRED TERMINALS
Stanley V. Horecky, Oak Park, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Dec. 19, 1968, Ser. No. 785,294
Int. Cl. H01h *15/02*
U.S. Cl. 200—16 **21 Claims**



A slide switch comprising a switch housing with a cavity opening thereinto from one end and a plurality of apertures extending into the housing from the other end and communicating with the cavity. A wiper assembly including a pair of independent shorting bars or wipers is movably mounted in the cavity with a slide control lever extending outwardly therefrom. Prewired terminal pins are inserted into the apertures and extend into the cavity for engagement by the wipers. In one embodiment, an actuating member of a rocker assembly is pivotally mounted on the one end of the housing and includes a pair of projections which engage the slide control lever at opposite ends thereof. Depression of one end of the rocker actuating member causes the slide control lever to be moved in a corresponding direction to change the contacting position of the wipers with respect to the plurality of pin terminals; thus, breaking and making electrical connections between certain ones of the pin terminals.

3,501,600
IGNITION DISTRIBUTOR
James E. Saulmon, 305 E. Main St., Wabash, Ind. 46992
Filed Feb. 19, 1968, Ser. No. 706,537
Int. Cl. H01h *19/12*
U.S. Cl. 200—19 **8 Claims**

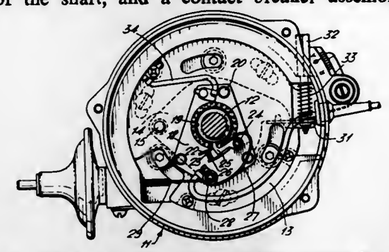


An improved distributor comprising a drive shaft, a plurality of contact elements peripherally spaced about the shaft, each contact element being adapted to be connected to a conventional spark plug, a rotor mounted on the shaft for rotation therewith and current carrying means mounted on the radially outer portion of the rotor and arranged to move past and transmit current to each contact element. In one embodiment of the invention, each contact element is formed to define at least two peripherally spaced contact areas past which the current carrying means moves so that two separate surges of current are transmitted to each spark plug for each revolution of the rotor. In another embodiment, the current carrying means comprises at least two peripherally spaced contact points arranged to move past each contact element so that at least two separate surges of current are transmitted to each spark plug during each revolution of the rotor. And, in still another embodiment, each contact element is formed to define a plurality of peripherally spaced contact areas and the current carrying means is formed to define a plurality of peripherally spaced contact points, each contact point being arranged to move past each contact area so that a plurality of separate current surges is transmitted to each spark plug during each revolution of the rotor.

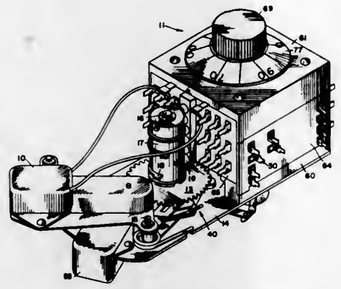
3,501,601
IGNITION DISTRIBUTORS
William Harold Cooksey, Walsall, England, assignor to Joseph Lucas (Industries) Limited
Filed Feb. 26, 1968, Ser. No. 708,353
Claims priority, application Great Britain, Mar. 6, 1967, 10,421/67
Int. Cl. H01h *19/62*
U.S. Cl. 200—30 **3 Claims**

An ignition distributor for use in a road vehicle includes a casing having a cam shaft mounted for rotation therein.

A first plate is fixed within the casing and a sleeve surrounds, and is spaced from the camshaft. Second and third plates are engaged with the sleeve so that the second and third plates are parallel with the first plate, and the third plate is angularly movable with respect to the second plate about the axis of the sleeve. Means are provided interconnecting the first and second plates for relative angular movement about an axis offset from the axis of the shaft, and a contact breaker assembly including a fixed contact and a movable contact is carried by the third plate. The arrangement is such that angular movement of the second plate with respect to the first plate acts through the sleeve to move the third plate in a direction to move the contact breaker assembly towards or away from the camshaft so as to adjust the contact gap. Moreover, angular movement of the third plate with respect to the second plate moves the contact breaker assembly angularly with respect to the camshaft to adjust the ignition timing of the distributor.



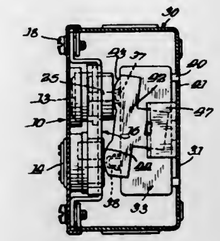
3,501,602
SEQUENTIAL TIMER
Gianni A. Dotto, Dayton, Ohio, and Wallace Leon Linn, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Original application June 29, 1964, Ser. No. 378,659, now Patent No. 3,271,541, dated Sept. 6, 1966. Divided and this application Apr. 4, 1966, Ser. No. 539,756
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **19 Claims**



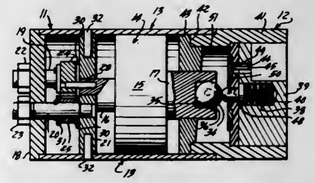
A timer including a mounting bracket to provide supporting structure, an electrical driving means, a subinterval means, an escapement means, a plurality of sequentially cam operated switches, a rotatable time selector indicator means and a rapid advance means.

3,501,603
CONTACT BLOCK ASSEMBLY WITH INTERLOCK SECURED BY MEANS OF A SINGLE SCREW
Dale F. Willcox, Aurora, Ill., assignor to Furnas Electric Company, Batavia, Ill., a corporation of Delaware
Filed July 5, 1968, Ser. No. 742,797
Int. Cl. H01h *9/26*
U.S. Cl. 200—50 **3 Claims**

The push button station assembly of this invention employs a pair of push buttons which actuate the respective plungers of the duplex switch device operatively associated with the push buttons. A pivotally mounted interlocking member is provided for preventing simultaneous actuation of the push buttons so that the operator cannot activate both electric circuits at the same time. A single securing screw secures the duplex switch to a supporting frame and assists in mounting the interlocking member.



3,501,604
APOGEE SWITCH
Sydney R. Crockett, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 27, 1968, Ser. No. 779,330
Int. Cl. H01h *35/02;* **G01w** *1/00*
U.S. Cl. 200—61.45 **10 Claims**

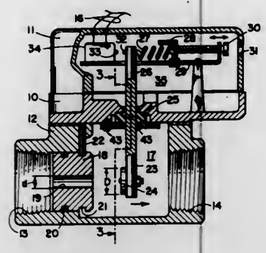


A switch responsive to conditions which occur when a missile reaches apogee. It includes a cylinder provided with a movable weight having a cage at one end in which a conductive sphere is locked prior to launch. Some time after launch a decrease in acceleration unlocks the cage. At apogee the sphere leaves its cage and bridges two contacts to close an electric circuit.

3,501,605
FLOW RESPONSIVE SWITCH MEANS
Harold D. Hutchinson and William C. Gregge, both of 903 Colorado Ave., Santa Monica, Calif. 90404
Filed June 26, 1968, Ser. No. 740,162
Int. Cl. H01h *35/40*
U.S. Cl. 200—81.9 **6 Claims**

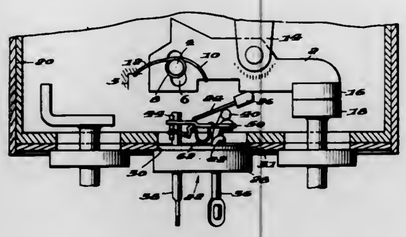
A switch housing including an enclosure is provided for insertion in a fluid line such that if the fluid flow through the enclosure drops below or rises above a predetermined flow rate, the switch in the housing will be actuated. This actuation is accomplished by an arm passing from the interior to the exterior of the enclosure through a bore in a wall portion of the enclosure which arm will transfer motion imparted to the inner portion of the arm by fluid flow to the outer portion of the arm by a rocking movement. The outer portion of the arm upon being rocked as a result of a change in fluid flow rate actuates the switch. The portion of the arm passing through the bore in the wall is surrounded by an annular resilient material to provide a fluid tight seal and yet permit the rocking movement. Further, a rigid transverse

pin passes through the resilient material and arm portion in a direction at right angles to the axis of the bore and the direction of fluid flow, the ends of the pin extending beyond the resilient material to engage opposite interior wall portions of the bore in such a manner as to be



blocked against translatory movement in a direction towards the exterior of the enclosure. The pin thus defines a pivot axis for the rocking movement and also prevents the resilient sealing material from being blown out when the fluid pressure in the enclosure exceeds the exterior pressure.

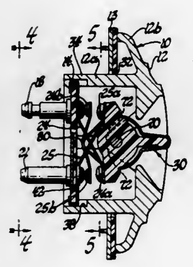
3,501,606
AUXILIARY SPRING SWITCH
George S. Harper, Cambridge, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland
Filed Dec. 16, 1965, Ser. No. 514,295
Int. Cl. H01h *9/38, 33/12*
U.S. Cl. 200—146 **3 Claims**



Disclosed is a snap action spring switch for use as an auxiliary switch in a circuit breaker. The switch comprises a lever and crossing link both pivoted to a plate secured to one switch terminal. The switch lever is actuated from the contact lever of the circuit breaker and the link carries a contact movable between two stationary contacts. A U-shaped spring acts between the lever and link to cause snap action of the movable contact.

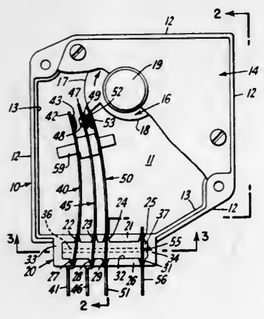
3,501,607
TWO-CONTACT LEAF SPRING WITH FULCRUM PORTION IN A DOUBLE-POLE, DOUBLE-THROW SWITCH
Akira Tanaka, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,739
Int. Cl. H01h *21/24, 1/18*
U.S. Cl. 200—153 **4 Claims**

In a preferred form, this disclosure relates to a double pole, double throw electric switch which is particularly useful for controlling energization and the direction of rotation of a permanent magnet motor. The switch comprises a switch housing having a base at one end, a plurality of spaced stationary contacts carried by the base, an actuator supported by the housing for movement in opposite directions from a center position and a pair of leaf springs. The leaf springs are each fixed to a stationary contact connected to one end of the motor windings and are self-biased toward a normal position in which they biasingly hold the actuator in its center position and in which they each engage a stationary ground contact to normally provide a con-



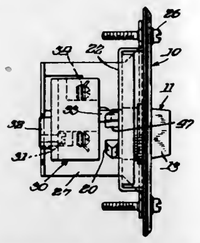
ductive path between the motor windings and ground. The actuator when moved in either direction from its center position causes one of the leaf springs to be deflected to disengage its associated ground contact and to engage an associated stationary contact connected to a power source to provide for current flow through the motor winding in a direction to produce the desired direction of rotation of the motor, the leaf springs including a fulcrum portion which engages the base when they are deflected to cause the adjacent portions to pivot thereabout and break the ground contact prior to engaging the contact connected to the power source.

3,501,608
SWITCH CONTACT ARM MOUNTING MEANS
Roger D. Rulseh and Claude V. Koch, Two Rivers, Wis., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed June 4, 1968, Ser. No. 734,357
Int. Cl. H01h *9/02*
U.S. Cl. 200—166 **10 Claims**



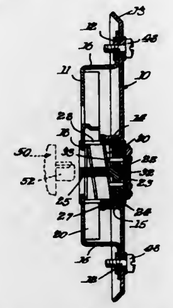
A through wall construction for an electrical device comprising a dielectric support means and one or more conductive elements extending through said means each being positioned, supported and retained thereby.

3,501,609
SELECTOR SWITCH
Dale F. Willcox, Aurora, and Irving W. Krieger, Sr., St. Charles, Ill., assignors to Furnas Electric Company, Batavia, Ill., a corporation of Delaware
Filed Aug. 29, 1968, Ser. No. 756,168
Int. Cl. H01h *3/08*
U.S. Cl. 200—172 **8 Claims**



In order to increase the utility of push button control stations the arrangement provides a selector switch which may be set by the operator for a two position indexing operation or for a three position indexing operation. The selector switch essentially comprises a guide plate in the form of an annulus having notches formed therein and an indexing plate also in the form of an annulus and having notches therein for coaction with the notches in the guide plate to effect the desired indexing operation.

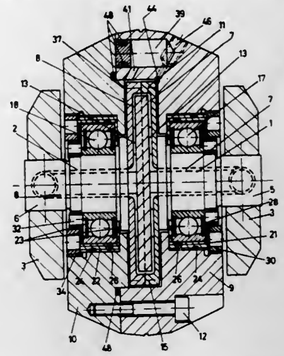
3,501,610
SUPPORTING FRAME STRUCTURE FOR PUSHBUTTON STATION ASSEMBLIES
Dale F. Willcox, Aurora, Ill., assignor to Furnas Electric Company, Batavia, Ill., a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,288
Int. Cl. H01h *3/12*
U.S. Cl. 200—172 **6 Claims**



The pushbutton stations can be assembled from specially designed stock components and a number of different assemblies can be made to fulfill different requirements. Accordingly the cover plate and bracket combination may accommodate a pilot light lens or a spring backed pushbutton, and the supporting frame structure of the cover plate and bracket combination may support a pilot light or an electric switch of the single or duplex contact type.

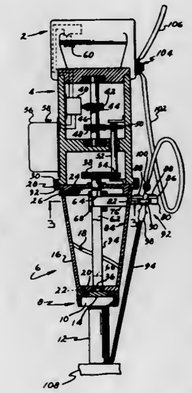
3,501,611
ELECTRODE ROLL FOR WELDING MACHINES
Paul Opprecht, Im hintern Bernold, Bergdietikon, Aargau, Switzerland
Filed May 15, 1968, Ser. No. 729,223
Claims priority, application Switzerland, May 23, 1967, 7,235/67; May 6, 1968, 6,712/68
Int. Cl. B23k *11/06*
U.S. Cl. 219—84 **15 Claims**

An electrode roll for welding machines in which an outer roll member partly surrounding an inner roll member is mounted on the latter turnably about the axis thereof and in which the inner surface of the outer roll member is spaced from the outer surface of the inner roll member so as to define between the surfaces



an annular gap. The annular gap is sealed and filled with an electrically conductive liquid, for instance mercury, so that electrical currents supplied to the stationarily mounted inner roll member will be transmitted to the outer roll member.

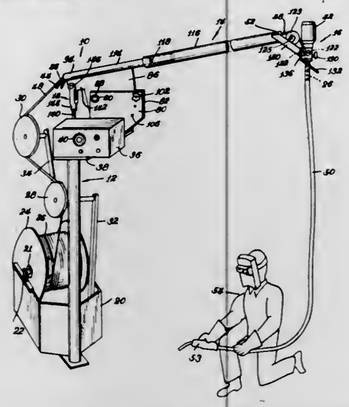
3,501,612
STUD WELDING DEVICE AND METHOD WITH ORBITAL WELD HEAD
Albert P. Denis, Castleton, N.Y., assignor to New Brunswick Scientific Co., Inc., New Brunswick, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 725,730, May 1, 1968. This application Apr. 29, 1969, Ser. No. 820,148
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **6 Claims**



A method of arc welding a stud member to a workpiece by providing a conically arranged helix path above and about the axis of the base of the stud; holding a welding rod for movement along said path with the rod tip in arc welding relation to said base and workpiece; and advancing the rod along said path while maintaining the tip in said arc welding relation as the rod moves around said base. The portable tool has means at its outer end to hold the stud against a workpiece, an inverted frusto-conical housing with a helix slot through which a rod holder projects and positions a rod in angled relation to hold the tip end disposed in arc welding relation to the stud base, and a drive shaft connection in the housing to rotate the holder and move the rod in the helix slot

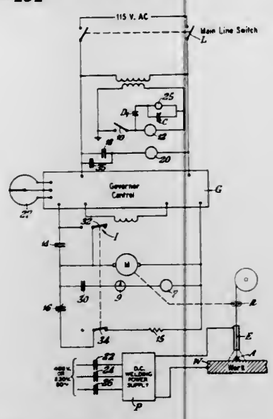
for progressive rotary, downward, and inward movement to weld the stud in place.

3,501,613
SUPPORT APPARATUS
Elliott C. Cornell, Jr., Brecksville, Ohio, assignor to The Auto Arc-Weld Mfg. Co., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 18, 1967, Ser. No. 631,762
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 **4 Claims**



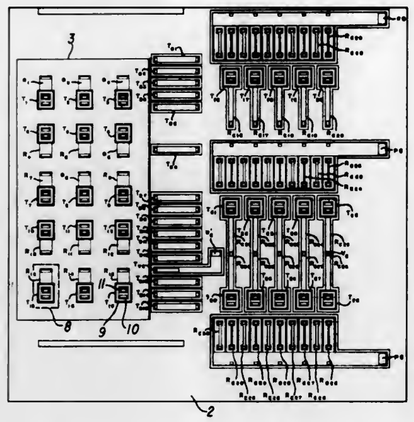
An apparatus for supporting welding cables and the like including a base support, an arm member pivotally supported on the base for supporting the cables, a counterbalance mechanism for establishing equal and opposite offsetting moments on the arm member, and wire feed means supported on the arm member for pulling wire along the arm.

3,501,614
ANTI-STICK CONTROL CIRCUIT
John P. C. Allen, Fanwood, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed June 27, 1967, Ser. No. 649,247
Int. Cl. B23k *9/10*
U.S. Cl. 219—131 **9 Claims**



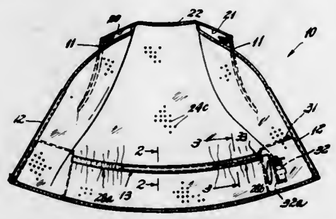
In an electric arc welding system having a motor of the constant field D.C. type for continuously feeding a consumable electrode into the arc comprising control circuitry including sensing means acting directly in response to the voltage developed across the motor for extinguishing the arc after a predetermined period of time has elapsed subsequent to completion of the weld.

3,501,615
INTEGRATED HEATER ELEMENT ARRAY AND DRIVE MATRIX
Jerry D. Merryman and Edward M. Ruggiero, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex.
Filed Sept. 29, 1967, Ser. No. 671,821
Int. Cl. H05b *1/00, 3/00*
U.S. Cl. 219—201 **4 Claims**



Thermal display including an air isolated integrated semiconductor circuit forming a semiconductor heater element array joined by a metallic connecting pattern which extends out over the heating elements to interconnect selected ones of them and a PN junction isolated integrated semiconductor drive matrix for the heating element array positioned in the same plane as the heating element array. The PN junction isolated integrated semiconductor drive matrix and the semiconductor heating element array are concurrently formed in the same semiconductor substrate and the heating element array is air isolated to provide a high dgeree of electrical and thermal isolation for the heating element array while both are located in the same plane on a larger support. The thermally sensitive material on which a dynamic display is formed or on which a permanent display is printed is in direct contact with the monocrystalline semiconductor material of the heating element array and can be passed over the heating element array and the drive matrix.

3,501,616
ELECTRICALLY HEATED BODY GARMENT
Stanley Arron, 3323 Old Town Road, Bridgeport, Conn. 06606
Filed Mar. 6, 1968, Ser. No. 711,012
Int. Cl. H05b *3/36, 3/54*
U.S. Cl. 219—211 **4 Claims**



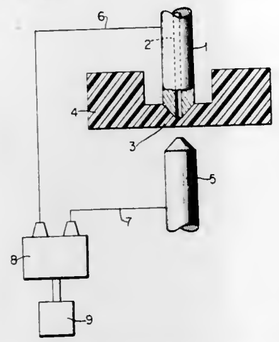
A garment for covering the upper torso of a wearer and having an electrical heat generating resistance strip positioned only at the small of the wearer's back with the heating element being resiliently urged into contact with said wearer's back and in which the garment is formed of three layers, an outer woven shell, a lining of reflective plastic film and an inner lining of batting disposed therebetween.

3,501,617
APPARATUS FOR SUBLIMATING AND EVAPORATING METALS
Helmut Vedder, Downers Grove, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Nov. 24, 1967, Ser. No. 685,674
Int. Cl. F22b *1/28*
U.S. Cl. 219—271 **15 Claims**



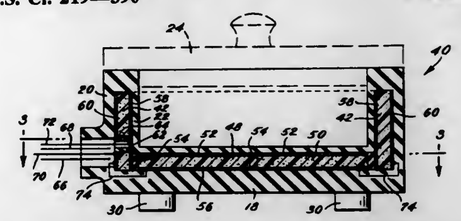
Disclosed is a device, hereinafter referred to as a filament, for subliming or evaporating materials. The filament comprises a carrier rod or carrier tubing having a series of nonconsumable elements intermittent consumable elements made of materials to be sublimed or evaporated by electrical power either directly energized as an electrical resistor or indirectly by resistant heating, induction or electron bombardment.

3,501,618
ELECTRIC ARC PROCESS FOR PRODUCING APERTURES IN PLASTIC ELEMENTS
Helmut Spranger, Oederan, Hans-Joachim Eisentraut, Dresden, Alexander Frenzel, Breitenau, and Erhard Schreiber, Freital, Germany, assignors to "Polyplaste" H. Rolf Spranger KG., a corporation of Germany
Filed Jan. 25, 1968, Ser. No. 700,624
Int. Cl. H05b *7/18*
U.S. Cl. 219—384 **4 Claims**



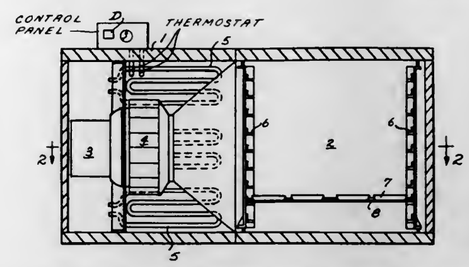
A novel process for forming small, unobstructed apertures in plastic elements such as small plastic nozzles and for cutting plastic elements by an electric arc. Facilitating and controlling the electric arc by providing the spark gap with a hot gas stream.

3,501,619
SELF-REGULATING THERMAL APPARATUS
Francis P. Bulting, Plainville, and Joseph W. Waseleski, Jr., Mansfield, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application July 15, 1965, Ser. No. 472,108, now Patent No. 3,413,442, dated Nov. 26, 1968. Divided and this application May 28, 1968, Ser. No. 732,717
Int. Cl. F27b *5/14;* **F27d** *11/00*
U.S. Cl. 219—390 **1 Claim**



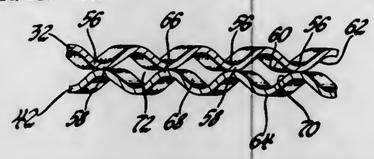
Electrical heating devices and methods of making same employing polymeric materials which display a steep-sloped positive temperature-resistivity coefficient (PTC) which serves to self-regulate the amount of heat produced. The materials are ductile and can be molded, extruded, machined and formed in complex shapes including the following embodiments: A utensil formed of a PTC heater element defining a cavity therein; the heating element encapsulated in an electrical insulating jacket preferably formed of material having the same thermal coefficient of expansion and also serving as thermal insulation where desired. Another embodiment employs a plurality of PTC elements having different anomaly temperatures to provide a choice in temperature selection. Yet another embodiment shows either open or closed ended passages formed in a PTC heating element.

3,501,620
APPARATUS FOR THAWING DEEP-FROZEN FOOD
Paul Sauer, Burg, Dillkreis, Germany, assignor to Burger Eisenwerke Aktiengesellschaft, Burg, Dillkreis, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 482,385, Aug. 25, 1965. This application Dec. 23, 1968, Ser. No. 786,334
Claims priority, application Germany, Sept. 5, 1964, B 78,425
Int. Cl. A21b *1/00, 1/22;* **F27d** *11/00*
U.S. Cl. 219—400 **9 Claims**



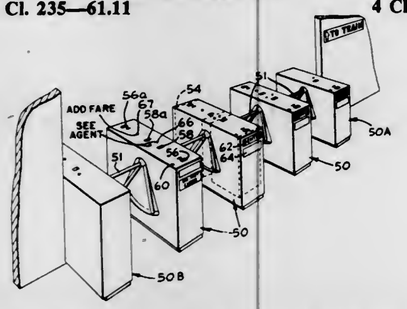
Apparatus for thawing deep-frozen food is provided with control means for controlling a sequence of thawing temperatures for the food. A first temperature control means sets a relatively high temperature for heated air or gas that is circulated past the frozen food in a chamber, and a second temperature control means sets a lower temperature for the heated air or gas during a final phase of thawing of the food. The first temperature is within the range of 200–250° C., and the second temperature is within the range of 100–150° C.

3,501,621
DUAL RIBBONED SURFACE HEATING ELEMENT
Nelson J. Pansing, Clayton, and Robert T. Wones, Piqua, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,940
Int. Cl. H05b *3/68*
U.S. Cl. 219—443 **2 Claims**



In preferred form, a surface heating unit having a solid top and bottom reflector plate. A high wattage density resistance element is located between the solid top and the reflector plate to transfer radiant energy directly to utensils on the top cover. The element includes two elongated ribbons supported edgewise between the reflector plate and solid top. At least one of the ribbons is corrugated along its length at an inclination to the longitudinal axis of the ribbons to increase radiant surface. Also, the corrugations include means for spacing the adjacent ribbons and inwardly facing surface that are directed at an inclination into openings between the spaced ribbons to directly radiate through the openings against supported utensils.

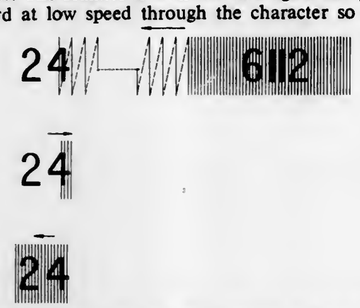
3,501,622
TICKET CREDIT ACCOUNTING SYSTEM
Stanley M. Weir, Palo Alto, Adrian P. Elich, San Jose, Richard Heaney, Campbell, Chester Szymanski, San Jose, and Frank S. Chytil, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 540,385
Int. Cl. G06k *7/00*
U.S. Cl. 235—61.11 **4 Claims**



An automatic fare system wherein the ticket has magnetic code information and human readable coordinate grid information as to ticket value. The entrance and exit gate turnstiles and a central computer automatically account for the fare of each ride. A ticket handling mechanism and a digitally stepped coordinate grid printer are also described.

3,501,623
HIGH SPEED SKIP AND SEARCH
Thomas S. Robinson, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 9, 1967, Ser. No. 608,131
Int. Cl. G08k *7/01*
U.S. Cl. 235—61.11 **9 Claims**

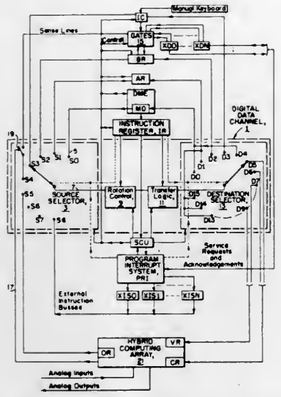
A scanner of documents is controlled to operate at high speed when scanning blanks and at low speed when scanning symbols such as characters. The video signal from the scanner is monitored to detect blank spaces and characters. Blank character spaces are counted and when a given count is reached a flip-flop is set which triggers the scanner to operate at high speed. Another flip-flop in series with the first flip-flop is set when a first character is detected after a blank area. This set condition of the second flip-flop causes the scanner to change to low speed and to reverse its direction. Having been reversed in direction, the scanner backs away from the character for a given distance. The scanner is then reversed again and proceeds forward at low speed through the character so that the



character may be read. A delay device and a single-shot responsive to the second flip-flop provide the second reversing signal which causes the scanner to move forward again. Therefore, the delay device defines a given time interval which corresponds to the scanner moving the given distance backwards before being reversed again to the forward direction. In addition, the above apparatus is shown operating in combination with line centering apparatus described in a copending commonly assigned patent application Ser. No. 509,512, filed Nov. 24, 1965, by Davey L. Malaby for Scan Centering Device.

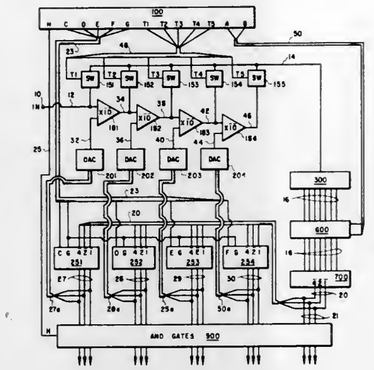
3,501,624
HYBRID COMPUTER INCORPORATING A STORED PROGRAM DIGITAL COMPUTER OF THE SOURCE-DESTINATION TYPE
Joseph D. Grandine 2nd, Wellesley, Mass., assignor to Adage, Inc., Boston, Mass., a corporation of Massachusetts
Filed Oct. 22, 1965, Ser. No. 500,740
Int. Cl. G06j *1/00*
U.S. Cl. 235—150.5 **17 Claims**

The hybrid computer disclosed herein employs a hybrid computing array having digital input and output registers as well as analog input and output terminals. The system



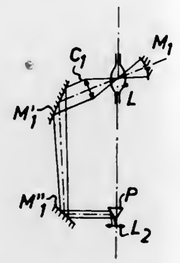
further incorporates a stored program digital computer of the source-destination type which includes the input and output registers of the hybrid array among its source and destination registers, respectively.

3,501,625
ANALOG TO DIGITAL CONVERTER
George G. Gorbatenko, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 23, 1965, Ser. No. 474,254
Int. Cl. G06f *5/00*; **H03k** *13/02*
U.S. Cl. 235—154 **11 Claims**



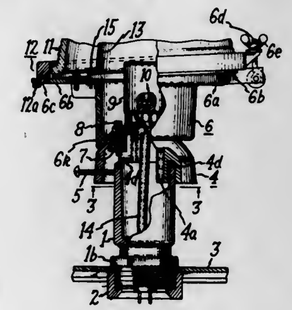
A converter is provided having a single comparator for producing an output signal in response to an analog signal which exceeds one or more predetermined thresholds. Each of a plurality of subtracting amplifiers has a first input connected to the output of its preceding amplifier and a second input connected to a digital to analog converter. Each amplifier has a constant gain equal to the radix of the number system employed. A control circuit sequentially connects the first input of each amplifier to the comparator and the second input of each amplifier to its corresponding digital-analog converter. A coding circuit is set by the comparator to provide a parallel digital output representative of the analog input.

3,501,626
RADIATION CONDENSER DEVICES
Christian Louis Georges Benard, Paris, France, assignor to Anciens Etablissements Barbier, Benard & Turenne, Paris, France, a joint-stock company of France
Filed Mar. 16, 1967, Ser. No. 623,695
Claims priority, application France, Apr. 6, 1966, 56,746; Nov. 16, 1966, 83,877
Int. Cl. F21v *9/02*
U.S. Cl. 240—1.1 **3 Claims**



A radiation condenser device for simulating the luminance of the sun has a light source about which a plurality of elementary condenser systems are symmetrically placed. Each elementary condenser system has a spherical mirror centered on the light source and a condenser lens on the opposite side of the light source and in line with the light source and spherical reflector. Light passes from the spherical mirror and light source through the condenser lens onto a first plane mirror which directs the light onto a second plane mirror. The second plane mirror directs the light onto a multi-sided prism which combines the light from the plurality of elementary condenser systems into a single beam. Down stream of the prism additional lenses are provided along with parabolic reflectors for securing a uniform beam.

3,501,627
AIRPORT LIGHTING FIXTURE
Herbert J. Macemon, Bay City, Mich., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,459
Int. Cl. B64f *1/20*; **F21v** *21/00*
U.S. Cl. 240—1.2 **10 Claims**



An airport runway light has a lampholder housing with a lens support flange which cooperates with lenses for high and low intensity lighting. The housing is mountable on a support member and is adjustable to move on the support member to the desired degree of inclination. Coaxial projections in the support member cooperate with support pipes of various diameters which are used for the different intensity lighting units.

3,501,628
ILLUMINATED HAIR ORNAMENT
William A. Madden, 21 Nantucket, San Francisco, Calif. 94112
Filed July 28, 1967, Ser. No. 656,759
Int. Cl. F21v *33/00*
U.S. Cl. 240—6.4 **1 Claim**

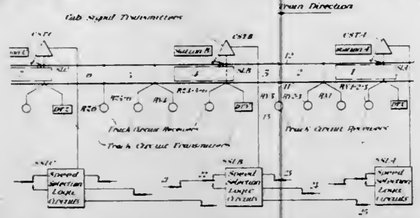


A battery housing is attached to a comb adapted to be concealed in a woman's coiffure. Wires are connected to the battery housing for energizing tiny lights at the free ends of the wires. The wires are concealed in the coiffure so that only the tiny lamps are visible. A switch is mounted to the housing for manually causing illumination of the tiny lights.

3,501,629
SPEED CONTROL SYSTEM FOR RAILROAD TRAINS

Donald W. Aiken, Suffolk, N.Y., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1968, Ser. No. 787,787
Int. Cl. B61l *23/16, 3/20*
U.S. Cl. 246—34 **8 Claims**

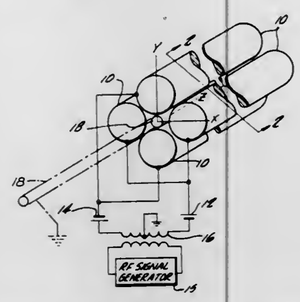


A cab signal/speed control system for railroads with signaling blocks established from station to station. A plurality of speed limits are predetermined in accordance with known braking characteristics of the trains, each speed limit being preselected in accordance with the maximum stopping distance required by a train having such braking characteristics when traveling at that allowed speed. Train positions are detected by audio frequency track circuits which divide each signaling block into short detector track sections. Speed selection logic circuitry selects one of the predetermined speed limit signals for transmission to an approaching train, in accordance with the detected positions of the preceding and approaching trains, such that the approaching train may be stopped from that speed within the minimum indicated spacing between trains.

3,501,630
MASS FILTER WITH REMOVABLE AUXILIARY ELECTRODE

Wilson M. Brubaker, Arcadia, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 568,259, July 27, 1966. This application Mar. 17, 1969, Ser. No. 807,875
Int. Cl. B01d *59/44;* **H01j** *39/34*
U.S. Cl. 250—41.9 **10 Claims**

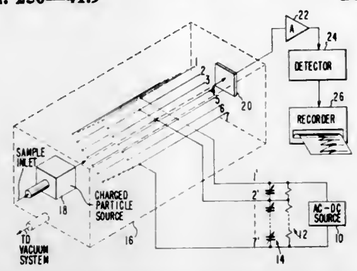


A multipole mass filter having a removable auxiliary electrode disposed along the axis of the analyzer for creating a plurality of analyzing regions within the analyzer. The electrode has several possible forms, including rod, planar and intersecting planar configuration. The filter is energized in the same manner as a conventional quadrupole analyzer. Insertion and removal of the auxiliary electrode permits conversion of the same basic filter configuration from a quadrupole to a dualpole or a monopole depending upon the physical configuration of the auxiliary electrode selected.

3,501,631
CHARGED PARTICLE TRAPPING MEANS EMPLOYING A VOLTAGE DIVIDER AND A PLURALITY OF SIMPLE CONDUCTORS TO PRODUCE COMPLEX TRAPPING FIELDS

James T. Arnold, Los Gatos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Oct. 21, 1968, Ser. No. 769,024
Int. Cl. H01j *39/36*
U.S. Cl. 250—41.9 **14 Claims**

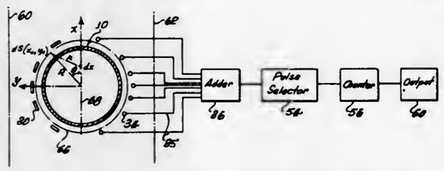


Charged particle trapping structures for use in mass spectrometers and the like wherein the ideal potential distribution forming the trapping means is generated using simple geometrical structures in place of the highly precise electrode surfaces previously used for the same purpose. An array of electrodes is arranged and energized in a predetermined manner so as to produce the desired trapping fields.

3,501,632
PENETRATING RADIATION SYSTEM FOR DETECTING THE AMOUNT OF LIQUID IN A TANK

Rimvydas A. Kaminskas, Monrovia, and Donald E. Wright, San Gabriel, Calif.; may be granted to National Aeronautics and Space Administration under provisions of 42 U.S.C. 2457(d)

Filed June 4, 1964, Ser. No. 372,648
Int. Cl. G01n *21/26*
U.S. Cl. 250—43.5 **19 Claims**



1. A system for indicating the quantity of matter within a region of definite form substantially independently of tre distribution of such matter therein, said system comprising in combination

means for projecting into the region through the surface portion thereof on one side of a section surface penetrating radiation capable of traversing the region when filled with said matter with attenuation not exceeding about 90 percent and having within the region approximately the same distribution of intensity and direction that would result from a uniformly distributed and infinitely extending source of such radiation lying in a plane adjacent the region on one side thereof and generally parallel to said section surface,

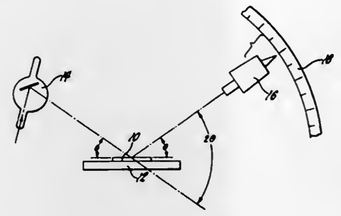
means for detecting penetrating radiation leaving the region through the surface portion thereof on the other side of said section surface, said detecting means being arranged to have substantially the same relative response to such radiation as an infinitely extending uniform detector lying in a plane adjacent the region on the other side thereof and parallel to the first said plane,

and means responsive to said detecting means for indicating the quantity of matter within the region, such indication being approximately uniform for all possible distributions within the region of such quantity of matter, including essentially random distributions.

3,501,633
X-RAY DIFFRACTION METHOD OF DETERMINING CARBON CONTENT IN STEEL

Robert A. Hesse, Sandusky, Ohio, and Saverio Minervini, Fort Lee, N.J., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 15, 1968, Ser. No. 713,372
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **5 Claims**

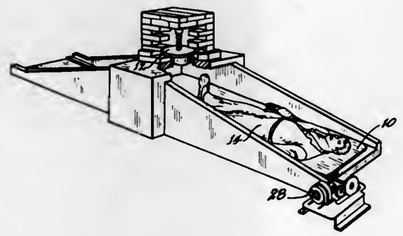


X-ray diffraction analysis may be employed to rapidly determine the carbon content at a surface of a hardened steel specimen without destroying the part. In a preferred embodiment of the invention, a specimen is subjected to monochromatic X-radiation such that reflected radiation is obtained from certain preferred families of lattice planes selected from those planes whose spacing is a function of the carbon content of the steel. Since the angle of reflection of the radiation is a function of the spacing of the irradiated planes, the value of the angle at which reflected radiation of peak intensity is detected may be correlated with the carbon content of the specimen.

3,501,634
WHOLE-BODY-RADIATION COUNTER WITH MEANS FOR CONTROLLING THE SCANNING VELOCITY

William C. Roesch, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 6, 1968, Ser. No. 710,813
Int. Cl. G01t *1/20*
U.S. Cl. 250—52 **5 Claims**

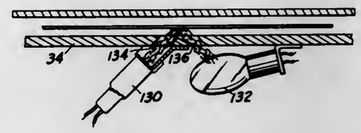


A whole-body-radiation counter includes radiation-counting means and specimen-support means movable with respect to the counting means to provide a whole-body-radiation scan of radionuclides within a specimen mounted on the support means. A resistor-capacitor combination generates a signal decaying in amplitude proportional to $e^{-\lambda t}$, where e is the natural logarithm, λ=.693 divided by the half-life of the radionuclide being measured and t=time measured from a predetermined reference time. A stepping motor responsive to this signal drives the specimen-support means.

3,501,635
PORTABLE THERMOGRAPHIC COPYING MACHINE WITH PHOTOELECTRIC MEANS TO ACTIVATE THE HEAT LAMP THEREOF UPON INSERTION OF A SPECIMEN INTO THE MACHINE

Thomas R. Sprunger and Stefan J. Krakowiak, Atlanta, Ga., assignors to Scripto, Inc., Atlanta, Ga., a corporation of Georgia

Filed May 1, 1968, Ser. No. 725,774
Int. Cl. B41m *7/00*
U.S. Cl. 250—65 **10 Claims**



The present invention relates to a portable thermographic copying machine that is adapted to permit the passage of specimens and copy material of varying thicknesses and incorporates an arrangement for feeding the specimen and copy material through the machine in substantially a linear path for attaining clear reproductions by preventing relative displacement therebetween.

Also, the present copying machine embodies a reflector arrangement that utilizes a C-shaped frame member and a gold plated reflector plate disposed therein so as to have an air void formed therebetween for attaining uniform distribution of heat across the reflector plate from a heat source disposed within the reflector.

Furthermore, there is provided a light sensing means for activating the heat source upon introduction of the specimen and copy material within the machine and a cooling system to effect unidirectional flow of air through the machine for cooling that is operated by the same means used for driving the unit.

3,501,636
ENHANCING RADIATION DAMAGE FOR NUCLEAR PARTICLE DETECTION

Harold Frank Sherwood, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 9, 1966, Ser. No. 593,044
Int. Cl. G01t *1/16;* **H01j** *39/00*
U.S. Cl. 250—83 **24 Claims**



Method and apparatus are disclosed for monitoring and recording damage created by nuclear particles in a radiation-damageable overcoat material placed adjacent a sensitive layer of material which is capable of a color-change when contacted by certain modifiers. The overcoat is subjected to nuclear particle bombardment and then etched to

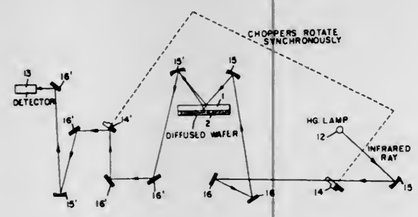
enlarge paths created by those particles passing through the overcoat. A modifier is then applied to the overcoated material, passing through the etched paths of the overcoat to effect a color-change in the exposed areas of the sensitive material, thereby providing a high-contrast image of the radiation-damage caused by the particles.

3,501,637

METHOD OF MEASURING THE THICKNESS OF THE HIGH RESISTIVITY LAYER OF SEMICONDUCTOR WAFERS

Toshio Abe, Yokohama-shi, Yoshio Nishi, Kamakura-shi, and Kenichi Goto, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Jan. 26, 1968, Ser. No. 700,760
Claims priority, application Japan, Jan. 31, 1967, 42/5,771
Int. Cl. G01t *1/16*
U.S. Cl. 250—83 **7 Claims**



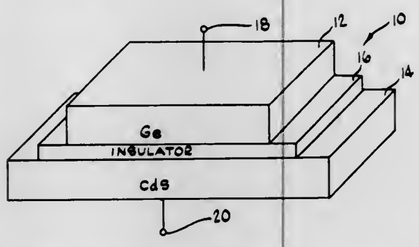
The thickness of the high resistivity layer of a semiconductor wafer consisting of a high resistivity layer and a low resistivity diffused layer contiguous thereto is measured by a method comprising the steps of measuring the thickness of the high resistivity layer by the infrared ray interference method to determine a measured value *Tobs*, measuring the total thickness of the semiconductor wafer to obtain a measured value T, establishing an experimental formula $Th=f$ (Tobs, T) which represents the thickness *Th* of the high resistivity layer as a function of the measured values *Tobs* and T, and determining the thickness *Th* of the high resistivity layer of the semiconductor wafer according to the experimental formula.

3,501,638

INFRARED CONVERTER USING TUNNELING EFFECT

Walter Dale Compton, Urbana, and William Paul Bleha, Jr., Villa Park, Ill., assignors to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Filed Oct. 25, 1967, Ser. No. 678,102
Int. Cl. G01t *1/16;* **H01j** *39/02*
U.S. Cl. 250—83.3 **9 Claims**



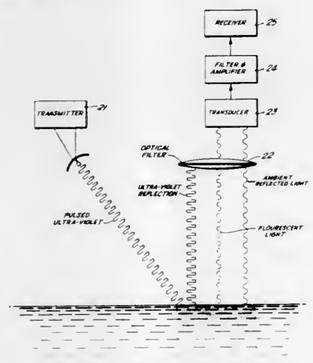
A solid state infrared converter having a narrow band gap semiconductor absorbing infrared radiation directed thereto, and a wide band gap semiconductor emitting the desired radiation. Minority carriers produced in the narrow band gap semiconductor traverse through a thin insulating film between the two semiconductors by what is believed to be a tunneling process to recombine with majority carriers to generate electromagnetic radiation characteristic of the energy of the wide band gap semiconductor.

3,501,639

SUBMARINE DETECTION

John N. Monroe, La Crescenta, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio

Continuation-in-part of application Ser. No. 724,473, Mar. 27, 1958. This application Feb. 13, 1959, Ser. No. 793,016
Int. Cl. G01t *1/16;* **G01d** *7/00*
U.S. Cl. 250—83.3 **1 Claim**



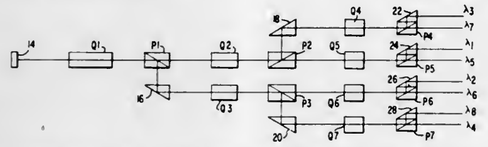
1. A method of detecting submarine objects comprising the steps of causing the fluorescent parts and contents of the surface water of the area being searched for submarine objects to fluoresce and thereby emit visible light having an intensity which varies at a first predetermined frequency in the presence of ambient light, detecting visible light emanating from said surface water, transducing the detected light into an electrical signal having an amplitude proportional to the instantaneous intensity of the detected light, electrically filtering the electrical signal to eliminate all components of said electrical signal which are below a second predetermined frequency, said second predetermined frequency being below said first predetermined frequency, and indicating the resultant signal on a receiver to show the presence of a submarine object.

3,501,640

OPTICAL COMMUNICATION SYSTEM

Thomas J. Harris, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,166
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **11 Claims**



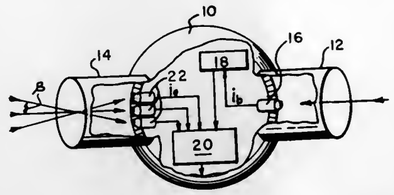
Apparatus for transferring large blocks of binary information from one location in a computer to another location at high speeds involving the parallel transmission of the information by a single light beam.

3,501,641

PASSIVE OPTICAL WIND AND TURBULENCE DETECTION SYSTEM

Fritz R. Krause, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 1, 1967, Ser. No. 679,862
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 **4 Claims**



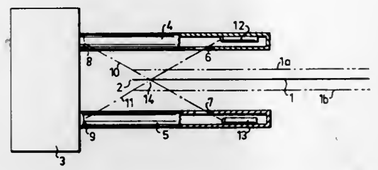
A rapidly moving remote detection system for monitoring atmospheric conditions over vast and sparsely instrumented areas from a single airplane or satellite. This is accomplished by passive optical detection, i.e., detecting modulations in light from extended natural radiation backgrounds such as scattered sunlight and thermal emission. The apparatus consists of two telescopes having divergent fields of view. A single detector is mounted in one telescope and a fan array of detectors is mounted in the other telescope. A time delay is introduced into the signal of the single detector, the first to view an area, and this generates an effect equivalent to having one undelayed telescope trailing in the same orbit. The lines of sight of the delayed and undelayed telescope detectors intersect at a chosen altitude. Light modulations occurring near this intersection exert a common influence on the detector signals. An on board computer performs a digital correlation analysis of the detector signals in a way known in random vibration analysis and communications to extract local information from the detector signals as to atmospheric conditions at the intersection. The computer provides an entire altitude profile of atmospheric conditions by repeating the data reduction with different time delays.

3,501,642

DEVICE FOR MONITORING THE PLANAR DISPLACEMENT OF A CONTINUOUS WEB

Curt Åke Gustav Wastesson, Rotebro, Sweden, assignor to AB Bonnierforetagen, Stockholm, Sweden

Filed June 23, 1966, Ser. No. 559,905
Claims priority, application Sweden, July 6, 1965, 8,896/65
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **6 Claims**



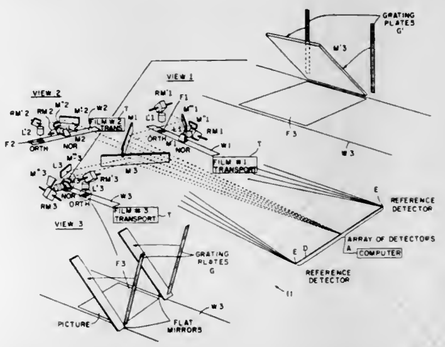
The invention provides a device for sensing the planar displacement of a continuous web comprising in combination at least two beam-emitting means and a corresponding number of beam-receiving means located adjacent one edge of said web, each of said beam-receiving means being positioned to receive signals along a straight line path from the corresponding beam-emitting means, each of said beam-emitting means and the corresponding beam-receiving means being positioned on opposite sides of the main plane of said web and also on opposite sides of a plane coinciding with one edge of said web and being at right angles to said main plane, whereby a predetermined upward movement of said web causes only one of said beam-receiving means to receive a beam, and a predetermined downward movement of said web causes the other of said beam-receiving means to receive a beam. The device may be adjusted to also sense the continuity of the web by positioning the corresponding beam-emitting means and beam-receiving means so that the straight line connecting each of said corresponding emitting and receiving means passes through the web when it is in its usual planar position.

3,501,643

FLYING IMAGE DIGITIZER UTILIZING MEANS FOR SWEEPING THE FOCUSED IMAGE PAST A LINEAR ARRAY OF PHOTODETECTORS AND GRATING MEANS FOR LOCATING RECORDED DATA IN SPACE AND TIME

Minato Kawaguti, Upton, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 10, 1968, Ser. No. 766,416
Int. Cl. G01n *21/30;* **H01j** *39/12*
U.S. Cl. 250—219 **10 Claims**



Flying image digitizer for bubble chamber film having light and dark portions corresponding to nuclear particle tracks for the rapid, electronic recording, interpretation and selection of bubble chamber pictures of said nuclear particle tracks, having a plurality of fixed photo-sensors, rotating mirrors for rotating enlarged images of stationary bubble chamber film frames past the photo-sensors for detecting the light and dark portions of the frames, and precision grating means for locating in time and space the light and dark portions detected whereby electronic pulses are produced corresponding to the detected portions for recording in a computer that may be programmed for selection and interpretation of predetermined nuclear particle events.

3,501,644

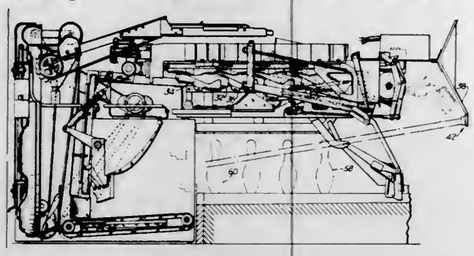
RADIATION SENSITIVE BOWLING PIN SENSOR

Robert M. Berler, Westport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed May 31, 1967, Ser. No. 642,500
Int. Cl. G06m *7/04;* **H01j** *39/12*
U.S. Cl. 250—222 **11 Claims**

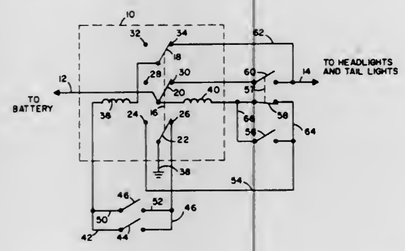
Apparatus for determining the pressure or absence of standing bowling pins on a bowling alley which comprises reflecting means oriented to receive radiant energy

reflected from a bowling pin standing on the alley, drive means coupled to rotatably drive said reflecting means to scan a bowling alley for standing pins, light sensitive means, light collecting means oriented to focus the radi-



ant energy received from said reflecting means to said light sensitive means, and circuit means connected to said light sensitive means and operable to be activated by the reception of radiant energy at the light sensitive means by a standing pin.

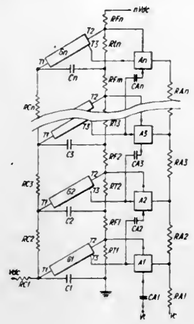
3,501,645
APPARATUS FOR SWITCHING OFF A VEHICLE'S HEADLIGHTS AND TAILLIGHTS FROM OUTSIDE THE VEHICLE
Roger S. Lindroth, 5498 Pennsylvania Ave., La Mesa, Calif. 92041
Filed Aug. 2, 1968, Ser. No. 749,654
Int. Cl. B60g *1/04*
U.S. Cl. 307—10 **7 Claims**



An apparatus for switching off a vehicle's headlights and taillights from outside the vehicle, employing the switch in the passenger compartment for switching on the vehicle's headlight and taillights, and a relay circuit operable to extinguish the headlights and taillights circuit upon being energized by a second switch that is operated from outside the vehicle, such as through operation of a door latch button actuated switch, or by actuating a switch positioned under the grill of the vehicle and which relay circuit holds the headlights and taillights in the off condition until the passenger compartment switch is returned to the off position or until the ignition switch is turned on.

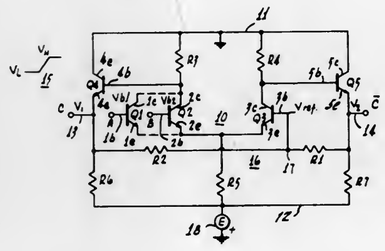
3,501,646
MULTIPLE-STAGE HIGH-VOLTAGE IMPULSE GENERATORS HAVING A SERIES ARRAY OF SPARK GAPS IN EACH STAGE
Malcolm John Bishop, Oldham, England, assignor to Ferranti Limited, Hollinwood, England, a company of the United Kingdom of Great Britain and Northern Ireland
Filed Oct. 3, 1967, Ser. No. 672,483
Claims priority, application Great Britain, Oct. 8, 1966, 45,064/66
Int. Cl. H02m *3/06, 3/18*
U.S. Cl. 307—110 **5 Claims**

Each stage of a multiple-stage high voltage impulse generator includes a capacitor, a charging resistor, and a series array of spark gaps connected across a potential divider network. Means are also provided for triggering



each of the spark gap arrays so that all the capacitors of the impulse generator are discharged in series with one another.

3,501,647
EMITTER COUPLED LOGIC BIASING CIRCUIT
Joseph John Di Giacomo, King of Prussia, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 578,002
Int. Cl. H03k *19/40*
U.S. Cl. 307—214 **7 Claims**

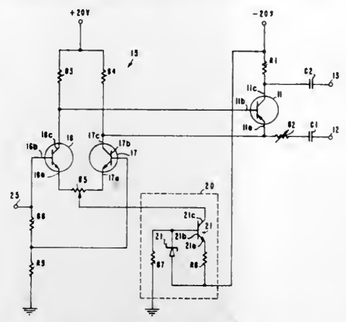


An emitter coupled logic circuit comprising a differential amplifier having first and second input points and first and second differential output points. The first and second differential output points are respectively coupled by emitter followers to first and second output signal points. Two resistors of unequal value are connected in series between the first and second signal output points and their junction point is connected to the second input point. In response to binary signal applied to the first input electrode, the amplitude of the voltage at the second input point varies by an amount determined by the ratio of the two resistors.

3,501,648
SWITCHING CIRCUIT
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Carl P. Chapman, La Crescenta, Calif., and Donald R. Rupnik, Sunland, Calif.
Filed June 29, 1966, Ser. No. 562,933
Int. Cl. H03k *17/00*
U.S. Cl. 307—254 **4 Claims**

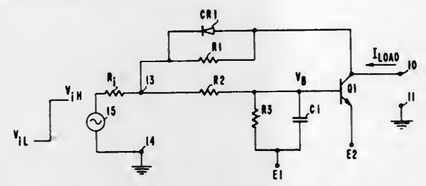
A solid state switching circuit is disclosed in which AC signals at an input terminal are switched to an output terminal through a gating transistor, as a function of the transistor's state of conduction. The state of conduction

is controlled by controlling the DC potential difference between its emitter and base and by means of a pair of control transistors, forming part of a DC control circuit.



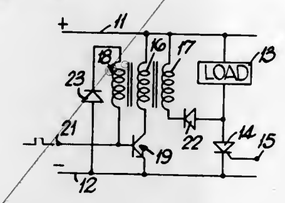
The relative states of conduction of the control transistors which produce the potential difference are controlled as a function of the amplitude of a DC control signal.

3,501,649
DC-COUPLED NONINVERTING ONE-SHOT
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Francis M. Pan, Los Angeles, Calif.
Filed May 17, 1967, Ser. No. 640,459
Int. Cl. H03k *3/26*
U.S. Cl. 307—273 **6 Claims**



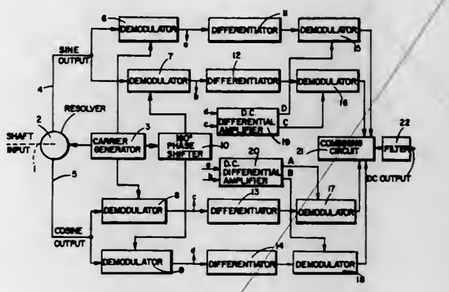
A one-shot providing an output at the collector of a transistor which is of the same polarity as the controlling input level. The duration of the outpulse is a function of the time required for a capacitor to charge up to a level at which the transistor is driven to conduction. The capacitor is not connected between the transistor and the input source, so that the one-shot may be thought of as DC coupled.

3,501,650
SWITCHING CIRCUITS
Lancelot Phoenix, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed May 1, 1967, Ser. No. 635,049
Claims priority, application Great Britain, May 27, 1966, 23,927/66
Int. Cl. H03k *17/00*
U.S. Cl. 307—284 **7 Claims**



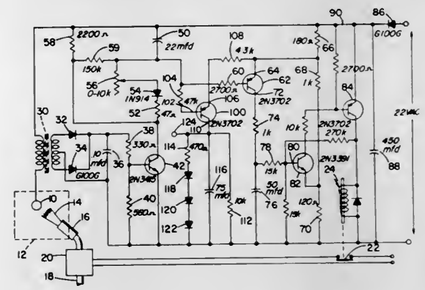
In a switching circuit in which a thyristor or similar device controls current flow through a load, the thyristor is switched off by a transformer having a winding connected across the load in series with the diode, means being provided whereby flux changes in the transformer core act through the winding and diode to turn the device off.

3,501,651
ELECTRONIC RATE GENERATOR
George B. Cottrell, Cerritos, Calif., assignor to North American Rockwell Corporation
Filed Mar. 24, 1967, Ser. No. 625,817
Int. Cl. H03k *1/16*
U.S. Cl. 307—295 **10 Claims**



A circuit for deriving a D.C. signal whose magnitude is directly proportional to the angular rate of a rotating shaft. The rotating shaft drives a resolver which is operative to provide sine and cosine modulations of a carrier signal in accordance with the angular position of the shaft. The sine and cosine signals are differentiated to derive a pair of signals proportional to angular rate. A logic circuit is provided to select those portions of the differential sine wave that are generated when the position signal is of the proper sign. A second logic circuit is provided to perform a similar operation on the cosine signal. The sine and cosine signals are combined to provide a D.C. signal proportional to angular rate.

3,501,652
CIRCUIT ARRANGEMENT EMPLOYING DOUBLE INTEGRATION FOR USE IN COMBUSTION SUPERVISION SYSTEMS
Elihu Craig Thomson, Wellesley, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 28, 1967, Ser. No. 634,580
Int. Cl. H03k *1/00*
U.S. Cl. 307—310 **11 Claims**



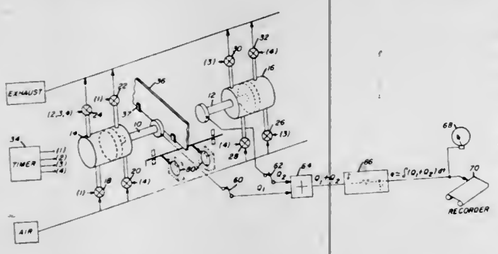
A combustion supervision system employs a UV avalanche discharge flame sensor whose output pulses are applied via a pulse stretcher network including a transistor to a first integrating network employing an averaging

capacitor an adjustable resistor for controlling a switching transistor. The output of the switching transistor is applied to a second integrating network employing a capacitor and a resistor that in turn controls the flame relay. The first integrating network turns its switching transistor on when the charge on the averaging capacitor reaches a first threshold level set as a function of detected radiation in the combustion chamber and the resulting output energizes the flame relay via the second transistor switch. The charge on the averaging capacitor is limited through the first transistor switch to a threshold level close to the first threshold level. When the charge on the averaging capacitor drops below the first threshold level, the second integrating network becomes operative to de-energize the flame relay after a predetermined time interval independent of reduced charge on the averaging capacitor due, for example, to background radiation in the combustion chamber.

3,501,653
IMPACT ELECTRIFICATION APPARATUS

William J. Bailey, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 15, 1969, Ser. No. 791,404
Int. Cl. H02n *1/00*
U.S. Cl. 310—2 **10 Claims**

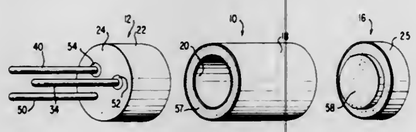


Apparatus for electrifying non-conductive material is disclosed in the environment of a test setup. Electrification is effected by means of crisp impacts of such material, accompanied by the free recoil of such material and/or the impacting means relative to each other.

3,501,654
MINIATURE PRESSURE TRANSDUCER

Richard S. Humphries, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 12, 1967, Ser. No. 645,149
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.9 **5 Claims**

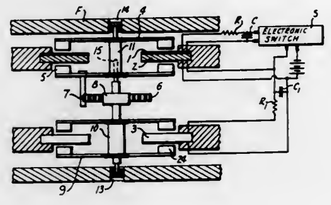


A highly sensitive miniature pressure transducer capable of detecting pressure variations as small as 10^{-3} pounds per square inch at a frequency of 100 kc. per second. A metal oxide semiconductor field effect transistor amplifier is encapsulated with a hollow cylindrical piezoelectric crystal which is completely shielded by a conductive coating. The high output impedance of the crystal is matched by the high input impedance of the field effect transistor whose output may be further amplified by a conventional junction transistor amplifier.

3,501,655
SPEED CONTROLLED CLOCK MOTOR

Roland Siefert, Bad Durrheim, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a corporation of Germany

Filed Feb. 5, 1968, Ser. No. 702,902
Claims priority, application Germany, Feb. 3, 1967, K 61,341
Int. Cl. H02k *33/18*
U.S. Cl. 310—38 **9 Claims**

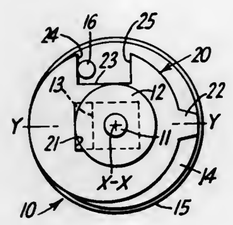


This is an electrically powered clock motor having two rotor halves turnable relative to each other and connected together by a resilient member so that there can be relative timed oscillation of the two halves during rotation of the two. Drive and disturbing or oscillation producing impulses are applied to the rotor as a whole by stator coils so located relative to the rotor halves that the two kinds of impulses are spacially out of phase, the impulse being triggered by a pickup inductor coil.

3,501,656
ROTOR CONSTRUCTION WITH DIRECTIONAL CONTROL FOR A SYNCHRONOUS A.C. MOTOR

Edwin R. Morley, Two Rivers, Wis., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 7, 1969, Ser. No. 789,513
Int. Cl. H02k *7/118*
U.S. Cl. 310—41 **8 Claims**

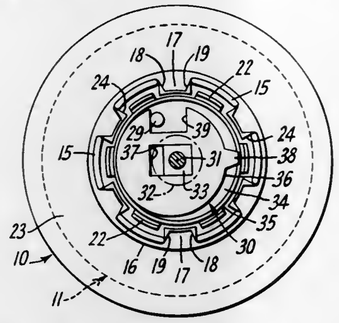


A directionally controlled rotor assembly for a synchronous A.C. motor, comprising a rotatable shaft member, a rotor member mounted on the shaft member and rotatable relative thereto, and a lost motion device coupling the rotor member to the shaft member after limited relative rotation and including a control member positively moved in a plane transverse to the axis of rotation between a retracted and a blocking extended position in response to relative rotation of the rotor member and positively held thereat to limit the driving of the shaft to one desired direction.

3,501,657
SYNCHRONOUS A.C. MOTOR WITH A PERMANENT MAGNET ROTOR AND DIRECTIONAL CONTROL THEREFOR

Robert A. Heinzen, Manitowoc, and Edwin R. Morley, Two Rivers, Wis., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 8, 1969, Ser. No. 789,742
Int. Cl. H02k *7/118*
U.S. Cl. 310—41 **7 Claims**

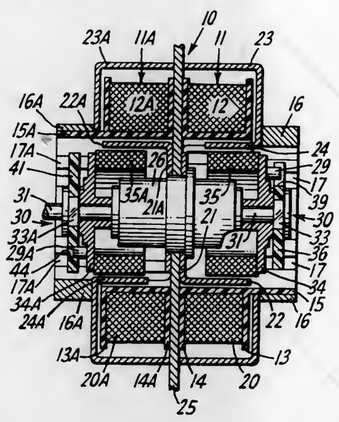


A synchronous A.C. motor including an A.C. coil with a tubular crown at one end with a formed inner surface providing an annular series of spaced inwardly extending abutments, a rotatable shaft, a permanent magnet rotor freely rotatable on the shaft within the coil, lost motion means coupling the rotor member to rotatably drive the shaft after limited rotation relative thereto and having a control member encircled by the crown portion and positively moved in a plane transverse to the shaft to a retracted position and to an extended position engaging one of the abutments in response to relative rotation of the rotor member and the direction thereof and positively held thereat thereby limiting the rotation to one desired direction.

3,501,658
BIDIRECTIONAL MOTOR WITH DIRECTIONAL CONTROL MEANS FOR STARTING IN EITHER DIRECTION

Edwin R. Morley, Two Rivers, Wis., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Apr. 17, 1969, Ser. No. 817,031
Int. Cl. H02k *7/118, 21/00*
U.S. Cl. 310—41 **7 Claims**

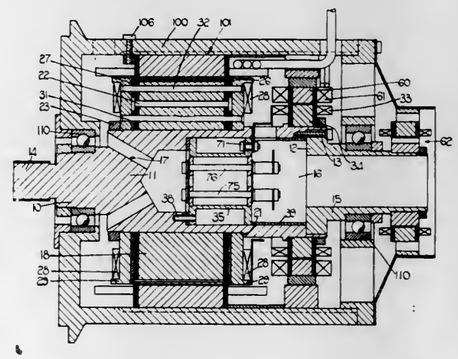


A bidirectional synchronous A.C. motor with directional control having a pair of synchronous motor or drive portions each with directional control means permitting rotation of the rotor assembly thereof in the same direction. The motor portions are enclosed back to back in a housing on opposite sides of a common housing wall portion supporting a bearing means for a common shaft driven by each rotor assembly in a direction opposite to the direction when driven by the other.

3,501,659
RECTIFYING ARRANGEMENT FOR DYNAMO ELECTRIC MACHINES

Dennis Alexander Pannell, Ickenham, England, assignor to Rotax Limited, London, England, a British company

Filed Feb. 8, 1968, Ser. No. 704,014
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **4 Claims**

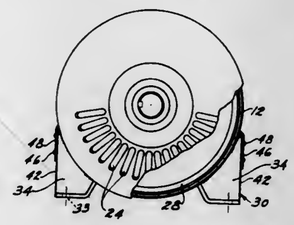


A dynamo electric machine comprising a rotor structure which is mounted upon a shaft which is formed in two parts defining a chamber in which is mounted a heat sink which supports a plurality of diode rectifiers, the rectifiers being mounted on angularly spaced ledges which extend in a plain substantially normal to a radius from the axis of rotation of the shaft, the diodes having a base portion upon which is mounted a dice of semiconductor material the diodes being mounted on ledges so that the centrifugal force acting on the dice will urge the latter against the base portion of the diode.

3,501,660
STEEL MOTOR FOOT CONSTRUCTION

Lawrance W. Wightman and Nick Tichy, St. Louis County, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

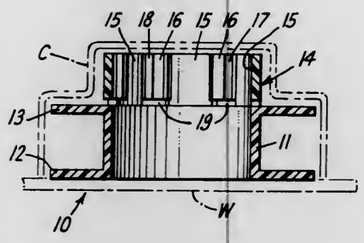
Filed Jan. 3, 1969, Ser. No. 788,818
Int. Cl. H02k *5/00*
U.S. Cl. 310—91 **6 Claims**



Feet for supporting and anchoring an electric motor stamped and formed from steel sheet stock and welded

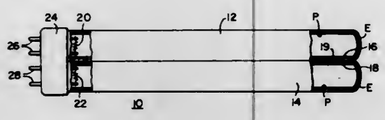
to a cylindrical steel stator shell, the feet being arranged to provide shielding for air vents in the lower half of the stator shell.

3,501,661
SPOOL CONSTRUCTION FOR THE STATOR COIL OF A SYNCHRONOUS A.C. MOTOR
Robert A. Heinzen, Manitowoc, and Loyd H. Haslee, Plymouth, Wis., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 7, 1969, Ser. No. 789,518
Int. Cl. H02k *3/00, 7/118*
U.S. Cl. 310—194 **8 Claims**



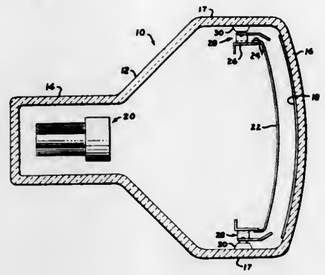
Directionally controlled synchronous motor toroidal stator coil spool construction provided with a cylindrical crown extending axially beyond one of the annular flanges with the inner surface thereof provided with spaced lugs or abutments to be engaged by a rotor directional control member. Recesses are provided for the salient poles of one or more claw tooth stator pole pieces. In a modification a cuplike cover is provided on the crown.

3,501,662
PLANAR OR THREE-DIMENSIONAL FLUORESCENT LAMP AND METHOD OF MANUFACTURE
Vernon L. Plagge, East Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1967, Ser. No. 694,553
Int. Cl. H01j *9/26, 61/35*
U.S. Cl. 313—109 **10 Claims**



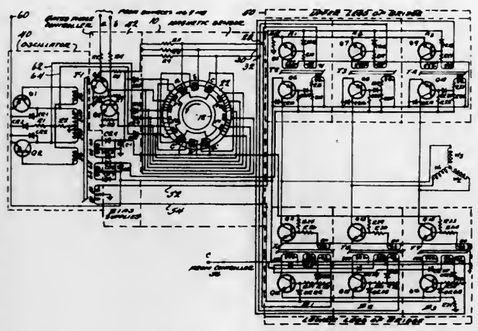
Two or more sections of glass tubing of the type used for conventional fluorescent lamp envelopes are joined together in side-by-side relationship and the tube ends are sealed off to form a planar or three-dimensional envelope. Aligned apertures in the adjacent side wall portions of the tubes form passageways which connect the tubes and provide a single sinuous discharge channel. In the case of a bisectional planar lamp, one end of each of the tubes is sealed off by forming a domed end wall, the apertures are made in the side walls, and the tubes are then coated with phosphor and joined together in planar configuration by fused solder glass which surrounds the aligned apertures and seals off the formed passageways from the atmosphere. Electrode-stem assemblies are then sealed into the open ends of the tubes, the envelope is evacuated and charged with mercury and a suitable fill gas through a tubulation on one of the stems, and the tubulation is tipped off. Three or more tube sections are coupled together in non-planar array to form a three-dimensional envelope and lamp.

3,501,663
PARALLAX BARRIER PROTECTING MEANS FOR CATHODE RAY TUBES HAVING PATTERNED SCREENS
Glen A. Burdick, Waterloo, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 751,970
Int. Cl. H01j *1/92, 29/46, 19/50*
U.S. Cl. 313—85 **4 Claims**



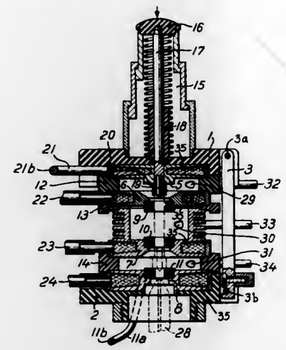
Support springs for color cathode ray tube parallax barriers have an outwardly projecting portion formed thereon to extend from the apertured free end of the spring to prevent damaging contact of the barrier with an inwardly extending supporting stud formed on the interior wall of the cathode ray tube face plate during the insertion of the barrier within the face plate.

3,501,664
ANGULAR POSITION AND VELOCITY SENSING APPARATUS
Leo J. Veillette, Lanham, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 28, 1967, Ser. No. 656,953
Int. Cl. H02p *7/28*
U.S. Cl. 318—138 **18 Claims**



A system is disclosed for regulating brushless DC motors of the type where an internal stator field is rotated in space 90° ahead of the rotor field. To maintain the correct spatial relation between the stator and rotor fields, the angular position of the rotor is continually sensed and the position indication is used to continually change the stator field orientation as the rotor rotates. The rate of rotation of the rotor is also determined to provide controlled-damping and rate-limiting of the motor.

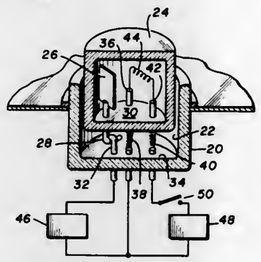
3,501,665
PLASMA TORCH
Klaus Rötger, Giessen, and Karl Heinz Haas, Wetzlar, Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Jan. 18, 1968, Ser. No. 698,769
Claims priority, application Germany, Jan. 20, 1967, L 55,535
Int. Cl. H01j *1/88*
U.S. Cl. 313—146 **6 Claims**



In a plasma torch for spectrum analysis examination processes a bar-shaped cathode and an annular anode are disposed in a casing which is subdivided by two disc-shaped apertured arc stabilizers into three chambers. At least the two outer chambers are provided with tangential inlet apertures for a protective gas, while the central chamber has a viewing aperture in front of which a spectrum analysis examination device is arranged.

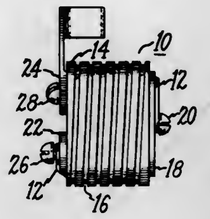
The disc-shaped arc stabilizers are disclosed to be made of graphite and to be mounted in discs having cavities through which a cooling medium flows. The protective gas may, for example, be argon.

3,501,666
IONIZATION LATCH INDICATOR AND HOUSING RECEPTACLE THEREFOR
James E. Bigham, Greenwood, S.C., and Harold E. Crider, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 623,050
Int. Cl. H01j *17/34*
U.S. Cl. 313—210 **1 Claim**



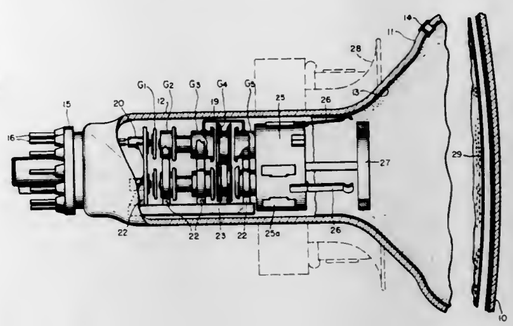
The invention concerns a circuit element comprising a transparent or translucent chamber filled with an ionizable gas, such as neon. Electrodes are disposed within the chamber, and include starting electrodes for initiating ionization, and holding electrodes for continuing ionization. The chamber is resiliently mounted with external contacts so that conduction may be stopped by pressing on the chamber.

3,501,667
SURGE PROTECTOR FOR SECONDARY VOLTAGE CIRCUITS
Roland J. Melanson, Rochester, N.H., assignor to General Electric Company, a corporation of New York
Filed Nov. 25, 1968, Ser. No. 778,688
Int. Cl. H01j *17/00, 21/00*
U.S. Cl. 313—325 **10 Claims**



A surge protector for secondary voltage A.C. circuits including an electrical resistance in series with an air gap. A length of resistance wire has one end connected to a terminal of the surge protector, the terminal being mounted on one end of a winding form. This terminal is connected to a secondary voltage line to be protected from voltage surges. The resistance wire is wound as a coil on the winding form. At the other end of the coil form, an air gap is provided between a pair of metallic electrodes. The other end of the resistance wire is connected to one electrode while the other electrode is normally connected to ground. In a second form of the invention a deionization chamber is placed around the air gap.

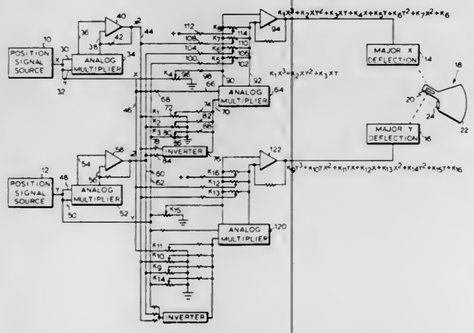
3,501,668
LOW FOCUS VOLTAGE ELECTRON GUN FOR CATHODE-RAY TUBES
Nicholas P. Pappadis, Chicago, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,163
Int. Cl. H01j *29/46*
U.S. Cl. 315—16 **9 Claims**



A shadow mask type of three gun tri-color cathode-ray tube has a low focus voltage gun featuring a unipotential lens formed by the electrodes G_3, G_4 and G_5. Of these electrodes, G_3 and G_5 are maintained at ultor potential while G_4 is maintained at a very low potential. In order to avoid convergence drift and spot distortion the terminal portions of electrodes G_3 and G_5 which face electrode G_4 are turned back on themselves and the ends of electrode G_4 have projecting portions which are curved

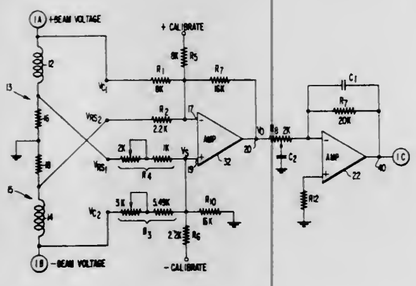
so that there is a uniform spacing between the facing ends of these three electrodes. The spacing of the electrodes from one another and the dimensioning of the terminal portions are proportioned so that the G_3, G_4 and G_4, G_5 electrode spacings, as projected on the beam axis of the gun, is small compared with the height of the curved termination of electrode G_4 as projected on a plane normal to the beam axis.

3,501,669
DEFLECTION SIGNAL CORRECTION SYSTEM
Martin C. Henderson, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,901
Int. Cl. H01j *29/70*
U.S. Cl. 315—18 **5 Claims**



A system for correcting for inaccuracies in the positioning of a cathode ray tube beam which inaccuracies may result from various factors including (1) curvature of the screen and (2) off-axis displacement of the electron gun. Unique analog multiplication means are disclosed for developing corrected deflection signals in response to position command signals in order to compensate for distortions which would otherwise be introduced due to the tube geometry.

3,501,670
YOKE DI/DT MONITORING CATHODE RAY TUBE PROTECTION
David L. Johnston, Michael M. Siverling, and Melvin G. Wilson, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 14, 1969, Ser. No. 791,035
Int. Cl. H01j *29/70*
U.S. Cl. 315—20 **8 Claims**

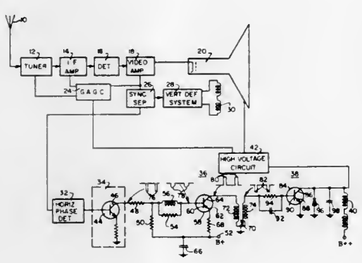


In a cathode ray tube beam deflection circuit means are provided for compensating for the voltage drop across the internal resistance of the coil sections in the deflection circuit. The deflection voltage across the deflection circuit and the voltage across the external resistor which is in series with each coil section are applied to the inputs of a differential amplifier. This has the effect of subtracting out the internal resistive voltage component of the deflection voltage. The output signal of the differential amplifier is thereby proportional only to beam velocity

$$\left(L\frac{di}{dt}\right)$$

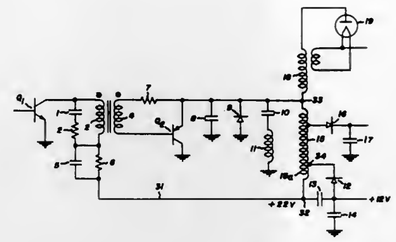
The magnitude of this signal is in effect compared to preset minimum positive and negative voltages representing minimum allowable beam velocity. The polarity of this signal represents the direction of beam travel and is compared to predetermined beam direction logic signals. If these comparisons indicate either that the beam is failing to travel at the minimum velocity or in the direction established by the logic signals, then a failure signal is generated, and this signal may be used to bias the cathode ray tube to blank the tube. An editing circuit consisting of logical elements functions to provide a time interval during which the beam is not blanked so as to permit the beam within this time interval to be at zero velocity such as when the beam reverses direction.

3,501,671
TELEVISION CIRCUIT
Mel E. Buechel, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 29, 1966, Ser. No. 575,796
Int. Cl. H01j *29/74*
U.S. Cl. 315—27 **6 Claims**



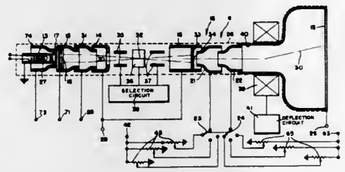
1. A pulse control circuit including the combination of: an oscillator circuit having output resistance means for developing a series of first pulses of a given duration, a pulse utilization device having input resistance means adapted to be switched between different conductive states, inductance means coupling said oscillator circuit to said pulse utilization device cooperating with said input and output resistance means to develop second pulses of a longer duration, a predetermined amplitude of said second pulses driving said pulse utilization device into one of said conductive states, said inductance means, said output resistance means and said input resistance means forming a time constant network, the value of said inductance means being selected so that in combination with said output resistance means and said input resistance means the rise time of each of said control pulses is not appreciably different than the rise time of each of said first pulses, at least until said second pulse reaches said predetermined amplitude, the value of said inductance means being further selected so that each of said second pulses remains above said predetermined amplitude for a time interval greater than the duration of each of said first pulses.

3,501,672
DRIVE FOR TELEVISION RECEIVER HORIZONTAL SWEEP CIRCUIT OUTPUT TRANSISTOR
Sabbas N. Xenakis, Portsmouth, Va., assignor to General Electric Company, a corporation of New York
Filed Oct. 25, 1968, Ser. No. 770,620
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **8 Claims**



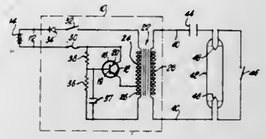
A television receiver horizontal sweep circuit is provided which has the horizontal deflection coils of a cathode ray picture tube coupled to and supplied from a high voltage transformer winding. The high voltage transformer winding is excited from a relatively low voltage battery through a horizontal output amplifier whose output is coupled through at least part of the high voltage transformer winding to the low voltage battery. A horizontal transistor buffer amplifier has its output coupled to and driving the horizontal output transistor amplifier and has a source of horizontal sweep frequency signals coupled to its base. An intermediate voltage rectifying and smoothing circuit is coupled across at least a portion of the high voltage transformer winding for deriving an intermediate value operating voltage, and means are provided for supplying the intermediate value operating voltage back to the horizontal buffer amplifier as an energizing potential to thereby provide an improved drive for the horizontal output amplifier.

3,501,673
VARIABLE MAGNIFICATION CATHODE RAY TUBE
Robert H. Compton, Saugus, Calif., assignor to Stromberg Datagraphix, Inc., San Diego, Calif., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 725,115
Int. Cl. H01j *29/56*
U.S. Cl. 315—31 **10 Claims**



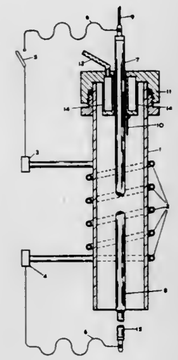
A display device is described comprising a shaped beam tube which includes a plurality of lens elements forming two electron lenses. The focusing effect of each lens is controllable in response to a variable electric signal to vary image size while maintaining image sharpness.

3,501,674
HIGH FREQUENCY PORTABLE POWER SUPPLY FOR A FLUORESCENT LAMP
Emmett L. Moore, New York, N.Y., assignor to Battery Lite Corporation, Long Island City, N.Y., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,265
Int. Cl. H05b *41/14*
U.S. Cl. 315—105 **1 Claim**



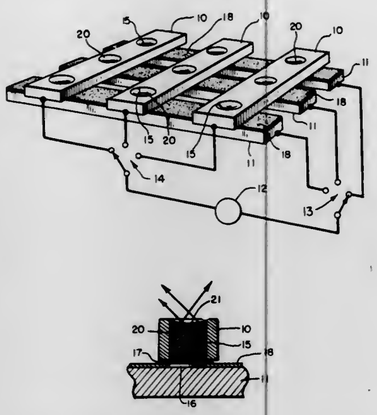
A solid state power supply circuit for a fluorescent lamp in which an oscillator is employed to convert a low level DC source voltage to a higher level AC operating voltage having a frequency selected to significantly increase the light output while also reducing the current required from the DC source.

3,501,675
INITIATION PROCESS
Denis Cleaver, Saltburn, and Peter Compton Macdonald, Brockworth, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed Sept. 12, 1967, Ser. No. 667,219
Claims priority, application Great Britain, Oct. 12, 1966, 45,619/66
Int. Cl. H05b *31/26*
U.S. Cl. 315—111 **19 Claims**



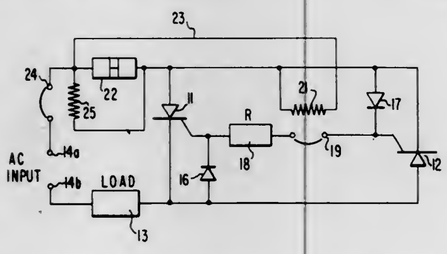
A method of initiating and maintaining a hot gaseous plasma by striking an arc between two electrodes in the gas stream to establish a plasma in the gas and subsequently removing the electrodes while maintaining a plasma by the passage of an oscillatory current around the walls of the tube through which the gas is flowing. The invention also includes apparatus for initiating and maintaining a plasma comprising a pair of electrodes positioned in a tube and moveable therefrom and inlet means for a gas and an electrically-conductive element surrounding a portion of the tube in the region of the plasma.

3,501,676
SOLID STATE MATRIX HAVING AN INJECTION LUMINESCENT DIODE AS THE LIGHT SOURCE
Robert Adler, Northfield, and Alan Sobel, Evanston, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,995
Int. Cl. H05b 37/00, 39/00
U.S. Cl. 315—169 7 Claims



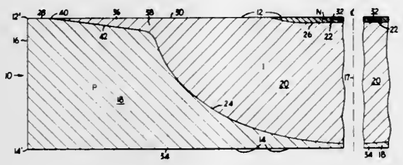
An image-display panel is composed of a matrix of electrically-conductive strips running in one direction across a plurailty of electrically-conductive ribbons. At each intersection between a ribbon and a strip, a light source, exemplified by an injection-luminescent diode, is disposed within an aperture in the strip. The light source terminals are electrically connected to the strip and to the ribbon respectively at the cross-point where the light source is situated. Each of the apertures is filled with an insert having an index of refraction between those of the light source and air and preferably presenting a curved surface to the air. The insert is formed by initially filling the aperture with a liquid material and then solidifying it to form the insert, and the meniscus of the liquid state material provides the preferred curved outer surface upon solidification. Preferably, the front surfaces of the strips and ribbons are blackened to improve image contrast.

3,501,677
CURRENT LIMITING STATIC ALTERNATING CURRENT CIRCUIT BREAKER
Ralph L. Hurtle, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed July 20, 1967, Ser. No. 654,905
Int. Cl. H02h 7/20, 5/04
U.S. Cl. 317—33 2 Claims



An arcless circuit breaker for alternating current, including a pair of parallel oppositely-directed controlled rectifiers with gate bias circuits for turning one rectifier on in each half-cycle of alternating current voltage; a pair of contacts in the gate circuits are operated in response to predetermined current conditions to open the gate circuits and thereby interrupt the current; the means for operating the contacts in one form includes a "change of state" current limiter acting to force current through a contact-operating solenoid.

3,501,678
TAPERED-SHELF SEMICONDUCTOR
Werner A. Schüler, Austin, Tex., assignor to Ortec, Oak Ridge, Tenn., a corporation of Tennessee
Filed June 28, 1967, Ser. No. 649,622
Int. Cl. H01l 15/00
U.S. Cl. 317—234 1 Claim



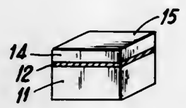
(1) A semiconductor in which the intrinsic or depletion region is formed with a tapered annular shelf.

(2) A method of forming the tapered shelf by diffusing dope from a dope source into the semiconductor nonuniformity to form a P-N junction prior to applying reverse bias to the junction.

(3) Apparatus for practicing the method in which a tube extending between the dope source and the semiconductor facilitates heavy deposition of dope on the semiconductor in a region near the mouth of the tube and progressively lighter deposition at locations radially removed from such region.

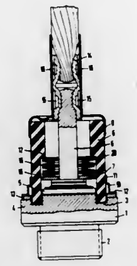
(4) A method of using the semiconductor to detect radiation.

3,501,679
P-N JUNCTION TYPE LIGHT-EMITTING SEMICONDUCTOR
Hiroo Yonezu and Akira Kawaji, Tokyo-to, Japan, assignors to Nippon Electric Company, Limited, Tokyo-to, Japan
Filed Feb. 26, 1968, Ser. No. 708,399
Claims priority, application Japan, Feb. 27, 1967, 42/12,769
Int. Cl. H01l 5/02, H01s 3/18
U.S. Cl. 317—234 3 Claims



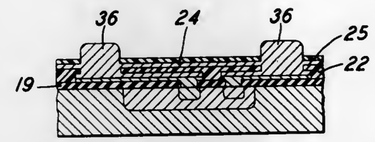
A p-n junction type semiconductor light-emitting element is disclosed, such as a p-n junction type semiconductor laser, comprising a crystal having p-p$^+$-n regions in which the thickness of the p$^+$ region from the p-n junction is not greater than the diffusion length of the carrier electron.

3,501,680
STRUCTURAL COMPONENT FOR HOUSING FOR SEMICONDUCTOR DEVICE
Heinz Martin and Herbert Vogt, Munich, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany
Continuation of application Ser. No. 553,407, May 27, 1966. This application Aug. 15, 1968, Ser. No. 755,020
Claims priority, application Germany, June 5, 1965, S 97,501
Int. Cl. H01l 3/00, 5/00, 9/00
U.S. Cl. 317—234 18 Claims



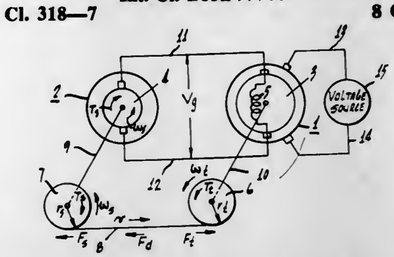
A structural member of electrically insulating material of a housing for a semiconductor device is positioned in an annular channel formed in a base member. A rod-like contact member passes into the housing. An electrical conductor has an end in proximity with the upper end of the contact member. The lower end of the contact member is positioned on the semiconductor device in the housing. A sleeve covers the proximate ends of the electrical conductor and the contact member and joins the conductor and member at their ends. The sleeve is notched or compressed with the electrical conductor at one base area and is notched or compressed with the contact member at the other base area.

3,501,681
FACE BONDING OF SEMICONDUCTOR DEVICES
Basil Weir, San Jose, Calif., assignor to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 566,355, July 19, 1966. This application Jan. 6, 1969, Ser. No. 792,200
Int. Cl. H01l 3/00, 5/00, 7/00
U.S. Cl. 317—234 15 Claims



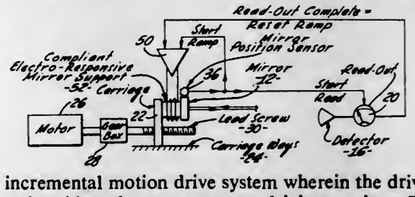
Planar type semiconductive devices and integrated circuits suited for direct bonding to a packaging unit are provided wherein raised contact elements on the semiconductor devices are formed as homogeneous metal deposits metallurgically bonded to the metallization pattern on the semiconductor device. A process for forming such homogeneous metal deposits by electroforming is provided.

3,501,682
CONSTANT TENSION-CONSTANT SPEED DRIVE BY MEANS OF A TANDEM MOTOR CONNECTION
George V. Jacoby, Bala-Cynwyd, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,610
Int. Cl. B65h 77/00
U.S. Cl. 318—7 8 Claims



There is disclosed a motor drive system for winding a sheet of material at constant speed and tension between a takeup and a supply reel. One electric motor capable of providing constant mechanical power is used to drive the takeup reel and thereby effect a transfer of the material from a supply reel to the takeup reel. A second electric motor which is energized by a load sensitive voltage developed in the first electric motor, is used to provide a corrective counter force on the supply reel.

3,501,683
INCREMENTAL MOTION DRIVE SYSTEM
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of John H. Morecroft, La Crescenta, Calif.
Filed May 17, 1967, Ser. No. 640,450
Int. Cl. G05b 11/01
U.S. Cl. 318—22 13 Claims



An incremental motion drive system wherein the driven member is subjected to two separate driving motions. The first driving motion is a continuous motion in a predetermined direction. The second driving motion is superimposed upon the first by means of an electromechanical transducer so that the motion of the driven member may be reversed, stopped or otherwise altered in accordance with a control signal transmitted to the transducer. The incremental motion drive system has particularly excellent utility when incorporated into a combination of interferometer system components for providing an improved interferometer.

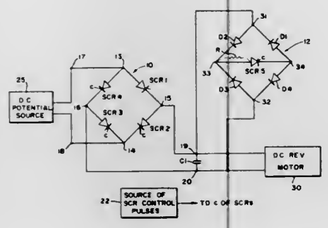
ERRATUM

For Class 318—138 see:
Patent No. 3,501,664

3,501,684
DUAL POLARITY FULL WAVE DC MOTOR DRIVE
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Michael F. Hanna, Glendora, Calif.
Filed Dec. 27, 1966, Ser. No. 605,098
Int. Cl. H02p 3/12
U.S. Cl. 318—258 4 Claims

A solid state braking circuit for use with a DC reversible motor of the type which is rotatable in either of two

directions, as a function of the polarity of a DC potential across its input terminals, the motor being breakable by substantially shorting its input terminals, by the provision of a low resistance path therebetween. The braking circuit comprises four conventional diodes connected in a bridge arrangement, having four junction points. Two of the junction points are directly connected to the two input terminals of the motor, while a SCR diode is connected across the other two junction points. By providing an enabling control signal to the control input terminals of

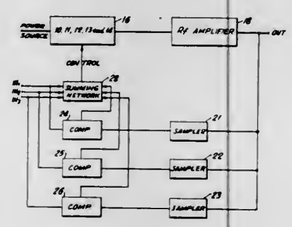


the SCR a low resistance path is provided across the SCR and between the input terminals of the motor. The low resistance path includes two of the four diodes in series with the SCR. The two diodes which are included in the low resistance path, depend on the polarity of the DC potential applied to the input terminals of the motor. Four SCR's connected in a different bridge arrangement for switching the polarity and controlling the amplitude of the potential applied to the input terminals from a potential source are also disclosed.

3,501,685
FM DIGITAL CIRCUIT FOR ANALOG POWER CONTROL

John Sanders Reese, St. Petersburg, and Neville L. Downs, Redington Shores, Fla., assignors to Electronic Communications, Inc.

Filed Feb. 13, 1967, Ser. No. 615,471
Int. Cl. H02m *5/40*
U.S. Cl. 321—2 **1 Claim**

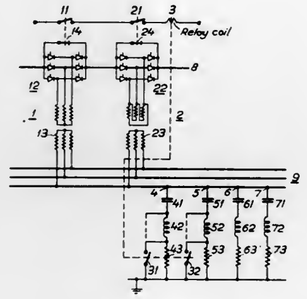


A versatile circuit usable inter alia as a regulator, audio amplifier, AM modulator, automatic power level control, and envelope distortion correcting device. The basic circuit is predicated upon the concept of using FM digital techniques for analog control and uses the basic combination of a DC to AC converter, FM discriminator and differential amplifier for comparing a control signal and a portion of the discriminator output.

3,501,686
CONTROL DEVICE FOR A FILTER CIRCUIT FOR A STATIC INVERTER

Martin Tveteras and Heine Martensson, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden

Continuation-in-part of application Ser. No. 537,198, Mar. 24, 1966. This application Aug. 22, 1968, Ser. No. 754,613
Int. Cl. H02m *1/12*
U.S. Cl. 321—9 **6 Claims**

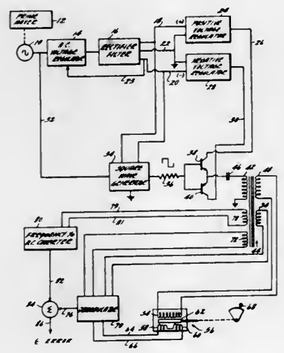


A static converter station for high voltage is provided with a filter circuit on its A.C. side, which filter circuit includes inductive, capacitive and resistive elements. Switches are arranged for by-pass connection of a part of the filter circuit, the switches being controlled by a relay device controlled by the number of pulses of the station or the harmonic current of the filter circuit.

3,501,687
EXCITATION OF TRANSDUCERS AND SQUARE WAVE GENERATORS EMPLOYED THEREFOR

Floyd Grossoehme, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Nov. 9, 1965, Ser. No. 506,993
Int. Cl. H02m *5/10*
U.S. Cl. 323—51 **2 Claims**



The disclosure shows improved means for exciting a position transducer from a voltage source which varies both in frequency and amplitude. Positive and negative reference voltages of equal magnitude are generated from the power source. These reference voltages are respectively applied to the collectors of a pair of transistors which are respectively applied to the collectors of a pair of

transistors which are interconnected at their emitters. The common emitter connection is connected to the primary of a transformer. A square wave is generated from the power source and applied to the bases of the two transmitters, thereby generating a square wave input of fixed amplitude having a frequency corresponding to that of the voltage source. This square wave is then applied to the input winding of a transducer. The output windings of the transducer are connected to a demodulator which is appropriately switched by square wave inputs from the transformer thereto to provide an output signal reflecting the degree of displacement of the coupling core of the transducer from a desired position. A D-C signal is also derived from the power source to indicate the actual frequency. The desired and actual signals are summed to provide an error signal.

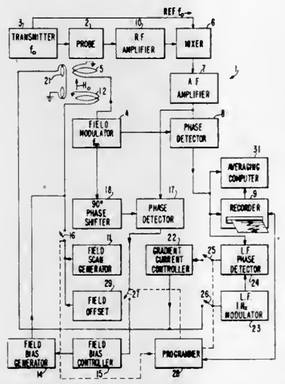
ERRATUM

For Class 323—28 see:
Patent No. 3,501,771

3,501,688
GYROMAGNETIC RESONANCE SPECTROMETER PROGRAMMED FOR AUTOMATIC SCAN AND CALIBRATION CYCLES

Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 21, 1967, Ser. No. 661,986
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **2 Claims**



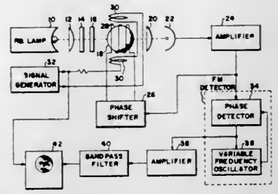
A programmer causes the spectrometer to alternately scan through the spectrum of the sample and to engage in a calibration cycle during which one or more of the operating parameters such as polarizing magnetic field intensity, magnetic field homogeneity, spin decoupling field strength, etc. may be calibrated.

3,501,689
MAGNETOMETER

Pierino P. Robbiano, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation of application Ser. No. 333,951, Dec. 27, 1963. This application June 6, 1966, Ser. No. 555,347
Int. Cl. G01n *27/72*
U.S. Cl. 324—.5 **3 Claims**

There is disclosed a self-oscillating spin precession magnetometer adapted to be used in detecting the azimuth and elevation of external magnetic fields, for example, the earth's field. A low frequency magnetic field, as of 500 c.p.s., is applied to a magnetometer resulting in the modulation of the total field including the earth's field as the system is rotated in the earth's field. The

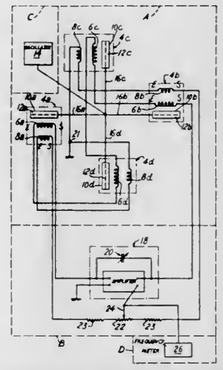


magnetometer output signal which results as the system is rotated is then phase compared to a reference signal from which the azimuth and elevation of the earth's field can be determined.

3,501,690
NUCLEAR MAGNETIC RESONANCE MAGNETOMETER OF THE SPIN COUPLING TYPE

Antoine Salvi, Fontaine, and Henri Glenat, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Aug. 9, 1967, Ser. No. 659,451
Claims priority, application France, Aug. 23, 1966, 73,924
Int. Cl. G01n *27/00*
U.S. Cl. 324—.5 **5 Claims**



The magnetometer comprises a measurement head, an amplifier, an oscillator for exciting electronic resonance lines of samples of the measurement head, said head including four similar units forming two couples disposed at 90° to each other, each couple consisting of two units in line with each other, every unit comprising two coils coaxial with each other and wound about a vessel containing a sample.

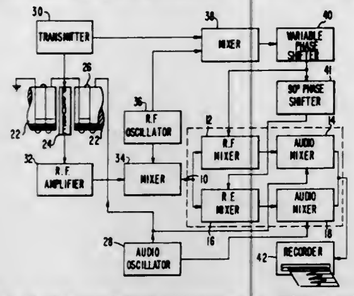
3,501,691
SINGLE SIDEBAND SYSTEM FOR IMPROVING THE SENSITIVITY OF GYROMAGNETIC RESONANCE SPECTROMETERS

Richard R. Ernst, Winterthur, Switzerland, assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 8, 1968, Ser. No. 727,535
Int. Cl. G01r *33/08*
U.S. Cl. 324—.5 **7 Claims**

A system for improving by a factor of $\sqrt{2}$ the sensitivity of any gyromagnetic resonance spectrometer using a sideband modulation technique. The intermediate frequency of the system is fed into two phase detectors or

mixers which are driven with the quadrature voltages of the reference frequency and the outputs thereof are fed into two other phase detectors driven with the quadrature



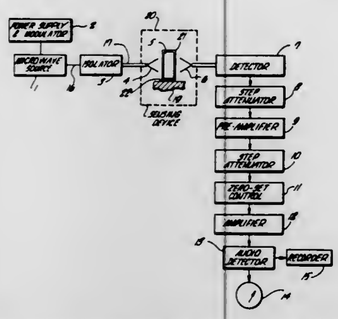
voltages of the modulation frequency. The resulting two outputs are then additively combined such that the unwanted sideband is eliminated.

3,501,692

APPARATUS FOR DETERMINING THE MOISTURE CONTENT OF SOLIDS AND LIQUIDS

James H. Kluck, Altadena, Calif., assignor to Hammtronics Systems, Inc., Pasadena, Calif., a corporation of Delaware

Filed Aug. 17, 1966, Ser. No. 573,053
Int. Cl. G01r *27/04*
U.S. Cl. 324—58.5 **4 Claims**



Electromagnetic apparatus for providing a direct indication of the moisture content of materials stored in a container adapted to transmit electromagnetic energy therethrough. A narrow beam of electromagnetic energy is generated for transmission through the material undergoing measurement and is received after travelling therethrough. The receiving apparatus includes precision elements making up an audio substitution means for accurately measuring changes in the level of the electromagnetic signal before and after the material is placed in the container. These elements include step attenuators that are switched into and out of the circuit to allow the amplifiers following the attenuators to operate at a constant signal level.

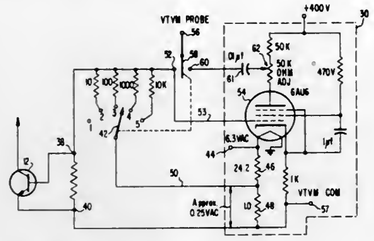
3,501,693

OHMMETER FOR MEASURING THE RESISTANCE OF A RESISTOR CONNECTED ACROSS A PN JUNCTION

Robert N. Griswold, Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 18, 1966, Ser. No. 535,409
Int. Cl. G01r *27/02*
U.S. Cl. 324—62 **5 Claims**

System and method for measuring the value of an unknown resistance connected in parallel with a semiconductor diode. A low voltage AC source is connected across a voltage divider including a reference connected in series with the parallel combination of the unknown resistor and the diode. The resulting voltage appearing



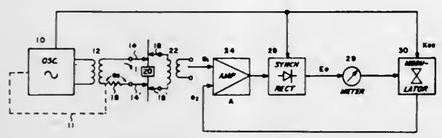
across the diode is so small that the diode remains substantially non-conductive, so that the voltage divider effectively contains only the reference resistor and the unknown resistor. Measurement of the voltage across the unknown resistor determines the resistance thereof.

3,501,694

OHMMETER CIRCUIT HAVING STABILIZING CIRCUIT WHICH REDUCES THE EFFECT OF SOURCE VARIATIONS ON INDICATION

Haruo Ito, Tokyo, Japan, assignor to Yokogawa-Hewlett-Packard, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 22, 1968, Ser. No. 722,847
Claims priority, application Japan, May 18, 1967, 42/31,226
Int. Cl. G01r *27/02, 27/14*
U.S. Cl. 324—62 **5 Claims**



A resistance-measuring meter includes a signal source that provides a constant AC current to an unknown resistance through a pair of current-carrying leads and an amplifier circuit is connected through another pair of leads to receive and amplify the voltage signal generated between the two ends of the unknown resistance. A meter circuit is connected to respond to the in-phase component of the amplified voltage signal and includes a modulator which receives an AC signal related to the output of said signal source for modulating the signal supplied to an indicating meter. This modulated signal is negatively fed back to the input of said amplifier circuit to remove errors in indication due to signal source fluctuations.

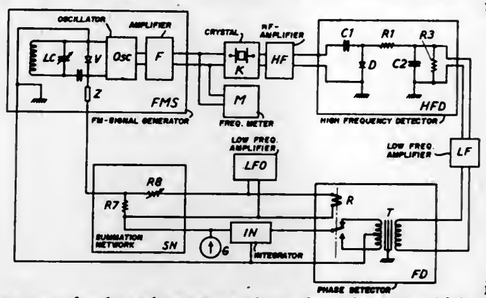
3,501,695

RESONANCE MEASURING APPARATUS UTILIZING THE SIDEBAND SIGNALS OF AN FM-TEST SIGNAL FOR FEEDBACK CONTROL

Leon Näsström, Bromma, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Mar. 18, 1966, Ser. No. 535,375
Claims priority, application Sweden, Apr. 8, 1965, 4,582/65
Int. Cl. G01r *23/12*
U.S. Cl. 324—82 **5 Claims**

Apparatus for automatically measuring the resonance frequency of a series resonant circuit utilizes feedback signals related to generated sidebands for varying the frequency of a test signal fed to the series resonant circuit. The test signal is generated by an FM-signal generator whose output signal is controlled by a control voltage.



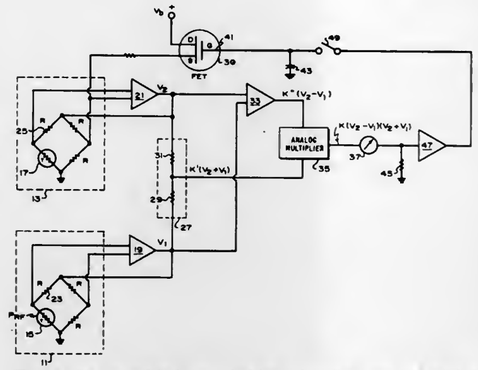
The control voltage is generated by a phase detector which compares the sideband signals transmitted by the resonant circuit and a low frequency modulating signal.

3,501,696

TEMPERATURE COMPENSATED R.F. POWER MEASURING DEVICE HAVING AUTOMATIC ZERO SETTING MEANS

Russell B. Riley, Portola Valley, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 12, 1968, Ser. No. 744,486
Int. Cl. G01r *21/04, 1/02*
U.S. Cl. 324—95 **4 Claims**



There are provided two bridge circuits, one of which includes a thermistor responsive to both R.F. power and ambient temperature, and the other of which includes a compensating thermistor responsive only to ambient temperature changes. Each of the two bridges is self-balanced by a D.C. differential amplifier in a feedback loop. A signal directly proportional to the R.F. power received is derived and applied to a meter. When a switch is momentarily closed, the signal applied to the meter also controls a field-effect transistor which adjusts the bias voltage for the temperature compensating thermistor to provide an accurate and fast means for zeroing the meter.

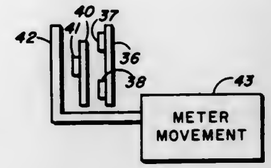
3,501,697

REVERSIBLE METER FOR DISPLAYING DIRECT AND RECIPROCAL CONTROL INFORMATION

Albert V. Martin, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 28, 1967, Ser. No. 663,787
Int. Cl. G01r *1/08;* **G09f** *9/00*
U.S. Cl. 324—115 **4 Claims**

A meter having a meter face with an indicating needle. A pair of oppositely-extending scale indicia on the meter face with shutter means movable to selectively cover one of the two sets of indicia such that a linear and a reciprocal (reverse) scales are selectively provided. By turning the meter rightside up or upside down and selecting its proper scale, the indicating needle always moves from left to right respectively to indicate zero and full scale of a controlled device response respectively in a direct and reciprocal proportion to control signals.

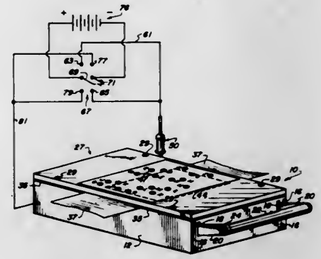


3,501,698

METHOD AND APPARATUS FOR TESTING CIRCUITS ON CIRCUIT BOARDS FOR CONTINUITY INCLUDING THE USE OF ELECTROSENSITIVE PAPER RESPONSIVE TO CURRENT FLOW THROUH THE CIRCUITS

Donald C. Becknell, Franklin Lakes, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Aug. 25, 1967, Ser. No. 663,336
Int. Cl. G01r *35/00*
U.S. Cl. 324—158 **14 Claims**



A method and device for inspection of a multilayer printed circuit board having a multiplicity of rivers or conductive circuits and including the provision of electrical tests to verify the continuity and anti-continuity of the tested circuit. The test device has a platen with a recess machined to an outline of a multilayer circuit board and preset holes drilled in the platen at points coinciding with nodes of the multilayer printed circuit board available at the printed circuit board surface. One hole is drilled in the platen for selective connection by means of an operator-operative probe to a pad or terminal for each node or continuous circuit of the multilayer circuit board. Moreover a roller assembly including an electrically conductive roller bears under spring tension against a sheet of electrosensitive recording paper which is in turn pressed against the electrically conductive terminals of the circuits of the multilayer circuit board under test. The circuit board nests in the platen so that the roller may pass over a surface of the board to complete a test circuit through the electrosensitive paper with the electrically conductive terminals of the circuit of the multilayer circuit board to which the probe is connected. The probe inserted in the selected node of the multiple layer circuit board is electrically connected through rivers or electrical conductors

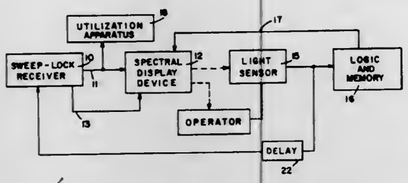
leading from the selected node and certain of the electrically conductive terminals so as to complete the test circuit upon the roller being advanced across the surface of the sheet of electrosensitive recording paper. The recording paper thus pressed by the roller against the conductive terminals is effectively discolored at the points of emergence of the flow of electrical energy relative to the terminals to provide an image upon the electrosensitive recording paper of the relative locations of the several terminals of the circuit under test. This image formed on the recording paper may then be compared with an image of a master pattern for the node or continuous circuit under test to determine any fault or discontinuity in the electrical circuit under test.

3,501,699

CONTROL OF SWEEPING RECEIVERS

Francois W. Gagne, Nashua, Charles R. Otey, Reeds Ferry, and Thomas E. Woodruff, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Aug. 29, 1966, Ser. No. 575,716
Int. Cl. H04b *1/30*
U.S. Cl. 325—337 **9 Claims**



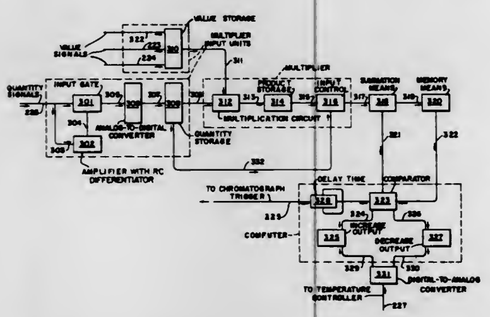
Apparatus is herein disclosed for stopping a sweeping receiver at a particular time in its displayed sweep at which a signal of interest is received and displayed, by electro-optically or electronically generating a signal corresponding to the frequency at which the signal of interest is received.

3,501,700

CHROMATOGRAPH OUTPUT SYSTEM SUITABLE FOR USE WITH PROCESS CONTROL

David M. Boyd, Jr., Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Original application Dec. 29, 1958, Ser. No. 783,365. Divided and this application Aug. 17, 1967, Ser. No. 661,299
Int. Cl. C06g *7/18*
U.S. Cl. 328—127 **11 Claims**



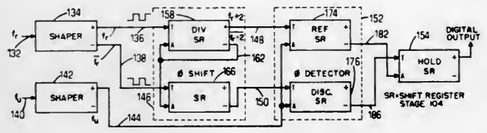
A system for determining a time integration of variable quantity signals or pulses such as provided by the output of a chromatograph. The varying quantity signals are passed through gating means to an analog-to-digital converter means which in turn provides digital signals to a quantity storage circuit. At the same time, the output or quantity signal is passed in parallel to a rate amplifier means which connects to the gating means in the system so that it permits transmission of the chromatograph output signals for only such periods of time that the quantity signals are changing with respect to time.

3,501,701

DIGITAL FREQUENCY DISCRIMINATOR

William J. Reid, Scottsdale, Ariz., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 19, 1967, Ser. No. 646,934
Int. Cl. H03b *3/04;* **H03k** *9/06*
U.S. Cl. 328—134 **4 Claims**



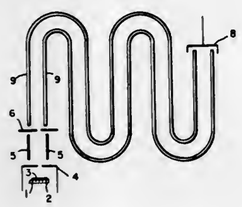
A digital logic discriminator having four integrated circuit chips each consisting of a shift register stage and interconnected to form a divide function, exclusive OR function, phase shifting and holding such that a single binary output signal is applied. When the binary signal is in a first state it indicates that one of the two input signals has a lower frequency than the other while in the second binary state the reverse is indicated.

3,501,702

ZERO CROSSING ELECTRON TUBE AND CIRCUIT

Mortimer H. Zinn, West Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 12, 1961, Ser. No. 144,799
Int. Cl. G01r *23/02*
U.S. Cl. 328—136 **13 Claims**



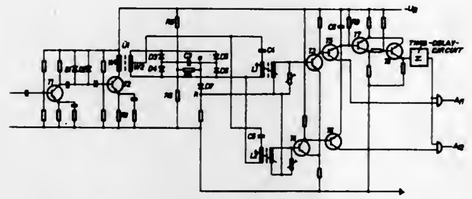
1. A system for generating an output signal as a result of a zero-potential crossing of an input signal, which crossing is not followed by a second such crossing in less than a predetermined time interval, comprising: means for forming an electron beam, first deflecting means for sweeping said electron beam according to said input signal, a blocking means having an aperture therein for passing said electron beam only on a zero crossing of said input signal, a potential source, impedance means, second deflecting means connected to said blocking means and through said impedance means to said potential source to adjust the potential of said second deflection means to permit passage of said electron beam when said beam is intercepted by said apertured electrode and to attract said beam to said second deflecting means when a second zero crossing occurs before said predetermined time interval, and a collecting means to receive said beam when passed by said second deflecting means.

3,501,703

CIRCUIT ARRANGEMENT FOR A SINGLE OR MULTI-FREQUENCY SIGNAL RECEIVER, OPERATING WITH A SPEECH IMMUNITY CIRCUIT AND LIMITING THE SIGNALS RECEIVED

Otto Baade, New South Gate, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 4, 1967, Ser. No. 636,101
Claims priority, application Germany, May 12, 1966, St 25,382
Int. Cl. H04b *1/10, 15/00*
U.S. Cl. 328—165 **2 Claims**



A speech immunity circuit is presented for discriminating desired dial pulse signals at voice frequencies from undesirable signals formed by the human voice, and for retransmitting the desired dial pulse signals free of undesirable signals.

ERRATUM

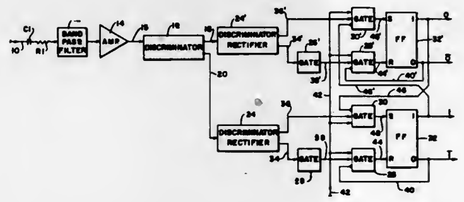
For Class 328—233 see:
Patent No. 3,501,734

3,501,704

FREQUENCY SHIFT KEYED DEMODULATOR

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Steven Teitelbaum, Highland Park, and Charles Staloff, East Brunswick, N.J.

Filed Nov. 27, 1967, Ser. No. 685,748
Int. Cl. H03k *7/06*
U.S. Cl. 329—104 **9 Claims**



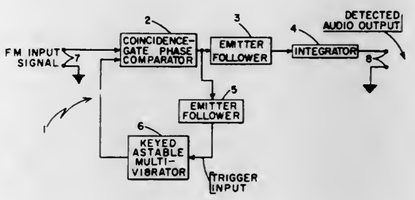
This invention relates to an FSK demodulator having a discriminator for detecting positive and negative frequency shifts representing binary ones and zeros, respectively, a ones decoding channel responsive to one output from the discriminator and a zeros decoding channel responsive to a second output from the discriminator. The two channels are identical and each includes a discriminator rectifier, a first gate responsive to the discriminator rectifier, a flip-flop, and a pair of gates for gating set and reset pulses to the flip-flop. Cross coupling from the flip-flop output of one channel to the set gate of the other channel prevents both channels from simultaneously producing outputs. Each channel includes a capacitor which must be charged each time a channel is activated. This capacitor causes the channel to ignore data modulated at greater than the desired rate. A bias circuit for the discriminator may be adjusted so that neither the ones nor the zeros channel will be activated unless the frequency shift is greater than some desired minimum value.

3,501,705

PHASE-LOCK LOOP FM DETECTOR CIRCUIT EMPLOYING A PHASE COMPARATOR AND KEYED OSCILLATOR

Samuel C. Lukens, Jr., Needham, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 27, 1967, Ser. No. 670,984
Int. Cl. H03b *3/06;* **H03d** *3/24,* **H03k** *3/26*
U.S. Cl. 329—122 **10 Claims**



Phase-lock loop FM detector circuit comprising a coincidence-gate phase comparator including first and second input terminals and an output terminal, an integrator coupled in series to the output terminal, and a feedback loop including a keyed astable multivibrator coupled between the output terminal and the second input terminal. The phase comparator senses the phase difference between an output signal provided by the multivibrator and an input FM signal applied to the first terminal, and generates a multivibrator trigger signal. A new output signal which is altered in frequency and phase in accordance with the phase difference between the compared signals is provided by the multivibrator and applied to the phase comparator. In response to the new multivibrator output signal, the frequency and phase of the output signal of the phase comparator is altered thereby keeping the output signal of the multivibrator phase-locked to the input FM signal. The output signal of the phase comparator is integrated by the integrator to provide a replica of the modulation on the input signal.

3,501,706

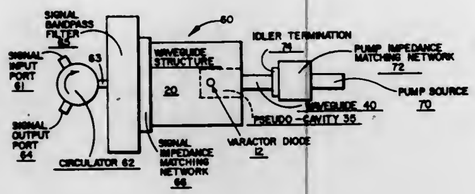
BROADBAND MICROWAVE PARAMETRIC AMPLIFIER

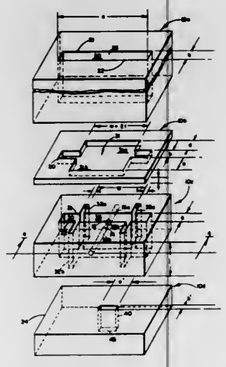
James N. Lind, Costa Mesa, and William E. Meyer, Buena Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Feb. 20, 1967, Ser. No. 617,231
Int. Cl. H03f *7/04*
U.S. Cl. 330—4.9 **7 Claims**

A broadband microwave parametric amplifier is described which uses a varactor diode as the nonlinear reactance to couple pump energy at a high frequency to a signal at a much lower frequency. The varactor diode is situated in a novel waveguide structure comprising a rectangular waveguide of sufficient width to allow propaga-

tion of the signal in the lowest order transverse electric mode. A pair of substantially U-shaped channels oppositely extend from the top and bottom of the waveguide to a depth of one-quarter guide wavelength at the lower



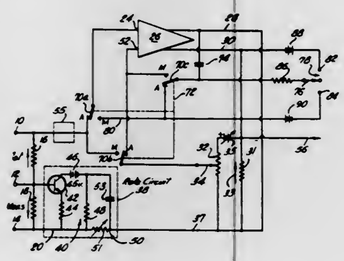


idler frequency. The channels define a pseudo-cavity region in the waveguide, within which region the idler and pump energy is constrained and parametric interaction occurs.

3,501,707
ELECTRONIC CONTROL APPARATUS HAVING IMPROVED MEANS FOR TRANSFER BETWEEN AUTOMATIC AND MANUAL OPERATION

David A. Richardson, Sheldonville, Mass., assignor to The Foxboro Company, Foxboro, Mass.

Filed Feb. 27, 1967, Ser. No. 618,715
Int. Cl. H03f 1/02
U.S. Cl. 330—9 7 Claims

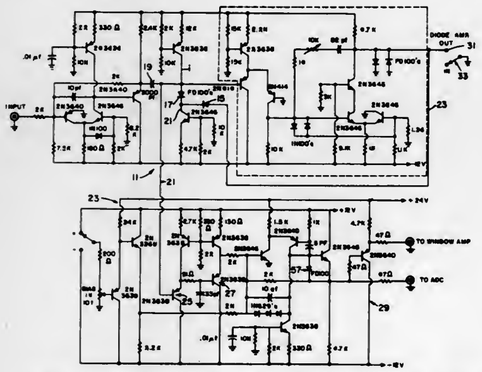


Industrial process controller in which transfer in both directions between automatic and manual operation of the controller is accomplished without upsets in the process, and without any need for balancing the controller prior to transfer. The controller embodiments disclosed are of the non-reset type, and use a "memory" storage circuit to sense and compensate for signal imbalances during transfer.

3,501,708
HIGH COUNTING-RATE BASE LINE RESTORATION

Robert L. Chase, Blue Point, N.Y., and Louis R. Poulo, Watertown, Mass., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 3, 1967, Ser. No. 672,651
Int. Cl. H03f 21/00, 3/18, 3/10
U.S. Cl. 330—11 5 Claims

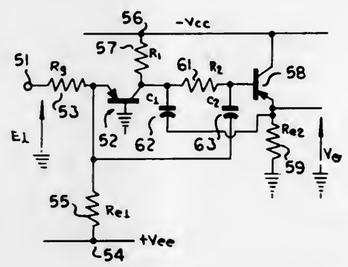


Electronic system for pulse analysis having precise means for preventing base line problems in Li (lithium) drifted Ge (germanium) pulse-amplitude spectrometers so as to provide high resolution in the detection and semiconductor radiation measurement of nuclear particles.

3,501,709
TRANSISTOR R-C FILTERS

Dale M. Uetrecht, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Continuation of application Ser. No. 415,236, Dec. 2, 1964. This application Aug. 14, 1968, Ser. No. 754,107
Int. Cl. H03f 3/04
U.S. Cl. 330—21 1 Claim

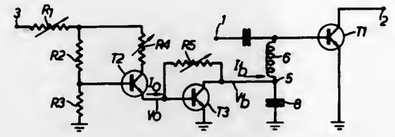


The present system relates to the transistorization of so-called Sallen and Key RC active filters. Sallen and Key have taught how to design the class of filters with which they were concerned, assuming vacuum tubes as the active elements. When transistors are substituted for tubes it is found that the design criteria provided by Sallen and Key are inadequate, and modified design criteria must be provided.

3,501,710
CLASS B TRANSISTOR AMPLIFIER BIASSING CIRCUIT

Valdis Liepins and Gian Franco Tonion, Chelmsford, England, assignors to The Marconi Company Limited, London, England, a British company

Filed Feb. 19, 1968, Ser. No. 706,546
Claims priority, application Great Britain, Apr. 7, 1967, 16,007/67
Int. Cl. H03f 3/04, 1/30, 3/20
U.S. Cl. 330—22 7 Claims

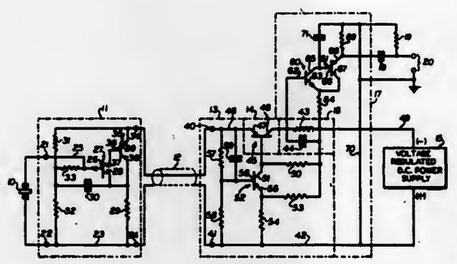


A class B transistor amplifier and a biassing circuit therefor are disclosed. Potential from a bias source is supplied to the base of a biassing transistor, the output from the emitter of which is fed to the base of the class B amplifying transistor through a resistance-shunted base-collector path of a further transistor. The further transistor has its emitter at earth potential, and a variable resistance connected between its collector and base electrode. The collector of the biassing transistor is connected to a terminal of the bias source via two series connected resistances which may be variable. The base of the biassing transistor is tapped upon a potentiometer connected between a terminal of the bias source and point of reference potential.

3,501,711
ZERO-VOLTAGE DRIVEN-CABLE AMPLIFIER

Edward P. Moran, North Haven, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware

Continuation-in-part of application Ser. No. 631,383, Apr. 17, 1967. This application Nov. 12, 1968, Ser. No. 777,995
Int. Cl. H03f 3/04, 3/68
U.S. Cl. 330—22 17 Claims

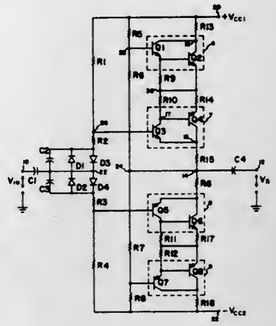


Current from a substantially constant voltage D.C. source passes through a fixed impedance and the series regulator device of a series-shunt voltage regulator and is fed through a two-conductor cable to a voltage-to-current or charge-to-current converter. A signal is derived across the fixed impedance and amplified which is proportional to any signal voltage or charge applied to the converter. Additional series-shunt voltage regulators may be inserted at spaced points along the cable to extend the usable cable length.

3,501,712
HIGH VOLTAGE TRANSISTOR CIRCUIT

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of James S. Lee, Santa Barbara, Calif.

Filed May 17, 1967, Ser. No. 640,449
Int. Cl. H03f 3/68
U.S. Cl. 330—30 5 Claims

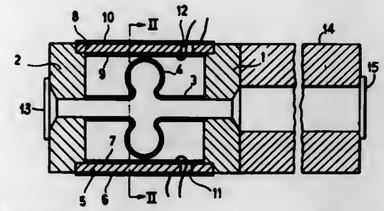


A transistor amplifier which has two series connected transistor subcircuits for sharing the output voltage and thus enabling higher voltage operation, wherein one subcircuit is of the Darlington type and the other is a complementary pair which eliminates a base-emitter in the feedback path; the amplifier providing a high input impedance, low output impedance, and low power dissipation.

3,501,713
LASER CONSTRUCTION

Jan Haisma and Adriaan Looijen, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1966, Ser. No. 582,441
Claims priority, application Netherlands, Oct. 7, 1965, 6512981
Int. Cl. H01s 3/22
U.S. Cl. 331—94.5 4 Claims



A detuning device for mounting a reflector onto a cavity of a gaseous discharge laser, which device is formed by a pair of apertured plates separated by a pair of concentric cylinders, the inner being resilient and the outer electrostrictive.

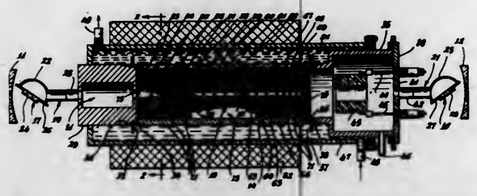
3,501,714
DC EXCITED GAS LASER TUBE WITH CONDUCTIVE SIDEWALLS

Stephen A. Myers, Stamford, and Jameson D. Rigden, Westport, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Mar. 13, 1967, Ser. No. 622,483
Int. Cl. H01s 3/02, 3/04
U.S. Cl. 331—94.5 13 Claims

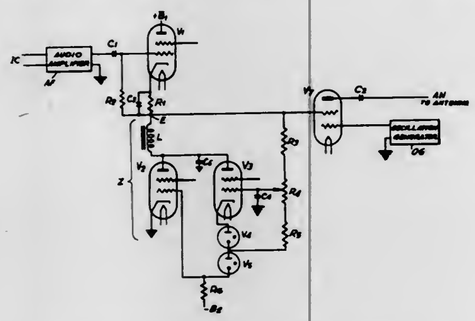
A DC excited gas laser in which the gas is confined in an elongated chamber having ceramic sidewalls. The gas discharge is produced in an open end plasma tube

made up of a plurality of sections of a material having high thermal conductivity. The tube is located in the chamber. Heat produced by the gas discharge is removed from the chamber primarily by conduction through the chamber sidewalls. The chamber is cooled by circulating



water and is surrounded by a solenoid which provides an axial magnetic field along the plasma tube. Electrodes for producing the DC discharge are located within the chamber. Novel shaped Brewster angle windows are used at the ends of the chamber.

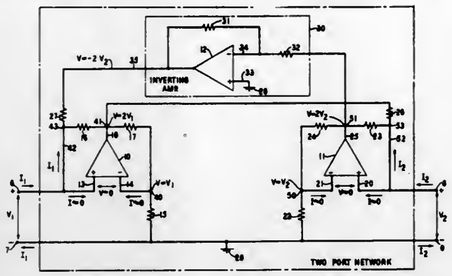
3,501,715
CATHODE FOLLOWER TYPE MODULATOR CIRCUIT
Julian S. Betts, Box 337, Rte. 1, College Park, Ga. 30337, and Ralph A. Armstrong, 2835 Connally Drive SW., Atlanta, Ga. 30311
Filed Feb. 17, 1967, Ser. No. 616,886
Int. Cl. H03c *1/02*
U.S. Cl. 332—64 **3 Claims**



The improvement in a modulation system of the type applying signals through a cathode-follower to the screen gride electrode of an RF amplifier for avoiding screen grid voltage variations. A series circuit including a reactance and an auxiliary vacuum tube for connection between the cathode-follower and ground is supplemented by a second circuit coupled to the first vacuum tube's grid and responsive to variations in the screen voltage to vary the grid bias and hence the plate resistance of the vacuum tube.

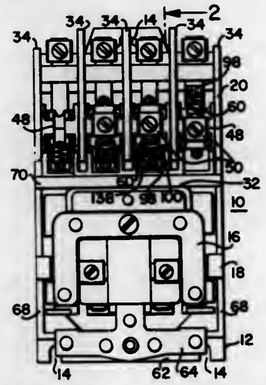
3,501,716
GYRATOR NETWORK USING OPERATIONAL AMPLIFIERS
Richard L. Ferch, Monmouth Beach, N.J., George Szentirmai, Ithaca, N.Y., and Lee C. Thomas, Matawan, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 3, 1968, Ser. No. 780,652
Int. Cl. H03h *7/44*
U.S. Cl. 333—80 **4 Claims**

A two-port gyrator circuit is disclosed using two differential amplifiers and an inverting amplifier. One of the differential amplifiers is connected with a resistor network across the input port and the other is connected with a similar resistor network across the output port in such a manner that a common ground connection is maintained between the input and output ports. The inverting amplifier and a resistor are each connected respectively



in one of the two circuit paths between the output of one differential amplifier and the plus input of the other differential amplifier. Because of its common ground connection the disclosed network is capable of simulating both serially and parallelly connected inductors.

3,501,717
CONVERTIBLE CONTACT STRUCTURE FOR AN ELECTROMAGNETICALLY OPERATED SWITCH
Allin W. Schubring, Milwaukee, and Kenneth L. Paape, Mequon, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 12, 1968, Ser. No. 759,382
Int. Cl. H01h *73/12*
U.S. Cl. 335—17 **10 Claims**

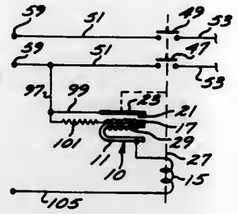


An arrangement for achieving conversion of the contacts from normally open to normally closed contact operation in a relay having a readily removable front contact and terminal which when removed will provide access and permit rotation of a movable contact about its support and wherein both the stationary front contact and the support carry portions indicating the operating condition of the contacts.

3,501,718
RAPID OPENING TIME-DELAY RELAY
William W. Chambers, Anaheim, Calif., assignor to Robertshaw Controls Company, Richmond, Va.
Filed Sept. 30, 1968, Ser. No. 763,765
Int. Cl. H01h *7/06, 43/30*
U.S. Cl. 335—66 **6 Claims**

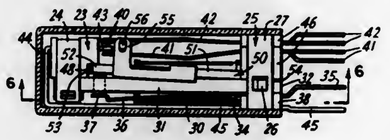
A rapid opening time-delay relay, biased to its open position, and including a frame mounting one end of a

thermostatic blade which carries a first electrical contact on its free end. A second electrical contact is arranged in adjacent spaced relation with the first contact, is mechanically coupled to the relay armature, and is movable into engagement with the first contact upon energization of the relay. A heat motor is disposed in heat exchange relationship with the thermostatic blade and is adapted for connection in parallel circuit with the



second contact whereby, when power is applied to the relay, the blade is heated and flexed to engage the first and second contacts. This causes current in the circuit to bypass the heat motor and energize the relay winding to close the relay. Since the second contact is coupled to the relay armature, energization of the relay maintains the first and second contacts in engagement, both during and after cooling of the blade.

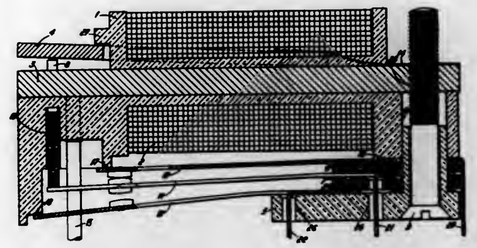
3,501,719
RELAY CONSTRUCTION
Walter J. Richert, Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 9, 1968, Ser. No. 751,481
Int. Cl. H01h *67/32*
U.S. Cl. 335—106 **14 Claims**



A flat pack electromagnetic relay with one dimension substantially smaller than the other two dimensions thereof, having a plurality of switches and terminals for the switch contacts and the electromagnet coil extending through one end or, alternatively, opposite ends of the relay.

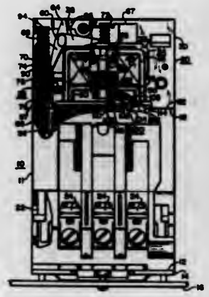
3,501,720
MINIATURE RELAY FOR USE IN PRINTED CIRCUITS
Walter Franz Josef Mathys, Horgen, Switzerland, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 605,302, Dec. 28, 1966. This application Nov. 5, 1968, Ser. No. 774,590
Claims priority, application Switzerland, Dec. 28, 1965, 17,963/65
Int. Cl. H01h *63/02, 67/02*
U.S. Cl. 335—135 **15 Claims**

A miniature relay is provided for use in restricted spaces, such as that between printed circuit boards. Steps are provided as integral parts of the relay to support contact elements and impart elastic deformation to the contact ele-



ments in such a way that good electrical connections can be established between contacts.

3,501,721
LATCH ATTACHMENT FOR AN ELECTRO-MAGNETICALLY OPERATED SWITCHING DEVICE
Adolfo M. Perez, Racine, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 14, 1968, Ser. No. 767,344
Int. Cl. H01h *9/24*
U.S. Cl. 335—170 **11 Claims**

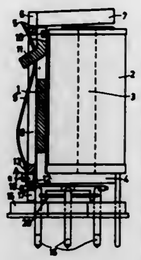


A latch attachment for an electromagnetically operated switching device, such as a relay or a contactor. The latch attachment includes a means for assuring that the lath mechanism within the attachment is de-activated when the attachment is initially installed on the switching device.

3,501,722
ELECTRO-MAGNETIC RELAY
Petrus Rumoldus Zwanen and Antoni Dutkiewicz, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1967, Ser. No. 668,324
Claims priority, application Netherlands, Sept. 17, 1966, 6613165
Int. Cl. H01h *3/28*
U.S. Cl. 335—192 **12 Claims**

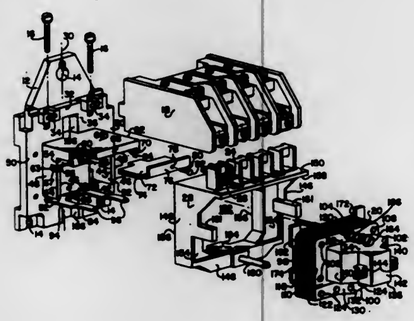
A relay comprising a U-shaped core and an L-shaped armature having its long limb extending approximately parallel and adjacent to one limb of the core. An S-shaped leafspring engages the armature at two areas spaced apart

from the rotary axis of the armature. Between said two areas of engagement, a tag extending from said one limb



of the core extends through an aperture in the leafspring and cooperates pivotally therewith.

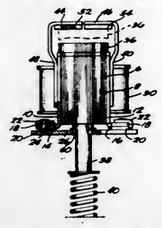
3,501,723
COIL AND STATIONARY MAGNET MOUNTING FOR AN ELECTROMAGNETICALLY OPERATED DEVICE
Kenneth J. Marien, Wauwatosa, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 12, 1968, Ser. No. 759,381
Int. Cl. H01h *9/02, 13/04*
U.S. Cl. 335—202 **10 Claims**



An electromagnet support and mounting structure wherein a single mounting screw maintains a stationary magnet part in position on a mounting base and moves a lever to resiliently maintain the magnet coil in position on the stationary magnet part when the mounting screw is tightened in a threaded opening in the base.

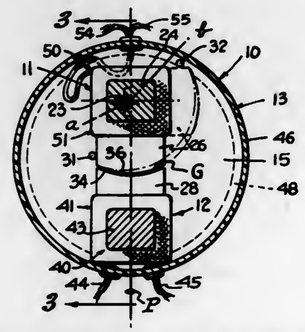
3,501,724
IMPACT CUSHIONING SOLENOID YOKE AND FRAME MOUNTING
Leslie C. Westphal, Milwaukee, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 2, 1968, Ser. No. 726,017
Int. Cl. H01f *7/12*
U.S. Cl. 335—248 **4 Claims**

The end laminations of a solenoid frame have outwardly turned flanges confined between cushion strips anchored to the base. Yoke means spans the frame and carries cushioning spaced therefrom to receive the returning impact of the armature head. The yoke means



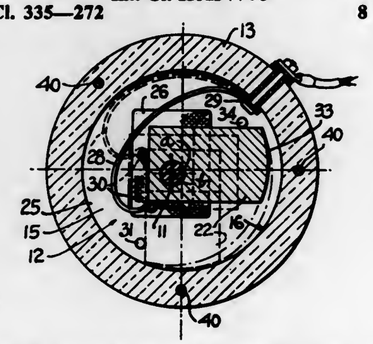
may be either continuous or made up of separate sections. In either case it has legs attached to a frame.

3,501,725
FIXED STATOR ROTARY SOLENOID
Karl Richard Olesen, 2156 Hedding St., San Jose, Calif. 95128
Filed Aug. 14, 1968, Ser. No. 752,718
Int. Cl. H01h *7/08, 7/12*
U.S. Cl. 335—272 **7 Claims**



A fixed stator dual acting rotary solenoid secured to a non-magnetic shaft mounted for rotary movement in offset relation to the rotor to provide an air gap between the rotor and fixed stator which gradually increases in spacing as the rotor is repelled. A fixed stator interlockingly related to the end walls of the unit to form a structural part thereof while providing the core and arms of field coils which effect the repelling and attracting magnetic action.

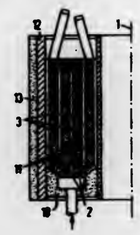
3,501,726
ROTARY SOLENOID
Karl Richard Olesen, 2156 Hedding St., San Jose, Calif. 95128
Filed Aug. 14, 1968, Ser. No. 752,719
Int. Cl. H01f *7/08*
U.S. Cl. 335—272 **8 Claims**



A rotary solenoid in which a U-shaped iron rotor has its bight portion secured to a non-magnetic shaft mounted

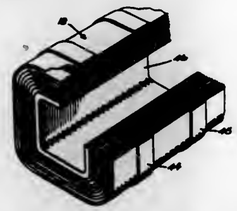
for rotation eccentrically of and within a cylindrical body of magnetizable material whereby the ends of the legs of such U-shaped rotor swings between limits from close proximity to the inner surface of the cylindrical body in an arc of increasing air gap relative thereto and single and dual action coils for such rotary solenoid.

3,501,727
LIQUID-COOLED ELECTROMAGNETS
Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 14, 1967, Ser. No. 623,126
Claims priority, application Germany, Mar. 17, 1966, S 102,570
Int. Cl. H01f *5/00, 7/00*
U.S. Cl. 335—300 **10 Claims**



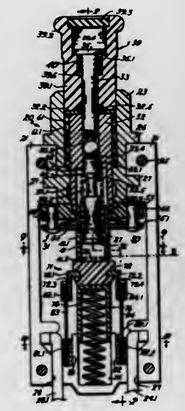
A liquid-cooled electromagnet having a coil formed by a plurality of winding layers which coaxially surround the axis of the coil with the successive winding layers situated one within the other and spaced from each other at different radial distances, respectively, from the coil axis so that the winding layers define circumferential spaces between themselves. A holding means is located in these spaces to hold the winding layers together, and this holding means defines longitudinal cooling passages which are substantially parallel to the coil axis and which are adapted to receive the cooling liquid, these cooling passages being circumferentially distributed in the space between each pair of winding layers so that the cooling liquid will flow through the cooling passages to cool the winding layers.

3,501,728
APPARATUS FOR STARTING AND OPERATING ELECTRIC DISCHARGE LAMPS
Richard D. Barriball, Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,417
Int. Cl. H01f *21/08, 27/30, 27/28*
U.S. Cl. 336—155 **2 Claims**



An electrical discharge lamp ballast apparatus employing a high leakage reactance type of transformer with a shell type magnetic core and electrical coils wound of turns of insulated wire flattened on the sides to form an essentially oblong cross section with opposed elongated interlayer insulating portions extending in an axial direction with respect to the coil and adjacent to the layer insulation of the coil. With the flattened wire coil arrangement the thermal performance of the ballast apparatus can be uprated, and aluminum wire can be more economically utilized in a ballast apparatus. Preferably, a polymeric amide resin is used as an insulating material for the flattened conductor wire.

3,501,729
TRIP FREE RECIPROCATING CIRCUIT BREAKER
Lawrence W. Brackett, Sr., Georgetown, Mass., assignor to Wood Electric Corporation, Lynn, Mass., a corporation of Massachusetts
Filed May 3, 1968, Ser. No. 726,338
Int. Cl. H01h *71/16*
U.S. Cl. 337—66 **10 Claims**

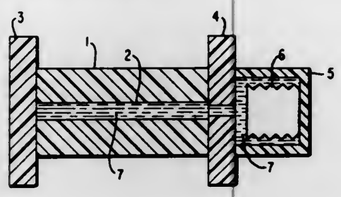


A trip free circuit breaker has two movable contact actuators both reciprocating within a housing. The first actuator has a push pull operator, bridged contacts, holding and tripping springs, and a cam operated detent mechanism for retaining it in operator controlled, closed or normally open, positions relatively to the housing. The second actuator has terminal connected contacts and is normally held, by springs of both units, for normal circuit making and breaking by the first unit. Upon occurrence of an abnormal load condition the second actuator is by a bimetallic catch released from the first actuator and during abnormal condition held in tripped position by a spring of the first actuator which actuator remains in normally closing position. Upon returning the first operator to normally opening position, the second actuator is returned to normal position by a restoring spring.

3,501,730
CURRENT LIMITING EQUIPMENT
Toshio Ito, Toshio Miyamoto, Yutaka Murai, and Yuichi Wada, Amagasaki-shi, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Feb. 26, 1968, Ser. No. 708,048
Claims priority, application Japan, Feb. 25, 1967, 42/11,942
Int. Cl. H01h *85/04*
U.S. Cl. 337—159 **2 Claims**

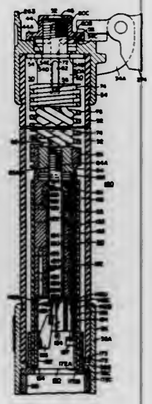
Current limiting equipment of a self restoration type in which current limiting is accomplished by evaporation of alkali metal. An alkali metal which is in liquid or solid state at ordinary temperature is contained in a casing devised to make the alkali metal evaporate and perform a current limiting operation by flow of a short-circuit current. The remarkably high vapor pressure caused by evaporation of the alkali metal and by a pressure

buffer set up in the casing in the current-limiting process of this current limiting equipment is controlled to the optimum value required for current limit operation. Vapor pressure is also maintained at the optimum pressure during the current limit operation.



Further breaking of a circuit connected with such a current limiting equipment is performed not only by the current limiting equipment, but is also performed by other disconnecting switches or breaker means connected in series with the current limiting equipment.

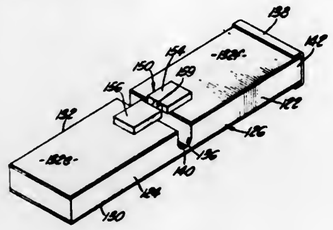
3,501,731
HIGH VOLTAGE CIRCUIT INTERRUPTER
Calvin C. Patterson, Bethel Park, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,019
Int. Cl. H01h *85/02*
U.S. Cl. 337—203 **6 Claims**



This invention relates to high voltage circuit interrupters and more particularly, to high voltage fuse structures.

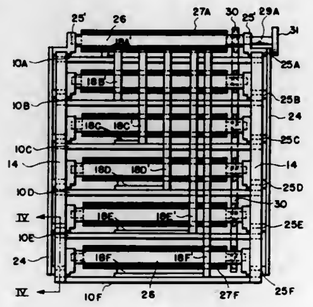
More specifically, a pivotally mounted fuse holder having fusible means disposed therein is normally latched in a closed circuit condition with a pair of spaced, relatively stationary contacts which are mounted on a pair of spaced insulatnig supports. A body of gas evolving arc-extinguishing material is disposed in the fuse holder and during an interrupting operation, gas from said body is evolved and exhausted from one end of the holder. In order to prevent axial movement of the holder due to the gas exhausted during an interrupting operation and to insure that both of the insulating supports share the mechanical stresses which result, means are provided on both of the insulating supports which engage the holder to prevent such axial movement and to insure such sharing of mechanical stresses.

3,501,732
SEMICONDUCTIVE PIEZORESISTIVE TRANSDUCER HAVING A GROOVED SUPPORT WITH ELECTRICAL CONTACTS
Leslie B. Wilner, Palo Alto, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California
Continuation-in-part of application Ser. No. 364,673, May 4, 1964. This application Dec. 29, 1964, Ser. No. 421,869
Int. Cl. G01l *1/22;* **G04r** *21/04*
U.S. Cl. 338—2 **12 Claims**



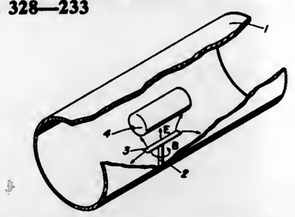
An electromechanical transducer is provided in which a piezoresistive element is mounted across the gap formed by two support members connected by a leaf spring that serves as a hinge. The ends of the support members are enlarged while the neck is reduced in size providing concentration of motion in the neck, where the electrical resistance per unit length is highest but the mechanical strain per unit angular displacement of the hinged elements is greatest.

3,501,733
MULTIPLE RHEOSTAT ASSEMBLY
George E. Lemon, 286 Lora Ave., Youngstown, Ohio 44504
Filed June 12, 1968, Ser. No. 736,453
Int. Cl. H01c *5/00*
U.S. Cl. 338—131 **9 Claims**



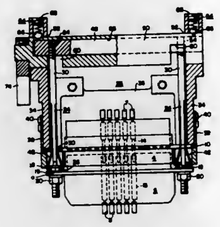
A multiple rheostat assembly for controlling a number of related functions, such as the speeds of the drive rolls of a strip rolling mill. A number of horizontal frames each having a contact blade pivotally connected to one end of the frame are vertically stacked. Associated with each horizontal frame is a cylindrical drum having a plurality of resistor elements of differing values. The drums are positioned so that the resistor element on the bottom of the drum contacts the blade of the corresponding horizontal frame. The drums are carried by a vertical frame which slides on the side rails of the horizontal frame and the drums may be simultaneously rotated to bring different value resistor elements into contact with the corresponding blades.

3,501,734
METHOD AND DEVICE FOR STABILIZATION OF THE FIELD DISTRIBUTION IN DRIFT TUBE LINAC
Edward A. Knapp, Donald A. Swenson, and James M. Potter, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 7, 1967, Ser. No. 666,564
Int. Cl. H01j *23/00;* **H05h** *9/00*
U.S. Cl. 328—233 **4 Claims**



Resonant couplers for stabilization of the field distribution in drift tube linacs, said coupler configurations ranging from a tunable T-bar shaped device to a simple post mounted normally to the outer wall of the linac cavity, and a method of achieving stabilization, are described.

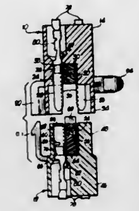
3,501,735
LATCHABLE ELECTRICAL CONNECTOR ASSEMBLAGE
Alan R. Ballman and George K. Green, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 21, 1968, Ser. No. 738,914
Int. Cl. H01r *13/54*
U.S. Cl. 339—75 **6 Claims**



Plug and socket parts of an electrical connector are drawn and locked tight together by a pair of stemmed self-expanding collets on the one part which are made to contract around and pull on shouldered latch pins on the other part by a crank pin screw-connected to stems of the collets and by cylindrical sockets into which the collets are drawn. Actuation of the crank pin is obtained via an enveloping rotary shaft in which such pin is journaled eccentrically. Slots in the shaft, exposing parts of the pin, accommodate collet stem extension, and detents yieldably lock the shaft in desired rotary positions.

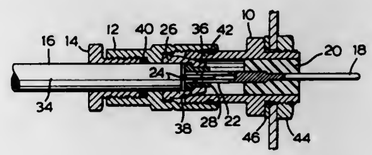
3,501,736
MULTIPLE TERMINAL ELECTRICAL CONNECTOR
Donald E. Norris, Kansas City, Kans., assignor to Whitaker Cable Corporation, North Kansas City, Mo., a corporation of Missouri
Filed Dec. 7, 1967, Ser. No. 688,747
Int. Cl. H01r *13/54*
U.S. Cl. 339—91 **15 Claims**

A connector has an insulator body provided with a shiftable locking bar which simultaneously captures a plurality of male or female terminals inserted within the body. The locking bar has a released or unlocked position utilized during loading of the insulator body with the terminals. As each terminal is inserted into the body, it is temporarily held against withdrawal therefrom by a restriction formed in the terminal-receiving opening. After all of the terminals are inserted into the body, the locking bar is shifted to its locked position to securely retain the terminals in place.



Two such connectors are employed to form a composite coupling, uniting of the two connectors being possible only if the locking bars thereof are both in their locked positions. Once united, the locking bars are interlocked by a detent to preclude movement thereof to terminal-releasing positions as long as the connectors are joined together.

3,501,737
CAPTIVATED CENTRE CONDUCTOR CONNECTOR
Gerald Harris, Rexdale, Ontario, and Arthur F. Davy, Weston, Ontario, Canada, assignors to Trim-Line Connectors Ltd., Weston, Ontario, Canada
Filed May 13, 1968, Ser. No. 728,657
Int. Cl. H01r *17/18, 13/58*
U.S. Cl. 339—177 **8 Claims**

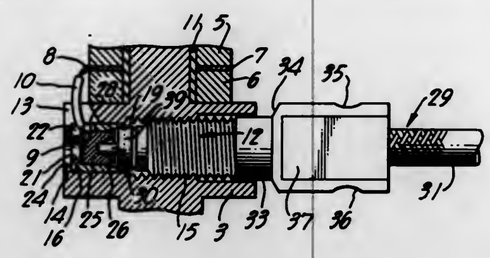


This invention relates to an improvement in a connector for coaxial cable of the type commonly used in television and other communication circuits. Connectors commonly have a plug that receives the centre cable of the coaxial cable. The improvement of this invention concerns the collar that exerts a gripping pressure on the plug to retain the centre of the coaxial cable from slipping within the plug during use.

3,501,738
ELECTRICAL CONNECTOR ARRANGEMENT
Billy Ray Tolliver, Glendora, Calif., assignor, by mesne assignments, to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Apr. 8, 1966, Ser. No. 541,382
Int. Cl. H01r *17/20*
U.S. Cl. 339—178 **12 Claims**

An electrical connector arrangement for detachably connecting a coaxial cable to an electrical device such as

a miniature accelerometer. The coaxial cable is threadably retained within a channel of the electrical device so



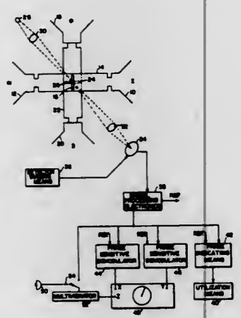
that the cable's central conductor is releasably maintained in electrical contact with a terminal within the channel.

3,501,739
TERMINAL CONNECTOR FOR ELECTRICAL CONDUCTOR
Bernard E. Dixon, P.O. Box 5872, Milwaukie, Oreg. 97222
Filed Oct. 31, 1967, Ser. No. 679,332
Int. Cl. H01r 11/08; F16b 39/22; F16c 11/00
U.S. Cl. 339—276 **1 Claim**



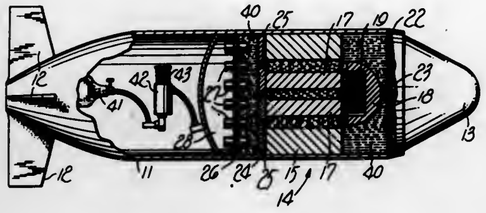
A terminal connector for an electrical conductor comprising a pair of eye members joined by a bendable strip to facilitate bending one eye member over onto the other with the hook or circle end of an electrical conductor therebetween.

3,501,740
ACOUSTIC DIRECTION FINDER
William J. Parkin, Wayland, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 31, 1969, Ser. No. 795,602
Int. Cl. G01s 3/00
U.S. Cl. 340—6 **10 Claims**



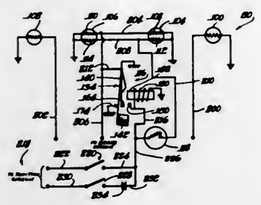
There is disclosed herein an acoustic direction finder wherein orthogonal input transducers convert acoustic waves into displacement of an aperture upon which a light source is imaged. Motion of the aperture results in the movement of a light spot on a rotating field detector element the output of which is indicative of the direction of arrival of the acoustic waves.

3,501,741
ACOUSTIC PROJECTOR PRESSURE RELEASE AND EQUALIZATION SYSTEM
Albert E. Wallen, Winston-Salem, and Paul L. Whitehead, Burlington, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 15, 1968, Ser. No. 776,141
Int. Cl. H04r 1/44
U.S. Cl. 340—8 **10 Claims**



In an acoustic projector, a baffle plate having a plurality of slidably mounted, spring-biased pistons is mounted between a gas filled pressure release chamber and a liquid filled acoustic generator chamber. The pressure release chamber is pressurized to a preestablished level so that the slidably mounted and spring-biased pistons present a certain compliance characteristic to the acoustic generator chamber. A pressure regulator system monitors and maintains the pressure within the pressure release chamber always at the optimum pressure above environmental pressure for the desired compliance characteristic.

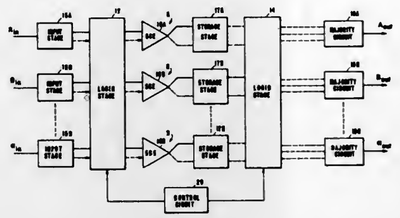
3,501,742
DECELERATION SIGNALLING SYSTEM FOR MOTOR VEHICLES
Lynn E. Ellison, 44 Industrial Road, Crystal Lake, Ill. 60014
Filed Aug. 11, 1966, Ser. No. 571,856
Int. Cl. B60q 1/26; G08b 21/00; H01h 35/02
U.S. Cl. 340—71 **11 Claims**



A deceleration signalling system for a motor vehicle, which system includes a source of light, an inertia switch assembly, main circuit means interconnecting said source of light with said inertia switch assembly and the brake light circuit of said vehicle. The inertia switch assembly includes a pair of normally open contacts disposed in circuit with the source of light, and means for closing said contacts upon the deceleration of said vehicle at a predetermined rate. In addition, said inertia switch assembly comprises electromagnetic means energized by the brake circuit for maintaining said contacts in engagement after the deceleration of said vehicle falls below said predetermined rate, but permitting said contacts to separate once the brake circuit is deenergized. Further, said system employs a novel signal unit construction for mounting on a

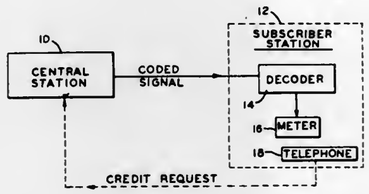
vehicle to warn following vehicles of rapid deceleration, said unit being designed and constructed to house the above-mentioned signalling system.

3,501,743
AUTOMATIC FAULT CORRECTION SYSTEM FOR PARALLEL SIGNAL CHANNELS
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Jacob Goldberg, Palo Alto, Calif.
Filed Nov. 4, 1965, Ser. No. 506,908
Int. Cl. G06f 11/00; G08b 29/00
U.S. Cl. 340—146.1 **11 Claims**



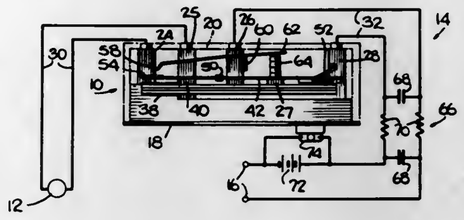
A plurality of signal channels, each with a failure-susceptible element, interconnected to correct for the failure of any one of said elements. The input signals of two different channels are transmitted through each failure-susceptible element during two different cycles of operation. The transmitted signals, temporarily stored in storage units, are supplied to majority circuits. Each majority circuit, associated with a different channel, provides a signal corresponding to its channel's input signal as long as not more than one failure-susceptible element fails.

3,501,744
POSTAGE METERING SYSTEM HAVING SIGNAL CONDITIONING MEANS
Luther G. Simjian, Greenwich, Conn., assignor to General Research, Inc., Greenwich, Conn., a corporation of Connecticut
Filed Nov. 15, 1967, Ser. No. 683,287
Int. Cl. H04q 9/00; G06f 7/46; H04m 11/00
U.S. Cl. 340—152 **20 Claims**



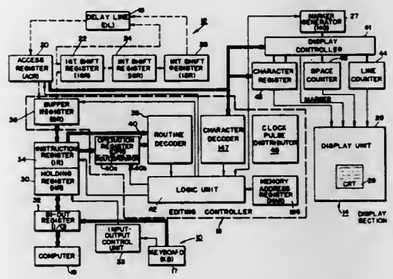
In a postage metering system the postage meter disposed at a user station is provided with settable means for enabling the credit register of the meter to be set to reflect an increased credit balance. These settable means are normally in an inoperative condition, but are rendered operative for setting the register to reflect a predetermined increment in response to the receipt of a coded electrical signal originating at a remote central station. For record purposes the meter is provided with image recording means to furnish a record of counters indicating the monetary status of the register.

3,501,745
FREQUENCY SELECTIVE RESONANT REED DETECTOR
John B. Beckman, Northvale, N.J., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,171
Int. Cl. H04q; H01h 35/02, 35/14
U.S. Cl. 340—156 **12 Claims**



A frequency selective device including a piezoelectric transducer which vibrates one end of a resonant reed is disclosed. Switch contacts including said reed close at resonant vibration amplitude. A shock responsive protective switch is provided.

3,501,746
EDITING DISPLAY SYSTEM
Michael K. Vosbury, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 27, 1965, Ser. No. 505,341
Int. Cl. G06f 1/00
U.S. Cl. 340—172.5 **17 Claims**

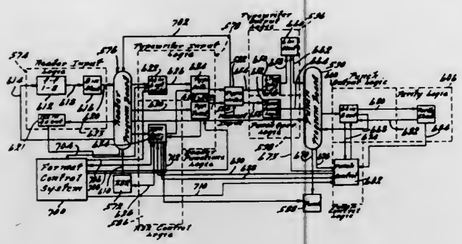


An editing and display system is capable of operating in both fixed and variable format modes. A format can be established in the variable format mode, and then when the system is switched to the fixed format mode, the operator is constrained to enter information in accordance with that format. This is combined with an overlay arrangement, whereby the fixed format may be stored in one part of the memory and the variable format in another part, and yet both parts are displayed in an interleaved fashion, i.e. as though the two parts had been interleaved in the memory. The invention also covers a time sharing arrangement in which different memories or different sections of the same memory may be assigned exclusively to different operators, with all the operators having access to the same editing unit for performance of editing functions in the respective memories or memory sections.

3,501,747
CODE CONVERSION SYSTEM

James D. Bungard, East Detroit, and Robert E. Costello, Fraser, Mich., assignors, by mesne assignments, to Intercontinental Systems, Inc., Los Angeles, Calif., a corporation of California

Filed July 8, 1965, Ser. No. 470,393
Int. Cl. B41j 5/36
U.S. Cl. 340—172.5 162 Claims



A writing system utilizing coded information input means coded in accordance with any one of a plurality of first codes, and an information output means having means actuated in accordance with a second code comprising means for generating information signals in accordance with the information in said input means, a first plurality of gate means responsive to said signal generating means for producing first output signals in accordance with the first code of informations signals, a second plurality of gate means responsive to said first output signals for producing second output signals in accordance with the second code, means selectively inter-connecting said first gate means and said second gate means for producing output information in said information output means representative of the information coded in the input means, and means coupling said second gate means to the information output means.

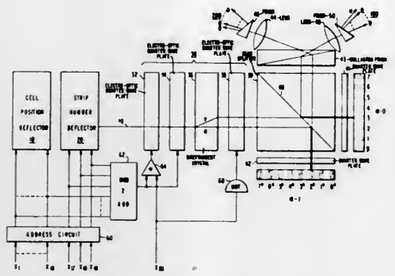
The method of programming an automatic writing system or the like for automatic completion of a form or the like comprising the steps of: dividing said form into horizontally and vertically extending lines corresponding to printing spaces of those portions of the form to be completed, preparing a first tape having a distinguishing code at each of said vertically extending lines, preparing a second tape having a distinguishing code at each of said horizontally extending lines, programming said automatic writing system to perform a particular function at each of a plurality of locations on said form, and signaling the locations of said form in said writing unit and utilizing such signals to select a particular function.

3,501,748
ERROR CONTROL FOR MEMORY

William L. Duda, Wappingers Falls, N.Y., and Erhard Max, Baden, Wurttemberg, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Feb. 17, 1967, Ser. No. 616,845
Int. Cl. G06f 1/00
U.S. Cl. 340—172.5 18 Claims

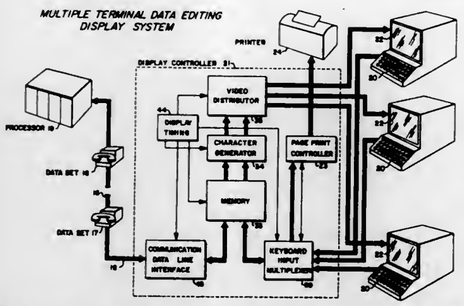
The storage of information words, the arrangement of information words and the readout of information words in read only memories of such large capacity that the probability of obtaining an error free store is negligibly small. The original information to be stored is arranged in lists of words and each list is successively stored in successive sections of the memory. After writing each list into its section, the stored list is read out and the erroneous words noted. The next list is stored with check words in word locations corresponding to the word locations containing errors. The erroneous words noted are arranged in a list and stored correctly and redundantly in a first additional section. In a second additional section each word stored therein contains the address of an erroneously stored word and the address with the first additional section wherein the word is written correctly. All words in the latter section are also written redundantly to increase the probability that any given word is written correctly at least once. To readout any information responsive to a given address, the addressed word and the word in the corresponding word location of the next succeeding section are interrogated and noted. If neither interrogated word is a check word, the addressed word readout was correctly written into memory and the readout process ends. However, if one of the interrogated words is a check word, meaning that the word at the addressed location was written into the memory incorrectly, the desired word must be obtained from somewhere in the first additional section. To accomplish the latter function, the second additional section is scanned for a word containing an address corresponding to the address of the desired word. When correspondence between addresses occurs the word in the second additional section is readout and the address witihn the first additional section wherein the desired word is correctly stored is noted. The latter address is used to locate the desired word within the first additional section.



3,501,749
MULTIPLEXING MEANS FOR RECEIVING INFORMATION FROM ONE OR MORE SOURCES AND STORING IT IN A CYCLIC MEMORY DEVICE

Allen B. J. Cuccio, Oklahoma City, Okla., assignor to General Electric Company, a corporation of New York

Filed Aug. 29, 1967, Ser. No. 663,997
Int. Cl. G11b 13/00; G06f 1/00, 7/00
U.S. Cl. 340—172.5 2 Claims

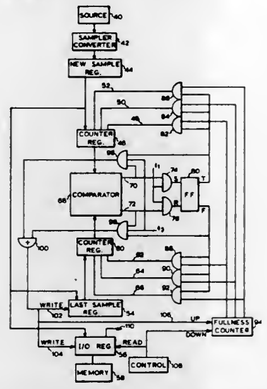


A system for storing information received from one or more keyboards in digital character form in a cyclic memory device including synchronizing apparatus which actuates the cyclic memory device to store the transfer of information in the cyclic memory device, and selecting apparatus which causes particular storage locations in the cyclic memory device to be available for storing without the need of direct storage address selection.

3,501,750
DATA COMPRESSION PROCESSOR

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Tage O. Anderson, Arcadia, Calif.

Filed Sept. 19, 1967, Ser. No. 668,969
Int. Cl. G06f 1/00
U.S. Cl. 340—172.5 9 Claims

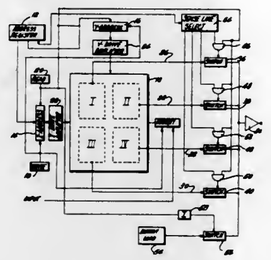


A processor responsive to a sampled analog signal for selecting only those samples whose values differ from a previously selected sample by more than a predetermined amount or aperture value. The processor determines whether a new sample should be selected by initially comparing it with the last selected sample and then modifying the smaller of the two samples by adding the aperture value thereto. The modified and unmodified samples are then compared and if the result is the same as the result of the first comparison, it indicates that the new sample differs from the last selected sample by more than the aperture value and thus should be selected.

3,501,751
HIGH SPEED CORE MEMORY WITH LOW LEVEL SWITCHES FOR SENSE WINDINGS

Charles P. Gerrard, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 6, 1965, Ser. No. 511,738
Int. Cl. G11b 5/00; H03k 17/00
U.S. Cl. 340—174 3 Claims

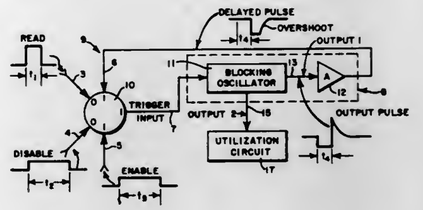


There is described a coincidence core memory in which a plurality of output sense windings are selectively gated by low level switching to a common output amplifier, the gating being controlled by an address register which stores part of the memory address.

3,501,752
PULSE-TYPE MAGNETIC CORE MEMORY ELEMENT CIRCUIT WITH BLOCKING OSCILLATOR FEEDBACK

Joseph C. Thornwall, 7006 Dolphin Road, Lanham, Md. 20801

Filed Jan. 13, 1966, Ser. No. 520,838
Int. Cl. G11b 5/00
U.S. Cl. 340—174 7 Claims

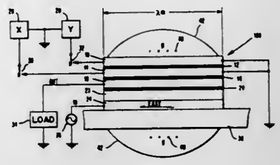


A magnetic core memory element circuit includes a magnetic core memory element having a plurality of input windings and an output winding, a blocking oscillator connected between the output winding and one of the plurality of input windings, and a utilization device coupled to the blocking oscillator to receive an output therefrom. With this particular circuit configuration, the output from the magnetic core memory element can be applied to the utilization device and simultaneously be coupled back to the magnetic core memory element to automatically reset it to its original state, i.e., the magnetic core memory element can be interrogated without subsequent loss of information content.

3,501,753
HIGH SPEED THIN FILM SWITCH

Philipp G. Kornreich, Westmont, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 326,060
Int. Cl. G11c 5/02, 11/14; H03k 17/84
U.S. Cl. 340—174 18 Claims

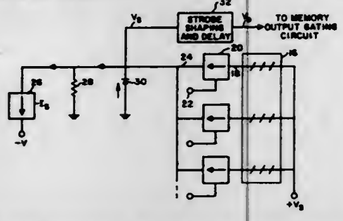


There is disclosed a switch comprising two transmission line elements with a thin magnetic film having the property of uniaxial anisotropy interposed as a spacer between the two elements. The first transmission line is made the input and the second line is made the output. The coupling between the two lines is made variable by causing the film to operate in its saturated or non-saturated mode.

3,501,754
COMPUTER MEMORY STROBING CIRCUIT FOR PROVIDING AN ACCURATELY POSITIONED STROBE PULSE

Neil R. Davie, Littleton, Colo., assignor to Ferroxcube Corporation, Saugerties, N.Y., a corporation of Delaware

Filed May 21, 1968, Ser. No. 730,787
Int. Cl. G11c 7/00; H03k 17/74
U.S. Cl. 340—174 4 Claims

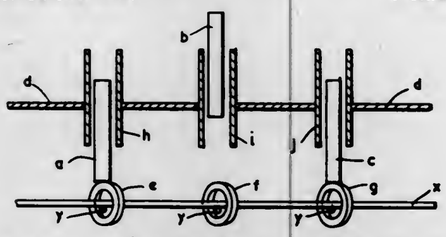


An arrangement for providing an accurately positioned strobe pulse which will consistently strobe the peak point of the output current of a selected core within a core memory matrix regardless of drive circuit delay variations and variable core peaking delays is provided with a diode clamp coupled to the last to be selected row or column coordinate drive line. Strobing delay initiating circuitry is coupled to the clamped line. When drive current selection switches are coupled to the selected drive line, the conducting diode will maintain the voltage across the line constant until the selected line current has risen to approximately drive current. The diode clamp is positioned such that at this point conduction ceases and strobe initiation begins.

3,501,755
MAGNETIC STORAGE MATRIX EMPLOYING MAGNET CORES

Russell Edward Winn, Hartfield, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 23, 1959, Ser. No. 808,383
Claims priority, application Great Britain, Apr. 23, 1958, 12,891/58
Int. Cl. G11c 5/02, 11/06, 17/00
U.S. Cl. 340—174 4 Claims

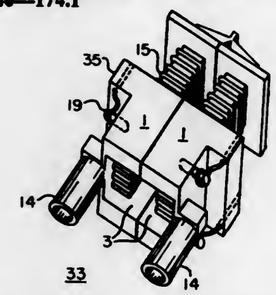


1. A magnetic storage device comprising a plurality of magnetic core elements arranged in rows and columns to form a matrix in a plane, said magnetic elements each being constituted of ferromagnetic material having a rectangular hysteresis loop and possessing two stable opposite remanence states, a pair of conductors threaded through each of said magnetic elements, and means for permanently recording information in said device by disabling selected elements of the matrix, said disabling means including a plurality of permanent magnets mounted in a plane parallel to the matrix plane and arranged substantially similarly to the magnetic elements and each capable of premagnetizing one of said magnetic elements when in close proximity thereto and thus effectively removing the said premagnetized element from the matrix, and means for moving selected ones of the permanent magnets in a direction substantially perpendicular to the matrix plane each into the close proximity of one of said selected elements.

3,501,756
LAMINATED MAGNETIC TRANSDUCER WITH BOBBIN STRUCTURE

John P. Woods, Anchorage, Alaska, and Clifford D. Dransfield and Henry R. Barta, Dallas, Tex., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Original application Aug. 29, 1962, Ser. No. 220,242, now Patent No. 3,375,574, dated Apr. 2, 1968. Divided and this application Mar. 5, 1968, Ser. No. 710,568
Int. Cl. G11b 5/00; G01d 15/06
U.S. Cl. 340—174.1 23 Claims

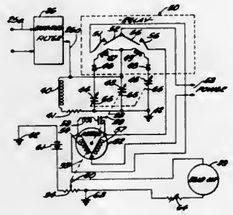


A magnetic transducer comprised of an interior subassembly inside of a case containing a metal suitable for protecting the subassembly from external magnetic fields. The subassembly includes a pair of bobbins with a separate L-shaped pole piece partially located within each bobbin. The pole pieces are comprised of facing L-shaped magnetic laminations which may have a flux concentrating groove or nose. Corresponding legs of the L-shaped magnetic laminations of each pole piece are connected by rectangular shaped magnetic laminations placed in first indentations in the bobbins. The corresponding legs may be so arranged that a short lamination corresponds to a longer lamination in the other pole piece. A coil in a second indentation in each bobbin encircles a leg of each pole piece. A plastic material holds the subassembly in place. Other features of the transducer are mentioned.

3,501,757
CONDITION MONITORING AND READOUT DEVICE

James B. Alper, 127 E. Bunny Ave., Santa Maria, Calif. 93454

Filed Dec. 14, 1965, Ser. No. 513,715
Int. Cl. G08c; H03j 3/04, 3/00
U.S. Cl. 340—187 2 Claims

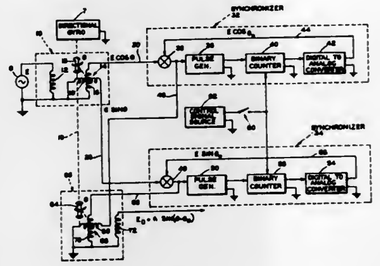


A device for monitoring conditions such as the level of a liquid in a tank by means of which extremely accurate measurements can be made and transmitted to a remote location for monitoring. The device includes a reactance type probe which would be responsive to the physical condition to be monitored and which converts the signal to a variable frequency signal which then can be transmitted to a remote location with little line loss and then converted into readable information.

3,501,758
APPARATUS FOR SYNCHRONIZING RESOLVER DATA

Robert Ludlow James, Bloomfield, and Harold Moreines, Springfield, N.J., assignors to The Bendix Corporation, a corporation of Delaware

Filed June 22, 1967, Ser. No. 648,158
Int. Cl. G08c; G06g 7/22
U.S. Cl. 340—198 8 Claims



Apparatus for synchronizing signals provided by a signal device including an input winding and an output winding carried by an angularly displaceable element for providing signals corresponding to the sine and cosine of the angular displacement. The signals are synchronized and the synchronized signals are connected to the input winding of another signal device, and which input winding is carried by an angularly displaceable element. The angularly displaceable elements are connected so that when the first mentioned of said elements is angularly displaced in response to a condition the last mentioned element provides at an output winding of the other signal device a synchronized output as a function of the difference between angular displacement of the elements in response to the condition and angular displacement at a predetermined synchronizing instant.

3,501,759
REGULATED POWER SUPPLY

James E. Armstrong, Maple Glen, Pa., assignor to Robinson-Halpern Company, a corporation of Pennsylvania

Filed May 20, 1966, Ser. No. 559,029
Int. Cl. H03b 3/00
U.S. Cl. 340—199 7 Claims

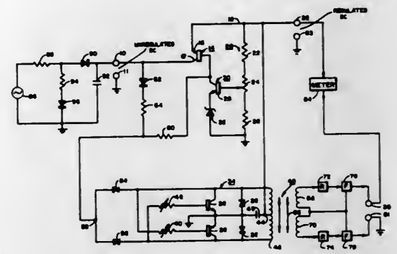
1. The combination of a regulated power supply circuit and a measuring system;

said measuring system comprising a differential transformer having mutually coupled primary windings; and said power supply comprising:

a regulated direct-current supply circuit including a first amplifier circuit for developing a regulated direct voltage from an unregulated direct voltage, and a second amplifier circuit responsive to said regulated direct voltage for controlling the operation of said first amplifier circuit;

a voltage-multiplier circuit including an oscillator circuit, means for coupling said primary windings as reactive elements of said oscillator circuit, and means for rectifying multiplied voltages developed across at least one of said primary windings;

means coupling said first amplifier circuit to said oscillator circuit to supply said regulated voltage as the operating voltage therefor;

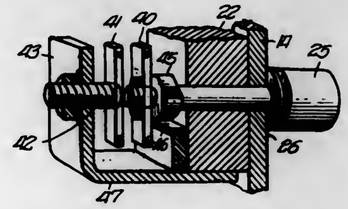


and means coupling said rectifying means to said second amplifier circuit to supply the rectified multiplied voltage as the operating voltage therefor.

3,501,760
FILM INSPECTING MACHINE

Robert F. Menary, Northbrook, Ill., assignor to Paulmar, Incorporated, Northfield, Ill., a corporation of Illinois

Filed Apr. 14, 1966, Ser. No. 542,484
Int. Cl. G08b 21/00
U.S. Cl. 340—260 11 Claims



A machine for inspecting motion picture film to enable improper splices, sprocket hole tears and similar defects to be detected and appropriate repairs made which includes an inspecting head having rollers on which the film is transported past (1) a thickness sensing roller which operates a switch connected into the film drive circuit for stopping the drive when a section of film of more than normal thickness and exceeding a predetermined length engages the sensing roller and rotates the same, and (2) a tear detecting device which is in the form of film engaging jewels mounted on switch forming spring arms also connected into the drive circuit for stopping the drive when a jewel drops into a hole resulting from a break or tear in an unsupported portion of the film intermediate its marginal edges.

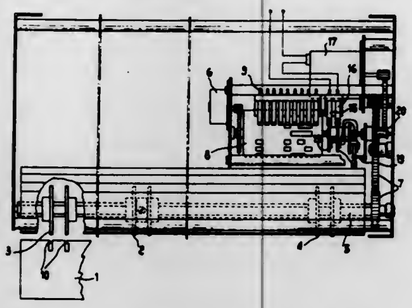
3,501,761
REMOTE-CONTROLLED DISPLAY DEVICE FOR SELECTIVELY DISPLAYING SIGNS OR WORDS

Elio Capellari, Milan, Italy, assignor to Enrico Boselli S.p.A., Milan, Italy

Filed June 7, 1966, Ser. No. 555,735
Claims priority, application Italy, June 8, 1965, 12,877/65; Feb. 25, 1966, 4,372/66
Int. Cl. G08b 23/00, 5/00
U.S. Cl. 340—324 2 Claims

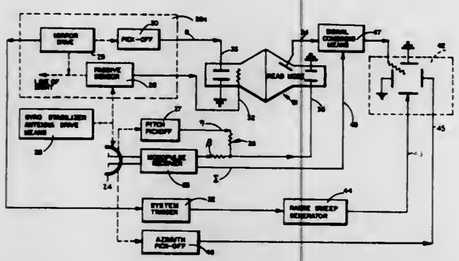
A remotely controlled display device comprises a rotary carrier having a plurality of indicia displaying vanes hingedly mounted thereon for selectively displaying

the indicia at each position of a plurality of rotational positions, the carrier being connected to a motor which has a remote control supply circuit. Connected to the supply circuit is a control circuit which has a given number of leads adapted for relative parallel connection each including a contact end individually contacting portions of a rotary roller type switch assembly having the given number of circular switch portions each with conductive and non-conductive segments, said assembly being ro-



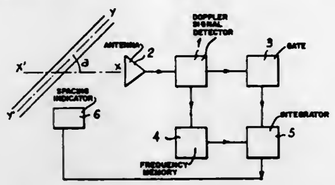
tatably connected to the carrier for phased concurrent rotation therewith. The connection between the supply circuit and the control circuit is such that as a potential is applied to a remotely selected group of leads and as the control circuit is opened by simultaneously contacting of all contact ends of the group on non-conductive segments, the supply to the motor is cut off, thereby stopping the carrier at a remotely predetermined indicia displaying position.

3,501,762
MULTISENSOR CORRELATION APPARATUS
Robert M. Klees, Costa Mesa, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,726
Int. Cl. G01s *9/00*
U.S. Cl. 343—6 **9 Claims**



9. In a system having two cyclical scanning sensors, each providing a first and second time-varying signal, said second signals corresponding to a common scanned parameter other than time and the signals of a first one of said sensors having a time-base mutually distinguishable from that of the signals of the other of said sensors, scan converter means for converting a first one of the signals of one of said sensors to the time base of the other, comprising a scan converter having a write-scan mode responsive to said second signal of one of said sensors for storing a first signal therefrom and further having a read-out scan mode responsive to said second signal of said second sensor and read-scanning parallel to said write scan mode for reading out said stored first signal in accordance with the time base of the signals from said second sensor.

3,501,763
METHOD OF MEASURING THE SPACING OF TWO MOVING VEHICLES AND A DEVICE FOR THE PERFORMANCE THEREOF, AND THEIR APPLICATION TO THE EVALUATION OF THE TRAFFIC DENSITY OF VEHICLES
Jean-Claude Preti, Clamart, France, assignor to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.), Massy, Essonne, France, a company of France
Filed Jan. 12, 1968, Ser. No. 697,449
Claims priority, application France, Jan. 13, 1967, 91,023; June 2, 1967, 108,876
Int. Cl. G01s *9/42*
U.S. Cl. 343—12 **9 Claims**

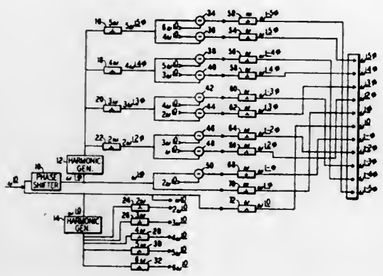


A Doppler effect radar detector detects the passage of a vehicle and emits Doppler signals the frequency of which represents the speed of the vehicle, and a count pulse that represents the passage of the vehicle.

For measuring the spacing of successive vehicles, the Doppler signals are fed to a memory circuit which emits memory signals which are counted by an integrator, and the count pulses are fed to a gate which resets the integrator to zero after the passage of each vehicle.

For measuring traffic density, the Doppler signals are fed to a memory circuit which emits memory signals, and the count pulses are fed to a digital divider which changes state after the reception of each N pulses. An integrator is connected to the memory circuit via a gate which is connected to the divider so as to feed the memory signals to the integrator from the passage of the first vehicle until the passage of the Nth vehicle.

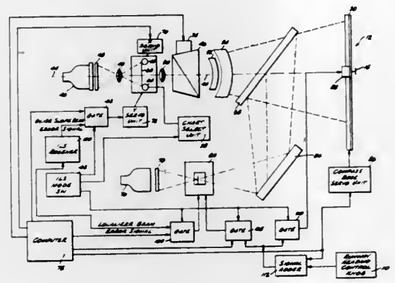
3,501,764
ARRAY PHASING DEVICE
Robert J. Mailloux, Newton, Paul R. Caron, Norwood, and Francis J. La Russa, South Boston, Mass., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 24, 1969, Ser. No. 793,772
Int. Cl. H04b *7/00*
U.S. Cl. 343—100 **13 Claims**



Apparatus for generating a series of microwave signals at positive and negative progressively phased angles. The disclosed apparatus employs intermediate frequency multiplication and heterodyning to produce the desired signals through use of only one precision phase shifter

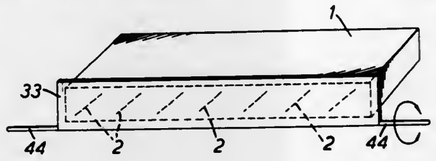
for each series of signals. A phase interpolation technique which permits doubling the number of phased output signals is also disclosed.

3,501,765
INSTRUMENT LANDING DISPLAY SYSTEM
Stanley N. Roscoe, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,890
Int. Cl. G01s *1/16*
U.S. Cl. 343—108 **10 Claims**



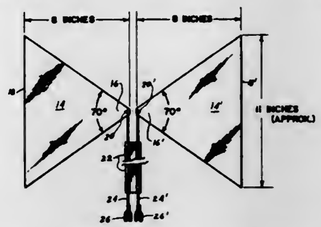
A display system in which graphic indications, used during flight to indicate specific flight conditions and data, are used during an instrument-landing-system (ILS) mode to indicate aircraft lateral and vertical displacements from a localizer beam and a glide slope beam, respectively of an instrument landing system. The graphic indication, which during flight displays the aircraft displacement from a selected course, is slewed in the ILS mode to display the lateral displacement of the aircraft from the localizer beam, as well as the difference between the aircraft and runway headings. The hardware, which during flight is used to automatically slew a map so that the aircraft position thereon appears at the display center, is used in the ILS mode to display the aircraft vertical displacement from a glide-slope beam.

3,501,766
VARIABLE DIRECTIVITY AERIAL OF THE SLOTTED WAVEGUIDE TYPE
Mervyn James Crumpen, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed July 27, 1966, Ser. No. 568,163
Claims priority, application Great Britain, Aug. 16, 1965, 34,960/65
Int. Cl. H01q *13/10, 15/02, 1/42*
U.S. Cl. 343—771 **5 Claims**



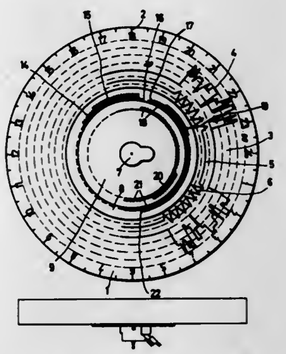
A variable directivity aerial system comprises a multi-walled slotted waveguide aerial, the walls of which are in fixed relation to one another, and, in combination therewith, an additional member which is movably mounted near the slots of the guide and is adapted differently to modify the field in the neighborhood of the slots in different positions occupied by said member in its range of movement. The movable additional member may be of metal or of thin microwave permeable insulating material.

3,501,767
ULTRA-HIGH FREQUENCY TABLE TOP DIPOLE MAT ANTENNA
Joseph Velez, Jackson Heights, N.Y., assignor to Lambda Antenna Systems Corp., Astoria, N.Y.
Filed Nov. 18, 1968, Ser. No. 776,324
Int. Cl. H01q *9/28*
U.S. Cl. 343—795 **4 Claims**



An antenna for use in the ultra-high frequency range for television operation. The antenna comprises a pair of coplanar triangular metal laminae. The apices of said triangular laminae are directed towards, and are spaced from, one another. The triangular laminae bases are disposed parallel to each other. Each of the apices constitutes a 70° angle. The bases are 11 inches long. The perpendicular span between each of the apices and its respective base is 8 inches. A two wire, 300 ohm transmission line is connected to the apices.

3,501,768
RECORDING ARRANGEMENT FOR A VEHICLE HAVING DIFFERENT OPERATORS
Karl Vögtlin, Villingen, Germany, assignor to Kienzle Apparate GmbH, Villingen, Black Forest, Germany
Filed Aug. 29, 1968, Ser. No. 756,161
Claims priority, application Germany, Sept. 2, 1967, K 63,267
Int. Cl. G01d *9/28*
U.S. Cl. 346—45 **10 Claims**



Several drivers or operators of vehicles provided with recording apparatus, have personal record carriers. When one or two operators are on duty on a particular vehicle, the respective personal record carrier, or record carriers, are attached to a vehicle record carrier for simultaneous recording movement. Recordings representing the operations of the vehicle are simultaneously made on the vehicle record carrier with recordings on the personal record carrier, or carriers, representing the work of the operator or operators. By evaluation of the recordings on the personal record carrier of each operator, the work

of each operator can be individually determined, and each operator can use his personal record carrier on different vehicles.

3,501,769
1-ARYLOXY - 3 - SECONDARY-ALKYL AND ARALKYL-2-PROPANOLS AND THE SALTS THEREOF

Albert Frederick Crowther, Leslie Harold Smith, and Thomas Miller Wood, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application Nov. 26, 1963, Ser. No. 326,233. Divided and this application May 25, 1966, Ser. No. 566,170
Claims priority, application Great Britain, Dec. 11, 1962, 46,740/62; July 19, 1963, 28,717/63
Int. Cl. C07c *91/00, 91/04*
U.S. Cl. 260—501.17 **10 Claims**

1. A compound which is a member selected from the group consisting of compounds of the formula:

$$Ar{\cdot}O{\cdot}CH_2{\cdot}CHOH{\cdot}CH_2{\cdot}NHR^1$$

wherein Ar is a member selected from the group consisting of 3-tolyl, 4-tolyl, 2,3-dimethylphenyl, 2,4-dimethylphenyl, 2,5 - dimethylphenyl, 3,4-dimethylphenyl, 3,5 - dimethylphenyl, 2-iodophenyl, 3-chlorophenyl, 3-bromophenyl, 3-fluorophenyl, 2,3-dichlorophenyl, 2,4-dichlorophenyl, 2,5-dichlorophenyl, 3,4-dichlorophenyl, 3,5 - dichlorophenyl, 2,4,5-trichlorophenyl, 4-chloro-3-methylphenyl, 4 - chloro - 2-methylphenyl, 2-chloro-4-methylphenyl, 2 - chloro-5-methylphenyl, 4-chloro-3,5-dimethylphenyl, 3-methoxyphenyl, 2,3-dimethoxyphenyl, 2 - hydroxyphenyl, 3 - nitrophenyl, 2-phenylphenyl, 2-benzylphenyl, 2-phenoxyphenyl, 3-phenoxyphenyl, 2-p-tolyloxyphenyl, 2 - benzoyl-5-methoxyphenyl and 4-N-anilinophenyl; and R^1 is a member selected from the group consisting of isopropyl, s-butyl, t-butyl and 1-methyl - 3-phenylpropyl; and pharmaceutically-acceptable acid-addition salts thereof.

3,501,770
SHIPPING FEVER VACCINE

Charles Gale and Earl E. Ose, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

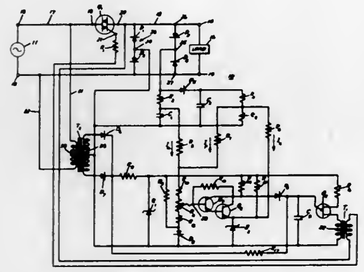
No Drawing. Continuation-in-part of application Ser. No. 565,397, July 15, 1966. This application Apr. 13, 1967, Ser. No. 630,529
Int. Cl. A61k *23/00*
U.S. Cl. 424—89 **10 Claims**

A vaccine of the inactivated virus type for immunizing cattle against shipping fever prepared by mixing inactivated *parainfluenza-3* virus and inactivated *Pasteurella multocida* and *hemolytica* bacteria cultures to an effective McFarland density and absorbing these inactivated organisms on an aluminum ion adjuvant.

3,501,771
ROOT MEAN SQUARE VOLTAGE REGULATOR

Meritt L. Miller and Lambert L. Johnson, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Filed Feb. 19, 1968, Ser. No. 706,373
Int. Cl. G05f *1/32*
U.S. Cl. 323—22 **10 Claims**



A regulating power supply circuit in which the power supplied at the output is controlled by phase controlling a semiconductor switching device in response to changes in a hybrid signal indicative of the root mean square value of the output voltage. The hybrid signal is formed by combining a first signal representing the average value of the output load voltage and a second signal representing the peak value of the load voltage. The two signals are currents of relatively small magnitude, and suitably proportioned amounts of the two currents are fed into the summing junction of an operational amplifier. Preferably, a circuit branch is provided for diverting a portion of the second signal current when the peak value of the load voltage exceeds a preselected value. A correction is thereby applied to compensate for the error inherent in approximating a root mean square value from peak and average values.

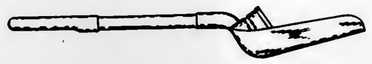
DESIGNS

MARCH 17, 1970

216,863
GRAIN SHOVEL

Gabe J. Landreville, 1913 Carroll Ave., St. Paul, Minn. 55104

Filed July 8, 1968, Ser. No. 12,657
Term of patent 7 years
Int. Cl. D8—*01*
U.S. Cl. D8—10



216,864
LUGGAGE LOCK OR SIMILAR ARTICLE

Eric P. Constable, Solihull, England, assignor to C. W. Cheney & Son Limited, Birmingham, England, a British company

Filed Feb. 19, 1969, Ser. No. 15,843
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—122

216,865
COMBINED LUGGAGE HANDLE AND STUDS THEREFOR

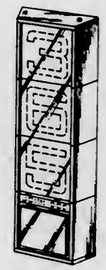
Anthony N. D'Elia, New York, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors, by mesne assignments, to Presto Lock Co., Inc., Garfield, N.J., a corporation of Delaware

Filed July 2, 1968, Ser. No. 12,599
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—154

216,866
COMBINED DOORBELL RINGER AND ADDRESS DISPLAY

Mauro C. Greco, 58 W. Bennett Ave., Kearny, N.J. 07032

Filed Jan. 8, 1969, Ser. No. 15,254
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—180



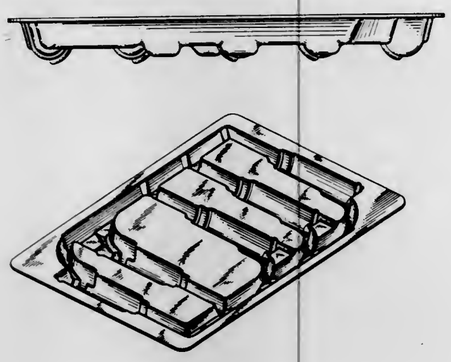
216,867
BOTTLE

Harold Raymond Aslin, 4580 Circle Road, Montreal, Quebec, Canada

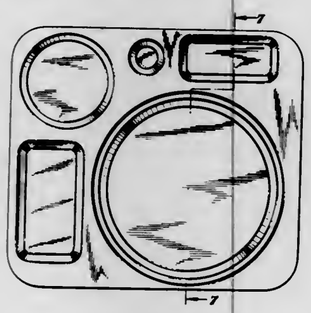
Filed Nov. 20, 1967, Ser. No. 9,464
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—33



216,868
TRAY FOR ELECTRONIC COMPONENTS OR THE LIKE
Thomas M. Britt, Red Bank, N.J., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 14,703
Term of patent 14 years
Int. Cl. D9—*04;* D15—*99*
U.S. Cl. D9—185



216,869
FOOD TRAY OR THE LIKE
Thomas M. Britt, Red Bank, N.J., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed June 6, 1969, Ser. No. 17,554
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—185



216,870
PACKAGING CONTAINER FOR FOOD OR THE LIKE
Donald H. Gregor, Chicago, Ill., assignor to Ekco Products, Inc., Wheeling, Ill., a corporation of Illinois
Filed May 1, 1969, Ser. No. 16,985
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—220



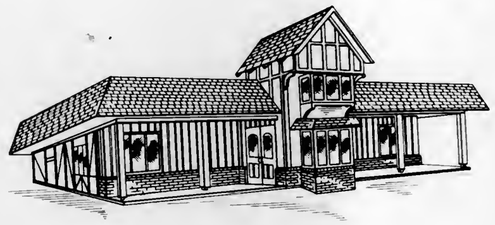
216,871
DISPLAY BOX
Rudy Leis, Wyncote, Pa., assignor to M. Black Manufacturing Company, Inc., Philadelphia, Pa., a corporation of Ohio
Filed June 17, 1969, Ser. No. 17,740
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—224



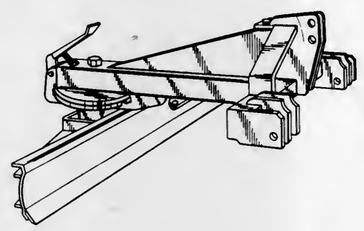
216,872
HOOK FOR MEAT OR SIMILAR ARTICLES
Allan G. Serle, Union, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of design application Ser. No. 9,436, Nov. 16, 1967. This application May 27, 1968, Ser. No. 12,084
Term of patent 14 years
The portion of the term of the patent subsequent to May 28, 1982, has been disclaimed
Int. Cl. D8—*03*
U.S. Cl. D11—1



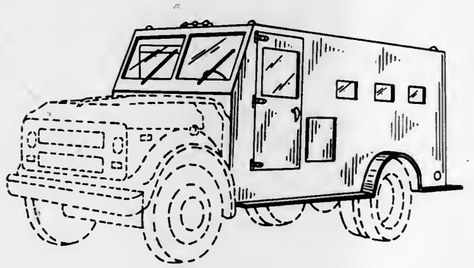
216,873
FOOD SERVICE BUILDING
Robert H. Spain, Fort Lauderdale, and Sidney R. Wilkinson, Broderton, Fla., assignors to Chris McGuire, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed June 24, 1969, Ser. No. 17,854
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



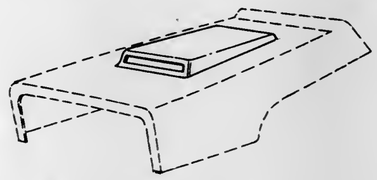
216,874
SCRAPER BLADE
Ted L. Cline, P.O. Box 38, Rush Springs, Okla. 73802
Filed Jan. 9, 1969, Ser. No. 15,282
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—3



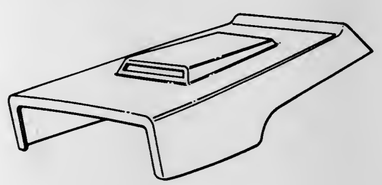
216,875
ARMORED MOTOR VEHICLE
Russell E. Bauer, Grosse Pointe, Mich., assignor to Bauer Ordnance Company, Warren, Mich., a corporation of Michigan
Filed Feb. 19, 1969, Ser. No. 15,844
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



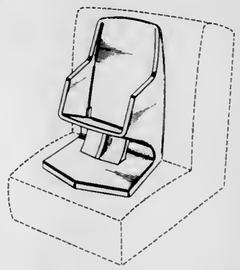
216,876
HOOD SCOOP FOR A TRACTOR
John A. Gale, Wayzata, and Robert E. Haueter, Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 4, 1968, Ser. No. 13,396
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—18



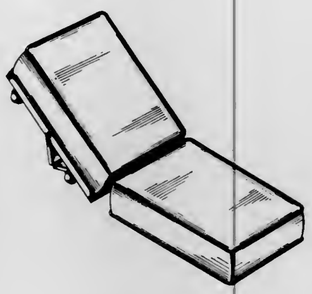
216,877
TRACTOR HOOD
John A. Gale, Wayzata, and Robert E. Haueter, Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 4, 1968, Ser. No. 13,397
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—18



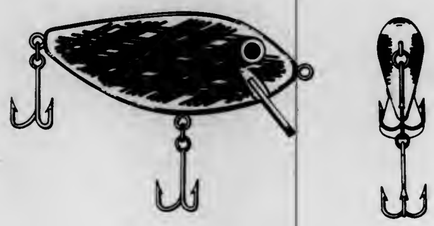
216,878
CAR SEAT FOR A CHILD
Stephen J. Molitoris, Ann Arbor, Mich., assignor to American Safety Equipment Corporation, Sherman Oaks, Calif., a corporation of New York
Filed Sept. 24, 1968, Ser. No. 13,693
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



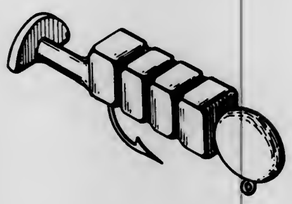
216,879
PORTABLE LOUNGE SEAT
David J. Petersen, 1206 Thomas Lane 98498, and Bruce S. Martin, 2224 N. Puget Sound 98406, both of Tacoma, Wash.
Filed Apr. 2, 1968, Ser. No. 11,257
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



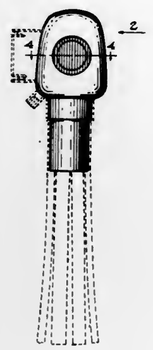
216,880
FISHING LURE
George S. Perrin, Fort Smith, Ark., assignor to Plastics Research and Development Corporation, Fort Smith, Ark., a corporation of Arkansas
Filed June 2, 1969, Ser. No. 17,454
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—28



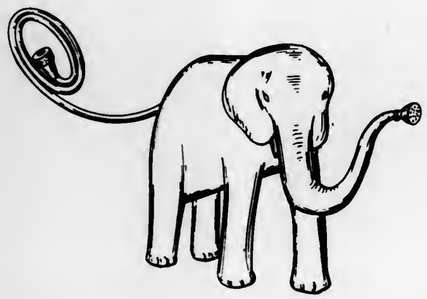
216,881
FISHING JIG
Daniel T. Lingle, 835 E. 52nd St. N., Tulsa, Okla. 74105
Filed June 18, 1969, Ser. No. 17,754
Term of patent 7 years
Int. Cl. D22—*07*
U.S. Cl. D22—30



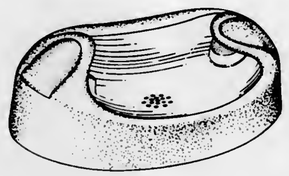
216,882
TROLLING SINKER
Oscar M. Clink, 1446 W. Slauson Ave., Los Angeles, Calif. 90047
Filed June 5, 1968, Ser. No. 12,224
Term of patent 7 years
Int. Cl. D22—*07*
U.S. Cl. D22—30



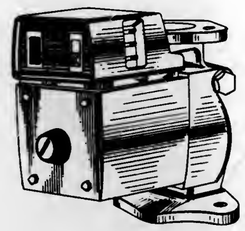
216,883
WATER SPRINKLER BATH TOY
Stanley Katzman, 75—18 193rd St., Flushing, N.Y. 11366
Filed July 1, 1968, Ser. No. 12,561
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—6



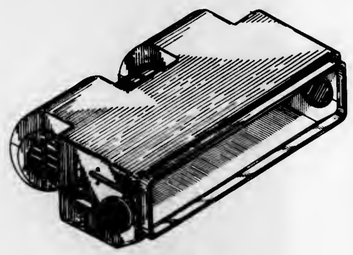
216,884
EYE-WASH FOUNTAIN BOWL
Allen C. Wright, Moraga, Calif., assignor to Haws Drinking Faucet Company, Berkeley, Calif., a corporation of California
Filed Nov. 1, 1968, Ser. No. 14,265
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



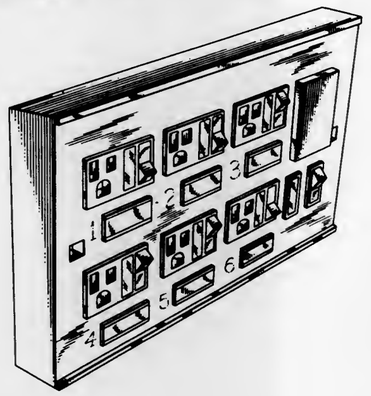
216,885
CIRCULATOR FOR A HEATER
Paul Andre Guinard, Avenue de Fouilleuse, Saint-Cloud, France
Filed May 15, 1968, Ser. No. 11,954
Term of patent 14 years
Int. Cl. D23—*03, 04*
U.S. Cl. D23—73



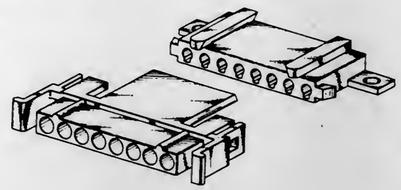
216,886
CASING FOR A VEHICLE AIR CONDITIONER
Charles F. Myers, P.O. Box 886, Denison, Tex. 75020
Filed Nov. 26, 1968, Ser. No. 14,670
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—142



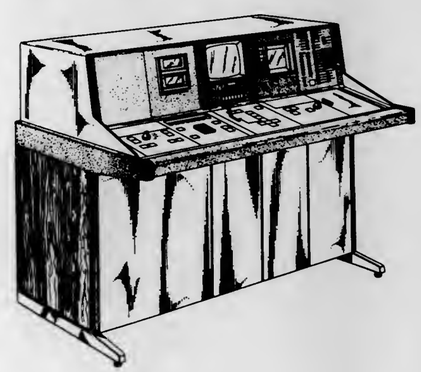
216,887
MULTIPLE ELECTRIC OUTLET UNIT
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 16, 1969, Ser. No. 16,784
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—1



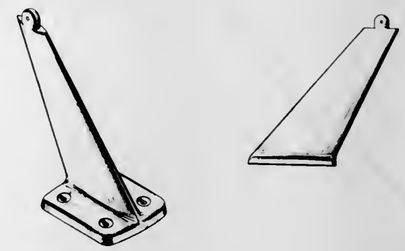
216,888
ELECTRICAL CONNECTOR HOUSING ASSEMBLY
John Philip Kunkle, Harrisburg, and Robert Charles Swengel, Jr., York, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 27, 1969, Ser. No. 15,513
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—1



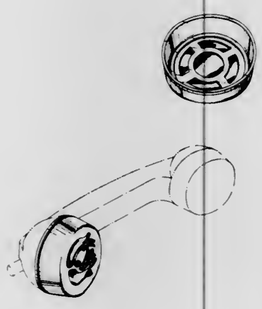
216,889
TELEPRODUCTION CONSOLE
Darrell S. Staley, Santa Clara, and Robert W. Bornschlegel, Mountain View, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 28, 1969, Ser. No. 16,918
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



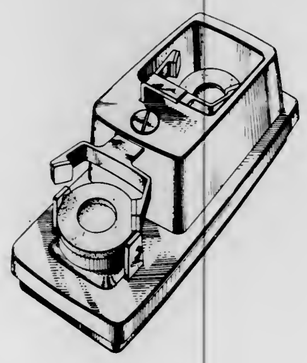
216,890
AIRCRAFT ANTENNA MAST
William C. Rogers, 5365 NW. 36th St., Miami Springs, Fla. 33166
Filed Sept. 30, 1968, Ser. No. 13,789
Term of patent 14 years
The portion of the term of the patent subsequent to Aug. 20, 1982, has been dedicated to the Public
Int. Cl. D14—*99;* D12—*06*
U.S. Cl. D26—14



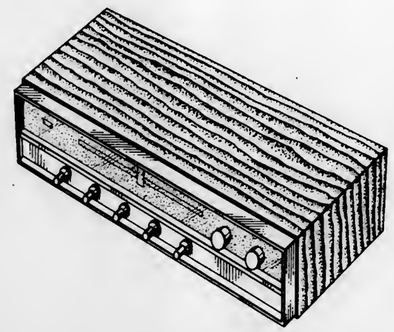
216,891
COMBINED TELEPHONE MOUTHPIECE STERILIZER AND PERFUMER
Michiko Onuki, 688 Nishiya-cho, Hodogaya-ku, Yokohama, Japan
Filed Nov. 13, 1968, Ser. No. 14,436
Term of patent 14 years
Int. Cl. D14—*03*; D23—*99*
U.S. Cl. D26—14



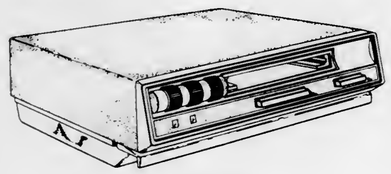
216,892
COUPLER FOR USE IN FACSIMILE TRANSCEIVER
Donald L. McFarland and Glenn Reese, both of 2829 Maricopa St., Torrance, Calif. 90503
Continuation-in-part of design application Ser. No. 3,480, Aug. 16, 1966. This application Feb. 16, 1968, Ser. No. 10,596
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



216,893
AMPLIFIER
Hironosuke Kohda, Tzuzuki-gun, Kyoto, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Apr. 16, 1969, Ser. No. 16,768
Claims priority, application Japan Oct. 23, 1968
Term of patent 14 years
Int. Cl. D14—*04*
U.S. Cl. D26—14



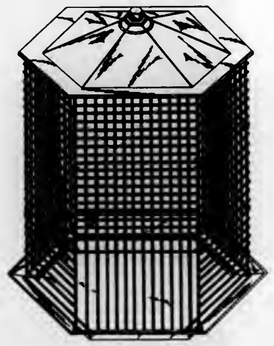
216,894
CASSETTE TRANSPORT
Orville Walter Larson, Elmhurst, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 21, 1969, Ser. No. 17,270
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



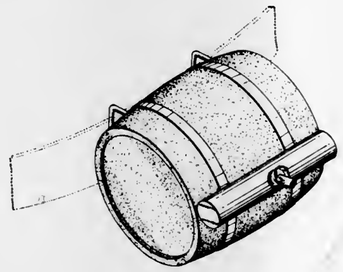
216,895
FRATERNAL STANDARD OR THE LIKE
George M. Wallace, 64 Clinton St., Paterson, N.J. 07501
Filed May 19, 1969, Ser. No. 17,215
Term of patent 14 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



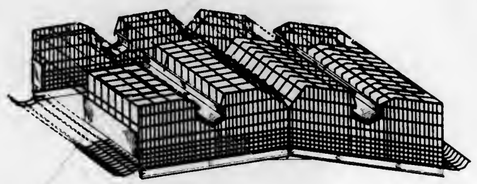
216,896
BIRD CAGE
George Gould, 791 Meacham Ave., Elmont, N.Y. 11003
Filed Oct. 11, 1968, Ser. No. 13,951
Term of patent 14 years
Int. Cl. D30—*01*
U.S. Cl. D30—4



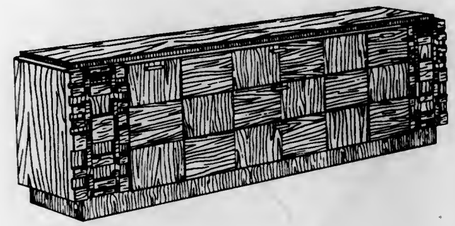
216,897
RETRACTABLE LEASH FOR DOG COLLARS
Delona J. Meath, 1100 N. Milton Ave., St. Paul, Minn. 55103
Filed Feb. 28, 1969, Ser. No. 15,976
Term of patent 14 years
Int. Cl. D30—*04*
U.S. Cl. D30—39



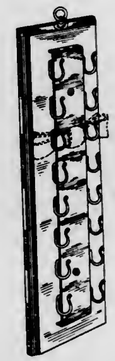
216,898
POULTRY CAGE
Gerald L. Kitson, 9709 Belding Road, Rockford, Mich. 49341
Filed Jan. 31, 1968, Ser. No. 10,375
Term of patent 14 years
Int. Cl. D30—*99*
U.S. Cl. D30—41



216,899
CHEST OF DRAWERS
Thomas Szirmay, Montreal, Quebec, Canada, assignor to Tabago Meubles Limitee, Sainte-Therese, Quebec, Canada
Filed Nov. 15, 1968, Ser. No. 14,481
Claims priority, application Canada May 16, 1968
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D33—6



216,900
BOWTIE RACK
Charles Miller, 2413 Grove Ave., Berwyn, Ill. 60402
Filed May 20, 1968, Ser. No. 12,011
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—8



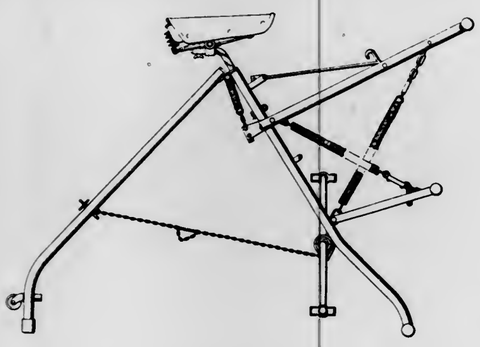
216,901
EGG-SHAPED TOY FIGURE
Reuben B. Klamer, 245 Barrington Ave., Los Angeles, Calif. 90049
Filed Aug. 2, 1967, Ser. No. 8,097
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—2



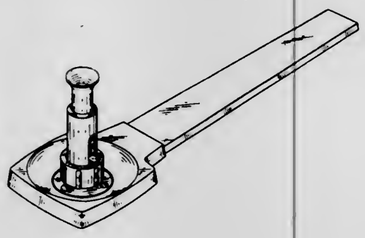
216,902
THREE FACED CONVERTIBLE DOLL
Frank F. Riforgiate, 12831 Foster Road, Rossmoor, Calif. 90720
Filed June 5, 1969, Ser. No. 17,525
Term of patent 7 years
Int. Cl. D21—*02*
U.S. Cl. D34—4



216,903
FOLDABLE EXERCISING BICYCLE
Carl W. Rubel, 2402 State Highway 20, Marysville, Calif. 95901
Filed June 13, 1969, Ser. No. 17,690
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



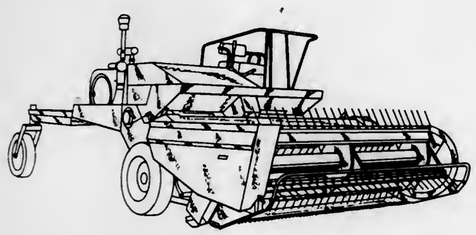
216,904
BATTING TRAINER
Norman J. Van Skyhawk, Salt Lake City, Utah, assignor to Harmon Killebrew Enterprises, Inc., Salt Lake City, Utah
Filed June 17, 1969, Ser. No. 17,748
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



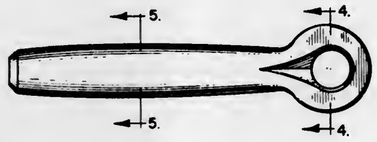
216,905
PLACEMENT KICKING BALL
Charles F. Ball, 1861 SW. 6th Ave., Pompano Beach, Fla. 33060
Filed Dec. 19, 1968, Ser. No. 15,057
Term of patent 3½ years
Int. Cl. D21—*02*
U.S. Cl. D34—15



216,906
SELF-PROPELLED AGRICULTURAL MOWING CONDITIONING MACHINE
Constantine J. Kermes and Lawrence M. Halls, Lancaster County, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 9, 1969, Ser. No. 16,655
Term of patent 14 years
Int. Cl. D15—*03*
U.S. Cl. D40—1



216,907
HANDLE FOR CULINARY IMPLEMENTS
Dorothy J. Connor, Northlake, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed July 31, 1969, Ser. No. 18,493
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



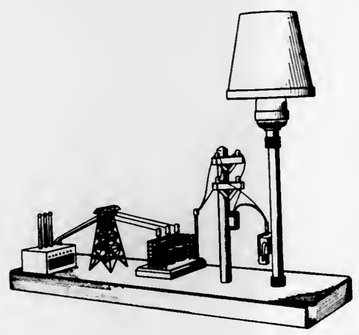
216,908
LINK CHAIN FOR BRACELETS OR THE LIKE
Samuel N. Cedar, 14 Worcester Road, Sharon, Mass. 02067
Filed Dec. 5, 1968, Ser. No. 14,809
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



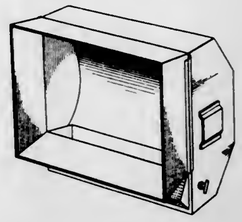
216,909
LINK CHAIN FOR BRACELETS OR THE LIKE
Samuel N. Cedar, 14 Worcester Road, Sharon, Mass. 02067
Filed Dec. 5, 1968, Ser. No. 14,810
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



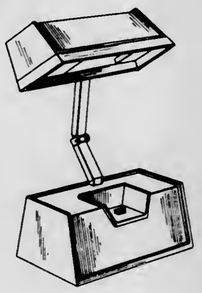
216,910
LAMP OR SIMILAR ARTICLE
Frank Skupien, 5443 S. Walcott, Chicago, Ill. 60609
Filed Apr. 15, 1969, Ser. No. 16,756
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



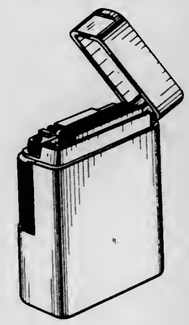
216,911
LAMP OR SIMILAR ARTICLE
Gaylord D. Specht, 19539 Mobile St., Reseda, Calif. 91335, and Calman Bassin, 187 S. Gardner St., Los Angeles, Calif. 90036
Filed Feb. 27, 1969, Ser. No. 15,940
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



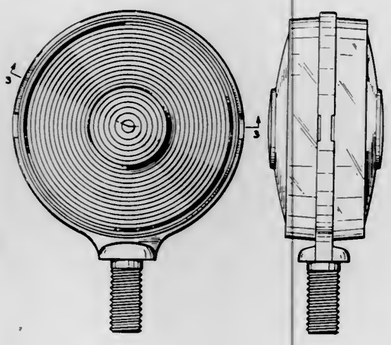
216,912
PORTABLE LAMP FOR DESKS AND THE LIKE
Hiroshi Daito, Kyoto, Japan, assignor to Blackwell Electronics Ind., Co., Ltd., Kyoto, Japan, a corporation of Japan
Filed Mar. 13, 1969, Ser. No. 16,225
Claims priority, application Japan Sept. 18, 1968
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



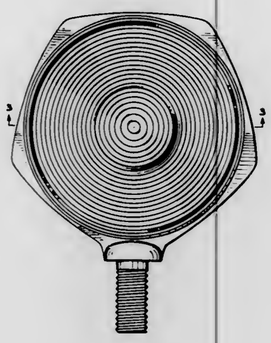
216,913
CIGARETTE LIGHTER
Takeshi Mizutani, Tokyo, Japan, assignor to Kanamaru Shoten, Ltd., Tokyo, Japan
Filed June 3, 1968, Ser. No. 12,189
Claims priority, application Japan Apr. 22, 1968
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



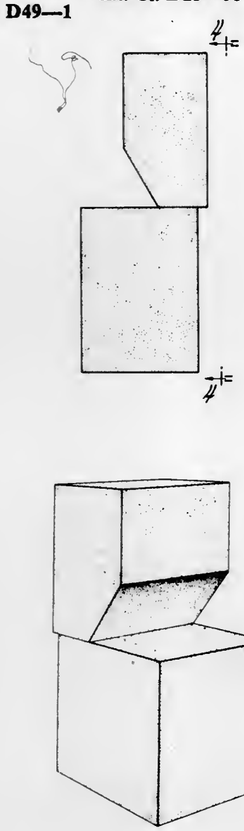
216,914
DIRECTION SIGNAL LAMP
Hugo Magi, Etobicoke, Ontario, Canada, assignor to Dominion Auto Accessories Limited, Toronto, Ontario, Canada
Filed Mar. 5, 1969, Ser. No. 16,050
Claims priority, application Canada Dec. 18, 1968
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



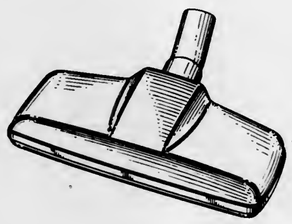
216,915
DIRECTION SIGNAL LAMP
Hugo Magi, Etobicoke, Ontario, Canada, assignor to Dominion Auto Accessories Limited, Toronto, Ontario, Canada
Filed Mar. 5, 1969, Ser. No. 16,038
Claims priority, application Canada Dec. 16, 1968
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



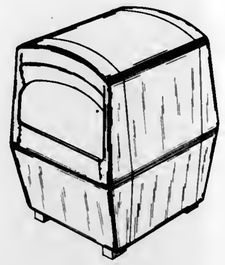
216,916
HOUSING FOR A COMBINATION WASHER-DRYER LAUNDRY APPLIANCE
Melvin A. Menk, Englewood, and Verlos G. Sharpe, Xenia, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 11, 1969, Ser. No. 15,740
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—1



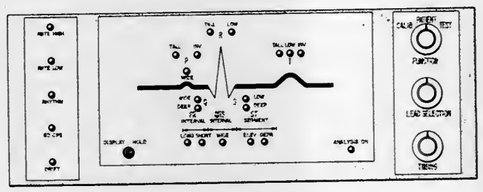
216,917
SUCTION CLEANER NOZZLE
Johan Arne Domstedt, Hagersten, and Kurt Lennart Ohlson, Bromma, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 2, 1969, Ser. No. 15,177
Claims priority, application Sweden July 5, 1968
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—18



216,918
NAPKIN DISPENSER
Robert Burkhalter, Jr., Fort Atkinson, Wis., assignor to Alwin Manufacturing Company, Inc., Green Bay, Wis.
Filed Dec. 17, 1968, Ser. No. 15,024
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D52—2



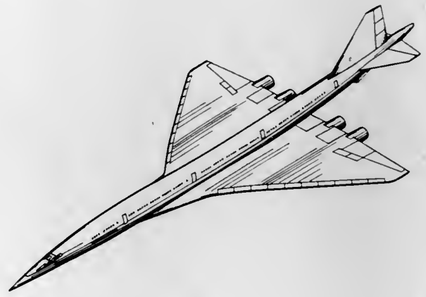
216,919
MEDICAL INSTRUMENT PANEL
Harvey F. Glassner, Los Angeles, and Lee R. Baessler, Torrance, Calif., assignors to Humetrics Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 7, 1968, Ser. No. 14,353
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6



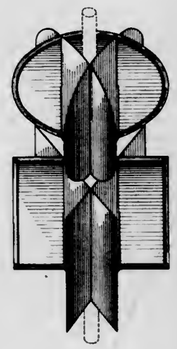
216,920
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 3, 1969, Ser. No. 15,989
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



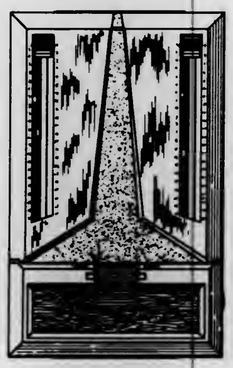
216,921
SUPERSONIC AIRPLANE
Gottfried O. Friebel, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 14,566
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



216,922
MARINE DISTRESS SIGNAL
Herman S. Teetor, 30 15th Ave. S., Naples, Fla. 33940
Filed Dec. 27, 1968, Ser. No. 15,129
Term of patent 14 years
Int. Cl. D29—*02*
U.S. Cl. D72—1



216,923
CALORIE INDEX OR THE LIKE
David Kirshenbaum, Cranston, and Anthony J. Iorio, North Providence, R.I., assignors to Consumer Dynamics Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 3, 1969, Ser. No. 15,609
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—1



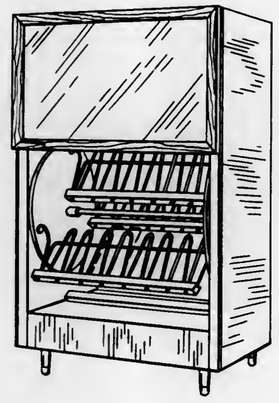
216,924
ROLL PREVENTIVE DEVICE FOR A PENCIL OR THE LIKE
Alex E. Lookholder, 4928 Ledge Ave., North Hollywood, Calif. 91601
Filed Nov. 18, 1968, Ser. No. 14,516
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—13



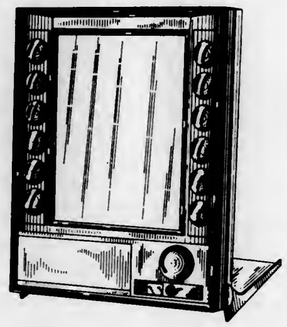
216,925
WRITING INSTRUMENT
Raymond A. Lanole, East Greenwich, R.I., assignor to Lew Mfg. Co., Coventry, R.I., a corporation of Rhode Island
Filed Apr. 21, 1969, Ser. No. 16,837
Term of patent 14 years
Int. Cl. D19—*06*
U.S. Cl. D74—17



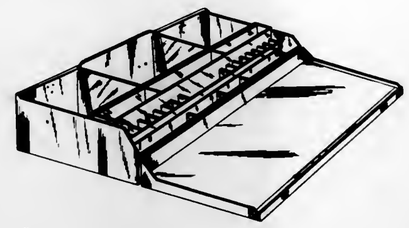
216,926
PIE DISPLAY AND WARMING CABINET
James C. Schindler, Naperville, Ill., assignor to McDonald's System, Inc., a corporation of Illinois
Filed Apr. 1, 1969, Ser. No. 16,549
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



216,927
ILLUMINABLE MAKEUP MIRROR
Howard Cole, Mountain Lakes, N.J., Dominic De Fano, Palatine, Ill., and Robert P. Wilson, Pound Ridge, N.Y., assignors to Clairol Incorporated
Filed Oct. 29, 1968, Ser. No. 14,219
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D86—10

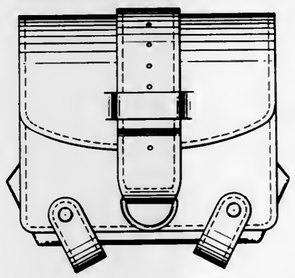


216,928
COMBINED TABLE AND CARRYING CASE FOR MODEL BUILDING OR SIMILAR ARTICLE
Benjamin F. Olson, 20 N. Compo Road, Westport, Conn. 06880
Filed Jan. 6, 1969, Ser. No. 15,225
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—1



216,929
COMBINED CARRYING AND STORAGE CASE
Peter T. Schurman, Woodbridge, Conn., assignor to The Plastic Forming Company, Inc., Woodbridge, Conn.
Filed Jan. 23, 1969, Ser. No. 15,466
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1

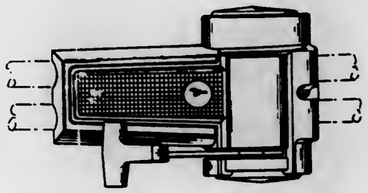
216,930
MULTIPLE PURSE
Murray Wolf, Union, N.J., assignor to Evans-Aristocrat Industries, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Jan. 27, 1969, Ser. No. 15,522
Term of patent 14 years
Int. Cl. D3—*02*
U.S. Cl. D87—3



216,931
EMBOSSED PLASTIC SHEET MATERIAL OR SIMILAR ARTICLE
Robert E. Brandner, Holmdel, N.J., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed July 31, 1968, Ser. No. 12,972
Term of patent 14 years
Int. Cl. D5—*09*
U.S. Cl. D87—3



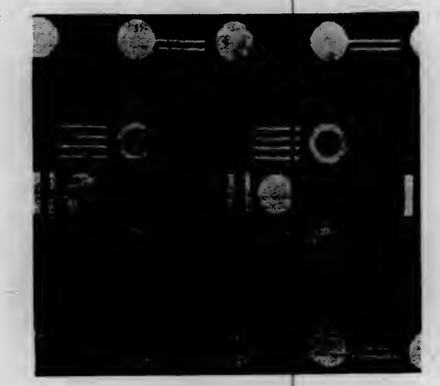
216,932
GEAR SHIFTING CONSOLE FOR A BICYCLE
Viktor Schreckengost, Cleveland, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Nov. 22, 1968, Ser. No. 14,589
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—1



216,933
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London SW. 3, England
Filed July 15, 1968, Ser. No. 12,741
Claims priority, application Great Britain May 1, 1968
Term of patent 14 years
Int. Cl. D6—*04*
U.S. Cl. D92—4



216,934
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London SW. 3, England
Filed July 15, 1968, Ser. No. 12,777
Term of patent 14 years
Int. Cl. D6—*04*
U.S. Cl. D92—4



216,935
TOWEL OR SIMILAR ARTICLE
Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,450
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



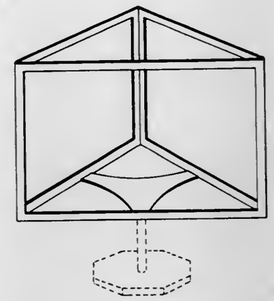
216,936
TABLECLOTH
Francesco P. Castorani, Easton, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Feb. 10, 1969, Ser. No. 15,727
Term of patent 7 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



216,937
SIGN
Tilmon Chamlee, Macon, Ga., assignor to The Shrimp Boats, Inc., Macon, Ga., a corporation of Georgia
Filed Jan. 27, 1969, Ser. No. 15,516
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



216,938
SIGN HOLDER
Sander Charles Nestegard, 403 Karen Place, White Bear Lake, Minn. 55110
Filed Sept. 11, 1967, Ser. No. 8,538
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



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PATENTS WERE ISSUED ON THE 17TH DAY OF MARCH, 1970

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Bell, David, III, to United States of America, National Aeronautics and Space Administration. Heated element fluid flow sensor. 3,500,686, Cl. 073-204.
Bell & Howell Company: *See—*
Bartusek, Robert J., 3,500,793.
Brubaker, Wilson M., 3,501,630.
Elazar, Shmuel, 3,500,674.
Bell, Malcolm R., to Sterling Drug Inc. (1-Indolinyl)-lower-alkylamidoximes and -amidine. 3,501,497, Cl. 260-326.11
Bell, Stanley C.: *See—*
Wei, Peter H. L., and Bell, Stanley C. 3,501,463.
Wei, Peter H. L., and Bell, Stanley C. 3,501,489.
Wei, Peter H. L., and Bell, Stanley C. 3,501,496.
Wei, Peter H. L., and Bell, Stanley C. 3,501,512.
Wei, Peter H. L., and Bell, Stanley C. 3,501,526.
Bell, Stanley C., to American Home Products Corporation. Disubstituted-11H-quinazolino-[2,3-b] quinazoline-11,13(5H)diones and the process for their preparation. 3,501,473, Cl. 260-256.4
Bell Telephone Laboratories, Incorporated: *See—*
Ferch, Richard L., Szentirmai, George, and Thomas, Lee C., 3,501,716.
Herriott, Donald R., and Schulte, Harry J., Jr., 3,501,222.
Herriott, Donald R., 3,501,587.
Kogelnik, Herwig W., 3,501,216.
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Bell, Walter, to Star Expansion Industries Corporation. Drill screw and reaming collar therefor. 3,500,713, Cl. 085-041.
Bellinger, Horst-Gunter: *See—*
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Bellman, Robert H., and Bermel, Thomas W., to Corning Glass Works. Pneumatic trigger. 3,500,845, Cl. 137-081.5
Beloit Corporation: *See—*
Whiting, Charles L., 3,501,035.
Wigner, Bernard J., and Ross, Robert N., 3,501,077.
Benak, James L., to Standard Oil Company, The (Ohio). Carbon purification process. 3,501,272, Cl. 023-209.9
Benak, James L., to Standard Oil Company, The (Ohio). Method of treating aluminum-lithium electrode. 3,501,349, Cl. 136-020.
Benard, Christian Louis Georges, to Anciens Etablissements Barbier, Benard & Turenne. Radiation condenser devices. 3,501,626, Cl. 240-001.1
Benaroya, Henry. Tandem, free-piston machines. 3,501,087, Cl. 230-056.
Bender, Lloyd F. Automated washing system for cleaning, sanitizing and drying flexible tubing or the like. 3,500,839, Cl. 134-057.
Bendix Corporation, The: *See—*
Becknell, Donald C., 3,501,698.
James, Robert Ludlow, and Moreines, Harold, 3,501,758.
Madsen, Per, 3,501,013.
Bennett, Robert A., to Bridgeport Plating Company, Inc. Shoe tie. 3,500,508, Cl. 024-117.
Bennett, Ronald S. Modular building construction unit and column. 3,500,595, Cl. 052-079.
Benson, Glendon M., to Physical International Company, mesne. Electromechanical control system. 3,500,799, Cl. 123-032.
Benson, Glendon M., to Physics International Company, mesne. Electromechanical actuator having an active element of electroexpansive material. 3,501,099, Cl. 239-585.
Bentley Engineering Company Limited: *See—*
Peberdy, Roland, 3,500,664.
Beregi, Laszlo, Hugon, Pierre, and Duhault, Jacques, to Science Union et Cie, Societe Francaise de Recherche Medicale. N-phenylsulphonyl-N'-(3-azabicyclo-alkyl) urea derivatives. 3,501,495, Cl. 260-326.3

Berg Electronics, Inc.: *See—*
Landman, Dirk, 3,500,709.
Bergische Achsenfabrik Fr. Kotz & Sohne: *See—*
Bosler, Helmut, 3,500,968.
Bergwerksverband GmbH: *See—*
Rieschel, Hans, 3,500,719.
Berkley & Company, Inc.: *See—*
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Johnson, Paul C., 3,500,572.
Berler, Robert M., to American Machine & Foundry Company. Radiation sensitive bowling pin sensor. 3,501,644, Cl. 250-222.
Bermel, Thomas W.: *See—*
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Bernal, G. Enrique, Chen, Di, and Walters, Wayne L., to Honeywell Inc. Multi-dimensional optical data display apparatus. 3,501,220, Cl. 350-150.
Berther, Clau: *See—*
Sailer, Richard, Philipp, Hanswerner, and Berther, Clau 3,501,275.
Bertin, Mario, Moiso, Ugo, and Craia, Giulio, to Aziende Colori Nazionale Affini ACHA S.p.A. Reactive monochlorotriazine azo dyestuffs containing a sodium salt of an aniline-N-omega-methane sulfonic acid group. 3,501,452, Cl. 260-146.
Bertinotti, Floriana, and Danielli, Ezio, to Montecatini Edison S.p.A. Dyeable polyolefin bulk textile fibers and process for their preparation. 3,501,371, Cl. 161-169.
Berube, Warren A., to Rockwell Manufacturing Company. Two-speed power tool. 3,500,696, Cl. 074-363.
Best, Clarence A. Teaching device. 3,500,555, Cl. 035-008.
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Bethlehem Corporation, The: *See—*
Root, William L., 3rd, Sturman, Valentine, and Mery, Milton S., 3,500,901.
Betts, Julian S., and Armstrong, Ralph A. Cathode follower type modulator circuit. 3,501,715, Cl. 332-064.
Beutler, Arthur J., to Stair Chair Corporation. Control system for elevators and the like. 3,500,963, Cl. 187-012.
Beyer, Carlton E.: *See—*
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Beyer, Kenneth W., to Halliburton Company. Overshot apparatus for manipulating a bridge plug in a well. 3,500,909, Cl. 166-134.
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Biaggi, Louis: *See—*
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Bierman, Eric, to Northern Electric Company Limited. Call offering circuits. 3,501,596, Cl. 179-018.
Bigham, James E., and Crider, Harold E., to Monsanto Company. Ionization latch indicator and housing receptacle therefor. 3,501,666, Cl. 313-210.
Bigos, Aloise A.: *See—*
Cheris, Maynard H., Bigos, Aloise A., and Mox, Dana W. 3,501,148.
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Bingman, William E., Jr., to Shell Oil Company. Pressurized well drilling system. 3,500,943, Cl. 175-066.
Binnings, Gerald F., to Aerojet-General Corporation. Liquid dispenser. 3,501,057, Cl. 222-132.
Birch, Stanley William, to Rolls-Royce Limited. Air intakes for gas turbine jet propulsion engines. 3,500,842, Cl. 137-015.1
Birge, William T., to Kelsey-Hayes Company. Disk brake embodying caliper positioner. 3,500,966, Cl. 188-073.
Bishop, Malcolm John, to Farranti Limited. Multiple-stage high-voltage impulse generators having a series array of spark gaps in each stage. 3,501,646, Cl. 307-110.
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Duran, Raymond J., Lessig, William R., III, and Stielper, Henry J., 3,500,620.
Blaha, Eli W.: *See—*
Little, Randel Q., Jr., Blaha, Eli W., and Watson, Roger W. 3,501,527.
Blaha, Miroslav, to Zavody Jana Svermy, narodni podnik. Lever-supporting assembly for typewriters and the like. 3,500,975, Cl. 197-022.
Blattner, Hans: *See—*
Schindler, Walter, and Blattner, Hans 3,501,459.
Bleha, William Paul, Jr.: *See—*
Compton, Walter Dale, and Bleha, William Paul, Jr. 3,501,638.
Blinder, William, to General Motors Corporation. Ball rotator for ball inspection and/or sorting apparatus. 3,501,038, Cl. 214-340.
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Easton, Geoffrey John, and Bliss, Denys Stanley 3,500,765.
Boehringer Mannheim GmbH: *See—*
Jaworek, Dieter, 3,501,009.
Boeing Company, The: *See—*
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Boes, Gunther, Plumeyer, Willi, and Schmidt, Christian, to Loewe Pumpenfabrik GmbH. Centrifugal pump units. 3,500,754, Cl. 103-087.
Bohme Chemie Gesellschaft mit beschrankter Haftung: *See—*
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Bohn, Floyd O., to Dresser Industries, Inc. Borehole logging apparatus and method. 3,500,684, Cl. 073-152.
Boileau, Jacques, to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie. Pneumatic tires and manufacture of the same. 3,500,888, Cl. 152-356.
Boileau, Jacques, to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie. Tires. 3,500,889, Cl. 152-361.
Boileau, Jacques, to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie. Radial ply tires. 3,500,890, Cl. 152-361.
Bok, Hendrik F. Baffle structure for a spray-coating environment. 3,500,741, Cl. 098-115.
Bolkow Gesellschaft mit beschrankter Haftung: *See—*
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Bonanza Sports, Inc.: *See—*
Purdie, Clarence E., and Schaffner, William C., 3,501,053.
Bonzagni, Francis A., to Monsanto Company. Process for preparing stable condensation resins of aldehydes, aminotriozines and polyhydroxyl compounds and products obtained thereby. 3,501,429, Cl. 260-017.3
Booker, Bradford J.: *See—*
Prosl, Frank R., Jr., and Booker, Bradford J. 3,500,860.
Boone, Ralph D., and Purtell, Rufus J., to Knight, J. B., Co., Inc., The. Irrigation system with driving chalk line. 3,500,856, Cl. 137-344.
Boots Pure Drug Company Limited: *See—*
Towlerton, Richard George, 3,500,795.
Borg-Warner Corporation: *See—*
Gerhart, Carlton M., Jr., and Jednacz, Thomas C., 3,500,898.
Keats, John B., 3,500,789.
Borginon, Hendrik Alfons: *See—*
Willems, Jozef Frans, Faelens, Paul, Claes, Frans Henri, Borginon, Hendrik Alfons, and Pattijn, Walter Camiel 3,501,313.
Borst, William B., Jr., to Universal Oil Products Company. Alkylation with spiralling flow path of reactants and alkylate. 3,501,536, Cl. 260-683.48
Bosch, Robert, G.m.b.H.: *See—*
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Bosch, Robert, Hausgerate GmbH: *See—*
von Cube, Hans-Ludwig, 3,500,897.
Bosler, Helmut, to Bergische Achsenfabrik Fr. Kotz & Sohne. Disc brake and mounting therefor. 3,500,968, Cl. 188-073.
Bossart, Clayton J., to Mine Safety Appliances Company. Adsorbent for gas-solid chromatography. 3,500,616, Cl. 055-386.
Bottani, Angelo, to Societa Internazionale Fonovisione S.p.A. Electrically actuated kaleidoscope. 3,501,217, Cl. 350-004.
Bowen, Marvin, 33 1/3 to Pruitt, William R. Mower cutting blade. 3,500,622, Cl. 056-295.
Bowers, Virginia S., Breazeale, Francis B., and Rice, Charles M., to American Enka Corporation. Torque yarn. 3,500,628, Cl. 057-140.
Bowles Engineering Corporation: *See—*
Bauer, Peter, 3,500,852.
Boyajian, Myron J., to Allis-Chalmer Manufacturing Company. Seat operated power cutoff time delay. 3,500,946, Cl. 180-101.
Boyce, Frederick C., to Plessey Company Limited, The. Seat adjusting arrangements. 3,501,198, Cl. 297-373.
Boyd, David M., Jr., to Universal Oil Products Company. Chromatograph output system suitable for use with process control. 3,501,700, Cl. 328-127.
Boyd, Robert E. Cuff aligning device. 3,501,069, Cl. 223-002.
Boynton, Jerald H., Felton, Dale D., and Moffa, Joseph, to Armco Steel Corporation. Helically corrugated spiral pipe and coupling therefor. 3,501,179, Cl. 285-373.
Bozek, John S., to Continental Can Company, Inc. Method of manufacturing can end. 3,500,939, Cl. 113-121.
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Stenert, Alois, Bracht, Josef, and Husten, Werner 3,501,212.
Bracken, Ronald C.: *See—*
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Brackett, Lawrence W., Sr., to Wood Electric Corporation. Trip free reciprocating circuit breaker. 3,501,729, Cl. 337-066.
Braco, Inc.: *See—*
Flink, Vernon J., 3,501,030.
Bradley, Bryant W., to Shell Oil Company. Permanently plugging thief zones between temporary frozen plug areas. 3,500,930, Cl. 166-295.
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Holyoake, George Philip, 3,500,566.
Bramley, Anthony, and Gilbert, John F., said Gilbert assor. to said Bramley. Production of netting. 3,501,366, Cl. 161-057.
Brandt, Hans-Walther, Engelhard, Bruno, Kronig, Walter, and Schwerdtel, Wulf, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of pure isoprene by extractive distillation of cyclopentadiene with aqueous aniline. 3,501,550, Cl. 260-681.5
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Braun Aktiengesellschaft: *See—*
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Braun, Anton. Free piston engine. 3,500,804, Cl. 123-046.
Braun, Anton. Balanced free piston engine. 3,501,088, Cl. 230-056.
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Kaether, Willy, and Dietzel, Walter, 3,501,345.
Braxton, Henry G., Jr., and Lajiness, Evelyn J., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,501,284, Cl. 071-072.
Braxton, Henry G., and Lajiness, Evelyn J., to Ethyl Corporation. Method of defoliating plants with organomercurials. 3,501,283, Cl. 071-070.
Braxton, Ralph C., Schoffner, Glenn R., and Levine, Alex, deceased (by Levine, Ida, excutrix), said Schoffner and Braxton assors to Alamance Industries, Inc. Full-fashioned brassiere and blank. 3,500,665, Cl. 066-176.
Bray, Robert S.: *See—*
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Breithor, Joachim-Hans. Shoehorn with an elongated handle. 3,501,073, Cl. 223-118.
Bremmer, John F.: *See—*
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Brennan, George Andrew. Adhesive coated articles. 3,501,327, Cl. 117-012.
Bresson, Richard Joseph, and Elton, Robert George, to Eastman Kodak Company. Adjustable low-light signal. 3,500,731, Cl. 095-010.
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Briggs, Warren S.: *See—*
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Brincks, Lawrence P.: *See—*
Erickson, Martin R., and Brincks, Lawrence P. 3,500,937.
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Maclusky, Gordon J. R., 3,501,113.
British Insulated Callender's Cables Limited:*See—*
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British Iron and Steel Research Association, The: *See—*
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British Titan Products Company, Limited: *See—*
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Twist, Walter, Lawrence, Leslie John, and Cordey, Tom Lloyd, 3,501,271.
Brixius, Jacob K., and Ryan, James P., to North American Rockwell Corporation. Method for making extended area type filter assemblies. 3,501,563, Cl. 264-261.
Brocker, Friedrich W. Variable diameter propellers. 3,501,248, Cl. 416-089.
Brockett, Charles R., to United States of America, Air Force. Magnetic separating and coating apparatus. 3,500,792, Cl. 118-416.
Brody, Gerald L., to Chevron Research Company. Deentrainment distillation of hydrocarbons in stripping column having arrester plate and collar. 3,501,400, Cl. 208-361.
Brois, Stanley J., to Esso Research and Engineering Company. Process for preparing 2-aminoethylthiophosphate salts. 3,501,557, Cl. 260-978.
Brown, Burnell E.: *See—*
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Brown, Donald A., and Downing, Lucien R., Jr., to Donn Products, Inc. Cross beam connector. 3,501,185, Cl. 287-189.36
Brown, Jept E., to Burlington Industries, Inc. Shuttleless loom tension pad stop motion. 3,500,875, Cl. 139-336.
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United States of America,, National Aeronautics and Space Administration, Administrator, 3,500,677.
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Miller, Robert L., Webb, Ernest C., Mentzer, Everett K., and Peplin, Stephen C., 3,501,145.
Strickland, Edward T., and Amos, Homer C., 3,501,048.
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Bryer, Robert F. Randomly self-propelled spherical toy. 3,500,579, Cl. 046-243.
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Buchsbaum, Frank. Gear hub clamp. 3,501,182, Cl. 287-052.04
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Buehler, Arthur, and de Montmollin, Rene, to Ciba Limited. 1-Amino-4[4'-(α,β-dibromopropionylamino and α-bromoacrylamino)-anilino]-2,2'- anthraquinonedisulfonic acids. 3,501,505, Cl. 260-372.
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Buiting, Francis P.: *See—*
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Buiting, Francis P., and Waseleski, Joseph W., Jr., to Texas Instruments, Incorporated. Self-regulating thermal apparatus. 3,501,619, Cl. 219-390.
Bunchak, William G., to Westinghouse Air Brake Company. Tracking and braking improvement in 6-wheel shuttle car. 3,501,033, Cl. 214-083.36
Bungard, James D., and Costello, Robert E., to Intercontinental Systems, Inc., mesne. Code conversion system. 3,501,747, Cl. 340-172.5
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Bunker-Ramo Corporation, The: *See—*
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Burba, John L., Jr., and Runyan, Robert S. Method and apparatus for removing debris from cased wells. 3,500,933, Cl. 166-311.
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Burgert, Herbert A., to Unitechnik AG. Upholstering spring, especially for the back of motor vehicle seats. 3,501,137, Cl. 267-102.
Burkholder, Wendell E., Silverstein, Robert M., Rodin, John O., and Gorman, John E., to United States of America, Agriculture. Sex attractant of the black carpet beetle. 3,501,566, Cl. 424-084.
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Gliksmann, David, and Petree, David W., 3,500,629.
Burroughs Corporation: *See—*
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Goldschmied, Sandor, 3,500,536.
Heidler, Glen R., and Saunders, Ralph, 3,501,582.
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Cahn, Arno, Kaniecki, Thaddeus John, Neiditch, Oscar Walter, and Rudy, Jerome, to Lever Brothers Company. Fabric conditioner. 3,501,335, Cl. 117-066.
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Calistrat, Mircea, to Koppers Company, Inc. Stacking system for paperboard blanks. 3,501,036, Cl. 214-152.
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Calvete Capdevila, Eugenio, to Invenplast S.A. Apparatus for the extrusion of synthetic plastic material. 3,500,500, Cl. 018-012.
Camerino, Bruno, and Palamidessi, Giorgio, to Societa' Farmaceutici Italia. Pyrazine derivatives. 3,501,464, Cl. 260-239.7
Cameron, Andrew Hepburn, to Union Carbide Canada Limited. Production of skinless sausage. 3,500,743, Cl. 099-353.

Cape, Arthur T., to Coast Metals, Inc. Ductile cobalt strip. 3,501,277, Cl. 029t182.
Capellari, Elio, to Enrico Boselli S.p.A. Remote-controlled display device for selectively displaying signs or words. 3,501,761, Cl. 340-324.
Capra, Uberto, to Ceccato & C. S.p.A. Vehicle washing apparatus. 3,500,487, Cl. 015-021.
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Caron, Paul R.: *See—*
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Case, John S., to Anchor Post Products, Inc., The. Coreless and centerless coiler. 3,501,106, Cl. 242-067.1
Cashman, Robert W., and Wasco, Anthony, Jr., to Saginaw Machine and Tool Company. Tool holder construction. 3,500,523, Cl. 029-096.
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Coleman, Joe. Trash disposal system for automobiles. 3,500,492, Cl. 015-313.
Collins, John J. Heavy equipment tire repair device. 3,500,891, Cl. 157-001.2
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Compton, Walter Dale, and Bleha, William Paul, Jr., to University of Illinois Foundation. Infra-red converter using tunneling effect. 3,501,638, Cl. 250-083.3
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Crawford, Irvin H., to Eastman Kodak Company. Photographic papers. 3,501,298, Cl. 096-085.
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Crowther, Albert Frederick, Smith, Leslie Harold, and Wood, Thomas Miller, to Imperial Chemical Industries Limited. 1-Aryloxy-3-secondary-alkyl and aralkyl-2- propanols and the salts thereof. 3,501,769, Cl. 260-501.17
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Da Valle, Bruno. Combined hollow bumper and trailer hitch for motor vehicles. 3,501,170, Cl. 280-500.

Davie, Neil R., to Ferroxcube Corporation. Computer memory strobing circuit for providing an accurately positioned strobe pulse. 3,501,754, Cl. 340-174.

Davis, Cloyd, to Modern Sewerage Systems, Inc. Drainage well. 3,501,007, Cl. 210-170.

Davis, John A., Jr., and Kunzman, William J., to Marathon Oil Company. Molecular weight of surfactant influencing the thermostability of micellar dispersions. 3,500,912, Cl. 166-252.

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Deiters, Wilhelm, to Inventa A.G. fur Forschung und Patentverwertung. Reduction of alkali sulfates to caustic alkali with crackable gases. 3,501,270, Cl. 023-184.

DeJoux, Jean Veran. Method and apparatus for projecting motion pictures. 3,501,229, Cl. 352-091.

Dekker, Jan, and Schuur, Gerrit, to Shell Oil Company. Process and apparatus for fibrillating and crimping films. 3,500,517, Cl. 028-001.5

De Lancey, Warren H., to American Standard, Inc. Furnace heat exchanger construction. 3,500,814, Cl. 126-110.

De Lange, Herman Kasper Adriaan, to U.S. Philips Corporation, mesne. Automatic level control for recording and reproducing video information. 3,501,585, Cl. 178-006.6

Delano, William R. P. Solar still with floating slab-supporting particulate radiant energy receptor. 3,501,381, Cl. 202-083.

de Lavenne, Hubert Yves, to Automobiles Peugeot, and Regie Nationale des Usines Renault. Air heating control system. 3,501,093, Cl. 236-068.

Delius, Hermann, to Reichhold Chemicals, Inc. Process for preparing thixotropic solutions of oil- modified alkyd resins and resulting product. 3,501,425, Cl. 260-022.

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Delzenne, Gerard Albert, to Gevaert-Agfa N.V. Production of light-sensitive coatings for use in the manufacture of copying materials such as printing plates. 3,501,296, Cl. 096-033.

DeMaio, Dennis A., to Halcon International, Inc. Chemical process catalyst. 3,501,417, Cl. 252-443.

de Mey, Charles F., II, and Dolgen, Igor E., to Perkin-Elmer Corporation, The. Pivoting sample cell holder. 3,501,242, Cl. 356-246.

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Deplante, Henri, to Avions Marcel Dassault. Airfoil position control for variable geometry aircraft. 3,501,115, Cl. 244-046.

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DeWeese, Raymond P., Meisinger, Elmer H., and Prindle, Frank D., to Poper, Geo D., Corporation. Windowed door for self-cleaning oven. 3,500,815, Cl. 126-200.

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DiGiaimo, Matthew Peter, to American Cyanamid Company. PVC compositions containing benzothiazoline light stabilizers. 3,501,437, Cl. 260-045.8

Dileone, Roland Ralph, to American Cyanamid Company. Process for preparing a polyimide comprising reacting 3,4-dicarboxy-1,2,3,4-tetrahydro-1-naphthalene succinic dianhydride with a diprimary diamine in the presence of certain organic solvents. 3,501,443, Cl. 260-078.

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Doherty, Martin C., to General Electric Company. Variable gain fluidic device. 3,500,847, Cl. 137-081.5

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Herriott, Donald R., to Bell Telephone Laboratories, Incorporated. Inline holographic arrangement for imaging a person viewing a television screen. 3,501,587, Cl. 178-006.7
Herriott, Donald R., and Schulte, Harry J., Jr., to Bell Telephone Laboratories, Incorporated. Optical pulse generator. 3,501,222, Cl. 350-171.
Hervert, George L., to Universal Oil Products Company. Detergent alkylate treating process. 3,501,543, Cl. 260-674.
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Herwig, Walter, Gumboldt, Albert Gustav Martin, and Weissermel, Klaus, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Metal allyl catalyst for homo-and copolymerizing olefinically unsaturated compounds. 3,501,415, Cl. 252-429.
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Holm, LeRoy W., to Union Oil Company of California. Miscible flooding process using improved soluble oil compositions. 3,500,919, Cl. 166-273.
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Hubbard, Albert L., to General Electric Company. Fishing rod pump assembly. 3,500,570, Cl. 043-018.
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Illingsworth, Bernard D., to Eastman Kodak Company. Regular grain photographic reversal emulsions. 3,501,306, Cl. 096-101.
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Illingsworth, Bernard D., and Spencer, Harry E., to Eastman Kodak Company. Direct positive silver halide emulsions containing compounds which accept electrons and spectrally sensitize the emulsion. 3,501,310, Cl. 096-106.
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Imperial Chemical Industries Limited: *See—*
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Mathys, Walter Franz Josef, 3,501,720.
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Ito, Haruo, to Yokogawa-Hewlett-Packard, Ltd. Ohmmeter circuit having stabilizing circuit which reduces the effect of source variations on indication. 3,501,694, Cl. 324-062.
Ito, Toshio, Miyamoto, Toshio, Murai, Yutaka, and Wada, Yuichi, to Mitsubishi Denki Kabushiki Kaish. Current limiting equipment. 3,501,730, Cl. 337-159.
Itoi, Kazuo, to Kurashiki Rayon Co., Ltd. Process for polymerizating ethylene with a catalyst consisting of an organotin hydride, a transition metal compound and an organotin pheonoxide. 3,501,450, Cl. 260-094.9
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Jacoby, George V., to RCA Corporation. Constant tension-constant speed drive by means of a tandem motor connection. 3,501,682, Cl. 318-007.
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Jaggi, Robert H., to Auto Research Corporation. Central lubricating system of the sequentially operating piston valve type. 3,500,960, Cl. 184-007.
Jagminas, Romualdas, to Mount Hope Machine Company, Incorporated. Adjustable-deflection roll. 3,500,524, Cl. 029-116.
James, Robert Ludlow, and Moreines, Harold, to Bendix Corporation, The. Apparatus for synchronizing resolver data. 3,501,758, Cl. 340-198.
Jangala, Chester E., Sr. Automatic casting apparatus. 3,500,571, Cl. 043-019.
Jasberg, Peter M., to Bunker Hill Company, The. Process for stripping metal from a cathode. 3,501,385, Cl. 204-012.
Jasper, John C., and Robertson, Millard L., to Continental Can Company, Inc. Pull tab configuration. 3,501,046, Cl. 220-054.
Jaworek, Dieter, to Boehringer Mannheim GmbH. Thin layer chromatography apparatus. 3,501,009, Cl. 210-198.
Jay, George, and Rankins, Everett V. Bale stacking apparatus. 3,501,025, Cl. 214-006.
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Johnson, Glenn E., Forney, Albert J., and Decker, William A., to United States of America, Interior. Reaction of coal and ammonia to make hydrogen cyanide. 3,501,267, Cl. 023-151.
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Johnson, Paul C., to Berkley & Company, Inc. Rod handle material. 3,500,572, Cl. 043-023.
Johnson, Sam H., Jr., and Vander Woude, Jack C., to Eastman Kodak Company. Process for separating high-boilers of the Oxo process. 3,501,537, Cl. 260-643.
Johnson, Virgil E., Jr., Scherer, John O., Jr., and Miller, Eugene R., Jr., to Hydronautics, Inc. Stable ocean platform. 3,500,783, Cl. 114-000.5
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Jones, Leonidas J., Rankin, Richard W., and Rivest, Everett L., to General Electric Company. Electronic system for accepting and processing responses to questions presented to students. 3,500,559, Cl. 035-048.
Jones, Ralph Bernard, and Oakley, Thurman B., to Textile Metals & Plastics, Inc. Method of handling hosiery. 3,500,779, Cl. 112-121.15
Jordan, Philip J. Hair curler with obscuring means. 3,500,836, Cl. 132-040.
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Kaegi, Hans Heinrich, to Hoffmann-La Roche Inc. Dehydration process for forming benzodiazepines. 3,501,460, Cl. 260-239.
Kaether, Willy, and Dietzel, Walter, to Braunschweigische Maschinenbauanstalt. Apparatus and method for the continuous extraction of sugar from bagasse. 3,501,345, Cl. 127-005.
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Kamila, Friedolf, Chase, Earle M., and Barkman, David R., to Package Machinery Company. Article transfer apparatus for candy bars and the like. 3,501,026, Cl. 214-001.
Kaminskas, Rimvydas A., and Wright, Donald E., to United States of America, National Aeronautics and Space Administration. Penetrating radiation system for detecting the amount of liquid in a tank. 3,501,632, Cl. 250-043.5
Kamio, Kosaku, Tadasa, Tatsuro, and Hakozaki, Tomio, to Nippon Carbide Kogyo Kabushiki Kaisha. Process for preparing vinyl chloride/ethylene copolymers. 3,501,440, Cl. 260-077.5
Kamman, Howard L.: *See—*
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Kaniecki, Thaddeus John: *See—*
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Kapnek, Bertram H. Chair. 3,501,199, Cl. 297-446.
Kappelmeyer, Rudolf, and Kellerbauer, Max Hugo, to Siemens Aktiengesellschaft. Method for producing rod-shaped silicon monocrystals with homogeneous antimony doping over the entire rod length. 3,501,406, Cl. 252-062.3
Karma (New Malden) Ltd.: *See—*
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Karobath, Ernst, to Telephon- und Telegraphen-Fabriks-Aktiengesellschaft. Galvanic primary cell. 3,501,351, Cl. 136-133.
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Katzen, Raphael, and Hokanson, Allan E., to Sugar Cane Growers Cooperative of Florida, Inc. Treatment of sugar mill clarifier mud. 3,501,346, Cl. 127-056.
Katzman, Frederick. Coping. 3,500,605, Cl. 052-588.
Kawaguti, Minato, to United States of America, Atomic Energy Commission. Flying image digitizer utilizing means for sweeping the focused image past a linear array of photodetectors and grating means for locating recorded data in space and time. 3,501,643, Cl. 250-219.
Kawaji, Akira: *See—*
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Keats, John B., to Borg-Warner Corporation. Display device. 3,500,789, Cl. 116-173.
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Kelley, Jerry O., to Cart-Trac, Inc. Reverse drive pinch roller for sound tape. 3,501,103, Cl. 242-055.13
Kelley, Lonny R., to General Electric Company. Variable gain fluidic device. 3,500,848, Cl. 137-081.5
Kelley, Lonny R., to United States of America, Navy. Fluid signal vibrating reed apparatus. 3,500,850, Cl. 137-081.5
Kelsey-Hayes Company: *See—*
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Nolan, Terence M., 3,500,967.
Kemp, Kenneth Albert Walters, and Wheeler, Terence Redvers, to C.A.V. Limited. Liquid fuel pumping apparatus. 3,500,749, Cl. 103-002.
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Kendrick Cattle Company: *See—*
Dea, Henry J., and Lynch, Paul E., 3,501,027.
Kenmore, Herbert. Removing scale from wire and similar strip material. 3,501,347, Cl. 134-014.

Kennedy, Joseph B., to Hughes Aircraft Company. Method of making a slow-wave structure encasement. 3,500,534, Cl. 029-600.
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Kessler, Milton. Plastic ball bearings. 3,501,208, Cl. 308-190.
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Kichline, Thomas P., and Stahlheber, Norman Earl, to Monsanto Company. Sodium aluminum phosphates and leavening compositions containing same. 3,501,314, Cl. 099-095.
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Vogtlin, Karl, 3,501,768.
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Kikuchi, Shoji: *See—*
Koda, Kenichi, Sugita, Sadao, Kikuchi, Shoji, and Nishimura, Katsumi 3,501,304.
Kim, Charles W., to Hercules Incorporated. Synthetic textile yarn. 3,500,627, Cl. 057-140.
Kimura, Shiro, Kobayashi, Teruo, Ishige, Sadao, and Katayama, Shizuo, to Fuji Shashin Film Kabushiki Kaisha. Pressure sensitive fluoran derivative containing copying paper. 3,501,331, Cl. 117-036.2
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Klaiber, Morton H., and Pater, Anton S., to Union Carbide Corporation. Aqueous lubricants for metal working. 3,501,404, Cl. 252-049.5
Klassen, Edward J. Automotive ash tray and snuffer. 3,500,835, Cl. 131-235.
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Kleiner, Walter, to Gebr. Staubli & Co. Apparatus for controlling the movement of a dobby jack lever in accordance with a pattern card. 3,500,873, Cl. 139-071.
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Klockner-Werke AG: *See—*
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Knapp, Edward A., Swenson, Donald A., and Potter, James M., to United States of America, Atomic Energy Commission. Method and device for stabilization of the field distribution in drift tube linac. 3,501,734, Cl. 328-233.
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Koch, Ludwig W., and Keller, Dennis F., to Continental Oil Company. Rotary particle filter for a bearing. 3,500,959, Cl. 184-006.
Kocher, Erich J., to Vilter Manufacturing Corporation. Lubrication system for compressors. 3,500,962, Cl. 184-103.
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Kogelnik, Herwig W., to Bell Telephone Laboratories, Incorporated. Controlled transmission of waves through inhomogeneous media. 3,501,216, Cl. 350-003.5
Kohler, Heinz, and Hoeber, Gerhard, to Schubert & Salzer Maschinenfabrik Aktiengesellschaft. Method and apparatus for lubricating needle cylinders in circular-knitting machines. 3,500,661, Cl. 066-008.
Kohout, Frank J., to Drum Parts, Inc. Ring applying apparatus. 3,500,529, Cl. 029-229.
Kohout, Frank J., to Drum Parts, Inc. Ring clamping apparatus. 3,500,530, Cl. 029-229.
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Koppers Company, Inc.: *See—*
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Korkos, George A. Door retaining unit. 3,501,188, Cl. 292-175.
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Korngold, Otto. Barbeque stove. 3,500,812, Cl. 126-025.
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Korte, Friedrich W. A. G. K.: *See—*
Draber, Wilfried, Falbe, Jurgen F., Buchel, Karl Heinz, and Korte, Friedrich W. A. G. K. 3,501,286.
Kovacevic, Boris N., to B & S Engineering & Mfg., Corporation. Cigarette lighter and dispenser. 3,501,051, Cl. 221-147.
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Matsuda, Akinobu, 3,500,700.
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Krainer, Helmut, deceased (by Krainer, Erika Krainer, Selma Krainer, Wolfram, heirs), Meyer, Gunter, and Serbent, Harry. Method of prereducing sinters and pellets. 3,501,288, Cl. 075-005.
Krainer, Selma: *See—*
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Krainer, Wolfram: *See—*
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Krause, Fritz R., to United States of America, National Aeronautics and Space Administration. Passive optical wind and turbulence detection system. 3,501,641, Cl. 250-209.
Kreuz, William E., Dankowski, John C., and Slatten, William, to Hycon Mfg. Company. Aerial camera. 3,500,733, Cl. 095-012.5
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Kronig, Walter, and Konrad, Peter, to Farbenfabriken Bayer Aktiengesellschaft. Process for the electrochemical production of olefin oxides. 3,501,388, Cl. 204-079.
Krulik, Leon F., and Gilbert, Thomas I., to Elco Corporation, The. Method for producing thiourea. 3,501,524, Cl. 260-552.
Kubo, Kazuhiko, to Kabushiki Kaisha Osaka Packing Seizosho. Manufacturing aqueous slurry of hydrous calcium silicate and products thereof. 3,501,324, Cl. 106-120.
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Kuo, Chan Hwa, Taub, David, and Wendler, Norman L., to Merck & Co., Inc. 6-Oxygenated-tetrahydronaphthylidine ethyl sulfonium salts. 3,501,521, Cl. 260-501.14
Kuper, Donald G.: *See—*
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Kwake, John P. Enclosure for entry into inflatable structures and for other purposes. 3,500,593, Cl. 052-002.
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Landen Corporation: *See—*
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Landen, William J., to Landen Corporation. Rearview mirror. 3,501,227, Cl. 350-303.
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Lapidus, Milton, Grant, Norman H., Rosenthale, Marvin E., and Alburn, Harvey E., to American Home Products Corporation. Prostaglandin ureides. 3,501,525, Cl. 260-553.
Laran, Roy J., Giraitis, Albert P., and Kobetz, Paul, to Ethyl Corporation. Process for the production of anhydrous hydrogen fluoride. 3,501,268, Cl. 023-153.
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Le Guen de Kergolan, Claude, to Compagnie Generale des Produits Industries et de Synthese C.O.G.E.P.R.I.S. Particular polishing apparatus having a vertical working vessel. 3,500,590, Cl. 051-164.
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Lehner, Florian, van Daalen, Francois, and van der Knaap, Willem, to Shell Oil Company. Method of recovering crude oil from a subsurface formation. 3,500,917, Cl. 166-272.
Lehoczky, Kalman Nagy, to Aktiengesellschaft Brown, Boveri & Cie Baden. Combined axial and radial bearing with liquid lubricating fluid for vertical axis machine. 3,501,206, Cl. 308-160.
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Lever, Frank Mercer, to Mallory, P. R., & Co., Inc. Metal-metal oxide compositions. 3,501,287, Cl. 075-000.5
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Levine, Ida: *See—*
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Liebert, Karl-Heinz, to Zahnradfabrik Friedrichshafen Aktiengesellschaft. Pump or hydraulic motor construction, especially for booster steering. 3,500,756, Cl. 103-126.
Liepins, Valdis, and Tonion, Gian Franco, to Marconi Company Limited, The. Class B transistor amplifier biassing circuit. 3,501,710, Cl. 330-022.
Ligon, Elmer R., and Reed, Norman D., to Dickey, W. S., Clay Manufacturing Company. Method and apparatus for testing and handling clay pipe. 3,500,680, Cl. 073-102.
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Lingen, Dieter, and Rum, Klaus, to Deutsche Edelstahlwerke Aktiengesellschaft. Wire processing machines. 3,500,877, Cl. 140-002.
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Lofgreen, Andrew F., and Coggburn, Harley L. Refrigeration system with liquid and vapor pumps. 3,500,656, Cl. 062-196.
Logan, Campbell F. Fluid recovery system and method. 3,500,841, Cl. 137-013.
Lohmann, Adolf W., to International Business Machines Corporation. Optical filtering. 3,501,221, Cl. 350-162.
Long, Emile David, to Gillett Tool Co., Inc., mesne. Control circuit for precision fuel metering systems. 3,500,802, Cl. 123-032.
Long, Emile David, to Gillett Tool Co., Inc. Electronic modulator circuit for precision fuel metering systems. 3,500,803, Cl. 123-032.
Long, Emile David, and Richardson, Keith C., to Gillett Tool Co., Inc. Actuator circuit for electronic precision fuel metering systems. 3,500,801, Cl. 123-032.
Long, Malcolm C., to Leesona Corporation. Strand advancing apparatus. 3,501,102, Cl. 242-047.09
Long, Robert S., to American Cyanamid Company. Process for simultaneous coloration and finishing of cellulose fibers and reactive dyes therefor. 3,501,259, Cl. 008-018.
Longini, Richard L., Romualdi, James P., and Stelson, Thomas E., to Battelle Development Corporation, The, mesne. Concrete construction and roadways. 3,500,728, Cl. 094-010.
Looijen, Adriaan: *See—*
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Lopez, Alfredo, Jr.: *See—*
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Lorenzo, Valentin E.: *See—*
Hernandez, Tomas, and Lorenzo, Valentin E. 3,500,554.
Losee, Dudley O.: *See—*
Stoffer, Lewis J., and Losee, Dudley O. 3,501,090.
Los, Marinus, to American Cyanamid Company. Substituted naphthalenones, naphthalenediones and D-homo-α-nor-estra-1,3,5(10),9(11)-tetraenes. 3,501,530, Cl. 260-590.
Love, Frank E., to National Lead Company. Continuous process for the electrolytic production of aluminum. 3,501,387, Cl. 204-067.
Lowe, William C., Jr., Asbury, Francis H., and Milliken, Jesse E., to Alma Desk Company. Reversible lower bookcase base frame. 3,500,768, Cl. 108-001.
Lozano, Luis J., and Bray, Robert S., to Anaconda American Brass Company. Method of cold pressure welding. 3,500,532, Cl. 029-470.1
Lucas, Joseph, (Industries) Limited: *See—*
Cooksey, William Harold, 3,501,601.
Phoenix, Lancelot, 3,501,650.
Skinner, Robert Thomas John, 3,500,758.
Skinner, Robert Thomas John, 3,500,851.
Lukens, Samuel C., Jr., to Sylvania Electric Products, Inc. Phase-lock loop FM detector circuit employing a phase comparator and keyed oscillator. 3,501,705, Cl. 329-122.
Lundquist, Jergen F. Wallpaper knife and guide. 3,500,540, Cl. 030-294.
Luxaire, Inc.: *See—*
Vales, Richard J., 3,501,258.
Lydle, John E., Whited, Harry H., and Dunbar, Robert R., said Whited and said Dunbar assors. to said Lydle. Automatic tire-changing machine. 3,500,892, Cl. 157-001.24
Lynch, Paul E.: *See—*
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Lyons, Joe C. Heat exchange apparatus. 3,500,655, Cl. 062-183.
Lyons, Thomas C., to Mobil Oil Corporation. Gas lift retorting process for obtaining oil from fine particles containing hydrocarbonaceous material. 3,501,394, Cl. 208-011.
Maatz, Harvey R. Cleaning and sterilizing apparatus for barbering tools. 3,500,840, Cl. 134-111.
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Cleaver, Denis, and Macdonald, Peter Compton 3,501,675.
Macemon, Herbert J., to General Electric Company. Airport lighting fixture. 3,501,627, Cl. 240-001.2
Machein, Kurt R., Phan, John T., and Stosberg, Arturo E., to Data Memory, Inc., mesne. Apparatus for producing a single picture signal from a composite video signal for display in a television receiver. 3,501,584, Cl. 178-006.6
Machinefabriek M. Brouwer & Co. N.V.: *See—*
Roetgerink, Johannes A., and Muller, Gerardus P., 3,500,985.
Macione, Jack: *See—*
Fischer, Harvey D., Palumbo, Nunzio J., and Macione, Jack 3,500,771.
Maclusky, Gordon J. R., to British Aircraft Corporation Operating Limited. Rotating beam missile guidance system. 3,501,113, Cl. 244-003.13
Madden, William A. Illuminated hair ornament. 3,501,628, Cl. 240-006.4
Madsen, Per, to Bendix Corporation, The. Filter assembly and method of manufacturing same. 3,501,013, Cl. 210-497.
Maeder, Erwin, and Siegrist, Adolf Emil, to Ciba Limited. Azole compounds. 3,501,490, Cl. 260-307.
Magee, John S., Jr., Surland, George J., Briggs, Warren S., and Ciapetta, Frank G., to Grace, W. R., & Co. Process for preparing cracking catalysts. 3,501,418, Cl. 252-450.
Magnuson, Malcolm O., to United States of America, Interior. Fly ash injection method and apparatus. 3,500,934, Cl. 169-002.
Maguire, Richard Joseph, to Gillette Company, The. Loading apparatus for cartridge for strip material. 3,500,528, Cl. 029-208.
Mailloux, Robert J., Caron, Paul R., and LaRussa, Francis J., to United States of America, National Aeronautics and Space Administration. Array phasing device. 3,501,764, Cl. 343-100.
Malhenzie, Anna Frances: *See—*
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Malhenzie, Charles A., and Vielleux, Florian Leo, said Malhenzie assor to Malhenzie, Anna Frances. Button assembly. 3,500,507, Cl. 024-113.
Malleable Research and Development Foundation: *See—*
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Mallory, P. R., & Co., Inc.: *See—*
Dotto, Gianni A., and Linn, Wallace Leon, 3,501,602.
Lever, Frank Mercer, 3,501,287.
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Maloney, William R., Hallquist, Arthur L., and Granzow, Daniel B., to Addressograph-Multigraph Corporation. Photoelectrostatic printout machine. 3,501,236, Cl. 355-014.
Mancel, Raymond. Method of making dry friction members. 3,501,360, Cl. 156-153.
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Manns, Horst, Zorner, Paul, and Breitenstraeter, Willi, to Messer Greisheim GmbH. Liquefied gas filter. 3,500,652, Cl. 062-018.
Marans, Nelson S., and Wessells, Forest A., to Grace, W. R., & Co. Method of making high density polyethylene foam. 3,501,428, Cl. 260-002.5
Marathon Oil Company: *See—*
Davis, John A., Jr., and Kunzman, William J., 3,500,912.
Olson, Danford H., and Bailey, George M., 3,501,539.
Poettmann, Fred H., 3,500,924.
Webb, Thomas O., 3,500,932.
Marchello, John L., to Wolverine World Wide, Inc. Safety headgear assembly. 3,500,473, Cl. 002-003.
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Liepins, Valdis, and Tonion, Gian Franco, 3,501,710.
Margola, Gianni B., to Societe Ceramica Italiana Richard-Ginori S.p.A. Glaze and body compositions for the manufacture of vitreous china flatware by a fast single firing process. 3,501,321, Cl. 106-045.
Marien, Kenneth J., to Square D Company. Coil and stationary magnet mounting for an electromagnetically operated device. 3,501,723, Cl. 335-202.
Marion Power Shovel Company, Inc.: *See—*
Barden, Kenneth L., Furey, Daniel J., and Sankey, Edwin W., 3,500,945.
Baron, George B., 3,501,034.
Marshall, Edward C., to Litton Business Systems, Inc. Pressure sensitive label strip construction. 3,501,365, Cl. 161-038.
Marshall, James E., Barcus, Jack L., Stormon, Lester T., and Ryan, John W., to Mattel, Inc. Multiple sequence sound reproducer. 3,501,154, Cl. 274-014.

Martelee, Ghislain Antoine Jean-Marie, to Cockerill-Ougree-Providence. Traction vehicle with interchangeable bodies. 3,501,040, Cl. 214-515.

Martensson, Heine: *See—*
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Marti, Fritz, to Portescap, Le Porte-Echappement Universal S.A. Bearing for a timepiece pivot. 3,500,632, Cl. 058-140.

Martin, Albert V., to Motorola, Inc. Reversible meter for displaying direct and reciprocal control information. 3,501,697, Cl. 324-115.

Martin, Alonza F., and Finnigan, Daniel B., to Walbert Equipment Company. Machine for grinding the cutting edge of a die. 3,500,587, Cl. 051-100.

Martin, Eugene R., and White, Claude F., to Caterpillar Tractor Company. Multiple spindle friction welder. 3,501,079, Cl. 228-002.

Martin, Heinz, and Vogt, Herbert, to Siemens Aktiengesellschaft. Structural component for housing for semiconductor device. 3,501,680, Cl. 317-234.

Martin, Lynn P., and Evans, Thomas P., to Textron, Inc., mesne. Fountain pen. 3,501,225, Cl. 401-198.

Martin-Marietta Corporation: *See—*
Freeman, Peter A., 3,500,853.

Martin, William E. Flexible coupling with elastomer plate. 3,500,659, Cl. 064-013.

Mason, Ronald F.: *See—*
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Matejczyk, Blair J. Device for the teaching of numeration systems to all bases. 3,500,558, Cl. 035-032.

Mathewson Corporation: *See—*
Kalning, Frederick E., and Redman, Howard E., 3,500,777.

Mathys, Walter Franz Josef, to International Standard Electric Corporation. Miniature relay for use in printed circuits. 3,501,720, Cl. 335-135.

Matson, Howard J., to Sinclair Research, Inc. Phosphosulfurized partial ester-partial metal salts of unsaturated dicarboxylic aliphatic acids and lubricating oils containing the partial ester- partial salts. 3,501,413, Cl. 252-032.7

Matson, Ted P., and Watanabe, Henry T., to Continental Oil Company. Detergent-hydrotrope composition. 3,501,409, Cl. 252-137.

Matsubara, Shigeru, and Fujisawa, Shin, to Fuji Shashin Film Kabushiki Kaisha. Filter control device. 3,500,730, Cl. 095-010.

Matsuda, Akinobu, to Koyo Seiko Company, Limited. Variable ratio steering gear. 3,500,699, Cl. 074-498.

Matsuda, Akinobu, to Koyo Seiko Company, Limited. Variable ratio power steering gear. 3,500,700, Cl. 074-498.

Mattel, Inc.: *See—*
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Mattimoe, Paul T., and Elton, William L., to Libbey-Owens-Ford Glass Company. Method of forming an insulated shaping surface on a bending mold. 3,501,281, Cl. 065-288.

Matzek, Norman E., Musinski, Donald F., and Roehrs, Herbert C., to Dow Chemical Company, The. Aluminum plating process. 3,501,338, Cl. 117-107.2

Maurice, Reginald E. Collapsible tube dispensing mechanism. 3,501,054, Cl. 222-102.

Max, Erhard: *See—*
Duda, William L., and Max, Erhard 3,501,748.

Mayr, Helmut, and Pelte, Richard, to Agfa-Gevaert Aktiengesellschaft. Light control arrangement for photographic cameras. 3,500,737, Cl. 095-064.

McCarthy, Richard H., to Stearns Electric Corporation. Electromagnetically released spring- applied caliper brake. 3,500,971, Cl. 188-161.

McClure, Charles A. Apparatus for strand treatment. 3,500,516, Cl. 028-001.2

Mc Cord Corporation: *See—*
Callahan, James J., Urso, Ralph F., and Snow, John P., 3,500,958.

McCrea, Samuel E., 1/4 to Handy, Mattie E. Bumper forming a reservoir with foldable step. 3,501,190, Cl. 293-069.

McDonald, Dean T.: *See—*
Stilwell, Robert E., and McDonald, Dean T. 3,501,096.

Mc Elroy, Arthur H. Heat exchange article. 3,500,903, Cl. 165-184.

McGee, Arthur L., and Chamberlin, Donald W., to FMC Corporation. Sheet dispenser. 3,501,138, Cl. 271-011.

McGuire, James M.: *See—*
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McKay Company, The: *See—*
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McKenzie, Duane. Prefabricated house construction. 3,500,597, Cl. 052-092.

McKinnon, Colin James. Louvered building structures. 3,500,583, Cl. 049-078.

McKwane, Arthur A. Bath tub closure and track therefor. 3,500,481, Cl. 004-149.

McLeod, Paul C., Jr., to Corning Glass Works. Free-running oscillator. 3,500,849, Cl. 137-081.5

McMullen, Patrick: *See—*
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McNeil Laboratories, Inc.: *See—*
Poos, George Ireland, 3,501,487.
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McReynolds, Earl E., to Upjohn Company, The. Falling film evaporator. 3,500,893, Cl. 159-013.

Mead Corporation, The: *See—*
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Mead, Mitchell F. Self-contained underwater suit heater. 3,501,056, Cl. 222-131.

Mecar S.A.: *See—*
Batou, Boris, 3,500,715.

Medawar, George E.: *See—*
Hom, Felix, and Medawar, George E. 3,500,644.
Hom, Felix, and Medawar, George E. 3,500,646.

Mee, John D., and Heseltine, Donald W., to Eastman Kodak Company. Direct positive silver halide emulsions containing trimethine cynanine dyes. 3,501,312, Cl. 096-106.

Meek, George W., to Munters, Carl, & Co. Gas and liquid contact apparatus. 3,500,615, Cl. 055-233.

Meekings, Francis A., to Franklin, Spencer, Limited. Pressure intensifying devices. 3,500,641, Cl. 060-054.6

Megargle, Robert J., and Jozwiak, Daniel J., to Chrysler Corporation. Method of forming motor vehicle rear window. 3,501,196, Cl. 296-145.

Meier, Robert. Means for cutting hard construction materials. 3,500,774, Cl. 110-001.

Meinunger, Hellmut. Joint for legs of supports. 3,501,118, Cl. 248-166.

Meisinger, Elmer H.: *See—*
DeWeese, Raymond P., Meisinger, Elmer H., and Prindle, Frank D. 3,500,815.

Melanson, Roland J., to General Electric Company. Surge protector for secondary voltage circuits. 3,501,667, Cl. 313-325.

Mellgren, Per-Gustaf: *See—*
Herolf, Kjell Olof Gunnar, Johnsson, Stig Arthur, and Mellgren, Per-Gustaf 3,500,883.

Menary, Robert F., to Paulmar Incorporated. Film inspecting machine. 3,501,760, Cl. 340-260.

Mentzer, Everett K.: *See—*
Miller, Robert L., Webb, Ernest C., Mentzer, Everett K., and Peplin, Stephen C. 3,501,145.

Menzl, Roland L., and Schuessler, Fred W., to Standard Oil Company (Indiana). Method for improving the efficiency of a multiple-stage phenol extraction process. 3,501,398, Cl. 208-316.

Menzl, Roland L., Schuessler, Frederick W., and Dodds, Lowell T., to Standard Oil Company (Indiana). Methods for improving a phenol extraction process. 3,501,399, Cl. 208-317.

Merck & Co., Inc.: *See—*
Chemerda, John Martin, and Sletzinger, Meyer, 3,501,498.
Cragoe, Edward J., Jr., and Woltersdorf, Otto W., Jr., 3,501,503.
Kuo, Chan H., Taub, David, and Wendler, Norman L., 3,501,509.
Kuo, Chan Hwa, Taub, David, and Wendler, Norman L., 3,501,521.
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Merryman, Jerry D., and Ruggiero, Edward M., to Texas Instruments, Incorporated. Integrated heater element array and drive matrix. 3,501,615, Cl. 219-201.

Mery, Milton S.: *See—*
Root, William L., 3rd, Sturman, Valentine, and Mery, Milton S. 3,500,901.

Mesnager, Jacques Jean Emile. High-speed transportation systems employing ground-effect vehicles. 3,500,763, Cl. 104-023.

Messer Greisheim GmbH: *See—*
Manns, Horst, Zorner, Paul, and Breitenstraeter, Willi, 3,500,652.

Meszaros, Albert B. Thumb plier glove. 3,500,477, Cl. 002-161.

Metal Carbides Corporation: *See—*
Myers, George E., 3,501,280.

Metcalf, John W. Mounting structure for a vehicle fuel tank sending unit. 3,500,858, Cl. 137-560.

Metco Inc.: *See—*
Daley, Horace S., 3,501,097.

Meyer, Donald J.: *See—*
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Meyer, George L.N., Sr., 'Automatic' Sprinkler Corporation of America, mesne. Container filling apparatus. 3,500,880, Cl. 141-040.

Meyer, George L.N., 'Automatic' Sprinkler Corporation of America. Container filling apparatus. 3,500,879, Cl. 141-001.

Meyer, Gunter: *See—*
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Meyer, Richard J. Dart game assembly. 3,501,149, Cl. 273-102.

Meyer, William E.: *See—*
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Miale, Joseph N., to Mobil Oil Corporation. Manganese carbonate-containing minerals and their use in hydrocarbon conversions. 3,501,395, Cl. 208-112.

Michal, John H., Jr. Urinal attachment for toilet bowl. 3,500,480, Cl. 004-102.

Mielke, Georg: *See—*
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MIF Industries, Inc.: *See—*
Hammer, Thorvald F., 3,500,979.

Mihai, George. Button and buttonhole template. 3,500,550, Cl. 033-190.

Miles Laboratories, Inc.: *See—*
Schut, Robert Norman, and Ward, Frederick Edmund, 3,501,484.

Miller, Eugene R., Jr.: *See—*
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Miller, Meritt L., and Johnson, Lambert L., to General Electric Company. Root mean square voltage regulator. 3,501,771, Cl. 323-022.

Miller, Robert L., Webb, Ernest C., Mentzer, Everett K., and Peplin, Stephen C., to Brunswick Corporation, mesne. Apparatus for selectively returning bowling balls to storage pockets. 3,501,145, Cl. 273-049.

Miller, Theodore H.: *See—*
Hand, Albert E., and Miller, Theodore H. 3,500,884.

Milliken, Jesse E.: *See—*
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Milliken, Kenneth Leslie. Decorative container. 3,501,256, Cl. 431-291.

Millmaster Onyx Corporation: *See—*
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Mine Safety Appliances Company: *See—*
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Minekawa, Saburo: *See—*
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Minervini, Saverio: *See—*
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Minor, John T., and Feighner, George C., to Continental Oil Company. Process for preparing aromatic sulfones. 3,501,532, Cl. 260-607.

Mitchell, David B. Upholstery button. 3,500,506, Cl. 024-113.

Mito, Hiroshi, to Taisei Kogaku Kogyo Co., Ltd. Adapters for automatic lens system usable with different reflex cameras. 3,500,735, Cl. 095-044.

Mitsubishi Denki Kabushiki Kaish: *See—*
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Mitsubishi Rayon Company Limited: *See—*
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Mitsuno, Hideo, to Nippon Sheet Glass Co., Ltd. Detecting and measuring apparatus for glass ribbon. 3,500,548, Cl. 033-174.

Mitsuyasu, Robert U. Container handling and transporting vehicle. 3,501,039, Cl. 214-390.

Miyake, Akira: *See—*
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Miyamoto, Toshio: *See—*
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Mizuno, Komei, Sugita, Norio, Asai, Mitsuko, and Miyake, Akira, to Takeda Chemical Industries, Ltd. Chromomycin A_3 derivatives and production thereof. 3,501,570, Cl. 424-119.

Mobil Oil Corporation: *See—*
Lake, Connie, 3,501,083.
Lyons, Thomas C., 3,501,394.
Miale, Joseph N., 3,501,395.

Moden, James R., to AMH Corporation. Reinforced buttom hole. 3,500,509, Cl. 024-202.

Modern Engraving and Machine Corporation: *See—*
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Modern Sewerage Systems, Inc.: *See—*
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Moeller, Everett G.: *See—*
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Moffa, Joseph: *See—*
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Moiso, Ugo: *See—*
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Mole, Cecil J., to Westinghouse Electric Corporation. Multistage direct transfer thermoelectric apparatus. 3,500,650, Cl. 062-003.

Molex Products Company: *See—*
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Molloy, Edward W., to General Motors Corporation. Bearing cage. 3,501,211, Cl. 308-217.

Monark-Crescent Aktiebolag: *See—*
Johansson, Bengt Ingvar, 3,501,142.

Monroe, John N., to TRW Inc., mesne. Submarine detection. 3,501,639, Cl. 250-083.3

Monsanto Chemicals (Australia) Limited: *See—*
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Monsanto Company: *See—*
Bach, Hartwig C., 3,501,444.
Bigham, James E., and Crider, Harold E., 3,501,666.
Bonzagni, Francis A., 3,501,429.
Brignac, Edmond P., 3,501,441.
Heintz, Daniel N., Roos, Charles W., and Knowles, William S., 3,501,501.
Kichline, Thomas P., and Stahlheber, Norman Earl, 3,501,314.
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Bertinotti, Floriana, and Danielli, Ezio, 3,501,371.
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Moore, Alvin G., to Hercules Incorporated. Angular movement sensing device. 3,500,691, Cl. 073-516.

Moore, Buell, to Esquire, Inc. Core winding apparatus. 3,500,878, Cl. 140-092.2

Moore, David M.: *See—*
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Moore, Edward L., and Symes, William F., to Monsanto Company. Process for preparing chlorocyanurate compounds. 3,501,468, Cl. 260-248.

Moore, Emmett L., to Battery Lite Corporation. High frequency portable power supply for a fluorescent lamp. 3,501,674, Cl. 315-105.

Moorehead, David R., to Colonial Sugar Refining Company Limited, The. Method of manufacturing building structural and paving products using a calcium silicate hydrate bonding matrix. 3,501,323, Cl. 106-097.

Moran, Edward P., to Textron, Inc. Zero-voltage driven-cable amplifier. 3,501,711, Cl. 330-022.

Morat, Franz, G.m.b.H.: *See—*
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Schmidt, Richard, 3,500,663.

Morecroft, John H.: *See—*
United States of America,, National Aeronautics and Space Administration, Administrator, 3,501,683.

Moreines, Harold: *See—*
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Morley, Edwin R.: *See—*
Heinzen, Robert A., and Morley, Edwin R. 3,501,657.

Morley, Edwin R., to American Machine & Foundry Company. Rotor construction with directional control for a synchronous A.C. motor. 3,501,656, Cl. 310-041.

Morley, Edwin R., to American Machine & Foundry Company. Bidirectional motor with directional control means for starting in either direction. 3,501,658, Cl. 310-041.

Morris, Rupert C.: *See—*
Van Winkle, John L., Morris, Rupert C., and Mason, Ronald F. 3,501,515.

Morse, William L. Fish holding apparatus. 3,500,495, Cl. 017-070.

Mosinskis, Victor S., to Boeing Company, The. Rotor hub. 3,501,250, Cl. 416-040.

Moskowitz, William, to Multisensory Systems. Visual education device. 3,500,556, Cl. 035-022.

Motor Wheel Corporation: *See—*
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Motorola, Inc.: *See—*
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Griffey, Donald E., 3,501,590.
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Mount Hope Machine Company, Incorporated: *See—*
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Mox, Dana W.: *See—*
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Mueller, Hans, to Process Engineering Company, S.A. Separating device. 3,501,414, Cl. 252-361.

Mueller, Helmut, to Kienzle Apparate GmbH. Shutter arrangement for a recording totalizer. 3,501,092, Cl. 235-001.

Muller, Gerardus P.: *See—*
Roetgerink, Johannes A., and Muller, Gerardus P. 3,500,985.

Muller, Helmut, and Gsching, Wilhelm, to Voith Getriebe KG. Superimposed transmission. 3,500,704, Cl. 074-688.

Muller, Jiri, and Kmeco, Rudolf, to Papcel Strojirny Pro Prumysl Celulosy a papiru, narodni podnik. Centrifugal separator. 3,501,001, Cl. 209-211.

Multisensory Systems: *See—*
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Mumpower, Robert C.: *See—*
Touey, George P., and Mumpower, Robert C. 3,501,361.

Munters, Carl, & Co.: *See—*
Meek, George W., 3,500,615.

Munters, Carl Georg, and Sjoberg, Nils Gunnar, to W.M.B. International AB. Method of manufacturing coherent bodies of foamed synthetic plastic material. 3,501,558, Cl. 264-047.

Munzing, Robert, to Ernst, Max. Electric locomotive for toy and model railroads. 3,500,580, Cl. 046-243.

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Spranger, Helmut, Eisentraut, Hans-Joachim, Frenzel, Alexander, and Schreiber, Erhard, 3,501,618.
Pool, Eldert B., to Rockwell Manufacturing Company. Ball valves. 3,501,128, Cl. 251-175.
Poos, George Ireland, to McNeil Laboratories, Inc. Certain hetero-aryl lower alkylene derivatives of 1-lower alkyl-2-imino-pyrrolidines. 3,501,487, Cl. 260-296.
Poper, Geo D., Corporation: *See—*
DeWeese, Raymond P., Meisinger, Elmer H., and Prindle, Frank D., 3,500,815.
Porsche, Ferdinand Anton Ernst, to Porsche, Firma. Speed responsive motor vehicle heating. 3,501,094, Cl. 237-012.3
Porsche, Firma: *See—*
Porsche, Ferdinand Anton Ernst, 3,501,094.
Portescap, Le Porte-Echappement Universal S.A.: *See—*
Marti, Fritz, 3,500,632.
Post, William Clinton: *See—*
Skoggard, Bruno Bengt, Post, William Clinton, and Weierter, Edward Peter 3,500,869.
Potter, James M.: *See—*
Knapp, Edward A., Swenson, Donald A., and Potter, James M. 3,501,734.
Potter, Millar D., and Parks, John H., to Caterpillar Tractor Company. Fuel priming pump. 3,500,759, Cl. 103-175.
Poulo, Louis R.: *See—*
Chase, Robert L., and Poulo, Louis R. 3,501,708.
Preissmann, Alexandre: *See—*
Combes, Gilles, and Preissmann, Alexandre 3,500,647.
Preti, Jean-Claude, to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.). Method of measuring the spacing of two moving vehicles and a device for the performance thereof, and their application to the evaluation of the traffic density of vehicles. 3,501,763, Cl. 343-012.
Prindle, Frank D.: *See—*
DeWeese, Raymond P., Meisinger, Elmer H., and Prindle, Frank D. 3,500,815.
Pritchard, J. F., and Company: *See—*
Parrish, Roger W., 3,501,516.
Pritchard, James E., to Phillips Petroleum Company. Protection of bearings from impact damage. 3,501,207, Cl. 308-187.
Process Engineering Company, S.A.: *See—*
Mueller, Hans, 3,501,414.
Procop, Alex J., to GAF Corporation. Web winding apparatus including means for preventing spill of the web. 3,501,111, Cl. 242-202.
Proctor & Schwartz, Inc.: *See—*
Cunningham, Wallace, and Sclater, Alexander, 3,500,515.
Prontor-Werk Alfred Gauthier, G.m.b.H.: *See—*
Rentschler, Waldemar T., and Espig, Winfried, 3,500,729.
Schutt, Wilhelm H., 3,500,986.
Propper Manufacturing Co., Inc.: *See—*
Speelman, Irving A., 3,501,228.
Prosl, Frank R., Jr., and Booker, Bradford J., to United Aircraft Corporation. Connector. 3,500,860, Cl. 137-614.03
Protective Treatments, Inc.: *See—*
Strack, Donald R., 3,500,603.
Pruitt, William R.: *See—*
Bowen, Marvin, 3,500,622.
Purdie, Clarence E., and Schaffner, William C., to Bonanza Sports, Inc. Powder measure apparatus. 3,501,053, Cl. 222-047.
Purtell, Rufus J.: *See—*
Boone, Ralph D., and Purtell, Rufus J. 3,500,856.
Putnam, Allen,: *See—*
Putnam, Allen Lewis, 3,500,574.
Putnam, Allen Lewis, 1/3 each to Putnam, Allen, Launer, Leland C., and Kerridge, Mark L. Fishing flies, lures and nymphs. 3,500,574, Cl. 043-042.25
Pye Limited: *See—*
Hall, Joseph E., Hunt, Richard J., and Vincett, Colin J., 3,500,617.
Quarles, Miller W., Jr., to Petty Geophysical Engineering Company. Method for editing seismic traces. 3,500,543, Cl. 033-001.
Quick-Free S.r.L.: *See—*
Gaione, Paolo, 3,500,510.
Raabe, Erwin M., to Pheem Manufacturing Company. Reinforced container. 3,501,047, Cl. 220-071.
Rabbitt, Robert R.: *See—*
Williamson, William A., and Rabbitt, Robert R. 3,500,948.
Raciti, Joseph A., to General Electric Company. Method for producing a wire having improved soldering characteristics. 3,500,538, Cl. 029-630.
Rack, Alois J., to Bell Telephone Laboratories, Incorporated. Optical pulse generator. 3,501,223, Cl. 350-171.
Ragazzini, Mario, and Carcano, Donato, to Montecatini Edison S.p.A. Ethylene-monochlorotrifluoroethylene- crystalline copolymers. 3,501,446, Cl. 260-087.5
Raifsnider, Philip J., to Shell Oil Company. Chemical injection of slugs of two dissimilar aqueous solutions to recover oil. 3,500,920, Cl. 166-273.
Ramirez, Paul: *See—*
Howell, Charles Frederick, Ramirez, Paul, and Hardy, Robert Allis, Jr. 3,501,483.

Ramsey, Thomas H., Jr.: *See—*
Haberecht, Rolf R., and Ramsey, Thomas H., Jr. 3,501,342.
Rankin, Richard W.: *See—*
Jones, Leonidas J., Rankin, Richard W., and Rivest, Everett L. 3,500,559.
Rankins, Everett V.: *See—*
Jay, George, and Rankins, Everett V. 3,501,025.
Ransburg Electro-Coating Corporation: *See—*
Spiller, Lester L., 3,501,328.
Rapp, Wolfgang: *See—*
Reisacher, Josef, and Rapp, Wolfgang 3,500,800.
Rasmussen, Chris Royce, to McNeil Laboratories, Inc. 3-Carbamoyl and 3-alkoxycarbonyl benzothiazine-1,1- dioxides. 3,501,466, Cl. 260-243.
Ratner, Abram Mark: *See—*
Ratner, George I., and Ratner, Abram Mark 3,500,772.
Ratner, George I., and Ratner, Abram Mark, said Ratner, Abram Mark, assor to said Ratner, George I. Security locking device. 3,500,772, Cl. 109-047.
RCA Corporation: *See—*
Di Giacomo, Joseph John, 3,501,647.
Fisher, William F., 3,501,231.
Jackson, Arnel E., 3,501,232.
Jacoby, George V., 3,501,682.
Read, Richard H., to Hydronics Systems, Inc. Liquid heating device. 3,500,817, Cl. 126-350.
Recchia, Francesco P.: *See—*
Farrissey, William J., Jr., Recchia, Francesco P., and Sayigh, Adnan A. R. 3,501,457.
Redman, Howard E.: *See—*
Kalning, Frederick E., and Redman, Howard E. 3,500,777.
Reed, Norman D.: *See—*
Ligon, Elmer R., and Reed, Norman D. 3,500,680.
Reed, Robert E.: *See—*
Fitch, Ernest C., Jr., Reed, Robert E., and Comer, Alva G. 3,501,014.
Reese, John Sanders, and Downs, Neville L., to Electronic Communications, Inc. FM digital circuit for analog power control. 3,501,685, Cl. 321-002.
Regensburger, Paul J., to Xerox Corporation. Light insensitive xerographic plate and method for making same. 3,501,343, Cl. 117-215.
Regie Nationale des Usines Renault: *See—*
de Lavenne, Hubert Yves, 3,501,093.
Reichardt, Harry J.: *See—*
Abromavage, John C., and Reichardt, Harry J. 3,501,123.
Reichhold Chemicals, Inc.: *See—*
Delius, Hermann, 3,501,425.
Reid, William J., to United States of America, National Aeronautics and Space Administration, mesne. Digital frequency discriminator. 3,501,701, Cl. 328-134.
Reinhard, Richard B. Tooth arrangement for alternate digging and scooping. 3,500,562, Cl. 037-141.
Reisacher, Josef, to Daimler-Benz Aktiengesellschaft. Gas exchange system for V-type internal combustion engines. 3,500,805, Cl. 123-052.
Reisacher, Josef, and Rapp, Wolfgang, to Daimler-Benz Aktiengesellschaft. Internal combustion engine with cylinders in V-arrangement. 3,500,800, Cl. 123-032.
Reisberg, Joseph, to Shell Oil Company. Use of highly saline ethoxylated surfactant system for oil recovery. 3,500,923, Cl. 166-274.
Remco Industries, Inc.: *See—*
Bart, Philip D., 3,500,577.
Remers, William Alan, Gibs, Gabriel Joseph, and Weiss, Martin Joseph, to American Cyanamid Company. Novel 2,3-heterocyclic fused quinuclidines, and 3- substituted quinuclidine-2-carboxylate derivatives. 3,501,471, Cl. 260-250.
Remers, William Alan, Gibs, Gabriel Joseph, and Weiss, Martin Joseph, to American Cyanamid Company. Dihydroquinolines and substituted dihydroquinolines and method of preparing the same. 3,501,479, Cl. 260-289.
Rennek Company: *See—*
Polewski, Robert E., 3,500,551.
Rentschler, Waldemar T., and Espig, Winfried, to Prontor-Werk Alfred Gauthier, G.m.b.H. Photographic camera shutter with an electronic timing device. 3,500,729, Cl. 095-010.
Reynolds, R. J., Tobacco Company: *See—*
Tompkins, Edward Crosby, 3,501,574.
Reynolds, Robert G. Surface craft. 3,500,784, Cl. 114-043.
Ribler, Erich, to Morat, Franz, G.m.b.H. Pattern controlling selector arrangement. 3,500,662, Cl. 066-050.
Rice, Charles M.: *See—*
Bowers, Virginia S., Breazeale, Francis B., and Rice, Charles M. 3,500,628.
Rice, Richard E., and Lawrence, Willis Thompson, to Hooker Chemical Corporation, mesne. Corrosion control in sealed heat storage modules. 3,501,261, Cl. 021-002.5
Rich, Maurice E., Jr. Bicycle seat supporting pivot means. 3,501,119, Cl. 248-221.
Richardson, Arthur Whittaker, to Karma (New Malden) Ltd. Safety arrangements for liquid fuel burning devices. 3,501,252, Cl. 431-033.
Richardson, David A., to Foxboro Company, The. Electronic control apparatus having improved means for transfer between automatic and manual operation. 3,501,707, Cl. 330-009.
Richardson, Edwin A., to Shell Oil Company. Electroless metal bonding of unconsolidated formations into consolidated formations. 3,500,926, Cl. 166-292.
Richardson, Keith C.: *See—*
Long, Emile David, and Richardson, Keith C. 3,500,801.
Richardson, Philip C., and Lopez, Alfredo, Jr., to United States of America, Air Force. Electrocardiographic and bioelectric capacitive electrode. 3,500,823, Cl. 128-002.06
Richert, Walter J., to American Machine & Foundry Company. Relay construction. 3,501,719, Cl. 335-106.
Richter, Philipp. Collapsible steering column. 3,500,698, Cl. 074-493.
Riede, Gerhard: *See—*
Alwall, Nils, Hagstrom, Nils Olov Vilhelm, Ostergren, Bo Lennart, and Riede, Gerhard 3,501,011.
Riegel Paper Corporation: *See—*
Hanson, Donald E., 3,501,295.
Lense, Robert F., 3,500,726.
Rieschel, Hans, to Bergwerksverband GmbH. Systems for controlling self-advancing mine roof support units. 3,500,719, Cl. 091-036.
Rigden, Jameson D.: *See—*
Myers, Stephen A., and Rigden, Jameson D. 3,501,714.
Rigor, Herbert W. Safety valve for aerosol dispensers. 3,501,067, Cl. 222-464.
Riley, Russell B., to Hewlett-Packard Company. Temperature compensated R. F. power measuring device having automatic zero setting means. 3,501,696, Cl. 324-095.
Risch, William E., and Grumbles, Samuel C., to Anchor Hocking Glass Corporation. Clean release innerseal. 3,501,042, Cl. 215-040.
Ritz, Rolf, to Voith Getriebe KG. Hydrodynamic transmission, especially for rail vehicles. 3,500,640, Cl. 060-054.
Rivest, Everett L.: *See—*
Jones, Leonidas J., Rankin, Richard W., and Rivest, Everett L. 3,500,559.
Roach, Robert Lee, to West Chester Chemical Company. Sealed vessels. 3,501,175, Cl. 285-295.
Robbiano, Picrino P., to Varian Associates. Magnetometer. 3,501,689, Cl. 324-000.5
Robens, Erich Maria: *See—*
Sandstede, Gerd, and Robens, Erich Maria 3,500,675.
Roberts, Thomas E., Jr., to FMC Corporation. Fluid pumping method and apparatus. 3,501,000, Cl. 209-170.
Robertshaw Controls Company: *See—*
Chambers, William W., 3,501,718.
Robertson, Melborne L., to Gulf Oil Corporation. Safety switch circuit. 3,500,751, Cl. 103-012.
Robertson, Millard L.: *See—*
Jasper, John C., and Robertson, Millard L. 3,501,046.
Robins, Janis, to Ashland Oil & Refining Company. Phenolic benzylic ether coating compositions and method of crosslinking same. 3,501,552, Cl. 260-831.
Robinson-Halpern Company: *See—*
Armstrong, James E., 3,501,759.
Robinson, Thomas S., to International Business Machines Corporation. High speed skip and search. 3,501,623, Cl. 235-061.11
Robroy Industries: *See—*
Hardt, Louis J., and Young, James M., 3,500,868.
Rockwell Manufacturing Company: *See—*
Berube, Warren A., 3,500,696.
Freeman, Mathew L., 3,501,127.
Pool, Eldert B., 3,501,128.
Rockwell, Norman P., to Du Pont de Nemours, E. I., and Company. Sand consolidation in oil wells with amorphous guanidine silicate. 3,500,928, Cl. 166-292.
Rodenberg, Herbert G.: *See—*
Aylesworth, Robert D., Hilton, Thomas B., Frochlich, Philip A., and Rodenberg, Herbert G. 3,501,554.
Roder, Karl, and Nautsch, Waltrud, to Daimler-Benz Aktiengesellschaft. Foot pedal. 3,500,702, Cl. 074-560.
Rodin, John O.: *See—*
Burkholder, Wendell E., Silverstein, Robert M., Rodin, John O., and Gorman, John E. 3,501,566.
Roe, Ralph C., to Saline Water Conversion Corporation, mesne. Distillation-condenser with vertically disaligned tubes. 3,501,382, Cl. 202-185.
Roehr, Kuno M.: *See—*
Thrasher, Paul M., and Roehr, Kuno M. 3,501,594.
Roehrs, Herbert C.: *See—*
Matzek, Norman E., Musinski, Donald F., and Roehrs, Herbert C. 3,501,338.
Roesch, William C., to United States of America, Atomic Energy Commission. Whole-body-radiation counter with means for controlling the scanning velocity. 3,501,634, Cl. 250-052.
Roetgerink, Johannes A., and Muller, Gerardus P., to Machinefabriek M. Brouwer & Co. N.V. Device for sorting and directing conical bobbins. 3,500,985, Cl. 198-033.
Roever, William L., to Shell Oil Company. Radiation method and apparatus for mapping the surface characteristics of an object. 3,500,950, Cl. 181-000.5
Roffler, Josua, to Sulzer Brothers Limited. Apparatus for separating water from wet steam prior to superheating of the steam. 3,500,796, Cl. 122-034.
Rohm and Haas Company: *See—*
Willette, Gordon L., 3,501,405.

Rohr Corporation: *See—*
Hom, Felix, and Medawar, George E., 3,500,644.
Hom, Felix, 3,500,645.
Hom, Felix, and Medawar, George E., 3,500,646.

Roiner, Franz. Method and apparatus for the manufacture of cheese. 3,500,542, Cl. 031-046.

Rollman, Edward W.: *See—*
Schnepfe, Robert W., and Rollman, Edward W. 3,500,716.

Rolls-Royce Limited: *See—*
Birch, Stanley William, 3,500,842.

Romualdi, James P.: *See—*
Longini, Richard L., Romualdi, James P., and Stelson, Thomas E. 3,500,728.

Roos, Charles W.: *See—*
Heintz, Daniel N., Roos, Charles W., and Knowles, William S. 3,501,501.

Root, William L., 3rd, Sturman, Valentine, and Mery, Milton S., to Bethlehem Corporation, The. Mixer. 3,500,901, Cl. 165-086.

Roper, John H. Gas pressure producing apparatus. 3,500,635, Cl. 060-029.

Ropp, Richard C., to Westinghouse Electric Corporation. Method of preparing dysprosium-activated rare- earth metal vanadate phosphor. 3,501,412, Cl. 252-301.4

Roscoe, Howard E., and White, Daniel A., to FMC Corporation. Auxiliary torque drive for tension brake system in high speed printing press. 3,501,108, Cl. 242-075.5

Roscoe, Stanley N., to Hughes Aircraft Company. Instrument landing display system. 3,501,765, Cl. 343-108.

Rose, David A., to Superior Seal Devices. Journal box seal. 3,501,156, Cl. 277-130.

Rosenthale, Marvin E.: *See—*
Lapidus, Milton, Grant, Norman H., Rosenthale, Marvin E., and Alburn, Harvey E. 3,501,525.

Ross, Jack H., and Spain, Raymond G., to United States of America, Air Force. Sizing system for high modulus fibers and method and apparatus for applying same. 3,501,431, Cl. 260-028.5

Ross, Robert N.: *See—*
Wigner, Bernard J., and Ross, Robert N. 3,501,077.

Rossi, Adriano, to Adriano & F. Lil Rossi S.p.A. Overhead transporter for oriented goods. 3,501,022, Cl. 212-128.

Rotax Limited: *See—*
Pannell, Dennis Alexander, 3,501,659.

Rotger, Klaus, and Haas, Karl Heinz, to Leitz, Ernst, G.m.b.H. Plasma torch. 3,501,665, Cl. 313-146.

Rouet, Paul O. C., to Ateliers de Constructions Electriques de Charleroi (ACEC). Measuring device for the maximum visual distance in the fog. 3,501,239, Cl. 356-103.

Rowland, Homer C., to Hallmark Cards Incorporated. Plastic bow and method of making the same. 3,501,364, Cl. 161-010.

Rozian, Irving W.: *See—*
Dow, William G., and Rozian, Irving W. 3,501,376.

Rudman, Frederick R., to Gardner-Denver Company. Feed mechanism for rock drill hose guide. 3,500,941, Cl. 173-160.

Rudszinat, Willy, to Hauni-Werke Koerber & Co. K.G. Magazine for cigarettes or the like. 3,501,052, Cl. 221-175.

Rudy, Jerome: *See—*
Cahn, Arno, Kaniecki, Thaddeus John, Neiditch, Oscar Walter, and Rudy, Jerome 3,501,335.

Ruegsegger, Glenn F. Machine for manufacturing concrete pipe fittings. 3,500,514, Cl. 025-030.

Ruggiero, Edward M.: *See—*
Merryman, Jerry D., and Ruggiero, Edward M. 3,501,615.

Rulseh, Roger D., and Koch, Claude V., to American Machine & Foundry Company. Switch contact arm mounting means. 3,501,608, Cl. 200-166.

Rum, Klaus: *See—*
Lingen, Dieter, and Rum, Klaus 3,500,877.

Runyan, Robert S.: *See—*
Burba, John L., Jr., and Runyan, Robert S. 3,500,933.

Rupnik, Donald R.: *See—*
United States of America,, National Aeronautics and Space Administration, Administrator, 3,501,648.

Russell, James T., to Battelle Development Corporation, The. Analog to digital to optical photographic recording and playback system. 3,501,586, Cl. 178-006.7

Russell, Robert J. Pet door. 3,500,794, Cl. 119-001.

Russo, Francis Paul, and Spargo, Thomas William, to American Machine & Foundry Company. Hydraulic filter cartridge with indicator. 3,501,005, Cl. 210-090.

Ruti Machinery Works Ltd.: *See—*
Strauss, Edgar H., 3,500,871.

Rutzen, Horst, to Henkel & Cie, G.m.b.H. Preparation of primary amines by hydrogenation of nitriles. 3,501,528, Cl. 260-583.

Ruyle, William V.: *See—*
Shen, Tsung-Ying, Neilson, Thomas, and Ruyle, William V. 3,501,456.

Ryan, James P.: *See—*
Brixius, Jacob K., and Ryan, James P. 3,501,563.

Ryan, John W.: *See—*
Marshall, James E., Barcus, Jack L., Stormon, Lester T., and Ryan, John W. 3,501,154.

Ryan, Michael J. Apparatus for continuous high filtration with a filter. 3,501,012, Cl. 210-406.

Sadowska, Wanda: *See—*
Penczek, Stanislaw, Fejgin, Jerzy, Tomaszewicz, Maria, and Sadowska, Wanda 3,501,438.

Safranski, John C., Jr.: *See—*
Farber, Hugh A., and Safranski, John C., Jr. 3,501,553.

Saginaw Machine and Tool Company: *See—*
Cashman, Robert W., and Wasco, Anthony, Jr., 3,500,523.

Sailer, Richard, Philipp, Hanswerner, and Berther, Clau, to Inventa A.G. fur Forschung und Patentverwertung. Apparatus for continuously separating mixtures of substances by multistage rectifying column crystallization. 3,501,275, Cl. 023-273.

Saito, Hachiro: *See—*
Saito, Tadashi, Saito, Masaya, Saito, Masaru, and Saito, Hachiro 3,500,671.

Saito, Masaru: *See—*
Saito, Tadashi, Saito, Masaya, Saito, Masaru, and Saito, Hachiro 3,500,671.

Saito, Masaya: *See—*
Saito, Tadashi, Saito, Masaya, Saito, Masaru, and Saito, Hachiro 3,500,671.

Saito, Tadashi, Saito, Masaya, Saito, Masaru, and Saito, Hachiro. Rolling apparatus for manufacturing rings. 3,500,671, Cl. 072-106.

Sakai, Michihiko, Kato, Masayuki, Hagiware, Hikoichi, and Konishi, Kazuo, to Takeda Chemical Industries, Ltd. Dithio amino alkanes. 3,501,502, Cl. 260-347.2

Saksa, John A., and Zuppa, Theodore A. Auto-safety sleeve. 3,501,187, Cl. 292-001.

Salamander Aktiengesellschaft: *See—*
Epstein, Roland O., 3,500,561.

Saline Water Conversion Corporation: *See—*
Roe, Ralph C., 3,501,382.

Salmans, Robert R., to Ceramics of Kansas, Inc. Apparatus used in producing ceramic castings. 3,500,881, Cl. 141-088.

Salomon, Georges P. J. Safety boot binding for skis. 3,501,163, Cl. 280-011.35

Salvi, Antoine, and Glenat, Henri, to Commissariat a l'Energie Atomique. Nuclear magnetic resonance magnetometer of the spin coupling type. 3,501,690, Cl. 324-000.5

San Miguel Project, Inc.: *See—*
Triplett, William C., and Brauer, Walter H., 3,500,910.

Sanchez, Moises G.: *See—*
Triggiani, Leonard V., Haberman, Norton, and Sanchez, Moises G. 3,501,411.

Sanders Associates, Inc.: *See—*
Gagne, Francois W., Otey, Charles R., and Woodruff, Thomas E., 3,501,699.
Parkin, William J., 3,501,740.
Vosbury, Michael K., 3,501,746.

Sanders, Norman Thomas, to Needle Industries Limited. Holders for needles and like articles. 3,500,998, Cl. 206-066.

Sandiford, Denis James Henry, to Imperial Chemical Industries Limited. Process for treatment of molecularly oriented crystalline organic polymeric material. 3,500,626, Cl. 057-140.

Sandoz A.G.: *See—*
Schenker, Erhard, 3,501,499.
Steinemann, Willy, 3,501,453.

Sandoz Ltd.: *See—*
Schenker, Erhard, 3,501,499.
Steinemann, Willy, 3,501,453.

Sandoz-Wander, Inc.: *See—*
Galantay, Eugene E., 3,501,510.

Sandstede, Gerd, and Robens, Erich Maria, to Sartorius-Werke, G.m.b.H. (und vormals Gottinger Prazisionswaagenfabrik, GmbH. Apparatus for an automatic gravimetric recording of characteristic curves which represent the sorption of gas by a sample. 3,500,675, Cl. 073-019.

Sangster, Arlon G., and Parker, Howard W. Cable actuated device converting rotary to linear motion. 3,500,692, Cl. 074-089.22

Sankey, Edwin W.: *See—*
Barden, Kenneth L., Furey, Daniel J., and Sankey, Edwin W. 3,500,945.

Sanner, George E. Controls for lawn sprinkling systems and the like. 3,500,844, Cl. 137-078.

Santelmann, Kurt M., to Desma-Werke G.m.b.H. Mold for the production of boots of rubber or plastics material. 3,500,502, Cl. 018-042.

Sarett, Lewis H.: *See—*
Shen, Tsung-Ying, and Sarett, Lewis H. 3,501,465.

Sarto, Jorma O., and Moeller, Everett G., to Chrysler Corporation. Preheating inlet air during engine idling. 3,500,806, Cl. 123-119.

Sartorius-Werke, G.m.b.H. (und vormals Gottinger Prazisionswaagenfabrik, GmbH: *See—*
Sandstede, Gerd, and Robens, Erich Maria, 3,500,675.

Sasmor, Ernest J.: *See—*
Halpern, Alfred, and Sasmor, Ernest J. 3,501,575.

Saulmon, James E. Ignition distributor. 3,501,600, Cl. 200-019.

Saunders, Ralph: *See—*
Heidler, Glen R., and Saunders, Ralph 3,501,582.

Sautier, Pierre J., to Engins Matra. Rocket-bomb magazine. 3,500,717, Cl. 089-001.817

Sayigh, Adnan A. R.: *See—*
Farrissey, William J., Jr., Recchia, Francesco P., and Sayigh, Adnan A. R. 3,501,457.

Sayigh, Adnan A. R., and Tilley, James N., to Upjohn Company, The. Secondary carbamyl chlorides. 3,501,523, Cl. 260-544.

Scalzo, Ausgustine J., and Zabrodsky, Andrew, to Westinghouse Electric Corporation. Side plates for turbine blades. 3,501,249, Cl. 416-095.

Schaar, Charles H., to Kendall Company, The. Film walled resilient nipples and containers and liquid containing packages integral therewith. 3,500,831, Cl. 128-252.

Schabert, Robert, and Buchsenstein, Wilhelm, to Freudenberg, Carl, Kommanditgesellschaft auf Aktien. Interlining. 3,501,368, Cl. 161-112.

Schadt, Oliver S., and Schubert, Luther A. Blood pressure measuring and recording apparatus. 3,500,822, Cl. 128-002.05

Schaefer, Edward E. Safety bottle cap. 3,501,041, Cl. 215-009.

Schaffner, William C.: *See—*
Purdie, Clarence E., and Schaffner, William C. 3,501,053.

Schaible, Aaron M., and Wenzel, Philip D., to Case, J. I., Company. Concrete pump valve with wall scraping means. 3,500,855, Cl. 137-242.

Scharf, Herbert D. Wire tension control device. 3,501,075, Cl. 226-025.

Scharfen, Hans, to Forkardt, Paul, Kommanditgesellschaft. Device for actuating clamping tools, especially jaw chucks on machine tools. 3,501,159, Cl. 279-004.

Schellberg, Charles D. Crusher apparatus. 3,501,100, Cl. 241-091.

Schenker, Erhard, to Sandoz Ltd., a/k/a Sandoz A.G. Sulfonylurea derivatives. 3,501,499, Cl. 260-340.7

Schenker, Fausto Eugenio: *See—*
Grethe, Guenter, and Schenker, Fausto Eugenio 3,501,478.

Scherer, John O., Jr.: *See—*
Johnson, Virgil E., Jr., Scherer, John O., Jr., and Miller, Eugene R., Jr. 3,500,783.

Schertel, Gunther, Bilz, Wilhelm, and Fierek, Horst, to Siemens Aktiengesellschaft. Transmission frame for mechanical devices. 3,500,703, Cl. 074-606.

Scheufler, Roland, to Schmidt, Karl, GmbH. Reinforced rotary piston. 3,500,797, Cl. 123-008.

Schilling, Hugh K., to Horton Manufacturing Company, Inc. Brake having spring engagement and fluid pressure release. 3,500,970, Cl. 188-170.

Schindler, Walter, and Blattner, Hans, to Geigy Chemical Corporation. 5H-Dibenz[b,f]azepine derivatives. 3,501,459, Cl. 260-239.

Schlenker, Roy F., to Holmes, T. J., Co., Inc. Pump for an atomizer or the like. 3,500,760, Cl. 103-188.

Schlor, Hans Helmuth, and Grewe, Ferdinand, to Farbenfabriken Bayer Aktiengesellschaft. Fungicidal composition containing phenyl- mercaptomethane-sulfonamide and method of using the same. 3,501,578, Cl. 424-321.

Schlumberger Technology Corporation: *See—*
Hoyle, William R., 3,500,683.

Schmidt, Bernd S. Toe toy. 3,501,144, Cl. 273-001.

Schmidt, Christian: *See—*
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Schmidt, Otto K.: *See—*
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Schmidt, Richard, to Morat, Franz, G.m.b.H. Yarn changing and feeding arrangement for circular knitting machines. 3,500,663, Cl. 066-139.

Schmucker, William Albert: *See—*
Nasierowski, Eugene Henry, and Schmucker, William Albert 3,501,579.

Schneider, Hans, to Sulzer Brothers, Ltd. Method for introducing lithium into high melting alloys and steels. 3,501,291, Cl. 075-053.

Schnepfe, Robert W., and Rollman, Edward W., to United States of America, Air Force. Bomb ejector. 3,500,716, Cl. 089-001.5

Schoffner, Glenn R.: *See—*
Braxton, Ralph C., Schoffner, Glenn R., and Levine, Alex 3,500,665.

Schohn, Wilhelmina. Oar rest. 3,500,483, Cl. 009-001.

Schottel-Werft Josef Becker AG: *See—*
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Schowalter, Lewis G., to Case, J. I., Company. Shifting device for transmission. 3,500,697, Cl. 074-477.

Schreffler, Robert Z., to Electric Conductor Bearings, Incorporated. Electric conductor bearings. 3,501,204, Cl. 308-001.

Schreiber, Erhard: *See—*
Spranger, Helmut, Eisentraut, Hans-Joachim, Frenzel, Alexander, and Schreiber, Erhard 3,501,618.

Schreier, Bernard Dov, and Brown, John. Counterbalance weights. 3,501,021, Cl. 212-049.

Schroder, Herbert. Equipment for manufacturing bakery products. 3,501,024, Cl. 214-001.

Schroder, Johann: *See—*
Nijland, Louis Marius, Schroder, Johann, and Andrich, Ekkehard 3,500,732.
Nijland, Louis Marius, and Schroder, Johann 3,501,254.

Schubert, Luther A.: *See—*
Schadt, Oliver S., and Schubert, Luther A. 3,500,822.

Schubert & Salzer Maschinenfabrik Aktiengesellschaft: *See—*
Kohler, Heinz, and Hoeber, Gerhard, 3,500,661.

Schubring, Allin W., and Paape, Kenneth L., to Square D Company. Convertible contact structure for an electromagnetically operated switch. 3,501,717, Cl. 335-017.

Schuemann, Wilfred C., to Hercules Incorporated. Angular movement sensing device. 3,500,690, Cl. 073-516.

Schuessler, Fred W.: *See—*
Menzl, Roland L., and Schuessler, Fred W. 3,501,398.

Schuessler, Frederick W.: *See—*
Menzl, Roland L., Schuessler, Frederick W., and Dodds, Lowell T. 3,501,399.

Schuler, Werner A., to Ortec. Tapered-shelf semiconductor. 3,501,678, Cl. 317-234.

Schulte, Harry J., Jr.: *See—*
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Schuster, Robert W. Fuel control for a gas turbine engine. 3,500,638, Cl. 060-039.28

Schut, Robert Norman, and Ward, Frederick Edmund, to Miles Laboratories, Inc. Certain substituted 3-(2-indolyl)-1,2,5,6-tetrahydropyridines and derivatives thereof. 3,501,484, Cl. 260-295.

Schutt, Wilhelm H., to Prontor-Werk Alfred Gauthier, G.m.b.H. Loading device for machine tools. 3,500,986, Cl. 198-033.

Schuur, Gerrit: *See—*
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Schwartz, James W., to National Video Corporation. Apparatus for correcting vertical drift in color television index tube. 3,501,583, Cl. 178-005.4

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Schwarz, Rudolf: *See—*
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Schweizer, Peter, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of germanium-(11)- phosphite. 3,501,263, Cl. 023-023.

Schweng, Otto, and Steinmair, Karl, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Device for lifting and lowering oxygen lances for top-blowing converters. 3,501,136, Cl. 266-034.

Schwerdtel, Wulf: *See—*
Brandt, Hans-Walther, Engelhard, Bruno, Kronig, Walter, and Schwerdtel, Wulf 3,501,550.

Science Union et Cie, Societe Francaise de Recherche Medicale: *See—*
Beregi, Laszlo, Hugon, Pierre, and Duhault, Jacques, 3,501,495.

Sciolino, Samuel, to Weathershield Corporation. Closure device. 3,500,599, Cl. 052-173.

Sclater, Alexander: *See—*
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Scott, Florence M. Corrective cosmetic mirror. 3,501,226, Cl. 350-293.

Scott, Ian J. C.: *See—*
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Seanor, Rex C.: *See—*
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Klimstra, Paul D., 3,501,504.
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Sederlund, Edward R.: *See—*
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Sedlak, Jan: *See—*
Trubacek, Josef, and Sedlak, Jan 3,501,205.

Seifert, Maurice. Unitary coin sorting and counting device. 3,500,838, Cl. 133-003.

Seiler, William, Jr.: *See—*
Elbogen, James S., Seiler, William, Jr., and Lebow, Ralph H. 3,500,864.

Seragnoli, Ariosto. Device for transferring batches of cigarettes in an automatic packing machine. 3,501,023, Cl. 214-001.

Serbent, Harry: *See—*
Krainer, Helmut, Meyer, Gunter, and Serbent, Harry 3,501,288.

Shah, Vinod D., to Hooker Chemical Corporation. Composition and method for treating zinc surfaces. 3,501,352, Cl. 148-006.2

Shane, Ralph S., Jr., to United States of America, Air Force. Thermal valve. 3,500,899, Cl. 165-032.

Shapland, James T., to United States Steel Corporation. Bottom-pour teeming vessel with sliding gate and pouring tube. 3,501,068, Cl. 222-512.

Shattuck, Wanda M. Bow making device. 3,501,070, Cl. 223-046.

Shay, Edward Griffin, and Cohen, Sidney, to Millmaster Onyx Corporation. Organic triazinone compound. 3,501,467, Cl. 260-248.

Shell Oil Company: *See—*
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Allen, Roy L., and Burt, Ronald, 3,501,279.
Baldwin, Richard W. W., 3,501,285.
Bingman, William E., Jr., 3,500,943.
Bradley, Bryant W., 3,500,930.
Buckman, Trent D., 3,501,332.
Closmann, Philip J., and Nordgren, Ronald P., 3,501,201.
Dekker, Jan, and Schuur, Gerrit, 3,500,517.
Draber, Wilfried, Falbe, Jurgen F., Buchel, Karl Heinz, and Korte, Friedrich W. A. G. K., 3,501,286.
Ediger, Heinz G., and Mielke, Georg, 3,501,049.
Lehner, Florian, van Daalen, Francois, and van der Knaap, Willem, 3,500,917.
Nordgren, Ronald P., and Closmann, Philip J., 3,500,913.
Petersen, William H., 3,500,905.

Petersen, William H., 3,500,906.
Petersen, William H., and Linder, William H., 3,501,173.
Raifsnider, Philip J., 3,500,920.
Reisberg, Joseph, 3,500,923.
Richardson, Edwin A., 3,500,926.
Roever, William L., 3,500,950.
Simpson, Warren C., 3,500,927.
Smith, Noyes D., Jr., 3,500,942.
Spooncer, William W., and Bauer, Ronald S., 3,501,389.
Thompson, William H., and Young, Eldred E., 3,501,397.
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Van Romondt Vis, Constant C. W., 3,500,678.
Van Winkle, John L., Morris, Rupert C., and Mason, Ronald F., 3,501,515.
Wald, Milton M., 3,501,416.
Watkins, Bruce J., and Greentree, William W., 3,500,904.

Shen, Tsung-Ying, Neilson, Thomas, and Ruyle, William V., to Merck & Co., Inc. Arabinofuranosyl nucleosides and intermediates. 3,501,456, Cl. 260-211.5

Shen, Tsung-Ying, and Sarett, Lewis H., to Merck & Co., Inc. 3-Indolyl lower aliphatic amines. 3,501,465, Cl. 260-240.

Sherwood, Harold Frank, to Eastman Kodak Company. Enhancing radiation damage for nuclear particle detection. 3,501,636, Cl. 250-083.

Shimamoto, Takio, Ishikawa, Masayuki, Ishikawa, Hisako, Inoue, Michiro, and Shimamoto, Tatsuo. Certain pyridinemethanol carbamate derivatives. 3,501,485, Cl. 260-295.5

Shimamoto, Tatsuo: *See—*
Shimamoto, Takio, Ishikawa, Masayuki, Ishikawa, Hisako, Inoue, Michiro, and Shimamoto, Tatsuo 3,501,485.

Shinkai, Noboru, to Fuji Shashin Film Kabushiki Kaisha. Method for recovering silver halide from photographic solutions. 3,501,378, Cl. 195-002.

Shively, Harmon G., to Goodrich, B. F., Company, The. Locating maximum radial force variation in a tire. 3,500,681, Cl. 073-146.

Sholtes, Carl E., to Westinghouse Electric Corporation. Dehumidifier structure. 3,500,654, Cl. 062-150.

Shroff, Arvin Pranlal, to Ortho Pharmaceutical Corporation. Steroidal adamantates. 3,501,508, Cl. 260-397.5

Sibbach, William: *See—*
Kalwaites, Frank, and Sibbach, William 3,501,565.

Siefert, Roland, to Kienzle Uhrenfabriken G.m.b.H. Speed controlled clock motor. 3,501,655, Cl. 310-038.

Siegel, Herbert: *See—*
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Siegrist, Adolf Emil: *See—*
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Siemens Aktiengesellschaft: *See—*
Kafka, Wilhelm, 3,501,727.
Kappelmeyer, Rudolf, and Kellerbauer, Max Hugo, 3,501,406.
Martin, Heinz, and Vogt, Herbert, 3,501,680.
Polensky, Gerhard, 3,501,597.
Schertel, Gunther, Bilz, Wilhelm, and Fierek, Horst, 3,500,703.

Sigle, Helmut, to Delmag-Maschinenfabrik Reinhold Dornfeld. Variable capacity fuel injection pump for fuel combustion operated pile driver. 3,500,752, Cl. 103-037.

Signet Packaging Enterprises Limited: *See—*
Gunyou, John, 3,500,609.

Silverman, Daniel. Medical probe adapted to be everted under pressure and method. 3,500,819, Cl. 128-001.2

Silvernail, Robert A. Retractable canopy mechanism. 3,500,895, Cl. 160-084.

Silverstein, Robert M.: *See—*
Burkholder, Wendell E., Silverstein, Robert M., Rodin, John O., and Gorman, John E. 3,501,566.

Simjian, Luther G., to General Research, Inc. Postage metering system having signal conditioning means. 3,501,744, Cl. 340-152.

Simmonds, James B. Bundle conductor stringing-sagging block. 3,501,129, Cl. 254-134.3

Simmons, James R., to Dimensional Concepts Inc. Portable display unit. 3,500,569, Cl. 040-132.

Simon, Gunter: *See—*
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Simonides, Jan: *See—*
Pliml, Jiri, Simonides, Jan, and Plzak, Frantisek 3,501,008.

Simplex Corporation: *See—*
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Simpson, Elbert L.: *See—*
Archer, Wesley L., Simpson, Elbert L., and Graybill, George Richard 3,501,538.

Simpson, Warren C., to Shell Oil Company. Electroless metalization of unconsolidated earth formations. 3,500,927, Cl. 166-292.

Sinclair Research, Inc.: *See—*
Matson, Howard J., 3,501,413.

Sionics, Inc.: *See—*
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Siuer, Paul, to Burger Eisenwerke Aktiengesellschaft. Apparatus for thawing deep-frozen food. 3,501,620, Cl. 219-400.

Siverling, Michael M.: *See—*
Johnston, David L., Siverling, Michael M., and Wilson, Melvin G. 3,501,670.

Sjoberg, Berndt Olof Harald: *See—*
Helgstrand, Ake John Erik, Sjoberg, Berndt Olof Harald, and Stjernstrom, Nils Erik 3,501,573.

Sjoberg, Nils Gunnar: *See—*
Munters, Carl Georg, and Sjoberg, Nils Gunnar 3,501,558.

Skaletzky, Louis L., to Upjohn Company, The. α-Substituted-(2,5-diacyloxyphenyl)acetaldehyde. 3,501,519, Cl. 260-476.

Skinner, Robert Thomas John, to Lucas, Joseph, (Industries) Limited. Reciprocating liquid pumps. 3,500,758, Cl. 103-171.

Skinner, Robert Thomas John, to Lucas, Joseph, (Industries) Limited. Fluid flow control devices. 3,500,851, Cl. 137-081.5

Skoggard, Bruno Bengt, Post, William Clinton, and Weierter, Edward Peter, to American Cyanamid Company. Flexible flattened tubular open-ended article. 3,500,869, Cl. 138-130.

Skubic, Leroy F., to Paltier Corporation, The. Pallet tiering frame with positive lock to pallet. 3,500,770, Cl. 108-053.

Slagel, Robert C.: *See—*
Grimm, Robert A., and Slagel, Robert C. 3,501,514.

Slakis, Albin Joseph, Kuhr, Wayne Kenneth, and Hughes, Richard Lawrence, to Abbott Laboratories, mesne. Cyclohexylsulfamic acid as a taste improver for raw potato products. 3,501,315, Cl. 099-100.

Slatten, William: *See—*
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Sletzinger, Meyer: *See—*
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Sloan, Richard L., to Tenneco Oil Company. Method for heating an oil reservoir by injecting alternate sluge of steam and higher specific heat material. 3,500,931, Cl. 166-303.

Smith, Arthur G., and Turner, Allen H., to Ford Motor Company. Electrocoatacure process and paint binders therefor. 3,501,391, Cl. 204-181.

Smith, Fred T., to Barber-Greene Company. Wheel-type top loading machine and method. 3,500,563, Cl. 037-190.

Smith, Fred T., to Barber-Greene Company. Conveyor system having plural unloading stations. 3,500,565, Cl. 037-190.

Smith, Fred T., to Barber-Greene Company. Reclaimer. 3,500,987, Cl. 198-036.

Smith, Fred T., to Barber-Greene Company. Wheel reclaimer and its cutters. 3,500,988, Cl. 198-036.

Smith, Harlan B., to Cornell, Howland, Hayes and Merryfield, Inc. Method and apparatus for determining stresses and deformations. 3,500,549, Cl. 033-174.

Smith, Kenneth M. Needle guard for sewing machines. 3,500,782, Cl. 112-261.

Smith Kline & French Laboratories: *See—*
Pfeiffer, Francis, 3,501,529.
Yen, John Kai-Ching, 3,501,571.

Smith, Leslie Harold: *See—*
Crowther, Albert Frederick, Smith, Leslie Harold, and Wood, Thomas Miller 3,501,769.

Smith, Noyes D., Jr., to Shell Oil Company. Shaped spark drill. 3,500,942, Cl. 175-016.

Smith, Robert W., to General Motors Corporation. Liquid level detector. 3,500,687, Cl. 073-295.

Smith, William P. Weld testing device. 3,500,679, Cl. 073-100.

Smoker, Benjamin K.: *See—*
Weaver, Richard L., and Smoker, Benjamin K. 3,501,029.

Snoeyenbos, David R., and Golding, Brage, to Malleable Research and Development Foundation. Method for bonding polyurethane to other materials. 3,501,564, Cl. 264-255.

Snow, John P.: *See—*
Callahan, James J., Urso, Ralph F., and Snow, John P. 3,500,958.

Snyder Manufacturing Company, Inc.: *See—*
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Sobel, Alan: *See—*
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Societa' Farmaceutici Italia: *See—*
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Societa Internazionale Fonovisione S.p.A.: *See—*
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Societe Ceramica Italiana Richard-Ginori S.p.A.: *See—*
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Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture: *See—*
Jurion, Roland, and Nicolas, Maurice, 3,501,055.

Societe de Fabrication d'Instruments de Mesure (S.F.I.M.): *See—*
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Societe Grenobloise d'Etudes et d'Applications Hydrauliques (Sogreah): *See—*
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Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See—*
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Sohner, Gerhard: *See—*
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Sokol, Frank, to Johnson & Johnson. Extended area air filter. 3,500,618, Cl. 055-484.

Solar, Samuel L.: *See—*
Clecak, Nicholas J., Cox, Robert J., Solar, Samuel L., and Wurster, Herbert K. 3,501,293.

Solo, Alan J., to Creative Environments Inc. Clay supply and implement holder. 3,501,018, Cl. 211-060.

Soltysik, Edmund John, to Illinois Tool Works Inc. Clip device. 3,501,117, Cl. 248-071.

Somers, Allen E.: *See—*
Carr, Norman L., Kline, Robert E., and Somers, Allen E. 3,501,542.

Soo, Shao L., to University of Illinois Foundation. Electro-aerodynamic precipitator. 3,500,614, Cl. 055-112.

Southern Machinery Company: *See—*
Emus, Ronald W., and Stuart, Barry W., 3,500,780.

Spain, Raymond G.: *See—*
Ross, Jack H., and Spain, Raymond G. 3,501,431.

Spange, Arno, and Bellinger, Horst-Gunter, to Bohme Chemie Gesellschaft mit beschrankter Haftung. Method of permanently sterilizing textiles with a solution of at least one N-pentachlorophenylamine compound. 3,501,341, Cl. 117-138.5

Spargo, Thomas William: *See—*
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Sparling, Arthur J. Means and method of welding small wires. 3,500,533, Cl. 029-475.

Speelman, Irving A., to Propper Manufacturing Co., Inc. Multi-focus ophtalmoscope. 3,501,228, Cl. 351-016.

Spencer, Harry E.: *See—*
Illingsworth, Bernard D., and Spencer, Harry E. 3,501,310.

Sperry Rand Corporation: *See—*
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Spiller, Lester L., to Ransburg Electro-Coating Corporation. Electrostatic adherent deposition of resinous powders. 3,501,328, Cl. 117-017.

Spoecker, Walter W.: *See—*
Versaw, Edward F., and Spoecker, Walter W. 3,501,050.

Spooncer, William W., and Bauer, Ronald S., to Shell Oil Company. Irradiated olefin oxide polymers. 3,501,389, Cl. 204-159.22

Sprague & Henwood, Incorporated: *See—*
Guest, George W., 3,500,940.

Spranger, Helmut, Eisentraut, Hans-Joachim, Frenzel, Alexander, and Schreiber, Erhard, 'Polyplaste' H. Rolf Spranger KG. Electric arc process for producing apertures in plastic clements. 3,501,618, Cl. 219-384.

Spray-Boy GmbH: *See—*
Andreoli, Gianni, 3,501,066.

Sprunger, Thomas R., and Krakowiak, Stefan J., to Scripto, Inc. Portable thermographic copying machine with photo- electric means to actuate the heat lamp thereof upon insertion of a specimen into the machine. 3,501,635, Cl. 250-065.

Square D Company: *See—*
Henry, Kaye P., 3,500,668.
Marien, Kenneth J., 3,501,723.
Perez, Adolfo M., 3,501,721.
Schubring, Allin W., and Paape, Kenneth L., 3,501,717.

Squibb, E. R., & Sons, Inc.: *See—*
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Stahlheber, Norman Earl: *See—*
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Stair Chair Corporation: *See—*
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Staloff, Charles: *See—*
United States of America,, National Aeronautics and Space Administration, Administrator, 3,501,704.

Stamm, Edward I., to General Electric Company. Combustion chamber mounting means. 3,500,639, Cl. 060-039.31

Standard Oil Company (Indiana): *See—*
Heidler, John C., and Lee, Robert J., 3,501,551.
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Menzl, Roland L., Schuessler, Frederick W., and Dodds, Lowell T., 3,501,399.

Standard Oil Company, The (Ohio): *See—*
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Grasselli, Robert K., and Callahan, James L., 3,501,470.

Stangl, Arnold: *See—*
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Stanley, John M., to Amsted Industries Incorporated. Isodynamic apparatus for molding ceramic pipe. 3,500,513, Cl. 025-030.

Stanley, Robert K., to Techniservice Corporation. Strand treatment. 3,500,519, Cl. 028-071.3

Stanley, Robert K., and Irwin, Malcolm F., to Techniservice Corporation. Strand treatment method and apparatus. 3,500,518, Cl. 028-001.6

Star Expansion Industries Corporation: *See—*
Bell, Walter, 3,500,713.

Starck, Clemens B.: *See—*
Nadeau, Gale F., Starck, Clemens B., and Jacoby, Frederick J. 3,501,301.

Starmer, Roy, to Applied Research and Engineering Limited. Low pressure degassing of feed water in multistage flash evaporators. 3,501,384, Cl. 203-011.

States Steamship Company: *See—*
Gray, Robert L., 3,501,193.

Stauffer Chemical Company: *See—*
Giolito, Silvio L., 3,501,520.

Staylastic-Smith, Inc.: *See—*
Hopf, Hans, 3,500,872.

Stearns Electric Corporation: *See—*
McCarthy, Richard H., 3,500,971.
Westphal, Leslie C., 3,501,724.

Stefcik, Andrew: *See—*
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Steidl, Albert: *See—*
Altmeppen, Johannes, and Steidl, Albert 3,500,854.

Steinemann, Willy, to Sandoz Ltd., a/k/a Sandoz A.G. Basic dyes. 3,501,453, Cl. 260-156.

Steinmair, Karl: *See—*
Schweng, Otto, and Steinmair, Karl 3,501,136.

Stelson, Thomas E.: *See—*
Longini, Richard L., Romualdi, James P., and Stelson, Thomas E. 3,500,728.

Stenert, Alois, Bracht, Josef, and Husten, Werner, to Eisenwerk Rothe Erde GmbH. Axial or thrust roller bearing having spacing member between each two rollers. 3,501,212, Cl. 308-235.

Sterling Drug Inc.: *See—*
Bell, Malcolm R., 3,501,497.
Christiansen, Robert G., and Dean, John W., 3,501,462.

Stern, Melvin J., to Craft Metal Products, Inc. Two man stepladder or step stool. 3,500,957, Cl. 182-104.

Sternbach, Leo Henryk: *See—*
Fryer, Rodney Ian, and Sternbach, Leo Henryk 3,501,474.

Stetson, Karl A., and Elion, Herbert A., to GCA Corporation. Method and apparatus for enhancing differences between similar spatial signals. 3,501,238, Cl. 356-071.

Stevens, Ash, Inc.: *See—*
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Stevens, J. P., & Co., Inc.: *See—*
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Stevenson, George Miller, to Eastman Kodak Company. High purity polyester depolymerization products from polyester scrap by polish hydrogenation. 3,501,420, Cl. 260-002.3

Stielper, Henry J.: *See—*
Duran, Raymond J., Lessig, William R., III, and Stielper, Henry J. 3,500,620.

Stier, Henry W., to Carmet Company. Cutoff tool holder. 3,500,522, Cl. 029-096.

Stilwell, Robert E., and McDonald, Dean T., to FMC Corporation. Fog dispersion device. 3,501,096, Cl. 239-014.

Stingele, Alwig, to European Atomic Energy Community (Euratom). Micro-furnace for use in a microscope hot-stage. 3,501,580, Cl. 013-020.

Stjernstrom, Nils Erik: *See—*
Helgstrand, Ake John Erik, Sjoberg, Berndt Olof Harald, and Stjernstrom, Nils Erik 3,501,573.

Stobb, Anton R. Method and means for stacking signatures. 3,501,139, Cl. 271-068.

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Strange, Robert J. System for salvaging submerged objects. 3,500,785, Cl. 114-050.

Stratienko, Andrew. Linear self-interlocking wedge device. 3,501,183, Cl. 287-052.06

Strauss, Edgar H., to Ruti Machinery Works Ltd., formerly Caspar Honegger. Guide arrangement for pick laying-in members. 3,500,871, Cl. 139-012.

Strickland, Edward T., and Amos, Homer C., to Brunswick Corporation. Construction material or member. 3,501,048, Cl. 220-083.

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Strom, Albert P., to Westinghouse Electric Corporation. Hydraulic systems with increased speed of response. 3,500,723, Cl. 091-460.

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TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF MARCH, 1970

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Atkins, Carl E., and R. L. Ziolkowski, to Wagner Electric Corp. Liquid level detector. Re. 26,828, 3–17–70, Cl. 137—392.
Barrett, Homer D.: *See—*
Stow, George C., Jr., Mallonee, and Barrett. Re. 26,824.
Bell Telephone Laboratories, Inc.: *See—*
Foster, Norman F. Re. 26,829.
Crowther, Gerald O., and G. F. Jeynes, to U.S. Philips Corp. Stepping-tube multiple-store circuit employing plural counter chains selectively gated through single interstage gating chain. Re. 26,821, 3–17–70, Cl. 315—84.5.
Crowther, Gerald O., and G. F. Jeynes, to U.S. Philips Corp. Stepping-tube read-in circuit employing gates to selectively inhibit lower order counters to effect more efficient read-in of additional numbers. Re. 26,822, 3–17–70, Cl. 315—84.5.
Crowther, Gerald O., and G. F. Jeynes, to U.S. Philips Corp. Stepping-tube counting-circuit utilizing a control signal to pre-condition interstage gates to avoid signal time delay. Re. 26,823, 3–17–70, Cl. 315—84.5.
Erikson, Carl: *See—*
Swanson, Fred R., and Erikson. Re. 26,827.
Foster, Norman F., to Bell Telephone Laboratories, Inc. Method of forming a piezoelectric ultrasonic transducer. Re. 26,829, 3–17–70, Cl. 117—217.
International Business Machines Corp.: *See—*
Randley, Peter L. Re. 26,832.
Jeynes, Graham F.: *See—*
Crowther, Gerald O., and Jeynes. Re. 26,821.
Crowther, Gerald O., and Jeynes. Re. 26,822.
Crowther, Gerald O., and Jeynes. Re. 26,823.
Kenney, James T., to United Geophysical Corp. Seismic prospecting system. Re. 26,825, 3–17–70, Cl. 181—.5.
Levitt, Harold E.: *See—*
Willcox, Frederic P., Smith, and Levitt. Re. 26,830.
Mallonee, William C.: *See—*
Stow, George C., Jr., Mallonee, and Barrett. Re. 26,824.
Monsanto Co.: *See—*
Stow, George C., Jr., Mallonee, and Barrett. Re. 26,824.
Nolan, Earl C. Ultrasonic type net weight load indicator for vehicles. Re. 26,826, 3–17–70, Cl. 177—137.
Randley, Peter L., to International Business Machines Corp. Integrated data processing system. Re. 26,832, 3–17–70, Cl. 340—172.5.
Smith, Newland F.: *See—*
Willcox, Frederic P., Smith, and Levitt. Re. 26,830.
Stow, George C., Jr., W. C. Mallonee, and H. D. Barrett, to Monsanto Co. Nylon tire cords. Re. 26,824, 3–17–70, Cl. 57—140.
Sunstrand Corp.: *See—*
Swanson, Fred R., and Erikson. Re. 26,827.
Swanson, Fred R., and C. Erikson, to Sundstrand Corp. Tool supporting adapter. Re. 26,827, 3–17–70, Cl. 279—83.
Treanor, Eugene J. Closures for containers. Re. 26,831, 3–17–70, Cl. 215—9.
U.S. Philips Corp.: *See—*
Crowther, Gerald O., and Jeynes. Re. 26,821.
Crowther, Gerald O., and Jeynes. Re. 26,822.
Crowther, Gerald O., and Jeynes. Re. 26,823.
United Geophysical Corp.: *See—*
Kenney, James T. Re. 26,825.
Wagner Electric Corp.: *See—*
Atkins, Carl E., and Ziolkowski. Re. 26,828.
Willcox, Frederick P., N. F. Smith, and H. E. Levitt; said Levitt assor. of 45% to said Willcox. Multiple remote interrogated information system. Re. 26,830, 3–17–70, Cl. 340—152.
Ziolkowski, Robert L.: *See—*
Atkins, Carl E., and Ziolkowski. Re. 26,828.

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AMP Inc.: *See—*
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Aktiebolaget Electrolux: *See—*
Domstedt, Johan A., and Ohlson. 216,917.
Alwin Mfg. Co., Inc.: *See—*
Burkhalter, Robert, Jr. 216,918.
American Home Products Corp.: *See—*
Connor, Dorothy J. 216,907.
American Safety Equipment Corp.: *See—*
Molitoris, Stephen J. 216,878.
Ampex Corp.: *See—*
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Aslin, Harold R. Bottle. 216,867, 3–17–70, Cl. D9—33.
Baessler, Lee R.: *See—*
Glassner, Harvey F., and Baessler. 216,919.
Ball, Charles F. Placement kicking ball. 216,905, 3–17–70, Cl. D34—15.
Bassin, Calman: *See—*
Specht, Gaylord D., and Bassin. 216,911.
Bauer Ordnance Co.: *See—*
Bauer, Russell E. 216,875.
Bauer, Russell E., to Bauer Ordnance Co. Armored motor vehicle. 216,875, 3–17–70, Cl. D14—3.
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Blackwell Electronics Ind., Co., Ltd.: *See—*
Daito, Hiroshi. 216,912.
Boeing Co., The: *See—*
Friebel, Gottfried O. 216,921.
Bornschlegel, Robert W.: *See—*
Staley, Darrell S., and Bornschlegel. 216,889.
Brandner, Robert E., to Owens-Corning Fiberglas Corp. Embossed plastic sheet material or similar article. 216,931, 3–17–70, Cl. D87—3.
Britt, Thomas M., to Lily-Tulip Cup Corp. Tray for electronic components or the like. 216,868, 3–17–70, Cl. D9—185.
Britt, Thomas M. Food tray or the like. 216,869, 3–17–70, Cl. D9—185.
Burkhalter, Robert, Jr., to Alwin Mfg. Co., Inc. Napkin dispenser. 216,918, 3–17–70, Cl. D52—2.
Cannon Mills Co.: *See—*
Willoughby, Connie C. 216,935.
Castorani, Francesco P., to Quaker Lace Co. Tablecloth. 216,936, 3–17–70, Cl. D92—26.
Cedar, Samuel N. Link chain for bracelets or the like. 216,908, 3–17–70, Cl. D45—4.
Cedar, Samuel N. Link chain for bracelets or the like. 216,909, 3–17–70, Cl. D45—4.
Celanese Corp.: *See—*
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Chamlee, Tilmon, to The Shrimp Boats, Inc. Sign. 216,937, 3–17–70, Cl. D96—12.
Cheney, C. W., & Son Ltd.: *See—*
Constable, Eric P. 216,864.
Clairol Inc.: *See—*
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Cline, Ted L. Scraper blade. 216,874, 3–17–70, Cl. D14—3.
Clink, Oscar M. Trolling sinker. 216,882, 3–17–70, Cl. D22—30.
Cole, Howard, D. De Fano, and R. P. Wilson, to Clairol Inc. Illuminable makeup mirror. 216,927, 3–17–70, Cl. 86—10.
Connor, Dorothy J., to American Home Products Corp. Handle for culinary implements. 216,907, 3–17–70, Cl. D44—29.
Constable, Eric P., to C. W. Cheney & Son Ltd. Luggage lock or similar article. 216,864, 3–17–70, Cl. D8—122.
Consumer Dynamics Inc.: *See—*
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Daito, Hiroshi, to Blackwell Electronics Ind., Co., Ltd. Portable lamp for desks and the like. 216,912, 3–17–70, Cl. D48—20.
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Evans-Aristocrat Industries, Inc.: *See—*
Wolf, Murray. 216,930.
Fedro, Inc.: *See—*
Kahn, Robert D. 216,887.
Friebel, Gottfried O., to The Boeing Co. Supersonic airplane. 216,921, 3–17–70, Cl. D71—1.
Gale, John A., and R. E. Haueter, to Toro Mfg. Corp. Hood scoop for a tractor. 216,876, 3–17–70, Cl. D14—18.
Gale, John A., and R. E. Haueter, to Toro Mfg. Corp. Tractor hood. 216,877, 3–17–70, Cl. D14—18.
General Motors Corp.: *See—*
Menk, Melvin A., and Sharpe. 216,916.
Glassner, Harvey F., and L. R. Baessler, to Humetrics Corp. Medical instrument panel. 216,919, 3–17–70, Cl. D52—6.

Gould, George J. Bird cage. 216,896, 3–17–70, Cl. D30—4.
Greco, Mauro C. Combined door bell ringer and address display. 216,866, 3–17–70, Cl. D8—180.
Gregor, Donald H., to Ekco Products, Inc. Packaging container for food or the like. 216,870, 3–17–70, Cl. D9—220.
Guinard, Paul A. Circulator for a heater. 216,885, 3–17–70, Cl. D23—73.
Haueter, Robert E.: *See*—
Gale, John A., and Haueter. 216,876.
Gale, John A., and Haueter. 216,877.
Haws Drinking Faucet Co.: *See*—
Wright, Allen C. 216,884.
Hicks, David N. Carpet or similar article. 216,933, 3–17–70, Cl. D92—4.
Hicks, David N. Carpet or similar article. 216,934, 3–17–70, Cl. D92—4.
Humetrics Corp.: *See*—
Glassner, Harvey F., and Baessler. 216,919.
Iorio, Anthony J.: *See*—
Kirshenbaum, David, and Iorio. 216,923.
Kahn, Robert D., to Fedtro, Inc. Multiple electric outlet unit. 216,887, 3–17–70, Cl. D26—1.
Kanamaru Shoten, Ltd.: *See*—
Mizutani, Takeshi. 216,913.
Katzman, Stanley. Water sprinkler bath toy. 216,883, 3–17–70, Cl. D23—6.
Kirshenbaum, David, and A. J. Iorio, to Consumer Dynamics Inc. Calorie index or the like. 216,923, 3–17–70, Cl. D74—1.
Kitson, Gerald L. Poultry cage. 216,898, 3–17–70, Cl. D30—41.
Kermes, Constantine J., to Sperry Rand Corp. Self-propelled agricultural mowing conditioning machine. 216,906, 3–17–70, Cl. D40—1.
Killebrew, Harmon, Enterprises, Inc.: *See*—
Van Skyhawk, Norman J. 216,904.
Klamer, Reuben B. Egg-shaped toy figure. 216,901, 3–17–70, Cl. D34—2.
Kohda, Hironosuke, to Matsushita Electric Industrial Co., Ltd. Amplifier. 216,893, 3–17–70, Cl. D26—14.
Kunkle, John P., and R. C. Swengel, Jr., to AMP Inc. Electrical connector housing assembly. 216,888, 3–17–70, Cl. D26—1.
Landreville, Gabe J. Grain shovel. 216,863, 3–17–70, Cl. D8—10.
Lanoie, Raymond A., to Lew Mfg. Co. Writing instrument. 216,925, 3–17–70, Cl. D74—17.
Leis, Rudy, to M. Black Mfg. Co., Inc. Display box. 216,871, 3–17–70, Cl. D9—224.
Larson, Orville W., to Ampex Corp. Cassette transport. 216,894, 3–17–70, Cl. D26—14.
Lew Mfg. Co.: *See*—
Lanoie, Raymond A. 216,925.
Lily-Tulip Cup Corp.: *See*—
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Lingle, Daniel T. Fishing jig. 216,881, 3–17–70, Cl. D22—30.
Lookholder, Alex E. Roll preventive device for a pencil or the like. 216,924, 3–17–70, Cl. D74—13.
Magi, Hugo, to Dominion Auto Accessories Ltd. Direction signal lamp. 216,914, 3–17–70, Cl. D48—32.
Magi, Hugo, to Dominion Auto Accessories Ltd. Direction signal lamp. 216,915, 3–17–70, Cl. D48—32.
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McDonald's System, Inc.: *See*—
Schindler, James C. 216,926.
McFarland, Donald L., and G. Reese. Coupler for use in facsimile transceiver. 216,892, 3–17–70, Cl. D26—14.
McGuire, Chris, Inc.: *See*—
Spain, Robert H., and Wilkinson. 216,873.
Meath, Delona J. Retractable leash for dog collars. 216,897, 3–17–70, Cl. D30—39.
Menk, Melvin A., and V. G. Sharpe, to General Motors Corp. Housing for a combination washer-dryer laundry appliance. 216,916, 3–17–70, Cl. D49—1.
Mizutani, Takeshi, to Kanamaru Shoten, Ltd. Cigarette lighter. 216,913, 3–17–70, Cl. D48—27.
Molitoris, Stephen J., to American Safety Equipment Corp. Car seat for a child. 216,878, 3–17–70, Cl. D15—1.
Miller, Charles. Bowtie rack. 216,900, 3–17–70, Cl. D33—8.
Murray Ohio Mfg. Co., The: *See*—
Schreckengost, Viktor. 216,932.
Myers, Charles F. Casing for a vehicle air conditioner. 216,886, 3–17–70, Cl. D23—142.
Nestegard, Sander C. Sign holder. 216,938, 3–17–70, Cl. D9c—12.
Ohlson, Kurt L.: *See*—
Domstedt, Johan A., and Ohlson. 216,917.
Olson, Benjamin F. Combined table and carrying case for model building or similar article. 216,928, 3–17–70, Cl. D87—1.
Oneida Ltd.: *See*—
Perry, Frank R. 216,920.
Onuki, Michiko. Combined telephone mouthpiece sterilizer and perfumer. 216,891, 3–17–70, Cl. D26—14.
Owens-Corning Fiberglas Corp.: *See*—
Brandner, Robert E. 216,931.
Reese, Glenn: *See*—
McFarland, Donald L., and Reese. 216,892.
Perrin, George S., to Plastics Research and Development Corp. Fishing lure. 216,880, 3–17–70, Cl. D22—28.
Perry, Frank R., to Oneida Ltd. Spoon or similar article. 216,920, 3–17–70, Cl. D54—12.
Petersen, David J., and B. S. Martin. Portable lounge seat. 216,879, 3–17–70, Cl. D15—11.
Plastic Forming Co., Inc., The: *See*—
Schurman, Peter T. 216,929.
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Perrin, George S. 216,880.
Preston Lock Co., Inc.: *See*—
D'Elia, Anthony N., and Stolarz. 216,865.
Quaker Lace Co.: *See*—
Castorani, Francesco P. 216,936.
Riforgiate, Frank F. Three faced convertible doll. 216,902, 3–17–70, Cl. D34—4.
Rogers, William C. Aircraft antenna mast. 216,890, 3–17–70, Cl. D26—14.
Rubel, Carl W. Foldable exercising bicycle. 216,903, 3–17–70, Cl. D34—5.
Schindler, James C., to McDonald's System, Inc. Pie display and warming cabinet. 216,926, 3–17–70, Cl. D81—10.
Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Gear shifting console for a bicycle. 216,932, 3–17–70, Cl. D90—1.
Schurman, Peter T., to The Plastic Forming Co., Inc. Combined carrying and storage case. 216,929, 3–17–70, Cl. D87—1.
Serle, Allan G., to Celanese Corp. Hook for meat or similar articles. 216,872, 3–17–70, Cl. D11—1.
Sharpe, Verlos G.: *See*—
Menk, Melvin A., and Sharpe. 216,916.
Shrimp Boats, Inc., The: *See*—
Chamlee, Tilmon. 216,937.
Spain, Robert H., and S. R. Wilkinson, to Chris McGuire, Inc. Food service building. 216,873, 3–17–70, Cl. D13—1.
Specht, Gaylord D., and C. Bassin. Lamp, or similar article. 216,911, 3–17–70, Cl. D48—20.
Skupien, Frank. Lamp or similar article. 216,910, 3–17–70, Cl. D48—20.
Sperry Rand Corp.: *See*—
Kermes, Constantine J. 216,906.
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Kunkle, John P., and Swengel. 216,888.
Szirmay, Thomas, to Tabago Meubles Limitee. Chest of drawers. 216,899, 3–17–70, Cl. D33—6.
Tabago Meubles Limitee: *See*—
Szirmay, Thomas. 216,899.
Teetor, Herman C. Marine distress signal. 216,922, 3–17–70, Cl. D72—1.
Toro Mfg. Corp.: *See*—
Gale, John A., and Haueter. 216,876.
Gale, John A., and Haueter. 216,877.
Van Skyhawk, Norman J., to Harmon Killebrew Enterprises, Inc. Batting trainer. 216,904, 3–17–70, Cl. D34—5.
Wallace, George M. Fraternal standard or the like. 216,895, 3–17–70, Cl. D29—23.
Wilkinson, Sidney R.: *See*—
Spain, Robert H., and Wilkinson. 216,873.
Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 216,935, 3–17–70, Cl. D92—26.
Wilson, Robert P.: *See*—
Cole, Howard, De Fano, and Wilson. 216,927.
Wolf, Murray, to Evans-Aristocrat Industries, Inc. Multiple purse. 216,930, 3–17–70, Cl. D87—3.
Wright, Allen C., to Haws Drinking Faucet Co. Eye-wash fountain bowl. 216,884, 3–17–70, Cl. D23—58.

CLASSIFICATION OF PATENTS

ISSUED MARCH 17, 1970

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2	3,500,472	30–994	3,500,540	57–140	3,500,627	75– 53	3,501,291	106– 48	3,501,322	128–215	3,500,829
3	3,500,473	31– 14	3,500,541		3,500,628	72	3,501,292	97	3,501,323	218	3,500,830
	3,500,474	46	3,500,542	144	3,500,629	77– 33.4	3,500,707	120	3,501,324	252	3,500,831
	3,500,475	33– 1	3,500,543	58– 23	3,500,630	81– 57.34	3,500,708	287	3,501,325	379	3,500,832
157	3,500,476	30	3,500,544	91	3,500,631	83–278	3,500,709	107– 1	3,500,766	131–140	3,500,833
161	3,500,477	47	3,500,545	140	3,500,632	588	3,500,710	8	3,500,767		3,500,834
221	3,500,478	126.6	3,500,546	60– 19	3,500,633	84–313	3,500,711	108– 1	3,500,768	235	3,500,835
243	3,500,479	143	3,500,547	23	3,500,634	85– 1	3,500,712	25	3,500,769	132– 40	3,500,836
4–102	3,500,480	174	3,500,548	29	3,500,635	41	3,500,713	53	3,500,770		3,500,837
149	3,500,481		3,500,549	39.03:	3,500,636	89– 1	3,500,714	109– 29	3,500,771	133– 3	3,500,838
8– 18	3,501,259	190	3,500,550		3,500,637		3,500,715	47	3,500,772	134– 14	3,501,347
115.6	3,501,260	214	3,500,551	.28:	3,500,638	.5	3,500,716	81	3,500,773	22	3,501,348
151.2	3,500,482	34– 8	3,500,552	.31:	3,500,639	.817	3,500,717	110– 1	3,500,774	57	3,500,839
9– 1	3,500,483	23	3,500,553	54	3,500,640	138	3,500,718	8	3,500,775	111	3,500,840
8	3,500,484	51	3,500,554	.6	3,500,641	91– 36	3,500,719	112– 79	3,500,776	136– 20	3,501,349
343	3,500,485	35– 8	3,500,555	102	3,500,642	412	3,500,720	118	3,500,777		3,501,350
13– 1	3,501,579	22	3,500,556	204	3,500,643		3,500,721		3,500,778	133	3,501,351
20	3,501,580	24	3,500,557	229	3,500,644	446	3,500,722	121.15:	3,500,779	137– 13	3,500,841
14– 71	3,500,486	32	3,500,558		3,500,645	460	3,500,723	.29:	3,500,780	15.1	3,500,842
15– 21	3,500,487	48	3,500,559		3,500,646	92– 31	3,500,724	254	3,500,781	43	3,500,843
	3,500,488	36– 2.5	3,500,561	61– 22	3,500,647	75	3,500,725	261	3,500,782	78	3,500,844
76	3,500,489	57	3,500,560	69	3,500,648	93– 8	3,500,726	113–121	3,500,939	81.5	3,500,845
97	3,500,490	37–141	3,500,562	62– 3	3,500,649	20	3,500,727	114– .5	3,500,783		3,500,846
159	3,500,491	190	3,500,563		3,500,650	94– 10	3,500,728	43	3,500,784		3,500,847
313	3,500,492		3,500,565	13	3,500,651	95– 10	3,500,729	50	3,500,785		3,500,848
16– 8	3,500,493	193	3,500,564	18	3,500,652		3,500,730	115– .5	3,500,786		3,500,849
17– 24	3 500 494	38– 17	3,500,566	117	3,500,653		3,500,731	41	3,500,787		3,500,850
70	3,500,495	35	3,500,567	150	3,500,654	11.5	3,500,732	116– 28	3,500,788		3,500,851
18– 2	3,500,496	40– 1.5	3,500,568	183	3,500,655	12.5	3,500,733	115.5	3,500,790		3,500,852
5	3,500,497	132	3,500,569	196	3,500,656	14	3,500,734	132	3,500,791	112	3,500,853
8	3,500,498	43– 18	3,500,570	428	3,500,657	44	3,500,735	173	3,500,789	118	3,500,854
	3,500,499	19	3,500,571	64– 13	3,500,658		3,500,736	117– 12	3,501,327	242	3,500,855
12	3,500,500	23	3,500,572		3,500,659	64	3,500,737	17	3,501,328	344	3,500,856
30	3,500,501	42.11:	3,500,573		3,500,660	96– 1	3,501,293	33	3,501,329	392	RE.26,828
42	3,500,502	.25:	3,500,574	65–288	3,501,281	.4	3,501,294	34	3,501,330	516.25:	3,500,857
	3,500,503	43.11:	3,500,575	66– 8	3,500,661	.8	3,501,295	36.2	3,501,331	560	3,500,858
19– .37:	3,500,504	.12:	3,500,576	50	3,500,662	33	3,501,296	47	3,501,332	614.03:	3,500,860
21– 2.5	3,501,261	44– 70	3,501,279	139	3,500,663	48	3,501,297		3,501,333	.05:	3,500,859
23– 21	3,501,262	46–134	3,500,577	150	3,500,664	85	3,501,298	49	3,501,334	.19:	3,500,864
23	3,501,263	172	3,500,578	176	3,500,665		3,501,299	66	3,501,335	624.13:	3,500,862
52	3,501,264	243	3,500,579	68–222	3,500,666	87	3,501,300	76	3,501,326	.15:	3,500,861
77	3,501,265		3,500,580	70– 84	3,500,667		3,501,301	106	3,501,336	.17:	3,500,863
89	3,501,266		3,500,581	212	3,500,668	88	3,501,302	107.2	3,501,337	625.6	3,500,865
151	3,501,267	47– 6	3,500,582	216	3,500,669		3,501,303		3,501,338	138– 30	3,500,866
153	3,501,268	49– 78	3,500,583	375	3,500,670		3,501,308	118	3,501,339	125	3,500,867
182	3,501,269	209	3,500,584	71– 28	3,501,282	94	3,501,304	124	3,501,340	127	3,500,868
184	3,501,270	280	3,500,585	70	3,501,283	101	3,501,306	138.5	3,501,341	130	3,500,869
202	3,501,271	431	3,500,586	72	3,501,284		3,501,307	212	3,501,342	177	3,500,870
209.9	3,501,272	51–100	3,500,587	73	3,501,285	106	3,501,309	215	3,501,343	139– 12	3,500,871
253	3,501,273	119	3,500,588	92	3,501,286		3,501,310	217	RE.26,829	55	3,500,872
259.5	3,501,274	132	3,500,589	72–106	3,500,671		3,501,311	236	3,501,344	71	3,500,873
273	3,501,275	164	3,500,590	179	3,500,672		3,501,312	118–416	3,500,792	102	3,500,874
284	3,501,276	263	3,500,591	220	3,500,673	107	3,501,313	637	3,500,793	336	3,500,875
24– 16	3,500,505	298	3,501,280	73– 1	3,500,674	108	3,501,305	119– 1	3,500,794	370	3,500,876
113	3,500,506	376	3,500,592	19	3,500,675	98– 94	3,500,738	51	3,500,795	140– 2	3,500,877
	3,500,507	52– 2	3,500,593	40.5	3,500,676	110	3,500,739	122– 34	3,500,796	92.2	3,500,878
117	3,500,508	65	3,500,594	57	3,500,677	115	3,500,740	123– 8	3,500,797	141– 1	3,500,879
202	3,500,509	79	3,500,595	84	3,500,678		3,500,741	11	3,500,798	40	3,500,880
230	3,500,510		3,500,596	100	3,500,679	99– 95	3,501,314	32	3,500,799	88	3,500,881
248	3,500,511	92	3,500,597	102	3,500,680	100	3,501,315		3,500,800	143– 46	3,500,882
252	3,500,512	155	3,500,598	146	3,500,681	107	3,501,316		3,500,801	144– 2	3,500,883
25– 30	3,500,513	173	3,500,599	150	3,500,682	111	3,501,317		3,500,802	3	3,500,884
	3,500,514	211	3,500,600	152	3,500,683	185	3,501,318		3,500,803	148– 6.14:	3,501,353
26– 61	3,500,515	236	3,500,601		3,500,684	204	3,501,319	46	3,500,804	.2	3,501,352
28– 1.2	3,500,516	265	3,500,602	180	3,500,685	326	3,500,742	52	3,500,805	23	3,501,354
.5	3,500,517	397	3,500,603	204	3,500,686	353	3,500,743	119	3,500,806	146	3,501,355
.6	3,500,518	489	3,500,604	295	3,500,687	101– 23	3,500,744		3,500,807	175	3,501,356
71.3	3,500,519	588	3,500,605	382	3,500,688	207	3,500,745	148	3,500,808	149– 19	3,501,357
29– 25.16:	3,500,520	589	3,500,606	425.4	3,500,689	102– 70.2	3,500,746		3,500,809	151– 29	3,500,885
33	3,500,521	699	3,500,607	516	3,500,690		3,500,747	196	3,500,810	50	3,500,886
96	3,500,522	53– 35	3,500,608		3,500,691	79	3,500,748	125– 11	3,500,811	152–230	3,500,887
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116	3,500,524	140	3,500,610	220	3,500,693		3,500,750	39	3,500,813	361	3,500,889
148.4	3,500,525	183	3,500,611	241	3,500,694	12	3,500,751	110	3,500,814		3,500,890
149.5	3,500,526	246	3,500,612	331	3,500,695	37	3,500,752	200	3,500,815	156– 7	3,501,358
182	3,501,277	55– 48	3,500,613	363	3,500,696	50	3,500,753	211	3,500,816	84	3,501,359
195	3,501,278	112	3,500,614	477	3,500,697	87	3,500,754	350	3,500,817	153	3,501,360
201	3,500,527	233	3,500,615	493	3,500,698		3,500,755	369	3,500,818	167	3,501,361
208	3,500,528	386	3,500,616	498	3,500,699	126	3,500,756	127– 5	3,501,345	157– 1.2	3,500,891
229	3,500,529		3,500,617		3,500,700	154	3,500,757	56	3,501,346	.24:	3,500,892
	3,500,530	484	3,500,618	513	3,500,701	171	3,500,758	128– 1.2	3,500,819	159– 13	3,500,893
401	3,500,531	56– 6	3,500,619	560	3,500,702	175	3,500,759	2	3,500,820	160– 22	3,500,894
470.1	3,500,532	25.4	3,500,620	606	3,500,703	188	3,500,760		3,500,821	84	3,500,895
475	3,500,533	44	3,500,621	688	3,500,704		3,500,761	.05:	3,500,822	168	3,500,896
600	3,500,534	295	3,500,622	863	3,500,705	104– 8	3,500,762	.06:	3,500,823	161– 6	3,501,362
606	3,500,535	57– 58.89:	3,500,623	868	3,500,706	23	3,500,763	66	3,500,824	10	3,501,364
623	3,500,536	129	3,500,624	75– .5	3,501,287		3,500,765	139	3,500,825	38	3,501,365
630	3,500,537	139	3,500,625	5	3,501,288	114	3,500,764	142.2	3,500,826	57	3,501,366
	3,500,538	140	RE.26,824	12	3,501,289	106– 38.27:	3,501,320	.5	3,500,827	68	3,501,367
30– 40.1	3,500,539		3,500,626		3,501,290	45	3,501,321	214.4	3,500,828	112	3,501,368

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48 : 3,501,339	50 : 3,501,241	51 : 3,501,672	54 : 3,501,545	55 : 3,500,971	55 : 3,501,661
3,501,342	51 : 3,500,649	52 : 3,500,962	55 : 3,500,619	3,501,035	3,501,717
3,501,537	3,500,685	53 : 3,500,587	3,500,697	3,501,108	3,501,721
3,501,572	3,500,746	3,500,594	3,500,839	3,501,566	3,501,723
3,501,591	3,500,747	3,501,191	3,500,879	3,501,608	3,501,724
3,501,615	3,500,891	3,501,586	3,500,880	3,501,656	56 : 3,500,909
3,501,678	3,501,169	3,501,634	3,500,954	3,501,657	57 : 3,501,012
49 : 3,500,846	3,501,316	54 : 3,501,535	3,500,963	3,501,658	

Design Patents

5 : 216,880	9 : 216,928	17 : 216,910	27 : 216,938	36 : 216,883	42 : 216,888
6 : 216,882	216,929	216,926	34 : 216,866	216,887	216,906
216,884	12 : 216,873	25 : 216,908	216,868	216,896	216,936
216,889	216,890	216,909	216,869	216,920	44 : 216,923
216,892	216,905	26 : 216,875	216,872	216,935	216,925
216,901	216,922	216,878	216,895	39 : 216,916	48 : 216,886
216,902	13 : 216,937	216,897	216,927	216,932	49 : 216,904
216,903	17 : 216,870	216,898	216,930	40 : 216,874	53 : 216,879
216,911	216,894	27 : 216,863	216,931	216,881	216,921
216,919	216,900	216,876	36 : 216,865	42 : 216,871	55 : 216,918
216,924	216,907	216,877			

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

March 17, 1970 Volume 872 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 49,996 (CARROM), Shampaine Industries, Inc., Gameboards, **filed** Dec. 2, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–1186, *Affiliated Hospital Products, Inc.* v. *Montgomery Ward & Co., Inc.*

Reg. No. 295,982 (IDEAL), Ideal Toy Corporation, Dolls; **Reg. No. 415,218**, same, Toy jeeps, toy rattles, toy tea sets, and toy dishes; **Reg. No. 742,955** (IDEAL AND DESIGN), same, Board games; **Reg. No. 775,311**, same, Toys, including animated mechanical action and pull toys; dolls, including animated and mechanical action dolls, doll accessories and doll clothing; stuffed toys, animals and hand puppets, including animated and mechanical action stuffed toys and animals; inflatable toys and animals; games, including mechanical action games; hobby kits, including animated and motorized cars, airplanes, ships, military pieces, animals, and the like; rigid frame and inflatable pools; and inflatable pool accessories, including swim rings, beach balls, mattresses, rafts, boats and water play novelties; **Reg. No. 783,149** (IT'S A WONDERFUL TOY . . . IT'S IDEAL AND DESIGN), same, Dolls and toys, **filed** Nov. 28, 1969, D.C., N.D.N.Y. (Utica), Doc. 69–CV–425, *Ideal Toy Corporation* v. *Ideal Home Toy Parties, Inc.*

Reg. No. 415,218. (See Reg. No. 295,982.)

Reg. No. 571,337 (BOBBY BROOKS), Ritmor Sportswear Company, Ladies' dresses, skirts, sweaters, coats, suits, blouses, shirts, play suits, slack suits, and bathing suits; **Reg. No. 690,595**, same, Bobbie Brooks, Incorporated, same, **filed** Dec. 12, 1969, D.C., S.D.N.Y., Doc. 69–5481, *Bobbie Brooks Incorporated* v. *Bobbi of Boston Inc.*

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk, GmbH, Vehicles—namely, automobiles and trucks, aircraft, boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 631,649** (VW IN CIRCLE), same; **Reg. No. 653,695** (VW), same; **Reg. No. 790,621** (VOLKSWAGEN), same, Automobiles and trucks, aircraft, and boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 790,959** (VW AND DESIGN), same; **Reg. No. 791,311** (VW), same; **Reg. No. 804,869** (VW AND DESIGN), same, Repair and reconditioning of motor vehicles, aircraft and boats; **Reg. No. 808,381** (VOLKSWAGEN), same, Vehicles—namely, automobiles and trucks, aircraft, and boats; and parts and accessories for automobiles and trucks, aircraft and boats—namely, radiators, direction indicators, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 815,632** (VW), same, Repair, reconditioning

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,963
Date of oldest new application	January 28, 1969
Date of oldest amended application (filing date)	September 8, 1966

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4–22–69	9–8–66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4–25–69	10–20–66
(III) C. R. FOWLER, Classes 19, 21, 23, 26, 31, 34, 35, 36	6–26–69	2–17–67
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	1–28–69	10–24–66
Renewals (All Classes)	12–2–69	----------
Sec. 12(c) Publications (All Classes)	12–10–69	----------

Applications filed during the month of January 1970—2,633

Registrations Issued ----------412—No. 887,688 to No. 888,099
Renewals Issued ----------120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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and replacement of motors and accessories and parts thereof, and repair and reconditioning of motor vehicles, aircraft, and boats; **Reg. No. 819,297** (VOLKSWAGEN), same, **filed** Jan. 9, 1970, D.C., N.D. Tex. (Dallas), Doc. CA-3-3579-B, *Volkswagenwerk Aktiengesellschaft* v. *Dieter Mueller and German Car Service, Inc.*

Reg. No. 630,706 (BLOSSOM-SET), Science Products Company, Inc., Synthetic plant hormones for blossoms and buds, used to induce the growth of larger, earlier maturing, meatier, better colored, and often seedless fruit, **filed** Dec. 24, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2647, *Science Products Company, Inc.* v. *Chevron Chemical Company, Inc.*

Reg. No. 631,649. (See Reg. No. 617,131.)

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 690,595. (See Reg. No. 571,337.)

Reg. No. 718,433. (See Reg. No. 773,452.)

Reg. No. 742,955. (See Reg. No. 293,982.)

Reg. No. 745,269. (See Reg. No. 773,452.)

Reg. No. 773,452 (813), Xerox Corporation, Developers and toners for xerography or electrostatic photography; **Reg. No. 718,433** (914), Haloid Xerox Inc., same; **Reg. No. 745,269** (1824), Xerox Corporation, Developers and toners for electrophotographic machines for electrostatic printing apparatus; **Reg. No. 802,909** (2400), same, Developers and toners for xerography or electrostatic photography, **filed** Dec. 24, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-2518-F, *Xerox Corporation* v. *Fillet Industries, Inc. et al.*

Reg. No. 774,870 (WHALER), The Fisher-Pierce Co., Inc., Motor-driven boats of the blunt bowed type; **Reg. No. 800,611** (BOSTON WHALER), same; **Reg. No. 802,139** (BOSTON WHALER SQUALL AND DESIGN), same, Dinghies, **filed** Dec. 22, 1969, D.C. Conn. (New Haven), Doc. 13603, *The Fisher-Pierce Co., Inc.* v. *General Fiberglass International, Inc. and General Fiberglass Italiana S.p.A.*

Reg. No. 775,311. (See Reg. No. 295,982.)

Reg. No. 783,149. (See Reg. No. 295,982.)

Reg. No. 790,321. (See Reg. No. 617,131.)

Reg. No. 790,959. (See Reg. No. 617,131.)

Reg. No. 791,311. (See Reg. No. 617,131.)

Reg. No. 794,033 (WEBB), David Webb, Inc., Men's and women's jewelry comprising precious metal, **filed** Dec. 22, 1969, D.C., S.D.N.Y., Doc. 69-5631, *David Webb, Inc.* v. *B & B Jewelry Co., Inc.*

Reg. No. 800,611. (See Reg. No. 774,870.)

Reg. No. 802,139. (See Reg. No. 774,870.)

Reg. No. 802,909. (See Reg. No. 773,452.)

Reg. No. 804,869. (See Reg. No. 617,131.)

Reg. No. 808,381. (See Reg. No. 617,131.)

Reg. No. 815,632. (See Reg. No. 617,131.)

Reg. No. 819,297. (See Reg. No. 617,131.)

Reg. No. 841,677 (CHARLIE'S GIRLS), Helen Harper Inc., Dresses, skirts, pants, bermuda shorts, jamaica shorts, jackets, sweaters, jumpers, blouses, shirts, shifts, stockings, hats, shirtwaists, suits, coats, underwear, and bathing suits, **filed** Dec. 23, 1969, D.C., S.D.N.Y., Doc. 69-C-5644, *Charlies Girls Inc.* v. *Charleys Place Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.**]**

SN 246,517 Sieber & McIntyre, Inc., Chicago, Ill. Filed May 25, 1966.

MEDITAPE

Owner of Reg. No. 874,876.

Class 36—Musical Instruments and Supplies

For Taped Sound Reproducers and Phonographs (Int. Cl. 9).

Class 38—Prints and Publications

For Records, Tapes or Cassettes, Periodically Issued, Containing Articles and the Like in the Manner of a Magazine on Subjects of Interest to the Medical Profession (Int. Cl. 9).

First use Feb. 28, 1966.

SN 276,493. Aerojet-General Corporation, El Monte, Calif. Filed July 21, 1967.

SPACE GENERAL TIRE GENERAL

Owner of Reg. Nos. 776,560, 811,025, and others.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Sounding Rockets and Component Parts Therefor—Namely, Payload Recovery Apparatus, Attitude Control Apparatus, Spin Control Apparatus and Inflatable Re-Entry Vehicles (Int. Cl. 13).

First use on or about Oct. 8, 1962.

Class 19—Vehicles

For Rocket Servicing Trailers (Int. Cl. 12).

First use on or about June 17, 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

For Printed Circuit Board Assemblies, Antennae, Encoders, Decoders, Radio Receiver and Transmitters, Radio PCM Bit Synchronizers, Amplifiers, and Radio Power Supplies (Int. Cl. 9).

First use on or about Mar. 18, 1963.

Class 26—Measuring and Scientific Appliances

For Missile and Rocket Checkout Equipment, Hydraulic Test Equipment, Passive Microwave Radiometers and Radio Telemetry Apparatus (Int. Cl. 9).

First use on or about Sept. 24, 1965.

Class 100—Miscellaneous

For Research and Development Services in Electronics and Space Technology (Int. Cl. 42).

First use on or about Jan. 10, 1963.

SN 283,747. Dresser Industries, Inc., Dallas, Tex., by merger from Symington Wayne Corporation, Salisbury, Md. Filed Oct. 31, 1967.

WAYNE

Owner of Reg. Nos. 80,295, 830,018, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Non-Metering and Non-Measuring pumps—Namely, Submersible, Hand Operated, Centrifugal and Internal Gear Pumps; Hose Reels with Retrieving Mechanisms for Rewinding and Storing gas and/or Liquid Hoses; Air Compressors, Air Compressor Assemblies, Parts for the Foregoing and Accessories for Said Assemblies—Namely, Receiver Tanks; Vehicle Hoists and Parts Therefor, Particularly Hoists That Engage the Underneath Side of Vehicles and That Are Hydraulically, Electrically and/or Pneumatically Controlled and Operated; and Hydraulically and/or Mechanically Controlled Leveling Ramps for Loading Docks (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Metering and Self-Measuring Pumps and Pump Assemblies—Namely, Rotary-Type Hand Operated Pumps With Meters, Measured Stroke-Type Hand Operated Pumps, Hand Operated Diaphragm Pumps With Meters; Service Station-Type Dispensing Apparatus and Parts Therefor for Use With Liquid Fuels and/or Lubricants for Measuring and Indicating the Volume and Computing and Indicating the Cost of the Dispensed Liquid; Blending and Dispensing Apparatus and Parts Therefor for Selecting the ratio of the Blend, Computing the Quantities of Liquids Required to Produce the Desired Blend, Measuring and Indicating the Volume of Liquid Dispensed, and Computing and Indicating the Cost of the Blend; and Accessories for Said Dispensers—Namely, Coin and Currency Apparatus for Said Dispensers for Preselecting and Controlling the Delivery of the Preselected Monetary Value of the Liquid, Volume or Value Apparatus for Said Dispensers for Pre-Setting and Controlling the Delivery of the Preselected Volume or Value of Liquid, Remote Recording and Indicating Apparatus for Said Dispensers for Recording and Indicating the cost and/or Volume of the Liquid Delivered, and Key or Card Actuated Record Control and Computing Apparatus for Said Dispensers for Automatically Indicating and/or Recording the Cost and Quantity of the Liquid Dispensed (Int. Cl. 9).

First use 1891.

SN 291,450. Universal Oil Products Company, d.b.a UOP Fabsteel Division, Des Plaines, Ill. Filed Feb. 19, 1968.

ENED

Class 100—Miscellaneous

For Engineering Services Performed to the Order and/or Specifications of Others in the Field of Platform and Ladder Construction (Int. Cl. 42).

Class 103—Construction and Repair

For Fabrication of Platforms and Ladders to the Order and/or Specification of Others (Int. Cl. 37).

First use Nov. 15, 1967.

SN 298,011. The Kendall Company, Walpole, Mass. Filed May 13, 1968.

KENDALL

Owner of Reg. Nos. 113,986, 848,114, and others.

Class 1—Raw or Partly Prepared Materials

For Jewelers' Cotton—Namely, Cotton for Use in Packaging and Displaying Laboratory Supplies, Jewelry, Fishing Tackle, Electronic Equipment, Pharmaceutical Products, and for Miscellaneous Other Uses (Int. Cl. 22).

First use 1940.

Class 2—Receptacles

For Dispensers for Filters (Int. Cl. 21).

First use Feb. 7, 1965.

Class 5—Adhesives

For Pressure-Sensitive Adhesive Tapes (Int. Cl. 17).

First use Jan. 10, 1967.

Class 16—Protective and Decorative Coatings

For Protective Coatings for Pipe Surfaces (Int. Cl. 2).

First use Jan. 10, 1967.

Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceutical Preparations for Human Use and for Veterinary Use (Int. Cl. 5).

First use 1880.

Class 22—Games, Toys, and Sporting Goods

For Rosin Preparations for Application to the Hands of Athletes (Int. Cl. 28).

First use Jan. 10, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Non-Woven Fabric Covers for Printing Rollers, Int. Cl. 7).

First use 1940.

Class 29—Brooms, Brushes, and Dusters

For Non-Woven Fabric Wipes, Crimped Polishing Fabrics, Non-Woven Fabric Wiping Cloths and Pads (Int. Cl. 21).

First use 1940.

Class 31—Filters and Refrigerators

For Filters for Liquids, Particularly for Dairy Products, Such as Milk (Int. Cl. 11).

First use 1944.

Class 39—Clothing

For Hosiery, Insoles and Pads for Shoes; Diapers; and Infants' and Children's Clothing—Namely, Shirts, Gowns, Kimonos, Sacques, Training Pants, Coveralls, Creepers, Sacque and Panty Sets, and Sleep Garments (Int. Cl. 25).

First use June 10, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Hair Cloth, Tobacco Canvas, Dish Towels, Pot Holders, Cotton Fabrics, Baby Blankets, Bed Sheets; Waterproof Pads and Sheets for the Protection of Clothing, Bedding and Upholstery; Towels, Wash Cloths, Cheese Cloth, Non-Woven Fabric, Rayon Fabric, Synthetic Fiber Fabrics, Synthetic Hair Cloth, Fiber Interlacings, Elastic Fabrics, and Elastic Webbing (Int. Cl. 24).

First use 1940.

Class 44—Dental, Medical, and Surgical Appliances

For Medical and Surgical Dressings and Bandages; Foot Products—Namely, Corn and Callous Pads and Plasters; Pediatric Urine Collector, Santiary Napkins and Tampons, Anti-Embolism Stockings, Suspensories, Elastic Hosiery; Nursers—Namely, Nursing Bottles, Caps and Sealing Disks for Nursing Bottles, and Nipples; Athletic Supporters, Non-Woven Fabric Strips and Coils for Use as Head Bands and Neck Wraps for use by Barbers and Beauticians, Cotton Balls; Rayon Balls for Cleansing, Dabbing, and Wiping the Skin and Other Surfaces, for Applying Medication, and for Cosmetic Use; Medicated Disposable Diaper Liners, Disposable Medicated Tissues for Treatment of the Skin, Support Hose, Disposable Mouth Pieces for Professional Dental Use, Pharmaceutical Cotton; Wristlets and Anklets to Support Sprained, Strained, or Weakened Wrists and Ankles; Knee Pads, Knee Braces, Surgical Sutures, Enema Sets, Syringes, Catheter and Urinary Drainage Bag, Inflatable Pressure Bandage, Fabric Prepared Especially for Use in Making Plaster Casts, Incontinent Pads, Elastic Bandages, and Mouthguards for Use by Athletes Engaged in Body-Contact Sports to Protect the Teeth and Cushion Blows to the Jaw (Int. Cls. 5 and 10).

First use 1940.

Class 52—Detergents and Soaps

For Saturated Towelettes; Detergents; Cleaner for Leather and Leather Substitutes; and Soap for General Washing and Cleansing Purposes (Int. Cl. 3).

First use June 13, 1967.

SN 301,580. Westinghouse Air Brake Company, Pittsburgh, Pa. Filed June 28, 1968.

WABCO

Owner of Reg. Nos. 359,479, 800,542, and others.

Class 2—Receptacles

For Reservoirs and Volumes (Int. Cl. 6).

First use Sept. 22, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Piping Devices—Namely, Anti-Freezers in the Nature of a Specialized Container Equipped With Alcohol and Cooperating Wick Enabling Vapor To Be Released Within a Pneumatic System Protecting Said System From Freezing; Check Valves, Cocks, Fittings, Flow Control Valves, and Safety Valves; and Panel Block Manifolds Designed to Fit Hydraulic Valves (Int. Cl. 6).

First use Sept. 3, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Power, Force and Positioning Devices—Namely, Cylinders and Actuators; Pneumatic Controlling Devices—Namely, Directional and Pressure Reducting Valves and Governors; Hydraulic Devices—Namely, Power Boosters and Directional Valves; Signal Devices—Namely, Air Pressure Switches and Pneumatic Horns; Motor and Steam Driven Compressors and Accessories Therefor; Marine Controls—Namely, Control Stands, Fuel Rack Transmitters, Gear Control Cylinders, Panel Boards, Propellor and Steering Control Units; Pulsation Dampeners; and Lubricating Units (Int. Cl. 7).

First use Jan. 30, 1965.

Class 26—Measuring and Scientific Appliances

For Anti-Wheel Slide Devices for Detecting and Relieving Slipping of Vehicle Wheels, and Air and Oil Level Gauges (Int. Cl. 9).

First use June 22, 1965.

Class 31—Filters and Refrigerators

For Air Strainers Used in Branch Lines of Pneumatic Circuits and Air Filters (Int. Cl. 11).

First use Dec. 17, 1964.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Rubber Goods—Namely, Packing Cups, Piston Packings, Flexible Diaphragms, Gaskets and Hose, and Tubing (Int. Cl. 17).

First use July 17, 1964.

SN 302,826. Bernard Golay SA., Cossonay, Vaud, Switzerland. Filed July 16, 1968.

GOLAY

The lining is part of the design and is not for the purposes of indicating color. Applicant disclaims the terms "Swiss" and "Precision" separate and apart from the mark as shown. Owner of Swiss Reg. No. 214,309, dated Nov. 17, 1965.

Class 26—Measuring and Scientific Appliances

For Electronic Timing Pulse Generator (Int. Cl. 9).

Class 27—Horological Instruments

For Watches, Clocks, Electronic Chronometers, Digital Indicator Chronometers, and Parts Therefor (Int. Cl. 14).

SN 305,067. J. A. Richards Company, Kalamazoo, Mich. Filed Aug. 13, 1968.

LIGNIFORM

Class 12—Construction Materials

For Sheets of Plywood (Int. Cl. 19).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Bases for Steel Rule Dies and Parts Thereof (Int. Cl. 8).

First use July 12, 1968.

SN 307,437. Dover Corporation, New York, N.Y. Filed Sept. 16, 1968.

GROEN

Class 2—Receptacles

For Tanks for Processing Food Service, Industrial and Chemical Materials (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting

For Mixing Kettles and Kettle Basket Inserts for Processing Food Service, Industrial and Chemical Materials, Kettle Drain Valves, Flush Dump Valves, Kettle Cover Actuators for Opening and Closing Covers (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sanitary Type Agitators for Mixing Kettles (Int. Cl. 7).

Class 31—Filters and Refrigerators

For Fluid Filters for Food Service Maferials (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Heat Exchanger Jacketed Stationary, Rotatable or Tiltable Kettles, Pans, Tanks, Urns, Brewers, Cookers, Mixers, Blenders, Evaporators and Concentrators for Processing Food Service, Industrial and Chemical Materials; Electrically Heated Braising Pans for Commercial and Institutional Use (Int. Cl. 11).

First use 1961.

SN 308,415. Paddock of California, Inc. Albany, N.Y. Filed Sept. 30, 1968.

PADDOCK

Owner of Reg. No. 844,365.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Components and Supplies for Swimming Pools, Sold Separately, Including Inlets, Outlets, and Piping Associated therewith; Filling Spouts and Hydrostatic Relief Valves; Separation Tanks; Chemical Feeders; Chlorinators; Water-Cleaning Equipment; Strainers, Skimmers and Skimming Weirs; Overflow Pipes and Connections; Pool Perimeter Gutters and Piping Associated Therewith; Gutter Drains and Deck Drains (Int. Cls. 6 and 7).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps and Water-Treating and Water-Circulating and Recirculating Systems, and Piping Associated Therewith, Sold as Units for Use in Swimming Pools (Int. Cl. 11).

Class 103—Construction and Repair

For Construction, Maintenance and Repair of Swimming Pools and Equipment Associated Therewith (Int. Cl. 37).

First use 1922.

SN 314,748. Memorex Corporation Santa Clara, Calif. Filed Dec. 18, 1968.

MRX

Class 21—Electrical Apparatus, Machines, and Supplies

For Video Tape for Recording Television Broadcasts (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Magnetic Recording Tape for Use in Computers and Instrumentation Studies (Int. Cl. 9).

First use July 18, 1966.

SN 316,856. Villager Industries, Inc., Philadelphia, Pa. Filed Jan. 17, 1969.

THE VILLAGER COLLECTOR

Owner of Reg. Nos. 702,965, 842,153, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Beach Bags, and Tote Bags (Int. Cl. 18).

Class 39—Clothing

For Wearing Apparel—Namely, Belts; Blazers; Blouses; Coats; Culottes; Cummerbunds; Dickies; Dresses; Dress Ensembles, Namely, Skirts and Blouses, Blouses and Slacks, Sweaters and Slacks, Sweaters and Skirts, and Blazer and Skirt Sets; Hats; Hosiery; Jackets; Kerchiefs; Kilts; Knitwear, Namely, Culottes, Dresses, Hosiery, Pullovers, Shells, Skirts, and Tights; Lingerie; Nightwear, Namely, Nightgowns, Pajamas, and Nightrobes; Neckwear; Pant-Dresses and Pant-Skirts; Raincoats; Sashes; Shells; Shirts; Skirts; Slacks; Shorts; Suits; Suspenders; Sweaters; Shoes; Swimwear, Namely, Beachrobes, Beach Dresses, Beach Skirts, Swim Dresses and Swimsuits; and Vests (Int. Cl. 25).

First use at least as early as April 1960.

SN 317,057. Holiday Magic, San Rafael, Calif. Filed Jan. 21, 1969.

SANTOSHA

Class 51—Cosmetics and Toilet Preparations

For Bath Powder, Colognes, Personal Sachet, Bath Oil, and Bath Perfume (Int. Cl. 3).

Class 52—Detergents and Soaps

For Bath Soap (Int. Cl. 3).

First use Dec. 26, 1968.

SN 217,567. Hyster Company, Portland, Oreg. Filed Jan. 27, 1969.

HYSTER

Owner of Reg. Nos. 720,296 and 761,243.

Class 100—Miscellaneous

For Materials Handling, Logging and Hauling Equipment Rental and Leasing Services (Int. Cl. 42).

First use February 1967.

Class 102—Insurance and Financial

For Materials Handling, logging and Hauling Equipment Financing Services (Int. Cl. 36).

First use March 1961.

Class 103—Construction and Repair

For Materials Handling, Logging and Hauling Equipment Maintenance Services (Int. Cl. 37).

First use May 1925.

Class 107—Education and Entertainment

For Customer Service Programs—Namely, Operational Instruction and Safeguard Maintenance Training Services for Materials Handling, Logging and Hauling Equipment (Int. Cl. 41).

First use Mar. 1, 1965.

SN 318,106. Spirax-Sarco Limited, Cheltenham, England. Filed Jan. 31, 1969.

SPIRAX

Owner of British Reg. Nos. 470,547, dated June 11, 1926, 533,302, dated July 8, 1932, 533,303, dated July 8, 1932, 652,927, dated Oct. 24, 1946, and 652,928, dated Oct. 24, 1946.

Class 13—Hardware and Plumbing and Steam-Fitting

For Flow Control Valves, Pressure Release Valves, Steam Traps and Pipe Strainers, All Being Parts of Machines, But Not Including Rotary Air and Gas Compressors and Pumps and Nozzle Elements for Gas Pressure Regulators (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Thermostatic Control Valves for Liquids and Gasses (Int. Cl. 9).

Class 31—Filters and Refrigerators

For Filters for Removing Condensate or Liquids and Air from Steam Lines or Steam Heated Machines, for Removing Liquids From Compressed Air Lines, for Straining Fluids in Pipe Lines and for Inspecting Fluids in Pipe Lines (Int. Cl. 11).

SN 318,554. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Feb. 6, 1969.

KELLY SPRINGFIELD

Owner of Reg. Nos. 169,306, 556,453, and others.

Class 6—Chemicals and Chemical Compositions

For Rubber Solvents (Int. Cl. 1).

First use Dec. 16, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

For Storage Batteries (Int. Cl. 9).

First use Dec. 12, 1968.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Tires (Int. Cl. 12).

First use Dec. 16, 1968.

SN 319,569. The W. E. Bassett Company, Derby, Conn. Filed Feb. 19, 1969.

TRIM

Owner of Reg. Nos. 433,832, 695,409, and others

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pocket Scissors and Safety Scissors (Int. Cl. 8).

First use Mar. 3, 1961.

Class 44—Dental, Medical, and Surgical Appliances

For Manicuring Sets Consisting of Two or More of the Following Items: Fingernail Clipper, Toenail Clipper, Nail File, Tweezer, Manicuring Scissor, Folding Pocket Tool, and Comb (Int. Cl. 8).

First use 1954.

SN 321,100. Certified Grocers of Illinois, Inc., Chicago, Ill. Filed Mar. 10, 1969.

HOUSEHOLD DELIGHT

Class 6—Chemicals and Chemical Compositions

For Spray Starch, Bleach-Disinfectant, Fabric Softener, and Ammonia (Int. Cl. 3).

First use in or before July 1966.

Class 52—Detergents and Soaps

For General Purpose Liquid Detergent and Cleanser for Household Use, and Laundry Detergent (Int. Cl. 3).

First use in or before November 1961.

SN 321,396. Mai-Kai, Inc., Fort Lauderdale, Fla. Filed Mar. 11, 1969.

MAI-KAI

Owner of Reg. Nos. 764,025, 839,165, and 839,735.

Class 15—Oils and Greases

For Fuel Cells for Use With Torches (Int. Cl. 4).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Fuel Wick Torches for Garden and Patio Use (Int. Cl. 11).

First use Oct. 24, 1966.

SN 326,486. Rule Industries, Inc., Beverly Farms, Mass. Filed May 6, 1969.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Switches for Water Pumps and Indicator Lights (Int. Cl. 9).

First use Mar. 9, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Marine Products—Namely, Salt Water and Fresh Water Pumps (Int. Cl. 7).

First use Mar. 29, 1966.

SN 327,799. Halliburton Company, Duncan, Okla. Filed July 9, 1969.

AID

Class 100—Miscellaneous

For Engineering Design Services in Relation to Railway Transportation Problems and the Cushioning of Railway Shocks (Int. Cl. 42).

Class 103—Construction and Repair

For Installation Services in the Area of Railway Cushioning Devices (Int. Cl. 37).

First use May 10, 1968.

SN 330,042. Jean d'Albret, Paris, France. Filed June 16, 1969.

BABYLANE

Owner of French Reg. No. 720,595, dated Apr. 26, 1966; and U.S. Reg. No. 744,956.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Toilet Waters, Cologne, Body and Facial Creams, Body and Facial Lotions, and Body Talc (Int. Cl. 3).

Class 52—Detergents and Soaps

For Perfumed Soaps (Int. Cl. 3).

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 326,120. Pfister & Vogel Tanning Co., Inc., Milwaukee, Wis. Filed May 1, 1969.

PLAZA

For Leather (Int. Cl. 18).
First use on or about Dec. 15, 1948.

SN 326,121. Pfister & Vogel Tanning Co., Inc. Milwaukee, Wis. Filed May 1, 1969.

FALCON

For Leather (Int. Cl. 18).
First use on or about Dec. 15, 1968.

SN 326,266. Uniroyal, Inc., New York, N.Y. Filed May 2, 1969.

CELEX

For Sheet Material Made of Fibre and Rubber for Manufacture Directly or With Further Treatment Into a Variety of Articles (Int. Cl. 17).
First use 1965.

SN 336,515. Dow Badische Company, Williamsburg, Va. Filed Aug. 28, 1969.

ZEFRAN II

Owner of Reg. Nos. 647,642, 702,651, and others.
For Synthetic Textile Fiber (Int. Cl. 22).
First use as early as December 1967; Sept. 26 1956, as to "Zefran."

SN 338,079. The W. R. Bonsal Company, Lilesville, N.C. Filed Sept. 17, 1969.

BONSAL

For Sand, Rock, and Pebbles (Int. Cl. 19).
First use May 17, 1964.

SN 340,893. Standard Oil Company, Flemington, N.J. Filed Oct. 16, 1969.

WYNENE

Owner of Reg. Nos. 437,022 and 443,639.
For Plastic Film (Int. Cl. 17).
First use Oct. 14, 1946.

Class 2 — Receptades

SN 309,385. Holman and Holman, Portland, Oreg. Filed Oct. 10, 1968.

FLYER

For Shipping Containers for Human Remains (Int. Cl. 20).
First use Aug. 28, 1968.

SN 310,367. John C. Swingle, Medina, Ohio. Filed Oct. 23, 1968.

CRISMAR

For Expandable Holders for Letters and Other Similar Materials (Int. Cl. 16).
First use Aug. 19, 1968.

SN 322,209. Brymax, Inc., Baton Rouge, La. Filed Mar. 19, 1968.

"BryMax"

For Material Handling Containers for the Collection of Trash (Int. Cl. 21).
First use July 1, 1965.

SN 323,472. Plasworld, Inc., Santa Ana, Calif. Filed Apr. 2, 1969.

EASYWAY

For Trash Containers and Garbage Cans (Int. Cl. 21).
First use on or before Sept. 25, 1967.

SN 325,019. Eagle Manufacturing Company, Wellsburg, W. Va. Filed Apr. 21, 1969.

Red Snapper

For Portable Gasoline Storage Cans for Outdoor Use (Int. Cl. 6).
First use on or about Feb. 27, 1969.

SN 332,875. Westvaco Corporation, New York, N.Y. Filed July 17, 1969.

BORD-SEAL

For Containers Made From Corrugated Paperboard (Int. Cl. 16).
First use Feb. 20, 1969.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 315,336. Roebling Luggage Corporation, New York, N.Y. Filed Dec. 27, 1968.

THE EXECUTIVE VIEWPOINT IN LUGGAGE

No claim is made to the word "Luggage" apart from the mark as shown without waiver of any common law rights therein.
For Luggage—Namely, Trunks, Traveling Bags, Suit Cases, and Overnight Bags (Int. Cl. 18).
First use during November 1967.

Class 5 — Adhesives

SN 316,118. Aerochem N.V., Curacao, Netherlands Antilles. Filed Jan. 8, 1969.

FINILEC

Owner of Netherlands Antilles Reg. No. 6,747, dated Apr. 23, 1968.
For Tire Sealant (Int. Cl. 1).

SN 328,189. National Beryllia Corp., Haskell, N.J. Filed May 23, 1969.

SEALOX

For Glass-Ceramic Powdered Bonding Material To Provide Hermetic Seals or Joints Between Ceramic to Ceramic Elements or Ceramic to Metal Elements, and Especially Useful for the Manufacture of Devices Which Include Electronic and Electrical Components (Int. Cl. 1).
First use May 8, 1969.

SN 338,080. The W. R. Bonsal Company, Lilesville, N.C. Filed Sept. 17, 1969.

BONSAL

For Liquid-Type Adhesive Particularly Adapted for Use in Bonding Ceramic Tile and Cement Type Materials to Walls, Floors, and Sealed Masonry Surfaces (Int. Cl. 19).
First use July 30, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 310,358. Rhodia Inc., New Brunswick, N.J. Filed Oct. 23, 1968

CHIPTOX

Owner of Reg. No. 651,903.
For Herbicides (Int. Cl. 5).
First use Oct. 14, 1968.

SN 312,348. Sun Chemical Corporation, New York, N.Y. Filed Nov. 15, 1968.

XKE

For Non-Offset Compound for Use in Printing Inks (Int. Cl. 1).
First use Sept. 18, 1968.

SN 313,318. Markem Corporation, Keene, N.H. Filed Nov. 29, 1968.

SUPER CEROXYLON

For Thread-Waxing Compound (Int. Cl. 4).
First use October 1947.

SN 318,264. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 3, 1969.



Owner of Reg. Nos. 613,328, 785,362, and others.
For Organic and Inorganic Chemicals—Namely, Soda Ash, Bicarbonate of Soda, Calcium Carbonate, Calcium Chloride, Caustic Soda, Chlorine, Ethylene Glycol, Antifreeze Compositions for Engine Cooling Systems, Sodium Carboxymethylcellulose, Diethylene Glycol, Propylene Glycol, Ethylene Oxide, Propylene Oxide and Condensates Thereof, Dichlorodimethylhydantoin, Polyoxyethylene Glycols, Polyoxypropylene Glycols, Propylene Oxide Adducts of Trimethylolpropane, Polyoxypropylene-polyoxyethylene Condensates, Phosphate Ester Compositions, Oxyalkylated Fatty Amines, Oxyalkylated Fatty Alcohols, N,N,N′,N′-Tetrakis (2-Hydroxypropyl) Ethylenediamine, N-(2-Hydroxypropyl) Ethylenediamine, Piperazine Compounds, Isocyanates, Sanitizers, Insecticides, Water Treatment Chemicals for Heating and Cooling Systems, Hydraulic Fluids, and Water-Repellent Compositions for Application to Fabrics (Int. Cls. 1 and 5).
First use October 1968.

SN 322,140. Atlas Supply Company, Springfield, N.J. Filed Mar. 19, 1969.

ATLAS

Owner of Reg. Nos. 295,699, 346,800, and 705,130.
For Chemical Composition for Melting Ice and Producing Friction (Int. Cl. 1).
First use Jan. 2, 1969.

SN 326,743. Sol Barnett, d.b.a. Barnett Lighting Company and Barnett Manufacturing Co., Los Angeles, Calif. Filed May 8, 1969.

GROOVY FRUITY

For Fragranted Incenses (Int. Cl. 3).
First use Oct. 21, 1968.

SN 327,741. Ciba Limited, Basel, Switzerland. Filed May 20, 1969.

SELECRON

Owner of Swiss Reg. No. 223,924, dated Mar. 7, 1967.
For Chemical Preparations for Killing Weeds and Destroying Vermin, Preparations for Combating Plant Pests (Int. Cl. 5).

SN 338,081. The W. R. Bonsal Company, Lilesville, N.C. Filed Sept. 17, 1969.



For Lime-Proof Organic and Inorganic Colors Particularly Adapted for Mixing with Cement Based Materials to Provide Colored Finished Products (Int. Cl. 2).
First use Feb. 12, 1969.

Class 7 — Cordage

SN 319,360. John Shaw Limited, Worksop, England, Filed Feb. 17, 1969.



Applicant disclaims the words "Wire Rope," "Brand," "John Shaw Ltd.," "Worksop, England," and the representation of a coil of rope apart from the mark as shown, reserving all common law rights therein.
Owner of British Reg. No. 659,082, dated May 14, 1947.
For Wire Ropes (Int. Cl. 6).

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 340,311. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Oct. 10, 1969.

LAREDO

Owner of Reg. No. 874,575.
For Machine to be Used by Individual to Make Cigarettes (Int. Cl. 34).
First use Oct. 9, 1969.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 303,062. Nu-Vita Products, Inc., Pittsburgh, Pa. Filed July 18, 1968.

COMBAT

For Aerosol Tear Gas Composition for Contact With the Eyes of an Assailant to Induce Temporary Blindness and Staining the Skin for Identification of the Assailant (Int. Cl. 13).
First use May 3, 1966.

SN 321,207. Federal Cartridge Corporation, Minneapolis, Minn. Filed Mar. 10, 1969.

HI-SHOK

Owner of Reg. No. 765,673.
For Bullets for Rifle and Hand Gun Ammunition (Int. Cl. 13).
First use Nov. 30, 1962.

Class 10 — Fertilizers

SN 323,600. Seaboard Seed Company, Bristol, Ill. Filed Apr. 3, 1969.

NATIONAL BEAUTIFICATION

Owner of Reg. No. 861,208.
For Lawn Fertilizer (Int. Cl. 1).
First use on or before Mar. 19, 1969.

Class 11 — Inks and Inking Materials

SN 311,348. American Cyanamid Company, Wayne, N.J. Filed Nov. 5, 1968.

DMS

For Luminescent Marking Ink (Int. Cl. 16).
First use Sept. 12, 1968.

Class 12 — Construction Materials

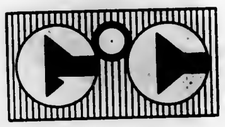
SN 331,148. Bliss & Laughlin Industries, Incorporated, Oakbrook, Ill. Filed June 27, 1969.

QUICKBEAM

For Telescopic Beam to Support Concrete (Int. Cl. 6).
First use May 26, 1969.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 313,573. Gemini Corporation, Rosemont, Ill. Filed Dec. 4, 1968.



The drawing is lined for shading only. The mark consists in part of the letters "GC."
For Fasteners, Bolts, Nuts, and Fittings Manufactured of Metal Bar Stock (Int. Cl. 6).
First use Nov. 4, 1968.

SN 313,643. Aimway, Inc., St. Paul, Minn. Filed Dec. 5, 1968.

AIMWAY

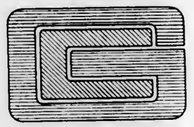
For Fasteners Comprising Bolts, Nuts, Rivets, Flexible Connections, Washers, Metal Fittings, Lag Screws, Jute Plugs With Screws, Toggle Bolts, and Cable (Not Electric) (Int. Cl. 6).
First use on or about Aug. 15, 1968.

SN 328,336. Price-Pfister Brass Mfg. Co., Pacoima, Calif. Filed May 26, 1969.

LUSTREGARD

For Coating or Finish Applied to Bathroom, Kitchen and Bar Plumbing Fittings for Sinks, Lavatories, Showers, and Bathtubs (Int. Cl. 6).
First use Jan. 21, 1969.

SN 328,546. Griswold Controls, Santa Ana, Calif. Filed May 28, 1969.



The drawing is lined for the colors blue and green, but no claim is made to any particular combination of colors.
For Valves and Controls Therefor (Int. Cl. 9).
First use May 12, 1969.

SN 332,003. Fairway Plastics, Inc., Port Lavaca, Tex. Filed July 8, 1969.

E-Z PRES

For Plastic Toothpaste Dispensers (Int. Cl. 21).
First use June 23, 1969.

Class 14 — Metals and Metal Castings and Forgings

SN 295,379. Societe Generale du Magnesium, Paris, France. Filed Apr. 10, 1968.

MERCATAL

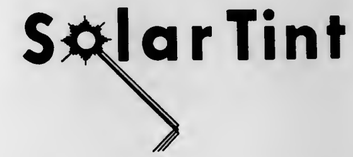
Owner of French Reg. No. 489,066, dated June 27, 1960 (Seine); Natl. Inst. No. 146,986.
For Metals and Metal Products Formed of Aluminum and Alloys of Aluminum—Namely, Billets, Ingots Plates, Sheets, Foils, Bars, Rods, Wires, Anodes and Galvanic Elements of Aluminum and Mercury Alloys (Int. Cls. 6 and 9).

SN 305,162. Sherritt Gordon Mines Limited, Toronto, Ontario, Canada. Filed Aug. 14, 1968.

DS

Owner of Canadian Reg. No. 155,533, dated Feb. 16, 1968.
For Partly Wrought and Wrought Metals—Namely, Nickel and Lead, and Alloys, namely, nickel base alloys (Int. Cl. 6).

SN 310,903. Charles H. Malone & Co. Inc., New York, N.Y. Filed Oct. 30, 1968.



The word "Tint" is disclaimed apart from the mark as shown.
For Heat Reflecting Transparent Aluminum Film for Use on Window Glass (Int. Cl. 6).
First use May 1, 1968.

SN 320,729. P. R. Mallory & Co. Inc., Indianapolis, Ind. Filed Mar. 4, 1969.

MATEX

For Beryllium Containing Metals, Alloys, and/or Composites (Int. Cl. 6).
First use Jan. 13, 1969.

SN 326,425. E. L. Post & Co., Inc., New York, N.Y. Filed May 5, 1969.

MOTOR

For Antifriction Metals, Including, in Particular, Babbitt Metal (Int. Cl. 6).
First use May 1, 1891.

SN 326,498. Carpenter Technology Corporation, Reading, Pa. Filed May 6, 1969.

CUSTOM 455

The term "Custom" is disclaimed apart from the mark as shown.
For Steel in the Form of Wire, Strips, Bars, Billets, and Shapes (Int. Cl. 6).
First use Feb. 11, 1965.

SN 326,521. DeVan-Johnson Co., d.b.a. Kut-A-Key Division, Aurora, Ill. Filed May 6, 1969.

KUT-A-KEY

Owner of Reg. No. 606,278.
For Steel Key Stock (Int. Cl. 6).
First use on or about Jan. 3, 1969.

Class 16—Protective and Decorative Coatings

SN 308,582. Hoboken Paints, Inc., Lodi, N.J. Filed Oct. 3, 1968.

MAGIC-FOIL

For Synthetic Rubber Base Waterproofing Paint (Int. Cl. 2).
First use Feb. 15, 1966.

SN 308,583. Hoboken Paints, Inc., Lodi, N.J. Filed Oct. 3, 1968.

Magic Lax

For Quick Drying Paint Enamel, Indoor or Outdoor (Int. Cl. 2).
First use Apr. 11, 1966.

SN 308,586. Hoboken Paints, Inc., Lodi, N.J. Filed Oct. 3, 1968.

Snowlux

For Enamel Paint, Indoor and Outdoor (Int. Cl. 2).
First use Apr. 11, 1968.

SN 308,587. Hoboken Paints, Inc., Lodi, N.J. Filed Oct. 3, 1968.

TINT-n-TONE

Alkyd Flat Paint for Ceiling, Floor, Walls, or Woodwork (Int. Cl. 2).
First use Apr. 11, 1968.

SN 312,229. SCM Corporation, Cleveland, Ohio. Filed Nov. 14, 1968.

TOTE-KOTE

For Wood Stain as a Protective Coating in Concentrate and in Ready To Use Form (Int. Cl. 2).
First use Apr. 4, 1967.

SN 338,082. The W. R. Bonsal Company, Lilesville, N.C. Filed Sept. 17, 1969.

BONSAL

For Cement Based Coating Material Particularly Adapted for Coating Masonry Surfaces and Having Waterproofing and Decorative Properties (Int. Cl. 2).
First use Aug. 12, 1966.

Class 17—Tobacco Products

SN 329,544. Villiger Söhne AG., Lucerne, Switzerland. Filed June 9, 1969.

ALPHORN

Owner of Swiss Reg. No. 235,674, dated Nov. 21, 1968.
For Cigars and Cigarillos (Int. Cl. 34).

Class 18—Medicines and Pharmaceutical Preparations

SN 311,519. Rico Sales Corporation, Aliceville, Ala. Filed Nov. 6, 1968.

PRO-SHO

For Cow and Calf Feed Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use July 6, 1968.

SN 311,520. Rico Sales Corporation, Aliceville, Ala. Filed Nov. 6, 1968.

PRO-START

For Milk Replacer and Starter Containing Vitamins and Minerals for Calves (Int. Cl. 5).
First use July 6, 1968.

SN 311,521. Rico Sales Corporation, Aliceville, Ala. Filed Nov. 6, 1968.

PRO-VIDE

For Pet Conditioner Containing Vitamins and Minerals, Primarily for Dogs and Cats (Int. Cl. 5).
First use July 6, 1968.

SN 312,659. Cooper Laboratories, Inc., Bedford Hills, N.Y. Filed Nov. 20, 1968.

AMINODUR

For Pharmaceutical Tablets Containing Essentially Aminophylline (Int. Cl. 5).
First use Sept. 24, 1968.

SN 328,975. Garden Laboratories Incorporated, Hackensack, N.J. Filed June 3, 1969.

ZOOVITE

For Multivitamin Tablets (Int. Cl. 5).
First use May 20, 1969.

SN 335,736. Beecham Inc., Clifton, N.J. Filed Aug. 20, 1969.

FLOXAPEN

For Antibiotics (Int. Cl. 5).
First use June 23, 1969.

SN 339,512. Organon Inc., West Orange, N.J. Filed Oct. 2, 1969.

STIMOVUL

For Ovulation-Inducing Pharmaceutical Preparation (Int. Cl. 5).
First use Sept. 16, 1969.

Class 19—Vehicles

SN 304,296. Atomic Space Age Transfer, Inc., Lake Grove, N.Y. Filed Aug. 5, 1968.



For Aircraft (Int. Cl. 12).
First use Apr. 6, 1968.

SN 304,746. Ernest Aasen, d.b.a. S-S-S Co., Mayville, N. Dak. Filed Aug. 9, 1968.

S-S-S

For Surface Engaging Disc Attachments for Snowmobiles to Prevent Skidding (Int. Cl. 12).
First use Mar. 19, 1968.

SN 322,189. Rankin Manufacturing, Inc., Swartz Creek, Mich. Filed Mar. 19, 1969.

TERRA-CAT

For Motor Scooters, Motor Bikes, and Motorcycles (Int. Cl. 12).
First use on or before June 1, 1968.

SN 326,340. Borg-Warner Corporation, Chicago, Ill. Filed May 5, 1969.

PUSHNEE

For Barge and Boat Bumpers (Int. Cl. 12).
First use on or prior to Feb. 15, 1968.

SN 327,253. Fox Corporation, Janesville, Wis. Filed May 14, 1969.

STREET SCAMP

For Lightweight Motorcycles, Known as Campus Bikes or Minibikes (Int. Cl. 12).
First use Jan. 22, 1969.

SN 327,254. Fox Corporation, Janesville, Wis. Filed May 14, 1969.

TRAIL TRAMP

For Lightweight Motorcycles, Known as Campus Bikes or Minibikes (Int. Cl. 12).
First use Jan. 22, 1969.

SN 327,726. Innovar, Inc., Dunnell, Minn. Filed May 20, 1969.

SnoCoupé

The term "Sno" is disclaimed apart from the mark.
For Snowmobile (Int. Cl. 12).
First use Jan. 4, 1969.

SN 329,061. Coast Catamaran Corporation, Capistrano Beach, Calif. Filed June 4, 1969.



The numeral "14" is disclaimed apart from the mark as shown.
For Sailboats (Int. Cl. 12).
First use July 5, 1968.

SN 329,794. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed June 12, 1969.

BRIDGESTONE 100 G/P

Without waiver of any common law rights, applicant makes no claim of exclusive right to use of the numeral "100" separate and apart from the mark as shown. Owner of U.S. Reg. Nos. 850,901, 857,819, and 857,821.
For Motorcycles, Bicycles, and Their Parts (Int. Cl. 12).
First use Jan. 10, 1969; in commerce Jan. 10, 1969.

SN 329,796. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed June 12, 1969.

BRIDGESTONE 100 TMX

Without waiver of any common law rights, applicant makes no claim of exclusive right to use of the numeral "100" separate and apart from the mark as shown. Owner of U.S. Reg. Nos. 850,901, 857,819, and 857,821.
For Motorcycles, Bicycles, and Their Parts (Int. Cl. 12).
First use Jan. 10, 1969; in commerce Jan. 10, 1969.

SN 330,997. Nassau Fiberglass Products, Fernandina Beach, Fla. Filed June 26, 1969.

FUN CRAFT

For the purposes of registration, no claim is made to the exclusive right to use the word "Craft" apart from the mark as shown.
For Boats (Int. Cl. 12).
First use Oct. 6, 1967.
Subj. to Intf. with SN 318,298.

Class 20—Linoleum and Oiled Cloth

SN 335,406. GAF Corporation, New York, N.Y. Filed Aug. 15, 1969.

SURE-STIK

For Vinyl Asbestos Floor Tiles (Int. Cl. 19).
First use Aug. 13, 1969.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 220,927. Electro-Tec Corp. (Delaware corporation), Ormond Beach, Fla., by change of name and assignment from Electro-Tec. Corp. (New Jersey corporation), Ormond Beach, Fla. Filed June 11, 1965.

For Slip Ring Assemblies, Commutators, Relays, and Switches (Int. Cl. 9).
First use May 12, 1945.
Subj. to Intf. with SN 240,213.

SN 240,213. Terasaki Electric Co., Ltd., Abeno-ku, Osaka, Japan. Filed Mar. 4, 1966.



For Circuit Breakers (Int. Cl. 9).
First use Dec. 31, 1937; in commerce Nov. 2, 1963.
Subj. to Intf. with SN 220,927.

SN 284,782. Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Societe Anonyme, Paris, France. Filed Nov. 14, 1967.

ALMELEC

Owner of French Reg. No. 80,455, dated Feb. 21, 1957 (Lyon), Natl. Inst. No. 86,492.
For Electrical Conductors, Both Insulated and Non-Insulated, Formed From Wire and/or Cables and Used in Electrical Installations (Int. Cl. 9).

SN 290,633. Charles Fredrick Miller, d.b.a. C. F. Miller & Associates, Anaheim, Calif. Filed Feb. 8, 1968.
The word "Bond" is disclaimed apart from the mark as shown.

WEST•BOND

For Bonding Apparatus Used for Bonding Miniature Electronic Devices, Particularly Miniature Electronic Circuit Boards, and Accessories for Such Devices (Int. Cl. 9).
First use Nov. 18, 1967.

SN 296,720. Safeguard Manufacturing Corp., Atlanta, Ga. Filed Apr. 26, 1968.



The word "Safeguard" is disclaimed apart from the mark as shown.
For Electrically Actuated Burglar and Fire Alarms (Int. Cl. 9).
First use Apr. 11, 1968.

SN 298,817. Electromagnetic Industries, Inc., Sayville, N.Y. Filed May 22, 1968.



For Generators and Parts Thereof, Regulators, Transformers, Battery Chargers, Electrical Shunts, Electrical Control Units for Oceanographic, Crystographic and Ground Power Equipment and Systems—Namely, Voltage, Frequency, Reverse Power, Short Circuit and Phase Sequence Protective Devices; Voltage, Current, Frequency Phase Sequence and Aircraft Power Monitoring and Warning Devices; Transducers; Electro-Hydraulic Governors; Contractors; Voltage and Power Regulators; Magnetic and Solid State Amplifiers; A.C. and D.C. Power Supplies; Power, Supervisory and Logic Panel Controls; Terminal Assemblies; Net, Diver and Beach Shark Repellant Devices; and Single Phase and Diesel Driven 3-Phase Generators (Int. Cls. 7 and 9).
First use January 1964.

SN 303,774. North American Philips Corporation, New York, N.Y., by change of name from Consolidated Electronics Industries Corp., New York, N.Y. Filed July 29, 1968.

CONELCO

For Electrical Relays (Int. Cl. 9).
First use June 14, 1968.

SN 308,276. Consolidated Spring Corp., Brooklyn, N.Y. Filed Sept. 26, 1968.

CORTEM

Owner of Reg. No. 777,690.
For Conductive Brush Springs for Electrical Motors (Int. Cl. 7).
First use June 30, 1963.

SN 308,864. Bertwin Inc., Lakewood, N.J. Filed Oct. 4, 1968.

TREASURE PROBE

For Electronic Instruments for Detecting Metals (Int. Cl. 9).
First use Sept. 23, 1967.

SN 311,144. Lloyd A. Griffith, d.b.a. Griffith Plastic Products Company, Burlingame, Calif. Filed Nov. 1, 1968.



For Knobs for Electronic Equipment (Int. Cl. 9).
First use about Dec. 1, 1967; in or about 1962 as to "Nobex."

SN 313,178. The Marconi Company Limited, London, England. Filed Nov. 27, 1968.

TUNISTOR

Owner of British Reg. No. 892,443, dated Mar. 25, 1966.
For Varactor Diodes (Int. Cl. 9).

SN 314,872. Century Lighting, Inc., Clifton, N.J. Filed Dec. 19, 1968.

MEMO-Q ∞

For Automatic Lighting Control System (Int. Cl. 9).
First use Sept. 10, 1968.

SN 315,253. N.V. Philips' Gloeilampenfabriken, Eindhoven, Netherlands. Filed Dec. 26, 1968.

PHILIPS

Owner of U.S. Reg. Nos. 706,721, 838,406, and others.
For X-Ray Diffraction and X-Ray Spectrometer Tubes for Commercial Use (Int. Cl. 10).
First use as early as September 1953; in commerce as early as September 1953.

SN 319,602. The Hobart Manufacturing Company, Troy, Ohio. Filed Feb. 19, 1969.

DAYTROL

For Speed Sensing Actuators and Switches for Electrically Operated Devices (Int. Cl. 9).
First use as early as 1963.

SN 319,919. Laser Systems Corporation, Ann Arbor, Mich. Filed Feb. 24, 1969.

LASER SENTRY

Applicant disclaims the word "Laser" apart from the mark as shown.
For Intrusion Detection Systems Using a Beam of Radiant Energy for Indicating the Presence of an Object (Int. Cl. 9).
First use Dec. 26, 1968.

SN 320,056. Flight Products, Inc., Moonachie, N.J. Filed Feb. 25, 1969.

VERTIGON

For Combination Rotating Cockpit Enclosure, Movie Projector and Intercom Used to Study and Demonstrate the Effects of Vertigo on an Occupant (Int. Cl. 9).
First use on or about Jan. 20, 1969.

SN 320,876. Tri-Data, Mountain View, Calif. Filed May 5, 1969.

CARTRIFILE

For Electronic, Mechanical and Electromechanical Equipment Used in Automatic Data Processing—Namely, Magnetic Tape Writers and Readers (Int. Cl. 9).
First use Dec. 27, 1968.

SN 320,878. Tri-Data, Mountain View, Calif. Filed Mar. 5, 1969.



For Electronic, Mechanical and Electromechanical Equipment Used in Automatic Data Processing—Namely, Magnetic Tape Writers and Readers (Int. Cl. 9).
First use Dec. 27, 1968.

SN 324,872. Acoustics Development Corporation, Northbrook, Ill. Filed Apr. 18, 1969.

PRO-TEC-TEL

For Telephone Apparatus Enclosure (Int. Cl. 9).
First use Feb. 14, 1969.

SN 329,762. Revere Copper and Brass Incorporated, New York, N.Y. Filed June 11, 1969.



Owner of Reg. Nos. 821,530, 832,117, and others.
For Electrical Wiring Devices, Fixtures, and Accessories—Namely, Single Pole Switches, Double Pole Switches, Three-Way Switches, Entrance Switches, Radio and Battery Switches, One-Piece Combination Switch Outlet and Wall Plates, Toggle Switches, Push-Button Switches, Lock Switches, Push Switches, Pull Switches, Heat Resistance Switches, Convenience Outlets, Tandem Slot Outlets, Three-Wire Grounded Outlets, Weatherproof Outlets, Weatherproof Sockets, Weatherproof Receptacles, Rubber Cord Sets, Current Taps, Porcelain Sockets, Bakelite Sockets, Brass Shell Sockets, Porcelain Receptacles, Bakelite Receptacles, Rosettes, Switch Plates, Outlet Plates, Porcelain Wall Fixtures, Porcelain Wall Brackets, and Porcelain Ceiling Fixtures (Int. Cl. 9).
First use May 16, 1969.

SN 332,240. John Oster Manufacturing Co., Milwaukee, Wis. Filed July 10, 1969.

OSTER

For Electric Cord Sets (Int. Cl. 9).
First use in or about May 1928.

SN 332,503. Midas, Inc., Chicago, Ill. Filed July 14, 1969.

POWERLINE

For Batteries (Int. Cl. 9).
First use May 21, 1969.

SN 334,259. Superior Continental Corporation, Hickory, N.C. Filed Aug. 1, 1969.

LAMIGARD

For Coaxial Cable and Coaxial Drop Wire (Int. Cl. 9).
First use June 21, 1969.

SN 340,337. T.A.D. Avanti, Inc., Paramount, Calif. Filed Oct. 10, 1969.

DECORDER

For Key Unit Used by Subscribers to Trigger Automatic Telephone Answering Devices Over The Telephone Lines to Cause Such Devices to Play Back Telephone Messages Previously Recorded in the Device (Int. Cl. 9).
First use Nov. 8, 1968.

Class 22—Games, Toys, and Sporting Goods

SN 294,831. Hazel Marie Flake, Houston, Tex. Filed Apr. 3, 1968.

TEXAS SPECIAL

For Toys, Such as Two-Wheeled and Three-Wheeled Bicycles and Tricycles (Int. Cl. 12).
First use Apr. 15, 1937.

SN 301,708. The Chicago Roller Skate Company, Chicago, Ill. Filed July 1, 1968.

DURETHANE

For Roller Skate Wheels (Int. Cl. 28).
First use Apr. 23, 1968.

SN 302,659. Uneeda Doll Co., Brooklyn, N.Y. Filed July 12, 1968.

PETAL PEOPLE

Owner of Reg. No. 794,408.
For Artificial Toy Flower With a Doll (Int. Cl. 28).
First use on or about Apr. 8, 1968.

SN 303,154. The Franklin Mint, Inc., Yeadon, Pa. Filed July 19, 1968.

PRESIDENTIAL HALL OF FAME

Applicant disclaims the word "Presidential" apart from the mark as shown.
For Display Holders for Coins (Int. Cl. 16).
First use Feb. 28, 1968.

SN 310,107. KMS INDUSTRIES, Inc., Ann Arbor, Mich. Filed Oct. 21, 1968.

MENTAL BLOCKS

Applicant disclaims the word "Blocks" apart from the mark as shown.
For Equipment Comprising a Plurality of Transparent Blocks of Identical Size Having Colored Filaments for Playing a Puzzle Game (Int. Cl. 28).
First use Mar. 22, 1968.
Subj. to Intf. with SN 306,751.

SN 310,213. Diversified Products Corporation, Opelika, Ala. Filed Oct. 22, 1968.

ORBATRON

Owner of Reg. No. 760,846.
For Barbells and Dumbbells (Int. Cl. 28).
First use on or about Jan. 30, 1963.

SN 314,779. Topper Corporation, Elizabeth, N.J., by change of name from De Luxe Topper Corporation, Elizabeth, N.J. Filed Dec. 18, 1968.



For Toy Doll (Int. Cl. 28).
First use Nov. 15, 1968.

SN 325,073. Products of the Behavioral Sciences, Inc., Campbell, Calif. Filed Apr. 21, 1969.

CHROMINOES

For Equipment (or Apparatus) for Playing a Domino-Type Parlor Game (Int. Cl. 28).
First use Feb. 17, 1969.

SN 339,103. Model Products Corporation, Mount Clemens, Mich. Filed Sept. 29, 1969.



For Model Toy Kits (Int. Cl. 28).
First use in or prior to February 1968.

SN 339,396. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1969

PUDGY-FUDGY

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use July 30, 1969.

SN 339,397. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1969.

HAPPY GO-ROUND

For Toy Merry-Go-Round (Int. Cl. 28).
First use July 30, 1969.

SN 339,398. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1969.

FOOT-MOBILE

For Toy Vehicle (Int. Cl. 28).
First use July 31, 1969.

SN 339,399. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1969.

THE SPOILERS

For Toy Automobiles (Int. Cl. 28).
First use Aug. 5, 1969.

SN 339,509. Mattel, Inc., Hawthorne, Calif. Filed Oct. 2, 1969.

GALLIVANTER

For Toy Vehicle (Int. Cl. 28).
First use July 31, 1969.

SN 340,318. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

GOOEY CHOOEY

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,324. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

WET NOODLES

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 28, 1969.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 296,497. Amut S.p.A., Novara, Italy. Filed Apr. 25, 1968.

AMUT

Priority claimed under Sec. 44(d) on Italian application Filed Mar. 14, 1968; Reg. No. 231,183, dated Sept. 24, 1968.
For Machines for Extruding Plastic Materials (Int. Cl. 7).

SN 298,130. Kousei Industrial Co., Ltd., Aarakawa-ku, Tokyo, Japan. Filed May 14, 1968.

KOCO

For Kitchen Utensils—Namely, 3-Prong Fork, 2-Prong Fork, Turners, Slotted Spoon, Spatula, Potato Masher, Ladles, Skimmers, and Basting Spoon (Int. Cl. 7).
First use on or about Aug. 1, 1966; in commerce on or about Aug. 1, 1966.

SN 301,636. Morrison and Morrison, The Dalles, Oreg. Filed June 28, 1968.

MORRISON TRAILBLAZER

For Tractor-Type Earth Moving Apparatus Equipped With Backhoe and Bulldozer Blade, for Use Particularly in Trail Making in Rough Terrain (Int. Cl. 7).
First use May 5, 1967.

SN 302,884. FMC Corporation, San Jose, Calif. Filed July 17, 1968.



For Tractors and Attachments Therefor, for Snow Removal, Cultivating, Earth Plowing, Grading and Scarifying, Raking and Agricultural and Horticultural Spraying (Int. Cls. 7 and 12).
First use July 15, 1966.

SN 303,722. Welty-Way Products Incorporated, Cedar Rapids, Iowa. Filed July 26, 1968.

COPILBO

For Pipe Elbow Bending Machines (Int. Cl. 7).
First use June 27, 1963.

SN 307,791. Keltec, Inc., Elkhart, Ind. Filed Aug. 21, 1968. Owner of Reg. No. 653,540.

MAGI CARPET ALADDIN

For Dry Foam Rug Shampoo Machines (Int. Cl. 7).
First use Apr. 20, 1968.

SN 308,809. Polypump Limited, Toronto, Canada. Filed Oct. 3, 1968.

POLYPUMP

For Liquid Dispensing Pumps for Use With Bottles, Jars, and Similar Containers (Int. Cl. 7).
First use June 14, 1968.

SN 315,578. Modern Tube Bending & Manufacturing Company, Long Beach, Calif. Filed Jan. 2, 1969.

Avenger HEADERS

The word "Headers" is disclaimed apart from the mark as shown.
For Automotive Parts—Namely, Exhaust Headers (Int. Cl. 12).
First use on or about Nov. 20, 1968.
Subj. to Intf. with SN 317,986.

SN 317,061. K-M Products, Inc., Troy, Mich. Filed Jan. 21, 1969.

UTILI-PAK

For Hydraulic Power Units Comprising a Fluid Reservoir, Pump, and Control Units (Int. Cl. 7).
First use April 1962.

SN 317,062. K-M Products, Inc., Troy, Mich. Filed Jan. 21, 1969.

K/M

For Hydraulic Power Units Comprising a Fluid Reservoir, Pump, and Control Units (Int. Cl. 7).
First use April 1962.

SN 317,940. Farrington Business Machines Corporation, Springfield, Va. Filed Jan. 30, 1969.

TOLERATOR

For Machine for Imprinting Credit Cards, Address Plates, and the Like; Roller Platen Therefor; and Replacement Parts for Use Therewith (Int. Cl. 7).
First use Aug. 21, 1968.

SN 319,715. Lowell Corporation, Worcester, Mass. Filed Feb 20, 1969.

T-TORKER

For Wrenches (Int. Cl. 8).
First use on or about July 1, 1968.

SN 321,852. Republic Corporation, Chatsworth, Calif. Filed Mar. 14, 1969.

MONOCON

For Overhead Conveyors (Int. Cl. 7).
First use Aug. 9, 1968.

SN 322,740. Star-New Era, Inc., South Hackensack, N.J., by change of name from Powers & Eaton Industries, Inc., South Hackensack, N.J. Filed Mar. 25, 1969.

SELECTRO-MATIC

For Quadding Mechanism for Type Setting, Type Casting Machines, and Parts Thereof (Int. Cl. 7).
First use about January 1954.

SN 322,879. Lear Siegler, Inc., Salem, Ill. Filed Mar. 26, 1969.

POWER-VAC

For Automobile Body and Frame Repair Equipment—Namely, Portable Force Applicator Devices (Int. Cl. 7).
First use Dec. 8, 1968.

SN 325,027. Fresh-Flo Corporation, Adell, Wis. Filed Apr 21, 1969.

Fresh-flo

For Centrifugal Water Aerators (Int. Cl. 7).
First use on or about Feb. 1, 1963.

SN 325,858. The Falls Engineering & Machine Co., Cuyahoga Falls, Ohio. Filed Apr. 29, 1969.

FEMCO

Owner of Reg. Nos. 440,312 and 700,488.
For Roller Die Cutting Machines, Foam Fabricating Machines, and V-Belt Manufacturing Machines (Int. Cl. 7).
First use in or about February 1969.

SN 327,161. The New Home Sewing Machine Company, Inc., Santa Monica, Calif. Filed May 13, 1969.

NEW IDEAL

For Sewing Machines and Attachments (Int. Cl. 7).
First use February 1881.

SN 327,162. The New Home Sewing Machine Company, Inc., Santa Monica, Calif. Filed May 13, 1969.

PAN AMERICAN

For Sewing Machines and Attachments (Int. Cl. 7).
First use Nov. 15, 1890.

SN 327,909. Kaspar Wire Works, Incorporated, Shiner, Tex. Filed May 21, 1969.

"K-MATIC"

For Coin-Operated Vending Machines (Int. Cl. 9).
First use May 9, 1969.

SN 328,597. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed May 28, 1969.

SEXAUER PRODUCTS

No claim is made to the word "Products," apart from the mark as shown, without waiving of any common law rights. Owner of Reg. Nos. 375,977, 533,533, 861,261, and others.
For Adaptors for Bibb Seat Forming Tools, Air Valve Keys, Basin Wrenches, Combination Tool Comprising Bibb Screw Gauges With Screw Drivers and Key Ring, Bibb Seat Forming Tool and Replacement Parts (Said Replacement Parts Comprising Shafts and Handles, Abutment Collars, Set Screws, Feed Wheels, Adaptors, Cones, and Cutters), Ball Cock Reseating Tool, Compass Saw Blades, Compass Saw Handles, Cutter Wheel Rollers, Cutter Wheel Pins, Cutters for Bibb Seat Tool, Drills for Bibb Screws, Extension Shafts for Bibb Seat Forming Tool, Faucet Seat Cutters, Flush Valve Reforming Tools, Hack Saw Blades, Hack Saw Frames, Inside Spud Wrenches, Pliers, Plumber Saws, Plumber Bits, Pipe Cutter Rollers, Refill Tube Extractor, Attachments Used With Bibb Seat Tools for Reforming Faucet Barrel Seats, Saddle Seat Cutters, Spud Wrenches, Tap and Die Sets, Vises and Wrenches for Sloan Valves, Wheels for Pipe Cutters, Wrench Straps, Force Cups, Toilet Bowl Force Cups, Closet Augers, Snakes and Cranks, and Snappy Wrenches (Int. Cls. 7 and 8).
First use during 1966; since 1921 as to "Sexauer."

SN 329,357. Hudson Industries, Inc., Detroit, Mich. Filed June 6, 1969.

HYDRASONIC

For Water Carbonators (Int. Cl. 7).
First use on or about Aug. 30, 1967.

SN 329,373. Wm. W. Meyer & Sons, Inc., Skokie, Ill. Filed June 6, 1969.

FIBREKING

For Insulation Blowing Machines (Int. Cl. 7).
First use Aug. 10, 1967.

SN 331,461. Williams Patent Crusher and Pulverizer Co., Inc., St. Louis, Mo. Filed June 30, 1969.

NUGGETIZER

For Shredders for Scrap Material and the Like (Int. Cl. 7).
First use Apr. 8, 1969.

SN 334,027. Purex Corporation, Ltd., d.b.a. Turco Products, Inc., Lakewood, Calif. Filed July 31, 1969.

ROTO-JET

Owner of Reg. No. 663,099.
For Hydraulic Jet Cleaners With Rotating Heads for Automatically Cleaning the Interior of Tanks (Int. Cl. 7).
First use on or about Oct. 12, 1951.

Class 24—Laundry Appliances and Machines

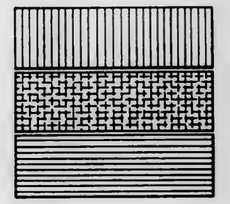
SN 320,409. John G. Weingarten, Springfield, Pa. Filed Mar. 3, 1969.

KORRECT KOLLAR

Owner of Reg. No. 747,091.
For Clothes Pressing Machines (Int. Cl. 7).
First use Apr. 6, 1960.

Class 26—Measuring and Scientific Appliances

SN 299,370. The National Cash Register Company, Dayton, Ohio. Filed May 29, 1968.



The drawing is lined for the colors red, yellow, and blue.
For Electronic Data Processing Systems, Comprising Central Processors, Memory Units, Controllers, High Speed Printers, Card Readers, and Tape Handlers (Int. Cl. 9).
First use Nov. 6, 1967.

SN 310,873. Exaphot Optik GmbH, Berlin, Germany. Filed Oct. 30, 1968.

EXAMAT

Owner of German Reg. No. 748,577, dated May 9, 1961.
For Optical Equipment—Namely, Interior Photometer Prisms (Int. Cl. 9).
First use July 1967; in commerce on or about Sept. 15, 1968.

SN 320,460. Dynatech Corporation, Cambridge, Mass. Filed Mar. 3, 1969.

DYNATECH

For Thermophysical Property Measuring Equipment, Instruments for Performing Serial Dilutions, Thermal Radiation Equipment, Radiometers, and Emissivity and Absorptivity Measuring Devices (Int. Cl. 9).
First use Mar. 20, 1967.

SN 323,372. Esterline Corporation, New York, N.Y., assignee of Scientific Columbus, Inc., Columbus, Ohio. Filed Apr. 1, 1969.

Halltiplier

For Apparatus and Solid State Instruments Used for Sensing, Measuring and Testing Various Quantities and Characteristics of Electrical Power—Namely, Watt Transducers, VAR Transducers, Voltage Transducers and Current Transducers (Int. Cl. 9).
First use May 3, 1963.

SN 324,689. Spiratone, Inc., Flushing, N.Y. Filed Apr. 28, 1969.

STROBE MASTER

Applicant disclaims the word "Strobe" apart from the mark as shown.
For Electronic Flash Units and the Carrying Cases Therefor (Int. Cl. 9).
First use Dec. 20, 1965.

SN 328,169. Fedtro, Inc., Rockville Centre, N.Y. Filed May 23, 1969.

INSTAMATIC

For Suction Mounted Compasses and Thermal Indicators for Use With Automobiles, Trucks, and Boats (Int. Cl. 9).
First use Mar. 27, 1969.

Class 28 — Jewelry and Precious-Metal Ware

SN 334,970. Big M, L and S Import & Export Company, San Francisco, Calif. Filed Aug. 11, 1969.

L & S

For Jewelry (Int. Cl. 14).
First use May 27, 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 313,190. New Broom, Inc., Asheboro, N.C. Filed Nov. 27, 1968.

AUTO-WHIS-KIT

For Combination Automobile Windshield Scrapers, Coin Receptacles, and Brushes (Int. Cl. 21).
First use Apr. 8, 1968.

SN 340,093. Lever Brothers Company, New York, N.Y. Filed Oct. 8, 1969.

CLOSE-UP

Owner of Reg. Nos. 620,093, 813,333, and 818,419.
For Toothbrushes and Hairbrushes (Int. Cl. 21).
First use Sept. 30, 1969.

SN 340,094. Lever Brothers Company, New York, N.Y. Filed Oct. 8, 1969.

STYLE LINE

Owner of Reg. No. 837,535.
For Toothbrushes and Hairbrushes (Int. Cl. 21).
First use Feb. 27, 1967.

SN 340,095. Lever Brothers Company, New York, N.Y. Filed Oct. 8, 1969.

TWICE AS NICE

Owner of Reg. No. 815,608.
For Hairbrushes (Int. Cl. 21).
First use Sept. 30, 1969.

Class 31 — Filters and Refrigerators

SN 322,559. Robert Conrad, d.b.a. Skim-Lite Mfg., Burbank, Calif. Filed Mar. 24, 1969.

VIRTI-CIRCLE

For Swimming Pool Filters (Int. Cl. 11).
First use July 10, 1968.

Class 32 — Furniture and Upholstery

SN 323,809. Flex-O-Lators, Inc., Carthage, Mo. Filed Apr. 7, 1969.

XTRU

For Rubber Loop Suspenders for Mounting Spring Decks in Upholstered Furniture Assemblies (Int. Cl. 20).
First use May 16, 1968.

SN 329,883. G. W. Onthank Company, Des Moines, Iowa. Filed June 12, 1969.

Capitol Furniture

The term "Furniture" is disclaimed apart from the mark as shown. Owner of Reg. No. 866,460.
For Dining Room, Living Room, and Bedroom Furniture, Bedroom Sets, Dinette Sets, and Occasional Chairs (Int. Cl. 20).
First use May 14, 1969.

SN 332,103. Hamilton Cosco, Inc., Columbus, Ind. Filed July 9, 1969.

EZE-arm

For Tablet Arm Chairs (Int. Cl. 20).
First use May 20, 1969.

SN 332,105. Independent Stave Company, Inc., d.b.a. Benjamin Harrison Furniture, Lebanon, Mo. Filed July 9, 1969.

BH

For Bedroom Furniture (Int. Cl. 20).
First use Apr. 30, 1969.

SN 332,147. Schnadig Corporation, Chicago, Ill. Filed July 9, 1969.

PILOREST

Owner of Reg. No. 514,437.
For Upholstered Furniture—Namely, Sofas, Couches, Chairs, and Recliners (Int. Cl. 20).
First use on or before June 1, 1935.

SN 332,460. Howard Damron, d.b.a. Sleepaire Mattress Co., Santa Monica, Calif. Filed July 14, 1969.

Heavenly Rest

For Mattresses (Int. Cl. 20).
First use 1950.

SN 332,461. Howard Damron, d.b.a. Sleepaire Mattress Co., Santa Monica, Calif. Filed July 14, 1969.

The MANOR

For Mattresses (Int. Cl. 20).
First use 1950.

SN 332,611. The Englander Company, Inc., New York, N.Y. Filed July 15, 1969.

TOWN-HOUSE

For Mattresses and Box Springs (Int. Cl. 20).
First use on or about May 31, 1940.

SN 332,823. Harris-Hub Company, Inc., Harvey, Ill. Filed July 17, 1969.

INST-A-MATIC

For Bed Frames (Int. Cl. 20).
First use June 4, 1969.

SN 333,086. The Berkline Corporation, West Springfield, Mass. Filed July 22, 1969.

FEATHER-GLIDE

For Chairs (Int. Cl. 20).
First use June 17, 1969.

SN 333,087. The Berkline Corporation, West Springfield, Mass. Filed July 22, 1969.

LO-CUBE-PAC

For Chairs (Int. Cl. 20).
First use June 17, 1969.

SN 335,867. Illumino Devices, Inc., New York, N.Y. Filed Aug. 21, 1969.

ILLUMINO

For Combined Lamp and Display Rack (Int. Cl. 20).
First use June 26, 1969.

SN 337,677. National Coronet, Inc., d.b.a. Illinois Shade Division of National Coronet, Inc., Chicago Heights, Ill. Filed Sept. 11, 1969.

LITE SHIELD ROYALE

For Window Shades (Int. Cl. 20).
First use July 10, 1969.

Class 33 — Glassware

SN 315,753. Glass Containers Corporation, Fullerton, Calif. Filed Jan. 3, 1969.

PERMANNEAL

For Protective Coating Sold Only as Part of Glass Bottles (Int. Cl. 21).
First use December 1967.

SN 341,114. PPG Industries, Inc., Pittsburgh, Pa. Filed Oct. 20, 1969.

VERTIGLAS

For Flat Glass (Int. Cl. 21).
First use at least as early as Oct. 2, 1969.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 288,410. National Supply Distributors Association, Inc., Boston, Mass. Filed Dec. 13, 1967.

Regency

For Water Heaters (Int. Cl. 11).
First use January 1960.

SN 291,171. Mobil Temp, Inc., Brighton, Mich. Filed Feb. 15, 1968.

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For Gas Operated Water Heaters for Use in Mobile Homes (Int. Cl. 11).
First use Jan. 31, 1966.

SN 297,212. Plastics, Inc., St. Paul, Minn. Filed May 2, 1968.

PERMAGLAZED

For Globe for a Source of Light Having an Ultra-Violet Protective Treatment on the Outer Surface (Int. Cl. 11).
First use Mar. 27, 1968.

SN 299,923. R. P. Adams Company, Inc., Buffalo, N.Y. Filed June 7, 1968.

ECONO-DRI

Owner of Reg. No. 729,457.
For Industrial Gas Dryers (Int. Cl. 11).
First use May 15, 1968.

SN 313,926. The Garrett Corporation, Los Angeles, Calif. Filed Dec. 9, 1968.

AIRESEARCH

For Heat Transfer Apparatus Comprising Coil, Tube, and Plate-Fin Heat Exchangers for Liquids and Gases; Gas Fired Steam Generating Plants; Steam Boilers; Steam Condensers, Engine Exhaust Heat Recuperators and Regenerators; Ventilating Apparatus Comprising Fans and Blowers and Controls Therefor; Air Conditioners and Controls Therefor; Space Capsule and Space Suit Pressurization and Ventilation Systems and Equipment and Component Parts Thereof; Carbon Dioxide and Contaminant Removal Equipment for Air and Water Purification; Odor and Water Absorption Equipment for Ventilating Air; Thermoelectric Heat Pump Systems and Components; Thermoelectric Cooling Systems and Components; Total Energy Systems and Components for Space Heating, Lighting and Ventilating; and Portable and Transportable Systems and Components for Providing Ventilation and Heating or Cooling of Compartments of Grounded Aircraft (Int. Cl. 11).
First use Oct. 9, 1940.

SN 315,734. Combustion and Power Equipment Ltd., Montreal, Quebec, Canada. Filed Jan. 3, 1969.

COMPOWER

The drawing is lined for the color red, which color is claimed as a feature of the mark. Priority claimed under Sec. 44(d) on Canadian application filed Sept. 30, 1968; Reg. No. 165,218, dated Sept. 12, 1969. Owner of U.S. Reg. No. 840,470.
For Oil Pumping, Heating and Straining Sets Comprising Various Combinations of Fuel Oil Pumps, Motor or Turbine Drives, Suction Strainers and Discharge Strainers, Steam or Electrical Heaters, and Associated Structural Framework, Piping Connections and Occasionally Wiring; Oil and Gas Burner Packages and Fuel Burning Systems Comprising Various Combinations of Burners, Burner Fans, Burner Steel Windboxes and Combustion Control Panels (Int. Cl. 11).

SN 318,719. Sioux Steam Cleaner Corporation, Beresford, S. Dak. Filed Feb. 10, 1969.

STEAM-FLO

For Steam Vapor Generator (Int. Cl. 7).
First use in or about 1939.

SN 323,374. Sheller-Globe Corporation, Toledo, Ohio. Filed Apr. 1, 1969.

REDYHOT

For Water Heating and Dispensing Units for Providing an Instant Supply of Hot Water for the Preparation of Food Products Such as Coffee, Tea, and Soup, for Example (Int. Cl. 11).
First use on or about May 14, 1968.

SN 327,163. Oakland Metal Fabricators, Inc., Warren, Mich. Filed May 13, 1969.

KWILTHERM

For Electrically Heated Dip Tanks Used To Contain Heated Liquid Material Such as Molten Plastic Compounds (Int. Cl. 11).
First use during September 1949.

SN 332,765. Matthiessen & Hegeler Zinc Company, La Salle, Ill. Filed July 16, 1969.

ZINAL

For Soldering Wire for Aluminum for Use in Manufacturing Processes (Int. Cl. 6).
First use on or prior to Nov. 15, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 307,122. Muskegon Piston Ring Company, Muskegon, Mich. Filed Sept. 11, 1968.

QUESTOR

For Automotive Equipment—Namely, Piston Rings, Sealing Rings, Mechanical Shaft Seals, Rubber Sealing Rings, and Carbon Sealing Rings (Int. Cl. 12).
First use on or about Aug. 19, 1968.
Subj. to Intf. with SN 309,925.

SN 316,064. American Biltrite Rubber Co., Inc., Chelsea, Mass. Filed Jan. 8, 1969.

PERFORMER

For General Industrial Air Hose (Int. Cl. 17).
First use June 30, 1959.

SN 318,757. Concorde Rubber Company, Inc., Boston, Mass. Filed Feb. 10, 1969.

LE HAVRE

For Tires for Use on Passenger Cars, Trucks, Earth Movers, Road Graders, and Industrial and Farm Vehicles (Int. Cl. 12).
First use Jan. 15, 1969.

SN 328,052. The Hercules Tire & Rubber Company, Findlay, Ohio. Filed May 22, 1969.

RAY BELT

Applicant disclaims rights in the word "Belt" apart from the mark as shown, except that applicant reserves any common law rights in unto the same.
For Pneumatic Tires and Tubes (Int. Cl. 12).
First use Mar. 11, 1969, on tires.

SN 329,256. Michelin Tire Corporation, Lake Success, N.Y. Filed June 5, 1969.

MICHELIN

For Pneumatic Tires and Inner Tubes for Vehicles (Int. Cl. 12).
First use at least as early as 1907.

SN 331,455. Union Oil Company of California, Los Angeles, Calif. Filed June 30, 1969.

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Owner of Reg. Nos. 728,547, 850,791, and others.
For Vehicle Tires (Int. Cl. 12).
First use May 1, 1969.

Class 36 — Musical Instruments and Supplies

SN 288,232. C. William Randolph, Chattanooga, Tenn. Filed Jan. 5, 1968.

THE JOYFUL SOUND

Ownership of the word "Sound" is disclaimed apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use at least as early as Aug. 1, 1967.

SN 317,548. Frankische Musikinstrumentenerzeugung Fred Wilfer KG, Bubenreuth, Erlangen, Germany. Filed Jan. 27, 1969.

FRAMUS

For Musical Instruments and Parts—Namely, Violins, Cellos, Violas, Double-Basses, Guitars, Mandolins, Lutes, Zithers, Balalaikas, Harps, Ukuleles, Trumpets, Clarinets, Oboes, Bassoons, Trombones, Horns, Pistons, Flutes, Saxophones, Xylophones, Mouth-Organs, Concertinas, Percussion Instruments, Chimes, Drums, as Well as Parts Thereof, Violin Bows, Cases for Musical Instruments, Strings, Rosins, Tuning and Bending Bridges, Finger Boards, Music Stands and Music Clips, Tuning Forks, Crossbars, Stops, Mouthpieces, Mutes; Electric Guitars, Electric Banjos, Electric Basses, Electric Mandolins; Electric Accessories for Musical Instruments—Namely, Amplifiers and Resounders, Music Boxes, Phonographs, Phonograph Records, Tape Recorders and Reproducers (Int. Cls. 9 and 15).
First use 1948; in commerce 1951.

SN 320,970. Pye Records Limited, London, England. Filed Mar. 6, 1969.

MARBLE ARCH

Priority claimed under Sec. 44(d) on British Reg. No. 931,097, dated Sept. 18, 1968.
For Phonograph Records, Blank Discs, Magnetic Tapes, Prerecorded Magnetic Tapes, and Prerecorded Sound Wires (Int. Cl. 9).

SN 321,935. Fred D. Hinger, Fort Lee, N.J. Filed Mar. 17, 1969.

HINGER

Owner of Reg. No. 772,830.
For Musical Instruments—Namely, Timpani and Other Drums, Mallets for Playing Upon Drums and Other Percussion Instruments, and Parts Thereof (Int. Cl. 15).
First use on or about Jan. 30, 1958, on drum mallets.

SN 321,936. Fred D. Hinger, Fort Lee, N.J. Filed Mar. 17, 1969.

TOUCH-TONE

Owner of Reg. No. 772,831.
For Musical Instruments—Namely, Timpani and Other Drums, Mallets for Playing Upon Drums and Other Percussion Instruments, and Parts Thereof (Int. Cl. 15).
First use Nov. 21, 1962, on drum mallets.

SN 327,346. Audiomasters Corporation, Sepulveda, Calif. Filed May 15, 1969.



Applicant disclaims the representation of a phonograph record apart from the mark as shown.
For Prerecorded Magnetic Tapes (Int. Cl. 9).
First use Jan. 27, 1967.

Class 37—Paper and Stationery

SN 322,626. Societe d'Exploitation de la S.A. Henri Malsert, Lyon (Rhone), France. Filed Mar. 24, 1969.

OBLIQUE

For Filing Folders, Indexing Plates or Reading Holders, Indexing Tapes and Staples for Such Folders; Supporting Rails, Hoods and Rods for Such Folders (Int. Cl. 16).
First use 1963; in commerce 1963.

SN 327,567. Villager Industries, Inc., Philadelphia, Pa. Filed May 19, 1969.

THE VILLAGER

Owner of Reg. Nos. 702,965, 867,611, and others.
For Writing Paper (Int. Cl. 16).
First use Jan. 2, 1968.

SN 337,143. Standard Packaging Corporation, Stamford, Conn. Filed Sept. 5, 1969.

FLEXFORM

For Plastic Film for Packaging (Int. Cl. 16).
First use at least as early as July 28, 1966.

SN 337,756. Neypaco Paper Corporation, New York, N.Y. Filed Sept. 12, 1969.



For Paper for Tracing, Writing, Drawing, and Printing Purposes and for Use as a Base Paper To Receive a Diazo or Other Emulsion or Photographic Coating, Drafting Cloth and Film (Int. Cl. 16).
First use in or about 1931 on writing and drawing paper.

Class 38—Prints and Publications

SN 279,879. United States Lawn Tennis Association, New York, N.Y. Filed Sept. 7, 1967.

Tennis U.S.A.

For Monthly Tennis Magazine (Int. Cl. 16).
First use January 1964.

SN 297,052. F & W Publishing Corporation, Cincinnati, Ohio. Filed May 1, 1968.

WRITER'S DIGEST

For Magazine (Int. Cl. 16).
First use Jan. 15, 1921.

SN 298,928. E.B.S., Inc., Lynbrook, N.Y. Filed May 23, 1968.

TEXABIND

For Bindings Which Are Incorporated in Books (Int. Cl. 16).
First use Sept. 15, 1967.

SN 298,952. Norcross, Inc., New York, N.Y. Filed May 23, 1968.

HANG-UPS

For Printed Cards Bearing Messages for Display (Int. Cl. 16).
First use Apr. 19, 1968.

SN 301,971. Shield International Corporation, Washington, D.C. Filed July 3, 1968.

VISA

For Magazine-Directory (Int. Cl. 16).
First use July 15, 1965.

SN 306,077. Schoolhouse Industries, Inc., Farmingdale, N.Y. Filed Aug. 27, 1968.

KEY-LAB

For Teaching Devices—Namely, Printed Cards, Wheels, Trays, Holders and Work Books Containing Work Sheets, and Cabinets for Holding the Foregoing (Int. Cl. 16).
First use Mar. 6, 1968.

SN 307,315. John Danenhower and Ethel Mitchell Danenhower (partnership), Old Lyme, Conn. Filed Sept. 13, 1968.

THE BACCHUS JOURNAL

For Magazine Published Periodically—Namely, an International Magazine on Wines and Spirits (Int. Cl. 16).
First use June 9, 1966.

SN 313,730. Schawk Graphics, Inc., Chicago, Ill. Filed Dec. 5, 1968.



For Lithographic Film, and Lithographic Color Separation Film (Int. Cl. 1).
First use in or about October 1967.

SN 315,533. Charles Bouman, d.b.a. Applications Programming Co., Moorestown, N.J. Filed Jan. 2, 1969.

DYNACHART

For Automatic Flow Charts (Int. Cl. 16).
First use Mar. 20, 1968.

SN 321,399. Parents' Magazine Enterprises, Inc., New York, N.Y. Filed Mar. 11, 1969.

THE CULTURAL LIBRARY

Owner of Reg. No. 755,537.
For Series of Books (Int. Cl. 16).
First use Feb. 20, 1965.

SN 325,982. Maremont Corporation, d.b.a. Saco-Lowell and Saco-Lowell Maremont, Chicago, Ill. Filed Apr. 30, 1969.

SACO-LOWELL REPLACEMENT PARTS NEWS

The words "Replacement," "Parts," and "News" are disclaimed apart from the mark as shown. Owner of Reg. No. 533,568.
For Periodically Published Paper Pertaining to Textile Machinery (Int. Cl. 16).
First use on or about Jan. 15, 1966.

SN 327,008. Dexter Press, Inc., West Nyack, N.Y. Filed May 12, 1969.

WIGGLE CARD

Applicant disclaims the word "Card" apart from the mark as shown.
For Picture Post Cards (Int. Cl. 16).
First use Apr. 17, 1969.

SN 327,970. Technology Communication, Inc., New York, N.Y. Filed May 21, 1969.

INNOVATION

For Monthly Management Magazine Directed to the Management of Advanced Technology (Int. Cl. 16).
First use Jan. 25, 1969.

SN 330,387. Independent Grocers' Alliance Distributing Co., Chicago, Ill. Filed June 18, 1969.

COOKING CAN BE FUN

For Newspaper or Magazine Column Devoted to the Art of Cooking (Int. Cl. 16).
First use November 1968.

SN 332,410. Cord Communications Corporation, New York, N.Y. Filed July 14, 1969.



For Magazines Directed to Recreational Activities (Int. Cl. 16).
First use Mar. 10, 1969.

SN 337,117. Ziff-Davis Publishing Company, New York, N.Y. Filed Sept. 4, 1969.



For Magazine (Int. Cl. 16).
First use January 1944.

SN 340,576. The Thomas More Association, Chicago, Ill. Filed Oct. 13, 1969.

YOU

For Psychology and Religious Newsletter Published Semi-Monthly (Int. Cl. 16).
First use May 7, 1969.

SN 340,654. Commerce Publishing Company, St. Louis, Mo. Filed Oct. 14, 1969.

American AGENT & BROKER

For Trade Magazine Published Periodically (Int. Cl. 16).
First use Oct. 6, 1969.

SN 340,790. Holy Spirit Teaching Mission, Inc., Fort Lauderdale, Fla. Filed Oct. 15, 1969.

NEW WINE

For Religious Magazine Published From Time to Time (Int. Cl. 16).
First use May 19, 1969.

Class 39 — Clothing

SN 255,027. Standard Garments, Inc., Baltimore, Md. Filed Sept. 23, 1966.

IVY *Classics*

For Men's and Boys' Sport Shirts (Int. Cl. 25).
First use Aug. 30, 1966.

SN 287,910. Carlo Gruber, Graz-Gosting, Austria. Filed Jan. 15, 1968.



Owner of Austrian Reg. No. 60,122, dated Aug. 17, 1967.
For Knitted Pullovers, Cardigans, Vests, and Caps (Int. Cl. 25).

SN 304,000. Rickie Tickie, Inc., Rolling Hills Estates, Calif., assignee of Donald R. Kracke, d.b.a. Rickie Tickie Stickies, Long Beach, Calif. Filed July 31, 1968.

CROWNS

For Novelty Felt Hats, Not Crown-Shaped (Int. Cl. 25).
First use July 17, 1968.

SN 304,122. Randolph Manufacturing Co., Inc. (Delaware corporation), Randolph, Mass., assignee of Randolph Manufacturing Co., Inc. (Massachusetts corporation), Randolph, Mass. Filed Aug. 1, 1968.

RANDY

Owner of Reg. Nos. 584,777, 846,310, and others.
For Canvas Footwear—Namely, Tennis Shoes, Sneakers, Basketball Shoes, and Boating Shoes (Int. Cl. 25).
First use Jan. 1, 1950.

SN 314,055. De Wan Manufacturing Corporation, Milwaukee, Wis. Filed Dec. 10, 1968.

MR. JAX "FOR MEN YOUNG"

Applicant disclaims right to exclusive use of the phrase "For Men Young" apart from the mark as shown.
For Water Repellent Weather Protective Jackets (Int. Cl. 25).
First use September 1967.

SN 314,680. Kiki Undies Corp., New York, N.Y. Filed Dec. 17, 1968.

KIKI

For Sleepwear, Underwear, Foundation Garments, and Hosiery (Int. Cl. 25).
First use in or about March 1956.

SN 314,813. Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. Filed Dec. 18, 1968.

PUCKER-UP

For Garter Panty (Int. Cl. 25).
First use May 1, 1968.

SN 314,866. Barad Lingerie Co., St. Louis, Mo. Filed Dec. 19, 1968.

THINGS BY BARAD

For Women's Lounge Wear—Namely, Lounging Pajamas, House Coats, and Robes and Sleep Wear (Int. Cl. 25).
First use Nov. 22, 1968.

SN 315,628. International Playtex Corporation, Dover, Del. Filed Dec. 30, 1968.



The mark consists of a representation of a container for the goods. Applicant disclaims the representation of the girdle apart from the mark as shown. The drawing is lined for the color violet.
For Girdles (Int. Cl. 25).
First use Nov. 6, 1968.

SN 317,020. L. B. Evans' Son Company, Wakefield, Mass. Filed Jan. 21, 1969.

SAHARA

For Men's and Boys' Shoes and Slippers (Int. Cl. 25).
First use on or about Jan. 15, 1953.

SN 317,974. Scott Paper Company, Philadelphia, Pa. Filed Jan. 30, 1969.

TERRI

For Disposable Diapers (Int. Cl. 25).
First use Jan. 22, 1969.

SN 318,755. Comain Development Corporation, New York, N.Y. Filed Feb. 10, 1969.



The drawing is lined for the color gold.
For Shirts (Int. Cl. 25).
First use Jan. 10, 1969.

SN 319,845. The Enro Shirt Company, Inc., Louisville, Ky. Filed Feb. 24, 1969.

ENRO PAJAMABUILDERS

Applicant disclaims exclusive use of the word "Pajamabuilders" apart from the mark as shown. Owner of Reg. No. 162,068.
For Men's, Women's, and Children's Pajamas and Robes (Int. Cl. 25).
First use Nov. 30, 1963.

SN 320,030. Caribbean Shoe Corporation, Miami, Fla. Filed Feb. 25, 1969.



For Shoes (Int. Cl. 25).
First use Sept. 30, 1968.

SN 320,448. Defender, Inc., Philadelphia, Pa. Filed Mar. 3, 1969.

DEFENDER

Owner of Reg. No. 722,635.
For Racing and Tank Suits, Gymnastic Suits, Wrestling Suits, Warm-Up Suits, and Underwear With Built-In Supporters (Int. Cl. 25).
First use on or about Feb. 13, 1959.

SN 323,383. The Suit Outlet, Inc., Graham, N.C. Filed Apr. 1, 1969.



For Men's Suits, Sport Coats, Pants, Shirts, Sweaters, and Ties (Int. Cl. 25).
First use Aug. 31, 1968.

SN 323,822. Jofranst Corporation, Los Angeles, Calif. Filed Apr. 7, 1969.

BIG DEALS

For Men's, Women's, and Children's Footwear—Namely, Shoes, Sandals, Slippers, and After-Ski Boots (Int. Cl. 25).
First use Feb. 21, 1969.

SN 325,604. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Apr. 25, 1969.

CESARE LARINI E FIGLIO

"Cesare Larini" is the name of a living individual whose consent is of record. Owner of Reg. Nos. 769,975 and 769,979.
For Men's Suits (Int. Cl. 25).
First use on or about Sept. 28, 1962.

SN 326,162. The Williams Manufacturing Company, Portsmouth, Ohio. Filed May 1, 1969.

THE GROUP

For Shoes (Int. Cl. 25).
First use Apr. 24, 1969.

SN 327,186. Young Bazaar Corp., New York, N.Y. Filed May 13, 1969.

YOUNG BAZAAR

For Children's and Ladies' Wearing Apparel—Namely, Dresses, Blouses, Shorts, Slacks, Sweaters, Skirts, Overalls, Hats, Coats, and Jackets (Int. Cl. 25).
First use Apr. 2, 1969.

SN 327,609. Eagle Clothes, Inc., New York, N.Y. Filed May 19, 1969.



The words "Coats" and "Classic" are disclaimed apart from the mark as shown. Owner of Reg. No. 780,074.
For Wearing Apparel—Namely, Coats (Int. Cl. 25).
First use Feb. 1, 1963.

SN 327,892. Gunston, Inc., Richmond, Va. Filed May 21, 1969.

JOHNSON'S REGENCY

For Nylon Hosiery (Int. Cl. 25).
First use Sept. 13, 1967.

SN 328,532. Cobblers, Inc., Los Angeles, Calif. Filed May 28, 1969.

CALIFORNIA COBBLERS ARE MORE LOVE THAN LEATHER

Applicant disclaims the words "California" and "Leather" apart from the mark as shown. Owner of Reg. No. 559,333.
For Women's Footwear (Int. Cl. 25).
First use Feb. 2, 1969; on or about Oct. 16, 1939, as to "Cobblers"; on or prior to Nov. 19, 1942, as to "California Cobblers."

SN 330,336. Wolf's Enterprises, Inc., Pico Rivera, Calif. Filed June 18, 1969.

SEA WOLF

For Rubber-Soled Shoes (Int. Cl. 25).
First use May 26, 1969.

SN 331,229. G. C. Murphy Company, McKeesport, Pa. Filed June 27, 1969.

PELHAM

Owner of Reg. Nos. 512,150, 777,585, and 777,905.
For Men's and Boys' Shoes (Int. Cl. 25).
First use Dec. 30, 1966.

SN 333,815. Carter & Churchill Company, Inc., West Lebanon, N.H. Filed July 29, 1969.



For Ski Parkas, Stretch Pants, and Turtleneck Shirts (Int. Cl. 25).
First use Mar. 1,1968.

SN 335,262. Rink's Department Stores, Inc., Cleveland, Ohio. Filed Aug. 13, 1969.

RINK'S

Owner of Reg. No. 815,173.
For Men's Dress Shirts; Ladies' Dresses and Hosiery; and Boys' Sport Shirts (Int. Cl. 25).
First use Apr. 1, 1969.

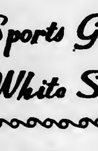
SN 335,264. Rink's Department Stores, Inc., Cleveland, Ohio. Filed Aug. 13, 1969.

RINK'S HI-CODE

Owner of Reg. No. 815,173.
For Men's and Boys' Wearing Apparel—Namely, Men's Work Clothes, Underwear, Work Socks, Dress Shirts, Casual Slacks, and Pajamas; and Boys' Dress Slacks, Blue Jeans, Dress Jeans, and Socks (Int. Cl. 25).
First use Dec. 15, 1968.

SN 335,557. Nancy T. Dubuque, Greenwich, Conn. Filed Aug. 18, 1969.

CASTOES



For Booties Intended To Cover Toes in a Cast (Int. Cl. 25).
First use May 1969.

SN 338,500. White Stag Manufacturing Co., Portland, Oreg. Filed Sept. 22, 1969.
Owner of Reg. Nos. 369,881, 868,238, and others.



For Girls' Slacks (Int. Cl. 25).
First use Oct. 14, 1962.

SN 338,507. White Stag Manufacturing Co., Portland, Oreg. Filed Sept. 22, 1969.



Owner of Reg. Nos. 369,881, 868,238, and others.
For Pants (Int. Cl. 25).
First use Aug. 11, 1961.

SN 338,514. White Stag Manufacturing Co., Portland, Oreg. Filed Sept. 22, 1969.



Owner of Reg. Nos. 369,881, 868,238, and others.
For Pants (Int. Cl. 25).
First use Mar. 9, 1962.

SN 339,280. Hat Corporation of America, New York, N.Y. Filed Sept. 30, 1969.

DERRINGER

For Hats for Men (Int. Cl. 25).
First use on or about Sept. 8, 1969.

Class 40—Fancy Goods, Furnishings, and Notions

SN 330,790. Trend Imports Corp., New York, N.Y. Filed June 23, 1969.

YOUR OWN THING

For False Hair Goods—Namely, Eyelashes, Mustaches, Sideburns, and Beards (Int. Cl. 26).
First use Apr. 10, 1969.

SN 338,713. Fashion Tress, Inc., Hialeah, Fla. Filed Sept. 24, 1969.

ASTRALON

For Ladies' Wigs and Hairpieces (Int. Cl. 26).
First use on or about Sept. 2, 1969.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 308,493. Klopman Mills, Inc., Rockleigh, N.J. Filed Sept. 30, 1968.

AMERICAN INDIAN

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as 1927.

SN 328,012. Okonite Company, Passaic, N.J. Filed May 22, 1969.

DOUBLE PLAY

For Rugs and Carpets (Int. Cl. 27).
First use in or about January 1969.

SN 332,737. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed July 16, 1969.

ACTIVA

For Fabric Woven of Yarns Having a Polymeric Coating (Int. Cl. 24).
First use June 11, 1969.

SN 336,867. Scarves by Vera, Inc., New York, N.Y. Filed Sept. 2, 1969.

VERATERRY

Owner of Reg. No. 775,874.
For Beach and Bath Towels and Hand Towels (Int. Cl. 24).
First use June 1, 1967.

SN 340,481. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 13, 1969.



Owner of Reg. No. 770,899.
For Greige and Finished Fabrics in the Piece for Use in Women's and Children's Apparel, and in Home Furnishings (Int. Cl. 24).
First use at least as early as Apr. 1, 1959.

Class 43—Thread and Yarn

SN 332,041. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed July 8, 1969.

ACTIVA

For Yarns Having a Polymeric Coating (Int. Cl. 23).
First use June 11, 1969.

Class 44—Dental, Medical, and Surgical Appliances

SN 282,836. Superior Autocatheter Enterprises, Inc., Hastings, Minn. Filed Oct. 18, 1967.

GarDent

For Disposable Soft-Plastic Teeth Guards for Use During Intubation and/or Anesthesia Procedures and Serving To Protect the Patient's Teeth Against Chipping and/or Breakage Through Pressure by the Laryngoscope (Int. Cl. 10).
First use Sept. 21, 1967.

SN 292,200. Holiday Pools, Inc., Spokane, Wash. Filed Feb. 29, 1968.

Aqua Sauna
Thermapeutic Pool by
holiday POOLS

No claim is made to the wording "Aqua Sauna," "Thermapeutic," "and "Pool" or "Pools" apart from the mark as shown.
For Prefabricated Therapy Swimming Pools (Int. Cl. 10).
First use May 18, 1967.

SN 319,311. The Hygienic Dental Manufacturing Company, Akron, Ohio. Filed Feb. 17, 1969.

STEDIBOLE

Owner of Reg. No. 587,100.
For Dental Mixing Receptacle and Vibrator Holder Used in the Practice of Prosthetic Dentistry (Int. Cl. 10).
First use in or about September 1968.

SN 329,585. Orflex, Incorporated, St. Louis, Mo. Filed June 10, 1969.



No exclusive right is claimed in the representation of an orthodontic band and the three orthodontic wires, apart from the mark as shown.
For Orthodontic Braces, Materials and Preformed Parts Therefor, Crowns, Instruments, and Trays (Int. Cl. 10).
First use in or about April 1960.
Subj. to Intf. with SN 325,637.

SN 331,288. Oxygen Equipment and Service Company, Chicago, Ill. Filed June 30, 1969.

Oxy-Vac-center

Owner of Reg. Nos. 873,120, 873,121, and 873,122.
For Vacuum and Oxygen Piping Systems, Vacuum Suction Units, and Vacuum Regulators, for Use in the Care and Treatment of Patients in Hospitals (Int. Cl. 10).
First use 1964.

SN 341,115. Parke, Davis & Company, Detroit, Mich. Filed Oct. 20, 1969.

READI-PADS

For Gauze Pads (Int. Cl. 5).
First use on or before Jan. 1, 1938.

Class 45—Soft Drinks and Carbonated Waters

SN 326,323. Wm. Scheele & Sons Co., Inc., Fort Wayne, Ind. Filed May 5, 1969.



Applicant disclaims, without prejudice to its common law rights, the word "Pop" apart from the mark as shown.
For Carbonated Artificially Flavored Soft Drinks (Int. Cl. 32).
First use Mar. 6, 1969.

Class 46—Foods and Ingredients of Foods

SN 290,894. Schweigert Meat Co., Minneapolis, Minn. Filed Feb. 12, 1968.

Schweigert

For Meat Products—Namely, Wieners, Salami, Bologna, Swedish Sausage, All Beef Link Sausages, Ham Sausage, and Summer Sausage (Int. Cl. 29).
First use 1947.

SN 296,462. Seaway Foods, Inc., Bedford Heights, Ohio. Filed Apr. 24, 1968.

TUG BOAT

For Canned, Bottled, Preserved, Fresh, Dried, and Frozen Foods—Namely, Fruits, Fruit Juices, Vegetables, Vegetable Juices, Fish, Meat, Relishes, Condiments in the Form of Mustard, Ketchup, Chili Sauce and Salt; Cooking Oils, Vegetable Shortening, Honey, Jams, Jellies and Preserves, Coffee, Tea, Cocoa, Salad Dressings, Spices, Unpopped Popcorn, Poultry; Baked Goods in the Form of Bread, Cookies and Cakes; Dairy Products in the Form of Milk, Cream, Ice Cream and Cheese; and Sandwich Spreads in the Form of Peanut Butter, Cheese Base and Fruit or Vegetable Mixtures; and Minced Meats (Int. Cls. 29, 30, 31, and 32).
First use Aug. 17, 1962.

SN 298,017. Lum's, Inc., d.b.a. Lums, Miami, Fla. Filed May 13, 1968.



Owner of Reg. Nos. 813,176 and 827,029.
For Fresh and Packaged Food Products—Namely, Frankfurter Sausages and a Ground Beef and Sauce Combination (Int. Cl. 29).
First use on or about Sept. 17, 1965.

SN 302,778. Thornton's Flavo-O-Rich Bakery, Inc., d.b.a. Thornton's Flav-O-Rich Bakery and Thornton's Bakery, Memphis, Tenn. Filed July 15, 1968.



Applicant disclaims the representation of a doughnut (per se), apart from the mark shown.
For Doughnuts and Doughnut Products, Pies, Coffeebuns, Eclairs, Pastries, Crullers, Muffins, Strudels, Honey Buns, Cakes, Danish Pastries, and Brownies (Int. Cl. 30).
First use June 25, 1963.

SN 306,372. Henningsen Foods, Inc., New York, N.Y. Filed Aug. 30, 1968.

HENNINGSEN

For Processed Egg Products—Namely, Powdered Eggs; and Prepared Meat Products (Int. Cl. 29).
First use about October 1941.

SN 309,192. Wilson & Co., Inc., Chicago, Ill., assignee of Textron Inc., Providence, R.I. Filed Oct. 8, 1968.

DRICOLD

For Prepacked Fresh Poultry (Int. Cl. 29).
First use Nov. 3, 1967.

SN 312,824. Tyson's Foods, Inc., Springdale, Ark. Filed Nov. 21, 1968.



Owner of Reg. No. 776,266.
For Crusted Poultry and Fish Which Is Deep Chilled to a Temperature of 28° Fahrenheit (Int. Cl. 29).
First use Aug. 13, 1968.

SN 313,726. Richardson-Merrell, S.A. de C.V., Mexico City, Mexico. Filed Dec. 5, 1968.

CHOCOMILK

Owner of Mexican Reg. No. 94,595, dated Oct. 17, 1958.
For Powders To Make Food Beverages and Ice Creams (Int. Cl. 30).

SN 314,461. W. F. Schrafft & Sons Corporation, d.b.a. Schrafft's, Boston, Mass. Filed Dec. 13, 1968.

CONCORD

For Candy (Int. Cl. 30).
First use Apr. 12, 1968.

SN 314,719. Donald G. Larson, d.b.a. Hopkins Food Equipment, Hopkins, Minn. Filed Dec. 17, 1968.

WONDEROASTER

For Food Seasonings of a Spice Nature (Int. Cl. 30).
First use Sept. 9, 1968.

SN 317,575. Kern Foods, Inc., City of Industry, Calif. Filed Jan. 27, 1969.

KERN'S

Owner of Reg. No. 541,315.
For Fruit Nectar and Fruit Juices, Tomato Puree, Tomato Sauce, Crushed Tomatoes, and Frozen Fruits (Int. Cls. 29, 30, and 32).
First use 1939 on fruit nectar and fruit juices.

SN 318,056. Lawry's Foods, Inc., Los Angeles, Calif. Filed Jan. 31, 1969.

TONIO'S

For Spaghetti Sauce Mix (Int. Cl. 30).
First use Dec. 23, 1968.

SN 318,815. Reddi Wip Co. of Phila., Inc., d.b.a. Glen Farms, Philadelphia, Pa. Filed Feb. 10, 1969.

COFFEE DREAM

Applicant disclaims "Coffee" apart from the mark as shown.
For Vegetable Fat Coffee Creamer (Int. Cl. 29).
First use January 1963.

SN 318,816. Reddi Wip Co. of Phila., Inc., d.b.a. Glen Farms, Philadelphia, Pa. Filed Feb. 10, 1969.



For Vegetable Oil Non-Dairy Coffee Whitener; Bakers' Toppings—Namely, Aerated Cream Toppings and Fillings and Coffee Cream (Int. Cl. 29).
First use Nov. 16, 1967.

SN 318,817. Reddi Wip Co. of Phila., Inc., d.b.a. Glen Farms, Philadelphia, Pa. Filed Feb. 10, 1969.

GLEN FARMS

For Vegetable Oil Non-Dairy Coffee Whitener; Bakers' Toppings—Namely, Aerated Cream Toppings and Fillings and Coffee Cream (Int. Cl. 29).
First use Nov. 16, 1967.

SN 320,048. Duffy-Mott Company, Inc., New York, N.Y. Filed Feb. 25, 1969.

FILL 'N CHILL

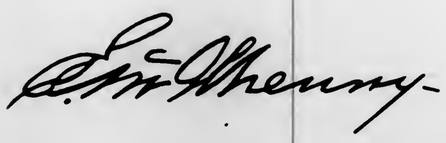
For Pie Filling of a Fruit Nature (Int. Cl. 29).
First use Feb. 5, 1969.

SN 321,651. Handy Pax, Inc., Boston, Mass. Filed Mar. 13, 1969.

HANDY PAX

The term "Pax" is disclaimed apart from the mark as a whole.
For Prepackaged Snack Sandwiches and Cookies (Int. Cls. 29 and 30).
First use September 1940.

SN 322,728. McIlhenny Company, Avery Island, La. Filed Mar. 25, 1969.



The mark is the stylized signature of "Edmund McIlhenny," now deceased. Owner of Reg. Nos. 280,910, 697,160, and others.
For Condiment—Namely, Liquid Pepper Seasoning (Int. Cl. 30).
First use at least as early as June 7, 1963; 1868 as to "McIlhenny."

SN 322,839. Crescent Food Co., Los Angeles, Calif. Filed Mar. 26, 1969.

CRESSIDA

For Cooked Ham, Blue Cheese, Romano Freshly Grated Cheese, Edam and Parmesan Cheese (Int. Cl. 29).
First use Jan. 2, 1969.

SN 322,866. Hershey Creamery Company, Harrisburg, Pa. Filed Mar. 26, 1969.

HERSHEY'S

Owner of Reg. No. 665,835.
For Ice Cream, Ice Milk, Sherbert, Water Ice, and Frozen Confections in Which Ice Cream, Ice Milk, Sherbert or Water Ice is a Component (Int. Cl. 30).
First use at least by 1910.

SN 323,249. Cal-Tex Citrus Juice, Inc., Houston, Tex. Filed Apr. 1, 1969.



Owner of Reg. No. 746,013.
For Orange Juice (Int. Cl. 32).
First use June 30, 1961.

SN 323,355. The Page Milk Company, Tulsa, Okla. Filed Apr. 1, 1969.

PAGE

Owner of Reg. Nos. 508,436, 791,109, and others.
For Fluid Whole and Low Fat Milk, Skim Milk, Buttermilk, Chocolate Flavored Milk, Whipping Cream, Half and Half, Cottage Cheese, Ice Milk Mix, Sour Cream, Non-Dairy Creamer, Imitation Milk, Chip Dip, and Frozen Dairy Confection Having Vegetable Oils Substituted for Milk Fats (Int. Cls. 29 and 30).
First use Aug. 18, 1947.

SN 323,717. Marval Poultry Company, Inc., Dayton, Va. Filed Apr. 4, 1969.

PRIDE OF THE FARM

For Frozen Dressed Poultry (Int. Cl. 29).
First use on or before May 2, 1955.

SN 324,082. Mutual Products Company of Minnesota, Inc., d.b.a. Mutual Products Co., Minneapolis, Minn. Filed Apr. 9, 1969.

DAIRYLAND

Owner of Reg. No. 396,857.
For Milk Replacer for Starting and Growing Calves, and Also for Pigs and Lambs (Int. Cl. 31).
First use Apr. 4, 1968.

SN 325,182. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL POP

The word "Pop" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use July 30, 1968.

SN 325,183. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL BUBBLE

The word "Bubble" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Chewing Gum (Int. Cl. 30).
First use Feb. 28, 1969.

SN 325,184. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL KISSES

The word "Kisses" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use Feb. 28, 1969.

SN 325,185. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL HEARTS

The word "Hearts" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use Feb. 28, 1969.

SN 325,186. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL EGGS

The word "Eggs" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use Mar. 27, 1969.

SN 325,187. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL BUNNY

The word "Bunny" is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use Mar. 27, 1969.

SN 325,345. Duncan Enterprise, Kokomo, Ind. Filed Apr. 23, 1969.

COLONEL CANES

The word "Canes" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Candy (Int. Cl. 30).
First use Feb. 28, 1969.

SN 325,481. The Frank Tea and Spice Company, Cincinnati, Ohio. Filed Apr. 24, 1969.

FORBES

Owner of Reg. No. 539,831.
For Olives, Olive Oil, and Peanut Butter (Int. Cls. 29 and 31).
First use Oct. 15, 1968.

SN 326,115. Murray-Allen Imports, Inc., New Rochelle, N.Y. Filed May 1, 1969.

DOUBLE QUARTET

For Confectionery—Namely, Chocolate Candies (Int. Cl. 30).
First use Oct. 9, 1967.

SN 326,987. Beatrice Foods Co., Chicago, Ill. Filed May 12, 1969.

DANNY

Owner of Reg. No. 399,510.
For Yogurt (Int. Cl. 29).
First use Feb. 21, 1969.

SN 328,061. S. S. Kresge Company, Detroit, Mich. Filed May 22, 1969.



Owner of Reg. Nos. 853,317 and 878,339.
For Coffee (Int. Cl. 30).
First use on or before July 10, 1968.

SN 328,062. S. S. Kresge Company, Detroit, Mich. Filed May 22, 1969.



Owner of Reg. Nos. 784,920, 853,764, and others.
For Coffee (Int. Cl. 30).
First use on or before July 10, 1968.

SN 328,246. Pet Incorporated, St. Louis, Mo. Filed May 26, 1969.

PARTY RINGS

Applicant disclaims any right to the word "Rings," apart from the mark as shown.
For Cereal Derived Flavored Snack Food Product (Int. Cl. 30).
First use Apr. 7, 1969.

SN 329,432. Basic Foods, Inc., Englewood, N.J. Filed June 9, 1969.

WASH-N-SHINE

Solution for Replacement for Egg Wash Used in Bakeries (Int. Cl. 1).
First use Apr. 15, 1969.

SN 329,642. Van Brode Milling Co., Inc., Clinton, Mass. Filed June 10, 1969.

SWEET-ZIT

For Low Calorie Sweetener (Int. Cl. 1).
First use Oct. 25, 1968.

SN 329,935. Etablissements L. Breton & Fils, Barbezieux (Charente), France. Filed June 13, 1969.

FRUITIGNAC

Owner of French Reg. No. 725,343, dated July 20, 1967.
For Fruits Preserved in Cognac (Int. Cl. 29).

SN 330,016. Steak n Shake, Inc., Bloomington, Ill. Filed June 13, 1969.

A TOUCH OF GOLD

For Steakburger Sandwiches (Int. Cl. 29).
First use June 9, 1969.

SN 331,345. Cream Products Company, Inc., Cicero, Ill. Filed June 30, 1969.

ISOLAC

For Substitute Whole Milk (Int. Cl. 29).
First use June 19, 1967.

SN 333,231. McCall Farms, Inc., Effingham, S.C. Filed July 23, 1969.

CHERAW



The word "Cheraw" is the name of an extinct Indian tribe, and the picture of the maiden shown is not that of any particular living individual.
For Canned Vegetables (Int. Cl. 29).
First use Sept. 7, 1946.

SN 335,111. Ralston Purina Company, St. Louis, Mo. Filed Aug. 12, 1969.

HORSE CHARGE

Applicant disclaims the word "Horse" apart from the mark as shown; by doing so, applicant waives none of its common law rights thereto.
For Horse Feed (Int. Cl. 31).
First use June 4, 1969.

SN 336,529. Albert Valdora, d.b.a. Valdora Produce Co., Riverside, Calif. Filed Aug. 28, 1969.

Grapefruit King

No claim is made to the word "Grapefruit" apart from the mark as shown. Owner of Reg. No. 827,960.
For Fresh Grapefruit (Int. Cl. 31).
First use May 31, 1969.

SN 336,894. ITT Continental Baking Company, Rye, N.Y. Filed Sept. 3, 1969.

MAMBO PIE

Applicant disclaims "Pie" apart from the mark as shown.
For Cake (Int. Cl. 30).
First use July 31, 1969.

SN 339,286. Pronto Pacific, Inc., Moses Lake, Wash. Filed Sept. 30, 1969.

Pepper Pine

For Frozen Potatoes (Int. Cl. 29).
First use July 21, 1969.

SN 339,405. Tootsie Roll Industries, Inc., Chicago, Ill. Filed Oct. 1, 1969.

LOVE BUG

For Candy (Int. Cl. 30).
First use at least as early as Sept. 25, 1969.

SN 340,477. Edlo Enterprises, Inc., San Francisco, Calif. Filed Oct. 13, 1969.

TRIM TIME

Owner of Reg. Nos. 550,505, 873,171, and others.
For Low Fat Milk, Ice Milk, Cottage Cheese, and Yogurt (Int. Cl. 29).
First use Oct. 6, 1969.

SN 340,714. H. J. Heinz Company, Pittsburgh, Pa. Filed Oct. 15, 1969.

Heinz

Owner of Reg. Nos. 31,048, 799,959, and others.
For Pickles, Vinegar, and Ketchup (Int. Cls. 29 and 30).
First use Sept. 11, 1969; 1869 as to the word "Heinz."

SN 340,975. Adams and Brooks, Inc., Los Angeles, Calif. Filed Oct. 17, 1969.

ab Adams & Brooks

Owner of Reg. No. 827,254.
For Salted and Unsalted Nuts; Candied Nuts, Being Nuts With Candy or Confection Coating; Nut Confections, Being Candy Confections Containing Nuts; Popped Popcorn; Popcorn Confections, Being Popcorn With a Candy or Confection Coating; and Candy (Int. Cls. 29, 30, and 31).
First use Sept. 1, 1969; at least as early as 1935 as to "Adams & Brooks."

SN 341,107. Friendship Dairies, Inc., Friendship, N.Y. Filed Oct. 20, 1969.

CALORIE METER

For Cottage Cheese (Int. Cl. 29).
First use Oct. 7, 1969.

SN 341,335. Ralston Purina Company, St. Louis, Mo. Filed Oct. 22, 1969.

SHELL-PAK

For Poultry Feed (Int. Cl. 31).
First use Sept. 1, 1969.

Class 47 — Wines

SN 325,034. Brüder Grill OHG, Fels am Wagram, Austria. Filed Apr. 21, 1969.

CASTLE OF SCHOENBRUNN

Priority claimed under Sec. 44(d) on Austrian application filed Nov. 12, 1968; Reg. No. 63,972, dated Apr. 2, 1969.
For Wines (Int. Cl. 33).

SN 325,393. Resero, Sociedad Anonima, Industrial, Agropecuaria, Comercial y Financiera, Buenos Aires, Argentina. Filed Apr. 23, 1969.



Owner of Argentine Reg. No. 613,251, dated Nov. 25, 1968.
For Wines (Int. Cl. 33).

SN 325,522. Supermarkets General Corporation, Cranford, N.J. Filed Apr. 24, 1969.

PATHMARK

Owner of Reg. Nos. 854,358, 880,075, and others.
For Pink Champagne, Sparkling Burgundy, and Cold Duck (Blend of Champagne and Sparkling Burgundy) (Int. Cl. 33).
First use on or about Feb. 1, 1969.

SN 334,143. Turret Imports Ltd., New York, N.Y. Filed July 31, 1969.

FLEUR ROSE

No claim is made to the word "Rose" apart from the mark as shown. "Fleur Rose" means in English "flower rose."
For Rosé Wines (Int. Cl. 33).
First use June 25, 1969.

Class 49 — Distilled Alcoholic Liquors

SN 282,372. The Huntington Creek Corporation, New York, N.Y. Filed Oct. 12, 1967.

SABRA

For Liqueur (Int. Cl. 33).
First use Sept. 15, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 326,961. The Security Blanket Co., Malibu, Calif. Filed May 12, 1969.

. . . "A LITTLE SOMETHING TO HANG ON TO" . . .

For Novelty Items—Namely, Miniature Blankets (Int. Cl. 20).
First use Oct. 6, 1968.

SN 330,494. Forest Mfg. Co., Cleveland, Ohio. Filed June 19, 1969.

ELECTRO-BRITE

For Strings of Pennants Used for Display Purposes (Int. Cl. 20).
First use May 19, 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 318,254. Twin Beauty by Mazzarelli Cosmetics, Granada Hills, Calif. Filed Feb. 3, 1969.

TWIN BEAUTY BY MAZZARELLI

For Cosmetic Face Masks, Face Creams, Face Lotions, Face Powders, Lipstick, Eye Shadow Sticks, Mascara, Eyebrow Pencils, Liquid Eyeliner, and Scalp Conditioner (Int. Cl. 3).
First use Nov. 1, 1954.

SN 326,519. Barbara J. Crockett, d.b.a. House of Styles, Oakland, Calif. Filed May 6, 1969.



For Hair Spray (Int. Cl. 3).
First use Nov. 20, 1968.

SN 334,838. Funel, Societe Anonyme, Le Cannet, Alpes-Maritimes, France. Filed Aug. 8, 1969.

NEVER ON SUNDAY

Owner of French Reg. No. 1,078, dated Dec. 23, 1961 (Cannes); Natl. Inst. No. 177,050.
For Toilet Water and Cologne (Int. Cl. 3).

SN 335,219. The Fleetwood Co., Chicago, Ill. Filed Aug. 13, 1969.

LET'S LIFT IT

For Herb Pack Facial (Int. Cl. 3).
First use Aug. 28, 1968.

SN 335,563. Faberge, Incorporated, New York, N.Y. Filed Aug. 18, 1969.

FABERGÉ



Owner of Reg. Nos. 402,130, 872,127, and others.
For Personal Deodorant Sticks (Int. Cl. 5).
First use July 25, 1969.

Class 52 — Detergents and Soaps

SN 277,667. Industrial Specialties Company, Dayton, Ohio. Filed Aug. 7, 1967.

ISCO SAFE SPOTTER

No claim is made to "Safe Spotter" apart from the mark as shown.
For Preparation for Removing Spots and Stains From Fabrics Such as Cotton, Wool, Linen, Silk, and Synthetics (Int. Cl. 3).
First use Nov. 23, 1955.

SN 311,697. Soap Products, Inc., North Hollywood, Calif. Filed Nov. 8, 1968.

MD-X

For Surgical Soaps, Gels, and Related Skin Cleaners (Int. Cl. 3).
First use Aug. 24, 1966.

SN 311,698. Soap Products, Inc., North Hollywood, Calif. Filed Nov. 8, 1968.

SPA

For Surgical Soaps, Gels, and Related Skin Cleaners (Int. Cl. 3).
First use Aug. 24, 1966.

SN 314,472. D. A. Stuart Oil Co., Limited, Chicago, Ill. Filed Dec. 13, 1968.

DASCO STRIP

Without waiving any of its common law rights, applicant disclaims the word "Strip" apart from the mark as shown.
Owner of Reg. Nos. 524,061, 806,617, and others.
For Chemical Compositions in Liquid and Powder Form for Use in the Removal of Paint and Other Surface Coatings (Int. Cl. 3).
First use March 1966.

SN 316,436. Holiday Magic, Inc., San Rafael, Calif. Filed Jan. 13, 1969.

HOME MAGIC

For General Purpose Aerosol Spray Cleaner for Household Use (Int. Cl. 3).
First use Dec. 6, 1968.

SN 328,879. Mercantile Development Company, d.b.a. Mercantile Devt. Co., Kansas City, Mo. Filed June 2, 1969.

SHONI

For Maintenance Detergent Cleaner for Dewaxing, Degreasing and General Cleaning Use on Driveways, Patios, Swimming Pools, Floors, Asbestos Siding, and Tile (Int. Cl. 3).
First use Jan. 21, 1969.

SN 330,503. Theodore Herman, d.b.a. Ejeks Company, Jersey City, N.J. Filed June 19, 1969.

EJEKS

For Combination Emulsifier and Degreaser (Int. Cl. 3).
First use May 19, 1969.

SN 334,472. Imoco-Gateway Corporation, Chicago, Ill. Filed Aug. 5, 1969.

FRIGID-KLEEN

For Cleaner for Industrial and Institutional Usage in Cold Storage Areas (Int. Cl. 3).
First use Feb. 17, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 290,995. Arby's Inc., Youngstown, Ohio. Filed Feb. 14, 1968.

SWING OVER TO ARBY'S

Owner of Reg. No. 801,497.
For Drive-In and Take-Out Restaurant Services (Int. Cl. 42).
First use at least as early as Feb. 1, 1968.

SN 301,812. Harry Alter & Sons, Inc., Davenport, Iowa. Filed July 2, 1968.



For Rental of Heavy Construction Equipment (Int. Cl. 42).
First use 1931.

SN 307,058. Jean Compo Sedlmayr, d.b.a. Stone Balloon, Christiansted, St. Croix, Virgin Islands. Filed Sept. 11, 1968.



For Restaurant Services (Int. Cl. 42).
First use July 1960.

SN 307,850. Mister Sandwich, Inc., Sarasota, Fla. Filed Sept. 20, 1968.



The term "Sandwich" is disclaimed apart from the mark as shown.
For Carry-Out Restaurant Services (Int. Cl. 42).
First use Mar. 1, 1968.

SN 311,564. Ashland Oil & Refining Company, Ashland, Ky. Filed Nov. 7, 1968.

ALLIED
FUEL OIL SPECIALISTS

The term "Fuel Oil Specialist" is disclaimed apart from the mark as shown.
For Services Relating to the Industrial Use of Fuel Oil, Particularly Technical and Engineering Consulting Services Relating to the Development and Design of Fuel Oil Combustion and Handling Systems (Int. Cl. 42).
First use at least as early as March 1967.

SN 315,672. Field Financial Corporation, New Brighton, Minn. Filed Dec. 26, 1968.

REMBRANDT

The mark consists of the name of a famous deceased painter.
For Providing and Furnishing Retirement and Nursing Home Care for the Elderly and Convalescent, and Nursing Home Care and Services for All Ages (Int. Cl. 42).
First use in 1968.

SN 322,749. Sandy's Franchise, Inc., Kewanee, Ill. Filed Mar. 25, 1969.



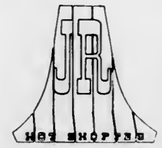
The drawing is lined to indicate the color red, but color is not claimed as a feature of the mark.
For Restaurant Services (Int. Cl. 42).
First use Mar. 1, 1968.

SN 336,527. Timme Motor Inn Corporation, Wilmington, N.C. Filed Aug. 28, 1969.

TIMME PLAZA

For Motor Hotel, Hotel, Restaurant and Bar Services (Int. Cl. 42).
First use June 2, 1969.

SN 341,479. Marriott Corporation, Washington, D.C. Filed Oct. 22, 1969.



Owner of Reg. Nos. 520,917, 871,923, and others.
For Serving of Foods and Beverages in Restaurants (Int. Cl. 42).
First use at least as early as June 21, 1968; at least as early as November 1967, in a different form.

Class 101 — Advertising and Business

SN 271,701. Glendinning Companies, Inc., Westport, Conn. Filed May 17, 1967.

GREAT MOMENTS IN SPORTS

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35).
First use Apr. 13, 1967.

SN 305,776. Francis W. Winn, d.b.a. Computer Language Research, Dallas, Tex. Filed Aug. 22, 1968.

FAST-TAX

For Preparation of Federal and State Tax Returns (Int. Cl. 35).
First use Oct. 17, 1965.

SN 307,480. Information Management Incorporated, San Francisco, Calif. Filed Sept. 16, 1968.

UPGRADE

For Preparing Computer Programs for Others (Int. Cl. 35).
First use Mar. 3, 1968.

SN 319,555. Regency Chauffeurs Services, Inc., Bronx, N.Y. Filed Feb. 19, 1969.



The drawing is lined for silver.
For Furnishing Drivers' and Chauffeurs' Services (Int. Cl. 35).
First use Apr. 24, 1968.

SN 322,242. Agricareers, Inc., New Hampton, Iowa. Filed Mar. 20, 1969.

AGRICAREERS, INC.

For Agricultural Personnel Recruiting Services (Int. Cl. 35).
First use Mar. 28, 1968.

SN 331,570. American Import Merchants Corporation, New York, N.Y. Filed July 2, 1969.

AIM

For Aiding Others in All Phases of the Purchase and Import of Hard and Soft Consumer Goods, Both Manufactured and Natural (Int. Cl. 35).
First use June 23, 1969.

SN 333,640. The Realty Programming Corporation, St. Louis, Mo. Filed July 28, 1969.



For purposes of this registration only, the words "Multi List Service" are disclaimed apart from the mark as shown. Owner of Reg. No. 801,507.
For Multiple Real Estate Listing Service, viz, Coordination and Distribution of Real Estate Listings and Related Materials for Real Estate Brokers (Int. Cl. 35).
First use on or about Nov. 9, 1963.

SN 337,794. Franchise Systems, Inc., Dallas, Tex. Filed Sept. 12, 1969.

FABRIFIC

For Retail Store Services Specializing in the Sale of Fabrics, Piece Goods, and Related Accessories and Items (Int. Cl. 35).
First use at least as early as June 1969.

Class 102 — Insurance and Financial

SN 277,364. Joplin Federal Savings and Loan Association, Joplin, Mo. Filed Aug. 2, 1967.

HAPPY SAVER

For Savings and Loan Services (Int. Cl. 36).
First use July 1966.

SN 311,617. Northwestern National Insurance Company of Milwaukee, Wisconsin, Milwaukee, Wis. Filed Nov. 7, 1968.

INCOMSURANCE

For Underwriting Services for Casualty, Accident, and Health Insurance (Int. Cl. 36).
First use on or about July 19, 1967.

SN 321,455. Bankers Life Company, Des Moines, Iowa. Filed Mar. 12, 1969.

THE BANKERS LIFE

The word "Life" is disclaimed apart from the mark as shown.
For Insurance Underwriting Services (Int. Cl. 36).
First use at least as early as July 13, 1968.

SN 321,563. Central States Health & Life Co. of Omaha, Omaha, Nebr. Filed Apr. 7, 1969.

HEALTH-GARD

For Underwriting of Health and Life Insurance (Int. Cl. 36).
First use Dec. 27, 1968.

SN 321,564. Central States Health & Life Co. of Omaha, Omaha, Nebr. Filed Apr. 7, 1969.

MEDI-GARD

For Underwriting of Health and Life Insurance (Int. Cl. 36).
First use Dec. 27, 1968.

SN 332,206. Van Dusen Aircraft Supplies, Incorporated, Minneapolis, Minn. Filed July 10, 1969.

NEW QUIP

For Financial Services—Namely, Loaning of Money (Int. Cl. 36).
First use on or about Jan. 1, 1967.

SN 337,753. Neuberger & Berman, New York, N.Y. Filed Sept. 12, 1969.



For Stock Brokerage Services (Int. Cl. 36).
First use Aug. 25, 1969.

SN 339,954. Allied Bank International, New York, N.Y. Filed Oct. 7, 1969.



For Banking Services (Int. Cl. 36).
First use Jan. 31, 1969.

SN 340,706. The First National Bank and Trust Company of Stillwater, Stillwater, Okla. Filed Oct. 15, 1969.

WOODEN NICKEL CLUB

For Banking Services—Namely, Membership Type Checking and Savings Accounts and Loan Services Especially for College Students (Int. Cl. 36).
First use at least as early as about Aug. 18, 1969.

Class 103 — Construction and Repair

SN 257,069. Nardoni Floor Company, Southfield, Mich. Filed Oct. 24, 1966.

DRY TAMP PROCESS

The word "Process" is disclaimed apart from the complete mark as shown.
For Constructing Concrete Floors (Int. Cl. 37).
First use 1947.

SN 285,681. Salviam, Paris, France. Filed Nov. 27, 1967.

PROSALVIA

Priority claimed under Sec. 44(d) on French Reg. No. 741,035, dated May 26, 1967.
For Construction of Industrial Floorings and Soils, and Roads and Quays; Laying of Coats on Roads and Quays; Covering and Coating of Industrial Flooring and Soils; and Upkeep of Soil and Embankments (Int. Cl. 37).

SN 326,206. Continental Mechanical Corporation, Dallas, Tex. Filed May 2, 1969.

CM

For Installing of Heating, Ventilation, Air Conditioning, Plumbing, Fire Control and Industrial Piping Systems (Int. Cl. 37).
First use at least as early as Sept. 20, 1966.

SN 341,242. Cook Industries, Inc., d.b.a. Bruce-Terminix, Bruce-Terminix Co., and Terminix Division, E. L. Bruce Co., Memphis, Tenn. Filed Oct. 21, 1969.

THE MONSTER FIGHTERS!

For Termite and Other Household Pest Control Services (Int. Cl. 37).
First use January 1969.

Class 105 — Transportation and Storage

SN 321,981. Reading Company, Philadelphia, Pa. Filed Mar. 17, 1969.



Applicant disclaims the word "Service" apart from the mark as shown.
For Freight Transportation Service by Railroad (Int. Cl. 39).
First use Oct. 18, 1966.

Class 107 — Education and Entertainment

SN 308,606. Health Studios, Inc., d.b.a. Cosmopolitan Health Studios, Inc., Cosmopolitan Heatlh Clubs, Cosmopolitan Spa Health Clubs, and Cosmopolitan Spa International, Nashville, Tenn. Filed Oct. 1, 1968.

COSMOPOLITAN

For Operation of Health Studios, Including Supervised Athletic Training and Exercises (Int. Cl. 41).
First use Aug. 9, 1963.

SN 313,473. International Telephone and Telegraph Corporation, New York, N.Y. Filed Dec. 3, 1968.

ITT

Owner of Reg. Nos. 688,679, 711,889, 829,106, and others.
For Business, Vocational and Trade Classroom and Correspondence Teaching Services (Int. Cl. 41).
First use in 1958.

SN 316,445. Magical Productions, Inc., Los Angeles, Calif. Filed Jan. 13, 1969.

CINILLUSION

For Magical Display Entertainment Service (Int. Cl. 41).
First use on or about Oct. 5, 1968.

SN 316,547. Peoples Drug Stores, Incorporated, Washington, D.C. Filed Jan. 14, 1969.

"KEY TO BEAUTY"

For Providing a Television Program Series on Grooming and Make-Up Application (Int. Cl. 41).
First use Nov. 25, 1963.

SN 340,091. Hughes Tool Company, d.b.a. The Desert Inn Hotel, Las Vegas, Nev. Filed Oct. 8, 1969.

PZAZZ AND ALL THAT JAZZ, BABY

For Supper Club Entertainment Services—Namely, a Musical Review Show (Int. Cl. 41).
First use July 16, 1968.

SN 340,092. Hughes Tool Company, d.b.a. The Desert Inn Hotel, Las Vegas, Nev. Filed Oct. 8, 1969.

PZAZZ

For Supper Club Entertainment Services—Namely, a Musical Review Show (Int. Cl. 41).
First use Sept. 21, 1967.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 318,087. National Registry of Registered Nurse Therapists, Inc., Minneapolis, Minn. Filed Jan. 31, 1969.

The drawing is lined for the color gold.
For Indicating Membership in Applicant.
First use Apr. 1, 1968.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

887,688. WIREFIL. Canadian Hoechst Limited. SN 284,989. Pub. 12-30-69. Filed 11-16-67.

887,689. VOLCLAY. American Colloid Company. SN 294,152. Pub. 12-30-69. Filed 3-26-68.

887,690. POLYFLYTE. Polyplastex United, Inc. SN 302,962. Pub. 12-30-69. Filed 7-17-68.

887,691. ASTRAL NOIR MACFUR. Macfur S.p.A. SN 309,270. Pub. 12-30-69. Filed 10-9-68.

887,692. AMRA ETC. AND DIAMOND DESIGN. American Mink Ranchers Assn. SN 311,453. Pub. 12-30-69. Filed 11-6-68.

887,693. BURLINGHAM'S. E. F. Burlingham & Sons. SN 313,900. Pub. 12-30-69. Filed 12-9-68.

887,694. POUNCE. Topco Associates, Inc. SN 326,964. Pub. 12-30-69. Filed 5-12-69.

Class 2 — Receptacles

887,695. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,137. Pub. 12-30-69. Filed 11-1-68.

887,696. ANYWARE. Masco Corporation. SN 321,677. Pub. 12-30-69. Filed 3-13-69.

887,697. BOWL & BOARD. Bowl & Board, Inc. SN 327,583. Pub. 12-30-69. Filed 5-19-69.

887,698. MARCOR. Container Corporation of America. SN 327,598. Pub. 12-30-69. Filed 5-19-69.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

887,699. DUOFLITE. Seward Luggage Manufacturing Company, Inc. SN 322,350. Pub. 12-30-69. Filed 3-20-69.

Class 4 — Abrasives and Polishing Materials

887,700. VACOSHINE. Vacowash Division, Inc. SN 271,885. Pub. 12-30-69. Filed 5-16-67.

887,701. ZIROX. National Lead Company. SN 316,021. Pub. 12-30-69. Filed 1-7-69.

Class 5 — Adhesives

887,702. CAROLINA AND DESIGN. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 302,294. Pub. 12-30-69. Filed 7-9-68.

887,703. SILASTIC 732. Dow Corning Corporation. SN 316,717. Pub. 12-30-69. Filed 1-16-69.

Class 6 — Chemicals and Chemical Compositions

887,704. APECO MARATHON. American Photocopy Equipment Company (Delaware corporation), assignee of American Photocopy Equipment Company (Illinois corporation). MULTIPLE CLASS (Classes 6 and 26). SN 279,887. Pub. 8-27-69. Filed 9-8-67.

887,705. HERCULES AND DESIGN. Hercules Chemical Company, Inc. MULTIPLE CLASS (Classes 6, 12, 34, and 52). SN 285,693. Pub. 12-30-69. Filed 11-28-67.

887,706. SUPCO. The Superior Oil Company. SN 286,207. Pub. 12-30-69. Filed 12-4-67.

887,707. D-ODOR 24. The Grant Company. SN 295,729. Pub. 2-11-69. Filed 4-16-68.

887,708. NO. 57. Universal Oil Products Company. SN 302,782. Pub. 12-30-69. Filed 7-15-68.

887,709. AQUA MAGIC. Oil Base, Inc. SN 304,380. Pub. 12-30-69. Filed 8-5-68.

887,710. LINCO BLEACH AND DESIGN. Linco Products Corporation. SN 304,609. Pub. 12-30-69. Filed 8-7-68.

887,711. CURENE. Anderson Development Co., assignee of Amos R. Anderson, d.b.a. Anderson Development Co. SN 305,389. Pub. 12-30-69. Filed 8-19-68.

887,712. STRATH-GUARD. Strathmore Products, Inc. SN 306,187. Pub. 12-30-69. Filed 8-28-68.

887,713. NVCP AND DESIGN. NVCP Nederlandsch Verkoopkantoor voor Chemische Producten N.V. SN 310,683. Pub. 12-30-69. Filed 10-28-68.

887,714. NATRON. National Starch and Chemical Corporation. SN 313,016. Pub. 12-30-69. Filed 11-25-68.

887,715. PYROBAK. Standard Brands Chemical Industries, Inc. SN 314,923. Pub. 12-30-69. Filed 12-19-68.

887,716. SAFE-DRY BLEACH. Johnson Chemical Industries, Inc. SN 315,318. Pub. 12-30-69. Filed 12-27-68.

887,717. TAMTRON. National Lead Company. SN 316,022. Pub. 12-30-69. Filed 1-7-69.

887,718. DURAGARD. Holliston Laboratories, Inc. SN 317,561. Pub. 12-30-69. Filed 1-27-69.

887,719. PILL KILL. Judd Ringer Corporation. SN 318,426. Pub. 12-30-69. Filed 2-5-69.

887,720. UNIT-BLUE. Unit Chemical Corp. SN 326,327. Pub. 12-30-69. Filed 5-5-69.

887,721. BUTANE MATCH. Butane Match Corporation of America. SN 300,802. Pub. 5-6-69. Filed 6-19-68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

887,722. THE LEBERT SMOKE RING. Products Dynamics Corporation. SN 305,979. Pub. 12-30-69. Filed 8-26-68.

887,723. MISSOURI MEERSCHAUM. Missouri Meerschaum Company. SN 306,066. Pub. 12-30-69. Filed 8-27-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

887,724. ATLACORD. Atlas Chemical Industries, Inc. SN 324,162. Pub. 12-30-69. Filed 4-10-69.

887,725. SHARPS AND DESIGN. Sharps Arms Company. SN 329,311. Pub. 12-30-69. Filed 6-6-69.

887,726. APOLLO. Po Sing Firecracker Factory. SN 333,176. Pub. 12-30-69. Filed 7-22-69.

Class 10 — Fertilizers

887,727. WEEDER-FEEDER. Vaughan's Seed Company, assignee of Agriform International Chemicals, Inc. SN 306,098. Pub. 12-30-69. Filed 8-28-68.

887,728. SCHULTZ-INSTANT SPRAY AND GRO. Schultz Shoe Co., Inc., d.b.a. Schultz Co. or Schultz Company. SN 307,593. Pub. 12-30-69. Filed 9-17-68.

887,729. VITAPLANT AND DESIGN. Leopoldo Pacheco Santana. SN 309,059. Pub. 12-30-69. Filed 10-7-68.

Class 11 — Inks and Inking Materials

887,730. RICH-INK. The Richardson Company. SN 326,687. Pub. 12-30-69. Filed 5-7-69.

Class 12 — Construction Materials

887,705. (See Class 6 for this trademark.)

887,731. LAYKOLD. Chevron Asphalt Company. SN 266,858. Pub. 12-30-69. Filed 3-16-67.

887,732. SHINGLE SHAKES AND DESIGN. Reynolds Metals Company. SN 267,769. Pub. 12-30-69. Filed 3-28-67.

887,733. MONOGARD. JAN Industries, Incorporated. SN 292,205. Pub. 12-30-69. Filed 2-29-68.

887,734. MINI-MART. Mini-Mart International, Inc., assignee of Coulter Petroleum Corporation, d.b.a. Copetco Sales Corporation. SN 297,172. Pub. 11-18-69. Filed 5-2-68.

887,735. BOS'N. Teledyne, Inc. SN 307,251. Pub. 12-30-69. Filed 9-12-68.

887,736. BLAK-KAP. Johns-Manville Corporation. SN 319,453. Pub. 12-30-69. Filed 2-18-69.

887,737. CASTILLE. Simpson Timber Company. SN 325,143. Pub. 12-30-69. Filed 4-22-69.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

887,738. "V.A.M." Vallourec. SN 255,736. Pub. 1-23-68. Filed 10-4-66.

887,739. HUBS. Howard S. Jebe, d.b.a. Hubs Mfg. Co. SN 300,938. Pub. 12-30-69. Filed 6-20-68.

887,740. VILLAGE FORGE. Keystone Consolidated Industries, Inc., by merger and change of name from National Lock Co. SN 303,624. Pub. 9-9-69. Filed 7-25-68.

887,741. DELTA METAL-FORMING AND DESIGN. Keystone Consolidated Industries, Inc., by merger and change of name from National Lock Co. SN 304,108. Pub. 9-9-69. Filed 8-1-68.

Class 14 — Metals and Metal Castings and Forgings

887,742. BERNASE ROMAN. Bonder & Carnase Studio Inc. SN 303,260. Pub. 12-30-69. Filed 7-22-68.

Class 15 — Oils and Greases

887,743. RELEASIL. Midland Silicones Limited. MULTIPLE CLASS (Classes 15 and 16). SN 281,155. Pub. 12-30-69. Filed 9-26-67.

887,744. SUPCO. The Superior Oil Company. SN 286,208. Pub. 12-30-69. Filed 12-4-67.

887,745. WAX LAMPS AND DESIGN. James Henderson. SN 296,426. Pub. 9-16-69. Filed 4-24-68.

887,746. BAKERY LUBE. Bel-Ray Company, Inc. SN 310,058. Pub. 12-30-69. Filed 10-21-68.

887,747. DASCOOL. D. A. Stuart Oil Co., Limited. SN 314,470. Pub. 12-30-69. Filed 12-13-68.

887,749. CH-22. Chessco Industries, Inc. SN 318,031. Pub. 12-30-69. Filed 1-31-69.

887,748. STUART'S THREDROL. D. A. Stuart Oil Co., Limited. SN 314,474. Pub. 12-30-69. Filed 12-13-68.

887,750. TURBEX. Farmland Industries, Inc. SN 318,898. Pub. 12-30-69. Filed 2-11-69.

Class 16 — Protective and Decorative Coatings

887,743. (See Class 15 for this trademark.)

887,751. MIN-ALU. Gust. Erdmann & Co. SN 291,263. Pub. 12-30-69. Filed 2-16-68.

887,752. CH TRIPP AND DESIGN. C. H. Tripp Finishing Company. SN 307,520. Pub. 12-30-69. Filed 9-16-68.

887,753. MISCELLANEOUS DESIGN. Staley Paint Mfg. Co. MULTIPLE CLASS (Classes 16 and 29). SN 311,987. Pub. 12-30-69. Filed 11-13-68.

887,754. HYDROMIL. De Soto, Inc. SN 313,916. Pub. 12-30-69. Filed 12-9-68.

Class 17 — Tobacco Products

887,755. A. GARCIA Y CA. Bayuk Cigars Incorporated. SN 314,869. Pub. 12-30-69. Filed 12-19-68.

887,756. MISCELLANEOUS DESIGN. Larus & Brother Company. SN 321,813. Pub. 12-30-69. Filed 3-14-69.

887,757. CARNABY. Bayuk Cigars Incorporated. SN 332,308. Pub. 12-30-69. Filed 7-11-69.

887,758. BERET. R. J. Reynolds Tobacco Company. SN 333,642. Pub. 12-30-69. Filed 7-28-69.

887,759. BRONCO. R. J. Reynolds Tobacco Company. SN 333,643. Pub. 12-30-69. Filed 7-28-69.

887,760. SCOTTY. Taylor Brothers, Inc. SN 334,030. Pub. 12-30-69. Filed 7-31-69.

887,761. SHADE. Taylor Brothers, Inc. SN 334,031. Pub. 12-30-69. Filed 7-31-69.

Class 18 — Medicines and Pharmaceutical Preparations

887,762. LOFTHOUSE'S ORIGINAL FISHERMAN'S FRIEND. Lofthouse Chemical Products Limited. SN 272,194. Pub. 12-30-69. Filed 5-23-67.

887,763. FORMULA PM. Bristol-Myers Company. SN 274,043. Pub. 12-30-69. Filed 6-16-67.

887,764. AM/PM. Bristol-Myers Company. SN 279,454. Pub. 12-30-69. Filed 8-31-67.

887,765. PIGMENTAN. Obermeyer & Co. SN 301,355. Pub. 12-30-69. Filed 6-25-68.

887,766. MPI AND DESIGN. Medcal Pharmaceuticals Inc. SN 309,776. Pub. 12-30-69. Filed 10-16-68.

887,767. CONTENT-MINTS. Carter-Wallace, Inc. (Delaware corporation), by merger from Carter-Wallace, Inc. (Maryland corporation). SN 312,949. Pub. 10-14-69. Filed 11-25-68.

887,768. SYNCHROMETER. Marion Laboratories, Inc. SN 313,179. Pub. 12-30-69. Filed 11-27-68.

887,769. SYNCHROMIST. Marion Laboratories, Inc. SN 313,180. Pub. 12-30-69. Filed 11-27-68.

887,770. 'BRETYLATE.' Burroughs Wellcome & Co. (U.S.A.) Inc. SN 317,201. Pub. 12-30-69. Filed 1-22-69.

887,771. P.M. Bristol-Myers Company. SN 319,272. Pub. 12-30-69. Filed 2-17-69.

887,772. SHIELD DESIGN. Bowman, Inc. SN 321,897. Pub. 12-30-69. Filed 3-17-69.

887,773. I.O.X. The Upjohn Company. SN 322,202. Pub. 12-30-69. Filed 3-19-69.

887,774. CELLO-BASE. LaFarr Research Company, Inc. SN 322,304. Pub. 12-30-69. Filed 3-20-69.

887,775. CLEAR-MISS. Richardson-Merrell Inc. SN 325,142. Pub. 12-30-69. Filed 4-22-69.

887,776. CALMURID. Pharmacia Laboratories, Inc. SN 328,630. Pub. 12-30-69. Filed 5-29-69.

887,777. TAMPEASE. Kimberly-Clark Corporation. SN 330,563. Pub. 12-30-69. Filed 6-20-69.

Class 19 — Vehicles

887,778. AERO-HARNESS. Universal Oil Products Company. SN 301,377. Pub. 12-30-69. Filed 6-25-68.

887,779. GTR AND DESIGN. The General Tire & Rubber Company. SN 309,373. Pub. 12-30-69. Filed 10-10-68.

887,780. KAP. Winnebago Industries, Inc. SN 314,006. Pub. 12-30-69. Filed 12-9-68.

887,781. A AND STAR DESIGN. Allstar Automotive Corporation. MULTIPLE CLASS (Classes 19, 23, 31, and 35). SN 315,845. Pub. 12-30-69. Filed 1-6-69.

887,782. CUSH N TOW. Nutting Truck and Caster Company. SN 317,919. Pub. 12-30-69. Filed 1-30-69.

887,783. KOPY-KART. Smart Supply Company Inc., d.b.a. S.S. Distributors. SN 321,285. Pub. 12-30-69. Filed 3-10-69.

887,784. MISCELLANEOUS DESIGN. Portland Wire and Iron Works. SN 325,777. Pub. 12-30-69. Filed 4-28-69.

887,785. TX-500. Textron Inc. SN 329,812. Pub. 12-30-69. Filed 6-12-69.

Class 20 — Linoleum and Oiled Cloth

887,786. LIGHT 'N LIVELY. Congoleum Industries, Inc. SN 328,957. Pub. 12-30-69. Filed 6-3-69.

887,787. CALIENTE. Congoleum Industries, Inc. SN 328,959. Pub. 12-30-69. Filed 6-3-69.

887,788. ROYAL COURT. Congoleum Industries, Inc. SN 328,960. Pub. 12-30-69. Filed 6-3-69.

887,789. MALAMAR. Congoleum Industries, Inc. SN 328,961. Pub. 12-30-69. Filed 6-3-69.

887,790. MEDALIST. Congoleum Industries, Inc. SN 328,963. Pub. 12-30-69. Filed 6-3-69.

887,791. FASHIONFLOR. Congoleum Industries, Inc. SN 328,964. Pub. 12-30-69. Filed 6-3-69.

887,792. CASABLANCA. GAF Corporation. SN 330,380. Pub. 12-30-69. Filed 6-18-69.

Class 21 — Electrical Apparatus, Machines, and Supplies

887,793. BROWN BOVERI AND DESIGN. Brown, Boveri & Company Limited. MULTIPLE CLASS (Classes 21, 23, 31, and 34). SN 277,848. Pub. 12-30-69. Filed 8-9-67.

887,794. ADDALUX. Berkey Photo, Inc., by merger from Berkey Technical Corp. SN 281,863. Pub. 12-30-69. Filed 10-5-67.

887,795. MISCELLANEOUS DESIGN. Electronic Image Systems Corporation. SN 283,115. Pub. 12-30-69. Filed 10-23-67.

887,796. NORMABLOC. Compagnie Generale d'Electricite. SN 295,914. Pub. 12-30-69. Filed 4-18-68.

887,797. RELIABLE AND DESIGN. Reliable Electric Company. SN 296,199. Pub. 12-30-69. Filed 4-22-68.

887,798. STANDARD SYSTEMS AND DESIGN. LTV Ling Altec, Inc. SN 299,138. Pub. 12-30-69. Filed 5-27-68.

887,799. SUPER CHEF. Mastercraft Engineering Company. SN 304,103. Pub. 12-30-69. Filed 8-1-68.

887,800. GAMUT 25. Sterling Information Services, Ltd., assignee of International Telemeter Corporation. SN 305,780. Pub. 12-30-69. Filed 8-22-68.

887,801. NORTHWEST. AND DESIGN. Northwest Import & Export Corporation. SN 305,965. Pub. 12-30-69. Filed 8-26-68.

887,802. AMERICAN DETECTION DEVICES AND DESIGN. American Detection Devices, Inc. SN 306,042. Pub. 12-30-69. Filed 8-27-68.

887,803. F AND DESIGN. Frequency Sources Inc. SN 306,302. Pub. 12-30-69. Filed 8-30-68.

887,804. HTV AND DESIGN. HTV Systems, Inc. SN 311,366. Pub. 12-30-69. Filed 11-5-68.

887,805. VAN PAD. VanTran Electric Corporation. SN 311,956. Pub. 12-30-69. Filed 11-12-68.

887,806. FDS AND DESIGN. Fire Detection Service, Inc. SN 313,284. Pub. 12-30-69. Filed 11-29-68.

887,807. SPACE ALARM. Kimco Laboratories, Inc. SN 313,783. Pub. 12-30-69. Filed 12-6-68.

887,808. INSTAMATOR. Diversified Electronics Co., Inc. SN 317,010. Pub. 12-30-69. Filed 1-21-69.

887,809. GEM LINE ETC. AND DESIGN. Modern Products, Inc. SN 317,594. Pub. 12-30-69. Filed 1-27-69.

887,810. CAPITRON. AMP Incorporated. SN 319,254. Pub. 12-30-69. Filed 2-17-69.

887,811. CHESSCO AND DESIGN. Chessco Industries, Inc. SN 320,435. Pub. 12-30-69. Filed 3-3-69.

887,812. OVATION AND DESIGN. Kaman Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 324,322. Pub. 12-30-69. Filed 4-14-69.

887,813. TURF HUGGER. A. B. Chance Company. SN 326,196. Pub. 12-30-69. Filed 5-2-69.

887,814. INSTA-COLOR. General Electric Company. SN 326,762. Pub. 12-30-69. Filed 5-8-69.

887,815. SILCAD PAC. Yardney Electric Corporation. SN 328,090. Pub. 12-30-69. Filed 5-22-69.

887,816. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 331,108. Pub. 12-30-69. Filed 6-27-69.

Class 22 — Games, Toys, and Sporting Goods

887,817. TRUE BLUE TOYS. True Blue Toys. MULTIPLE CLASS (Classes 22 and 38). SN 249,820. Pub. 6-11-68. Filed 7-8-66.

887,818. ROYAL STAR DRI-GLOVE AND DESIGN. Nelson Sales Co. SN 283,689. Pub. 12-30-69. Filed 10-30-67.

887,819. MISCELLANEOUS DESIGN. EB-Sport-International GmbH. SN 308,475. Pub. 12-30-69. Filed 9-30-68.

887,820. MAXIMA ETC. AND DESIGN. Bruce B. Mises, Inc. SN 308,627. Pub. 12-30-69. Filed 10-1-68.

887,821. BUBBL-MATIC. Kenner Products Company. SN 323,302. Pub. 12-30-69. Filed 4-1-69.

887,822. FIREBALL. Kenner Products Company. SN 323,303. Pub. 12-30-69. Filed 4-1-69.

887,823. SUPERSPORT. Kenner Products Company. SN 323,313. Pub. 12-30-69. Filed 4-1-69.

887,824. BIG D. Dell Plastics Company, Inc. SN 325,729. Pub. 12-30-69. Filed 4-28-69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

887,781. (See Class 19 for this trademark.)

887,793. (See Class 21 for this trademark.)

887,825. LIFETIME BAMBOO. Lifetime Cutlery Corp. SN 288,625. Pub. 12-30-69. Filed 1-11-68.

887,826. SB AND DESIGN. VEB Schnellfiechter Berlin. SN 298,071. Pub. 12-30-69. Filed 5-13-68.

887,827. GYRABRATOR. The Wheelabrator Corporation. SN 299,177. Pub. 12-30-69. Filed 5-27-68.

887,828. AERO-TRAK. Aero-Motive Manufacturing Company. SN 302,479. Pub. 12-30-69. Filed 7-11-68.

887,829. MANITOWOC. The Manitowoc Company, Inc. SN 303,622. Pub. 12-30-69. Filed 7-25-68.

887,830. JAGUAR. Maruzen Sewing Machine Co., Ltd. MULTIPLE CLASS (Classes 23 and 26). SN 305,226. Pub. 12-30-69. Filed 8-15-68.

887,831. M-R-S. M-R-S Manufacturing Company. SN 305,333. Pub. 12-30-69. Filed 8-16-68.

887,832. M-R-S AND DESIGN. M-R-S Manufacturing Company. SN 305,334. Pub. 12-30-69. Filed 8-16-68.

887,833. ROTOFLEX. FMC Corporation. SN 307,637. Pub. 12-30-69. Filed 9-18-68.

887,834. PLENUM-PULSE. Fuller Company. SN 307,998. Pub. 12-30-69. Filed 9-23-68.

887,835. MF AND DESIGN. Massey-Ferguson Limited. SN 312,598. Pub. 12-30-69. Filed 11-19-68.

887,836. FORMULA 62. Stress Relief Engineering Co. SN 312,820. Pub. 12-30-69. Filed 11-21-68.

887,837. CONVERTA. Riam S.A. SN 313,137. Pub. 12-30-69. Filed 11-26-68.

887,838. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 313,197. Pub. 12-30-69. Filed 11-27-68.

887,839. KVERNELANDS AND DESIGN. Kvernelands Fabrikk A/S. SN 314,717. Pub. 12-30-69. Filed 12-17-68.

887,840. UNIBLOC. Cow & Gate Limited. SN 316,186. Pub. 12-30-69. Filed 1-9-69.

887,841. SANI-BRITE. The Firestone Tire & Rubber Company. SN 316,303. Pub. 12-30-69. Filed 1-10-69.

887,842. MISCELLANEOUS DESIGN. Pace, Inc. SN 316,501. Pub. 12-30-69. Filed 1-14-69.

887,843. KOLMAN. Athey Products Corporation. SN 317,700. Pub. 12-30-69. Filed 1-28-69.

887,844. VAC-U-TREAT. Mojonnier Bros. Co. SN 322,459. Pub. 12-30-69. Filed 3-21-69.

887,845. DOW AND DESIGN. The Dow Chemical Company. SN 323,275. Pub. 12-30-69. Filed 4-1-69.

887,846. GROMETEER. Park-Air Corporation. SN 325,308. Pub. 12-30-69. Filed 4-23-69.

887,847. METALLOY. Metalloy Steel Foundry, Inc. SN 326,114. Pub. 12-30-69. Filed 5-1-69.

887,848. WESTMONT. Washington Forge, Incorporated. SN 327,438. Pub. 12-30-69. Filed 5-15-69.

887,849. LOBRO AND DESIGN. Lohr & Bromkamp G.m.b.H. SN 327,770. Pub. 12-30-69. Filed 5-20-69.

887,850. APOLLO. Bissell Inc. SN 328,033. Pub. 12-30-69. Filed 5-22-69.

887,851. PIC-ALL. Nash Metalware Co., Inc. SN 328,510. Pub. 12-30-69. Filed 5-28-69.

Class 24 — Laundry Appliances and Machines

887,852. RADIANTRON. Signatronic Company Ltd. SN 313,983. Pub. 12-30-69. Filed 12-9-68.

887,853. EXCEL. Star Key & Lock Manufacturing Co., Inc. SN 330,960. Pub. 12-30-69. Filed 6-25-69.

Class 26 — Measuring and Scientific Appliances

887,704. (See Class 6 for this trademark.)

887,830. (See Class 23 for this trademark.)

887,854. VIDEOGRAPH. Impulsphysik G.m.b.H. SN 287,019. Pub. 8-6-68. Filed 12-15-67.

887,855. OMEGA-T. Omega-T Systems Incorporated. SN 291,087. Pub. 12-30-69. Filed 2-14-68.

887,856. OMEGA-T AND DESIGN. Omega-T Systems Incorporated. SN 291,090. Pub. 12-30-69. Filed 2-14-68.

887,857. AFCO. GAF Corporation, by merger from American Felt Company. MULTIPLE CLASS (Classes 26 and 37). SN 299,064. Pub. 12-30-69. Filed 5-27-68.

887,858. CHECKMATE. Platt Luggage, Inc. SN 312,804. Pub. 12-30-69. Filed 11-21-68.

887,859. COMPAS. Systems Engineering Laboratories Incorporated. SN 317,772. Pub. 9-30-69. Filed 1-28-69.

887,860. P AND DESIGN. Parker Instrument Corporation. SN 318,222. Pub. 12-30-69. Filed 2-3-69.

887,861. FUN-VUE. William Rand, Inc. SN 322,088. Pub. 12-30-69. Filed 3-18-69.

887,862. BNC REFLEX. Mitchell Camera Corporation. SN 324,598. Pub. 12-30-69. Filed 4-15-69.

887,863. FIELDLAB. Beckman Instruments, Inc. SN 324,678. Pub. 12-30-69. Filed 4-16-69.

887,864. MISCELLANEOUS DESIGN. Data Memory, Inc. SN 324,700. Pub. 12-30-69. Filed 4-16-69.

887,865. CAREFREE. Argus Incorporated. SN 325,268. Pub. 12-30-69. Filed 2-17-69.

887,866. MICROSEP. Canton Bio-Medical Products. SN 326,193. Pub. 12-30-69. Filed 5-2-69.

Class 27 — Horological Instruments

887,867. T TISSOT. Fabrique d'Horlogerie Chs. Tissot & Fils S.A. SN 330,053. Pub. 12-30-69. Filed 6-16-69.

Class 28 — Jewelry and Precious-Metal Ware

887,868. MISCELLANEOUS DESIGN. Carla Jewelry Corp. SN 325,459. Pub. 12-30-69. Filed 4-24-69.

887,869. MODERN BAROQUE. Oneida Ltd. SN 327,166. Pub. 12-30-69. Filed 5-13-69.

887,870. AVILA. Textron Inc. SN 329,291. Pub. 12-30-69. Filed 6-5-69.

Class 29 — Brooms, Brushes, and Dusters

887,753. (See Class 16 for this trademark.)

887,871. DURACREST AND DESIGN. Metro Wholesale Corporation. SN 257,293. Pub. 3-5-68. Filed 10-26-66.

887,872. SHU-MITT. Swank, Inc. SN 314,736. Pub. 12-30-69. Filed 12-17-68.

Class 31 — Filters and Refrigerators

887,781. (See Class 19 for this trademark.)

887,793. (See Class 21 for this trademark.)

887,873. PULSHAKE. Slick Industrial Company. SN 301,364. Pub. 12-30-69. Filed 6-25-68.

887,874. TORITE. Torite Enterprises, Inc., d.b.a. Torite Filter Company. SN 308,410. Pub. 12-30-69. Filed 9-27-68.

887,875. SEAFARER AND DESIGN. Ice Industries International, Inc. SN 319,053. Pub. 12-30-69. Filed 2-13-69.

887,876. HOVOGLAS. Hollingsworth & Vose Company. SN 328,297. Pub. 12-30-69. Filed 5-26-69.

Class 32 — Furniture and Upholstery

887,877. CANEL. Gartzke Refrigeration Co., Inc. SN 291,733. Pub. 12-30-69. Filed 2-23-68.

887,878. BOBBY-LEE. Storktex Inc. MULTIPLE CLASS (Classes 32 and 42). SN 297,890. Pub. 3-25-69. Filed 5-10-68.

887,879. JEFFERSON MANOR. Congoleum Industries, Inc., assignee of Congoleum-Nairn Inc. SN 298,706. Pub. 9-30-69. Filed 5-21-68.

887,880. TOW-AWAY. American Athletic Equipment Co. SN 312,975. Pub. 12-30-69. Filed 11-25-68.

887,881. ROYAL CREST ETC. AND DESIGN. White Front Stores, Inc. SN 321,558. Pub. 12-30-69. Filed 3-12-69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

887,705. (See Class 6 for this trademark.)

887,793. (See Class 21 for this trademark.)

887,882. RED HOT. Champion Heater Company, Inc., d.b.a. Red Hot Heater Co. SN 278,873. Pub. 12-30-69. Filed 8-23-67.

887,883. SECATOR. Messer Griesheim G.m.b.H. SN 281,209. Pub. 12-30-69. Filed 9-26-67.

887,884. SPEED-O-MATIC. General Processing Corporation. SN 286,119. Pub. 12-30-69. Filed 12-4-67.

887,885. BIOTEC. Biotec Aktiebolag. SN 293,220. Pub. 12-30-69. Filed 3-14-68.

887,886. INTERTHERM. Intertherm, Inc., by change of name from International Thermal Corporation. SN 324,339. Pub. 11-4-69. Filed 4-14-69.

887,887. SKYBAY. Integrated Ceilings Inc. SN 325,757. Pub. 12-30-69. Filed 4-28-69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

887,781. (See Class 19 for this trademark.)

887,888. TIGER CLAW. Penetred Corporation. SN 209,033. Pub. 5-24-66. Filed 12-29-64.

887,889. BETAFLEX JOINTINE. Jointine Products Company Limited. SN 296,541. Pub. 12-30-69. Filed 4-25-68.

887,890. STAR TRACTION. O.K. Tire and Rubber Co., Inc. SN 307,347. Pub. 12-30-69. Filed 9-13-68.

887,891. POLY-BELT. Market Tire Company of Maryland, Inc. SN 327,034. Pub. 12-30-69. Filed 5-12-69.

887,892. AUTO-FLITE. Schenuit Industries, Inc. SN 329,634. Pub. 12-30-69. Filed 6-10-69.

887,893. KM 20. S. S. Kresge Company. SN 330,149. Pub. 12-30-69. Filed 6-16-69.

Class 36 — Musical Instruments and Supplies

887,812. (See Class 21 for this trademark.)

887,894. HELICASSETTE. Helicosa. SN 308,373. Pub. 12-30-69. Filed 9-27-68.

887,895. HURRICANE AND TREE DESIGN. Hurricane Records & Promotions. SN 319,508. Pub. 12-30-69. Filed 2-18-69.

887,896. CULTURE MATE. Sony Corporation. SN 320,652. Pub. 12-30-69. Filed 3-3-69.

887,897. SAVAREZ. Babolat Maillot Witt. SN 322,257. Pub. 12-30-69. Filed 3-20-69.

887,898. RCA. Radio Corporation of America. SN 324,566. Pub. 12-30-69. Filed 4-15-69.

887,899. RCA. Radio Corporation of America. SN 324,570. Pub. 12-30-69. Filed 4-15-69.

887,900. CHART. Chart Records, Inc. SN 325,462. Pub. 12-30-69. Filed 4-24-69.

887,901. HASTINGS. International Musical Instruments, Inc. SN 326,377. Pub. 12-30-69. Filed 5-5-69.

887,902. CURRIER. International Musical Instruments, Inc. SN 328,059. Pub. 12-30-69. Filed 5-22-69.

887,903. GENESIS. Tuba Records, Inc. SN 328,922. Pub. 12-30-69. Filed 6-2-69.

887,904. EDU TAPE. Erie Technological Products, Inc. SN 329,452. Pub. 12-30-69. Filed 6-9-69.

887,905. YOU NEVER HEARD IT SO GOOD. Superscope, Inc. SN 332,567. Pub. 12-30-69. Filed 3-20-69.

Class 37 — Paper and Stationery

887,857. (See Class 26 for this trademark.)

887,906. ANTIQUE ANGEL AND DESIGN. KirchCarpenter. SN 310,959. Pub. 12-30-69. Filed 10-31-68.

887,907. BLUE CROSS AND CROSS DESIGN. Georgia-Pacific Corporation. SN 317,034. Pub. 12-30-69. Filed 1-21-69.

887,908. VISUAL KING. Visual King International, Inc. SN 317,654. Pub. 12-30-69. Filed 1-27-69.

887,909. SUNSET. Saxon Industries, Inc. SN 327,333. Pub. 12-30-69. Filed 5-15-69.

Class 38 — Prints and Publications

887,817. (See Class 22 for this trademark.)

887,910. DECALAGE. The Meyercord Co. SN 279,563. Pub. 12-30-69. Filed 9-1-67.

887,911. FROSTY THE KNOW MAN AND DESIGN. H. W. Black & Associates, Inc. SN 288,271. Pub. 12-30-69. Filed 1-8-68.

887,912. GCL AND DESIGN. Guia Comercial y Social Latina Inc. SN 291,739. Pub. 12-30-69. Filed 2-23-68.

887,913. MINNIE PEARL'S GRINDER SWITCH GAZETTE AND DESIGN. Performance Systems, Inc., by change of name from Minnie Pearl's Chicken System, Inc. SN 302,748. Pub. 11-4-69. Filed 7-15-68.

887,914. STOCK EXCHEQUER. John F. Bancroft, d.b.a. Stock Exchequer Investment Service. SN 305,303. Pub. 12-30-69. Filed 8-16-68.

887,915. PRESAGE. Egaserp Etablissements. SN 306,361. Pub. 12-30-69. Filed 8-30-68.

887,916. GLOBE DESIGN. Columbia Broadcasting System, Inc., assignee of CBS Enterprises, Inc. SN 314,673. Pub. 12-30-69. Filed 12-17-68.

887,917. CLINICAL PROFILE. Beckman Instruments, Inc. SN 315,729. Pub. 12-30-69. Filed 1-3-69.

887,918. THE WASHINGTONIAN MAGAZINE. Washington Magazine, Inc. SN 322,017. Pub. 12-30-69. Filed 3-17-69.

887,919. STOCKMAP AND DESIGN. Fetherolf & Company, Inc. SN 323,285. Pub. 12–30–69. Filed 4–1–69.

887,920. THE WORLD OF DQ AND DESIGN. American Dairy Queen Corporation. SN 326,972. Pub. 12–30–69. Filed 5–12–69.

887,921. ARROW DESIGN. Litton Educational Publishing, Inc. SN 327,825. Pub. 12–30–69. Filed 5–21–69.

887,922. THE ALEXANDRIA GAZETTE AMERICA'S OLDEST DAILY ESTAB. 1784 A FREE PRESS A FREE PEOPLE AND DESIGN. The Alexandria Gazette Corporation. SN 333,350. Pub. 12–30–69. Filed 7–24–69.

Class 39 — Clothing

887,923. ORSINI. Strozzi Incorporated. SN 197,999. Pub. 8–9–66. Filed 7–16–64.

887,924. UPS-N-DOWNS. Blair Fashions, Inc. SN 232,517. Pub. 9–19–67. Filed 11–12–65.

887,925. JODETTE. University Sportswear of California. SN 260,107. Pub. 4–30–68. Filed 12–5–66.

887,926. HIGH CROSS. Atkins Brothers (Regent Street Hinckley) Limited. SN 291,480. Pub. 12–30–69. Filed 2–20–68.

887,927. SPIDER. The Donner Mountain Corporation. SN 299,955. Pub. 12–30–69. Filed 6–7–68.

887,928. SHANE CUSTOM. Shane Uniform Company, Inc. SN 311,939. Pub. 12–30–69. Filed 11–12–68.

887,929. MARIO OF MILANO. Rob-Scot Knitting Mills, Inc. SN 312,698. Pub. 12–30–69. Filed 11–20–68.

887,930. LEVI'S FOR GALS. Levi Strauss & Co. SN 313,985. Pub. 12–30–69. Filed 12–9–68.

887,931. COMFORTGARD. O.K.I. Supply Co. SN 320,847. Pub. 8–19–69. Filed 3–5–69.

887,932. ZIO. Zio Luigi Ltd. SN 322,534. Pub. 12–30–69. Filed 3–24–69.

887,933. THIRD PERSONS. Marx & Newman Company, Inc. SN 323,169. Pub. 12–30–69. Filed 3–28–69.

887,934. SNO-MO-BEELER. Wonderalls. SN 323,661. Pub. 12–30–69. Filed 4–4–69.

887,935. THE DOLL FACTORY AND DESIGN. Main Street Manufacturing Corporation. SN 323,830. Pub. 12–30–69. Filed 4–7–69.

887,936. HENRI AND POODLE DESIGN. L & L Mfg. Co., Inc. SN 325,136. Pub. 12–30–69. Filed 4–22–69.

887,937. BELLE BOTTOMS. The Lovable Company. SN 326,038. Pub. 12–30–69. Filed 5–1–69.

887,938. PRESCRIPTION GLOVES. Aris Gloves, Inc. SN 327,099. Pub. 12–30–69. Filed 5–13–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

887,878. (See Class 32 for this trademark.)

887,939. BOLD VENTURE. Burlington Industries, Inc. SN 282,286. Pub. 3–5–68. Filed 10–11–67.

Class 44 — Dental, Medical, and Surgical Appliances

887,940. RUBBERJEL. Dentsply International Inc., assignee of The Dentists' Supply Company of New York. SN 291,719. Pub. 12–30–69. Filed 2–23–68.

887,941. SIERRACIN. The Sierracin Corporation. SN 304,402. Pub. 12–30–69. Filed 8–5–68.

887,942. URO-PAK. C. R. Bard, Inc. SN 314,311. Pub. 12–30–69. Filed 12–12–68.

887,943. VARNAL. Cetylite Industries, Inc. SN 325,837. Pub. 12–30–69. Filed 4–29–69.

887,944. CATAROL. American Cyanamid Company. SN 325,945. Pub. 12–30–69. Filed 4–30–69.

887,945. SS AND DESIGN. Stainless Specialties, Inc. SN 326,450. Pub. 12–30–69. Filed 5–5–69.

887,946. MERCURETTE. Propper Manufacturing Co., Inc. SN 327,049. Pub. 12–30–69. Filed 5–12–69.

887,947. TRACTOLATOR. Tractolator Company, Inc. SN 327,307. Pub. 12–30–69. Filed 5–14–69.

Class 46 — Foods and Ingredients of Foods

887,948. MAGI-CAL. Lever Brothers Company. SN 206,276. Pub. 4–6–65. Filed 11–16–64.

887,949. NRB. Kent Feeds, Inc. SN 282,098. Pub. 6–3–69. Filed 10–9–67.

887,950. STARFOLD. James Franklin Lowe. SN 284,925. Pub. 12–30–69. Filed 11–15–67.

887,951. MON CHERI AND DESIGN. P. Ferrero & C. S.p.A. SN 286,335. Pub. 12–30–69. Filed 12–6–67.

887,952. NUTTY BUDDY. Maryland Baking Company. SN 298,839. Pub. 12–30–69. Filed 5–22–68.

887,953. BIRDSEY. Birdsey Flour Mills, d.b.a. Birdsey Flour and Feed Mills. SN 301,188. Pub. 12–30–69. Filed 6–24–68.

887,954. FANCIFUL APPLE (DESIGN). Bruce Fruit Farms, Inc. SN 307,066. Pub. 12–30–69. Filed 9–23–68.

887,955. K & L AND DESIGN. Kahan & Lessin Co., d.b.a. Natural Brands Co. SN 308,955. Pub. 4–15–69. Filed 10–7–68.

887,956. CLOVER RICH. Clover Leaf Creamery Company. SN 309,026. Pub. 12–30–69. Filed 10–7–68.

887,957. BAR SIX. Cadbury Brothers, Limited. SN 311,111. Pub. 12–30–69. Filed 11–1–68.

887,958. YOO-HOO. Yoo-Hoo Beverage Company. SN 313,049. Pub. 12–30–69. Filed 11–25–68.

887,959. GALLO AND DESIGN. Gallo Salame, Inc. SN 316,889. Pub. 12–30–69. Filed 1–17–69.

887,960. LUCKY ELEPHANT. Purity Popcorn Co., Ltd. SN 319,071. Pub. 12–30–69. Filed 2–13–69.

887,961. DOLE AND CROWN DESIGN. Castle & Cooke, Inc., d.b.a. Dole Company. SN 319,668. Pub. 12–30–69. Filed 2–20–69.

887,962. GIT N' GO. Dairyland, Inc., d.b.a. Git N' Go Stores. SN 319,834. Pub. 12–30–69. Filed 2–24–69.

887,963. E AND A BRAND AND DESIGN. Ensher, Alexander & Barsoom, Inc. SN 320,467. Pub. 12–30–69. Filed 3–3–69.

887,964. FLAKOLENE. H. Kohnstamm & Co., Inc. SN 321,507. Pub. 12–30–69. Filed 3–12–69.

887,965. DO-HICKEY. National Biscuit Company. SN 323,724. Pub. 12–30–69. Filed 4–4–69.

887,966. SUPER M. Wyandot Popcorn Company. SN 323,746. Pub. 12–30–69. Filed 4–4–69.

887,967. PLANTATION ACRES. United Chemical Company. SN 324,545. Pub. 12–30–69. Filed 4–14–69.

887,968. FRESHMAN. Oxnard Frozen Foods Cooperative. SN 324,740. Pub. 12–30–69. Filed 4–16–69.

887,969. SEA-VALLEY. Oxnard Frozen Foods Cooperative. SN 324,742. Pub. 12–30–69. Filed 4–16–69.

887,970. WEST-OVER. Taylor & Sledd, Inc. SN 325,414. Pub. 12–30–69. Filed 4–23–69.

887,971. MARTIN'S AND DESIGN. James L. Wall, d.b.a. Martin's Home-Made Products Co. SN 326,011. Pub. 12–30–69. Filed 4–30–69.

887,972. KELTROL. Kelco Company. SN 326,104. Pub. 12–30–69. Filed 5–1–69.

887,973. VITA-PRO. Lauhoff Grain Company. SN 333,233. Pub. 12–30–69. Filed 7–23–69.

Service Marks

Class 49 — Distilled Alcoholic Liquors

887,974. GLEN CRAIG. Continental Distilling Corporation. SN 324,638. Pub. 12–30–69. Filed 4–16–69.

887,975. HEATHBANK. Continental Distilling Corporation. SN 324,639. Pub. 12–30–69. Filed 4–16–69.

887,976. TULLYTON. Continental Distilling Corporation. SN 324,642. Pub. 12–30–69. Filed 4–16–69.

887,977. LORD SANDWICH. Continental Distilling Corporation. SN 325,652. Pub. 12–30–69. Filed 4–28–69.

887,978. BRAEBASSIE. Continental Distilling Corporation. SN 325,653. Pub. 12–30–69. Filed 4–28–69.

Class 51 — Cosmetics and Toilet Preparations

887,979. FACE SHINER. Helene Curtis Industries, Inc. SN 296,652. Pub. 12–30–69. Filed 4–26–68.

887,980. PREFERENCE. L'Oreal. SN 300,640. Pub. 12–30–69. Filed 5–13–68.

887,981. SINEOL. Laboratoire Lachartre S.A. SN 301,350. Pub. 12–30–69. Filed 6–25–68.

887,982. STARSONG. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 306,719. Pub. 12–30–69. Filed 9–6–68.

887,983. ESSENCE DE "200" AND DESIGN. Houbigant, Inc. SN 306,908. Pub. 12–30–69. Filed 9–9–68.

887,984. MINI GLO. Amsco Industries, Inc. SN 310,997. Pub. 12–30–69. Filed 10–31–68.

887,985. FOUR ACES AND DESIGN. Multi-Line Fragrance, Inc. SN 315,579. Pub. 12–30–69. Filed 1–2–69.

887,986. INERAL. L'Oreal. SN 316,216. Pub. 12–30–69. Filed 1–9–69.

887,987. CONCENTRATE 37. Bristol-Myers Company. SN 317,816. Pub. 12–30–69. Filed 1–29–69.

887,988. FUNNY PASTE AND DESIGN. Todd Consumer Corp. SN 317,887. Pub. 12–30–69. Filed 1–29–69.

887,989. SNEAKY PETE. Carter-Wallace, Inc. SN 325,542. Pub. 12–30–69. Filed 4–25–69.

887,990. PLATIFIZ. L'Oreal. SN 328,121. Pub. 12–30–69. Filed 5–27–69.

887,991. BEAUTIFUL FEELING. John H. Breck, Inc. SN 331,018. Pub. 12–30–69. Filed 6–26–69.

887,992. FEELIN' BEAUTIFUL. John H. Breck, Inc. SN 331,025. Pub. 12–30–69. Filed 6–26–69.

887,993. BEAUTIFUL FEELING. John H. Breck, Inc. SN 331,992. Pub. 12–30–69. Filed 7–8–69.

Class 52 — Detergents and Soaps

887,705. (See Class 6 for this trademark.)

887,982. (See Class 51 for this trademark.)

887,994. VACOFOAM. Vacowash Division, Inc. SN 271,883. Pub. 12–30–69. Filed 5–16–67.

887,995. UNCOAT. Clairol Incorporated. SN 297,535. Pub. 12–30–69. Filed 5–7–68.

887,996. CAROLINA AND DESIGN. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 302,298. Pub. 12–30–69. Filed 7–9–68.

887,997. DERBAC. Cereal Soaps Company, Inc. SN 307,728. Pub. 12–30–69. Filed 9–19–68.

887,998. NEO-CHEM THE HOUSE OF CONCENTRATES AND DESIGN. Neo-Chem Co. SN 317,968. Pub. 12–30–69. Filed 1–30–69.

887,999. SUPER G VALUE! AND DESIGN. Genovese Drug Stores, Inc. SN 320,588. Pub. 12–30–69. Filed 3–3–69.

888,000. FEEL 'N PRETTY. John H. Breck, Inc. SN 328,408. Pub. 12–30–69. Filed 5–27–69.

888,001. KINGSTON. The Kingston Company. SN 331,827. Pub. 12–30–69. Filed 7–7–69.

Class 100 — Miscellaneous

888,002. M1 AND DESIGN. Edmund J. McCormick, d.b.a. McCormick & Company. SN 272,082. Pub. 12–30–69. Filed 5–22–67.

888,003. HENRY TH' EIGHTH AND DESIGN. Henry M. Beard. SN 287,342. Pub. 12–30–69. Filed 12–21–67.

888,004. KING'S BARBECUE HOUSE AND DESIGN. King's Barbecue House of Virginia, Inc. SN 290,392. Pub. 12–30–69. Filed 2–6–68.

888,005. DELICA-SEA. Terry Corporation. SN 304,163. Pub. 12–30–69. Filed 8–1–68.

888,006. TACO KID. Pizza Hut, Inc., assignee of Taco, Inc. SN 304,409. Pub. 12–30–69. Filed 8–5–68.

888,007. TACO KID AND DESIGN. Pizza Hut, Inc., assignee of Taco, Inc. SN 304,990. Pub. 12–30–69. Filed 8–12–68.

888,008. THE MOUSE TRAP AND DESIGN. The Mouse Trap of Miami, Inc. SN 306,393. Pub. 12–30–69. Filed 8–30–68.

888,009. BEEF CHIEF AND DESIGN. Beef Chief, Inc. SN 307,304. Pub. 12–30–69. Filed 9–13–68.

888,010. ROYAL FORMAL WEAR. Royal Credit Co., Inc. MULTIPLE CLASS (Classes 100 and 101). SN 310,134. Pub. 12–30–69. Filed 10–21–68.

888,011. TOTAL CONCEPT. Automated Building Components, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 310,437. Pub. 12–30–69. Filed 10–24–68.

888,012. MASTERPLAN. Dayton-Hudson Corporation, by change of name from Dayton Corporation. SN 312,439. Pub. 11–4–69. Filed 11–18–68.

888,013. HIGH SCHOOL STUDENT AMBASSADOR PROGRAM. Educational Travel Company. SN 312,761. Pub. 12–30–69. Filed 11–21–68.

888,014. EZ-HAUL. National Car Rental System, Inc., assignee of Parkhurst Manufacturing Company. SN 315,141. Pub. 12–30–69. Filed 12–24–68.

888,015. THE BEEF BARRON. Hilton Hotels Corporation. SN 315,915. Pub. 12–30–69. Filed 1–6–69.

888,016. CIRCULAR DESIGN WITH ANGULAR STRIPES. Carrier Atlanta Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 316,183. Pub. 12–30–69. Filed 1–9–69.

888,017. BONANZA INTERNATIONAL, INC. 1849 AND DESIGN. Bonanza International, Inc. SN 318,626. Pub. 12–30–69. Filed 2–7–69.

888,018. SC AND ROOSTER DESIGN. Chicken Roost Enterprises, Inc. SN 319,583. Pub. 12–16–69. Filed 2–19–69.

888,019. MISSION BELL INN. McLaughlin Family Lodge, Inc. SN 321,525. Pub. 12–30–69. Filed 3–12–69.

888,020. RESTORE. Continental Casualty Company. SN 321,775. Pub. 12–30–69. Filed 3–14–69.

Class 101 — Advertising and Business

888,010. (See Class 100 for this trademark.)

888,021. WHITE GLOVE SERVICE AND DESIGN. J. A. Nere Co., Inc. SN 272,740. Pub. 12–30–69. Filed 5–31–67.

888,022. UNICLUB. Uniclub, Inc. SN 272,872. Pub. 6–18–68. Filed 6–1–67.

888,023. THOUGHTFULNESS SHOP. Hallmark Cards, Incorporated. SN 285,659. Pub. 12–30–69. Filed 11–27–67.

888,024. T DESIGN. Justin A. Bereny, d.b.a. Technology Transfer Associates. SN 289,871. Pub. 12–30–69. Filed 1–30–68.

888,025. ROYAL FLUSH. Herron-Kienzle, Inc. SN 298,222. Pub. 12–30–69. Filed 4–1–68.

888,026. MI DESIGN. Measurement Instruments, Inc. SN 301,083. Pub. 12-30-69. Filed 6-21-68.

888,027. SAMP-L-MATIC. Cabners Publishing Company, Inc. SN 306,220. Pub. 12-30-69. Filed 8-29-68.

888,028. COOK UP CASH. Gould, Cargill & Company, Inc. SN 306,240. Pub. 12-30-69. Filed 8-29-68.

888,029. TAURUS ZODIAC DESIGN. Taurus Associates, Inc., d.b.a. Taurus Associates. SN 308,049. Pub. 12-30-69. Filed 9-23-68.

888,030. M.O.R.E. T.E.A.M. Seavey & Flarsheim Brokerage Company, Inc. SN 308,821. Pub. 12-30-69. Filed 10-3-68.

888,031. MBS AND DESIGN. Merchants Buying Syndicate, Inc. SN 310,411. Pub. 12-30-69. Filed 10-24-68.

888,032. G GOODWAY AND DESIGN. Goodway, Inc. SN 311,130. Pub. 12-30-69. Filed 11-1-68.

888,033. LIZ' AND ROCKING CHAIR DESIGN. Mary Elizabeth Munson, d.b.a. Liz' Gifts & Decorator Accessories. SN 313,957. Pub. 12-30-69. Filed 12-9-68.

888,034. ALLIED. Allied Personnel, Inc. SN 315,824. Pub. 12-30-69. Filed 12-23-68.

888,035. MISCELLANEOUS DESIGN. Southeastern Shows, Inc. SN 316,688. Pub. 12-30-69. Filed 1-15-69.

888,036. FARMAIL. Farm Journal, Inc. SN 319,152. Pub. 12-30-69. Filed 2-14-69.

888,037. SHOP THE BIG G AND SAVE AND DESIGN. Genovese Drug Stores, Inc. SN 320,584. Pub. 12-30-69. Filed 3-3-69.

888,038. CUCON. Syntactics, Inc. SN 328,020. Pub. 12-30-69. Filed 5-22-69.

888,039. STEPHANIE SHOP. Chas. A. Stevens & Co. SN 329,588. Pub. 12-30-69. Filed 6-10-69.

Class 102 — Insurance and Financial

888,040. LINE-O-CREDIT. Harris Trust and Savings Bank. SN 276,499. Pub. 12-30-69. Filed 7-21-67.

888,041. T (DESIGN). Transamerica Corporation. SN 297,722. Pub. 12-30-69. Filed 5-8-68.

888,042. UNIVERSITY SEAL ETC. AND DESIGN. Fidelity American Insurance Agency. SN 302,497. Pub. 12-30-69. Filed 7-11-68.

888,043. AGP AUTOMATIC GROWTH PLANS. Georgia International Life Insurance Company. SN 310,320. Pub. 12-30-69. Filed 10-23-68.

888,044. PNB AND DESIGN. The Philadelphia National Bank. SN 312,494. Pub. 12-30-69. Filed 11-18-68.

888,045. EXTRA-ORDINARY LIFE. Garden State Life Insurance Company. SN 324,443. Pub. 12-30-69. Filed 4-14-69.

Class 103 — Construction and Repair

888,011. (See Class 100 for this trademark.)

888,016. (See Class 100 for this trademark.)

888,046. BIT BOSS. Smith International, Inc., by merger and change of name from Drilco Oil Tools, Inc. SN 268,872. Pub. 12-30-69. Filed 4-11-67.

888,047. DELK PEST CONTROL ETC. AND DESIGN. Delk Pest Control. SN 288,681. Pub. 12-30-69. Filed 1-12-68.

888,048. MISCELLANEOUS DESIGN. Arrow Pest Control, Inc. SN 298,533. Pub. 12-30-69. Filed 5-20-68.

888,049. MISCELLANEOUS DESIGN. Fire Safety Supply Company. SN 306,364. Pub. 12-30-69. Filed 8-30-68.

888,050. GASAMAT AND DESIGN. Pat Griffin, d.b.a. Pat Griffin Co. SN 309,036. Pub. 12-30-69. Filed 10-7-68.

888,051. C AND LIGHTNING DESIGN. Continental Oil Company. SN 309,753. Pub. 12-30-69. Filed 10-16-68.

888,052. LOCKHEED. Lockheed Aircraft Corporation. SN 310,475. Pub. 12-30-69. Filed 10-24-68.

888,053. MAGS AND DESIGN. Modern Auto Glass Specialists, Inc. SN 319,617. Pub. 12-30-69. Filed 2-19-69.

Class 104 — Communication

888,054. WIOD THE SOUND OF MAJORITY 610 AND DESIGN. Miami Valley Broadcasting Corp., d.b.a. Radio Broadcasting Station WIOD. SN 301,756. Pub. 12-30-69. Filed 7-1-68.

Class 105 — Transportation and Storage

888,055. DOARS. The Reuben H. Donnelley Corporation. SN 275,243. Pub. 12-30-69. Filed 7-3-67.

888,056. ESCAPADE. Escapade Travel Club Inc. SN 299,961. Pub. 12-30-69. Filed 6-7-68.

888,057. TIA AND DESIGN. Trans International Airlines, Inc. SN 310,261. Pub. 12-30-69. Filed 10-22-68.

888,058. TIA AND DESIGN. Trans International Airlines, Inc. SN 310,370. Pub. 12-30-69. Filed 10-23-68.

888,059. TRANS INTERNATIONAL AIRLINES (LOGO). Trans International Airlines, Inc. SN 310,371. Pub. 12-30-69. Filed 10-23-68.

888,060. CHEVRON. Standard Oil Company of California. SN 311,073. Pub. 12-30-69. Filed 10-31-68.

888,061. CHEVRON DESIGN. Standard Oil Company of California. SN 311,074. Pub. 12-30-69. Filed 10-31-68.

888,062. TIA. Trans International Airlines, Inc. SN 312,617. Pub. 12-30-69. Filed 11-19-68.

888,063. TIA. Trans International Airlines, Inc. SN 312,618. Pub. 12-30-69. Filed 11-19-68.

888,064. TREASURED TOURS OF OLDE NEW ENGLAND INC. AND DESIGN. Treasured Tours of Olde New England, Inc. SN 321,093. Pub. 12-30-69. Filed 3-7-69.

888,065. CALL CALL AMERICAN RED BALL ETC. AND DESIGN. American Red Ball Transit Company, Inc. SN 327,217. Pub. 12-30-69. Filed 5-14-69.

Class 106 — Material Treatment

888,066. TEEGIDE. Teeg Research, Inc. SN 304,034. Pub. 12-30-69. Filed 8-1-68.

888,067. NEDOX. General Magnaplate Corporation. SN 304,461. Pub. 12-30-69. Filed 8-6-68.

888,068. CANADIZING. General Magnaplate Corporation. SN 304,462. Pub. 12-30-69. Filed 8-6-68.

Class 107 — Education and Entertainment

888,069. PRIME-O-TEC. Dr. William C. Jordan. SN 281,899. Pub. 12-30-69. Filed 10-5-67.

888,070. WV AND DESIGN. Waterville Company, Inc. SN 285,280. Pub. 12-30-69. Filed 11-20-67.

888,071. UA AND DESIGN. State University of New York and Board of Higher Education of the City of New York (joint owners). SN 289,842. Pub. 8-19-69. Filed 1-29-68.

888,072. EDUCARE. Certification Commission for Executive Secretaries, Inc. SN 299,099. Pub. 12-30-69. Filed 5-27-68.

888,073. MR. PHYSICAL FITNESS. Paul Bernstein. SN 307,727. Pub. 12-30-69. Filed 9-19-68.

888,074. TELE-CRITIQUE. Aerospace Education Foundation. SN 316,061. Pub. 12-30-69. Filed 1-8-69.

Collective Membership Marks

Class 200

888,075. 1620 AND SHIP DESIGN. Massachusetts Society of Mayflower Descendants. SN 304,695. Pub. 12-30-69. Filed 8-8-68.

888,076. MISCELLANEOUS DESIGN. American Society for Industrial Security. SN 305,194. Pub. 12-30-69. Filed 8-15-68.

888,077. STAMP OUT CRIME CRIME STOPPERS CLUB AND DESIGN OF A BOY. The Crime Stoppers Club, Incorporated. SN 315,836. Pub. 12-30-69. Filed 11-14-68.

Certification Mark

Class A — Goods

888,078. ICGB. International Cargo Gear Bureau, Inc. SN 263,670. Pub. 12-30-69. Filed 1-31-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

888,079. Carter-Wallace, Inc., New York, N.Y., by assignment and merger from Lambert-Kay, Inc., Los Angeles, Calif. SN 298,830. Filed P.R. 5-22-68; Am. S.R. 7-14-69.

FLEAFUME

For Insecticide Aerosol Bomb (Int. Cl. 5).
First use Feb. 4, 1968.

Class 16 — Protective and Decorative Coatings

888,080. C. H. Tripp Finishing Company, d.b.a. C. H. Tripp Company, San Diego, Calif. SN 280,651. Filed P.R. 9-18-67; Am. S.R. 7-23-69.

METALLIC TONE

For Paint Products—Namely, a Base, a Toner and a Sealer-Finish (Int. Cl. 2).
First use Aug. 25, 1967.

Class 18 — Medicines and Pharmaceutical Preparations

888,081. Neotis S.p.A., Villaguardia, Como, Italy. SN 313,189. Filed P.R. 11-27-68; Am. S.R. 12-4-69.

LABIOSTICK

Priority claimed under Sec. 44(d) on Italian application filed June 12, 1968; Reg. No. 231,664, dated Sept. 26, 1968.
For Preparation for Use in the Prevention and Elimination of Chapping and Irritation of the Lips (Int. Cl. 5).

Class 26 — Measuring and Scientific Appliances

888,082. Process Equipment Co. of Tipp City, Tipp City, Ohio. SN 273,975. Filed P.R. 6-15-67; Am. S.R. 9-16-69.

LAS-ER-PLANE

For Laser Beam Transmitters (Int. Cl. 9).
First use Mar. 23, 1967.

Class 37 — Paper and Stationery

888,083. Stone Container Corporation, Chicago, Ill. SN 308,406. Filed P.R. 9-27-68; Am. S.R. 11-7-69.

CUSH-N-IT

For Corrugated Paperboard and the Fluted and Facing Media for Making Said Corrugated Paperboard (Int. Cl. 16).
First use Aug. 12, 1968.

888,084. The Mead Corporation, Dayton, Ohio. SN 328,874. Filed 6-2-69.

CULTURE

For Book Papers (Int. Cl. 16).
First use Jan. 26, 1965.

Class 38 — Prints and Publications

888,085. The Signs of the Times Publishing Co., Cincinnati, Ohio. SN 289,344. Filed P.R. 1-22-68; Am. S.R. 11-5-69.

SCREEN PRINTING

For Magazine (Int. Cl. 16).
First use on or about Dec. 29, 1967.

888,086. Cahners Publishing Company, Inc., New York, N.Y., by merger from Conover-Mast Publications, Inc., New York, N.Y. SN 292,890. Filed P.R. 3-11-68; Am. S.R. 6-3-69.

PURCHASING MANAGEMENT

For Periodic Newsletter of Interest to Industrial Buyers and Management Personnel (Int. Cl. 16).
First use June 6, 1967.

888,087. Ziff-Davis Publishing Company, New York, N.Y., assignee of American Aviation Publications, Inc., Washington, D.C. SN 302,700. Filed P.R. 7-15-68; Am. S.R. 8-28-69.

AIR FREIGHT WEEKLY REPORT

For Report Issued Weekly (Int. Cl. 16).
First use Apr. 29, 1968.

888,088. Frequency, Inc., Norwood, Mass. SN 320,811. Filed P.R. 3-5-69; Am. S.R. 12-12-69.

FREQUENCY TECHNOLOGY

For Magazine Published Periodically (Int. Cl. 16).
First use Nov. 27, 1968.

888,089. National Magazine Company Ltd., London, England. SN 328,717. Filed P.R. 5-29-69; Am. S.R. 12-2-69.

CONTAINERISATION INTERNATIONAL

For Magazine Published Monthly and/or at Other Intervals (Int. Cl. 16).
First use on or about April 1967; in commerce on or about April 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

888,090. Fashion Wigs, Inc., Providence, R.I. SN 321,917. Filed P.R. 3-17-69; Am. S.R. 11-3-69.

fashion wigs

For Wigs (Int. Cl. 26).
First use in or about July 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

888,091. Thompson of California, Inc., d.b.a. California Authensics, Hermosa Beach, Calif. SN 314,505. Filed P.R. 12-16-68; Am. S.R. 12-15-69.

CALIFORNIA AUTHENTICS

For Piece Goods for Making Into Wearing Apparel of All Kinds, Draperies, Tablecloths, and the Like (Int. Cl. 24).
First use Nov. 29, 1968.

888,092. Fab Industries, Inc., New York, N.Y. SN 329,347. Filed P.R. 6-6-69; Am. S.R. 12-3-69.

CLING-FREE

For Apparel Fabric for Making Lingerie Garments (Int. Cl. 24).
First use November 1968.

Class 44 — Dental, Medical, and Surgical Appliances

888,093. Picker Corporation, White Plains, N.Y. SN 312,064. Filed P.R. 11-13-68; Am. S.R. 12-22-69.

RAPIDFIL

For Barium Enema Bags (Int. Cl. 10).
First use Nov. 1, 1966.

888,094. Balfour Imports Ltd., Brooklyn, N.Y. SN 315,298. Filed P.R. 12-27-68; Am. S.R. 8-4-69.

BALFOUR

For Electric Hair Styling Iron (Int. Cl. 9).
First use Mar. 19, 1968.

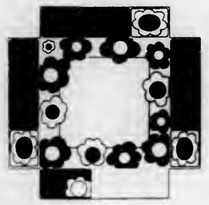
888,095. The Vollrath Co., Sheboygan, Wis. SN 315,453. Filed P.R. 12-30-68; Am. S.R. 10-6-69.

PERSONAL PAK

For Kit Containing Medical Appliances and Utensils of the Type Required by a Hospital Patient, Including Such Items as an Emesis Basin, Wash Basin, Bedside Tray, Water Carafe, Soap Dish, and Tumbler (Int. Cl. 10).
First use Nov. 15, 1965.

Class 46 — Foods and Ingredients of Foods

888,096. Table Talk, Inc., Worcester, Mass. SN 317,162. Filed P.R. 1-21-69; Am. S.R. 11-26-69.



For Dessert Pies (Int. Cl. 30).
First use Oct. 3, 1968.

Service Marks

Class 102 — Insurance and Financial

888,097. Hagerstown Trust Company, Hagerstown, Md. SN 296,071. Filed P.R. 4-22-68; Am. S.R. 11-21-69.

CHEC-KING TRUST

Applicant disclaims the words "Hagerstown Trust Company" apart from the mark as shown.
For Making Loans and Extending Credit on a Revolving Basis by the Use of Checks Drawn by Customers on Their Individual Checking Accounts (Int. Cl. 36).
First use Apr. 6, 1968.

Class 103 — Construction and Repair

888,098. Kurt Lehmann, Jr., d.b.a. Leathercraft Process, New York, N.Y. SN 324,821. Filed 4-17-69.

LEATHERCRAFT PROCESS

For Cleaning, Redyeing, Renapping, Repolishing, Rebuffing, and Restoring Leather Surfaces (Int. Cl. 40).
First use Mar. 15, 1938.

Class 107 — Education and Entertainment

888,099. United States Lawn Tennis Association, New York, N.Y. SN 306,412. Filed P.R. 8-30-68; Am. S.R. 10-27-69.

UNITED STATES OPEN TENNIS CHAMPIONSHIPS

For Organization and Conducting of Tennis Competitions (Int. Cl. 41).
First use May 3, 1968.

TRADEMARK REGISTRATIONS RENEWED

77,430. DELMAR CLUB. Cl. 46 (Int. Cls. 29 and 30). 4-12-10.
264,554. RESOLUTE. Cl. 37 (Int. Cl. 16). 11-26-29.
265,369. KLIP ETC. AND LABEL DESIGN. Cl. 6 (Int. Cl. 5). 12-24-29.
265,698. CROWN. Cl. 2 (Int. Cl. 16). 1-7-30.
266,447. MODART. Cl. 39 (Int. Cl. 25). 1-21-30.
267,299. "SILLY SYMPHONY" AND DESIGN. Cl. 26 (Int. Cl. 9). 2-18-30.
267,423. OLD GOLD. Cl. 46 (Int. Cl. 31). 2-18-30.
267,884. FIRTHALOY. Cl. 23 (Int. Cls. 7 and 8). 3-4-30.
269,045. SONNY BOY. Cl. 46 (Int. Cl. 30). 3-25-30.
269,231. "CT" AND DESIGN. Cl. 18 (Int. Cl. 5). 4-1-30.
269,496. ATLAS "A" ETC. Cl. 6 (Int. Cl. 5). 4-8-30.
269,655. SUN DROP. Cl. 45 (Int. Cl. 32). 4-15-30.
270,360. REACTIFORMER. Cl. 21 (Int. Cl. 9). 5-6-30.
270,952. "COMFOSEAM" AND DESIGN. Cl. 39 (Int. Cl. 25). 5-20-30.
271,078. I. W. Lyon D.D.S. Cl. 51 (Int. Cl. 3). 5-27-30.
271,079. DR. LYON'S. Cl. 51 (Int. Cl. 3). 5-27-30.
271,357. "BEEFEATER." Cl. 46 (Int. Cl. 29). 6-3-30.
271,445. SAFEWAY. Cl. 2 (Int. Cl. 16). 6-3-30.
271,831. "CLUB MANAGEMENT" ETC. Cl. 38 (Int. Cl. 16). 6-17-30.
443,751. K & E. Cl. 37 (Int. Cl. 16). 2-7-50.
443,792. CHESEBROUGH AND DESIGN. Cl. 51 (Int. Cls. 3, 4, and 5). 2-28-50.
443,950. THIRST-AID FIRST AID FOR YOUR THIRST. Cl. 45 (Int. Cl. 32). 5-2-50.
505,779. TOP-FLITE. Cl. 22 (Int. Cl. 28). 1-18-49.
511,350. PAYSET. Cl. 37 (Int. Cl. 16). 6-21-49.
514,916. CAPITOL (DESIGN). Cl. 11 (Int. Cl. 16). 9-6-49.
515,170. LAKESIDE. Cl. 37 (Int. Cl. 16). 9-13-49.
515,342. PRIDE OF THE NORTH. Cl. 46 (Int. Cl. 31). 9-20-49.
515,967. HYDROLAIR. Cl. 23 (Int. Cl. 7). 10-4-49.
516,767. FLOOR MASTER. Cl. 29 (Int. Cl. 21). 10-25-49.
517,174. ROUGH RIDER AND DESIGN. Cl. 39 (Int. Cl. 25). 11-1-49.
517,432. FINGER-BUFFS. Cl. 4 (Int. Cl. 7). 11-8-49.
517,908. JENOLITE. Cl. 6 (Int. Cls. 1, 2, and 3). 11-22-49.
517,982. BEACON. Cl. 4 (Int. Cl. 3). 11-22-49.
518,985. HEVI DUTY AND DESIGN. Cl. 21 (Int. Cl. 11). 12-20-49.
519,016. THE WEBSTER STAR BRAND. Cl. 15 (Int. Cl. 4). 12-20-49.
519,120. TARA. Cl. 27 (Int. Cl. 14). 12-20-49.
519,127. COBLENTZ. Cl. 3 (Int. Cl. 18). 12-20-49.
519,161. SLEEVOIL. Cl. 23 (Int. Cl. 7). 12-27-49.
519,355. SHERATON. Cl. 44 (Int. Cl. 10). 12-27-49.
519,400. SWP COVER THE EARTH AND DESIGN. Cl. 16 (Int. Cls. 2 and 3). 1-3-50.
519,475. CORA. Cl. 39 (Int. Cl. 25). 1-3-50.
519,511. PREPWASH. Cl. 52 (Int. Cl. 3). 1-3-50.
519,606. YOUNGSTOWN. Cl. 13 (Int. Cl. 6). 1-10-50.
519,619. O-CEDAR. Cl. 29 (Int. Cl. 21). 1-10-50.
519,630. LUNT. Cl. 28. 1-10-50.
519,677. PENTO-DEL. Cl. 18 (Int. Cl. 5). 1-10-50.
519,683. LANCO AND DESIGN. Cl. 12 (Int. Cl. 19). 1-10-50.
519,684. IGAS. Cl. 12 (Int. Cl. 17). 1-10-50.
519,685. PLASTIMENT. Cl. 12 (Int. Cl. 1). 1-10-50.
519,686. PLASTOCRETE. Cl. 12 (Int. Cl. 1). 1-10-50.
519,769. EUTEC-ALUM-WELD. Cl. 14 (Int. Cl. 6). 1-10-50.
519,781. N.C. FINISH AND DESIGN. Cl. 106 (Int. Cl. 40). 1-10-50.
519,874. DAVEY. Cl. 23 (Int. Cl. 7). 1-17-50.
519,883. NAAS OLD TIME. Cl. 46 (Int. Cl. 30). 1-17-50.
519,941. MICHIGAN MINTS. Cl. 46 (Int. Cl. 30). 1-17-50.
519,957. ARGO AND DESIGN. (Cl. 46 (Int. Cl. 30). 1-17-50.
520,019. BUSHEND. Cl. 21 (Int. Cl. 9). 1-17-50.
520,021. PALOMINO. Cl. 46 (Int. Cl. 30). 1-17-50.
520,185. CREST (DESIGN). Cl. 39 (Int. Cl. 25). 1-24-50.
520,339. BAN-FLAME. Cl. 42 (Int. Cl. 24). 1-31-50.
520,345. FLYING ANGEL (DESIGN). Cl. 46 (Int. Cl. 29). 1-31-50.
520,351. A CRADLE CLUB PRODUCT AND DESIGN. Cl. 42 (Int. Cl. 24). 1-31-50.
520,398. SUNSPARK. Cl. 42 (Int. Cl. 24). 1-31-50.
520,445. DISTINCTIVE. Cl. 46 (Int. Cl. 31). 1-31-50.
520,446. HEALTH GIVER. Cl. 46 (Int. Cl. 31). 1-31-50.
520,493. SANFORLAN. Cl. 42 (Int. Cl. 24). 1-31-50.
520,724. FILMSORT. Cl. 37 (Int. Cl. 16). 2-7-50.
520,766. SIKA. Cl. 12 (Int. Cl. 1). 2-7-50.
520,891. SEIBERLING. Cl. 35 (Int. Cl. 12). 2-7-50.
520,895. PRE-TESTED. Cl. 29 (Int. Cl. 16). 2-14-50.
520,900. WHALE AND DESIGN. Cl. 34 (Int. Cl. 11). 2-7-50.
521,015. CHLORANTINE. Cl. 6 (Int. Cl. 2). 2-14-50.
521,017. COPRATINE. Cl. 6 (Int. Cl. 2). 2-14-50.
521,021. VERTEX DEPOSE AND DESIGN. Cl. 42 (Int. Cl. 24). 2-14-50.
521,196. FLORENCE. Cl. 6 (Int. Cl. 1). 2-21-50.
521,545. JEXANE. Cl. 15 (Int. Cl. 4). 2-28-50.
521,565. LITHOLINE. Cl. 15 (Int. Cl. 4). 2-28-50.
521,591. BRISTOL. Cl. 6 (Int. Cl. 3). 2-28-50.
522,173. REED. Cl. 23 (Int. Cl. 7). 3-14-50.
522,448. MISCELLANEOUS DESIGN. Cl. 103 (Int. Cl. 16). 3-14-50.

522,561. HICKOK. Cl. 28 (Int. Cl. 14). 3-21-50.
522,569. VISULITE. Cl. 12 (Int. Cl. 6). 3-21-50.
522,722. KRYSTAL KLEAR. Cl. 37 (Int. Cl. 16). 3-21-50.
522,808. EUTEC-HAND-OMATIC. Cl. 34 (Int. Cl. 9). 3-21-50.
522,809. EUTECT-O-MATIC. Cl. 34 (Int. Cl. 9). 3-21-50.
522,848. GREAT VALUE. Cl. 46 (Int. Cls. 29 and 32). 3-21-50.
522,849. GOOD'N RIPE. Cl. 46 (Int. Cl. 29). 3-21-50.
522,915. CROSS AND DESIGN. Cl. 46 (Int. Cl. 29). 3-28-50.
523,027. PENNZOIL KONTAX SYSTEM AND DESIGN. Cl. 26 (Int. Cl. 9). 3-28-50.
523,070. NACO. Cl. 46 (Int. Cls. 30 and 32). 3-28-50.
523,306. YEASTAGA. Cl. 18 (Int. Cl. 5). 4-4-50.
523,380. ISCO. Cl. 39 (Int. Cl. 25). 4-4-50.
523,397. BROOKSIDE. Cl. 46 (Int. Cl. 29). 4-4-50.
523,458. SPAULDING AND DESIGN. Cl. 46 (Int. Cl. 30). 4-4-50.
523,546. CAFE RIOJA. Cl. 46 (Int. Cl. 30). 4-4-50.
523,550. EL PASEO. Cl. 46 (Int. Cl. 29). 4-4-50.
523,630. SHU-KLEEN. Cl. 52 (Int. Cl. 3). 4-4-50.
523,682. STANHO. Cl. 23 (Int. Cl. 6). 4-11-50.
523,692. CRAFT'S. Cl. 46 (Int. Cl. 30). 4-11-50.
523,893. NELSONREST. Cl. 32 (Int. Cl. 20). 4-11-50.
523,897. EMPRESS. Cl. 32 (Int. Cl. 20). 4-11-50.
523,905. DIWEEVIL. Cl. 6 (Int. Cl. 5). 4-11-50.
524,133. ENGLISH RIB AND DESIGN. Cl. 39 (Int. Cl. 25). 4-18-50.
524,165. HY-VALUE. Cl. 39 (Int. Cl. 25). 4-18-50.
524,238. D AND DESIGN. Cl. 14 (Int. Cl. 6). 4-18-50.
524,310. STERLING. Cl. 6 (Int. Cls. 1 and 2). 4-25-50.
524,679. DR. PEPPER AND DESIGN. Cl. 45 (Int. Cl. 32). 5-2-50.
524,680. DR. PEPPER. Cl. 45 (Int. Cl. 32). 5-2-50.
524,724. ZENITH. Cl. 32 (Int. Cl. 20). 5-2-50.
524,945. SAFETY GRIP. Cl. 35 (Int. Cl. 12). 5-9-50.
525,107. BB DUREX. Cl. 33 (Int. Cl. 14). 5-9-50.
525,121. TIME AND DESIGN. Cl. 15 (Int. Cl. 4). 5-9-50.
525,604. MEEHANITE. Cl. 38 (Int. Cl. 16). 5-30-50.
525,608. LA BOUR. Cl. 23 (Int. Cl. 7). 5-30-50.
525,677. HANDI-CLIP. Cl. 23 (Int. Cl. 16). 5-30-50.
525,763. GENUINE ROCKINGHAM VIRGINIA POULTRY. Cl. 46 (Int. Cl. 29). 5-30-50.
525,827. MEASURED. Cl. 39 (Int. Cl. 25). 5-30-50.
525,897. SUCCESS. Cl. 37 (Int. Cl. 16). 6-6-50.
525,993. TOPPER. Cl. 23 (Int. Cl. 9). 6-6-50.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

523,890. ORIENTER. Cl. 26. 4-11-50.
569,484. FOOD SERVICE NEWS. Cl. 38. 1-20-53.
623,108. FRISCO FOG. Cl. 39. 3-13-56.
883,610. ACRALEN. Cl. 6. 1-6-70.

Section 8

740,909. CHEM-MATIC. Cl. 26. 11-20-62.
742,484. DISC EYES. Cl. 51. 12-18-62.
742,919. HAUL-MARK. Cl. 19. 1-1-63.

The following registrations issued Jan. 28, 1964

763,721. THERMAFORM. Cl. 1.
763,722. BARBED WIRE. Cl. 1.
763,724. PREVELLE. Cl. 1.
763,735. SANI-GUARD. Cl. 2.
763,744. OXABANE. Cl. 6.
763,745. LAUROBANE. Cl. 6.
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550,554. LOUISE ANDRE AND DESIGN. Cl. 39. 11-6-51.

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507,680. PLAINSMAN. Cl. 1. 3-15-49. Great Plains Seed Co. Farmers Union Central Exchange, Incorporated, St. Paul, Minn. Amended to appear:

PLAINSMAN

508,533. SILVER DOLLAR. Cl. 1. 4-12-49. Great Plains Seed Co. Farmers Union Central Exchange, Incorporated. St. Paul, Minn. Amended to appear:

SILVER DOLLAR

515,302. NEBEL AND DESIGN. Cl. 39. 9-20-49. Nebel Knitting Company, Charlotte, N.C. Amended to appear:

NEBEL

518,981. ROYAL TRITON. Cl. 15. 12-20-49. Union Oil Company of California, Los Angeles, Calif. Amended to appear:

ROYAL TRITON

679,098. H-W CHROMEPAK. Cl. 12. 5-26-59. Harbison-Walker Refractories Company. Dresser Industries, Inc., Dallas, Tex. Amended to appear:

CHROMEPAK

755,293. UNIGAS AND FLAME DESIGN. Cl. 6. 8-27-63. Union Oil Company of California, Los Angeles, Calif. Amended to appear:

UNIGAS

763,032. THE AUSSIE. Cl. 22. 1-14-64. Bancroft Racket Company, Pawtucket, R.I. Amended to appear:

AUSSIE

820,002. WHITE LILY AND DESIGN. Cl. 46. 12-6-66. J. Allen Smith & Company. The Great Western Foods Company, Knoxville, Tenn. Amended to appear:

WHITE LILY

834,849. RIVIANA. Cl. 46. 9-5-67. Riviana Foods Inc., Houston, Tex. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted and *Inc.* should be inserted.

880,902. FACELLE AND DESIGN. Cls. 37 and 39. 11-18-69. International Paper Company, assignee of Facelle Company Limited, Toronto, Ontario, Canada. Corrected: In the heading "Feb. 27, 1969" should be deleted and *Mar. 21, 1969* should be inserted.

884,233. CHEVRON DESIGN. Cl. 46. 1-13-70. Riviana Foods Inc., Houston, Tex. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted and *Inc.* should be inserted.

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Adaptable Laboratory Furniture Co., Inc., New York, N.Y. 763,880, canc. Cl. 26.
Aero-Motive Mfg. Co., Kalamazoo, Mich. 887,828, pub. 12–30–69. Cl. 23.
Aeroscience Electronics, Inc., Atlanta, Ga. 763,865, canc. Cl. 26.
Aerospace Education Foundation, Washington, D.C. 888,074, pub. 12–30–69. Cl. 107.
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Alexander Doll Co.. Inc., New York, N.Y. 763,835, canc. Cl. 22.
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Ditto, Inc., Chicago, Ill., to Payset, Inc., Los Angeles, Calif. 511,350, ren. 3–17–70. Cl. 37.
Diversified Electronics Co., Inc., Sunnyvale, Calif. 887,808, pub. 12–30–69. Cl. 21.
Dr. Pepper Co., Dallas, Tex. 524,679–80, ren. 3–17–70. Cl. 45.
Dodge Mfg. Corp., to Reliance Electric Co., Mishawaka, Ind. 519,161, ren. 3–17–70. Cl. 23.
Donnelley, Reuben H., Corp., The, New York, N.Y. 888,055, pub. 12–30–69. Cl. 105.
Donner Mountain Corp., The, Berkeley, Calif. 887,927, pub. 12–30–69. Cl. 39.
Dow Chemical Co., The, Midland, Mich. 887,845, pub. 12–30–69. Cl. 23.
Dow Corning Corp., Midland, Mich. 887,703, pub. 12–30–69. Cl. 5.
Drackett Co., The: *See*—
O-Cedar Corp'n.
Drilco Oil Tools, Inc.: *See*—
Smith International, Inc.
Duckham, Alexander, & Co. Ltd.: *See*—
Jenolite Ltd.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 887,816, pub. 12–30–69. Cl. 21.
Early California Industries Inc.: *See*—
Pacific Olive Co.
Eb-Sport-International GmbH, Bavaria, Germany. 887,819, pub. 12–30–69. Cl. 22.
Educational Travel Co., Spokane, Wash. 888,013, pub. 12–30–69. Cl. 100.
Edwards, L. F., Research Corp., Long Island City, N.Y. 763,752, canc. Cl. 6.
Egaserp Etablissements, Vaduz, Liechtenstein. 887,915, pub. 12–30–69. Cl. 38.
Electrical Information Publications, Inc., Madison, Wis. 569,484, canc. Cl. 38.
Electronic Associates, Inc., Long Branch, N.J. 763,875, canc. Cl. 26.
Electronic Image Systems Corp., Cambridge, Mass. 887,795, pub. 12–30–69. Cl. 21.
Empire Coatings & Chemical Co., Denver, Colo. 763,775, canc. Cl. 16.
Ensher, Alexander & Barsoom, Inc., Sacramento, Calif. 887,963, pub. 12–30–69. Cl. 46.
Erdmann, Gust., & Co., Hamburg, Germany. 887,751, pub. 12–30–69. Cl. 16.
Erie Technological Prod., Inc., Erie, Pa. 887,904, pub. 12–30–69. Cl. 36.
Escapade Travel Club Inc., Jamaica, N.Y. 888,056, pub. 12–30–69. Cl. 105.
Estate of William S. Dwinnell, deceased, d.b.a. Dwinnell Bros. Orchards, Minneapolis, Minn., to Frank Taylor Orchards, Inc., Wenatchee, Wash. 515,342, ren. 3–17–70. Cl. 46.
Etablissements Boudious, Romilly Sur Seine (Aube), France. 521,021, ren. 3–17–70. Cl. 42.
Eutectic Corp.: *See*—
Eutectic Welding Alloys Corp.
Eutectic Welding Alloys Corp., New York, to Eutectic Corp., Flushing, N.Y. 519,769, ren. 3–17–70. Cl. 14.

Eutectic Welding Alloys Corp., New York, to Eutectic Corp., Flushing, N.Y. 522,808–9, ren. 3–17–70. Cl. 34.
FMC Corp., San Jose, Calif. 887,833, pub. 12–30–69. Cl. 23.
Fab Industries, Inc., New York, N.Y. 888,092. Cl. 42.
Fabrique d'Horlogerie Chs, Tissot & Fils S.A., Le Locle, Switzerland. 887,867, pub. 12–30–69. Cl. 27.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 883,610, canc. Cl. 6.
Farmland Industries, Inc., Kansas City, Mo. 887,750, pub. 12–30–69. Cl. 15.
Farm Journal, Inc., Philadelphia, Pa. 888,036, pub. 12–30–69. Cl. 101.
Fashion Wigs, Inc., Providence, R.I. 888,090. Cl. 40.
Federal Mfg. & Engineering, Garden City, N.Y. 763,867, canc. Cl. 26.
Fels and Co., Philadelphia, Pa. 764,076, canc. Cl. 52.
Ferrero, P., & C. S.p.A., Alba, Italy. 887,951, pub. 12–30–69. Cl. 46.
Fetherolf & Co., Inc., New York, N.Y. 887,919, pub. 12–30–69. Cl. 38.
Fidelity American Insurance Agency, Chicago, Ill. 888,042, pub. 12–30–69. Cl. 102.
Fieldcrest Mills, Inc.: *See*—
North Carolina Finishing Co.
Fieldcrest Mills, Inc., Spray, N.C. 763,826, canc. Cl. 21.
Film 'N File, Inc., New York, N.Y., to Minnesota Mining & Mfg. Co., St. Paul, Minn. 520,724, ren. 3–17–70. Cl. 37.
Fire Detection Service, Inc., Spokane, Wash. 887,806, pub. 12–30–69. Cl. 21.
Fire Safety Supply Co., Pittsburgh, Pa. 888,049, pub. 12–30–69. Cl. 103.
Firestone Tire & Rubber Co., The: *See*—
Seiberling Rubber Co.
Firestone Tire & Rubber Co., The, Akron, Ohio. 887,841, pub. 12–30–69. Cl. 23.
First National Stores, Inc., Somerville, Mass. 523,397, ren. 3–17–70. Cl. 46.
Firth Sterling Corp.: *See*—
Firth-Sterling Steel Co.
Firth-Sterling Steel Co., to Firth Sterling Corp., McKeesport, Pa. 267,884, ren. 3–17–70. Cl. 23.
Flavour Candy Co., The, to Flavour Candy Co., Chicago, Ill. 519,941, ren. 3–17–70. Cl. 46.
Fleming-Joffe Ltd., New York, N.Y. 763,722, canc. Cl. 1.
Flowers Breweries Ltd., Luton, England. 764,058–9, canc. Cl. 48.
Foremost-McKesson, Inc.: *See*—
Currier's Tablets Inc.
Fraser's, Inc., New York, N.Y. 763,848, canc. Cl. 23.
Frequency, Inc., Norwood, Mass. 888,088. Cl. 38.
Frequency Sources Inc., North Chelmsford, Mass. 887,803, pub. 12–30–69. Cl. 21.
Fuller Co., Catasauqua, Pa. 887,834, pub. 12–30–69. Cl. 23.
GAF Corp., New York, N.Y. 887,792, pub. 12–30–69. Cl. 20.
GAF Corp., New York, N.Y., from American Felt Co., Glenville, Conn. 887,857, pub. 12–30–69. Multiple Class (Classes 26 and 37).
Gallo Salame. Inc., San Francisco, Calif. 887,959, pub. 12–30–69. Cl. 46.
Garden State Life Insurance Co., Newark, N.J. 888,045, pub. 12–30–69. Cl. 102.
Gartzke Refrigeration Co., Inc., Madison, Wis. 887,877, pub. 12–30–69. Cl. 32.
Gawne, Donald, d.b.a. Uni-Rep, Fort Lauderdale, Fla. 763,831. canc. Cl. 21.
Gebauer, Carl H., d.b.a. The Sheraton Co., Chicago, Ill. 519,355, ren. 3–17–70. Cl. 44.
Geier Industries, Inc.: *See*—
Geier Mattress Co., The.
Geier Mattress Co., The, Rossmoyne, to Geier Industries, Inc., Cincinnati, Ohio. 524,724, ren. 3–17–70. Cl. 32.
General Dynamics Corp., Rochester, N.Y. 763,890, canc. Cl. 26.
General Electric Co., Schenectady, N.Y. 887,814, pub. 12–30–69. Cl. 21.
General Magnaplate Corp., Linden, N.J. 888,067–8, pub. 12–30–69. Cl. 106.
General Processing Corp., Crossville, Tenn. 887,884, pub. 12–30–69. Cl. 34.
General Tire & Rubber Co., The, Akron, Ohio. 764,007, canc. Cl. 42.
General Tire & Rubber Co., The, Akron, Ohio. 887,779, pub. 12–30–69. Cl. 19.
Genesco, Inc., Nashville, Tenn. 763 983, canc. Cl. 39.
Genovese Drug Stores, Inc., Long Island City, N.Y. 887,999, pub. 12–30–69. Cl. 52.
Genovese Drug Stores, Inc., Long Island City, N.Y. 888,037, pub. 12–30–69. Cl. 101.
Georgia International Life Insurance Co., Atlanta, Ga. 888,043, pub. 12–30–69. Cl. 102.
Georgia-Pacific Corp., Portland, Oreg. 887,907, pub. 12–30–69. Cl. 37.
Goldstein, Nathan, d.b.a. Nathan Jewelry, New York, N.Y. 763,917, canc. Cl. 28.
Goodway, Inc., Philadelphia, Pa. 888,032, pub. 12–30–69. Cl. 101.
Gould, Cargill, & Co., Inc., Minneapolis, Minn. 888,028, pub. 12–30–69. Cl. 101.
Grant Co., The, Chicago, Ill. 887,707, pub. 2–11–69. Cl. 6.
Great Plains Seed Co., to Farmers Union Central Exchange, Inc., St. Paul, Minn. 507,680. Am. 7(d). Cl. 1.
Great Plains Seed Co., to Farmers Union Central Exchange, Inc., St. Paul, Minn. 508,533. Am. 7(d). Cl. 1.
Greenerd Press & Machine Co., Inc.: *See*—
American Steel Foundries.
Greyhound Corp., The, Chicago, Ill. 887,695, pub. 12–30–69. Cl. 2.
Griffin, Pat, d.b.a. Pat Griffin Co., Fort Collins, Colo. 888,050, pub. 12–30–69. Cl. 103.
Grumbacher, M., Inc.. New York, N.Y. 520,895, ren. 3–17–70. Cl. 29.
Guia Comercial y Social Latina Inc., New York, N.Y. 887,912, pub. 12–30–69. Cl. 38.
HTV Systems, Inc., Rochester, N.Y. 887,804, pub. 12–30–69. Cl. 21.
Hagerstown Trust Co., Hagerstown, Md. 888,097. Cl. 102.
Halby Products Co., Inc., Wilmington, Del. 763,744–5, canc. Cl. 6.
Hallmark Cards, Inc., Kansas City, Mo. 888,023, pub. 12–30–69. Cl. 101.
Hamilton Allied Corp.: *See*—
Decatur Casting Co., The.
Hannah Embroidery Inc., Palisades Park, N.J. 764,000, canc. Cl. 39.
Harbison-Walker Refractories Co., to Dresser Industries, Inc., Dallas, Tex. 679,098. Am. 7(d). Cl. 12.
Harris Trust & Savings Bank, Chicago, Ill. 888,040, pub. 12–30–69. Cl. 102.
Hayette, Inc., New York, N.Y. 764,008, canc. Cl. 42.
Hercules Chemical Co., Inc., New York, N.Y. 887,705, pub. 12–30–69. Multiple Class (Classes 6, 12, 34, and 52).
Helicosa, Paris, France. 887,894, pub. 12–30–69. Cl. 36.
Henderson, James, Hollywood, Calif. 887,745, pub. 9–16–69. Cl. 15.
Herron-Kienzle, Inc., Wilton, Conn. 888,025, pub. 12–30–69. Cl. 101.
Hevi Duty Electric Co., to Sola Basic Industries, Inc., Milwaukee, Wis. 518,985, ren. 3–17–70. Cl. 21.
Hexcel Products Inc., Berkeley, Calif. 763,966, canc. Cl. 38.
Hickok Mfg. Co., Inc., Rochester, N.Y. 520,185, ren. 3–17–70. Cl. 39.
Hickok Mfg. Co., Inc., Rochester, N.Y. 522,561, ren. 3–17–70. Cl. 28.
Hilton Hotels Corp., Chicago, Ill. 888,015, pub. 12–30–69. Cl. 100.
Holeproof Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 270,952, ren. 3–17–70. Cl. 39.
Hollingsworth & Vose Co., East Walpole, Mass. 887,876, pub. 12–30–69. Cl. 31.
Holliston Laboratories, Inc., Boston, Mass. 887,718, pub. 12–30–69. Cl. 6.
Horlicks Corp., Racine, Wis. 520,345, ren. 3–17–70. Cl. 46.
Houbigant, Inc., New York, N.Y. 887,983, pub. 12–30–69. Cl. 51.
Hoyt Heater Co., Orange, Calif. 763,950, canc. Cl. 34.
Hurricane Records & Promotions, Albuquerque, N. Mex. 887,895, pub. 12–30–69. Cl. 36.
Ice Industries International, Inc., Longwood, Fla. 887,875, pub. 12–30–69. Cl. 31.
Igloo Custom Equipment, Inc., Jacksonville, Fla. 763,802, canc. Cl. 19.
Impulsphysik G.m.b.H., Hamburg-Rissen, Germany. 887,854, pub. 8–6–68. Cl. 26.
Infant Items, Inc., Fremont, Ohio. 520,351, ren. 3–17–70. Cl. 42.
Infilco Inc., Tucson, Ariz. 763,857, canc. Cl. 23.
Interchemical Corp., New York, N.Y., to Clopay Corp., Cincinnati, Ohio. 514,916, ren. 3–17–70. Cl. 11.
Integrated Ceilings Inc., Los Angeles, Calif. 887,887, pub. 12–30–69. Cl. 34.
International Cargo Gear Bureau, Inc., New York, N.Y. 888,078, pub. 12–30–69. Cl. A.
International Musical Instruments, Inc., Marion, N.C. 887,901–2, pub. 12–30–69. Cl. 36.
International Paper Co., from Facelle Co., Ltd., Toronto, Ontario, Canada. 880,902, cor. Multiple Class (Classes 37 and 39).
International Products Corp., New York, N.Y., to Republic Food Products Co., d.b.a. International Food Products Co., Chicago, Ill. 271,357, ren. 3–17–70. Cl. 46.
International Shoe Machine Corp., Boston, Mass. 763,721, canc. Cl. 1.
International Telemeter Corp.: *See*—
Sterling Information Services, Ltd.
International Thermal Corp.: *See*—
Intertherm, Inc.
Intertherm, Inc., from International Thermal Corp., St. Louis, Mo. 887,886, pub. 11–4–69. Cl. 34.
Interwoven Stocking Co., New Brunswick, N.J., to Kayser-Roth Corp., New York, N.Y. 523,380, ren. 3–17–70. Cl. 39.
Interwoven Stocking Co., New Brunswick, N.J., to Kayser-Roth Corp., New York, N.Y. 524,133, ren. 3–17–70. Cl. 39.
Jacobson, Shirley E., Washington, D.C. 763,968, canc. Cl. 38.
Jaeger Laboratories, Columbus, Ohio. 764,017, canc. Cl. 44.
Jan Industries, Inc., Atlanta, Ga. 887,733, pub. 12–30–69. Cl. 12.
Jebe, Howard S., d.b.a. Hubs Mfg. Co., Oak Lawn, Ill. 887,739, pub. 12–30–69. Cl. 13.
Jenolite Ltd., to Alexander Duckham & Co. Ltd., London, England. 517,908, ren. 3–17–70. Cl. 6.
Johns-Manville Corp., New York, N.Y. 887,736, pub. 12–30–69. Cl. 12.
Johnson Chemical Industries, Inc., Baltimore, Md. 887,716, pub. 12–30–69. Cl. 6.
Johnson, Denis O., Jr., Northlake, Ill. 764,038, canc. Cl. 46.
Jointine Products Co. Ltd., North Hykeham, England. 887,889, pub. 12–30–69. Cl. 35.
Jordan, Dr. William C., San Rafael, Calif. 888,069, pub. 12–30–69. Cl. 107.
Jura Watch Co., Delemont, Switzerland. 519,120, ren. 3–17–70. Cl. 27.
Kahan & Lessin Co., d.b.a. Natural Brands Co., Los Angeles, Calif. 887,955, pub. 4–15–69. Cl. 46.

Kaman Corp., Bloomfield, Conn. 887,812, pub. 12–30–69. Multiple Class (Classes 21 and 36).
Katz, Martin, Co., The, to Martin Katz Corp., Brooklyn, N.Y. 522,569, ren. 3–17–70. Cl. 12.
Kayser-Roth Corp.: *See*—
Holeproof Hosiery Co.
Interwoven Stocking Co.
Rosedale Knitting Co.
Kelco Co., San Diego, Calif. 887,972, pub. 12–30–69. Cl. 46.
Kellogg Corset Co.: *See*—
Associated Apparel Industries, Inc.
Kenmore Machine Products, Inc., Lyons, N.Y. 763,933, canc. Cl. 31.
Kenner Products Co., Cincinnati, Ohio. 887,821–3, pub. 12–30–69. Cl. 22.
Kent Feeds, Inc., Muscatine, Iowa. 887,949, pub. 6–3–69. Cl. 46.
Keuffel & Esser Co., Morristown, N.J. 443,751, ren. 3–17–70. Cl. 37.
Keystone Consolidated Industries, Inc., Peoria, from National Lock Co., Rockford, Ill. 887,740–1, pub. 9–9–69. Cl. 13.
Kimberly-Clark Corp.: *See*—
Neenah Paper Co.
Kimberly-Clark Corp., Neenah, Wis. 887,777, pub. 12–30–69. Cl. 18.
Kimco Laboratories, Inc., Brooklyn, N.Y. 887,807, pub. 12–30–69. Cl. 21.
King's Barbecue House of Virginia, Inc., Richmond, Va. 888,004, pub. 12–30–69. Cl. 100.
Kingston Co., The, Skokie, Ill. 888,001, pub. 12–30–69. Cl. 52.
Kirch Carpenter, Madison, Wis. 887,906, pub. 12–30–69. Cl. 37.
Klopman Mills, Inc.: *See*—
Burlington Mills Corp.
Kohnstamm, H., & Co., Inc., New York, N.Y. 521,591, ren. 3–17–70. Cl. 6.
Kohnstamm, H., & Co., Inc., New York, N.Y. 887,964, pub. 12–30–69. Cl. 46.
Kresge, S. S., Co., Detroit, Mich. 887,893, pub. 12–30–69. Cl. 35.
Kvernelands Fabrikk A/S, Kvernaland, Norway. 887,839, pub. 12–30–69. Cl. 23.
L & L Mfg. Co., Inc., Dallas, Tex. 887,936, pub. 12–30–69. Cl. 39.
LTV Ling Altec, Inc., Anaheim, Calif. 887,798, pub. 12–30–69. Cl. 21.
Laboratoire Lachartre S.A., Paris, France. 887,981, pub. 12–30–69. Cl. 51.
Labour Co., Inc., The, to American Gage & Machine Co., Elkhart, Ind. 525,608, ren. 3–17–70. Cl. 23.
Lafarr Research Co., Inc., Elkton, Md. 887,774, pub. 12–30–69. Cl. 18.
Lambert-Kay, Inc.: *See*—
Carter-Wallace, Inc.
Langdale Co., The, Valdosta, Ga. 519,683, ren. 3–17–70. Cl. 12.
Larus & Brother Co., Richmond, Va. 887,756, pub. 12–30–69. Cl. 17.
Lauhoff Grain Co., Danville, Ill. 887,973, pub. 12–30–69. Cl. 46.
Lazier, J. F., Mfg. Co., Inc., to Sun Drop Sales Corp. of America, St. Louis, Mo. 269,655, ren. 3–17–70. Cl. 45.
Lear, Inc., Grand Rapids, Mich. 523,890, canc. Cl. 26.
Lefebure Corp., Cedar Rapids, Iowa. 763,863, canc. Cl. 25.
Lehmann, Kurt, Jr., d.b.a. Leathercraft Process, New York, N.Y. 888,098. Cl. 103.
Leventhal, Harold A., New York, N.Y. 763,860, canc. Cl. 24.
Lever Brothers Co., New York, N.Y. 887,948, pub. 4–6–65. Cl. 46.
Lifetime Cutlery Corp., Brooklyn, N.Y. 887,825, pub. 12–30–69. Cl. 23.
Lindsay Citrus Growers Association, to Sierra Citrus Association, Lindsay, Calif. 520,445–6, ren. 3–17–70. Cl. 46.
Linco Products Corp., Chicago, Ill. 887,710, pub. 12–30–69. Cl. 6.
Litton Educational Publishing, Inc., New York, N.Y. 887,921, pub. 12–30–69. Cl. 38.
Lockheed Aircraft Corp., Burbank, Calif. 888,052, pub. 12–30–69. Cl. 103.
Lofthouse Chemical Products Ltd., Fleetwood, England. 887,762, pub. 12–30–69. Cl. 18.
Lohr & Bromkamp G.m.b.H., Main, Germany. 887,849, pub. 12–30–69. Cl. 23.
Londontown Mfg. Co., The, Baltimore, Md. 623,108, canc. Cl. 39.
L'Oreal, Paris, France. 887,980, pub. 12–30–69. Cl. 51.
L'Oreal, Paris, France. 887,986, pub. 12–30–69. Cl. 51.
L'Oreal, Paris, France. 887,990, pub. 12–30–69. Cl. 51.
Lovable Co., The, Atlanta, Ga. 887,937, pub. 12–30–69. Cl. 39.
Louisiana State Rice Milling Co., Inc., Abbeville, La., to Riviana Foods Inc., Houston, Tex. 269,045, ren. 3–17–70. Cl. 46.
Lowe, James F., Prescott, Ariz. 887,950, pub. 12–30–69. Cl. 46.
Lynchburg Hosiery Mills, Inc., Lynchburg, Va. 524,165, ren. 3–17–70. Cl. 39.
M-R-S Mfg. Co., Flora, Miss. 887,831–2, pub. 12–30–69. Cl. 23.
Macfur S.p.A., Guardamiglio, Italy. 887,691, pub. 12–30–69. Cl. 1.
Magi Enterprises, Ltd., London, England. 763,886, canc. Cl. 26.
Main St. Mfg. Corp., Boonton, N.J. 887,935, pub. 12–30–69. Cl. 39.
Mallory Electric Corp., Detroit, Mich. 763,816, canc. Cl. 21.
Management Magazines, Inc., Chicago, Ill., to Commerce Publishing Co., St. Louis, Mo. 271,831, ren. 3–17–70. Cl. 38.
Manitowoc Co., Inc., The, Manitowoc, Wis. 887,829, pub. 12–30–69. Cl. 23.
Marion Laboratories, Inc., Kansas City, Mo. 887,768–9, pub. 12–30–69. Cl. 18.
Market Tire Co. of Maryland, Inc., Rockville, Md. 887,891, pub. 12–30–69. Cl. 35.
Markwell Mfg. Co., Inc., New York, N.Y. 525,677, ren. 3–17–70. Cl. 23.
Maruzen Sewing Machine Co., Ltd., Osaka, Japan. 887,830, pub. 12–30–69. Multiple Class (Classes 23 and 26).
Marx & Newman Co., Inc., New York, N.Y. 887,933, pub. 12–30–69. Cl. 39.
Maryland Baking Co., Baltimore, Md. 887,952, pub. 12–30–69. Cl. 46.
Masco Corp., Taylor Mich. 887,696, pub. 12–30–69. Cl. 2.
Massachusetts Society of Mayflower Descendants, Boston, Mass. 888,075, pub. 12–30–69. Cl. 200.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 887,835, pub. 12–30–69. Cl. 23.
Mastercraft Engineering Co., Minneapolis, Minn. 887,799, pub. 12–30–69. Cl. 21.
McCormick, Edmund J., d.b.a. McCormick & Co., Yonkers, N.Y. 888,002, pub. 12–30–69. Cl. 100.
McDaniel, Sam, & Sons, Inc., Bedford, Va. 764,039, canc. Cl. 46.
McLaughlin Family Lodge, Inc., Manitou Springs, Colo. 888,019, pub. 12–30–69. Cl. 100.
Mead Corp., The, Dayton, Ohio. 888,084. Cl. 37.
Measurement Instruments, Inc., Columbus, Ohio. 888,026, pub. 12–30–69. Cl. 101.
Medical Pharmaceuticals Inc., Glendale, Calif. 887,766, pub. 12–30–69. Cl. 18.
Meehanite Metal Corp., to Meehanite Metal Corp., White Plains, N.Y. 525,604, ren. 3–17–70. Cl. 38.
Merchants Buying Syndicate, Inc., New York, N.Y. 888,031, pub. 12–30–69. Cl. 101.
Messer Griesheim G.m.b.H., Frankfurt am Main, Germany. 887,883, pub. 12–30–69. Cl. 34.
Metalloy Steel Foundry, Inc., Sacramento, Calif. 887,847, pub. 12–30–69. Cl. 23.
Metro Wholesale Corp., New York, N.Y. 887,871, pub. 3–5–68. Cl. 29.
Meyercord Co., The, Wheaton, Ill. 887,910, pub. 12–30–69. Cl. 38.
Miami Valley Broadcasting Corp., Miami, Fla. 888,054, pub. 12–30–69. Cl. 104.
Middleby, Joseph, Jr. Inc., Boston, Mass. 443,950, ren. 3–17–70. Cl. 45.
Midland Silicones Ltd., Reading, England. 887,743, pub. 12–30–69. Multiple Class (Classes 15 and 16).
Miller Brewing Co., Milwaukee, Wis. 764,056–7, canc. Cl. 48.
Miller & Poston Mfg. Co., Inc., Spokane, Wash. 763,764, canc. Cl. 13.
Mini-Mart International, Inc., from Coulter Petroleum Corp., d.b.a. Copetco Sales Corp., Tulsa, Okla. 887,734, pub. 11–18–69. Cl. 12.
Minnesota Mining & Mfg. Co.: *See*—
Film 'n File, Inc.
Minnie Pearl's Chicken System, Inc.: *See*—
Performance Systems, Inc.
Miro Pen Corp., New York, N.Y. 763,965, canc. Cl. 37.
Mises, Bruce B., Inc., Los Angeles, Calif. 887,820, pub. 12–30–69. Cl. 22.
Missouri Meerschaum Co., Washington, Mo. 887,723, pub. 12–30–69. Cl. 8.
Mitchell Camera Corp., Glendale, Calif. 887,862, pub. 12–30–69. Cl. 26.
Model Projects, Inc. New York, N.Y. 742,484, canc. Cl. 51.
Modern Auto Glass Specialists, Inc., Fargo, N. Dak. 888,053, pub. 12–30–69. Cl. 103.
Modern Products, Inc., Kansas City, Mo. 887,809, pub. 12–30–69. Cl. 21.
Mojonnier Bros. Co., Chicago, Ill. 887,844, pub. 12–30–69. Cl. 23.
Moll, A., Grocer Co., St. Louis, Mo. 77,430, ren. 3–17–70. Cl. 46.
Moore, Franklin M., Downey, to Western Zone Sales Co., Los Angeles, Calif. 523,630, ren. 3–17–70. Cl. 52.
Moran Shoe Co., Carlyle, Ill. 763,993–4, canc. Cl. 39.
Morrow Products Co., Warren, Mich. 764,077, canc. Cl. 52.
Mouse Trap of Miami, Inc., The, Miami, Fla. 888,008, pub. 12–30–69. Cl. 100.
Multi-Line Fragrance, Inc., Fort Scott, Kans. 887,985, pub. 12–30–69. Cl. 51.
Munson, Mary E., d.b.a. Liz' Gifts & Decorator Accessories, Bonita, Calif. 888,033, pub. 12–30–69. Cl. 101.
Murphy, G. W., Industries, Inc.: *See*—
Reed Roller Bit Co.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 887,838, pub. 12–30–69. Cl. 23.
NVCP Nederlandsch Verkoopkantoor Voor Chemische Producten N.V., Amsterdam, Netherlands. 887,713, pub. 12–30–69. Cl. 6.
Naas Corp. of Indiana, The, to Naas Foods, Inc., Portland, Ind. 519,883, ren. 3–17–70. Cl. 46.
Naas Corp. of Indiana, The, to Naas Foods, Inc., Portland, Ind. 523,070, ren. 3–17–70. Cl. 46.
Naas Foods, Inc.: *See*—
Naas Corp. of Indiana, The.

Nash Metalware Co., Inc., New York, N.Y. 877,851, pub. 12–30–69. Cl. 23.
National Biscuit Co., New York, N.Y. 887,965, pub. 12–30–69. Cl. 46.
National Car Rental System, Inc., Minneapolis, Minn., from Parkhurst Mfg. Co., Sedalia, Mo. 888,014, pub. 12–30–69. Cl. 100.
National Lead Co., New York, N.Y. 887,701, pub. 12–30–69. Cl. 4.
National Lead Co., New York, N.Y. 887,717, pub. 12–30–69. Cl. 6.
National Lock Co.: *See*—
Keystone Consolidated Industries, Inc.
National Magazine Co. Ltd., London, England. 888,089. Cl. 38.
National Starch and Chemical Corp., New York, N.Y. 887,714, pub. 12–30–69. Cl. 6.
Nebel Knitting Co., Charlotte, N.C. 515,302. Am. 7(d). Cl. 39.
Neenah Paper Co., to Kimberly-Clark Corp., Neenah, Wis. 525,897, ren. 3–17–70. Cl. 37.
Nelson Chemical Co., Detroit, Mich., to Amchem Products, Inc., Ambler, Pa. 519,511, ren. 3–17–70. Cl. 52.
Nelson Bros., West Wyoming, to Nelson Mfg. Co., Inc., Wyoming, Pa. 523,893, ren. 3–17–70. Cl. 32.
Nelson Mfg. Co., Inc.: *See*—
Nelson Bros.
Nelson Sales Co., San Antonio, Tex. 887,818, pub. 12–30–69. Cl. 22.
Neo-Chem Co., Chicago, Ill. 887,998, pub. 12–30–69. Cl. 52.
Neotis S.p.A., Villaguardia, Como, Italy. 888,081. Cl. 18.
Nere, J. A., Co., Inc., Fredericksburg, Va. 888,021, pub. 12–30–69. Cl. 101.
New Jersey Zinc Co., The, to The New Jersey Zinc Co., New York, N.Y. 521,196, ren. 3–17–70. Cl. 6.
North American Philips Co., Inc., New York, N.Y. 763,850, canc. Cl. 23.
North Carolina Finishing Co., Salisbury, to Fieldcrest Mills, Inc., Eden, N.C. 519,781, ren. 3–17–70. Cl. 106.
Northeastern Inc., Canton, Ohio. 763,896, canc. Cl. 26.
Northwest Import & Export Corp., Brooklyn, N.Y. 887,801, pub. 12–30–69. Cl. 21.
Nutting Truck and Caster Co., Faribault, Minn. 887,782, pub. 12–30–69. Cl. 19.
O.K. Tire and Rubber Co., Inc., Littleton, Colo. 887,890, pub. 12–30–69. Cl. 35.
O.K.I. Supply Co., Cincinnati, Ohio. 887,931, pub. 8–19–69. Cl. 39.
Obermeyer & Co., Hanau, Germany. 887,765, pub. 12–30–69. Cl. 18.
O-Cedar Corp'n, Chicago, Ill., to The Drackett Co., Cincinnati, Ohio. 519,619, ren. 3–17–70. Cl. 29.
O-Cedar Corp'n, Chicago, Ill., to The Drackett Co., Cincinnati, Ohio. 516,767, ren. 3–17–70. Cl. 29.
Oil Base, Inc., Houston, Tex. 887,709, pub. 12–30–69. Cl. 6.
Olin Mathieson Chemical Corp., New York, N.Y. 763,751, canc. Cl. 6.
Omega-T Systems Inc., Richardson, Tex. 887,855–6, pub. 12–30–69. Cl. 26.
Oneida Ltd., Oneida, N.Y. 887,869, pub. 12–30–69. Cl. 28.
Oxnard Frozen Foods Cooperative, Oxnard, Calif. 887,968–9, pub. 12–30–69. Cl. 46.
Po Sing Firecracker Factory, G/F Hong Kong. 887,726, pub. 12–30–69. Cl. 9.
Pace, Inc., Silver Spring, Md. 887,842, pub. 12–30–69. Cl. 23.
Pacific Olive Co., Visalia, to Early California Industries Inc., Los Angeles, Calif. 523,550, ren. 3–17–70. Cl. 46.
Pangburn Co., Inc., Fort Worth, Tex. 520,021, ren. 3–17–70. Cl. 46.
Park-Air Corp., Boston, Mass. 887,846, pub. 12–30–69. Cl. 23.
Parker Instrument Corp., Stamford, Conn. 887,860, pub. 12–30–69. Cl. 26.
Parkhurst Mfg. Co.: *See*—
National Car Rental System, Inc.
Pascal Co., Inc., Seattle, Wash. 763,789, canc. Cl. 18.
Payset, Inc.: *See*—
Ditto, Inc.
Peavey Co., Minneapolis, Minn. 763,901, canc. Cl. 26.
Penetred Corp., Marshfield, Wis. 887,888, pub. 5–24–66. Cl. 35.
Pennzoil Co., The, to Pennzoil United, Inc., Oil City, Pa. 523,027, ren. 3–17–70. Cl. 26.
Pennzoil United, Inc.: *See*—
Pennzoil Co., The.
Performance Systems, Inc., from Minnie Pearl's Chicken System, Inc., Nashville, Tenn. 887,913, pub. 11–4–69. Cl. 38.
Peterson-Rockhill Corp., Seattle, Wash. 763,834, canc. Cl. 22.
Pharmacia Laboratories, Inc., Piscataway, N.J. 887,776, pub. 12–30–69. Cl. 18.
Philadelphia National Bank, Philadelphia, Pa. 888,044, pub. 12–30–69. Cl. 102.
Philco Corp., Philadelphia, Pa. 763,932, canc. Cl. 31.
Phillips-Van Heusen Corp., New York, N.Y. 763,996, canc. Cl. 39.
Picker Corp., White Plains, N.Y. 888,093. Cl. 44.
Pilot Full Fashion Mills, Inc., to Alba-Waldensian, Inc., Valdese, N.C. 519,475, ren. 3–17–70. Cl. 39.
Pizza Hut, Inc., from Taco, Inc., Wichita, Kans. 888,006–7, pub. 12–30–69. Cl. 100.
Plastic Coating Corp., The, Holyoke, Mass. 763,758, canc. Cl. 6.
Platt Luggage, Inc., Chicago, Ill. 887,858, pub. 12–30–69. Cl. 26.
Polyplastex United, Inc., Union, N.J. 887,690, pub. 12–30–69. Cl. 1.
Port-A-Galley, Inc., Claremont, Calif. 763,952, canc. Cl. 34.
Portland Wire and Iron Works, Portland, Oreg. 887,784, pub. 12–30–69. Cl. 19.
Process Equipment Co. of Tipp City, Tipp City, Ohio. 888,082. Cl. 26.
Product Dynamics Corp., San Francisco, Calif. 887,722, pub. 12–30–69. Cl. 8.
Propper Mfg. Co., Inc., Long Island City, N.Y. 887,946, pub. 12–30–69. Cl. 44.
Pressman-Gutman Co., Inc., Philadelphia, Pa. 763,724, canc. Cl. 1.
Pullman Inc., Chicago, Ill. 763,798, canc. Cl. 19.
Purity Popcorn Co., Ltd., Toronto, Ontario, Canada. 887,960, pub. 12–30–69. Cl. 46.
RCA Corp.: *See*—
RCA Service Co., Inc.
RCA Service Co., Inc., Camden, N.J., to RCA Corp., New York, N.Y. 522,448, ren. 3–17–70. Cl. 103.
Radio Corp. of America, New York, N.Y. 887,898–9, pub. 12–30–69. Cl. 36.
Ram Tool Corp., Chicago, Ill. 763,846, canc. Cl. 23.
Rand, William, Inc., New York, N.Y. 887,861, pub. 12–30–69. Cl. 26.
Redi-Knot, Inc., Pittsburgh, Pa. 764,006, canc. Cl. 40.
Reed Roller Bit Co., to G. W. Murphy Industries, Inc., Houston, Tex. 522,173, ren. 3–17–70. Cl. 23.
Reliable Electric Co., Franklin Park, Ill. 887,797, pub. 12–30–69. Cl. 21.
Reliance Electric Co.: *See*—
Dodge Mfg. Corp.
Republic Food Products Co.: *See*—
International Products Corp.
Reynolds Metals Co., Richmond, Va. 887,732, pub. 12–30–69. Cl. 12.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 887,758–9, pub. 12–30–69. Cl. 17.
Rhodia Inc.: *See*—
Chipman Chemical Engineering Co., Inc.
Riam S.A., Morges, Switzerland. 887,837, pub. 12–30–69. Cl. 23.
Richardson Co., The, Melrose Park, Ill. 887,730, pub. 12–30–69. Cl. 11.
Richardson-Merrell Inc., New York, N.Y. 887,775, pub. 12–30–69. Cl. 18.
Richardson-Merrell Inc., New York, N.Y. 763,790. Cl. 18.
Riegel Paper Corp., New York, N.Y. 763,959, canc. Cl. 37.
Ringer, Judd, Corp., Eden Prairie, Minn. 887,719, pub. 12–30–69. Cl. 6.
Riviana Foods Inc.: *See*—
Louisiana State Rice Milling Co., Inc.
Riviana Foods Inc., Houston, Tex. 834,849, cor. Cl. 46.
Riviana Foods Inc., Houston, Tex. 884,233, cor. Cl. 46.
Rob-Scot Knitting Mills, Inc., Philadelphia, Pa. 887,929, pub. 12–30–69. Cl. 39.
Rockingham Poultry Marketing Co-Operative, Inc., Broadway, Va. 525,763, ren. 3–17–70. Cl. 46.
Rogers, Lunt & Bowlen Co., Greenfield, Mass. 519,630, ren. 3–17–70. Cl. 28.
Root, Myron, & Co., Inc.: *See*—
Root & Pankey.
Root & Pankey, to Myron Root & Co., Inc., Medford, Oreg. 267,423, ren. 3–17–70. Cl. 46.
Rosedale Knitting Co., Reading, Pa., to Kayser-Roth Corp., New York, N.Y. 525,827, ren. 3–17–70. Cl. 39.
Rough Rider, Inc., Napa, Calif. 517,174, ren. 3–17–70. Cl. 39.
Royal Credit Co., Inc., Washington, D.C. 888,010, pub. 12–30–69. Multiple Class (Classes 100 and 101).
Rytak Co. Inc., The, d.b.a. Rytak Corp., Seattle, Wash. 764,041, canc. Cl. 46.
Safeway Sales Corp., Boston, to United States Envelope Co., Springfield, Mass. 271,445, ren. 3–17–70. Cl. 2.
Santana, Leopoldo Pacheco, Caracas, Venezuela. 887,729, pub. 12–30–69. Cl. 10.
Saxon Industries, Inc., New York, N.Y. 887,909, pub. 12–30–69. Cl. 37.
Schenuit Industries, Inc., Baltimore, Md. 887,892, pub. 12–30–69. Cl. 35.
Schultz Shoe Co., Inc., d.b.a. Schultz Co., St. Louis, Mo. 887,728, pub. 12–30–69. Cl. 10.
Schwartz & Son, Washington, D.C. 763,925, canc. Cl. 28.
Seavey & Flarsheim Brokerage Co., Inc., Oak Brook, Ill. 888 030, pub. 12–30–69. Cl. 101.
Selberling Rubber Co., to The Firestone Tire & Rubber Co., Akron, Ohio. 520,891, ren. 3–17–70. Cl. 35.
Sentinel Bag & Paper Co., Inc., Brooklyn, N.Y. 763,735, canc. Cl. 2.
Servomechanisms/Inc., Westbury, N.Y. 763,882, canc. Cl. 26.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 887,699, pub. 12–30–69. Cl. 3.
Shane Uniform Co., Inc., Evansville, Ind. 887,928, pub. 12–30–69. Cl. 39.
Sharples Corp., The, Philadelphia, Pa. 763,866, canc. Cl. 26.
Sharps Arms Co., Salt Lake City, Utah. 887,725, pub. 12–30–69. Cl. 9.
Sherwin-Williams Co., The, Cleveland, Ohio. 519,400, ren. 3–17–70. Cl. 16.
Sierra Citrus Assn.: *See*—
Lindsay Citrus Growers Assn.
Sierracin Corp., The, Sylmar, Calif. 887,941, pub. 12–30–69. Cl. 44.
Signatronic Co. Ltd., East Elmhurst, N.Y. 887,852, pub. 12–30–69. Cl. 24.
Signs of the Times Publishing Co., The, Cincinnati, Ohio. 888,085. Cl. 38.

Simmons Co., New York, N.Y. 523,897, ren. 3–17–70. Cl. 32.
Simpson Timber Co., Seattle, Wash. 887,737, pub. 12–30–69. Cl. 12.
Sinclair Refining Co., New York, N.Y., to Atlantic Richfield Co., Philadelphia, Pa. 521,565, ren. 3–17–70. Cl. 15.
Slick Industrial Co., Summit, N.J. 887,873, pub. 12–30–69. Cl. 31.
Smart Supply Co. Inc., d.b.a. S.S. Distributors, Los Angeles, Calif. 887,783, pub. 12–30–69. Cl. 19.
Smith, Allen J., & Co. The Great Western Foods Co., Knoxville, Tenn. 820,002. Am. 7(d). Cl. 46.
Smith, Bradner & Co., to Bradner Central Co., Chicago, Ill. 515,170, ren. 3–17–70. Cl. 37.
Smith International, Inc., Whittier, Calif., from Drilco Oil Tools, Inc., Midland, Tex. 888,046, pub. 12–30–69. Cl. 103.
Societe Carbochimique S.A., Brussels, Belgium. 764,053, canc. Cl. 46.
Societe des Lunetiers (Cottet, Poichet, Tagnon & Cie), Paris, France. 763,879, canc. Cl. 26.
Sola Basic Industries, Inc.: *See*—
Hevi Duty Electric Co.
Sony Corp., Tokyo, Japan. 887,896, pub. 12–30–69. Cl. 36.
Southeastern Shows, Inc., Charlotte, N.C. 888,035, pub. 12–30–69. Cl. 101.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 505,779, ren. 3–17–70. Cl. 22.
Spaulding Bakeries, Inc., Binghamton, N.Y. 523,458, ren. 3–17–70. Cl. 46.
Stainless Specialties, Inc., Newport Beach, Calif. 887,945, pub. 12–30–69. Cl. 44.
Staley Paint Mfg. Co., St. Louis, Mo. 887,753, pub. 12–30–69. Multiple Class (Classes 16 and 29).
Stanco Inc., to Standard Oil Co., New York, N.Y. 265,369, ren. 3–17–70. Cl. 6.
Standard Brands Chemical Industries, Inc., Dover, Del. 887,715, pub. 12–30–69. Cl. 6.
Standard Horse Nail Corp., New Brighton, Pa. 523,682, ren. 3–17–70. Cl. 23.
Standard Oil Co.: *See*—
Stanco Inc.
Standard Oil Co., The, Cleveland, Ohio. 521,545, ren. 3–17–70. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 888,060–1, pub. 12–30–69. Cl. 105.
Standard Steel Works, Inc., North Kansas City, Mo. 742,919, canc. Cl. 19.
Star Key & Lock Mfg. Co., Inc., Brooklyn, N.Y. 887,853, pub. 12–30–69. Cl. 25.
State University of New York & Board of Higher Education of the City of New York, Albany, N.Y. 888,071, pub. 8–19–69. Cl. 107.
Sterling Drug Inc.: *See*—
Watkins, R. L., Co., The.
Sterling Drug Inc., New York, N.Y. 763,787, canc. Cl. 18.
Sterling Information Services, Ltd., New York, N.Y., from International Telemeter Corp., Los Angeles, Calif. 887,800, pub. 12–30–69. Cl. 21.
Stevens, Chas A., & Co., Chicago, Ill. 888,039, pub. 12–30–69. Cl. 101.
Stone Container Corp., Chicago, Ill. 888,083. Cl. 37.
Storktex Inc., Brooklyn, N.Y. 887,878, pub. 3–25–69. Multiple Class (Classes 32 and 42).
Strathmore Products, Inc., Syracuse, N.Y. 887,712, pub. 12–30–69. Cl. 6.
Strauss, Levi, & Co., San Francisco, Calif. 887,930, pub. 12–30–69. Cl. 39.
Stress Relief Engineering Co., Costa Mesa, Calif. 887,836, pub. 12–30–69. Cl. 23.
Strozzi Inc., Chicago, Ill. 887,923, pub. 8–9–66. Cl. 39.
Stuart, D. A., Oil Co., Ltd., Chicago, Ill. 887,747–8, pub. 12–30–69. Cl. 15.
Sun Drop Sales Corp. of America: *See*—
Lazier, J. F., Mfg. Co., Inc.
Superior Oil Co., The, Houston, Tex. 887,706, pub. 12–30–69. Cl. 6.
Superior Oil Co., The, Houston, Tex. 887,744, pub. 12–30–69. Cl. 15.
Superior Switchboard & Devices Co., The, to The Union Metal Mfg. Co., Canton, Ohio. 270,360, ren. 3–17–70. Cl. 21.
Superscope, Inc., Sun Valley, Calif. 887,905, pub. 12–30–69. Cl. 36.
Swank, Inc., Attleboro, Mass. 887,872, pub. 12–30–69. Cl. 29.
Syntactics, Inc., New York, N.Y. 888,038, pub. 12–30–69. Cl. 101.
Systems Engineering Laboratories Inc., Fort Lauderdale, Fla. 887,859, pub. 12–30–69. Cl. 26.
Table Rock Laboratories, Inc., Greenville, S.C. 523,306, ren. 3–17–70. Cl. 18.
Table Talk, Inc., Worcester, Mass. 888,096. Cl. 46.
Taco, Inc.: *See*—
Pizza Hut, Inc.
Tansey Co., The, Tarpon Springs, Fla. 763,763, canc. Cl. 13.
Taurus Associates, Inc., d.b.a. Taurus Associates, Alexandria, Va. 888,029, pub. 12–30–69. Cl. 101.
Taylor Brothers, Inc., Winston-Salem, N.C. 887,760–1, pub. 12–30–69. Cl. 17.
Taylor, E. E., Corp., Freeport, Maine. 763,980, canc. Cl. 39.
Taylor, Frank, Orchards, Inc.: *See*—
Dwinnell, William S., Estate of.
Taylor & Sledd, Inc., Richmond, Va. 887,970, pub. 12–30–69. Cl. 46.
Teeg Research, Inc., Detroit, Mich. 888,066, pub. 12–30–69. Cl. 106.
Tee-Pak, Inc., Chicago, Ill. 763,841, canc. Cl. 23.
Teledyne, Inc., Los Angeles, Calif. 887,735, pub. 12–30–69. Cl. 12.
Telequip Corp., New York, N.Y. 763,894–5, canc. Cl. 26.
Terry Corp., Milwaukee, Wis. 888,005, pub. 12–30–69. Cl. 100.
Texize Chemicals, Inc.: *See*—
Cincinnati Oil Works Co., The.
Textron Inc., Providence, R.I. 887,785, pub. 12–30–69. Cl. 19.
Textron Inc., Providence, R.I. 887,870, pub. 12–30–69. Cl. 28.
Thompson of California, Inc., Hermosa Beach, Calif. 888,091. Cl. 42.
Time Oil Co., Los Angeles, Calif. 525,121, ren. 3–17–70. Cl. 15.
Todd Consumer Corp., Great Neck, N.Y. 887,988, pub. 12–30–69. Cl. 51.
Topco Associates, Inc., Skokie, Ill. 887,694, pub. 12–30–69. Cl. 1.
Torite Enterprises, Inc., d.b.a. Torite Filter & Co., Industry, Calif. 887,874, pub. 12–30–69. Cl. 31.
Torque Controls, Inc., Union City, N.J. 763,868, canc. Cl. 26.
Tractolator Co., Inc., Philadelphia, Pa. 887,947, pub. 12–30–69. Cl. 44.
Trans International Airlines, Inc., Oakland, Calif. 888,057–9, pub. 12–30–69. Cl. 105.
Trans International Airlines, Inc., Oakland, Calif. 888,062–3, pub. 12–30–69. Cl. 105.
Transamerica Corp., San Francisco, Calif. 888,041, pub. 12–30–69. Cl. 102.
Treasured Tours of Olde New England, Inc., North Dartmouth, Mass. 888,064, pub. 12–30–69. Cl. 105.
Tripp, C. H., Finishing Co., San Diego, Calif. 887,752, pub. 12–30–69. Cl. 16.
Tripp, C. H., Finishing Co., d.b.a. C. H. Tripp Co., San Diego, Calif. 888,080. Cl. 16.
True Blue Toys, Berkeley, Calif 887,817, pub. 6–11–68. Multiple Class (Classes 22 and 38).
Tuba Records, Inc., Detroit, Mich. 887,903, pub. 12–30–69. Cl. 36.
Uniclub, Inc., New York, N.Y. 888,022, pub. 6–18–68. Cl. 101.
Union Metal Mfg. Co., The: *See*—
Superior Switchboard & Devices Co., The.
Union Oil Co. of California, Los Angeles, Calif. 518,981. Am. 7(d). Cl. 15.
Union Oil Co. of California, Los Angeles, Calif. 755,293. Am. 7(d). Cl. 6.
Unit Chemical Corp., Los Angeles, Calif. 887,720, pub. 12–30–69. Cl. 6.
United Chemical Co., Dallas, Tex. 887,967, pub. 12–30–69. Cl. 46.
United States Envelope Co.: *See*—
Safeway Sales Corp.
United States Envelope Co., Springfield, Mass. 522,722, ren. 3–17–70. Cl. 37.
United States Lawn Tennis Association, New York, N.Y. 888,099. Cl. 107.
Universal Oil Products Co., Des Plaines, Ill. 887,708, pub. 12–30–69. Cl. 6.
Universal Oil Products Co., Des Plaines, Ill. 887,778, pub. 12–30–69. Cl. 19.
University Sportswear of California, Los Angeles, Calif. 887,925, pub. 4–30–68. Cl. 39.
Upjohn Co., The, Kalamazoo, Mich. 887,773, pub. 12–30–69. Cl. 18.
VEB Schnellfiechter Berlin, Weissensee, Germany. 887,826, pub. 12–30–69. Cl. 23.
Vacowash Division, Inc., West Hollywood, Fla. 887,700, pub. 12–30–69. Cl. 4.
Vacowash Division, Inc., West Hollywood, Fla. 887,994, pub. 12–30–69. Cl. 52.
Vallourec, Paris, France. 887,738, pub. 1–23–68. Cl. 13.
Vantran Electric Corp., Vandalia, Ill. 887,805, pub. 12–30–69. Cl. 21.
Vaughan's Seed Co., Downers Grove, Ill., from Agriform International Chemicals, Inc., Newark, Calif. 887,727, pub. 12–30–69. Cl. 10.
Vending, Victor, Corp., Chicago, Ill. 525,993, ren. 3–17–70. Cl. 23.
Veriscope Corp., New York, N.Y. 763,902, canc. Cl. 26.
Visual King International, Inc., Oakland, Calif. 887,908, pub. 12–30–69. Cl. 37.
Vollrath Co., The, Sheboygan, Wis. 888,095. Cl. 44.
Wall, James L., d.b.a. Martin's Home-Made Products Co., Madison, N.C. 887,971, pub. 12–30–69. Cl. 46.
Washington Forge, Inc., Englishtown, N.J. 887,848, pub. 12–30–69. Cl. 23.
Washington Magazine, Inc., Washington, D.C. 887,918, pub. 12–30–69. Cl. 38.
Waterville Co., Inc., West Campton, N.H. 888,070, pub. 12–30–69. Cl. 107.
Watkins, R. L., Co., The, to Sterling Drug Inc., New York, N.Y. 271,078–9, ren. 3–17–70. Cl. 51.
Wayne-George Corp., Newton, Mass. 763,904, canc. Cl. 26.
Webster, F. S., Co., Cambridge, Mass, to Clopay Corp., Cincinnati, Ohio. 519,016. ren. 3–17–70. Cl. 15.
Western Auto Supply Co., to Western Auto Supply Co., Kansas City, Mo. 524,945. ren. 3–17–70. Cl. 35.
Western Zone Sales Co.: *See*—
Moore, Franklin M.
Whale Oil Co. Inc.: *See*—
Whale Products Corp.
Whale Products Corp., to Whale Oil Co. Inc., Brooklyn, N.Y. 520,900, ren. 3–17–70. Cl. 34.

Wheelabrator Corp., The, Mishawaka, Ind. 887,827, pub. 12–30–69. Cl. 23.
Whirlpool Corp., Benton Harbor, Mich. 764,086, canc. Cl. 103.
White Avionics Corp., Plainview, N.Y. 763,888, canc. Cl. 26.
White Front Stores, Inc., Los Angeles, Calif. 887,881, pub. 12–30–69. Cl. 32.
Wilson, Thomas, & Co. Inc., New York, N.Y. 764,010–11, canc. Cl. 42.
Wilton Tool Mfg., Shiller Park, Ill., from Boice-Crane Co., Toledo, Ohio. 763,851, canc. Cl. 23.
Winkler, Kaspar, & Co., Zurich, Switzerland. 519,684–6, ren. 3–17–70. Cl. 12.
Winkler, Kaspar, & Co., Zurich, Switzerland. 520,766, ren. 3–17–70. Cl. 12.
Winnebago Industries, Inc., Forest City, Iowa. 887,780, pub. 12–30–69. Cl. 19.
Wonderalls, Minneapolis, Minn. 887,934, pub. 12–30–69. Cl. 39.
Woolfolk Chemical Works, Ltd., Fort Valley, Ga. 523,905, ren. 3–17–70. Cl. 6.
Wyandot Popcorn Co., Marion, Ohio. 887,966, pub. 12–30–69. Cl. 46.
Yale Upholstering Co., Inc., New Haven, Conn. 763,938, canc. Cl. 32.
Yardney Electric Corp., New York, N.Y. 887,815, pub. 12–30–69. Cl. 21.
Yoo-Hoo Beverage Co., Carlstadt, N.J. 887,958, pub. 12–30–69. Cl. 46.
Youngstown Sheet & Tube Co., Boardman, Ohio. 519,606, ren. 3–17–70. Cl. 13.
Ziff-Davis Publishing Co., New York, N.Y., from American Aviation Publications, Inc., Washington, D.C. 888,087. Cl. 38.
Zio Luigi Ltd., New York, N.Y. 887 932, pub. 12–30–69. Cl. 39.

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1970

Examiner affirmed	188
Examiner affirmed in part	14
Examiner reversed	28
Total	230

Errata

All references to Design Patent No. 216,728 to Richard S. Latham, Saucepan, appearing in the OFFICIAL GAZETTE of March 3, 1970 should be deleted as the application was withdrawn from issue and the patent was not issued.

All references to Design Patent No. 216,729 to Richard S. Latham, Combined Saucepan and Cover Therefor, appearing in the OFFICIAL GAZETTE of March 3, 1970 should be deleted as the application was withdrawn from issue and the patent was not issued.

All references to Design Patent No. 216,732 to Richard S. Latham, Combined Beverage Server and Cover Therefor, appearing in the OFFICIAL GAZETTE of March 3, 1970 should be deleted as the application was withdrawn from issue and the patent was not issued.

Certificates of Correction for the Week of Mar. 24, 1970

P.P. 2,868	3,336,815	3,390,549	3,404,165
Re. 26,500	3,342,875	3,391,068	3,404,257
Re. 26,514	3,343,494	3,393,313	3,404,373
Re. 26,523	3,344,913	3,394,921	3,404,417
D. 207,483	3,358,671	3,396,229	3,404,742
D. 213,013	3,366,684	3,396,770	3,405,003
D. 213,320	3,366,910	3,397,178	3,405,124
D. 213,334	3,372,400	3,397,213	3,405,125
2,940,950	3,375,271	3,399,157	3,405,622
3,150,112	3,378,242	3,399,328	3,406,028
3,157,958	3,384,550	3,400,105	3,407,119
3,218,287	3,384,590	3,400,258	3,407,572
3,256,741	3,384,613	3,401,584	3,407,667
3,299,680	3,385,059	3,402,548	3,408,084
3,312,548	3,387,751	3,402,966	3,408,524
3,314,111	3,388,105	3,403,109	3,408,669
3,319,052	3,388,261	3,403,296	3,409,075
3,320,138	3,389,792	3,403,534	3,409,309
3,332,096	3,390,387	3,403,606	3,409,602

Certificates of Correction for the Week of Mar. 24, 1970

3,409,606	3,418,639	3,423,382	3,426,144
3,409,632	3,418,991	3,423,418	3,426,150
3,409,945	3,419,035	3,423,428	3,426,213
3,409,947	3,419,290	3,423,484	3,426,220
3,410,061	3,419,349	3,423,504	3,426,263
3,410,629	3,419,360	3,423,612	3,426,266
3,410,631	3,419,494	3,423,828	3,426,311
3,410,633	3,419,517	3,423,831	3,426,377
3,410,826	3,419,547	3,423,884	3,426,382
3,410,912	3,419,565	3,423,896	3,426,547
3,411,321	3,419,580	3,424,021	3,426,596
3,411,396	3,419,603	3,424,090	3,426,611
3,411,746	3,419,640	3,424,227	3,426,642
3,412,021	3,419,762	3,424,244	3,426,757
3,412,088	3,419,849	3,424,342	3,426,772
3,412,359	3,420,420	3,424,372	3,426,773
3,412,559	3,420,447	3,424,380	3,426,863
3,412,626	3,420,697	3,424,407	3,426,936
3,413,741	3,420,703	3,424,525	3,427,054
3,413,901	3,420,835	3,424,585	3,427,109
3,414,532	3,420,841	3,424,758	3,427,133
3,414,620	3,420,919	3,424,760	3,427,145
3,415,319	3,420,987	3,424,761	3,427,183
3,415,372	3,421,028	3,424,763	3,427,277
3,415,653	3,421,368	3,424,779	3,427,330
3,415,794	3,421,383	3,424,866	3,427,381
3,415,808	3,421,807	3,424,879	3,427,399
3,415,851	3,421,852	3,424,892	3,427,484
3,415,866	3,421,883	3,425,015	3,427,505
3,415,889	3,421,915	3,425,291	3,427,601
3,415,934	3,421,997	3,425,399	3,427,668
3,416,222	3,422,101	3,425,439	3,427,711
3,416,412	3,422,123	3,425,479	3,427,739
3,416,473	3,422,170	3,425,546	3,427,872
3,416,753	3,422,254	3,425,604	3,427,897
3,416,788	3,422,313	3,425,835	3,428,129
3,416,876	3,422,380	3,425,836	3,428,321
3,416,904	3,422,538	3,425,844	3,428,366
3,417,028	3,422,599	3,425,857	3,428,418
3,417,108	3,422,604	3,425,866	3,428,463
3,417,134	3,422,740	3,425,924	3,428,465
3,417,318	3,422,836	3,425,983	3,428,479
3,418,064	3,422,845	3,425,991	3,428,502
3,418,143	3,422,894	3,425,996	3,428,518
3,418,153	3,422,929	3,425,997	3,428,520
3,418,185	3,422,947	3,426,011	3,428,623
3,418,237	3,423,252	3,426,080	3,428,649
3,418,268	3,423,308	3,426,094	3,428,676
3,418,331	3,423,316	3,426,098	3,428,703
3,418,525	3,423,348	3,426,120	3,428,728
3,418,576			

New Applications Received During January 1970

Patents	7396
Designs	438
Plant Patents	11
Reissues	11
Total	7856

Issue—March 24, 1970

Patents	1304—No. 3,501,772 to No. 3,503,075, incl.
Designs	111—No. 216,939 to No. 217,049, incl.
Reissues	7—No. 26,833 to No. 26,839, incl.
Def. Pub	4—No. T872,005 to No. T872,008, incl.
Total	1422

Certificates of Correction for the Week of Mar. 24, 1970

3,428,863	3,429,879	3,438,991	3,445,552	3,449,157	3,452,021	3,454,506	3,457,480
3,428,907	3,430,093	3,441,279	3,445,916	3,449,215	3,452,046	3,454,548	3,457,522
3,428,920	3,430,700	3,441,431	3,445,946	3,449,301	3,452,094	3,454,556	3,458,143
3,428,940	3,430,724	3,441,560	3,446,274	3,449,446	3,452,572	3,454,574	3,458,335
3,429,048	3,430,838	3,443,415	3,446,378	3,449,619	3,452,867	3,454,586	3,458,571
3,429,338	3,431,426	3,443,887	3,446,733	3,449,743	3,452,981	3,454,898	3,458,576
3,429,372	3,431,529	3,443,916	3,446,737	3,449,753	3,453,295	3,454,996	3,458,625
3,429,392	3,432,485	3,444,026	3,446,829	3,450,009	3,453,333	3,455,146	3,459,453
3,429,414	3,434,465	3,444,047	3,448,007	3,450,225	3,453,347	3,455,354	3,460,820
3,429,540	3,435,602	3,444,171	3,448,037	3,450,443	3,453,359	3,455,534	3,472,587
3,429,592	3,436,350	3,444,243	3,448,038	3,450,725	3,453,660	3,456,027	3,475,828
3,429,664	3,436,517	3,444,384	3,448,069	3,450,792	3,453,802	3,456,182	3,475,918
3,429,704	3,437,582	3,444,782	3,448,546	3,450,980	3,453,928	3,456,552	3,476,297
3,429,712	3,438,352	3,445,386	3,448,623	3,451,333	3,454,143	3,457,063	3,477,424
3,429,863	3,438,401	3,445,464	3,448,739	3,451,672	3,454,198	3,457,323	3,480,185

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-04-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*8-29-67
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-24-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-68
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-26-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ASHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-03-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-19-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-68
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-02-68
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-29-68
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-19-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10-11-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-04-68
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	7-09-68
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-03-68
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	9-11-68

Total number of pending applications (excluding Designs)	183,028
Total number of Design applications pending	2,920

Expiration of patents: The patents within the range of numbers indicated below expire during February 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 600, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 82nd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,627,071 to 2,629,868, inclusive
Plant Patents	Numbers 1,162 to 1,171, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JOHN S. BOZEK

No. 8173. Decided November 6, 1969

[57 CCPA —; 416 F.2d 1385; 163 USPQ 545]

1. CLAIM—CONSTRUCTION OF CLAIMS—"MEANS" CLAUSE ACCORDED PRESENTLY EXISTING FUNCTION—35 U.S.C. 112.

"Upon a careful study of the references and a thorough consideration of the record and arguments of counsel, we have decided to affirm the decision of the Board. Initially, we point out that we agree with the Solicitor that appellant has improperly relied on the third paragraph of 35 U.S.C. 112. It seems to us that the only rational way in which 35 U.S.C. 112 can be interpreted is to require that the 'means * * * for performing a specified function,' in order to be accorded structural significance, be a means which possesses a *presently existing* function or a *presently existing capability* to perform a function. The rib means of the instant claims, if it performs the recited function of absorbing excess material resulting from the formation of the score line at all, performs that function *during* the manufacturing process. Thus, *as he has claimed it*, i.e., in the shape of the final article, appellant's invention does not distinguish, insofar as defining the rib as new structure, over the article of Speidel."

2. PATENTABILITY—REFERENCE—REFERENCE EVALUATED FOR ALL IT FAIRLY SUGGESTS.

"* * * we have said many times that a reference disclosure must be evaluated for *all* that it fairly suggests and not only for what is indicated as preferred."

3. SAME—COMBINING REFERENCES—OBVIOUSNESS.

"* * * we do not consider the Henchert patent to be 'non-analogous art,' the disclosure of which can only be combined with Speidel 'to provide the Speidel can body with a *locking band* having a stacking rib offset radially inboard slightly of the double seam.' * * * It is obvious, we feel, that Henchert was cited not because it *specifically* suggests the combination but, as indicated in the Examiner's answer, to show lack of novelty, per se, in the concept of extending a rib (which we consider to be, by nature, a reinforcement) through a tear-out portion of a can top. Having established that this knowledge was in the art, the Examiner could then properly rely, as put forth by the Solicitor, on a conclusion of obviousness 'from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.' The test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art."

4. SAME—PARTICULAR SUBJECT MATTER—"NON-FLIPPING BEER CAN END."

The refusal of certain claims in an application entitled "Non-Flipping Beer Can End," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 345,615.

AFFIRMED.

Mason, Porter, Diller & Brown (*Charles E. Brown, Vincent L. Ramik*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, GANEY, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This is an appeal from the Patent Office Board of Appeals decision, adhered to on reconsideration, which affirmed the rejection of claims

2, 4, 5, 7 and 9–14 in appellant's application,[1] as unpatentable over Speidel [2] in view of Henchert [3] under 35 U.S.C. 103. The Board reversed the rejecton of three claims.

The Invention

As stated in appellant's specification, the invention relates to "a can end of the easy opening type adapted for the dispensing of beverages including beer, wherein an end panel of the can end is provided with a score line which defines a tear-out portion through which the beverage is poured." The specification does not state explicitly how the score line is provided, but in his briefs to the Board and this court, appellant has indicated that the score line is formed by compressing the material of the can end in a die-stamping operation, as opposed to a cutting or metal-removing operation. This compression causes a flowing of the metal in directions away from the score line, thus causing a gathering of metal within the tear-out portion defined by the score line and a generally circumferential bulging of the metal outwardly from the score line. Appellant alleges that this results in the creation of "two major disadvantages." Quoting from the application:

> In the first place, the excess metal effects a crowding of the remaining metal of the end panel and causes the end panel to be readily flipped from one side to the other of the normal median plane of the end panel with the result that a premature rupture of the end panel along the score line may result. The second disadvantage is that the excess metal which causes the bulging of the end panel also tends to flip up the free end of the pull tab which is attached to the tear-out portion whereas the pull tab should remain as flat as possible against the end panel so as to not interfere with the stacking of the can ends or the seaming of the can ends to can bodies.

Appellant proposes to solve the problems he describes by providing a circumferentially extending rib in the end panel, which rib is offset from the plane of the end panel in either an upward or downward direction. This rib, or groove as it may be, serves, according to appellant, to absorb the excess metal resulting from the forming of the score line,[4] while at the same time functioning as a circumferential reinforcement to stiffen the entire end panel. Appellant states that the rib may extend continuously around the circumference of the can end or it may be in a C-shape with the ends terminating closely adjacent to the opposite sides of the tear-out portion.

It has been agreed by the parties that claims 2 and 9 are representative of the claimed invention and any decision regarding these claims will be determinative as to the others. Claim 2 reads:

> 2. An easy opening end particularly adapted for use on beverage cans, said end including an end panel, a single continuous score line formed in said end panel and defining a removable tear-out portion which extends generally radially from the central portion of said end panel to the periphery of said end panel, and circumferential rib means in said end panel, said rib means being generally C-shaped in outline and having opposite ends terminating adjacent said tear-out portion and absorbing excess material which resulted from the forming of said score line whereby undesired bulging of said end panel is prevented.

Claim 9 contains slightly different language but the only significant difference between that claim and claim 2 is the recitation that the

---

[1] Serial No. 345,615, filed Feb. 18, 1964, for "Non-Flipping Beer Can End."
[2] U.S. Patent 2,112,231, issued March 29, 1938.
[3] Canadian Patent 484,099, issued June 17, 1952.
[4] It appears that the invention requires that the rib (or groove), in order to actually function so as to absorb the excess metal generated by the formation of the score line, be formed simultaneously with or after the formation of the score line. The significance of this point will be brought out later on.

"rib means" or "offset portion" (as it is called in claim 9) extends across the tear-out section.

The References

Speidel discloses numerous forms of easy-opening can ends each having a tear-out portion which, according to the patent disclosure, "may be of any desired shape and which is defined by an area or zone of compressed metal, produced either by coining, stamping, [or] rolling." The tear-out portion has a pull member spot welded, soldered, riveted, or otherwise secured to one end "in such a manner that when pulled outwardly, the hardened metal is fractured so that the tear strip or section may be torn from one end to the other along the zone of compressed metal, the entire operation being performed with ease and in a fraction of a second." The patent also discloses, as a "further feature of the invention," the formation of "one or more reinforcing ribs either along the zones of compressed metal * * * or at such locations as will hold the cover or wall of the container relatively stiff while the strip is being torn * * *." The embodiments of the Speidel invention primarily relied upon by the Patent Office are reproduced below:

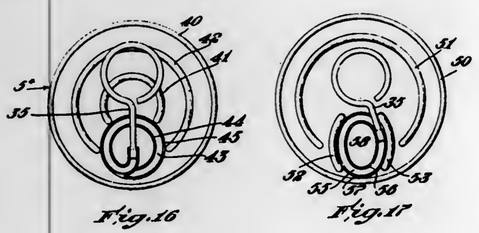


Fig. 16

Fig. 17

The technique of manufacturing the can ends shown above is described by Speidel with the aid of the following illustrations:

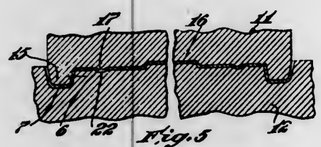


Fig. 5

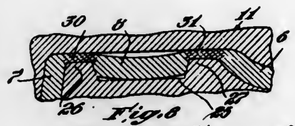


Fig. 8

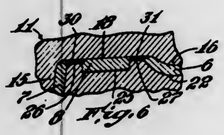


Fig. 6

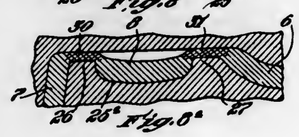


Fig. 8a

FIGURE 5 shows a cross section of a can end being formed between the surfaces of a stamping die. FIGURES 6, 8 and 8*a* illustrate alternative designs for the section of the die which produces the score lines defining the tear-out portion (the area within the rectangle outlined on the left side of FIGURE 5).

In the manufacturing process, according to the patent disclosure, a blank, or stock piece of sheet metal is inserted between the dies 11 and 12 and the can end is stamped out in a single operation. "During the operation the annular zones of metal lying between the surface 18 of die 11 and the shoulders 26 and 27 of the die 12, are subjected to a coining treatment which effects a compression of the metal, as shown in FIG. 6, and as a result of this treatment the parallel bands or zones of metal 30 and 31 lying above the shoulders 26 and 27, are physically altered and become hard and dense, having a bursting and tensile strength not substantially less, if any, than that of the unaltered metal, but a tearing strength which is considerably less than that of the unaltered metal." In the same operation, the "reinforcing corrugations 6" and "a peripheral flange 7" are formed.

The Henchert patent is drawn to a three-piece closure for containers which includes a can top having a central opening, a cover designed to frictionally fit within the central opening of the can top and a metal sealing ring to render the can tamper-proof. The sealing ring extends around the outer edge of the can top, extending inward toward the center only enough to overlap and secure the friction cover. The sealing ring is made readily rupturable by forming two parallel score lines across the ring and providing a pull tab at that point. The score lines extend across an upstanding, circumferential rib in the sealing ring which is placed there according to the patent disclosure "for stacking purposes."

The Rejection

The Examiner rejected the appealed claims as unpatentable over Speidel in view of Henchert under 35 U.S.C. 103. His position was well summarized as follows:

> (1) Applicant argues Speidel has no teaching of the ribs functioning in a manner to absorb excess metal material which results from the forming of score lines. This functional limitation is inherent in the structure of Speidel and would function in the same manner as applicant's ribs. The ribs could extend upwardly or downwardly, as desired. * * *
>
> (2) The single score line that defines the tear out portion is a common feature in the art. To employ a single continuous score line instead of two would be a mere matter of choice.
>
> (3) Claims 9, 10, 13 and 14 recite rib or ribs extending across the tear out portion. This structure is old as shown by Henchert and it would be obvious to one having ordinary skill in the art to extend the ribs 42 and 51 of Speidel if they so desired or found necessary.

The Board recognized that the Examiner's rejection was separable since it pointed out that the Henchert patent was only pertinent to claims 9, 11, 13 and 14 which make reference to the rib extending across the tear-out portion. It went on to state, however, that "we are of the opinion that the rejection of the other claims over Speidel is proper under 35 U.S.C. 103 since differences thereover are involved, as noted in paragraphs (1) and (2) of the Examiner's answer, supra, and as argued by the appellant." The rejection of claims 2, 4, 5, 7, 10 and 12 was affirmed using the following reasoning:

> * * * we see nothing unobvious, but only a matter of choice between known alternatives in the art on the part of the routineer in the art, in replacing the double score line type tab shown in FIGS. 16 and 17 of Speidel with the conventional single score line tab.
>
> Speidel further discloses the use of either one (51, FIG. 17) or two (41, 42, FIG. 16) C-shaped reinforcing ribs terminating adjacent to the tear out portion. As a broad proposition, in the absence of new relationships and new utilities,

whether the ribs extend upwardly or downwardly is deemed an arbitrary matter of choice in design, as either would reinforce the end panel.

* * * * * * *

We are further of the opinion that while most of the displaced metal would flow into the mold cavity 25 (FIG. 8), some will unavoidably flow to the right of said cavity and go toward the formation of reinforcing rib 6. Thus, the forming in the reinforcing rib 6 will absorb excess metal resulting from the forming of the score line as claimed, albeit not all of the displaced metal.

With regard to the claims directed to the extension of the ribs across the tear-out section, the Board concluded:

* * * [W]e are not convinced by appellant's arguments that Henchert would not have suggested the extension of the Speidel ribs in that manner, even though rib 20 of Henchert is basically a stacking rib. Accordingly, the patentability of these claims will be resolved on the same basis as claims 2, 4, 5, 7 and 12, i.e., as to whether the fabricating function attributed to the reinforcing rib or ribs of absorbing the excess material which resulted from the forming of the score line patentably distinguishes over Speidel.

Having decided that the claims did not patentably distinguish, the rejection was affirmed.

Opinion

Appellant has taken the position before the Board of Appeals and before this court, that the score lines in the Speidel can top are formed in such a manner as to *preclude* any flowing of metal in directions away from the score lines. He argues that:

There is therefore nothing in the *entire* Speidel disclosure which supports the Board's "opinion" that some of the displaced metal will "unavoidably flow to the right of said cavity (25) and go toward the formation of reinforcing rib 6." In fact, the Speidel patent is diametrically opposite to appellant's invention because by an undistorted interpretation thereof any absorption of metal occurs *only* in the tear strips and not outboard thereof by "rib means," as claimed.

Since the "rib means" of the rejected claims is given the limitation of "absorbing excess material which resulted from the forming of said score line," [5] appellant contends that a structural significance is thus created in accordance with the third paragraph of 35 U.S.C. 112,[6] which distinguishes the claims over the Speidel disclosure.

Appellant also objects to the use of the Henchert patent, arguing that it is "non-analogous art" and that its disclosure should not therefore be combined with that of Speidel to make the second embodiment, where the rib means extends across the score lines, obvious.

The Solicitor, besides arguing in support of the Board's conclusion of obviousness, contends that appellant's "means * * * absorbing excess material" is not a "means * * * for performing a specified function" as permitted by 35 U.S.C. 112. He states:

The function of the rib means in absorbing excess material is performed in the process of manufacturing the can end, and the only function of the rib means in the finished article claimed by appellant is to strengthen the can end.

[1] Upon a careful study of the references and a thorough consideration of the record and arguments of counsel, we have decided to affirm the decision of the Board. Initially, we point out that we

[5] This is the language of claim 2. Claim 9 is similar in reciting "means absorbing said excess material and stiffening said panel against flexing."

[6] An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

agree with the Solicitor that appellant has improperly relied on the third paragraph of 35 U.S.C. 112. It seems to us that the only rational way in which 35 U.S.C. 112 can be interpreted is to require that the "means * * * for performing a specified function," in order to be accorded structural significance, be a means which possesses a *presently existing* function or a *presently existing capability* to perform a function. The rib means of the instant claims, if it performs the recited function of absorbing excess material resulting from the formation of the score line at all, performs that function *during* the manufacturing process. Thus, *as he has claimed it*, i.e., in the shape of the final article, appellant's invention does not distinguish, insofar as defining the rib as new structure, over the article of Speidel.

Although we possibly need not discuss it, we have also decided that appellant's arguments concerning the teaching of the Speidel patent are not supported. We think that a fair reading of the disclosure of the patent as a whole supports the Board's "opinion" that:

while most of the displaced metal would flow into the mold cavity 25 (FIG. 8), some will unavoidably flow to the right of said cavity and go toward the formation of reinforcing rib 6. Thus, the forming of the reinforcing rib 6 will absorb excess metal resulting from the forming of the score line as claimed, albeit not all of the displaced metal.

Appellant has relied heavily on the suggestion of Speidel that the displacement of metal occurring during the formation of the score lines be compensated for by increasing the depth of the recess in the die in which the tear-out portion is formed. We think he is in error to draw from this the conclusion that "the tear-out portion 8 and only the tear-out portion 8 absorbs excess material." **[2]** In any event we have said many times that a reference disclosure must be evaluated for *all* that it fairly suggests and not only for what is indicated as preferred. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507 (1966). While Speidel does suggest that this would be desirable, he does not limit his disclosure to embodiments in which it could be argued all of the excess material flows one way.

[3] And finally, we do not consider the Henchert patent to be "non-analogous art," the disclosure of which can only be combined with Speidel "to provide the Speidel can body with a *locking band* having a stacking rib offset radially inboard slightly of the double seam." [Emphasis appellant's.] It is obvious, we feel, that Henchert was cited not because it *specifically* suggests the combination but, as indicated in the Examiner's answer, to show lack of novelty, per se, in the concept of extending a rib (which we considered to be, by nature, a reinforcement) through a tear-out portion of a can top. Having established that this knowledge was in the art, the Examiner could then properly rely, as put forth by the Solicitor, on a conclusion of obviousness "from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference." The test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art. *In re Mapelsden*, 51 CCPA 1123, 329 F.2d 321, 141 USPQ 30 (1964). *In re Henley*, 44 CCPA 701, 239 F.2d 399, 112 USPQ 56 (1956). **[4]** The decision of the Board of Appeals is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

GULF STATES PAPER CORPORATION *v.* CROWN ZELLERBACH CORPORATION

No. 8183. Decided November 13, 1969

[57 CCPA —; 417 F.2d 795; 163 USPQ 589]

1. TRADEMARK—CONFUSING SIMILARITY—"CZ" AND "E–Z" FOR PAPER PRODUCTS. "* * * we have considered, as we must, the particular area of commerce [paper products] in which the marks are used and the discriminating type of purchaser at which they are aimed. It appears to us that, viewed in this light, the marks are not confusingly similar. Although they differ by a single letter when opposer's suffixes are ignored and they are somewhat similar in sound, we think the marks would tend to stimulate a different response in the mind of the purchaser. The mark E–Z sounds like 'easy' and thus generates the idea of an attribute of the goods. On the other hand, the mark CZ can only represent initials of some sort, and one seeing or hearing the mark would probably presume that that is what it indicates. The decision of the Board is affirmed."

APPEAL from Patent Office. Opposition No. 44,658.

AFFIRMED.

Raphael Semmes (*G. Mallet Prevost*, of counsel) for appellant.
James M. Naylor, *William K. Quarles*, *Jr.*, for appellee.

Before RICH, *Acting Chief Judge*, GANEY, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This is an appeal from the decision [1] of the Trademark Trial and Appeal Board, adhered to on reconsideration, dismissing an opposition by Gulf States Paper Corporation to an application [2] by Crown Zellerbach Corporation for registration of the mark CZ, for use in connection with printing paper. Use of the mark since February 11, 1964 was asserted.

Appellant, Gulf States Paper Corporation, opposed on the ground of likelihood of confusion, based upon its use and prior registration of the mark E–Z [3] in connection with paper products.

The record shows that the opposer in this case is engaged in the manufacture and sale of paper and related products. Apparently, prior to 1960, opposer was a "coarse" paper products manufacturing and distributing concern.[4] Since 1960, however, opposer has expanded its business into what is known as the "fine" paper products field, which includes such products as school and office supplies and tissue towels. It had been the practice of opposer and its corporate predecessors since about 1902 to identify all of its manufactured products by trademarks comprising the designation "E–Z" either alone or in combination with various suffixes (generally descriptive), and since expanding its line of merchandise, opposer has continued this practice. Ownership of the registrations for the marks E–Z File Folders, E–Z Mimeograph and E–Z Duplicator in the *fine* paper field has been established in the record along with registrations for the mark E–Z alone for several different products in the *coarse* paper field.

[1] Abstracted at 152 USPQ 841 (TTAB 1967).
[2] Serial No. 190,896, filed Apr. 13, 1964.
[3] Opposer submitted 27 trademark registrations as evidence of use of the mark E–Z. Most of the registrations are for marks containing the letters E–Z in combination with such words as "Opener" (Registration No. 593,737, issued Aug. 17, 1954), "Carl" (Registration No. 629,101, issued June 19, 1956), "Pulp" (Registration No. 659,648, issued Mar. 25, 1958), "Foodpak" (Registration No. 716,664, issued June 13, 1961), and "Zip" (Registration No. 769,766, issued May 19, 1964). Some registrations were, however, for the mark E–Z alone (Registrations No. 227,085, issued Apr. 26, 1927, and No. 735,108, issued July 31, 1962) or in conjunction with a tree design (Registration No. 750,588, issued June 4, 1963).
[4] From the record, it appears that the term "coarse paper products" refers to such goods as paper bags or sacks, paper pulp, wrapping paper, and the like.

Applicant, Crown Zellerbach Corporation, is also engaged in the manufacture and sale of paper products, both "coarse" and "fine." Since 1953, Crown has used as its corporate symbol and as trademark for all its products, a composite crown device with the letters C and Z. Applicant's registration of this mark [5] has been included in the record to establish applicant's entry into the fine paper field in 1953 and, prima facie, its continuance in the field since that time.

A reproduction of applicant's composite crown mark, along with the mark which is the subject of this opposition and the opposer's E–Z mark is shown below:



Opposer's E-Z mark | Applicant's CZ mark in this opposition | Applicant's Crown Emblem mark

In dismissing the opposition, the Board initially determined that although opposer had established use of its "E–Z" mark prior to the use by applicant of either the letters "CZ" alone or the composite registered mark, it was only since 1959 or 1960, when opposer extended its activities into the soft paper products and fine paper field, that the "general public or persons who would generally be customers for mimeograph paper, bond paper, duplicating paper, and other fine papers" would have been aware of the mark in a trademark sense. In addition, the Board apparently credited applicant with the benefit of the 1953 date of registration for the composite mark, reasoning that the fine paper goods for which use of that mark was claimed were "closely related to the printing papers here claimed," and "that the letters 'CZ' are equally if not more prominent than the crown design and might be utilized by some segment of the purchasing public to call for and identify the goods sold thereunder." This was tantamount to a holding that applicant was the prior user in the contested field of use.

Additionally, the Board pointed out that "none of opposer's existing registrations for 'E–Z' alone or in association with a particular design covers fine paper such as duplicating paper, bond paper, and the like."

Nevertheless, the Board went on to specifically hold, as the basis of its decision, that:

> The differences between "CZ" and "EZ" alone or in association with such words as "Duplicating," "Mimeograph," "Bond," and "File Folders" are sufficient to preclude a likelihood of confusion or mistake in trade as to the source of the products of the parties.

In addition to its principal argument that the marks are confusingly similar, opposer has argued on appeal that the Board was in error in holding that the letters CZ in the composite trademark are equally, if not more, prominent than the crown design and thus establish prior use of the mark CZ alone. Opposer also argues that the Board's holding of no likelihood of confusion was inconsistent with statements in earlier opinions dealing with other oppositions between the same two parties.

[5] No. 593,901, issued August 17, 1954.

Applicant argues, inter alia, that the transition from use of its composite mark to use of the letters CZ alone was a legitimate extension of its already existing trademark rights in the fine paper field, and that opposer cannot rely on the "E–Z" portion of its series of marks alone for abstract comparison with other marks.

Regarding opposer's latter argument, we find it not only without substance, but also irrelevant to the case at bar. The other arguments of the parties have been considered but require no further discussion since we have decided to sustain the Board's ultimate holding that there is no likelihood of confusion or mistake in trade as to the source of the products of the parties.

[1] In doing so, we have considered, as we must, the particular area of commerce in which the marks are used and the discriminating type of purchaser at which they are aimed. It appears to us that, viewed in this light, the marks are not confusingly similar. Although they differ by a single letter when opposer's suffixes are ignored and they are somewhat similar in sound, we think the marks would tend to stimulate a different response in the mind of the purchaser. The mark E–Z sounds like "easy" and thus generates the idea of an attribute of the goods. On the other hand, the mark CZ can only represent initials of some sort, and one seeing or hearing the mark would probably presume that that is what it indicates. The decision of the Board is affirmed.

AFFIRMED.

ALMOND, *J.*, dissenting.

In my opinion CZ so resembles E–Z as to be likely, when applied to the goods in issue, to cause confusion or to cause mistake. The majority, although admitting that the marks "differ [merely] by a single letter" and "are somewhat similar in sound," feels otherwise. Yet, the only *express* reasons given for so holding fail to find support in the record before this court. Applicant produced no evidence, with respect to its goods, of "the particular area of commerce * * * and the discriminating type of purchaser * * *," in light of which the majority views the marks in question. The majority's not so subtle attempt at implying that appellant-opposer's mark is suggestive and perhaps weak in that "E–Z" sounds like 'easy' and thus generates the idea of an attribute of the goods" must fail absent some logical suggestion as to how "easy" is an attribute of fine or printing papers. Easy what? Nor is it clear to me why the mark CZ, sounding so much like E–Z, can *only* represent initials of some sort.

So much for the express reasons for the majority's decision. What concerns me are the reasons implicit in the majority's discussion of the facts of the case. The facts indicate that this case involves also a question of priority of use arising from consideration as to what is or is not the natural field of expansion for a producer of coarse paper products, as appellant-opposer originally started out, as well as consideration as to whether or not applicant has possible intervening rights. I do not feel that this issue can be avoided, as has been done by the Board and majority here, simply by expressing an unfounded conclusion that no likelihood of confusion exists. I would reverse and remand the case to the Board for proper consideration of the primary issue involved.

U.S. Court of Customs and Patent Appeals

VINCENT J. FRILETTE AND PAUL B. WEISZ
v.
CHARLES NEWTON KIMBERLIN, JR., AND ELROY MERLE GLADROW

No. 8141. Decided June 26, 1969

[56 CCPA —; 411 F.2d 1390; 162 USPQ 148]

1. INTERFERENCE—PATENT AND APPLICATION—REISSUE OF PATENT IN INTERFERENCE.

"We do not agree with * * * arguments of Frilette et al. [that, in taking out a reissue of the patent in interference with the same patent claims plus others, 'After the Board made its award of priority to them', Kimberlin et al. have abandoned the interference]. * * * it is plain that Kimberlin et al. still have a patent claiming the precise subject matter of the counts and have not abandoned that subject matter. Also, they are still entitled to the February 5, 1957 filing date of their orginal application and thus plainly have not withdrawn their 'case-in-chief.' The question whether the Board erred in its award of priority is still before us on the evidence of record and the briefs and oral arguments of the parties. No sound basis is advanced for allowing Frilette et al. to introduce any additional evidence as to the present counts."

2. SAME—SAME—SAME—35 U.S.C. 135.

"The possibility that further interference proceedings involving the Kimberlin et al. reissue patent [of the patent in interference] might be initiated to determine priority of broader subject matter provides no sound reason for delaying the determination of the present appeal by remand. Under 35 U.S.C. 135, the question whether further interference proceedings are in order is a matter for determination by the Commissioner of Patents and is not appropriate for our consideration here. Also, it is noted that Kimberlin et al. observe in their brief that refusal by us to remand 'can in no way affect any rights which appellants may have to contest priority as to other claims of the reissue patent.'"

3. SAME—PRIORITY OF INVENTION.

"We agree with the Board's conclusion that Frilette et al. have not proved that they reduced the invention of count 1 to practice prior to the February 5, 1957 filing date of Kimberlin et al. Also, we find that Frilette et al. have not proved diligence as to count 1 extending from a conception prior to that date to a subsequent reduction to practice. As to count 2, we agree with the Board that neither prior conception nor diligence extending from a date prior to February 5, 1957 to a subsequent reduction to practice has been proved. For these reasons, we do not find reversible error in the Board's award of priority to Kimberlin et al. and hold that the decision below must be affirmed."

4. SAME—EVIDENCE—REDUCTION TO PRACTICE—IDENTIFICATION OF MATERIALS.

"Of course, the designation of the material involved in the March 1956 AA tests in Lago's records as 'Linde molecular sieve 13X calcined ammonium exchange' cannot establish identification since that designation was merely copied by Lago from the label on the bottle in which the sample was given to him by Frilette and was not based on either knowledge or analysis by Lago."

5. SAME—CONSTRUCTION OF COUNT—PORE SIZE.

"* * * we think it plain that the reference to and tests with 5A sieve do not show conception of count 2. Instead, the record fully supports the interpretation of the term between 'about 6 and about 15' in the count as excluding materials having pore openings of 5 Angstroms. Thus, the Kimberlin et al. patent in which both counts originated, emphasizes the use of crystals having a pore size of 'about 6' to 15 Angstroms throughout and points out specifically that openings in that range 'allow for easy ingress of all hydrocarbon feed types and egress of the reaction products.' It also states that such size 'serves to lower catalytic coke buildup within the structure and improve regeneration characteristics of the catalyst.' The patent further states that the versatility and usage of '3 to 5A pore diameter crystals' are restricted because the crystals will not allow any but straight chain paraffins and olefins to enter the interior of the pores. Also, the patent points out that the 3 to 5 Angstrom pore diameter crystals are of limited use as catalytic agents be-

cause they yield relatively large amounts of catalytic coke. The fact, pointed out by Frilette et al., that the Kimberlin et al. patent describes the preparation of a material having pore openings of 5 Angstrom units does not support their position here because the patent shows by test results that the 5 Angstrom material provided results decidedly inferior to material having pore sizes within the about 6 to 15 Angstrom range."

6. SAME—REDUCTION TO PRACTICE—IDENTIFICATION OF MATERIALS—*Patterson* v. *Hauck* DISTINGUISHED.

"*Patterson* v. *Hauck*, 52 CCPA 987, 341 F.2d 131, 144 USPQ 481 (1965), involved the identification of materials used by an inventor in tests of a process. The materials purported to have been used were 'exactly the same polyester resins and the same catalysts already in use and being made and sold by * * * [the inventor's employer] prior to the making of the invention as a regular part of its business.' Also, the experiments in question were done as the result of instructions of the inventor's supervisor to use those very materials. That situation contrasts markedly with the present case where the 13X starting material was a 'rather exotic' material not made by Mobil or used previously by it for upgrading hydrocarbons, the manner in which Mobil obtained the material is unexplained and the material under the designation applied to it was not shown to have attained the status of a staple product known to have the particular characteristics required by the counts at the critical time."

7. SAME—SAME—SAME—*Mann* v. *Werner* CONSTRUED.

"*Mann* v. *Werner*, 52 CCPA 1578, 347 F.2d 636, 146 USPQ 199 (1965) is another case involving identification of materials which presents a far stronger evidentiary case than exists here. The question was whether polybutadiene was one of the materials used by associates of the inventor in carrying out certain operations relied on as reduction to practice. In evidence was an order requesting that a service group within the assignee's company produce a polybutadiene latex for use in preparing the compositions of the counts. Also, the operator who made the polybutadiene testified that he got butadiene for the preparation from a tank marked 'Butadiene' in which it was normally kept and that he recognized the smell of butadiene. The court, further observing that the procedure used to prepare the polybutadiene was a well-recognized one and that the material was not 'so exotic or unusual' that the person who requested it would have been unreasonable in expecting to receive what he ordered, concluded that the proof that the material was polybutadiene was sufficient."

8. SAME—SAME—SAME—*Ritter* v. *Rohm and Haas Co.* DISTINGUISHED.

"Also cited by Frilette et al. is *Ritter* v. *Rohm and Haas Co.*, 271 F. Supp. 313, 154 USPQ 518 (S.D.N.Y. 1967) wherein a patent in suit was held valid but not infringed. There the court, in awarding the plaintiff the benefit of a conception and reduction to practice prior to his filing date, held the inventor's notebook to be 'admissible evidence to show corroboration.' It appears that the records were complete and meticulously prepared and were 'of uncontested authenticity.' Moreover, the court stated in considering reduction to practice that the inventor and another witness testified that 'the starting materials and products similar to the resulting products were well-known compounds, that the steps carried out were of a type generally known, that the reaction could therefore be predicted with reasonable accuracy,' and that analytical equipment which subsequently became available proved the inventor was right. The factual distinction over the present case, where neither the source material nor the corresponding treated material used in the experiments relied on for reduction to practice was established as having the properties required by the count, is apparent."

APPEAL from the Patent Office. Interference No. 92,280.

AFFIRMED.

Oswald G. Hayes, *Raymond W. Barclay*, *Richard K. Stevens*, *Davidson C. Miller*, *John F. Witherspoon* (*Stevens, Davis, Miller & Mosher*, of counsel) for appellants.

Whelan, *Chasan*, *Litton*, *Marx and Wright*, *S. Stahl* (*Malvin R. Mandelbaum*, *Robert D. Fier*, *Douglas G. Brace*, *Kenyon & Kenyon*, of counsel) for appellees.

Before RICH, *Acting Chief Judge*, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

Frilette and Weisz (Frilette et al.) appeal from the decision of the Board of Patent Interferences awarding Kimberlin and Gladrow (Kimberlin et al.) priority as to the two counts in Interference No. 92,280, involving Kimberlin et al. Patent No. 2,971,903 [1] granted on an application filed February 5, 1957 and an application of Frilette et al. [2] filed on September 26, 1958. The Kimberlin et al. patent is assigned to Esso Research and Engineering Company and the Frilette et al. application to Mobil Oil Corporation. [3]

As junior party having the burden of proving priority by a preponderance of the evidence, Frilette et al. have submitted testimony and documentary evidence which they advance as showing actual reduction to practice of count 1 prior to February 5, 1957 and conception of count 2 prior to that date coupled with diligence to a subsequent actual reduction to practice.

Kimberlin et al. introduced no evidence of activities prior to their February 5, 1957 filing date and are thus restricted to that date for conception and reduction to practice.

The Subject Matter in Issue

The subject matter in issue relates to a process using a new type of aluminosilicate catalyst for upgrading hydrocarbons. In contrast to older aluminosilicate catalysts which were amorphous gels comprising pores having a wide range of sizes from 5 to as much as 200 Angstroms [4] in diameter, the catalysts involved here comprise highly crystalline material characterized by pores of nearly uniform dimensions in the range of about 6 to 15 Angstroms.

The counts, which are verbatim copies of claims 1 and 2 of the Kimberlin et al. patent, read:

1. A process for upgrading hydrocarbons which comprises contacting a hydrocarbonaceous fluid in a conversion zone at elevated temperatures with a crystalline metallic alumino-silicate catalyst having uniform pore openings between about 6 and about 15 Angstrom units, said material being the sole conversion catalyst in said zone and recovering an upgraded hydrocarbon product having a molecular weight no higher than said first named hydrocarbonaceous fluid.

2. The process of count 1 wherein said catalyst comprises a member of the alkaline earth group.

Frilette et al. are involved on modifications of these counts which define the size of the pore openings as between "about 6 and about 13" Angstrom units instead of between "about 6 and about 15" Angstrom units.

Preliminary Issue

Before us, Frilette et al. have devoted a very substantial part of their briefs and their entire oral argument to an issue based on the fact that Kimberlin et al. were granted a reissue [5] of their involved patent on April 11, 1967, which was after the Board made its award of priority to them on October 6, 1966 and adhered thereto on reconsideration. The application for the reissue patent was filed during

[1] Granted February 14, 1961 and entitled "Hydrocarbon Conversion Catalyst."
[2] Serial No. 763,433, entitled "Catalytic Conversion of Hydrocarbons."
[3] Formerly Socony Mobil Oil Company, Inc.
[4] An Angstrom, frequently designated "Å," is a unit of length equal to one ten-billionth of a meter.
[5] Reissue Patent No. 26,188, granted on an application filed August 24, 1962.

the pendency of the interference and Frilette et al. were notified of its filing and given access thereto by the Commissioner in accordance with the Patent Office practice,[6] such notice being received by Frilette et al. after the expiration of the motion period. The reissue application had been prosecuted to what the Examiner deemed allowable condition during the interference proceedings, but repeated petitions by Kimberlin et al. for issuance of the patent thereon before the priority decision of the Board were denied. Included in the reissue patent, which embodies the same specification as the original patent, are two claims duplicating the interference counts and seven other claims which Frilette et al. state are either identical or "substantially" identical to claims in their application. Frilette et al. further state that five of the latter claims are broader in scope than the counts of the interference.

Frilette et al. argue that, since the reissue patent has now issued and the original patent on which it is based has thus been surrendered, either the interference contest must be considered to have been abandoned by Kimberlin et al. and the proceedings terminated, or the reissue patent must be considered to have been somehow substituted for the original patent. They urge that, if the former condition exists, Kimberlin et al. have "in effect, withdrawn * * * [their] entire case-in-chief" and Frilette et al. are entitled to judgment. They further contend that, if the reissue patent has been substituted, the case should be remanded to the Patent Office for further proceedings. By "further proceedings" they apparently mean to include introduction of additional evidence and determination of priority as to other claims in the reissue patent.

[1] We do not agree with those arguments of Frilette et al. In the first place, it is plain that Kimberlin et al. still have a patent claiming the precise subject matter of the counts and have not abandoned that subject matter. Also, they are still entitled to the February 5, 1957 filing date of their original application and thus plainly have not withdrawn their "case-in-chief." The question whether the Board erred in its award of priority is still before us on the evidence of record and the briefs and oral arguments of the parties. No sound basis is advanced for allowing Frilette et al. to introduce any additional evidence as to the present counts.

[2] The possibility that further interference proceedings involving the Kimberlin et al. reissue patent might be initiated to determine priority of broader subject matter provides no sound reason for delaying the determination of the present appeal by remand. Under 35 U.S.C. 135, the question whether further interference proceedings are in order is a matter for determination by the Commissioner of Patents and is not appropriate for our consideration here. Also, it is noted that Kimberlin et al. observe in their brief that refusal by us to remand "can in no way affect any rights which appellants may have to contest priority as to other claims of the reissue patent."

The appeal will therefore be considered on the merits.

The Frilette et al. Proofs

The evidence of Frilette et al. includes the testimony of a number of witnesses who were employees of Mobil at times relevant to the interference and many documentary exhibits. The exhibits were generally

[6] Manual of Patent Examining Procedure, section 1111.08.

identified by the name of the witness who first testified concerning them, followed by sequential numbers.

Identifying the witnesses, the co-inventor, Paul B. Weisz, was a research associate heading a group within a physics research section of the Mobil Laboratories at Paulsboro, New Jersey, which section was headed by Dr. Clark. The other inventor, Dr. Frilette, was an assistant of Weisz who joined Mobil in 1956. Drs. White and Prater were under Dr. Clark's direction and Rudolph Lago was a research employee who reported to Prater. Emil Mower was an assistant who did test work under Weisz but was assigned at some time in 1956 to work for Frilette. Other of the witnesses were employees of the analytical section of Mobil who testified concerning analytical work done either by them or under their direct supervision for others, including Frilette. Those include Sawruk, Geortler, Tierney, Wohlfarth, Wong, Bowen, Montgomery, Mollet, Webster, Milliken, Cranston, Freeman, Kitz and Herman. In addition, Kimberlin, co-patentee of the Kimberlin et al. patent, was called as a witness by Frilette et al.

The evidence shows that White attended a Gordon research conference in June 1955 at which one of the subjects discussed was molecular sieves. Such a sieve is described in Clark Exhibit 1, a report by White dated July 13, 1955, as "a zeolite structure from which the water of hydration has been removed;

$$Na_{12}(AlO_2)_{12}\cdot(SiO_2)_{12}\cdot 27H_2O\cdot[sic]$$

The report states:

> Several forms of this structure have been prepared with port diameters ranging from 3.0 to 5.3Å and with port diameters ranging from 10 to 13Å.

As one of the characteristics of "these zeolite structures," the report lists:

> 6. In the hydrogen exchange form they have catalytic cracking properties.

It appears that Weisz read this report since a notebook entry of his under date of "Aug. 2–Aug. 5" (1955) appearing in Weisz Exhibit 4 refers to "J.R.W. [J. R. White] report on mol. sieve talk at Colby."

Other exhibits include Weisz Exhibits 3 and 5. The former is a notebook entry made by Weisz in March of 1956 referring to the filter properties of a "5A port. molec. filter material" and suggesting utilization of its properties for "cracking of n-paraffins to n-paraffins of lower mol. wt. by having the 'filter' particles combined as a mix with a (de)hydrogenation component * * * ." Weisz Exhibit 5, a copy of a typewritten "Technical Summary Letter" of August 1955, refers to "molecular sieves, which are calcium alumina silicate crystals, * * * made by Linde Air Products Company" and states that the holes in the crystal have a critical size which "admit the normal paraffins and exclude the aromatics, cycloparaffins and isoparaffins."

Frilette himself began work at Mobil on March 1, 1956, having been hired by Clark to work on "molecular filters" under Weisz, an assignment that was not changed between that date and April of 1957.

Weisz Exhibit 7, a report by Weisz to Clark dated "April 1956" and entitled "Operations Summary—P.B.W." includes under the heading "4. New Catalytic Processes (Frilette)," the statement:

> *a* Have base exchange some 4Å and 10Å filter bases to get H in and alkali metal out, to get AA-activity. AA checks made (10Å material shows AA~20, 4Å none, in agreement with expect since cumene size>4Å!) Scheduling decene runs on such materials.

It appears that this referred to work by Frilette or some other subordinate of Weisz since Weisz did not testify that he performed any of the experiments himself.

Frilette testified that Weisz and he had frequent discussions concerning research work he performed beginning in March 1956. As to an early discussion, he stated:

> I recall that in Mr. Weisz' office he had some bottles of molecular sieves sitting on top of a file cabinet, which I believe was located opposite the door and to the left-hand side of the room. The desks were on the opposite side of the room, and it seems to me I was not there more than a day or so before we had these bottles down and were looking at them and talking about them.

He further testified:

> X–Q. 600. Do you remember what you said to Mr. Weisz about them, or what Mr. Weisz said to you about them? A. Not specifically, no.
>
> X–Q. 601. Do you recall in general what you said to Mr. Weisz or what Mr. Weisz said to you about them? A. In general, we spoke about the possibility of utilizing these particular rather exotic crystalline structures as catalysts and catalyst supports.
>
> X–Q. 602 Do you recall what specific molecular sieves were in those bottles? A. I can make a guess, if you permit me to refresh my recollection from the records.
>
> X–Q. 603. What would you like to use for the purpose——A. Well, the first page of the notebook 4856.
>
> X–Q. 604. Please do so. A. I believe those bottles contained small quantities of Linde 4A powder, 13X—and 13X powder. There may have been others, but these two I am quite sure were there.

With the aid of aforementioned notebook 4856, which covered a period extending from March 1, 1956 through April of 1957, Frilette testified concerning his activities during that time. Included were notes on tests involving molecular sieves designated Linde 4A, Linde 13X and Linde 5A.[7] Other testimony and exhibits related to tests made for Frilette by Lago. Mower, who was assigned to work for Frilette beginning prior to the fall of 1956 testified concerning work he did. The latter included tests on material designated Linde 10X and 13X which took place after February 5, 1957.

Lago testified he received a sample of designated Linde molecular sieve 13X from Frilette on March 9, 1956 to be tested for cracking activity with cumene by the AA or "acid activity" test.[8] As noted in the Frilette et al. main brief, and apparently also in their brief before the Board, the results Lago obtained in the test on this untreated material were negative.

According to his evidence, Frilette, on March 12, 1956, treated Linde 13X material with ten times the amount of ammonium ion theoretically necessary for complete exchange with the object of exchanging as much of the sodium therein as possible and replacing it with ammonium. He stated that he then calcined the exchanged material with the expectation of converting the major portion of the ammonium to hydrogen to introduce catalytic activity. According to the evidence, the ammonium exchanged and calcined 13X sieve material was submitted to Lago for a cumeme cracking or AA test. Lago stated that he carried out such a test of what he designated "Linde molecular sieve 13X calcined ammonium exchange" on March 16, 1956, reporting an acid activity of approximately 20.7×10^{-6} moles per second per gram.

[7] Frilette testified that the 4A, 5A and 13X sieves were "purported" to have pore sizes of 4, 5 and 13 Angstroms, respectively.

[8] The AA test was a standard one involving passing cumeme (isopropyl benzene) over the tested material at an elevated temperature and determining the rate of production of propylene as a measure of "acid activity."

A portion of ammonium exchanged and calcined 13X material was submitted for sodium analysis on March 14, 1956. An analysis, carried out by Tierney on March 23, 1956, showed that 6.1% of sodium remained in the treated material. Frilette said that he appeared to have received that analysis by the March 23 date.

Frilette's evidence also shows that he subsequently "exchanged 1/1" (contacted with a solution which contained sodium and ammonium ions in a 1 to 1 ratio) Linde 13X material which was then calcined. Further according to the notebook, that material was employed by Frilette in dodecene cracking on April 30, 1956 with results designated as "34.5% conversion."

Certain tests on Linde 10X material were reported in 1957 after the Kimberlin et al. filing date. One was an AA test on "Linde 10X treated NH_4NO_3 calcined 800–6 hours" run by Milliken on March 14, 1957, which reported an AA activity of 43.6×10^{-6} mole/second/gram.

The Board's Decision

The Board ruled that neither Lago's March 1956 AA tests on treated material designated as 13X nor Frilette's dodecene cracking test with 1/1 exchanged material in April 1956 established reduction to practice of the subject matter of count 1 "because of lack of corroboration." It stated:

> Frilette et al. have not offered independent proof of the identity of the untreated materials tested as catalysts in the AA tests. Only Frilette and his coinventor Weisz had knowledge of the identity of the solid materials used in the AA tests. Count 1 further requires that the metallic aluminosilicate be crystalline but there is no independent proof that such is the case. The Frilette et al. reply brief, page 17, states that the material used by Frilette was inherently crystalline. However, we have no independent evidence as to what this material was, nor what its state was after the ammonium treatment. That the inventors' (Frilette's) own records refer to Linde molecular sieve 13X and that Frilette was in contact (from his own record, Frilette Exhibit 4) with a Linde employee and that said material is a stable [sic: staple] article of commerce does not corroborate identification of this material which was used in the AA tests. No witness other than Frilette testifies of his own knowledge as to the alleged ammonium treatment of the 13X molecular sieve performed by Frilette. This is fatal to the Frilette et al. case for reduction to practice. *Vandenberg* v. *Reynolds*, 46 CCPA 938, 268 F.(2d) 744, 122 USPQ 381. The mention of these materials in Frilette's laboratory notebook alone is not sufficient to establish corroboration. *Reed* v. *Cislak and Wheeler*, 36 CCPA 1117, 175 F.(2d) 972, 82 USPQ 215; *Senkus* v. *Johnson*, 35 CCPA 1008, 166 F.(2d) 597, 77 USPQ 113; *Teter* v. *Kearby*, 36 CCPA 706, 169 F.(2d) 808, 79 USPQ 65.
>
> Lago's performance of the AA tests did not corroborate the identity of the solid material that he used. What Lago knew about it was only acquired from the labels on the bottles, thus (Q 49, R. 322) "I had no way of knowing what the samples were or what was done to them, and as a result of them coming from outside our group I wrote down everything that was on the label to make sure that the sample and the data sheet would be identified."

It was further held by the Board that Frilette et al. had not established prior conception of count 1 and had not shown conception followed by diligence to any subsequent reduction to practice.

With regard to count 2, the Board held that Frilette et al. have failed to prove conception prior to the Kimberlin et al. filing date or diligence from immediately prior to that date to a subsequent actual reduction to practice. It found that conception of the count was not inherent in the work reported done in 1956 and early 1957 on *sodium* aluminosilicates (as 4A and 13X sieves) which do not comprise an alkali earth metal or on 5A sieves which, although in calcium or alkali

earth metal form, do not have a pore size between about 6 and about 15 Angstrom units. It also was of the opinion that the investigations of aluminosilicates which did take place during the period beginning just prior to the Kimberlin et al. effective date did not establish diligence with respect to the process of count 2. As to the tests on Linde 10X material (calcium form) by Mower and Milliken after the February 5, 1957 date, the Board held that there was "no proper identification of the material tested."

Opinion

[3] We agree with the Board's conclusion that Frilette et al. have not proved that they reduced the invention of count 1 to practice prior to the February 5, 1957 filing date of Kimberlin et al. Also, we find that Frilette et al. have not proved diligence as to count 1 extending from a conception prior to that date to a subsequent reduction to practice. As to count 2, we agree with the Board that neither prior conception nor diligence extending from a date prior to February 5, 1957 to a subsequent reduction to practice has been proved. For these reasons, we do not find reversible error in the Board's award of priority to Kimberlin et al. and hold that the decision below must be affirmed.

The activities relied on by Frilette et al. for reduction to practice of count 1 are Lago's AA test on treated material in March of 1956 and Frilette's dodecene cracking test on similar material in April of the same year. In order for those tests to amount to reductions to practice, the material tested must be established as a "crystalline metallic aluminosilicate catalyst having uniform pore openings between about 6 and about 15 Angstrom units." In holding that such identity was not established, the Board found a "lack of corroboration" and emphasized the deficiency of the evidence as to "what this material was" and "what its state was after the ammonium treatment." Kimberlin et al. argue that not only is there a lack of corroboration but there is a total lack of any probative evidence of the properties of the materials allegedly used. We note that the Board seems to have used the terms "lack of corroboration" and "no proper identification of the material tested" interchangeably and agree that the question is broader than mere corroboration and is better defined as whether the record as a whole establishes that the material defined by the count was used in the critical experiments.

Neither Frilette nor any other witness offered any testimony that showed how they obtained the starting material which Frilette denominated Linde 13X molecular sieve. What Frilette stated was that "in Mr. Weisz' office he had some bottles of molecular sieves sitting on top of a file cabinet" and that he believed that those bottles contained "Linde 4A powder" and "13X powder." Apparently, those bottles were the source of the molecular sieve material used in the March and April tests, for Frilette testified that "to the best of * * * [his] recollection" he got 4A sieve for certain tests from them and no other source was disclosed for the 13X material. Although Weisz testified, he did not state how or when the bottles and their contents were obtained, whether the bottles were sealed or unsealed and how and by whom they might have been labeled. Neither did Frilette nor anyone else. Frilette himself, who had no specific catalyst experience and no experience in the field of aluminosilicate catalysts prior to entering Mobil's employment on March 1, 1956, did not point out how he might have recognized that the materials in the bottles were what he said he believed them to be or that any labels that might have been on the bottles were correct. In stating that Weisz and he had discussed the use of the materials "as catalysts and catalyst supports," Frilette characterized them as "rather exotic" materials.

In their briefs, Frilette et al. repeatedly refer to the crystalline metallic aluminosilicate materials as "staple" articles of commerce. However, they point to no evidence that proves the 13X sieve had such status as early as March and April of 1956. Thus, they assert that the materials were, "prior to the time of the filing of Kimberlin et al's. application (February 5, 1957), staple articles of commerce supplied by the Linde Division of Union Carbide Corporation," with the only matter pointed out as supporting evidence being an undated brochure of Linde supplied by Kimberlin et al. in connection with a Rule 131 affidavit in their application for reissue of their involved patent. Assuming but not deciding that that brochure, which relates to physical properties of 4A, 5A and 13X sieves, is properly part of the interference record, it nevertheless does not substantiate the case for Frilette et al. The earliest date which the affidavit could be regarded as attributing to the brochure is "prior to December 14, 1956," the date of the reference being antedated. The fact that the sieves referred to might have been offered as having certain properties at that time does not establish that products existing under a similar designation as early as March of 1956, when the bottles turned up in Weisz' office, either had or were known to have the same properties. Likewise, the properties at that time are not established by other matter cited elsewhere by Frilette et al. Thus, Weisz Exhibit 5 mentions no sieve number or pore size and Frilette et al. cross Exhibit 7, their Patent No. 3,140,322, speaks only as of its August 14, 1958 filing date.

Although Frilette et al. refer to Frilette having "frequent communication in 1956–1957" with a sales representative of Linde, the evidence on this point painly does not establish the significant properties of 13X sieves as of March 1956. Not only is there no indication that any information concerning crystallinity and pore size was received but an entry regarding a conversation in September of 1956 refers to "faulty 4A or 5A," indicating that difficulties may have been encountered in Linde's sieve preparation.

The record further fails to show that Frilette et al. conducted tests that demonstrated that the 13X material in the ammonium exchanged and calcined form used in the experiments relied on for reduction to practice of count 1 had the pore characteristics—size and uniformity—and the crystallinity required by that count. The record shows some analyses for sodium, aluminum and silicon dioxide both on untreated and on exchanged and calcined samples but it is not pointed out how those results identify the materials as to crystallinity and pore size. X-ray tests on 4A materials showed a difference between the untreated form and the exchanged and calcined form, which difference was attributed to some loss of crystallinity or a decrease in pore size in the latter product. Such evidence that ammonium-exchange and calcination of aluminosilicate products resulted in change in structure indicates that tests were in order to determine whether similar treatment of 13X material had affected its structure relative to crystallinity or pore dimensions. While some measure of pore size of 4A sieves was obtained by "selective sorption measurement," no

tests demonstrating the pore size of the 13X sieve material were reported. Even if the record were adequate to show that *untreated* Linde 13X sieves on the market by March 1956 had the required crystallinity and uniform pore size, which we do not think it is, the failure to disclose how and when the bottles of material on Weisz' cabinet were acquired and the absence of tests or other evidence showing that the *ammonium treated and calcined* 13X sieves tested for catalyst activity in the experiments relied upon had the required properties would leave a serious question whether the latter material complied with the count requirements.

[4] Of course, the designation of the material involved in the March 1956 AA tests in Lago's records as "Linde molecular sieve 13X calcined ammonium exchange" cannot establish identification since that designation was merely copied by Lago from the label on the bottle in which the sample was given to him by Frilette and was not based on either knowledge or analysis by Lago.

The experiment involving cracking of dodecene on an ammonium-exchange Linde 13X sieve in April of 1956 suffers from the further disability that the experiment itself, as well as the preparation of the material, was the work of Frilette himself. Regarding that experiment, Frilette et al. "hasten to point out" that Weisz Exhibit 7, the report apparently made by Weisz to his superior Dr. Clark in April 1956, "mentions the fact that Dr. Frilette was scheduling dodecene runs on 10 Angstrom unit materials." However, the report fails to conform to the experiment for two reasons. First the report is incorrectly described and actually refers to "decene" rather than dodecene which was used in the experiment. Also the experiment is purported to be on material designated 13X and not on "10 Angstrom unit materials." Particularly in view of these inconsistencies, the report appears to lack any probative value as circumstantial evidence in corroboration of the Frilette experiment.

For the above reasons, we hold that the tests advanced by Frilette et al. fail as reductions to practice for lack of substantial evidence to show that the materials tested were *crystalline* metallic aluminosilicate catalysts having *uniform* pore openings *between about 6 and about 15 Angstrom units*. Since Frilette et al. do not urge before us that they should prevail on the basis of conception of count 1 coupled with diligence extending from just before February 5, 1957 until a subsequent reduction to practice, we need not review the Board's holding that no prior conception of that count was shown. We observe, however, that the evidence is obviously insufficient to prove the necessary diligence over the critical period beginning just prior to February 5, 1957 even if prior conception were to be assumed.

As to count 2, Frilette et al. do not assert a reduction to practice prior to the Kimberlin et al. filing date of February 5, 1957 but claim prior conception coupled with diligence extending to a subsequent actual reduction to practice. Concerning the requirement in that count that the catalyst be an *alkaline earth metal* aluminosilicate, Frilette et al. state that "Linde molecular sieve 5A, being a calcium aluminosilicate, is such a material; but Linde molecular sieve 13X, being a sodium aluminosilicate, is not." They further state that sieve 5A has uniform pore openings of 5 Angstrom units. Concerning conception, they then urged:

> [I]n view of the fact that the record amply shows that they were extremely familiar with alkaline earth aluminosilicates, having worked with Linde molecular sieve 5A for almost the entire period from May of 1956 until the end of 1956 (as shown by Frilette Exh. 1) and further in view of the fact that Frilette and Weisz were quite familiar during that time with crystalline aluminosilicates generally, including those having a pore size of 6 to 15 Angstrom units, the conception of using a crystalline *alkaline earth metal* aluminosilicate *as the catalyst for the process of count 1* (and hence a conception of count 2) is implicit in the vast amount of experimental work carried out in 1956.

In particular, Frilette et al. refer to Frilette's work with cumene and dodecene on Linde molecular sieve 13X during March and April of 1956 being followed by work on May 7, 1956 with "Linde 5A pellets clay-bonded" and on May 8, 1956 with "Linde 5A powder pelletized." They also refer to further work in July and September of 1956 with the 5A sieve. Reliance is also placed on Weisz Exhibits 3 and 5. The former is relied on for its reference to the filter properties of a "5A port. molec. filter" and suggestion of utilization of these properties for "cracking of n-paraffins to n-paraffins of lower mol. wt. by having the 'filter' particles combined as a mix with a (de)hydrogenation component * * * ." In Weisz Exhibit 5, they depend upon the reference to "molecular sieves, which are calcium alumina silicate crystals," made by Linde Air Products Company and the statement that holes in the crystal have a critical size which admits the normal paraffins and excludes the aromatics, cycloparaffins and isoparaffins.

Frilette et al. assert that the above items reveal the concept of the use of a crystalline alkaline earth metal aluminosilicate, the 5A sieve, to permit a portion of a feed mixture to enter the pores of the material and undergo a cracking reaction therein, while a portion of the feed is excluded. They further contend that one having that concept "[o]bviously" would know that a molecular sieve the same as the first but having larger pores would permit at least as much of the feed to contact the catalytic sites within the pores. They urge in conclusion:

> Therefore, the conception of cracking a feed material with a crystalline alkaline earth aluminosilicate having a 5 Angstrom pore opening is also a conception of cracking a feed material with a crystalline alkaline earth aluminosilicate having a 6 Angstrom pore opening.

[5] However, we think it plain that the reference to and tests with 5A sieve do not show conception of count 2. Instead, the record fully supports the interpretation of the term between "about 6 and about 15" in the count as excluding materials having pore openings of 5 Angstroms. Thus, the Kimberlin et al. patent, in which both counts originated, emphasizes the use of crystals having a pore size of "about 6" to 15 Angstroms throughout and points out specifically that openings in that range "allow for easy ingress of all hydrocarbon feed types and egress of the reaction products." It also states that such size "serves to lower catalytic coke buildup within the structure and improve regeneration characteristics of the catalyst." The patent further states that the versatility and usage of "3 to 5Å pore diameter crystals" are restricted because the crystals will not allow any but straight chain paraffins and olefins to enter the interior of the pores. Also, the patent points out that the 3 to 5 Angstrom pore diameter crystals are of limited use as catalytic agents because they yield relatively large amounts of catalytic coke. The fact, pointed out by Frilette et al., that the Kimberlin et al. patent describes the preparation of a material having pore openings of 5 Angstrom units does not

support their position here because the patent shows by test results that the 5 Angstrom material provided results decidedly inferior to material having pore sizes within the about 6 to 15 Angstrom range.

Finally, a motion in which Frilette et al. sought to substitute for count 1 a proposed count in which the lower limit of the pore openings in the crystalline metallic aluminosilicate was defined as "about 5" Angstroms instead of "about 6" Angstroms was denied by the Examiner who found that the use of a material with 5 Angstrom pore openings was not included in the invention of the patent claim constituting count 1.

So far as Weisz Exhibits 3 and 5 are concerned, they emphasize the property of the 5A material referred to therein as a *filter* and *sieve*. Since material having pore openings of from about 6 to about 15 Angstroms would not have the same filter characteristics as the 5 Angstrom unit, those exhibits do not demonstrate conception of the use of materials in the large size range as the "sole conversion catalysts" in the process of count 2.

Since Frilette et al. have not proved conception of the subject matter of count 2 prior to the Kimberlin et al. filing date, the matter of whether they proved a subsequent actual reduction to practice using

Remaining for consideration are certain decisions cited by Frilette Linde 10X in March and April of 1957 is moot.

et al. but deemed too remote from the present situation factually to merit any comments earlier. One of these is *Hasselstrom* v. *McKusick*, 51 CCPA 1008, 324 F.2d 1013, 139 USPQ 511 (1963), apparently cited for the propositions that "the amount and quality of corroborative evidence that is necessary in any given case will vary with the facts of that case" and that there is "no fixed formula in determining the sufficiency of corroborative evidence." Those principles are sound and have been kept at the forefront in our consideration here but we think it plain that they do not indicate that a reversal is in order.

[6] *Patterson* v. *Hauck*, 52 CCPA 987, 341 F.2d 131, 144 USPQ 481 (1965), involved the identification of materials used by an inventor in tests of a process. The materials purported to have been used were "exactly the same polyester resins and the same catalysts already in use and being made and sold by * * * [the inventor's employer] prior to the making of the invention as a regular part of its business." Also, the experiments in question were done as the result of instructions of the inventor's supervisor to use those very materials. That situation contrasts markedly with the present case where the 13X starting material was a "rather exotic" material not made by Mobil or used previously by it for upgrading hydrocarbons, the manner in which Mobil obtained the material is unexplained and the material under the designation applied to it was not shown to have attained the status of a staple product known to have the particular characteristics required by the counts at the critical time.

[7] *Mann* v. *Werner*, 52 CCPA 1578, 347 F.2d 636, 146 USPQ 199 (1965) is another case involving identification of materials which presents a far stronger evidentiary case than exists here. The question was whether polybutadiene was one of the materials used by associates of the inventor in carrying out certain operations relied on as reduction to practice. In evidence was an order requesting that a service group within the assignee's company produce a polybutadiene latex for use in preparing the compositions of the counts. Also, the

operator who made the polybutadiene testified that he got butadiene for the preparation from a tank marked "Butadiene" in which it was normally kept and that he recognized the smell of butadiene. The court, further observing that the procedure used to prepare the polybutadiene was a well-recognized one and that the material was not "so exotic or unusual" that the person who requested it would have been unreasonable in expecting to receive what he ordered, concluded that the proof that the material was polybutadiene was sufficient.

[8] Also cited by Frilette et al. is *Ritter* v. *Rohm and Haas Co.*, 271 F.Supp. 313, 154 USPQ 518 (S.D.N.Y. 1967) wherein a patent in suit was held valid but not infringed. There the court, in awarding the plaintiff the benefit of a conception and reduction to practice prior to his filing date, held the inventor's notebook to be "admissible evidence to show corroboration." It appears that the records were complete and meticulously prepared and were "of uncontested authenticity." Moreover, the court stated in considering reduction to practice that the inventor and another witness testified that "the starting materials and products similar to the resulting products were well-known compounds, that the steps carried out were of a type generally known, that the reaction could therefore be predicted with reasonable accuracy," and that analytical equipment which subsequently became available proved the inventor was right. The factual distinction over the present case, where neither the source material nor the corresponding treated material used in the experiments relied on for reduction to practice was established as having the properties required by the count, is apparent.

The decision is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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3,061,139, B. Edwards, SELF-VENTING PACKAGE; **3,091,360**, same, NESTABLE CUP; **3,139,213**, same, **filed** Mar. 6, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c485, *Illinois Tool Works Inc.* v. *Owens-Illinois Inc. et al.* Order of dismissal without prejudice, Nov. 18, 1969.

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DEFENSIVE PUBLICATIONS

MARCH 24, 1970

Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T872,005
NOVEL CATALYST SYSTEM AND OLEFIN POLYMERIZATION THEREWITH

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Continuation-in-part of application Ser. No. 442,478, Mar. 24, 1965. This application July 22, 1969, Ser. No. 843,857

Int. Cl. C08f *1/56, 3/10*
U.S. Cl. 260—93.7
No Drawing. 8 Pages Specification

Propylene or higher alpha-olefin is polymerized to predominantly crystalline high molecular weight polymers in the presence of an inert hydrocarbon diluent and a catalyst system consisting essentially of predominantly amorphous titanium trichloride, an alkali metal hydrocarbon compound, and either aluminum trichloride or aluminum tri-iodide, the mol ratios of Al to Ti and alkali metal to Al being in the range between 1:10 and 10:1. Usually the mol ratio of Al to Ti is in the range between 1:5 and 5:1, preferably in the range between 1:2 and 2:1. The mol ratio of alkali metal to Al is usually in the range between 2:1 and 5:1, preferably in the range between 5:2 and 7:2. The alkali metal hydrocarbon compound contains no olefinic unsaturation, and may be for example a Li, Na or K alkyl, aryl or cycloalkyl. Alkali metal alkyls having a chain length of 1 to 8 carbon atoms are generally used; lower alkyl Li compounds containing 2 to 5 carbon atoms are preferred.

T872.006
MANEB FORMULATIONS INCLUDING POLYETHOXYALKANOL PHOSPHATES

Christian Benjamin Luginbuhl, 127 Nevada Ave., Shipley Heights, Wilmington, Del. 19803

Continuation-in-part of application Ser. No. 639,288, May 18, 1967. This application Aug. 19, 1969, Ser. No. 851,494

Int. Cl. A01n *9/12*
U.S. Cl. 424—286
No Drawing. 13 Pages Specification

A fungicidal spray composition suitable for spraying is made by adding to a maneb wettable powder, hydrocarbon spray oil, emulsifier and water formulation, a polyethoxyalkanol phosphate as an anti-foam agent. The preferred anti-foaming agent is the reaction product of ethoxylated tridecyl alcohol with P_2O_5.

T872,007
UNBALANCED PROCESS FOR PRODUCING BALANCED POLYETHYLENE TEREPHTHALATE FILM

James J. Jefferson and Marshall T. Watson, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 810,364, Mar. 25, 1969, which is a continuation-in-part of application Ser. 569,822, Aug. 3, 1966. This application Oct. 3, 1969, Ser. No. 864,956

Int. Cl. B29c *25/00;* **B29d** *7/24*
U.S. Cl. 264—235
No Drawing. 14 Pages Specification

A process for producing a biaxially oriented polyethylene terephthalate film which has substantially uniformly balanced properties in mutually perpendicular directions including the steps of stretching a substantially amorphous unoriented melt extruded cast film in the direction of extrusion at a stretch ratio of from about 3.5 to about 3.6 times the cast dimension and stretching the film in the transverse direction at a stretch ratio in the range of about 3.0 to 3.2 times the transverse dimension. The quotient of the longitudinal stretch ratio divided by the transverse stretch ratio is greater than 1.10. The rate of stretching, expressed as percentage change per minute of the unstretched dimension, must also be above certain values to produce the balanced properties.

T872,008
COMPOSITE ASSEMBLIES INCORPORATING ALKYLIDENE BISPHENOL POLYESTERS

Winston J. Jackson, Jr., and John R. Caldwell, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 562,499, July 5, 1966. This application Oct. 20, 1969, Ser. No. 867,967

Int. Cl. B32b *27/36;* **C09j** *3/14*
U.S. Cl. 161—231
No Drawing. 16 Pages Specification

A composite assembly comprising at least two structural members bonded together by an adhesive member composed essentially of a polymer of at least one dicarboxylic acid and at least 50 mole percent of an alkylidene bisphenol.

REISSUES

MARCH 24, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,833
METHOD FOR TREATING COCCIDIOSIS WITH QUINAZOLINONES

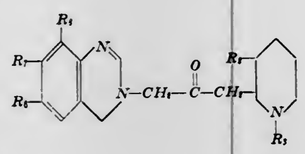
Emanuel Waletzky, Princeton, and Gerald Berkelhammer and Sidney Kantor, Trenton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original No. 3,320,124, dated May 16, 1967, Ser. No. 383,910, July 20, 1964. Application for reissue May 15, 1968, Ser. No. 731,358

Int. Cl. A61k *27/00*

U.S. Cl. 424—251 **20 Claims**

A method of controlling coccidiosis in animals comprising orally administering to domestic animals an edible carrier containing an effective amount of an anti-coccidial of the formula:



wherein each of R_6, R_7 and R_8 is individually selected from the group consisting of hydrogen, halogen, nitro, lower alkyl, phenyl, and lower alkoxy and R_6 and R_7 or R_7 and R_8, taken together, may form a benzo moiety.

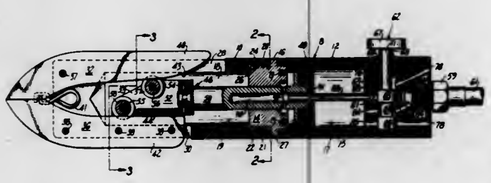
26,834
FLUID OPERATED HAND TOOL

James A. Pawloski, Box 158, East Woodstock, Conn. 06244

Original No. 3,269,223, dated Aug. 30, 1966, Ser. No. 408,900, Nov. 4, 1964. Application for reissue Oct. 6, 1967, Ser. No. 676,659

Int. Cl. B25b *7/12*

U.S. Cl. 81—1 **15 Claims**



A fluid operated tool having a power pack portion 8 including a housing 12 in which there is defined a piston chamber 17 in which a piston 48 is slidably disposed for movement between an operative and inoperative position. The arrangement is such that the piston 48 partitions the housing 12 into two chamber portions (i.e. the forward end and rear end of the piston chamber 17). A piston rod 50 having a bore 90 extends through an opening formed in end wall or plug 14. A control means including a valving means 62 disposed in a valving chamber 63 is provided for selectively admitting fluid under pressure into one of the chamber portions on one side of the piston and exhausting the fluid from the other chamber portion on the other side of the piston 48. Direction of fluid flow is attained by first passage means 80 and 84 connecting the valving chamber to a source of pressurized fluid. Second passage means 81, 88 and 84 connect the first passage means to each of the respective chamber portions through the valving chamber 63. And third passage means 83, 76 and 78 function to selectively exhaust each of the respective chamber portions to the atmosphere through the valving chamber 63. The valve 62 is constructed so that in one position the respective passages are placed in communication so that fluid under pressure is introduced into one chamber portion to act on one side of the piston to cause displacement thereof as the fluid in the other chamber portion on the other side of the piston is exhausted to the atmosphere. The arrangement is such that the passage 88 functions to both supply and exhaust fluild from the forward chamber through the valve chamber 63.

Operatively associated with the piston rod 50 of the power pack unit are a plurality of different head constructions which are adapted to be detachably connected to the unit 8, the particular head construction depending upon the particular operation to be performed by the tool.

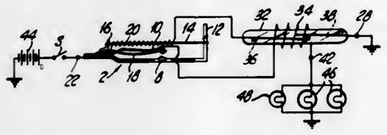
26,835
INDEPENDENT LOAD FLASHER

William B. Almassy, Littleton, Colo., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware

Original No. 3,267,330, dated Aug. 16, 1966, Ser. No. 304,822, Aug. 27, 1963. Application for reissue Apr. 17, 1968, Ser. No. 724,321

Int. Cl. H01j *7/44, 13/46*

U.S. Cl. 315—50 **4 Claims**



A flasher is constructed of (1) a snap switch having movable and stationary contacts which are controlled to engage and disengage by cooling and heating of a heat-expansible pull means, (2) a reed relay having a coil and relay contacts which are controlled to engage and disengage by current flow at a predetermined level and absence of such flow through the coil, and (3) a heater for the pull means. The relay coil and snap switch are in series with each other and with a voltage source at one side and a lamp load at the other side thereof. The heater and relay contacts are in series with each other and are parallel to the snap switch and lamp load, whereby the lamp load may be flashed at substantially constant rate regardless of increase in current flow through the relay coil above the predetermined level.

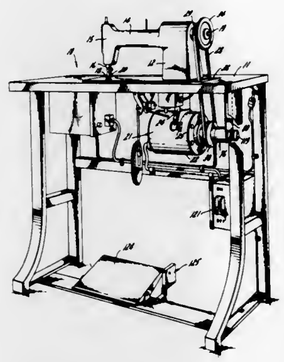
26,836
ELECTRIC SPEED CONTROL FOR SEWING MACHINE

Philip E. Myers, Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware

Original No. 3,253,563, dated May 31, 1966, Ser. No. 346,510, Feb. 21, 1964. Application for reissue Dec. 15, 1967, Ser. No. 694,774

Int. Cl. D05b *69/00;* **F16d** *11/06, 23/10*

U.S. Cl. 112—220 **22 Claims**



In the drive of a device at selectable and different ones of a plurality of speeds from a rotating power source, and with each speed controlled to have the desired value, there is disclosed a constant speed electric motor supplying input motive power to a transmission coupled at its output to a sewing machine. The transmission includes an electromagnetic clutch 38 having an input member 54 driven from the motor 35 and an output member 49 coupled to the machine, together wtih an actuating coil 62 which upon electrical energization or deenergization actuates or deactuates the clutch to effect driving engagement or disengagement between the input and output members, and thus between the motor and the machine. A speed controller 76 drivingly coupled to the output member 49 includes normally closed, centrifugally actuated switch contacts 88, 90 which are so arranged to open when the output member's speed exceeds a predetermined value W_1 (which may, incidentally, be adjustable). Circui connections (FIG. 7) provide an operator with the options of (a) connecting the coil 62 in series with a voltage source through the contacts 88, 90 (b) connecting the coil in series with the voltage source independently of the contacts, or (c) isolating the coil from the voltage source. Under condition (b) the clutch members are steadily engaged, and the machine is driven directly and at a high speed W_2. Under condition (c), the clutch members are steadily disengaged, and the machine is at rest. Under condition (a), however, the clutch coil is deenergized or energized as the speed of the output member rises above and falls below the value W_2, so that by automatic intermittent engagement and slippage, the clutch drives the machine at a speed which is substantially constant but has the predetermined average value W_1, which is lower than the value W_2. A plurality of centrifugal switches connected to provide a greater selection of controlled speeds are also shown (FIG. 9). An electric brake is disclosed as being actuatable under condition (c), to brake the driven machine to a stop.

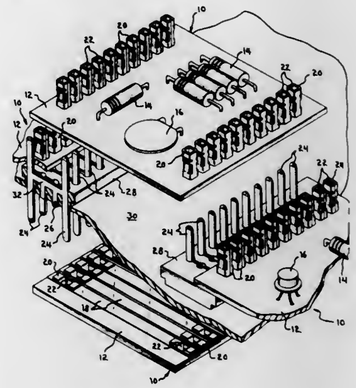
26,837
ELECTRICAL CONNECTING SYSTEM AND PARTS

William Robert Evans, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Original No. 3,270,251, dated Aug. 30, 1966, Ser. No. 302,653, Aug. 16, 1963. Application for reissue July 17, 1968, Ser. No. 747,031

Int. Cl. H02b *1/04, 9/00;* **H05k** *1/00*

U.S. Cl. 317—101 **30 Claims**



Electrical connecting means for connecting one or more electrical modules having electrical components thereon to circuit means comprising female contacts associated with a module board and connected to the circuitry on the module board, and male contacts extending from an insulating base and insertable longitudinally through passages extending completely through the female contacts. The female contacts are of generally closed, box-like configuration having opposed spring tongues for engaging the male contacts.

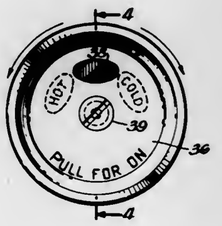
26,838
COLOR INDICATOR FOR PUSH-PULL FAUCET

John G. Pecis, Wilmington, Del., assignor to Speakman Company, Wilmington, Del.

Original No. 3,238,968, dated Mar. 8, 1966, Ser. No. 347,269, Feb. 25, 1964. Application for reissue July 3, 1967, Ser. No. 661,138

Int. Cl. F16k *11/02, 37/00*

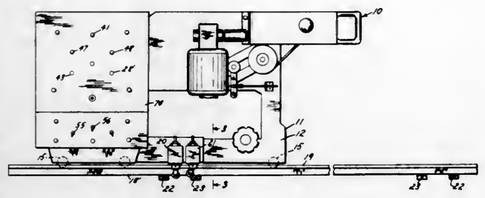
U.S. Cl. 137—556 **5 Claims**



A non-rotating color plate with contrasting colors to indicate hot and cold water outlet temperatures underlying the handle of a push-pull faucet. That portion of the color plate which is viewable through a window in the handle corresponds to the water outlet temperature selected by rotation of the handle.

26,839
CARRIAGE CONTROL MEANS FOR CLOTH LAYING MACHINES
Gerard J. Wendelken, Harrington Park, N.Y., by Cutting Room Appliances Corp., New York, N.Y., a corporation of New York
Original No. 3,401,926, dated Sept. 17, 1968. Ser. No. 548,553, May 9, 1966. Application for reissue Feb. 17, 1969, Ser. No. 830,551
Int. Cl. B65h *29/46*
U.S. Cl. 270—31 **1 Claim**

A motor driven carriage for a cloth laying machine, including clutch means interconnecting the motor and the driven mechanism, and means for disengaging the clutch means in serial relation to the interruption of current flow to the motor, whereby the clutch means will remain engaged until the carriage has come to a stop, and the automatic disengagement of the clutch means permits



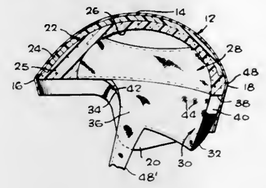
manual positioning of the carriage before resumption of current flow to the motor.

PATENTS

GRANTED MARCH 24, 1970

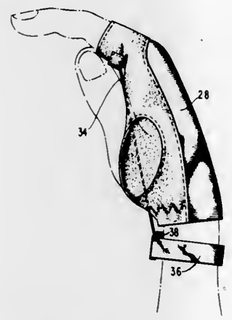
GENERAL AND MECHANICAL

3,501,772
SPORTING SAFETY HELMET
Marlin H. Wyckoff, Redondo Beach, Calif., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California
Filed May 8, 1968, Ser. No. 727,521
Int. Cl. A42f *3/00, 3/02*
U.S. Cl. 2—3 **7 Claims**



A helmet comprising a shell having front, crown, rear and depending side lobe sections. A liner is mounted within the shell with the liner having an inner contour adapted for encompassing the upper head area of the wearer, and an outer contour adapted for contacting the inner surfaces of the shell. The front section of the shell protrudes a distance in front of the inner surface of the front portion of the liner so that the front of the shell extends past the vertical plane of the face area of the wearer. The rear portion of the shell extends a substantial distance behind the inner surface of the rear portion of the liner so as to give additional protection to the rear area of the head of the wearer. The shell further includes a structural strengthening rib or bead formed around the circumference of the base of the crown section, and air foil indentations formed at the unions of the upper portion of the side lobes and the front section of the shell.

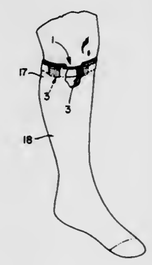
3,501,773
ATHLETIC GLOVE
Troy A. Stansberry, 2056 Mercer Ave., and James C. Wheeler, 1648 Hawthorne Ave., both of College Park, Ga. 60481
Continuation-in-part of application Ser. No. 658,471, Aug. 4, 1967. This application Mar. 13, 1969, Ser. No. 814,877
Int. Cl. A41d *19/00*
U.S. Cl. 2—159 **10 Claims**



A glove has an elastic member extending between a wristband and finger loops. The length of the elastic member causes it to bias the metacarpal bones in a direction promoting appropriate wrist action in athletic events.

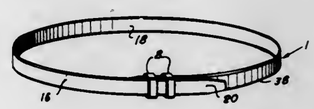
A glove for basketball players includes an elastic member with free edges which run approximately parallel to the metacarpal bones when worn, and is attached at one end around the first phalanges of the wearer's hand, so that forward movement of the hand about the wrist joint is produced. The basketball glove may also include pads which prevent a player from resting the ball in the palm of his hand.

3,501,774
GARTER
George R. Norman, 4875 Countryside Lane, Cleveland, Ohio 44124
Filed May 25, 1966, Ser. No. 552,847
Int. Cl. A41f *9/02, 11/02*
U.S. Cl. 2—321 **5 Claims**



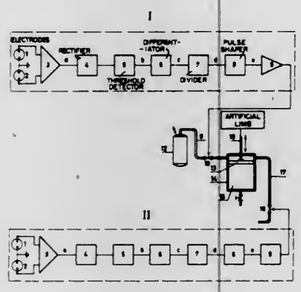
A garter for hosiery having a multitude of resiliently deformable hook elements which penetrate the material of the hose and engage the loops thereof for supporting the hose in position on the leg of a person without the use of clasps or the like engaging the hose.

3,501,775
BELT CONSTRUCTION AND METHOD OF MAKING SAME
Phillip A. Demers and William J. Moon, both of 7509 Inwood Road, Dallas, Tex. 75209
Filed July 16, 1968, Ser. No. 745,182
Int. Cl. A41f *9/00*
U.S. Cl. 2—321 **14 Claims**



A belt and method of making same wherein the ends of the belt are joined without the use of a buckle or other joinder member engaged with the belt body proper, and no attachment member or stitching is exposed on the outer side of the belt.

3,501,776
ELECTROPNEUMATIC CONVERTER FOR OPERATING AN ARTIFICIAL LIMB
Theodorus Willem Beeker, Amersfoort, Adriaan den Hertog, Paterswolde, Johannes During, Utrecht, and Theodorus Cornelis Maria van Miltenburg, Jntfaas, Netherlands, assignors to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van de Volksgezond Held, The Hague, Netherlands, a corporation of the Netherlands
Filed Aug. 7, 1967, Ser. No. 658,759
Claims priority, application Netherlands, Aug. 30, 1966, 6612233
Int. Cl. A61f *1/00, 1/06*
U.S. Cl. 3—1.1 **5 Claims**



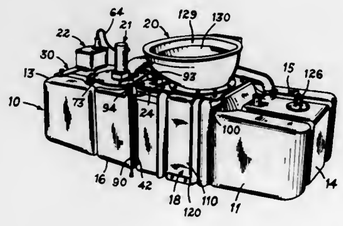
A control device provided with a body electrode for picking up a muscle signal, in which the muscle signal is converted via an electrofluid converter into a signal consisting of fluid pulses of a constant duration, and with a repetitive frequency which is equal to the repetitive frequency of the pulses of the original muscle signal, and in which the pulses themselves are utilized to effect a displacement in a cylinder of a piston controlling an artificial member.

3,501,777
LEG PROSTHESES FOR THIGH DISARTICULATIONS
Gavrill Artemovich Degtyarev, Ul. Garibaldi 12, kv. 99; Nikolai Ivanovich Klimov, Ul. Vavilova 17, kv. 114; and Vyacheslav Stepanovich Leonov, Ul. Kedrova 16, kv. 36, all of Moscow, U.S.S.R.
Filed July 13, 1967, Ser. No. 653,094
Int. Cl. A61f *1/08, 1/04*
U.S. Cl. 3—15 **4 Claims**



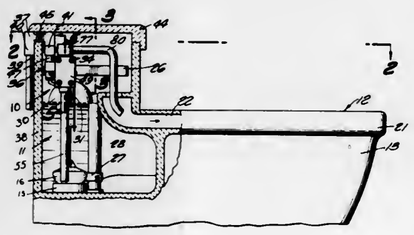
A leg prosthesis for thigh disarticulations near the hip having a half-corset provided with a bracket mounted near the underside which pivotally supports thigh, shin and foot members covered with an elastic material. An automatic lock is provided between the bracket and thigh member to support the body in the vertical position and is releasable for forward pivoting during sitting. The leg features an improved hinged link structure forming the thigh member comprising, an upper fork-like platform hinged to the bracket and hingedly supporting two parallel upright links having their lower ends hinged to a shaped link located at the knee area. An inclined link is hingedly supported between the platform and shaped links, thereby forming a hinged link structure capable of supporting great loads during walking and standing.

3,501,778
SELF-CONTAINED SEWERAGE SYSTEM
Max E. Minniear and Robert C. Helke, Dayton, Ohio, assignors to Koehler-Dayton, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 625,647, Mar. 24, 1967. This application Feb. 13, 1969, Ser. No. 805,092
Int. Cl. E03d *1/00;* **B61d** *35/00;* **A47k** *11/02*
U.S. Cl. 4—10 **6 Claims**



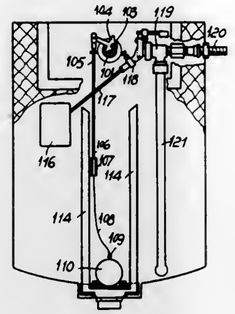
A self-container sewerage system for passenger vehicles having a unitary thin-walled plastic tank with a rigid bridge reinforcement which supports a substantial portion of the weight imposed on the tank. Reinforcing ribs in the walls of the tank permit the use of uniformly thin walls throughout without loss of structural integrity.

3,501,779
BALL COCK FOR ONE-PIECE WATER CLOSET
Irving A. Ward, Los Angeles, Calif., assignor to Modern Faucet Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Dec. 23, 1965, Ser. No. 516,006
Int. Cl. E03d *1/26, 1/28, 1/34*
U.S. Cl. 4—13 **10 Claims**



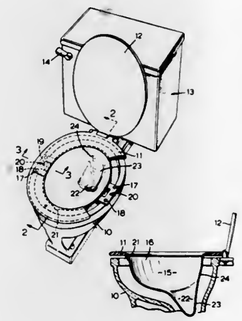
A ball cock valve assembly for one-piece water closets including a unique mounting bracket which incorporates the water inlet and further including an improved shut-off valve coupled with a novel anti-siphon valve assembly for controlling the flow of water to the bowl and to the tank.

3,501,780
WATER-CLOSET FLUSH TANK ASSEMBLY
Angiolino Bosi, Alessandria, Italy, assignor to Dorino Marabese, Alessandria, Italy
Filed Feb. 28, 1966, Ser. No. 530,300
Int. Cl. E03d *1/33, 1/34, 5/09*
U.S. Cl. 4—41 **5 Claims**



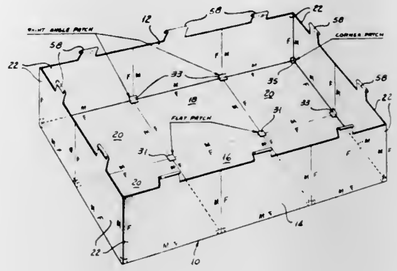
This disclosure relates to a water-closet flush tank assembly having a float valve and a flush valve and wherein the flush valve comprises a free spherical obturating body with a ballast weight and a slack string controllable by a push-button and the float valve is controlled by a two armed angle lever and a tripping device urging said float valve in one of its end positions through the buoyancy action of the float of the float valve.

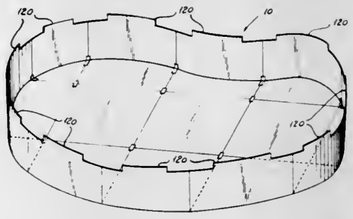
3,501,781
RECEPTACLE
Frank J. Ott, 76 Old Gainsborough Drive, Hamilton, Ontario, Canada
Filed Dec. 6, 1967, Ser. No. 688,450
Int. Cl. A47k *11/02, 13/24*
U.S. Cl. 4—141 **5 Claims**

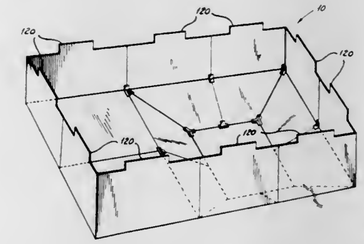


The bottom of a specimen-collecting receptacle, which may be a bed-pan, is provided with a downwardly-extending well-like portion and the walls between the receptacle opening and the well portion are shaped to ensure that the specimen tends to move under gravity to the bottom of the well. At least the well is provided with suitable indicia. Small specimens can be measured accurately in situ in the well, while large specimens overflow into the main body of the receptacle. An embodiment for use with a toilet has means for supporting it safely on the bowl beneath the seat and can be tipped to deposit the contents directly into the toilet.

3,501,782
SWIMMING POOL ASSEMBLY INCLUDING RIGID LINER FOR SIDEWALLS OF POOL WITH INTERLOCKING SECTIONS
Julius Donald Schwarz, Teaneck, and George E. Dokes, Hillsdale, N.J., Otokar von Bradsky, Westwood, N.Y., and Sidney J. Goodman, Paramus, N.J., assignors to Hendon Construction Company, Little Ferry, N.J., a corporation of New Jersey
Filed Oct. 3, 1967, Ser. No. 672,604
Int. Cl. E04h *3/18*
U.S. Cl. 4—172 **10 Claims**

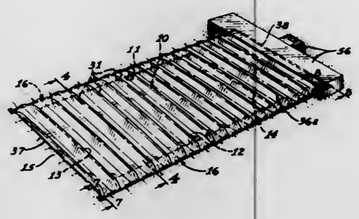


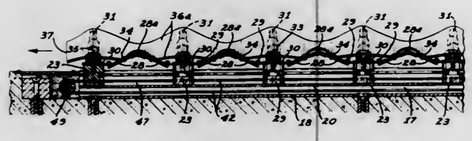




A rigid liner for sidewalls of a swimming pool with interlocking sections for carrying the water of the swimming pool and to replace the flexible sheet of a somewhat stretchable plastic material such as polyvinylchloride heretofore utilized as a liner in swimming pools, together with an improved swimming pool assembly including corrugated metal reinforcements for supporting the rigid liner so as to provide sidewalls for the liner, and other improved pool assembly means for securing the rigid liner along an upper edge of the pool and adjacent a sidewall panel of a prior type pool assembly so that the rigid liner with interlocking sections may be readily substituted for a flexible plastic liner in a prior type pool assembly.

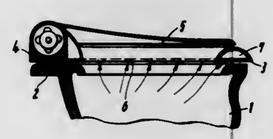
3,501,783
SWIMMING POOL COVER
Ira S. Broadman, Phoenix, Ariz., assignor to Capitol Holding Corp., Los Angeles, Calif., a corporation of the District of Columbia
Filed Oct. 24, 1967, Ser. No. 677,593
Int. Cl. E04h 3/19
U.S. Cl. 4—172.14 8 Claims





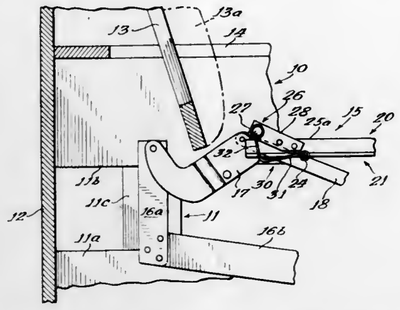
A mechanically operated collapsible folding cover for a swimming pool arranged to slide out over and retract from immediately above the water surface to maintain the pool clean and keep the pool safe from against someone falling in the pool when not in use.

3,501,784
TOILET FITTING
Hans Maisch, Rotenfels, Germany, assignor to Eisenwerke Gaggenau G.m.b.H., Gaggenau, Germany, a company of Germany
Filed Nov. 20, 1967, Ser. No. 684,336
Claims priority, application Germany, Nov. 18, 1966, E 32,866
Int. Cl. A47k 13/30
U.S. Cl. 4—217 6 Claims



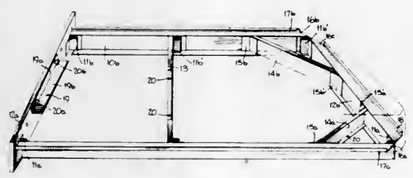
A toilet fitting comprising a hollow seat adapted to rest on the upper edge of a toilet bowl having openings equidistantly arranged around the inner edge. The seat is formed with a hollow rear extension accommodating an air extractor and a filter element. An extraction duct having a branch in each half of the seat communicates with the hollow extension, the two branches operating aerodynamically in parallel.

3,501,785
BED SECTION CONSTRUCTION FOR SOFA SLEEPERS
Aloysius J. Mikos, Skokie, Ill., assignor to The Seng Company, a corporation of Illinois
Filed July 5, 1968, Ser. No. 742,907
Int. Cl. A47c 17/04, 17/00
U.S. Cl. 5—13 8 Claims



A sofa sleeper which has a bed frame consisting of a plurality of pivotally connected bed sections with wire mesh means carried in the sections for supporting a mattress, and linkage means supporting the bed frame in a sofa frame for movement between a folded position within the sofa frame and an extended bed position projecting out of the sofa frame, in which a bed section which has an inner rail adjacent the back of the sofa frame in sofa position has the inner rail offset out of the plane of the parallel bed rails to which it is rigidly connected, so that the inner rail acts as a mattress stop, and in which the wire mesh mattress supporting means is connected to the offset inner rail by a plurality of L-shaped wire links, each of said links having a first leg generally in the plane of the wire mesh means and pivotally connected thereto, and a second leg secured to the offset inner rail.

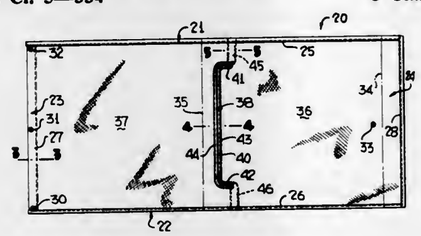
3,501,786
BED CONSTRUCTION
Jacob S. Hurwitz, 990 Clark Place, Woodmere, N.Y. 11598
Filed Dec. 13, 1967, Ser. No. 690,269
Int. Cl. A47c 19/00
U.S. Cl. 5—207 13 Claims



The invention relates to a bed construction which is characterized by ease and simplicity in assembly and disassembly and which has a peripheral frame adapted to provide a substantially dust proof seal with the floor thereby minimizing underbed cleaning. A rectangular frame is provided comprising a pair of depending parallel side frames removably connected by frictional interlocking slip joints to a pair of parallel end rails and a spreader therebetween, the latter functioning to provide frame rigidity while its upper end functions to provide bedspring support. The bulk of the bedspring support is provided by flanges on the upper periphery of the respective side rails and foot rail and by the laterally extending

leg of an angle bar attached to the head rail. Adjusting means such as machine screws threaded through the latter permit bedsprings of the same designation, e.g., king size, queen size, etc., which, among different manufacturers, have slightly varying lengths to be accommodated and held flush against a vertical lip provided about the periphery of the flanges. A pair of reinforcement rails are removably provided between stops affixed to the respective side rails and foot rail and serve to brace the foot corners of the frame. Angular cuts in the flanges at the foot corners permit overlapping by a boxspring thereby avoiding the projection of sharp frame corners.

3,501,787
DOUBLE SAIL SHEET
Louise M. Nunn, 1502 Pickett St., Radford, Va. 24141
Filed Aug. 1, 1967, Ser. No. 657,670
Int. Cl. A47g 9/00; A47c 21/06
U.S. Cl. 5—334 8 Claims

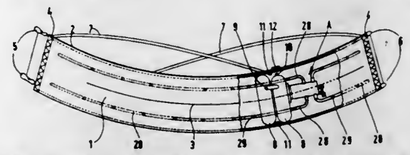


This invention relates to an improved double sail sheet which is formed of a single one-piece generally rectangular cloth blank folded upon itself to define a mattress receiving portion and a covering portion. A first pocket is integrally formed from the blank at a first transverse end of the mattress receiving portion while a second pocket means is similarly integrally formed from the blank at an opposite transverse end of the mattress receiving portion. One of the pockets is defined by a generally U-shaped slit in the mattress receiving portion spaced inwardly and opening away from the adjacent transverse edge of the mattress receiving portion. The U-shaped slit has a bight portion and a pair of leg portions with the leg portions being spaced inwardly from opposite longitudinal edges of the blank. The area between each longitudinal edge and its associated leg portion is sewn together to secure the mattress receiving and covering portions to each other, and snap-locking means are provided for securing the mattress receiving and covering portions in generally overlapping relationship particularly for laundering purposes.

3,501,788
PROCESS FOR REMOVING WATER FROM WET LENGTHS OF FABRICS
Alfred Schraud, Hamburg-Wandsbek, Germany, assignor to Artos Dr. Ing. Meier-Windhorst K.G., Hamburg, Germany, a corporation of Germany
No Drawing. Filed Dec. 15, 1967, Ser. No. 690,801
Int. Cl. D06f 51/00
U.S. Cl. 8—158 1 Claim

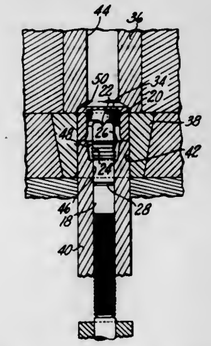
The process for removing water from wet lengths of material, particularly after washing processes, is characterized in that, at the end of a normal known washing process in washing sections which follow each other, the length of material in the last washing section is treated at the highest possible temperature, preferably boiling temperature, is then subjected to a squeezing process with preferably average squeezing output while retaining this temperature to the greatest possible extent and subjected to subsequent evaporation.

3,501,789
SAFETY LIFEBELT
Lino Rossetti, Via Cesare Battisti 27, Viareggio, Italy
Filed Feb. 28, 1968, Ser. No. 708,929
Claims priority, application Italy, Mar. 18, 1967, 32,913/67; Dec. 28, 1967, 54,263/67
Int. Cl. B63c 9/16
U.S. Cl. 9—319 5 Claims



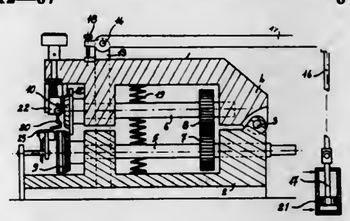
Safety lifebelt composed of an air tube, provided with braces so that it can be put on in the manner of a jacket, surrounding the chest and with its ends intended to be hooked together so as to form a toroidal chamber the continuity of which is interrupted at the point of hooking.

3,501,790
METHOD OF MAKING BLIND RIVET ASSEMBLIES
Thomas J. Wickers, Trumbull, Conn., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Continuation of application Ser. No. 458,213, May 24, 1965. This application Apr. 14, 1967, Ser. No. 630,956
Int. Cl. B21k 1/58
U.S. Cl. 10—27 3 Claims



A method of manufacturing a rivet by extruding an open ended rivet body in situ about a rivet mandrel.

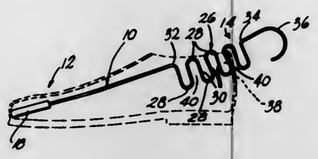
3,501,791
MANUFACTURE OF FOOTWEAR
Robert Zanetti, Ile de France Rue du 4 Septembre, Romans, Drome, France
Filed Apr. 11, 1968, Ser. No. 720,622
Claims priority, application France, June 15, 1967, 48,787
Int. Cl. A43d 45/00, 47/00, 57/00
U.S. Cl. 12—67 6 Claims



A machine for cutting or partially cutting shoe insoles from their corresponding welts includes a pair of driving

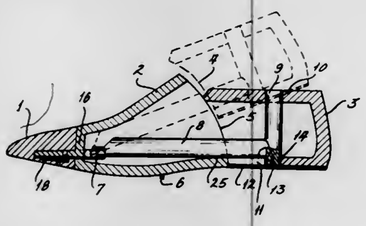
rollers which clamp the welt and notch it at the same time and a cutter arranged obliquely so as to make a chamfered cut into the welt to define the insole.

3,501,792
WIRE SHOETREE
Henry H. Merriman, 751 W. Washington St., Jackson, Mich. 49201
Filed July 29, 1968, Ser. No. 748,335
Int. Cl. A43d *5/00*
U.S. Cl. 12—115.6 **12 Claims**



A shoetree of a simple construction, yet permitting use with a wide variety of shoe sizes, consisting of an elongated member, preferably of wire, having a shoe toe engaging end member or portion, and including a plurality of sinuous or zigzag bends and elements for selective engagement with the heel portion of the shoe to maintain a shoe in a stretched condition. The elements of the zigzag portion are so spaced as to accommodate half sizes of shoes, and preferably, a hook is defined at the end of the elongated member adjacent the zigzaz section permitting the shoetree to be suspended.

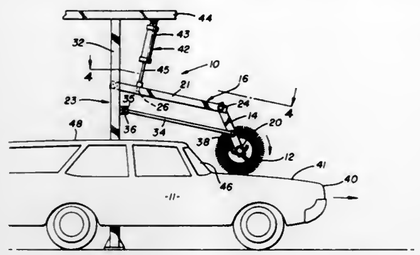
3,501,793
SHOE LAST
Gilbert F. Jonas, Nashville, Tenn., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed May 6, 1966, Ser. No. 548,144
Int. Cl. A43d *3/00, 23/00*
U.S. Cl. 12—136 **8 Claims**



For use in the manufacture of shoes, a last having complementary heel- and fore-parts connected together by a detachable hinge which connects with the fore-part more remotely from the parting line (between said heel-part and fore-part) than its connection with said heel-part.

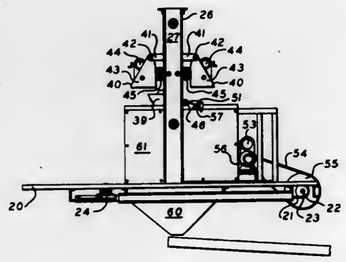
3,501,794
MECHANISM FOR SUPPORTING AND POSITIONING AN OVERHEAD BRUSH IN A CARWASH
Fred D. Solomon, Akron, Ohio, assignor to Lanning Equipment Corp., Akron, Ohio, a corporation of Ohio
Filed Feb. 27, 1968, Ser. No. 709,582
Int. Cl. B60s *3/06;* **A46b** *13/02*
U.S. Cl. 15—21 **5 Claims**

A mechanism for supporting and positioning the overhead brush in automatic carwashes. The overhead brush cleans the generally upwardly facing surfaces of the vehicle being washed. The subject mechanism rotatably supports the overhead brush on an articulated frame carried on a standchion. In the embodiment depicted the frame has a pair of upper, support links and a pair of lower, control links. The links in each said pair are pivotally secured to the stanchion and extend in generally



parallel relation outwardly from the stanchion. Each pair is pivotally connected to an outer arm, the outer arms being laterally spaced to support the overhead brush rotatably therebetween.

3,501,795
ANODE CLEANING MACHINE
Peter M. Jasberg, Kellogg, Idaho, assignor to The Bunker Hill Company, a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,178
Int. Cl. A46b *13/04*
U.S. Cl. 15—77 **15 Claims**



An apparatus for removing manganese deposits and other matter from anode assemblies used in electrolytic metal recovery processes. The anodes are handled on a movable truck with the individual anodes in parallel transverse positions along a longitudinal line. The truck carrying the anodes is moved by a horizontal conveyor across the machine framework while a vertical conveyor simultaneously lifts each anode assembly from the truck and carries it through hydraulic sprays and powered brush cleaning assemblies. The individual anodes are returned to their original positions on the truck in the timed operation of the horizontal and vertical conveyor components.

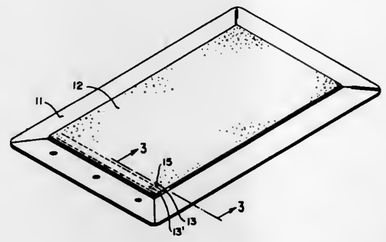
3,501,796
MOP CONSTRUCTION
Theron V. Moss, 3175 Falmouth, Shaker Heights, Ohio 44120
Continuation-in-part of application Ser. No. 513,770, Dec. 14, 1965. This application Oct. 10, 1968, Ser. No. 766,421
Int. Cl. A47l *13/12, 13/20*
U.S. Cl. 15—118 **6 Claims**

A mop swab including absorbent cords secured together substantially centrally of the length and flaring outwardly adjacent the ends thereof. Means may be included to assist in maintaining the cords in the desired fanned relationship. A cleaning pad or assembly may also be secured to the mop, including an abrasive ele-



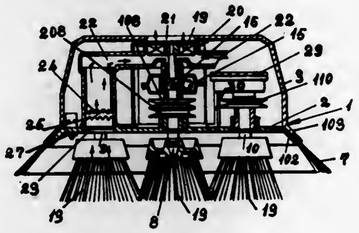
ment to facilitate cleaning of floors and also to assist in maintaining the individual cords in the spread relationship.

3,501,797
TACKY MAT WITH IMPROVED SHEET SEPARATING MEANS
John J. Nappi, 80 Beckley Road, Berlin, Conn. 06037
Filed Sept. 9, 1968, Ser. No. 758,375
Int. Cl. A47l *23/22*
U.S. Cl. 15—215 **7 Claims**



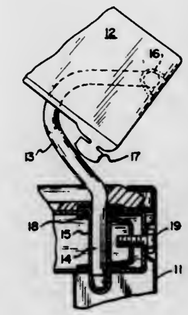
A tacky mat stack of pressure sensitive adhesive coated sheets is provided at one end with a strand between each pair of adhered sheets and a pulling loop on the end of each strand extending from the stack. By pulling the loop and the strand the adhesive bond is released across one end of the sheet to facilitate peeling off the used sheet.

3,501,798
ELECTRIC POLISHER FOR SMOOTH VERTICAL WALLS, SUCH AS WINDOW GLASS
Ennio Carraro, Via Roma 305, 30038 Spinea, Venice, Italy
Filed Apr. 9, 1968, Ser. No. 719,946
Claims priority, application Italy, Apr. 15, 1967, 6,941/67
Int. Cl. A47l *7/02, 1/02;* **A46b** *13/04*
U.S. Cl. 15—320 **9 Claims**



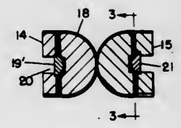
A window glass polisher comprising a set of rotating brushes; spray nozzles for spraying a cleansing liquid against the glass surface being polished; a circumferential skirt encircling said brushes and spray nozzles; air suction and controlling means having their suction side in communication with the space dilimited by said circumferential skirt, for vaporizing and venting to the external atmosphere the liquid particles in said closed cleansing space.

3,501,799
HINGE STRUCTURE
George J. Flech, White Bear Lake, Minn., and Kenneth J. Dahlstrom, St. Croix Falls, Wis., assignors to Whirlpool Corporation, a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,175
Int. Cl. E05d *7/04, 7/12*
U.S. Cl. 16—129 **1 Claim**



A hinge structure for hingedly mounting a movable member such as a lid, door or the like on a base member having hinge means on which the movable member is movably mounted, receiving means on the base member for releasably receiving and retaining the hinge means in a predetermined fixed position with respect to the base member so that the movable member will be thusly positioned with respect to the base member and an adjusting device for adjusting the position of either the receiving means or the hinge means to adjust this predetermined fixed position of the movable member with respect to the base member when such adjusting is desired.

3,501,800
HINGE FOR FOLDING SCREENS AND THE LIKE
Bernard J. O'Dea, Canon City, Colo. (1912 Eastlake Blvd., Apt. 1103, Colorado Springs, Colo. 80910)
Filed May 24, 1967, Ser. No. 640,979
Int. Cl. E05d *7/00, 9/00*
U.S. Cl. 16—150 **3 Claims**

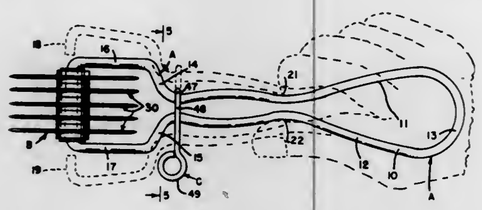


This invention relates to hinges, and more particularly, to a hinge especially designed for use on folding screens and the like; still more particularly, to a hinge that is made of a single piece of nylon or Fiberglas cord.

3,501,801
MEAT TENDERIZER

Maynard P. La Fleur, P.O. Box 457, Champlin, Minn. 55316

Filed Apr. 24, 1967, Ser. No. 633,293
Int. Cl. A22c *9/00*
U.S. Cl. 17—29 3 Claims

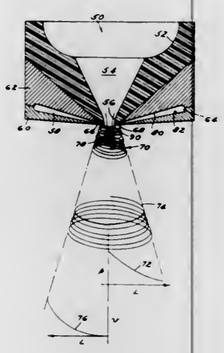


A meat tenderizer having a number of juxtaposed circular cutters formed with sharpened teeth and shoulders adjacent the teeth for holding the meat in position during cutting and limiting the depth of the cut, said cutters being carried by a sleeve rotatable on complemental axles on adjacent outwardly sprung resilient handle members movable relative to one another to permit of assembly of the cutters and sleeves thereon together with retaining means for holding the axles against the spring action thereof with the cutters assembled thereon in juxtaposed operative position, in spaced position and with the axles sufficiently spaced permitting removal of the sleeve and cutters therefrom.

3,501,802
METHOD AND APPARATUS FOR PRODUCING METAL POWDERS

Terry S. Ullman, Royal Oak, and Chester J. Lecznar, Warren, Mich., assignors to Alloy Metals, Incorporated, Troy, Mich., a corporation of Michigan

Filed Jan. 16, 1967, Ser. No. 609,562
Int. Cl. B22d *23/08*
U.S. Cl. 18—2.5 7 Claims

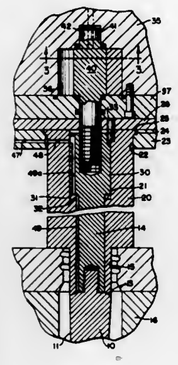


In general, this disclosure relates to the production of metal powders, in which molten metal is atomized in a tower by a tornado-like spiral stream of fluid produced by an atomizing nozzle device. The atomized metal powder is collected by a reciprocating conveyor disposed beneath the tower.

3,501,803
BLOW CORE WITH CLOSABLE BLOW PORT FOR PLASTIC MOLDING APPARATUS

John Guelph, Paterson, N.J., assignor to Emery I. Valyi, Riverdale, N.Y.

Filed Feb. 5, 1968, Ser. No. 703,193
Int. Cl. B29c *17/07*; B29d *23/03*
U.S. Cl. 18—5 8 Claims

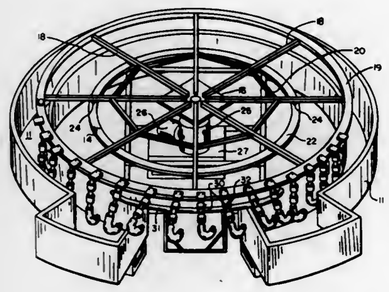


A blow core for molding and blowing a parison having a sleeve forming a continuation of the blow core surface. The blow core is formed with a stem slidable in the sleeve to open and close the blow ports. A rotatable threaded shaft actuated by fluid pressure registers with threads in the stem for advancing or retracting the blow core so as to open or close the ports.

3,501,804
RUBBER CURING APPARATUS AND METHOD

Howard L. Oplinger, Chardon, and Alan Nicol, Burton, Ohio, assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Filed June 13, 1967, Ser. No. 645,695
Int. Cl. B29h *5/28*; B29c *13/00*
U.S. Cl. 18—6 5 Claims

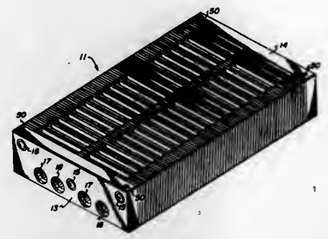


Apparatus and method for curing mandrel-mounted hoses by continuously moving the mandrels through a heated bath except for withdrawal at a loading station whereat the mandrels are positioned for removal and mounting of hoses thereon. A mounting means for mandrels is also included.

3,501,805
APPARATUS FOR FORMING MULTI-COMPONENT FIBERS

Robert Pohlé Douglas, Jr., Norwalk, Conn., and Frank N. Tonnies, Bayside, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Jan. 3, 1963, Ser. No. 249,203
Int. Cl. D01d *3/00*
U.S. Cl. 18—8 7 Claims



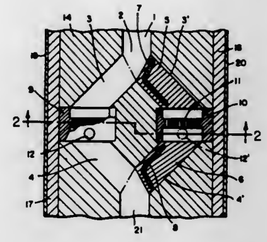
1. A spinnerette assembly comprising:
(a) a spinnerette having a plurality of orifices disposed in a plurality of parallel rows in the face thereof,
(b) a spin dope distribution assembly mounted adjacent said spinnerette comprising a plurality of plates secured together to form a stack, such stack including:
(1) a plurality of first plates having openings communicating from a first spin dope passageway to first regions immediately adjacent said spinnerette,
(2) a plurality of second plates having openings communicating from a second spin dope passageway to second regions immediately adjacent said spinnerette, and
(3) a plurality of third plates interposed between each such first plate and its neighboring such second plate to isolate the aforesaid openings from each other and to provide communication between each such first region and each such second region immediately adjacent said spinnerette; and
(c) support means for mounting said spinnerette and said spin dope distribution assembly with each of said third plates aligned with a corresponding row of orifices in said spinnerette and with each of rows of orifices located between a pair of adjacent first and second regions.

3,501,806
APPARATUS FOR SPINNING ARTIFICIAL THREADS

Hansgeorg Schrader, Remscheid-Lennep, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany

Filed Apr. 28, 1966, Ser. No. 546,038
Claims priority, application Germany, May 5, 1965, B 81,751
Int. Cl. B29f *3/03*
U.S. Cl. 18—8 3 Claims

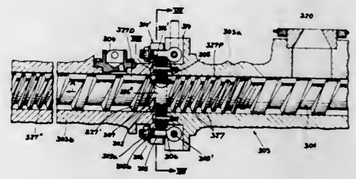
Apparatus for spinning threads from viscous spinning compositions in which means are provided for changing a filter in the equipment without interrupting the flow of composition to the spinning nozzle and without risking the addition of air or decomposed products to the spun material. At least two lines are provided between a supply tank and the spinning nozzle. A filter is placed in each of the lines. Double means for blocking the passage of the composition to the spinning head is provided in each of the lines. One blocking means is placed before and one after the filter. Closable passage means is also provided allowing the spinning composition to be passed from the filter to the atmosphere in order to check the effectiveness of a newly installed filter. The apparatus insures the continuity of the spinning process and insure that air inclusions, bubble formation, and the like, will not take place during the filter changing step.



3,501,807
MASTICATING SYSTEM FOR PLASTIC MATERIALS

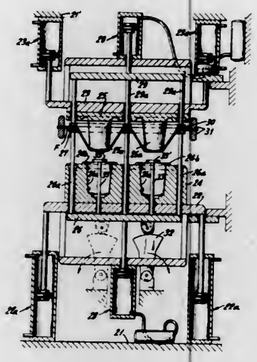
Hans-Werner Selbach, Bad Oeynhausen, Germany, assignor to Rolf Kestermann Maschinenfabrik, Bad Oeynhausen, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 560,553, June 27, 1966. This application Sept. 8, 1967, Ser. No. 666,311
Claims priority, application Germany, Sept. 10, 1966, K 60,216
The portion of the term of the patent subsequent to Oct. 29, 1985, has been disclaimed
Int. Cl. B29f *3/02*, *3/40*
U.S. Cl. 18—12 7 Claims



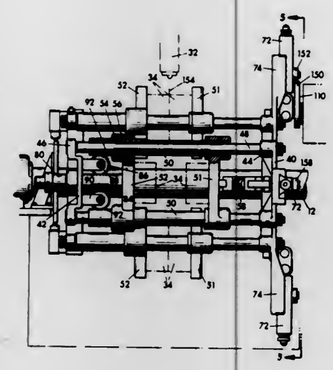
A masticating device for plasticizing a synthetic-resin material (e.g. polyvinylchloride) whose housing is axially separable and forms an elongated plasticizing chambers receiving a placticizing worm for advancing and plasticizing the material; a perforated disk is clamped between the housing parts and is provided with a multiplicity of perforations extending in the direction of flow of the material whereby the material is extruded through the perforations from a compression zone into a decompression zone. A blade sweeps along the downstream face of the disk for severing the material forced through the perforations and granulating the material in the decompression zone, while the housing is provided with at least one passage communicating with the decompression zone proximal to said disk for applying suction for degassing the material.

3,501,808
PRESS MOLDING DEVICE AND METHOD
Joseph Meier, Geroldswil, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed Sept. 6, 1966, Ser. No. 582,192
Claims priority, application Switzerland, Sept. 3, 1965, 12,425/65
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **7 Claims**



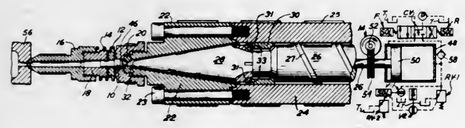
This invention relates, in general, to a device for press molding materials and, in particular, to a new and useful device for producing hollow bodies from synthetic thermoplastic foil using a swage plate.

3,501,809
APPARATUS FOR FORMING PLASTIC ARTICLES
John P. Kinsley, Cuyahoga Falls, Ohio, assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,293
Claims priority, application Canada, July 21, 1966, 965,976
Int. Cl. B29c *3/02, 17/07*
U.S. Cl. 18—20 **5 Claims**



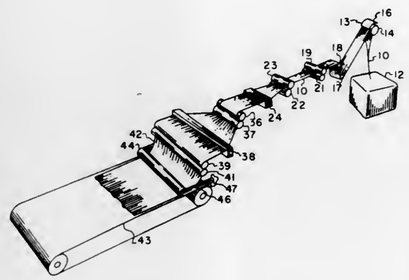
This disclosure relates to a blow-molding machine for continuously preparing bottles or the like from tubular thermoplastic material. The blow-molding machine consists of a rotary mechanism having a plurality of molds arranged in a rotary fashion. The indexing sequence and actuation of the machine component parts are, through camming means, accurately and positively co-ordinated and synchronized for variable machine speeds and in addition, a positive locking device is provided to retain the mold halves in closed relation during the molding operation.

3,501,810
PRESSURE RELEASE CHECK VALVE FOR PRESSURE OPERATED INJECTION NOZZLE
Russell W. Powell, Richmond, Ind., assignor to National Automatic Tool Company, Inc., a corporation of Indiana
Filed Apr. 17, 1967, Ser. No. 631,419
Int. Cl. B29f *1/03*
U.S. Cl. 18—30 **9 Claims**



A pressure release check valve is associated with a pressure operated injection nozzle in such manner as to release pressure from a mold after the mold has been charged through the pressure operated injection nozzle. The pressure release check valve is thus opened by back pressure from the mold as the molding material therein expands to atmospheric pressure following its subjection to injection pressure and upon such injection pressure being released following the completion of the molding operation.

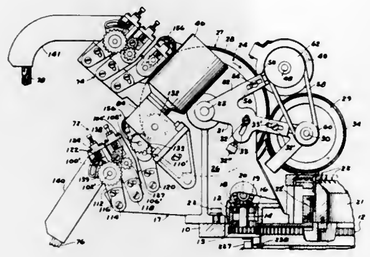
3,501,811
CONTINUOUS FILAMENT WEBS
George A. Watson, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 382,263, July 13, 1964. This application July 3, 1967, Ser. No. 650,796
Int. Cl. D01b *3/04;* **D02g** *3/00*
U.S. Cl. 19—65 **8 Claims**



A method for producing a lightweight web of continuous filaments and the product produced thereby comprising deregistering a tow of continuous crimped filaments and subsequently subjecting the deregistered tow to

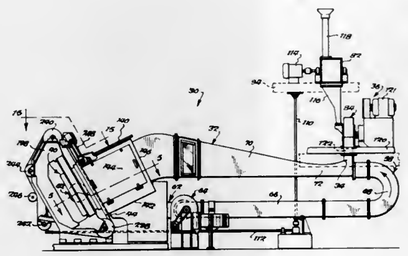
a plurality of spreading stages to produce a web having a density of less than 1 ounce per square yard and preferably less than about ½ ounce per square yard.

3,501,812
CARDING HEAD ATTACHMENT FOR PILE FABRIC KNITTING MACHINES
Arnold W. Schmidt, Sarasota, Fla., assignor to Norwood Mills, Inc., Janesville, Wis., a corporation of Delaware
Original application Dec. 20, 1963, Ser. No. 332,227, now Patent No. 3,299,672, dated Jan. 24, 1967. Divided and this application Dec. 9, 1966, Ser. No. 600,490
Int. Cl. D01g *13/00;* **D04b** *9/12, 9/14*
U.S. Cl. 19—145.7 **10 Claims**



A carding head for feeding pile fibers to a pile fabric knitting machine wherein a roving or sliver of pile fibers is fed to the main cylinder of the head by a roving drafting section driven by a variable speed electric motor. The main cylinder and doffer are driven at a constant speed from a separate drive so that pile fibers are presented at a uniform speed by the doffer to the knitting machine, and the motor drive of the drafting section is controllable and variable during running to permit gradual variation in the volumetric feed rate of pile fibers.

3,501,813
METHOD OF FORMING A CONTINUOUS FIBROUS WEB
Charles Allen Lee and Warren R. Furbeck, Knoxville, Tenn., and Thomas S. Bartley and Jeremy G. Beaty, Toronto, Ontario, Canada, assignors, by direct and mesne assignments, to Canadian International Paper Company, Montreal, Quebec, Canada, a body corporate and politic
Filed Nov. 10, 1965, Ser. No. 507,089
Int. Cl. D01g *25/00*
U.S. Cl. 19—156.3 **7 Claims**



A single integral web of loose fibrous material having a non-uniform cross sectional thickness is formed on a carrier moving at a uniform rate by causing first and second quantities per unit time of loose fibrous material to be conveyed by air and deposited on first and second different portions of the carrier.

3,501,814
TWO PART FASTENING MEANS FOR ANIMAL COLLARS
Victor F. Anderson, Wenonah, and David P. Atwood, Trenton, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,145
Int. Cl. B65d *63/00*
U.S. Cl. 24—16 **7 Claims**



A two-part fastening assembly, one part including an elongated strap having a guide mounted substantially at the end thereof with one or more outwardly protruding studs positioned on the strap behind the guide; the other part including an elongated tongue passable through the guide with one or more openings disposed to fit over the studs. The fastening is achieved by passing the tongue through the strap guide and securing the openings on the studs.

3,501,815
FASTENER FOR A STACK OF SHEET MATERIAL
Alexandre Dreux, Porto Alegre, Rio Grande do Sul, Brazil
Filed Jan. 26, 1968, Ser. No. 700,905
Claims priority, application Brazil, Jan. 30, 1967, 186,611
Int. Cl. A44b *19/30;* **B42f** *3/02, 9/00*
U.S. Cl. 24—153.1 **10 Claims**

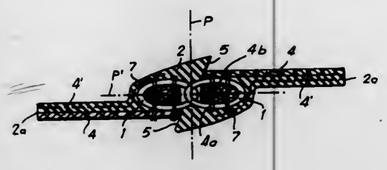


A fastener constituted by first and second base plates detachably supporting a pair of flexible tubes which are adapted for being secured in the openings in sheet material of a stack. Each tube is interengaged with a base plate by being slid on a tongue therein.

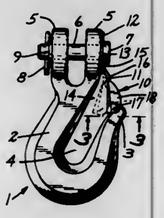
3,501,816
FLUID-TIGHT SLIDE-FASTENER
Helmut Heimberger, Essen, Germany, assignor to Opti-Holding AG., Glarus, Switzerland, a corporation of Switzerland
Continuation-in-part of applications Ser. No. 534,356, Mar. 15, 1966, and Ser. No. 651,269, July 5, 1967. This application Aug. 17, 1967, Ser. No. 661,434
Claims priority, application Germany, Aug. 26, 1966, O 11,910
Int. Cl. A44b *19/00*
U.S. Cl. 24—205.1 **6 Claims**

A slide-fastener assembly having a pair of interengageable elastomeric sealing strips encapsulating respective helicoidal or meandering coupling elements with a coating on the stringer tapes wherein the slide-fastener halves are originally laterally reversed with respect to one another (and their normal positions) and interconnected for extrusion of the elastomeric material therearound, then separated and reconnected in their normal orienta-

tion whereby overhanging portions of the strips of high sealing effectiveness, are formed. The sealing strips include wedge-shaped formations on opposite sides of the assembly.

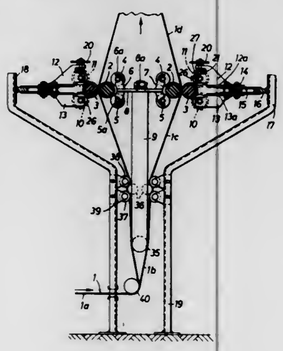


3,501,817
SAFETY SNAP FOR CLEVIS HOOKS
Joseph B. Bambenek, George Malotke, Stephan E. Sadowski, and Arthur E. Stokke, Winona, Minn., assignors to Peerless Chain Company, Winona, Minn., a corporation of Minnesota
Filed Feb. 23, 1968, Ser. No. 707,838
Int. Cl. B66c *1/36*
U.S. Cl. 24—233 **8 Claims**



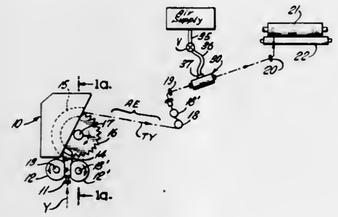
A safety snap for clevis hooks including integral means for mounting the snap on the clevis portion of a clevis hook to prevent accidental disengagement of the hook from a hook-engaged member.

3,501,818
SQUEEZING ARRANGEMENT FOR WET TUBULAR WEBS
Karl-Heinz Heitkamp, Herdecke, Germany, assignor to Maschinenbau G.m.b.H. Hossmann & Strauss, Wuppertal-Barmen, Germany
Filed Feb. 26, 1968, Ser. No. 708,219
Int. Cl. D06f *45/00, 3/06*
U.S. Cl. 26—55 **21 Claims**



A tubular web, which is wet due to immersion into a dye or finishing liquid, is squeezed out in a circular gap between two circular elastic concentric squeezing rollers supported on inner and outer supporting rollers for rotation about circular axes. The outer supporting rollers are driven to rotate the elastic outer roller, and are inward movable for varying the pressure.

3,501,819
YARN PROCESSING METHOD AND APPARATUS
Fred B. Satterwhite, Williamsburg, Va., assignor, by mesne assignments, to The Klinger Manufacturing Company Limited, London, England, a corporation of Great Britain
Filed Oct. 13, 1966, Ser. No. 586,491
Int. Cl. B02g *1/16, 1/18*
U.S. Cl. 28—1.3 **18 Claims**



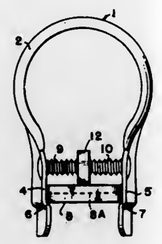
Filaments of multi-filament yarn are entangled, preferably by directing streams of fluid under pressure on to the yarn, either before or after texturizing the yarn. A continuous yarn treating process includes drawing and texturizing the yarn by longitudinally compressing the yarn while hot, setting the yarn in the texturized condition and entangling the filaments of the yarn by air streams while the yarn is under little or no tension. Two or more ends of multi-filament yarn may be processed to form a single end of texturized yarn the filaments of which are entangled internally of the yarn by combining the two ends to form a single end texturizing the single end and entangling the filaments of the single end before or after texturizing.

3,501,820
SLUB CATCHER
Samuel L. Abbott, Wilton, N.H., assignor to Abbott Machine Co., Inc., Wilton, N.H., a corporation of New Hampshire
Filed May 27, 1968, Ser. No. 732,188
Int. Cl. D01h *13/22*
U.S. Cl. 28—64 **16 Claims**



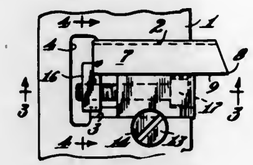
In a machine for winding yarn, slub catchers for the one or more winding units embodied therein, each slub catcher being characterized in that it is adjustable for yarns of different size, and means for automatically, simultaneously or successively adjusting the several slub catchers.

3,501,821
TOOLHOLDER
Harry E. Ford, 4627 Caroline Ave. NE., Salem, Oreg. 97303
Filed Sept. 30, 1968, Ser. No. 763,628
Int. Cl. B23d *71/04*
U.S. Cl. 29—80 **1 Claim**



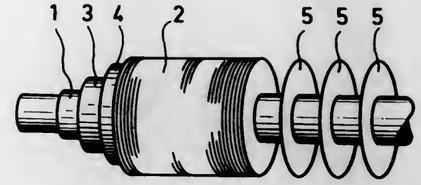
A toolholder especially adapted for use with flat files and similar hand tools. The main body of the holder is of substantially tubular form with two depending normally parallel flanges adapted to be compressed and/or deformed into secure gripping engagement with a file, or the like, firmly secured between the flanges for filing operations.

3,501,822
TOOL WITH BIT HOLDER
Thurston Williams, Wilton, N.H., assignor to The O.K. Tool Company, Inc., Milford, N.H., a corporation of New Hampshire
Continuation-in-part of application Ser. No. 662,804, Aug. 23, 1967. This application Mar. 28, 1968, Ser. No. 716,829
Int. Cl. B26d *1/12*
U.S. Cl. 29—96 **10 Claims**



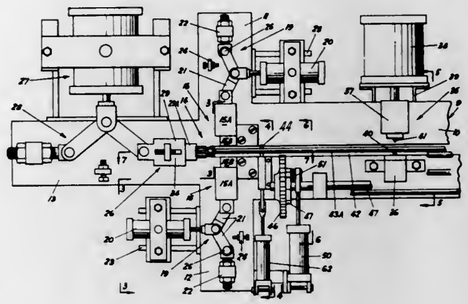
A tool comprising a carrier which has two surfaces meeting at a corner and a bit recess in the corner with a mouth opening in each face and a bottom opposite each mouth, a bit disposed in said recess with an outer cutting edge projecting from each mouth, the bit and recess having interfitting guides extending obliquely to said bottom so that movement of the bit along the guide concomitantly adjusts the extent to which said edges project from said mouths, a lock disposed in the recess at one side of the bit, an actuator for moving the lock to hold the bit in the recess, a bit locator disposed in the recess on said side and having an abutment engaging the bit to limit inward movement of the bit away from said corner, and a screw extending through the lock and threading into said locator.

3,501,823
CALENDER ROLL WITH "BI-AXIALLY ORIENTED" POLYMER SEGMENTS
Alv Gregersen and Karl-Olof Sellden Larsson, Karlstad, Sweden, assignors to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden
Filed Mar. 22, 1968, Ser. No. 715,392
Claims priority, application Sweden, Mar. 23, 1967, 4,126/67
Int. Cl. B21b *27/02;* **F06c**
U.S. Cl. 29—132 **6 Claims**



A calender roll comprising a central core and a roll filling composed of discs fitted on the core and compressed together to form an essentially solid body. The discs are made of a polymeric sheet material having a biaxially oriented molecular structure.

3,501,824
MACHINE FOR ASSEMBLING AND SECURING END CAPS TO TUBES
David George Holloway, Yowie Bay, New South Wales, and Cedric Victor Whitehouse, Beverley Park, New South Wales, Australia, assignors to Vida-Weld Pty. Limited, Taren Point, near Sydney, New South Wales, Australia, a corporation of New South Wales
Filed Mar. 20, 1967, Ser. No. 624,424
Claims priority, application Australia, Mar. 28, 1966, 3,502/66
Int. Cl. B23p *19/04;* **B23q** *27/10*
U.S. Cl. 29—203 **6 Claims**



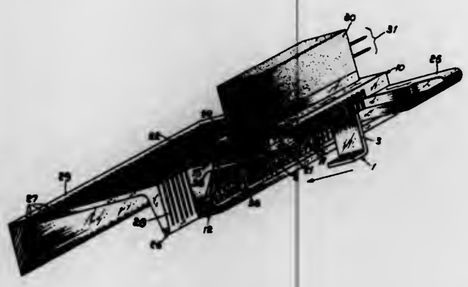
An apparatus is provided for securing end caps to tubes, the tubes being freely passable through a passage formed by two opposed anvil die elements which are movable towards and away from the tubes, the caps being loosely applied to the tubes and penetrable into the passage for only a limited portion of the length thereof, the caps being engaged by a press die which is moved towards the anvil die elements to force the end cap part way into the tube passage to swage the end cap onto the tube.

3,501,825

TRANSFER FIXTURE

Bruce A. Alexander, Stoneham, and Sandor Nagy, Lawrence, Mass., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware

Filed Aug. 21, 1967, Ser. No. 662,016
Int. Cl. H01r 43/04; B23q 7/10
U.S. Cl. 29—203 5 Claims



This is an apparatus for transferring first seals having an elongated portion of magnetizable material terminating at one end into an enlarged portion from a first fixture to a second fixture. The first fixture has a plurality of openings adapted to receive only the elongated portion. A first member has a plurality of parallel vertical slots extending from a bottom surface of said first member, the slots being adapted to receive the enlarged portions. The first fixture is disposed below the first slotted member and the fixture openings are aligned with the slots of the first member. An electromagnet is disposed above the first slotted member. The activation of this electromagnet causes the first seals to be lifted into the slots of the first member and towards its bottom surface. A second slotted member is disposed adjacent the first slotted member and the slots in the first member are aligned with the slots in the second member. The first fixture can be moved horizontally and vertically so as to enable the transfer of the first seals from the first fixture to the second slotted member when the electromagnet is deactivated. The second fixture has slots disposed adjacent the second slotted member with the slots in the second member being aligned with the slots in the second fixture. The first seals are then transferred from the first slotted member to the fixture by gravity feed.

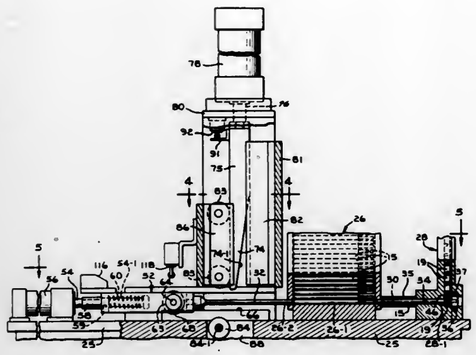
3,501,826

APPARATUS FOR ASSEMBLING A PAIR OF ARTICLES ONE WITHIN THE OTHER

Jerome R. Marcus, Chicago, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 21, 1967, Ser. No. 632,582
Int. Cl. B23p 19/04; B23q 7/10
U.S. Cl. 29—211 10 Claims

An apparatus for assembling rods and bushings wherein a ram is advanced a predetermined distance by a first actuator to cause it to move a rod from a magazine therefor into proximity to a magazine for the bushings and to effect the ejection from the apparatus of a previously assembled rod and bushing. A reciprocatory anvil and escapement mechanism releases a bushing into the path of the rod and restrains the bushing against axial movement while a wedge is moved transversely of the ram



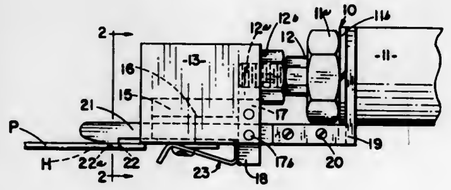
by a second actuator to advance the ram further and push the rod into the bushing.

3,501,827

TOOL FOR ASSEMBLING SPRING METAL C-CLIPS TO PANELS

Robert A. Munse, Perrysburg, Ohio, assignor, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California

Filed Oct. 9, 1967, Ser. No. 673,608
Int. Cl. B23p 19/04
U.S. Cl. 29—225 9 Claims



A tool for applying spring metal C-clips having a nut in one arm to an apertured panel has a power operated reciprocal ram provided with a head to which a clip is applied in such position that when the ram advances the clip is forced over the edge of the panel, the arms of the clip opening to engage opposite faces of the panel. The tool has a locator arm which has a hook at its outer end to engage in a hole in the panel to guide the ram operation and cause the clip to be properly positioned with its nut in alignment with the panel hole.

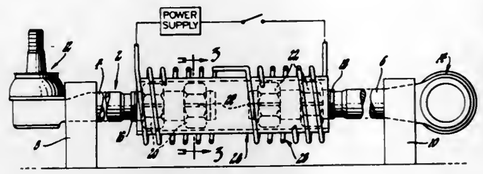
3,501,828

METHOD OF MANUFACTURING A TIE ROD ASSEMBLY

Melvin A. Schultz, Bay City, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 5, 1968, Ser. No. 750,143
Int. Cl. B23p 17/00
U.S. Cl. 29—421 5 Claims

The method of making a threaded adjuster assembly involving disposition of a plurality of split nuts in aligned axially spaced relation on the threaded end of a rod, slidably positioning the nuts in a tubular member and electromagnetically deforming the member into gripping engagement with the nuts so that portions thereof exert a resilient bias providing full thread conformity and a predetermined turning torque and other portions thereof forming circumferential ribs retaining the nuts in their axially spaced relation.

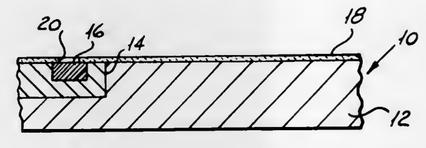


3,501,829

METHOD OF APPLYING CONTACTS TO A MICROCIRCUIT

Frank R. Corwin, Milford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,845
Int. Cl. B01j 17/00; H01l 5/04
U.S. Cl. 29—577 1 Claim



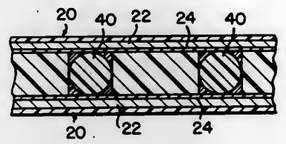
In general my invention contemplates the provision of an improved hybrid microcircuit and method of making the same in which I form a low resistance electrical contact and a good mechanical bond between aluminum being deposited and previously deposited aluminum by first depositing germanium on the previously formed region to provide an intermediate germanium-aluminum alloy region between the new and old deposits.

3,501,830

METHODS OF MAKING A FILAMENTARY MAGNETIC MEMORY USING FLEXIBLE SHEET MATERIAL

Thaddeus F. Bryzinski, West Webster, and Larry L. Launt, Holcomb, N.Y., assignors to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Jan. 22, 1968, Ser. No. 699,672
Int. Cl. H01f 7/06
U.S. Cl. 29—604 3 Claims



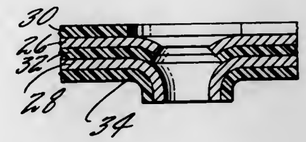
A flexible insulating sheet material with conductive strips bonded to its surface is laid upon a support, and an array of spaced insulating lands defining grooves between them is cast in situ upon the sheet with the lands and grooves aligned normally to the conductive strips. Stretchable filaments, typically of nylon, are placed in the grooves, and outer portions of the sheet material are folded over the array of lands and grooves and bonded in place. The stretchable filaments are withdrawn, leaving elongated apertures to receive filamentary magnetic memory elements. The laminate is rigidified by cementing it between rigid plates, and edge portions of the flexible sheet are folded back to expose end portions of the conductive strips for connecting them to an external circuit.

3,501,831

EYELET

Herman B. Gordon, Tempe, Ariz., assignor to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

Filed June 17, 1968, Ser. No. 737,504
Int. Cl. H05k 3/30
U.S. Cl. 29—625 1 Claim



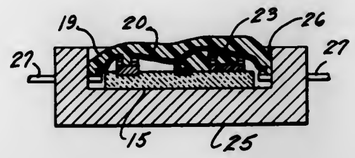
A through-hole connection for printed circuits comprising eyelets formed by drawing copper foil conductors into the desired connector shape while simultaneously punching through the circuit board. The drawn eyelets extend completely through the board thereby enabling soldering from either side thereof. In the case of multilayer circuitry, interconnection between various levels in the circuit may be achieved by interconnecting the drawn eyelets by means of wave soldering.

3,501,832

METHOD OF MAKING ELECTRICAL WIRING AND WIRING CONNECTIONS FOR ELECTRICAL COMPONENTS

Saburo Iwata, Tokyo, and Akira Misawa, Kanagawa-ken, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

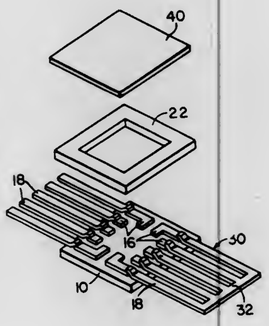
Filed Feb. 20, 1967, Ser. No. 617,374
Claims priority, application Japan, Feb. 26, 1966, 41/11,837, 41/11,838
Int. Cl. B23k 31/02
U.S. Cl. 29—626 4 Claims



A method of making electrical wiring and wiring connections for electrical components by forming a pattern of an electrical circuit on a thermoplastic panel, placing

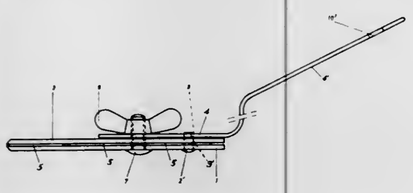
the panel on the electrical components having electrodes to which electrical connection may be made, and heating the panel to make contact between the electrical circuit and the electrodes.

3,501,833
ELECTRONIC DEVICE ENCLOSURE METHOD
John Spiegler, Bradford, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Original application Oct. 12, 1964, Ser. No. 403,125, now Patent No. 3,340,347. Divided and this application Feb. 27, 1967, Ser. No. 618,872
Int. Cl. H05k *3/28*; **B44d** *1/18*
U.S. Cl. 29—627 **7 Claims**



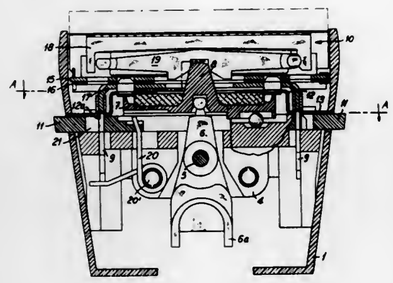
A method of manufacturing an enclosure for an electronic device providing great flexibility of internal contact plate patterns with standard external lead configurations is disclosed.

3,501,834
GRASS-CUTTING TOOL EMPLOYING RAZOR BLADES
Jakob van Lare, Ruyslaan 25, De Koog, Netherlands
Filed Nov. 28, 1967, Ser. No. 686,024
Claims priority, application Netherlands, July 19, 1967, 6710034
Int. Cl. B26b *5/00*
U.S. Cl. 30—318 **5 Claims**



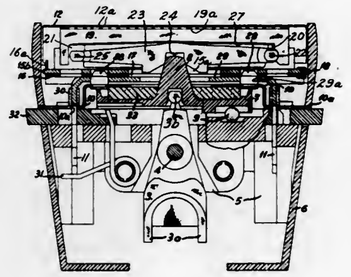
This cutting tool is especially useful for trimming or cutting grass. A generally triangular ground plate is provided with studs and razor blades are located by the studs to project slightly along two sides of the ground plate. A triangular upper plate lies over the razor blades and is held by the studs, and a handle has a plate secured over the upper plate, all the plates being rigidly secured together, as by a single bolt with a wing nut.

3,501,835
ELECTRIC DRY SHAVER WITH CUTTING HEAD MOVABLE TO SHAVING AND CLEANING POSITIONS AND REMOVABLE
Michel A. Moret, Chene-Bourg, Geneva, and Claude R. Rosset, Chene-Thonex, Geneva, Switzerland, assignors to Etablissements AESUP, Vadux, Liechtenstein, a firm of Liechtenstein
Filed Nov. 1, 1967, Ser. No. 679,874
Claims priority, application Switzerland, Nov. 2, 1966, 15,826/66
Int. Cl. B26b *19/02*
U.S. Cl. 30—43.92 **6 Claims**



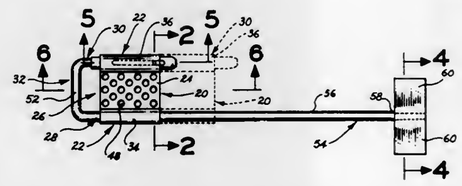
The cutting head is mounted for movement partially out of the casing with ends thereof exposed for cleaning, the movement disengaging the head from the driving means. Manually-actuated detent means holds the cutting head in either shaving or cleaning positions and, upon further movement, allows the cutting head to be removed.

3,501,836
ELECTRIC DRY SHAVER WITH AN ELONGATED MEMBER PIVOTED TO THE INNER CUTTER AND SPRING BIASED AGAINST THE CUTTER AND THE DRIVING MEMBER COUPLED THERETO
Michel A. Moret, Chene-Bourg, Geneva, and Claude R. Rosset, Chene-Thonex, Geneva, Switzerland, assignors to Etablissements AESUP, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Nov. 1, 1967, Ser. No. 679,875
Claims priority, application Switzerland, Nov. 2, 1966, 15,826/66
Int. Cl. B26b *19/02*
U.S. Cl. 30—43.92 **7 Claims**



An elongated member of rigid material extends lengthwise of an inner cutter having a generally U-shaped cross-section and is pivoted at one end to the sidewalls of the cutter, the other end being free for movement toward and away from the cutting face. A spring extends lengthwise of the inner cutter between the cutting face thereof and the elongated member, and engages the inner cutter near the ends thereof. The elongated member engages the spring intermediate the ends thereof. A reciprocating driving member is coupled to the elongated member by a projection on one member and a cooperating indented section on the other shaped for tapered engagement therebetween. The elongated member is dimensioned to flex the spring to bias the inner cutter against the outer shear comb and bias the projection and cooperating indented section into engagement.

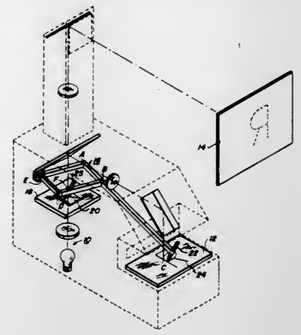
3,501,837
DENTAL IMPRESSION TRAY, PRIMARILY FOR POSTERIOR TEETH
Alexander Clark, 1801 Asheville Highway, Hendersonville, N.C. 28739
Filed June 10, 1966, Ser. No. 556,597
Int. Cl. A61c *9/00*
U.S. Cl. 32—17 **11 Claims**



The specification discloses a dental impression tray primarily intended for making posterior dental impressions through the use of an impressionable material adapted to be carried thereby, and adapted for subsequent use in making dental bridges, crowns, false teeth, or the like. The complete device includes a removable rectangular tray portion which is usually made of vertically apertured, sterilizable plastic material and which has a pair of laterally spaced side parts provided with a corresponding pair of parallel, longitudinally apertured mounting sleeve portions adapted to be slidably removably received on corresponding first and second longitudinal side members of a substantially U-shaped, manually holdable mounting bracket with said rectangular, apertured plastic tray portion having a horizontal thin-sheet perforate membrane member lying across and between the laterally spaced side parts thereof and adapted to carry and hold the impressionable dental material both above and below said thin-sheet perforate membrane member. The plastic tray portion is removable for sterilization and replacement, or can be replaced with another tray portion of a different size when needed for the purpose of making dental impressions of larger or smaller teeth. Also, in one preferred form, one of the side members of the mounting bracket may be longitudinally extendable and retractable so as to be adapted for mounting engagement with a longer or shorter, rectangular, vertically perforated, removable plastic tray portion.

3,501,838
PANTOGRAPHIC IMPLEMENTED OVERHEAD PROJECTOR
Thomas P. Agliata, Rochester, and Harold E. Clark, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 20, 1968, Ser. No. 714,700
Int. Cl. B43l *13/10*
U.S. Cl. 33—25 **9 Claims**

Apparatus for adding information while projecting an object onto a viewing screen and an auxiliary screen. The apparatus includes an overhead projector and a pantographic device connecting an auxiliary screen with a marking stylus at the object on the platen of the projector so that additional information can be marked on



the object while it is being projected to both screens without substantially interfering with the projected image.

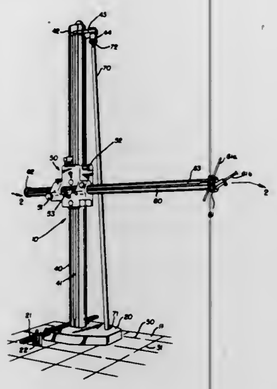
3,501,839
VERNIER CALIPER WITH DOUBLE SCALE
Radu Bancescu, Bucharest, and Matyko Andor, Resita, Rumania, assignors to Ministerul Industriei Constructiilor de Masini, Bucharest, Rumania, a firm
Continuation of application Ser. No. 719,885, Apr. 9, 1968. This application May 19, 1969, Ser. No. 828,424
Int. Cl. G01b *5/00*
U.S. Cl. 33—143 **1 Claim**

A vernier caliper with a double scale comprising a bar having a normal millimeter scale on one side and a double-millimeter scale on the other, the double-millimeter scale being calibrated to read half the actual measurement. The caliper has a head at one end of the scale projecting laterally to one side while an intermediate slider has a window exposing the normal millimeter scale and is of Z-shaped configuration with arms extending to opposite lateral sides, including one arm co-operating with the caliper head and on the same side as the latter and another arm extending in the opposite direction for co-operation with a second slide arm on a slide which exposes the double-millimeter scale. The sliders have locking screws opposite one another.

3,501,840
MEASURING DEVICE HAVING SAG COMPENSATION MEANS
Frederick S. Schiler, Stow, Ohio, assignor to Portage Machine Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 17, 1966, Ser. No. 535,231
Int. Cl. G01b *5/00*
U.S. Cl. 33—169 **9 Claims**

In the use of precision measuring instruments that involve movement with respect to elongated components,

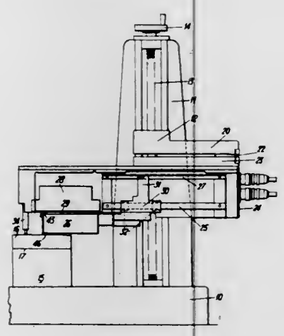
problems of sag occur as the weight is shifted with respect to the point of support. In the layout machine of the present invention such sag can occur in two directions with sag of the cross arm normally occurring as the same is extended with respect to its point of support and with sag of the upright occurring as the unit is moved to an elevated position.



Applicant has provided a first internally located sag compensating means to compensate for the sag that occurs in the cross arm and has further presented a rigid extension that insures upright relationship of the upright column regardless of the position of the measuring unit.

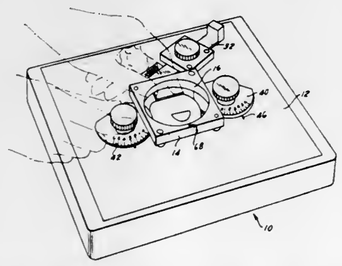
The two sag compensation means operate independently of each other but have the effect of complementing each other during their combined use so as to minimize inaccuracy.

3,501,841
SURFACE-TESTING APPARATUS
John Reginald Adams, Leicester, England, assignor to The Rank Organisation Limited, London, England, a British company
Filed Feb. 20, 1967, Ser. No. 617,210
Claims priority, application Great Britain, Feb. 22, 1966, 7,640/66
Int. Cl. G01b *5/20, 5/28*
U.S. Cl. 33—174 **9 Claims**



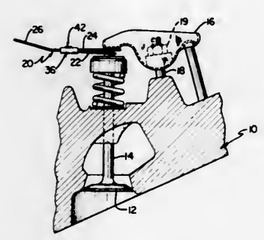
Surface-testing apparatus for testing the straightness of a surface has a pick-up head which effects linear traversing movements parallel to a surface to be tested. A stator member is hinged to the pick-up head and is spring-biased so that a skid attached to the stator member is maintained in engagement with a fixed flat reference surface extending generally parallel to the test surface. A stylus is movable relative to the stator member perpendicularly to the test surface and engages the test surface so that during a said traversing movement the displacements of the stylus relative to the reference surface are measured directly by a transducer having one part fixed to an arm carrying the stylus and another relatively movable part attached to the stator member.

3,501,842
METHOD AND APPARATUS FOR BLOCKING MULTIFOCAL LENS BLANKS
George A. Beasley, Fort Lauderdale, Fla., assignor to Univis, Inc., Fort Lauderdale, Fla., a corporation of Ohio
Filed Oct. 17, 1967, Ser. No. 675,967
Int. Cl. G01b *5/24;* **B23q** *17/04;* **B23f** *23/08*
U.S. Cl. 33—180 **6 Claims**



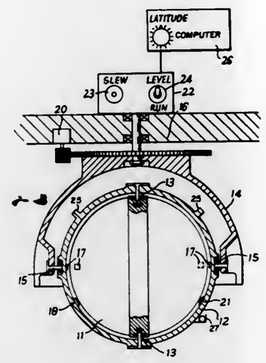
A method and apparatus for blocking a lens blank which has edge referencing surfaces, the apparatus having means to accurately position the block immediately above the blank in a predetermined relationship to the prescribed optical and geometrical properties of the finished lens.

3,501,843
FEELER GAUGE ASSEMBLY
John C. Bandimere, 3740 Fenton St., Wheatridge, Colo. 80033
Filed Dec. 7, 1967, Ser. No. 688,851
Int. Cl. G01b *3/30*
U.S. Cl. 33—181 **9 Claims**



The invention is a feeler gauge assembly including the feeler gauge and support structure therefor adapted to snap onto a valve stem to hold the feeler gauge in gauging position between the tappet and the end of the valve stem.

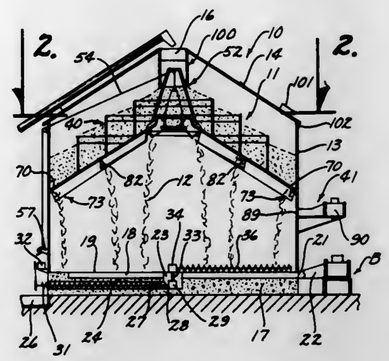
3,501,844
GYROCOMPASSES
Norman Curtis, Sunbury-on-Thames, England, assignor to Sperry Rand Limited, London, England, a company of Great Britain
Filed May 26, 1967, Ser. No. 641,548
Claims priority, application Great Britain, June 8, 1966, 25,501/66
Int. Cl. G01c *19/38*
U.S. Cl. 33—226 **3 Claims**



A gyrocompass of the type wherein the rotor case is supported directly by the vertical ring for relative rotation about a normally vertical axis and the vertical ring is supported for rotation about a horizontal axis upon a follow-up which is motor driven about an azimuth axis of the craft. Stops limit the above vertical axis relative rotation to a small angle, and other stops limit the amount of rotor tilt to an angle which may be 45° or more. The follow-up motor is initially operated to slew the rotor axis rapidly to a nearly meridional position and then is switched to control by a combination of a rotor tilt sensor signal, an attenuated signal of vertical axis relative rotation, and a computer output signal derived from a manual latitude setting, to attain rapid leveling in readiness for normal setting operation.

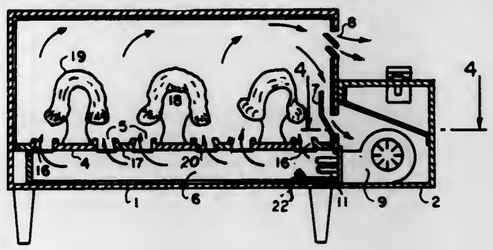
3,501,845
APPARATUS FOR AND PROCESS OF DRYING GRAIN
Vernon H. Sietmann, Laurel, Iowa, assignor of thirty percent to Gerald F. Dendel, Costa Mesa, Calif., twenty percent to Leonard Lukehart, Laurel, Iowa, ten percent to Wanda and Raymond Smith, both of Laurel, Iowa, and ten percent to Beth and Larry Keese, both of Gilman, Iowa
Continuation-in-part of application Ser. No. 669,928, Sept. 22, 1967. This application Nov. 20, 1968, Ser. No. 777,450
Int. Cl. F26b *17/12, 5/00*
U.S. Cl. 34—33 **15 Claims**

This invention comprises an inverted frusto-conical shaped perforated floor which is mounted in a conventional grain drying bin in a raised position relative to the base floor thereof. The perforated floor has a plurality of grain discharge openings formed therein, each of which are selectively closed by a perforated trap door means. A movable valve means is movably mounted in a central opening formed in the perforated floor and is movable from closed to opened positions. The valve means and the trap doors are interconnected whereby the opening of the valve means also causes the trap doors to be opened. A series of bands are concentrically mounted above the perforated floor to maintain the level of the grain being dried substantially parallel to the upper surface of the perforated floor for evenness of drying and to also make it possible to dry a predetermined amount of grain. The grain is dumped on the floor and the dried air is passed upwardly through the perforated trap doors to dry the grain. After the grain has been



dried, the valve means and the trap doors are moved to their open positions to permit the grain to pass downwardly through the central opening and through the grain discharge openings in an even manner to the base floor of the storage bin.

3,501,846
DRYING APPARATUS
Albert Melega and Ernest Melega, Malverne, N.Y., assignors to Mal-Marc Corp., a corporation of New York
Filed Sept. 14, 1967, Ser. No. 667,826
Int. Cl. F26b *25/00*
U.S. Cl. 34—103 **10 Claims**

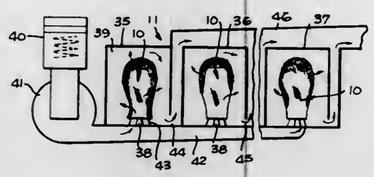


An apparatus for drying articles comprises a housing having means for placing articles to be dried, and drying means arranged to convey a current of drying gas around and about the articles in a direction from the bottom to the top of the housing.

3,501,847
WIG FORM
Jack C. Sanford, P.O. Box 634, Big Bear City, Calif. 92314, and Jack F. Sanford, 4475 Garden Highway, Sacramento, Calif. 95834
Filed Dec. 26, 1967, Ser. No. 693,237
Int. Cl. F26b *3/06;* **A45d** *20/16*
U.S. Cl. 34—103 **5 Claims**

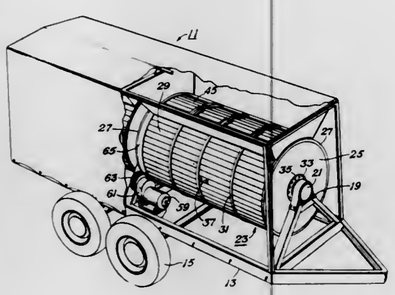
The disclosure comprises a structure for wig forming and treating, consisting of a hollow housing approximately simulating a human head and attached neck, the housing being built of multiple layers of open wire mesh of different hole sizes so that conventional pins used by wig makers for holding a wig on the form or housing will be capable

of easy penetration but will be provided with a firm grip so that once in place they will not work out until finally removed by hand. The wig form moreover is provided with an open bottom as well as an open mesh construction so that when one or more of them are placed in a drier, filtered and dehumidified air can be passed into the



forms at the bottom and then be emitted more or less uniformly throughout the area of the form where the wig is mounted, exhaust humidified air, which may still be warm being passed around drier jackets for the other wig forms, thereby to economize in heating but at the same time dry each of a multiple number of wigs uniformly.

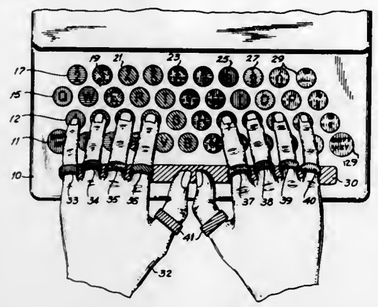
3,501,848
PROCESS FOR DRYING SOLID, MOISTURE LADEN PARTICLES
Boyd V. Massey, Rte. 1, Box 57, Poolville, Tex. 76076
Filed Apr. 3, 1968, Ser. No. 718,613
Int. Cl. F26b *11/02*
U.S. Cl. 34—138 **6 Claims**



An air pervious, hollow, particle receiving member in pneumatic communication with a transverse air distribution element supported on the interior of the particle receiving member of a central shaft for tumbling and drying the particles.

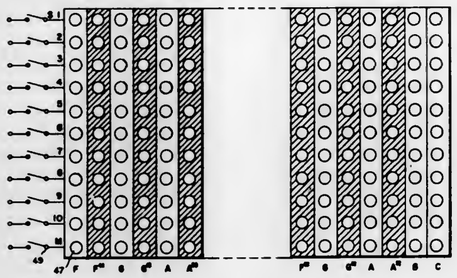
3,501,849
METHOD AND DEVICE FOR TEACHING TYPING AND LANGUAGE SKILLS
Mildred E. Olsen, 92 Pearl St., Staten Island, N.Y. 10304
Filed Nov. 17, 1966, Ser. No. 595,096
Int. Cl. G09b *13/00*
U.S. Cl. 35—6 **4 Claims**

An educational device for teaching language skills to students using the keyboard of typewriters wherein a plurality of groups of colored discs are attached to the keys of each sector of the typewriter and corresponding colored rings are engaged to each index finger of the student operating in that keyboard sector. In combination, the educational device also includes an instruction booklet having the colored discs reproduced in selective arrangement on the pages of the booklet with directional



arrows for indicating the movement of the index fingers so that the student can learn langauge skills by color recognition.

3,501,850
TEACHING METHOD AND APPARATUS
Guy D. Ouchterlony, Toronto, Ontario, Canada, assignor to Alda Instruments Limited, Toronto, Ontario, Canada
Continuation-in-part of application Ser. No. 582,086, Sept. 26, 1966. This application Feb. 20, 1967, Ser. No. 617,120
Int. Cl. G07b *15/02, 15/08*
U.S. Cl. 35—6 **6 Claims**

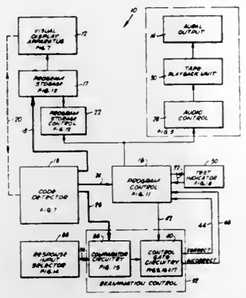


To facilitate the teaching of music on keyboard instruments, several student's keyboards are connected to a single teacher's console. When the students operate their keyboards in accordance with an instruction from the teacher, an immediate collective aural response is obtained together with a display on the teacher's console, visible only to the teacher, of the keys actually struck on the students' keyboards.

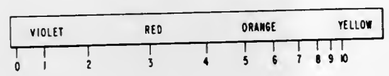
3,501,851
METHOD AND APPARATUS FOR TEACHING
David D. Price, Jr., Oklahoma City, Okla., William B. Huckabay, Dallas, Tex., and Ford C. Price, Oklahoma City, Okla.; said Huckabay assignor to The Economy Company, Oklahoma City, Okla., a corporation of Oklahoma; and said David D. Price, Jr., and said Ford C. Price assignors to Individualized Instruction Incorporated, Oklahoma City, Okla., a corporation of Oklahoma
Filed July 11, 1967, Ser. No. 652,575
Int. Cl. G09b *7/04*
U.S. Cl. 35—9 **31 Claims**

A method and apparatus for reproducing plural track information as exemplified in a tutoring apparatus which is capable of reacting to student responses to branch or

alter the tutoring program accordingly; the apparatus provides plural channels of coordinated visual and aural data of varying complexity for the students' consideration, and a response mechanism derives the students' answer and behavior relative to a given visual and/or aural lesson unit so that it can thereafter be evaluated in accordance with a predetermined code program to determine the next one of the possible visual and aural lesson units that will be presented to the student.



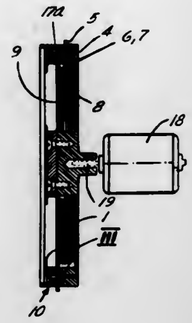
3,501,852
COLOR SCALES FOR ANALYTICAL AND DIAGNOSTIC PURPOSES
Arnold Hartel and Hermann Lang, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany
Filed Mar. 10, 1967, Ser. No. 622,189
Claims priority, application Germany, Mar. 12, 1966, M 68,752
Int. Cl. G09b *29/00*
U.S. Cl. 35—28.3 **3 Claims**



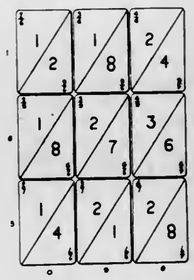
Printed color scales for evaluating colorimetric reactions, the scale being a continuous spectrum in the applicable range printed by the half-tone four-color technique and calibrated after printing.

3,501,853
ROTATING COLORIMETER
Rolf H. Hubner, Gabelsbergerstr. 31, Dortmund 46, Germany
Filed Nov. 13, 1967, Ser. No. 682,438
Int. Cl. G09b *23/00*
U.S. Cl. 35—28.3 **5 Claims**

A device for the presentation of color effect or apparent color. A rotatable carrier has mounted thereon a plurality of color elements adapted to be moved in order to have the relative angular exposure varied. The color elements each have a color band, which may be a flexible strip of material, and the bands are mounted in superposed relationship on the carrier. Each band is adapted to extend beyond and retract beneath the next overlying band in order to vary the extent of exposure of each band. A masking element is adapted to have exposed portions of the bands in front of and concealed portions behind the element. A slot is in the masking element for passage of the band therethrough. Driving means, which may be manually operable, rotatable elements are provided to adjust the extent of exposure of each color. The carrier is generally disc-like and has an axially projecting rim peripherally enclosing the bands. The masking element and carrier cooperate to define an annular chamber for accommodating concealed portions of the band. A motor is connected to the carrier adapted to rotate the same.



3,501,854
MULTIPLICATION CARD-COMBINATION ARRAY
Raft T. Hollingsworth, 10604 E. Marginal Way S., Seattle, Wash. 98168
Filed May 1, 1968, Ser. No. 725,864
Int. Cl. G09b *23/02*
U.S. Cl. 35—31 **7 Claims**



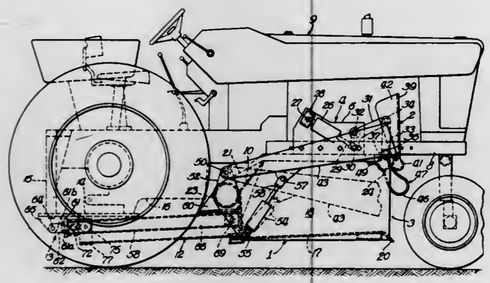
Individual cards bear a multiplier and a multiplicand in a corner and their product in the central portion with diagonal lines separating the units, tens and hundreds columns of the product. The cards are combined in an array to perform complex multiplication operations by placing such cards in columns and rows so that the diagonal lines cooperate to define diagonal columns of numbers which extend in continuity across the array.

3,501,855
FOOTWEAR HAVING IMPROVED BLOCK COPOLYMER FOXING ADHESION
Glenn R. Himes, Torrance, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 8, 1968, Ser. No. 719,720
Int. Cl. A43b
U.S. Cl. 36—2.5 **4 Claims**

Footwear assemblies are provided comprising a textile upper, a polymer soling and a block copolymer foxing

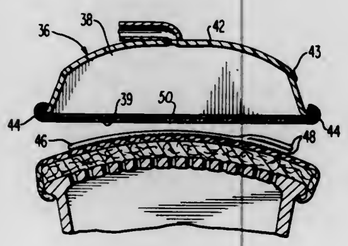
wherein the foxing adhesion to the upper under wet conditions is substantially improved by pretreatment of the uppers with an amino triazine-aldehyde resin.

3,501,856
SELF-CONTAINED SCRAPER ATTACHMENT ASSEMBLY FOR FARM TRACTOR
William E. Martin, % The Martin Company, P.O. Box 187, Kewanee, Ill. 61443
Filed Jan. 18, 1968, Ser. No. 698,943
Int. Cl. E02f *3/62*
U.S. Cl. 37—126 **10 Claims**



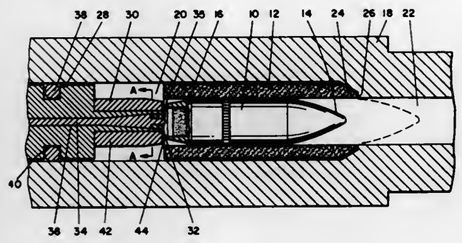
An apparatus comprising an attachable self-contained independently operable arrangement for bodily mounting upon a conventional type of farm tractor including an earth working scraper with hood therefor and with a material ejector all for material handling purposes.

3,501,857
GARMENT TREATMENT METHOD
George Schlemon, 3060 Pharr Court NW., Atlanta, Ga. 30305
Continuation-in-part of application Ser. No. 676,098, Oct. 18, 1967, which is a continuation-in-part of application Ser. No. 543,996, Apr. 20, 1966. This application June 11, 1968, Ser. No. 736,176
Int. Cl. D06f *71/00*
U.S. Cl. 38—144 **5 Claims**



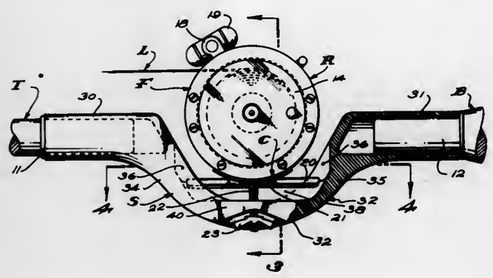
A method and apparatus for imparting a permanent press to garments comprising arranging the garments in their respective proper pressing position on a pressing surface, applying light pressure to the garments with a flexible screen which substantially conforms to the shape of the garments on the pressing surface, passing substantially saturated steam from the pressing surface through the garments and through the flexible screen to loosen the fabric of the garments, and passing air heated to a temperature at which the fabric is cured through the garment.

3,501,858
DEVICE AND METHOD FOR CHAMBERING TELESCOPED CASELESS AMMUNITION
Perry J. Hensley, Magna, and James O. Mack, Jr., Salt Lake City, Utah, assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Dec. 28, 1967, Ser. No. 694,211
Int. Cl. F41c *11/00;* **F42b** *5/18, 9/16*
U.S. Cl. 42—16 **10 Claims**



A device is provided for chambering the projectile of a telescoped round of caseless ammunition so that substantially forward obturation of the round is accomplished prior to the ignition of the propellant charge.

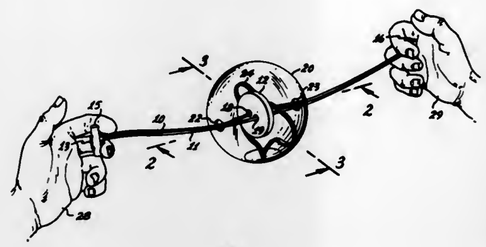
3,501,859
FISHING POLE REEL SEAT
John L. Perkins, 22021 Catalina Circle, Huntington Beach, Calif. 92646
Filed June 13, 1968, Ser. No. 736,760
Int. Cl. A01k *87/06*
U.S. Cl. 43—22 **9 Claims**



A fishing rig including a pole assembly comprising a pole tip, reel seat and pole butt; a spool-type reel and a line. The reel seat has axially aligned, axially spaced pole tip and pole butt engaging portions and an upwardly opening U-shaped central portion in which the reel is arranged. The central portion having a longitudinally extending laterally crowned seat spaced below the axes of the end portions and parallel therewith, laterally spaced retaining flanges at the ends of the seat and central, laterally outwardly projecting flanges with laterally extending slots. The reel having a mounting saddle with a central longitudinally extending pad engaging the seat with its ends between the retaining flanges and carrying laterally

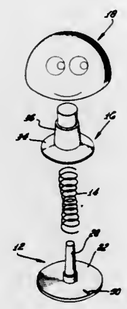
spaced studs which depend through the slots; and nuts on the lower ends of the studs and engaging the flanges to hold the pad tight on the seat.

3,501,860
CORD TWIST SPINNING TOY
Leon D. Bandy, 1652 E. Roeser Road, Apt. 2, Phoenix, Ariz. 85040
Filed Jan. 9, 1968, Ser. No. 696,562
Int. Cl. A63h *1/32*
U.S. Cl. 46—62 **2 Claims**



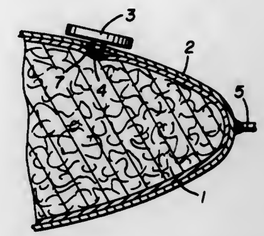
A toy having a string actuated whirling disc surrounded by a transparent sphere having a rubber band attached to the inside of the sphere arranged to entangle and snare the whirling disc during play to intermittently cause the sphere to rotate with the disc in response to the skill of player.

3,501,861
GAME APPARATUS AND TIME-DELAY ACTION UNIT
Adolph E. Goldfarb, 7427 Varna St., Los Angeles, Calif., and Rene Soriano, Los Angeles, Calif.; said Soriano assignor to said Goldfarb
Filed May 24, 1968, Ser. No. 731,914
Int. Cl. A63h *13/00, 13/16;* **A63b** *65/00*
U.S. Cl. 46—129 **10 Claims**



A game played with a plurality of pop-up units which may be set, moved or shuffled around, and which will, at different time intervals, be propelled high into the air to be caught by the respective players, to start or stop time periods, or to otherwise relate to play of the game. Each illustrated unit comprises a movable base, a coil compression spring, and a suction cup element releasably engageable with the base against the force of the spring, and means for affording selected leakage of air into the set suction cup so that units will release at different time intervals.

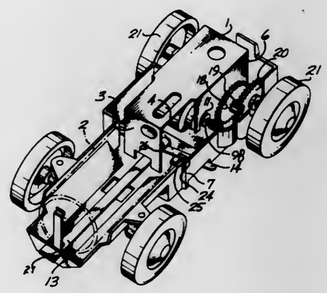
3,501,862
COVERED FIGURE TOY WITH EYES PROJECTING THROUGH THE COVER
Ethel L. Austin, 1777 Greensburg Road, North Canton, Ohio 44720
Filed Jan. 4, 1968, Ser. No. 695,719
Int. Cl. A63h *3/02*
U.S. Cl. 46—158 **1 Claim**



Stuffed toy animals are provided with a removable skin. There are button-like eyes sewed on to the stuffed body, and buttonholes in the skin which button over the eyes. These button-like eyes serve no other purpose than ornamentation. There is an opening in the skin through which the stuffed body is inserted, and the opening is closed by snaps or a zipper or other suitable closure. The ears, legs and tail, if any, may be fabricated as a part of the skin or part or all of them may be a part of the stuffed body with the skin fitting over them.

The skin is readily removed for cleaning and can be readily replaced on the stuffed body.

3,501,863
DRIVING MECHANISM FOR RUNNING TOYS
Yukimitsu Matsushiro, Tokyo, Japan, assignor to William L. Hayes, Kirkland, Wash.
Filed Mar. 4, 1968, Ser. No. 709,987
Claims priority, application Japan, Apr. 6, 1967, 42/29,072
Int. Cl. A63h *33/26*
U.S. Cl. 46—243 **8 Claims**

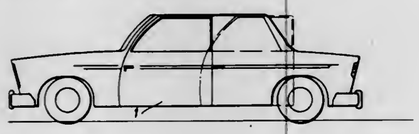


This application discloses a drive mechanism for toys and similar miniature running vehicles which can be easily assembled without the need for conventional electric lead lines. Construction details as well as the manner of assembling a preferred embodiment are provided, including details of a battery holder, switch assembly, and electric motor frame and drive assembly.

The driving mechanism hitherto employed for running toys and similar miniature vehicles powered and driven by small electric motors has used lead lines to connect a motor to a battery or a switch. Typically, the enclosing frame for holding a battery and the frame to which the

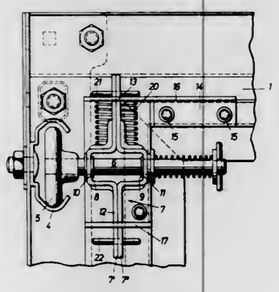
motor and transmission gears etc. were to be attached were constructed separately with the final assembly being completed by securing them to the body of the toy by rivets or other fasteners. Because of this procedure, this traditional method of assembly involved very complex assembly operations, inefficient procedures, and had a tendency to result in many inferior products due to errors in assembly operations and related causes.

3,501,864
SWINGABLE SLIDING CAR DOOR ASSEMBLY
Gerhard Erb, Kassel, and Ingo Britzke, Kassel-Bettenhausen, Germany, assignors to Wegmann & Co., Kassel-Bettenhausen, Germany, a company of Germany
Filed Apr. 17, 1968, Ser. No. 721,993
Claims priority, application Germany, Apr. 21, 1967, W 43,821
Int. Cl. E05d *15/10;* **B60j** *5/06*
U.S. Cl. 49—215 **9 Claims**



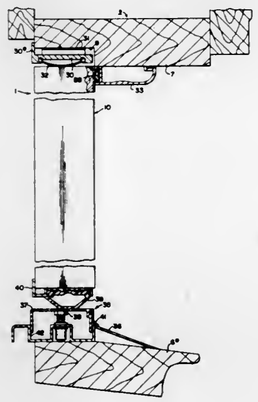
A door for a car particularly for a passenger car which can be opened and closed by a combination of swinging and sliding movements. Linkage means steady the door in all positions thereof, The linkage means also guide and support the door while the same is being moved into and out of its closed position and prevent effectively a tilting of the door out of its correct vertical plane. The door can be gently closed, or can be slammed in the same manner as a hinged door. The entire linkage and guidance mechanism of the door is concealed except for a few barely noticeable slots on the outside of the car body and at the door frame so that the ornamental appearance of a car equipped with the door according to the invention is not marred.

3,501,865
DOOR OPERATING MECHANISM
Hermann Hörmann, Amshausen, Steinhagen, Germany, assignor to K.G. Hörmann, Amshausen Steinhagen, Westphalia, Germany
Filed Sept. 23, 1968, Ser. No. 761,782
Claims priority, application Germany, Sept. 22, 1967, H 60,279
Int. Cl. E05d *13/12, 15/38*
U.S. Cl. 49—358 **14 Claims**



A door operating mechanism adapted to be secured to the door panel of a garage door or the like comprising an operating shaft carrying a roller adjacent each end, a guide rail at each end for guiding the rollers and a shaped member rotatively supporting the operating shaft adjacent each of its ends. The shaped members are movable relative to the door panel between two limiting positions. Each of the shaped members is held by an angle section with two flanges projecting from its planes, which can be fixed to the door panel. These flanges have aligned apertures for guiding the shaped member which, through dowel pins and the like can be brought into engagement with the flanges, by the force of the spring mounted between the flanges.

3,501,866
REPLACEMENT DOOR AND FRAME UNIT
Waldo O. Johnson, Wooster, Ohio, assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Oct. 18, 1968, Ser. No. 768,677
Int. Cl. E06b *1/22*
U.S. Cl. 49—380 **4 Claims**

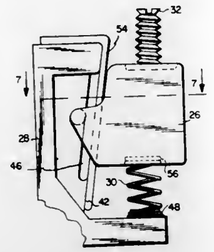


The replacement door and frame unit includes a pair of side jamb strips to be positioned in rabbets formed in the side jambs of the door frame and usually resiliently positioned to be urged laterally inwardly of the door frame. Resilient sealing means are carried on the laterally inner face of the side jamb strips and a door is hingedly secured to one of such strips for extending therebetween.

3,501,867
WINDOW BRAKING MECHANISM
John W. Scott, 1510 Johanna St., Houston, Tex. 77055
Continuation-in-part of application Ser. No. 580,429, Sept. 19, 1966. This application Oct. 22, 1968, Ser. No. 769,615
Int. Cl. E05d *13/08*
U.S. Cl. 49—421 **13 Claims**

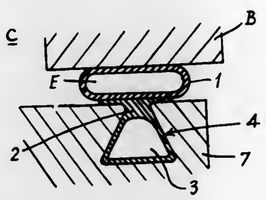
A braking device for holding a window sash at a predetermined point along a generally U-shaped side jamb of a window frame which includes a housing which can be mounted along the top rail of a single- or double-hung window sash or the bottom rail of a single-hung sash or in the side rail of such sashes. The housing contains at least one spring-biased braking element operatively expansible and contractible in position to vary the frictional contact between the braking element and the inside of the U-shaped jamb of the window frame and a limit element in

contact with the braking element and adjustable to limit the expansion of the braking element and thus vary the



maximum frictional contact between the braking element and the side jamb.

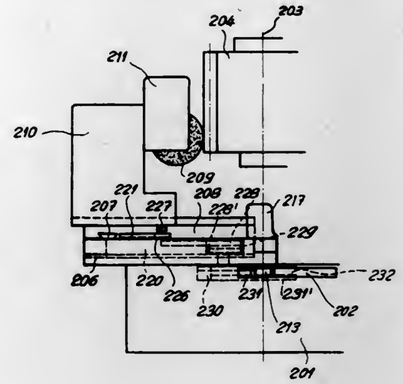
3,501,868
SEALING JOINTS
Jean Victor Ganzinotti, Brive, Correze, France, assignor to Equipment Moderne Industriel par Application du Caoutchouc Manufacture et des Plastiques EMI, Paris, France, a French body corporate
Continuation-in-part of application Ser. No. 427,328, Jan. 22, 1965. This application Oct. 2, 1967, Ser. No. 672,360
Claims priority, application France, Jan. 31, 1964, 962,368
Int. Cl. E06b *7/16;* **F16j** *15/46,* **E21b** *33/00*
U.S. Cl. 49—477 **10 Claims**



A sealing joint to close a door sealably against its frame consists of an inflatable sealing part removably anchorable to the perimeter of the door by a protuberance which is separately inflatable. The protuberance is shaped to seat in a groove which is of trapezoid cross-section and the inflatable sealing part rests entirely external to it.

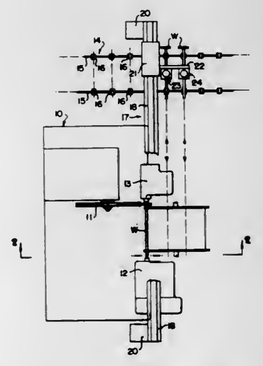
3,501,869
GENERATING MECHANISM FOR TOOTH FLANK GENERATING MACHINES
Gerd R. Sommer, Dietikon, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland
Filed Nov. 21, 1967, Ser. No. 684,730
Claims priority, application Germany, Jan. 18, 1967, M 72,448
Int. Cl. B24b *7/00, 9/00*
U.S. Cl. 51—54 **5 Claims**

An involute gear tooth grinder in which the gear is held stationary while the grinding wheel is swung angularly about the gear axis and simultaneously fed toward and away from the gear to form the desired involute profile. The grinding wheel is slidably mounted on a swinging table and is moved on its slide by a rocker fixed on the grinder slide and having an end angularly adjustably connected to a carriage displaceable on the table at an angle to the grinding wheel feed direction. Movement is transmitted to the carriage by a flexible band arrangement such that angular motion of the table causes a linear displacement of the carriage which, in a ratio de-



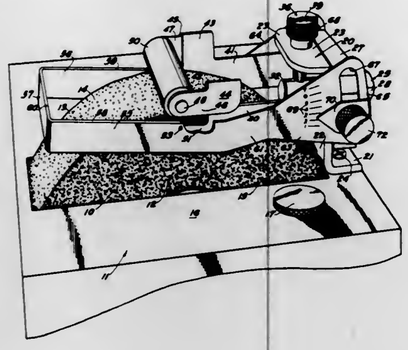
pending on the selected angular disposition of the rocker, is translated into a shifting of the grinder slide toward and away from the gear to form the desired profile. Preferably two swinging grinders are employed simultaneously on different teeth of the gear.

3,501,870
MACHINE AND CONVEYOR ASSEMBLY
Herbert G. Bottomley, Skipton, Yorkshire, England, assignor to Landis Lund Limited, Crosshills Keighley, York County, England, a corporation of Great Britain
Filed Dec. 16, 1966, Ser. No. 602,342
Int. Cl. B24b *47/02,* **B23q** *5/22, 7/00*
U.S. Cl. 51—215 **12 Claims**



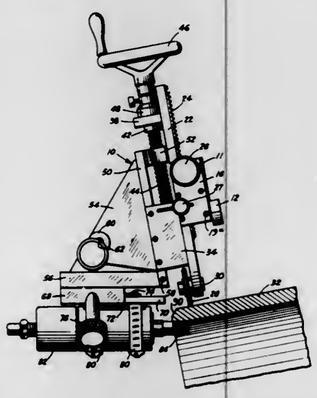
A carrier which is interposed between a transfer mechanism and a machine tool wherein the carrier is of a type having work receiving and discharge stations at the same elevation as a work conveyor and another station at the same elevation as and in alignment with work receiving mechanism of a machine whereby the transfer mechanism may have pick-up and discharge positions at the same elevation.

3,501,871
BLADE ORIENTING ATTACHMENT FOR GRINDING WHEELS
Eugene A. Anderson, Douglasville, and Leonard G. Peppers, Atlanta, Ga., assignors to Southern Saw Service, Atlanta, Ga., a corporation of Georgia
Filed Mar. 17, 1967, Ser. No. 623,950
Int. Cl. B24b *3/38*
U.S. Cl. 51—238 **11 Claims**



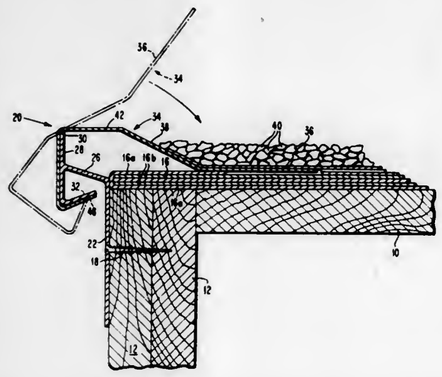
Blade orienting attachment mounted on the housing of a grinding wheel for orienting a blade approximately tangential to the periphery of a grinding wheel and having a roller for urging the blade into engagement with the grinding wheel. The guide is tiltable for adjusting the angle of the blade. Both the roller and guide are adjustable toward and away from the grinding wheel to take up for wear of the grinding wheel.

3,501,872
INTERNAL PIPE BEVELING ATTACHMENT FOR PIPE BEVELING MACHINES
Perceptimus J. Mighton, Tulsa, Okla., assignor to Mary C. Harter, Tulsa, Okla.
Continuation-in-part of application Ser. No. 293,479, July 8, 1963. This application Aug. 8, 1966, Ser. No. 570,978
Int. Cl. B24b *19/00;* **B23k** *7/04*
U.S. Cl. 51—241 **6 Claims**



A method and means for preparing the end of a tubular member comprising an attachment for a pipe cutting machine for performing an operation on the end of the pipe which is determined or indexed from the configuration of the outer periphery of the pipe. A follower roller or indexing wheel rides around the outer periphery of the pipe and moves radially inwardly or outwardly in accordance with the contour of the surface of the pipe. A machine tool is carried by the indexing wheel support structure and moves around the pipe simultaneously therewith. In addition, the machine tool is positioned complementary with respect to the index wheel for coaction therebetween whereby the resulting operation of the machine tool is referenced from the index wheel in order to provide a uniform thickness for the wall of the pipe subsequent to a beveling operation, or to maintain the end preparation operation in direct relation to the contour of the outer periphery of the pipe.

3,501,873
ARRANGEMENT FOR INSTALLING FASCIAS, GRAVEL STOPS AND GUTTERS ALONG THE EDGES OF ROOFS
Edward T. Berg, 187 Fremont St., San Francisco, Calif. 94105
Original application Apr. 3, 1967, Ser. No. 627,877, now Patent No. 3,432,976, dated Mar. 18, 1969. Divided and this application Aug. 23, 1968, Ser. No. 754,798
Int. Cl. E04d *13/04*
U.S. Cl. 52—11 **4 Claims**

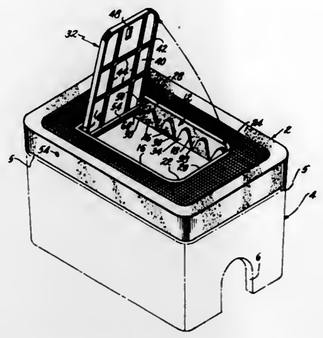


An anchoring member for installing both gravel stops and fascias or gutters, along the edges of roofs, comprising a bracket portion for attachment to the upper end of a wall, a neck portion slanting upwardly away from the upper end of the bracket portion, and secured to said neck portion a vertically disposed strip-shape support portion with a horizontally extending upper support edge and an inwardly turned anchoring lip along its bottom. The marginal area of gravel stop strips is formed to fit over the outside of the support portion of the anchoring member, and is held in position by the outside of its anchoring lip, and the upper end of a fascia or the inner side wall of a gutter is formed into a lip that may be engaged over and suspended from the inside of said anchoring lip.

3,501,874
SELF-CLEANING LEDGE CONSTRUCTION FOR METER BOXES AND THE LIKE
Walter B. Hahne, Costa Mesa, Calif., assignor to Pre-Cast Concrete Products, Limited, a partnership
Filed Nov. 22, 1967, Ser. No. 685,187
Int. Cl. E02d *29/14*
U.S. Cl. 52—20 **8 Claims**

A self-cleaning lid supporting ledge structure for access openings in meter boxes and the like, designed to avoid lid damage or breakage, wherein the ledge is formed by

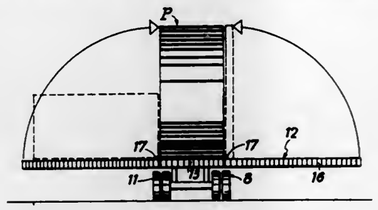
a plurality of generally triangular, inwardly projecting, spaced bosses, each boss preferably having a rounded apex or top surface, and downwardly diverging side surfaces, the horizontal depth of the space between the bosses gradually diminishing from a maximum at the top of the bosses to zero at the bottom whereby any debris falling on the bosses while the lid is open, or removed, will slide



off the rounded top surface onto a sloping boss side surface and fall through the space between the bosses and into the box. The ledge structure is of generally saw-tooth configuration and can be made an integral part of the box or be formed on a separate cover for the box, and support a hinged or removable lid associated with the cover or box.

3,501,875
CONSTRUCTION OF BUILDINGS
Jean Jacques de Mailly, Palais de Chaillot, Pavillon Wilson, Place du Trocadero 75, Paris, France
Filed Oct. 6, 1967, Ser. No. 673,482
Claims priority, application France, Oct. 10, 1966, 79,276
Int. Cl. B60p *3/32;* **E04h** *1/12;* **E04g** *21/14*
U.S. Cl. 52—69 **14 Claims**

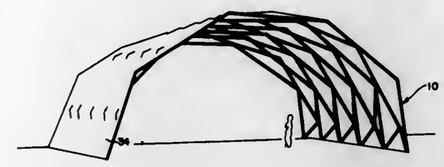
Method of construction comprising pre-fabricating rectangular-sided caisson elements, each of which corresponds to a room of a standard dwelling having a floor-



bed, the caisson elements being capable of being nested one inside the other, whereby the largest caisson element representing the largest room of the dwelling can contain all the other caisson elements, and pre-fabricating the floor-bed in such manner that it can also serve as a temporary protective packing for the transportation of the caisson elements.

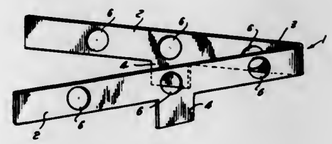
3,501,876
MODULAR STRUCTURE
William H. Engle, 8 Lenmore Drive, Old Bethpage, N.Y. 11804
Filed Jan. 2, 1968, Ser. No. 694,901
Int. Cl. E04b *1/32, 1/347*
U.S. Cl. 52—86 **2 Claims**

A prefabricated modular enclosure comprising a plurality of repetitive tubular frame elements comprising only two sizes bolted together to form modular sections and secured to the ground to provide a sturdy frame of desired



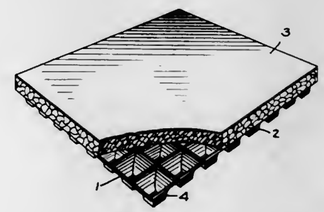
size and a flexible, plastic, waterproof covering stretched over the frame and secured thereto.

3,501,877
MASONRY JOINT SPACER
John S. White, Rte. 4, Box 983W, Lufkin, Tex. 75901
Filed Mar. 28, 1968, Ser. No. 716,838
Int. Cl. E04b *1/41, 2/06;* **E04c** *5/18*
U.S. Cl. 52—127 **3 Claims**



A masonry joint spacer including diverging legs the width of which define the width of a horizontal mortar joint and a shoulder on the legs for gauging the width of a vertical joint wherein the spacer is concealed in the mortar joint, providing automatic spacing and structural reinforcement.

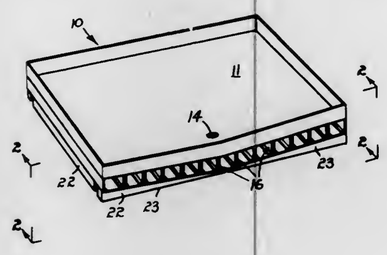
3,501,878
SOUND AND HEAT INSULATING PANELS
Charles Segal, 24 Mozart St., Antwerp, Belgium
Filed May 22, 1967, Ser. No. 645,844
Claims priority, application Belgium, Nov. 8, 1966, 689,396
Int. Cl. E04b *1/74;* **G10k** *11/00*
U.S. Cl. 52—144 **10 Claims**



This disclosure relates to an insulating panel wherein a plurality of hollow protuberances are provided to strengthen the panel and also form air cavities when an insulating layer of cork and asphalt is adhered thereto. A moisture repellant surface is disposed adjacent the insulating layer to provide an integrated lightweight and effective insula-

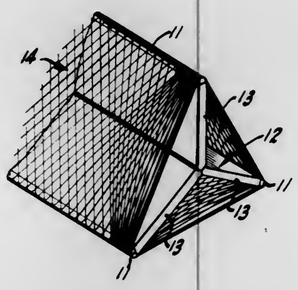
tion structure. A means for interlocking adjacently spaced panels is included to allow for fabrication of walls, ceilings, roofs and the like.

3,501,879
PREFABRICATED FLOOR
Graham George Mitchell and Ronald John Roach, Blair Athol, South Australia, Australia, assignors to Gramall Industries Proprietary Limited, Blair Athol, South Australia, Australia
Filed May 6, 1968, Ser. No. 726,891
Int. Cl. E04b *1/70;* **A47k** *3/08*
U.S. Cl. 52—198 **3 Claims**



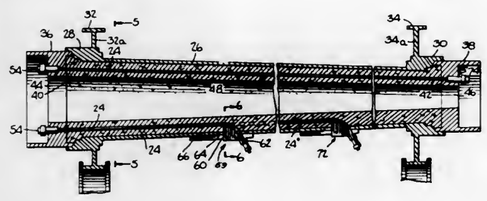
A prefabricated drain flooring suitable for example for a bathroom having floor stiffening means between the draining floor surface and slope control members which vary in depth so that the floor surface slopes downwardly towards a drain opening therein.

3,501,880
CAPTIVE-COLUMN STRUCTURE
Lawrence R. Bosch, 2768 Georgetown St., East Palo Alto, Calif. 94303
Filed Nov. 8, 1967, Ser. No. 681,535
Int. Cl. E04c *3/10, 3/30*
U.S. Cl. 52—222 **11 Claims**



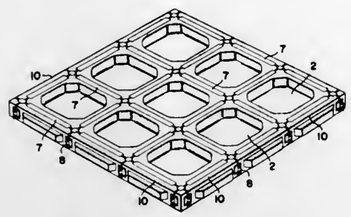
The present invention is directed to a composite structural member formed of three or more columns restrained from moving in any direction relative to each other. The structure incorporates, in addition to the aforementioned columns, an internal compression core supporting the columns along the entire length thereof and a tension skin, or winding, disposed about the columns as the exterior of the structure. Substantially all types of loading of the structure of the present invention result in the application of only compression and tension forces to components of the structure which are particularly designed to withstand such forces.

3,501,881
REINFORCEMENT OF CONCRETE STRUCTURES
Myers Van Buren, Cheriton, Va., assignor to Bayshore Concrete Products Corp., Cape Charles, Va., a corporation of Virginia
Filed May 18, 1967, Ser. No. 639,371
Int. Cl. E04c *3/10, 3/34;* **F16l** *9/04*
U.S. Cl. 52—223 **3 Claims**



Use of pretension elongated reinforcing rods in concrete structures, the rods being terminated at various intermediate ends of the structure, and special anchor arrangements for permitting intermediate termination of the rods.

3,501,882
LIGHTWEIGHT PRESTRESSED STRUCTURAL CONCRETE MEMBER AND METHOD FOR MANUFACTURING THE SAME
Hideya Kobayashi, 14–14 1-chome, Nagasaki, Toshima-ku, Tokyo, Japan
Filed Jan. 5, 1968, Ser. No. 695,967
Claims priority, application Japan, Jan. 12, 1967, 42/1,952; May 9, 1967, 42/28,886
Int. Cl. E04c *3/22, 3/10;* **E04b** *2/10*
U.S. Cl. 52—228 **5 Claims**

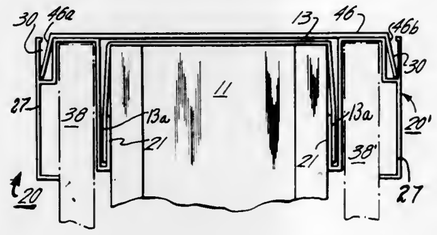


A lightweight prestressed structural concrete member comprising a plurality of precast rectangular concrete blocks arranged in side-by-side relation, each of said blocks having at least one elongated recess along at least one of its peripheral edges so as to form an elongated gap between two adjacent blocks, said gap being filled with concrete material after stretching within said gap at least one wire of high tensile strength with a predetermined tension, whereby the blocks and the concrete material filling said gap are subjected to pre-compression.

3,501,883
METHOD AND APPARATUS FOR MOUNTING WALLBOARD
Herbert L. Birum, Jr., Pleasant Valley, Titusville, N.J. 08560
Filed June 29, 1967, Ser. No. 650,072
Int. Cl. E04b *5/52;* **E04c** *3/00*
U.S. Cl. 52—241 **4 Claims**

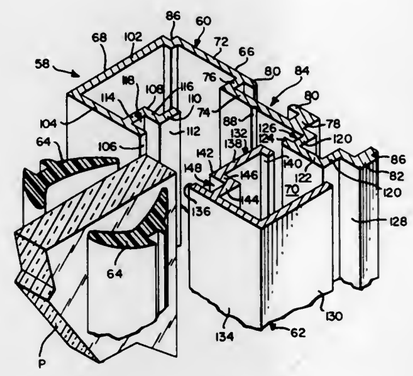
This invention teaches a method and apparatus for mounting wallboard. Many offices, factories, apartments, and the like, employ metal studs which constitute the framework of the rooms or other enclosed areas to be

formed within the building. Metal studs are typically comprised of vertical sections, normally spaced 16 inches on center from one another, and which are held together to form a unitary structure by floor and ceiling channels secured thereto by suitable fastening means. This framework is set between the floor and ceiling, and plasterboard panels are then secured to the vertical studs by sheet metal screws. Finished panels such as wood, vinyl, or any other panel having an esthetic finish, are then mounted



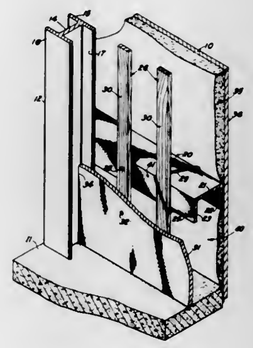
upon the plasterboard by means of an elongated ceiling runner which is provided with a flange along its rearward surface which is force-fitted beneath a downwardly depending arm of the framework ceiling channel. After the panelboards are suitably cut to size, their upward edges are then fitted into a channel formed in the panelboard ceiling runner. The panelboards remain substantially in position without the need for any fastening means so that the workmen are free to insert additional panelboards.

3,501,884
WALL CONSTRUCTION GLAZING SYSTEM
John J. Di Cesare, Jr., and Edward J. Rutkowski, Kenmore, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,614
Int. Cl. E04b *2/88;* **E06b** *3/63, 1/18*
U.S. Cl. 52—397 **4 Claims**



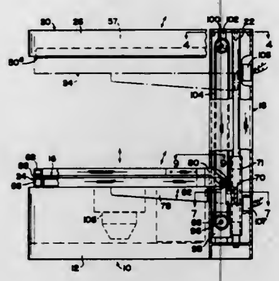
In assembling a glass wall panel and a glazing strip, stop and bead assembly, an elongated metal glazing strip, composed of a base portion connecting transversely spaced large and small salient portions extending laterally outwardly from one side thereof, is installed by attaching the other side of the base portion to a support. The large L-shaped salient portion includes a transverse flange and a Z-shaped reentrant flange forming a pair of lateral coplanar surfaces separated by a recess and facing toward the small, U-shaped salient portion, which has an outstanding lug forming a groove opening toward the large salient portion. Next, a glass panel is installed by arranging its opposite marginal sides between the large and small salient portions, with the pair of lateral surfaces facing one marginal side for supporting the same. Next, an elongated, channel-shaped, metal glazing stop composed of a transverse leg and a pair of outstanding lateral legs, one of which is Z-shaped, terminates in an internal transverse tongue and forms with the transverse leg a pair of second lateral coplanar surfaces facing oppositely to the tongue and separated by a recess, is temporarily installed by arranging the lateral legs over the small salient portion and moving the stop transversely of the base portion to arrange the tongue in the groove with the pair of second lateral surfaces alined with the pair of first lateral surfaces and facing the other marginal side of the panel for supporting the latter. Finally, two flexible and resilient, crescent-shaped, plastic beads, each having a convex outer periphery provided with smaller and larger lips, are installed by wedging each bead in place between each marginal side of the panel and each pair of lateral surfaces to resiliently bias the tongue into the groove and secure the stop on the strip, such wedging causing each smaller lip to be snapped into each receses to secure each bead in place and each larger lip to overlie each outer side of the transverse flange and leg respectively, to limit the depth of insertion of each bead.

3,501,885
WALL CONSTRUCTION
Stewart Abel, 11007 Vivian Drive NW., Huntsville, Ala. 35810
Continuation of application Ser. No. 620,207, Feb. 23, 1967. This application Nov. 25, 1968, Ser. No. 778,867
Int. Cl. E04b *2/60*
U.S. Cl. 52—410 **7 Claims**



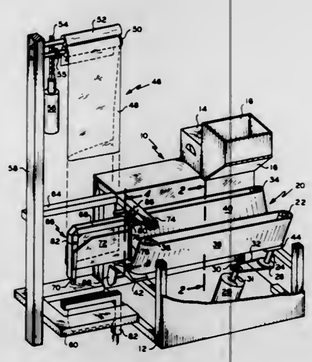
Wall construction for a building wherein a plurality of upwardly extending I-beams are disposed in parallel disposition, a plurality of laterally extending bridging beams are attached to the outer surface of the I-beams, insulation material is attached to the outer surfaces of the plurality of bridging beams and extends between the bridging beams, and steel siding is attached to the bridging beams, through the insulation material. A plurality of upwardly extending furring strips are attached to the inside surface of the bridging beams and wallboards are attached to the furring stirps in such a manner that they overlap the outside flanges of the I-beams and leave the inside flanges and a portion of the web of each I-beam exposed to the interior of the building.

3,501,886
FILM PACKAGING MACHINE AND METHOD
Ridley Watts, Jr., and Anton Z. Zupancic, Cleveland, Ohio, assignors to The American Packaging Corporation
Filed Sept. 18, 1967, Ser. No. 668,372
Int. Cl. B65b *31/00*
U.S. Cl. 53—22 13 Claims



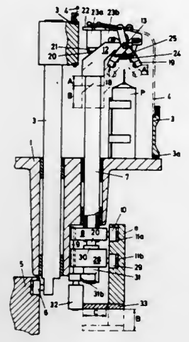
A film packaging machine having a cantilevered film holding frame and heater. The heater uses a rapid heating, low mass ribbon element and is cooled to ambient temperatures between packaging cycles.

3,501,887
CONTINUOUS BELT FEED FOR FILM PACKAGING MACHINE
Robert C. Umholtz and Daniel E. Perry, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,851
Int. Cl. B65b *1/32, 35/44, 9/06*
U.S. Cl. 53—28 9 Claims



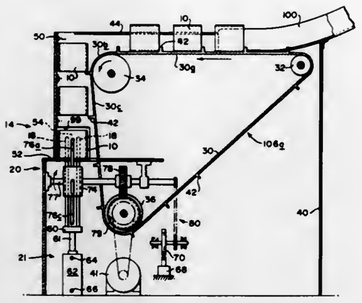
The invention provides a feeding method and apparatus for an electically actuated folded-film type packaging machine, which utilizes a time-delay electric circuit including an actuating switch positioned in the packaging or filling area of the machine enclosed by the film and a relay for actuating the machine circuit; a pendulous tongue within the packaging area, the oscillation of which actuates said switch; and a horizontal conveyor, preferably a pair of upright continuous belts forming a V, positioned to throw items to be packaged into said packaging area against the lower end of said tongue so as to oscillate same and effect a delayed actuation of the machine circuit.

3,501,888
DEVICES FOR EVACUATING AND/OR FILLING WITH GAS AND SEALING SHUT FILLED CONTAINERS
Alwin Egli, Zurich, and Theo Rothenbach, Schaffhausen, Switzerland, assignors to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed Nov. 30, 1967, Ser. No. 686,908
Claims priority, application Switzerland, Dec. 5, 1966, 17,355/66
Int. Cl. B65b *31/02*
U.S. Cl. 53—86 14 Claims



Two pairs of spreaders and counter members grasp the opposed sides of the bag and spread them apart, to permit the gas to enter the bag. The bag is then closed and sealed shut by a welding die and counter member. The spreaders, welding die, and associated counter members are automatically controlled during rotation of the turntable, on which the bags are set under a hood, by cam tracks.

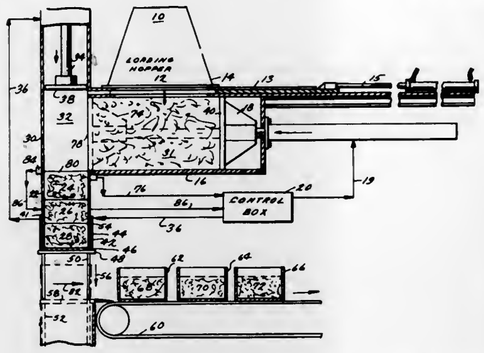
3,501,889
BELT PACKAGING DEVICE
Gary Grulich, Hanover, and M. Sadek Eid, Lebanon, N.H. (both % Dartmouth College, The Thayer School of Engineering, Hanover, N.H. 03755)
Filed Nov. 24, 1967, Ser. No. 685,633
Int. Cl. B65b, *63/04, 27/06;* B31b *1/98*
U.S. Cl. 53—116 8 Claims



A conveyor advances cylindrical recording belts end-on to a first station. As each belt arrives at the station, it is dropped onto a pair of spaced upstanding posts so that the posts protrude loosely through the bore of the belt.

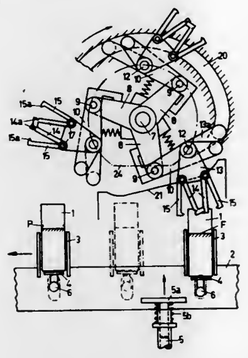
A finger movable into the space between the posts engages each belt after it arrives at the station and collapses a wall portion thereof into the space between the posts. This draws the belt tightly about the posts and reduces the cross-sectional area defined by the belt appreciably below the cross-sectional area defined by an uncollapsed belt so that the next belt arriving at the station can be dropped onto the posts and encircle the first belt.

3,501,890
METHOD AND APPARATUS FOR PACKAGING COMPRESSIBLE MATERIAL
Johnnie B. Hunt, Stuttgart, Ark., assignor to J. B. Hunt Company, Stuttgart, Ark., a corporation of Arkansas
Filed Nov. 7, 1966, Ser. No. 592,403
Int. Cl. B65b *1/24, 39/00, 63/02*
U.S. Cl. 53—124 8 Claims



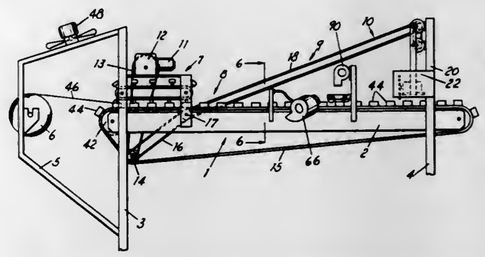
Apparatus and method are disclosed by which a compressible and expandable material such as rice hulls may be packaged. The apparatus includes hydraulic press means for successively compressing and packing increments of compressed rice hulls into a container or bag without releasing expanding pressures therein which would otherwise rupture the bag or container in the packing operation.

3,501,891
DEVICE FOR ADJUSTING THE LEVEL OF A CONTAINER'S CONTENTS TO A PREDETERMINED HEIGHT AND FOR CREASING THE CONTAINER'S SIDES ALONG THE EVENTUAL FOLDING LINES
Robert Auckenthaler, Schaffhausen, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed Apr. 10, 1968, Ser. No. 720,075
Claims priority, application Switzerland, May 29, 1967, 7,529/67
Int. Cl. B65b *1/24*
U.S. Cl. 53—124 7 Claims



Creasing arms and gauge arms are mounted on rotating arms, the gauge arms entering the open container and contacting the raised container's surface of the contents and the creasing arm pivoting against the outside surface of the container's sides to crease the latter.

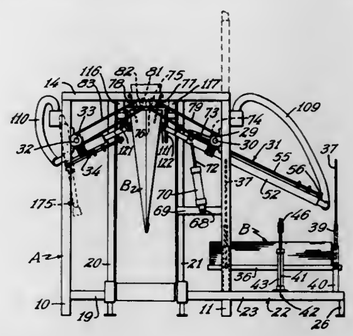
3,501,892
WRAPPING MACHINE USING LIMP FILM FOR IRREGULAR ARTICLES
Harry Pikal, R.R. 1, Box 200, Bangor, Mich. 49013
Filed Oct. 4, 1968, Ser. No. 765,203
Int. Cl. B65b *9/06, 47/06, 61/08*
U.S. Cl. 53—180 9 Claims



A main conveyor advances article receiving cups under incoming limp film. A pocket forming conveyor over the main conveyor presses pocket forming dies into the cups and draws film along. An overhead fan blows sides of film down over sides of cups. Articles are loaded into pockets formed in cups at a loading station at end of pocket forming conveyor. Blowers on each side blow the sides of the film up where guide plows fold the sides over articles. Foating rollers seal the overfolded sides and a heated blower heats the rollers and seals the film. A cut-off operating between cup cuts the overfolded and sealed wrapper.

A modification has a soft yieldable belt in spaced relation over the incoming end of the main conveyor. Articles are loaded into the cups at the bight between the soft belt and the cups so that the belt causes the articles to form their own pouch when pressed into the cups.

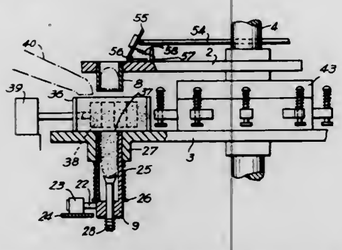
3,501,893
BAG OPENING MACHINE
Axel F. Peterson, 7145 Nicollet, Minneapolis, Minn. 55423
Filed Jan. 8, 1968, Ser. No. 700,667
Int. Cl. B65b *43/18, 43/30*
U.S. Cl. 53—190 10 Claims



The invention discloses a bag opening apparatus for use with flat folded bags having pleated walls. The device includes a bag filling guide, and a pair of arms pivoted on parallel planes on opposite sides of said guide. The arms are provided with extensible and retractable end

portions provided with bag engaging suction cups connectable to a source of partial vacuum. The arms are swingable from a substantially vertical position through somewhat more than ninety degrees to a position adjacent to the filling guide and on opposite sides thereof. When in vertical position the suction cups of one arm engage the uppermost bag of a series of superimposed bags. The extensible end of said one arm retracts, and the arms swing in unison until the bag is engaged by the suction cups of the other arm. The extensible end of the other arm retracts to open the big. When carried to position adjacent the filling guide the sides of the bag are clamped for filling.

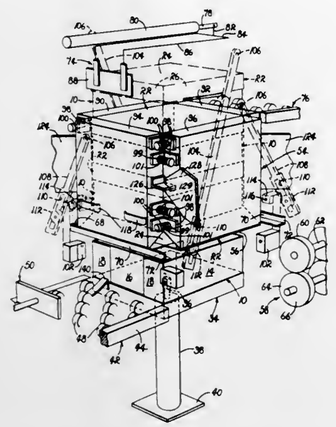
3,501,894
CAPSULE CHARGING SYSTEM
Naoichi Hayashi, Nobuhiro Takeuchi, and Sakae Sunagawa, Tokyo, Japan, assignors to Sankyo Co., Ltd., Tokyo, Japan
Filed Mar. 13, 1967, Ser. No. 622,647
Claims priority, application Japan, Mar. 15, 1966, 41/15,923; Nov. 21, 1966, 41/76,617
Int. Cl. A61j *3/07;* **B65b** *1/24, 43/40*
U.S. Cl. 53—281 **1 Claim**



A capsule filling system is provided which includes a stand having a drive mounted thereupon with upper and lower rotary members supported on the stand. The rotary members are continuously rotated by the drive. Hollow cylindrical portions are secured on the upper rotary member to retain the caps of capsules to be filled. Hollow cylindrical portions are also provided in the lower rotary member and received the bodies of said capsules. The cylindrical portions of the upper and lower rotary members are vertically aligned. A cam rail is arranged to raise and lower the cylindrical portions of the lower rotary member. Suction pipes are arranged in the latter said cylindrical portions and are brought into communication with a pneumatic source to separate the bodies from the caps. A second cam rail moves the suction pipes vertically in the cylindrical portions associated therewith. A stop is provided to cover the upper openings of the first said cylindrical portion to prevent the cap contained therein from moving upwardly when a charged body is raised thereagainst. A chute is arranged adjacent the upper rotary member for supplying empty capsules complete with caps to the first said cylindrical portions. An arrangement is made in the path of the second said cylindrical portions for supplying materials to the capsule bodies. A delivery device is provided for taking out the filled capsules complete with caps from the cylindrical portions.

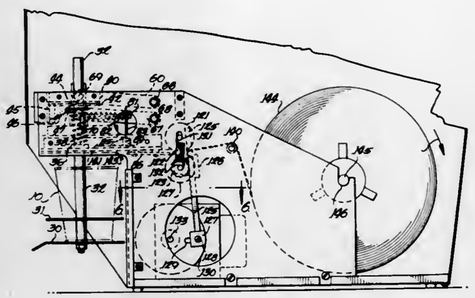
3,501,895
CONTAINER LIDDING MACHINE
Robert L. Geyer, Merced, Calif., assignor to Foster Poultry Farms, a corporation of California
Filed Mar. 14, 1967, Ser. No. 623,108
Int. Cl. B65b *7/16, 51/02*
U.S. Cl. 53—287 **8 Claims**

Container lidding machine for applying to and sealing lids on containers in a substantially continuous manner adapted to receive filled and open containers, position closing lids as blanks, in flattened condition, over open tops of the containers, to apply glue to the container sides, and subsequently to fold the lids in such manner as to form side folded flaps thereof and contact the flaps with their associated containers, and thereafter to hold the lids in position on the containers under compression until the glue hardens, by slidably inserting the containers in superimposing sequence into a vertical tunnel, the walls of the



tunnel being adapted to permit slight inward and outward movement under adjustable compression, and upward passage therethrough of the superimposed containers after lids have been placed thereover and glue applied thereto, with the lids having portions engaged with the interior surfaces of the tunnel to insure maintaining the lids in place until the glue has set, so that upon discharge of the containers from the tunnel the lids are caused to be properly secured to the containers.

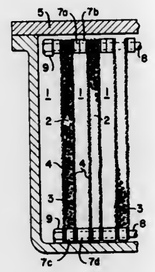
3,501,896
AUTOMATIC HEAT SEALING APPARATUS
Walter von Stoeser, Lake Villa, and Louis Lawrence Laske, Grays Lake, Ill., assignors to Vonco Products, Inc., Grays Lake, Ill., a corporation of Illinois
Filed May 18, 1967, Ser. No. 639,415
Int. Cl. B65b *51/14, 61/06*
U.S. Cl. 53—329 **7 Claims**



A method of closing the open end of a container by heat sealing a thin sheet of material to the edge forming the open end wherein such edge is coated with a heat sealable substance. An apparatus to automatically effect such

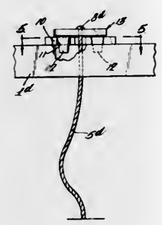
a seal upon actuating a motor driving a mechanical linkage wherein a flat heater plate in a raised position with film spaced closely beneath is lowered into engagement with the film, continuing such movement, cutting the film to appropriate size and engaging the film with the edge forming the open end of the container to provide a heat seal of the film to the edge of the container, returning the heater plate upward to the raised position, and positioning film in a close spaced position below the heater plate for the next cycle of operation.

3,501,897
PROCESS FOR REMOVING SULFUR OXIDES FROM GAS MIXTURES
Henricus J. A. Van Helden, Jaap E. Naber, Frederik J. Zuiderweg, and Heinz Voetter, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,187
Claims priority, application Great Britain, Nov. 28, 1966, 53,141/66
Int. Cl. B01d *53/04*
U.S. Cl. 55—73 **12 Claims**



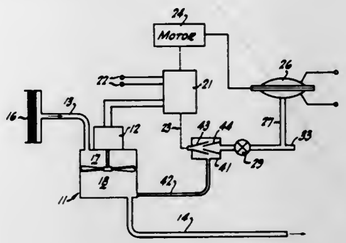
A process for removal of sulphur oxides from gas mixtures such as flue gases by means of a solid acceptor for sulfur oxide disposed in multiple open gas channels running parallel or substantially parallel having very low pressure drop and providing efficient sulfur oxide removal.

3,501,898
EMITTING ELECTRODE ASSEMBLY FOR ELECTROSTATIC PRECIPITATORS
Bengt Lindholm and Gösta Mildh, Vaxjo, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 3, 1966, Ser. No. 531,612
Claims priority, application Sweden, Mar. 5, 1965, 2,850/65
Int. Cl. B03c *3/40*
U.S. Cl. 55—147 **3 Claims**



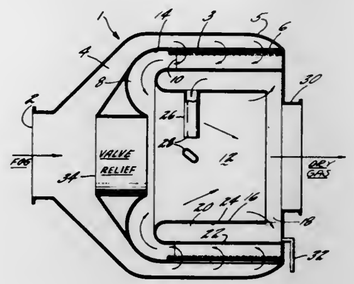
A mounting for the emitting electrode of an electrostatic precipitator which permits easy mounting and dismounting including a mounting plate connected to a frame of the precipitator and having at least one aperture for receiving the electrode. The electrode is provided with an anchoring plug adapted to engage in the aperture. Either the plug or the aperture is tapered so that there is a line contact between the plug and the aperture.

3,501,899
CONSTANT-FLOW AIR SAMPLER
Donald M. Allen, Richmond, Calif., assignor to International Chemical & Nuclear Corporation, Burbank, Calif., a corporation of California
Filed May 2, 1968, Ser. No. 726,078
Int. Cl. B01d *39/00, 46/46;* **F04b** *49/00*
U.S. Cl. 55—210 **3 Claims**



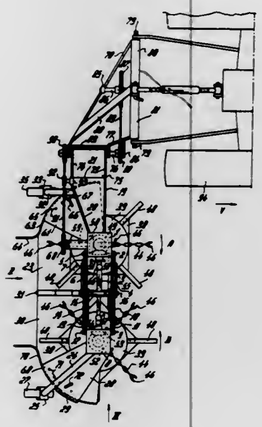
A filter apparatus including a variable speed pump and a valve interposed between a pressure sensitive switch which actuates the pump and the pump outlet and being responsive to the pump motor.

3,501,900
MOISTURE SEPARATOR
John L. Warner, Simsbury, Conn., Walter J. Barry, Longmeadow, and George E. Wilmot, Jr., Feeding Hills, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,045
Int. Cl. B01d *46/46, 45/12*
U.S. Cl. 55—313 **7 Claims**



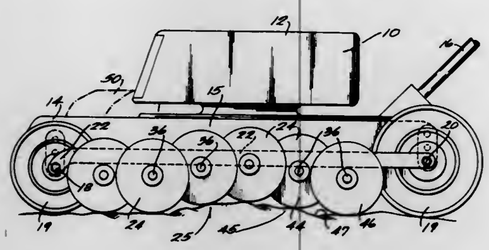
The coalescer, vortex chamber and liquid collecting chamber of a moisture separator are placed in radial layers around the axis of the separator housing. A counter-flow arrangement is utilized to provide a flow path of sufficient length to accomplish coalescing, separation and collection of liquid.

3,501,901
MOWING MACHINES
Cornelis van der Lely, 7 Bruschenrain, Zug, Switzerland
Filed Mar. 17, 1966, Ser. No. 535,199
Claims priority, application Netherlands, Mar. 29, 1965, 6503953
Int. Cl. A01d *75/30, 35/26*
U.S. Cl. 56—6 12 Claims



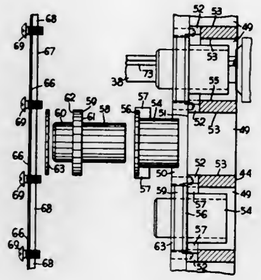
A mowing machine in which one or more mowers is located laterally of the prime mover, the mower extending transverse to the direction of normal travel. The mower has cutting members, rotatable about non-horizontal axes and one or more ground wheels positioned to enable the cutting members to maintain their respective cutting positions over uneven ground.

3,501,902
SIDE GUARD FOR LAWN MOWER
Einar S. Dahl and Edward W. Puffer, Galesburg, Ill., assignors to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 609,137
Int. Cl. A01d *75/20*
U.S. Cl. 56—25.4 6 Claims



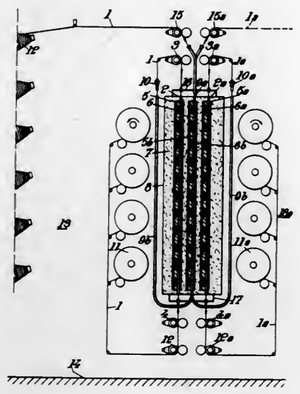
Disclosed herein are safety side guards for a rotary mower consisting of a longitudinal array of thin ground engaging annular disks carried by side rails connected to the front and rear axles of the mower. The disks are rotatably mounted in pairs on plates to minimize drag, and overlap to provide a continuous shield along the side of the mower. Vertical and rocking movement of the plates and disks in response to ground relief features, or elevation changes, is afforded by an elongated vertical slot in the plates and studs extending through the slots and secured to the side rails.

3,501,903
COTTON HARVESTER STRIPPER BAR
Rector C. Fergason, Gadsden, Ala., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 10, 1967, Ser. No. 659,637
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 4 Claims



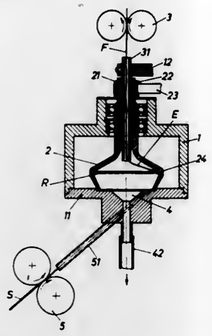
A cotton picker stripper bar wherein the stripper bushings are mounted for vertical movement to provide a self-centering function relative to the cotton picker spindles.

3,501,904
PROCESS AND MACHINE FOR THE TEXTURIZATION OF THERMOPLASTIC YARN, AND THE YARN THUS OBTAINED
Guy Batsch, 07 Saint-Pierre-sous-Aubenas, France
Filed July 18, 1968, Ser. No. 745,918
Claims priority, application France, July 21, 1967 115,275
Int. Cl. D01b *13/26*
U.S. Cl. 57—34 4 Claims



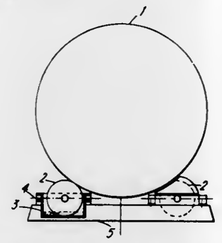
Each yarn to be textured descends, due, at least partly, to the weight of the yarn, down a vertical heating path. The yarn is fed into the top of the heating path at a speed which can exceed by 20% and possibly even by 60% the speed at which the yarn is fed out at the bottom of the heating path.

3,501,905
SLIVER SPINNING METHOD AND APPARATUS
Hans Landwehrkamp, Franz Schreyer, and Rolf Canzler, Ingolstadt, Germany, assignors to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, (Danube), Germany, a corporation of Germany
Filed Apr. 24, 1967, Ser. No. 633,242
Claims priority, application Germany, Apr. 26, 1966, Sch 38,889; Aug. 17, 1966, Sch 39,416
Int. Cl. D01b *7/00*
U.S. Cl. 57—58.89 22 Claims



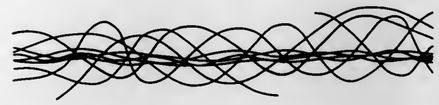
A sliver spinning method and apparatus wherein the fibre sliver is introduced into a rotary spinning chamber by a powered infeed means and is accumulated within the chamber in the form of a fibre ring held against the chamber wall by centrifugal force, which fibre ring is contacted during spinning by the end of the spun thread for continuous gathering of fibres which are twisted to continuously add to the length of the spun sliver delivered from the spinning chamber by a powered outfeed means. When spinning is interrupted, the operation of the infeed and outfeed means is halted before the rotation of the spinning chamber is stopped to assure retention within the spinning chamber of the spun sliver end, and when spinning is resumed, the spinning chamber is set into rotation before operation of the infeed and outfeed means is resumed to assure contact between the spun sliver end and the fibre ring for continued fibre gathering and twisting.

3,501,906
FRAME SUPPORT FOR CABLE WINDING MACHINE
Willy Wilhelmsen, Snaroya, Norway, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,875
Claims priority, application Norway, Dec. 3, 1966, 165,859
Int. Cl. D01h *7/02*
U.S. Cl. 57—59 3 Claims



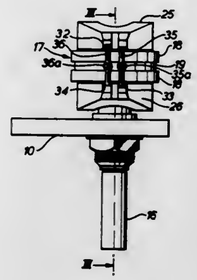
The rotatable frame of a cable winding machine carriage is supported on pivotable rollers which maintain alignment with the frame under varying loads and resulting deflection.

3,501,907
SPUN YARN AND ITS DOUBLED YARN
Masaaki Tabata, Kozo Susami, and Hiroshi Edagawa, Otsu-shi, Japan, assignors to Toyo Rayon Company Limited, Chuo-ku, Tokyo, Japan
Filed Dec. 15, 1967, Ser. No. 691,056
Claims priority, application Japan, Dec. 20, 1966, 41/82,981; July 12, 1967, 42/44,377
Int. Cl. D02g *3/02*
U.S. Cl. 57—140 6 Claims



An improved spun yarn of the invention is provided with twist configuration characterized by fibers maintained in the respective forms of spiral having uniform pitch and diameter of coils of the respective spirals. The form of spiral of fibers in an inner layer with respect to an axis of the yarn is provided with a smaller number of coils of spiral and smaller diameter of the spiral while the form of spiral of fibers in an outer layer with respect to the yarn axis provided with larger number of coils of spiral and larger dameter of the coils of the spiral, further the respective spiral of fibers in the inner and outer layer is provided with almost uniform diameter with respect to the axis of yarn. An improved blended yarn provided with the above-mentioned twist configuration is also disclosed. Further a process for manufacturing the above-mentioned blended yarn is also disclosed.

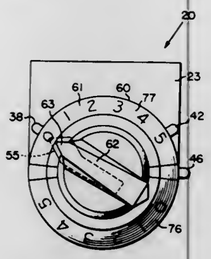
3,501,908
FALSE TWISTING METHOD
Denis Albert Edward Mattingly, Enfield, Middlesex, England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company
Original application July 7, 1965, Ser. No. 470,015, now Patent No. 3,403,566, dated Oct. 1, 1968. Divided and this application Aug. 6, 1968, Ser. No. 750,680
Claims priority, application Great Britain, July 8, 1964, 28,140/64
Int. Cl. D02g *3/02*
U.S. Cl. 57—157 3 Claims



Yarn is false twisted by being subjected to at least two false twisting operations by being passed consecutively through separate false twist spindles which are supported and rotated by a single transmission means. In another embodiment, two or more yarns are given a false S-twist by being passed through separate false twist spindles which are supported and rotated in one direction by a single transmission means; in like manner, two

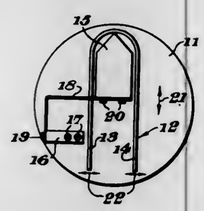
or more other yarns are given a false Z-twist; and, finally, the yarns are combined in pairs, a false S-twisted yarn and a false Z-twisted yarn to each pair.

3,501,909
INTERVAL TIMER
Richard J. Conradt, 774 Meigs St., Rochester, N.Y. 14620
Filed Jan. 15, 1968, Ser. No. 697,689
Int. Cl. G04f *3/02*
U.S. Cl. 58—22.9 **10 Claims**



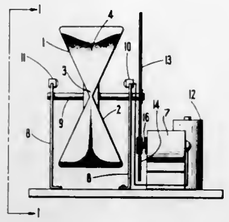
This timer may be set to operate at less than the maximum operating period of the mechanism which actuates it. For use with a citizen band radio, for instance, it will be set to time five minute intervals. A translucent dial having two sets of indicia around its reading face on red and green segments, respectively, covers the front of the instrument. To set the timer, a stop is rotatably adjusted angularly away from zero position, in which one of the segments is uppermost, in correspondence with the interval to be timed. The timer drive shaft is then rotated angularly to this stop position by a knob which carries a spring-pressed detent that rotates the dial with the knob and a block on the dial winds a torsion spring. When the knob reaches the stop this spring rotates the dial slightly beyond the stop to bring the other segment of the dial uppermost.

3,501,910
TUNING FORK ARRANGEMENT FOR ELECTRO-MECHANICAL OSCILLATORS
Cecil Frank Clifford, Newbridge Works, Bath, Somerset, England
Filed Apr. 18, 1968, Ser. No. 722,319
Claims priority, application Great Britain, May 15, 1967, 22,329/67
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **5 Claims**



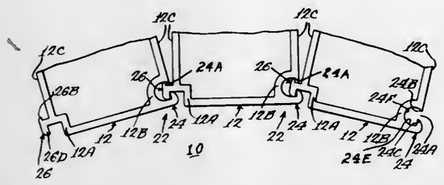
A mounting arrangement for a single reed or a tuning fork of an electromechanical oscillator in which an inertia weight is directly attached to one end of the reed or the nodal point of the tuning fork, and the inertia weight is mounted on a spring which is supported by a base, the spring preferably being arranged so that it will readily move in a direction in which out-of-balance forces of the oscillator will act, so that noise and other undesirable effects are reduced.

3,501,911
HOURGLASS
Bobby Sjöström, 315 Royal Palm Way, Boca Raton, Fla. 33432
Filed Dec. 23, 1968, Ser. No. 785,876
Int. Cl. G04f *1/06*
U.S. Cl. 58—144 **3 Claims**



An hourglass in which the chambers automatically pivot 180° when the granular material in one chamber has reached a selected level. The hourglass is secured to a gear with the axis of the gear and neck of the hourglass coaligned. A motor operatively connected to the gear is controlled by a circuit having a photoelectric cell which is aligned with a light source through the hourglass at a level such as to activate the photocell for control of the motor when the granular material reaches a selected level.

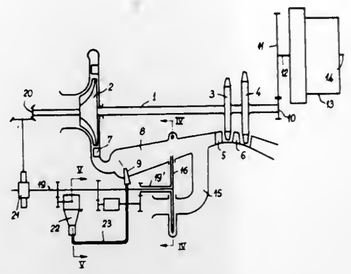
3,501,912
ARTICULATED COUPLING
Warren E. Gilson, 4801 Sheboygan Ave., and Robert E. Gilson, 4 Franklin Ave., both of Madison, Wis. 53705
Filed Feb. 1, 1968, Ser. No. 702,447
Int. Cl. F16g *13/04*
U.S. Cl. 59—78 **9 Claims**

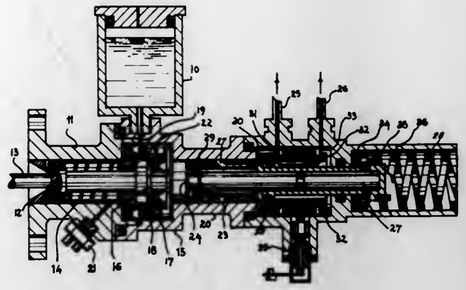


A snap type readily attachable and detachable interconnecting or coupling means including a first member having a longitudinal groove and a second member having a generally T-shaped projection extending into the groove for coupling the members in an articulated or hinge type manner to provide predetermined relative angular movement between the members. The coupling and uncoupling are preferably effected upon relative angular movement of the two members beyond the predetermined or normal range of angular movement to effect snap type coupling and uncoupling. Uncoupling cannot be effected by direct pull of the members.

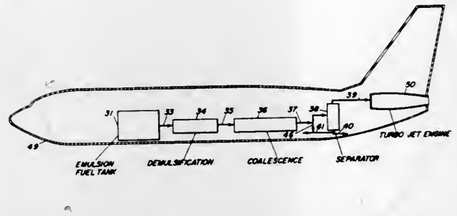
3,501,913
TWO-STROKE GAS TURBINES
Maurice G. Brille, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, and Automobiles Peugeot, Paris, France
Filed Feb. 2, 1968, Ser. No. 702,744
Claims priority, application France, Feb. 17, 1967, 95,475
Int. Cl. F02c *5/12, 7/02*
U.S. Cl. 60—39.15 **8 Claims**

Gas turbine with combustion chamber and compressor, characterised in that means are provided for causing the intermittent operation of said combustion chamber and the delivery to said turbine of fresh cooling and scavenging air alternating with the flow of combustion gases delivered by said chamber.





3,501,914
HYDROCARBON FUEL POWERED VEHICLE EMPLOYING EMULSIFIED FUEL
William J. Asher, Fanwood, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Original application July 14, 1967, Ser. No. 653,457, now Patent No. 3,416,320, dated Dec. 17, 1968. Divided and this application Aug. 30, 1968, Ser. No. 756,473
Int. Cl. F02c *3/20;* **F02k** *1/00*
U.S. Cl. 60—39.46 **5 Claims**

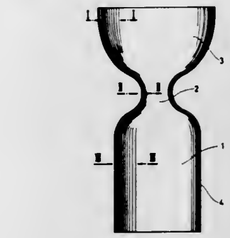


Stable emulsions containing from 75 up to 99 wt. percent of hydrocarbon fuels as the dispersed phase are charged to the fuel tanks of vehicles powered by internal combusion engines. Demulsification of the emulsion is continuously carried out integral with the operation of the engines so that they are in fact burning liquid fuel or at least partially demulsified fuel in the combustion zones of the engines. The system includes a demulsification zone, coalescence and separation zones and means for feeding coalesced fuel to the combustion zones of the engines.

3,501,915
POWER BOOSTER SAFETY TANDEM MASTER BRAKE CYLINDER
Norman H. Hackett, Bondi, Australia, assignor of fifty percent to Roy J. Cochran, Los Angeles, Calif.
Filed Jan. 17, 1968, Ser. No. 698,669
Int. Cl. F15b *7/08*
U.S. Cl. 60—54.5 **6 Claims**

A device for a fluid operating system having dual outlets and arranged for sealing either outlet in the case of loss of fluid pressure therein. The device is particularly applicable to motor vehicle braking systems and includes pressure intensification means. A recharging arrangement may be provided for recharging the outlet side of the device after failure and the main operating piston is associated with a safety piston which operates in the event of failure of the main piston.

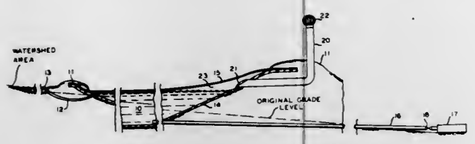
3,501,916
TUBULAR COMPONENTS FOR FORMING A ROCKET ENGINE COMBUSTION CHAMBER
Karl Butter and Carl Helmut Dederra, Munich, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn by Munich, Germany
Filed Sept. 20, 1967, Ser. No. 669,168
Claims priority, application Germany, Sept. 24, 1966, B 89,084
Int. Cl. F02k *1/24;* **F02c** *7/12;* **F28f** *3/12*
U.S. Cl. 60—267 **8 Claims**





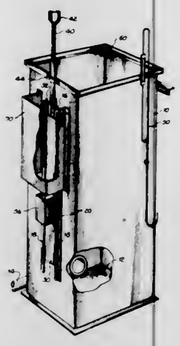
A tubular component formed by a channel-shaped section and a closure section secured together to provide a closed fluid-tight passageway. The channel-shaped section of the tubular component is comprised of a web and a pair of spaced legs extending from the web. The tubular component is curved along its longitudinal axis and the thickness of the web and the spacing of the legs of the channel-shaped section vary along the length of the tubular component. Preferably, the sections forming the tubular component are formed of materials having different characteristics of heat conductivity and tensile strength, for example, the channel-shaped section could be formed of copper and the closure section of steel.

3,501,917
LIQUID STORAGE
Clyde V. Detter, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 14, 1968, Ser. No. 737,028
Int. Cl. B65g *5/00*; **E21f** *17/16*
U.S. Cl. 61—1 **9 Claims**



A water reservoir is formed in the earth to collect surface water. The reservoir is provided with a cover formed of relatively thin, flexible material to prevent water loss by evaporation. In order to prevent the cover from being destroyed by wind, the interior of the reservoir is either evacuated or pressurized in order to retain the cover stationary.

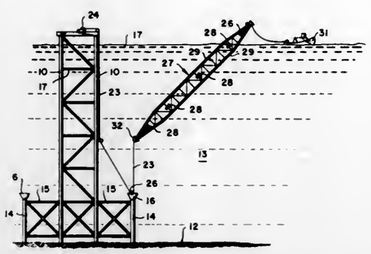
3,501,918
EFFLUENT STRUCTURE
George D. Newton, Sr., 466 Christopher Drive, NW., Gainesville, Ga. 30501
Filed Dec. 13, 1967, Ser. No. 690,295
Int. Cl. E02b *7/28, 8/06*; **E03b** *5/00*
U.S. Cl. 61—17 **7 Claims**



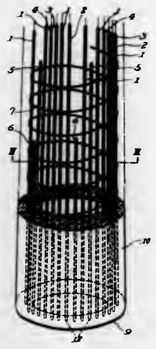
An effluent structure for controlling the water level in a waste stabilization pond is composed of a vertical hollow column having an elongated vertical opening therein. A gate plate with a V-notch weir therein is slidably mounted over the opening. The water in the pond flows through the weir into the column and leaves the column through a drain pipe. Therefore, the position of the weir sets the water level in the pond. This structure is simple, inexpensive, and efficient.

3,501,919
METHOD AND APPARATUS FOR CARRYING OUT OPERATIONS AT AN UNDERWATER INSTALLATION
Peter W. Marshall, New Orleans, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1968, Ser. No. 709,093
Int. Cl. E02b *11/00*
U.S. Cl. 61—46.5 **11 Claims**

A method and apparatus for carrying out operations on an underwater installation, for example, inserting stub piles to anchor a marine structure, in which an elongated buoyant truss member is lowered from the water surface into a substantially vertical position with the lower end in registry with the underwater installation to thereby provide communication between the water surface and the underwater installation for lowering pilings and the like.



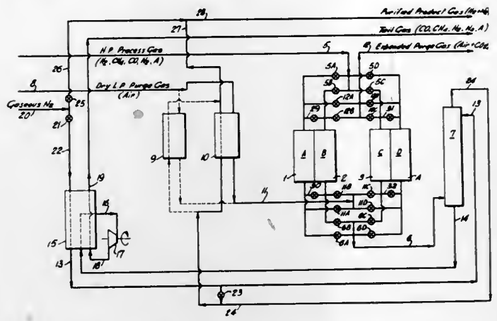
3,501,920
REINFORCED CONCRETE POLES, PILES AND THE LIKE
Minoru Uchiyama, Tokyo, Japan, assignor to Nippon Concrete Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 15, 1967, Ser. No. 683,242
Int. Cl. E02d *5/58*; **E04c** *3/10*
U.S. Cl. 61—56 **1 Claim**



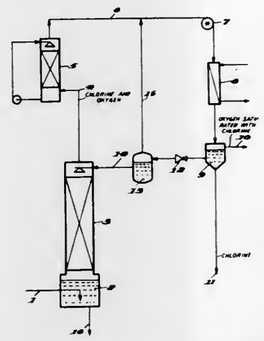
For axial reinforcement of precast concrete poles, piles or the like products, nontensioned ordinary-strength steel wires are used in different lengths and in combination with conventional pretensioned high-strength steel wires thereby to save the latter as much as possible while imparting to the product a breaking strength varying along the axis of the pole in such a fashion as to afford a satisfactory crack-resisting feature thereto.

3,501,921
METHOD OF OPERATING HEAT EXCHANGERS IN CRYOGENIC SYSTEMS
James R. Muenger, Beacon, and David L. Alexander, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,856
Int. Cl. F25j *3/00*
U.S. Cl. 62—13 **2 Claims**

In the operation of reversing heat exchangers or thermal regenerators, contamination of a relatively pure high pressure process gas stream by a low pressure purge gas stream is avoided by isolating two sections of the heat exchanger, bleeding gas from the one end of the high pressure section of the heat exchanger to one end of the low pressure section thereof thereby equalizing the pressure between the sections, thereafter depressuring the high pressure section at the opposite end of the high pressure section and bleeding gas from the opposite end of the low pressure section into the depressured high pressure section whereby purge gas from the low pressure section is substantially completely replaced with high purity gas from the high pressure section prior to introduction of relatively pure, high pressure, process gas to the purged section of the heat exchanger.



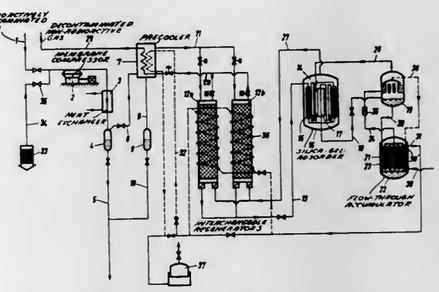
3,501,922
PROCESS FOR THE DISTILLATIVE SEPARATION OF PURE CHLORINE FROM A GAS MIXTURE CONTAINING CHLORINE, NITROGEN DIOXIDE, NITROSYL CHLORIDE AND OXYGEN
Alfred Schmidt and Ferdinand Weinrotter, Linz (Danube), and Walter Müller, Leonding, near Linz (Danube), Austria, assignors to Osterreichische Stickstoffwerke AG, Linz, Austria
Filed Mar. 14, 1968, Ser. No. 713,233
Claims priority, application Austria, May 23, 1967, A 4,789
Int. Cl. F25j *3/08*, **C01b** *7/02, 21/53*
U.S. Cl. 62—17 **4 Claims**



Distillative separation of pure chlorine from a gas mixture containing chlorine, nitrogen dioxide, nitrosyl chloride and oxygen. Said gas mixture is introduced, at a temperature preferably 10 to 20° C. above its dew point, into the sump of a distillation column operating at atmospheric pressure thereby supplying the necessary heat of evaporation to the sump. The resulting mixture of chlorine and oxygen is withdrawn from the head of the column and the chlorine liquefied by compression and cooling.

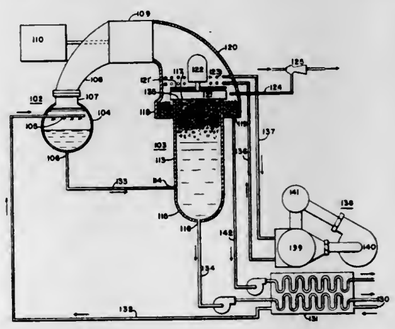
Part of the liquid chlorine is expanded, thereby cooled to a temperature below its boiling point by partial evaporation at atmospheric pressure and introduced at the head of the column as a reflux in the liquid form.

3,501,923
PROCESS FOR DECONTAMINATING RADIOACTIVE FLUIDS
Wilhelm Lehmer, Munich, Germany, assignor to Linde Aktiengesellschaft, Hollriegelskreuth, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 301,468, Aug. 12, 1963. This application Feb. 16, 1966, Ser. No. 527,790
Claims priority, application Germany, Aug. 14, 1962, 1,444,453
Int. Cl. F25j *3/00*; **B01d** *53/00*
U.S. Cl. 62—18 **7 Claims**



A radioactively contaminated gas containing relatively adsorbable and less adsorbable radioactive impurities is continuously passed through an adsorber for a period of time causing the adsorber to become saturated with the relatively adsorbable impurity, the saturated condition of the adsorber being effective to hold up the flow of contaminated gas and provide a residence time in excess of the half-life of the readily adsorbable impurity whereby the latter decays to a small fraction of its original radioactivity. The flow through the adsorber is continued for a prolonged period of time following saturation and the gas is recovered with substantially unchanged proportions of the original constituents with the readily adsorbable impurity being freed from radioactivity during the prolonged period of time. The gas with reduced radioactivity is then liquefied and passed along on extended path where the less adsorbable impurity decays.

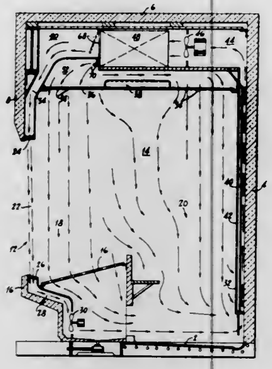
3,501,924
WATER WASH OF ICE FORMED IN VACUUM FREEZING
Carlyle M. Ashley, Fayetteville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 28, 1955, Ser. No. 518,431
Int. Cl. B01d *9/04*; **C02b** *1/12*
U.S. Cl. 62—123 **3 Claims**



A brine solution is vaporized to form an ice slurry. A separator receiving the ice slurry includes a vertically

extending vessel having an open end. Means substantially surrounding the open end of the vessel receives separated ice. Wash liquid is discharged directly on the separated ice in the vessel. Means are placed adjacent the open end of the vessel for transferring the washed ice to the receiving means.

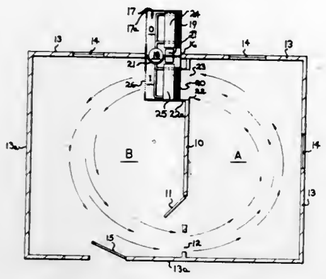
3,501,925
REFRIGERATED EQUIPMENT
James H. Brennan and Winfield R. Burtis, Trenton, N.J., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Continuation-in-part of applications Ser. No. 608,340, Jan. 10, 1967, and Ser. No. 621,909, Mar. 9, 1967. This application Dec. 26, 1967, Ser. No. 693,200
Int. Cl. A47f *3/04*
U.S. Cl. 62—256 **21 Claims**



Refrigerated equipment having a refrigerated space, a front access opening, a display area adjacent the access opening and a service area near the rear of the refrigerated space which is in open communication with the display area. Air flows through a discharge outlet adjacent the access opening establishing an air barrier and through additional outlets into the refrigerated space. Air from both these outlets is withdrawn from the service area and recirculated to such outlets. The recirculated air is cooled by a plurality of successively defrosted refrigerated elements but is passed into heat exchanging relation with only those elements not being defrosted.

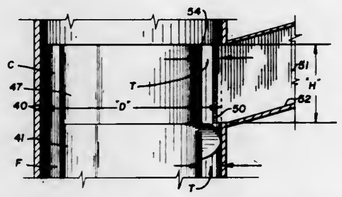
3,501,926
MULTIPLE ROOM AIR-CONDITIONING SYSTEM
Russell T. Smith, Innisbrook Apts. 3A, Mill Road, Adrian, Mich. 49221
Filed June 10, 1968, Ser. No. 735,659
Int. Cl. F25d *23/12*
U.S. Cl. 62—263 **1 Claim**

An air-conditioner device for two adjacent rooms separated by a partition wall which extends to an outside wall. In such outside wall and disposed in the region of the partition wall is an opening, in which is mounted an air-conditioner unit, which can be installed and removed from the inside of the room. An opening in the partition wall communicates with the evaporator of the air conditioner and a motor-driven fan adjacent the evaporator draws air from one room, passes same about the evaporator and into the other room. A suitable opening in the partition wall remote from such outside wall enables circulation of air from one room to the other. An imperforate partition separates the air conditioner into two compartments, in one of which is the evaporator and



its fan, and in the other is arranged the motor-compressor and condenser, as well as a fan for cooling same.

3,501,927
ICE FLAKE MACHINES
Joe E. Wadsack, Denver, Colo., assignor to Mile High Equipment Company, Denver, Colo., a corporation of Colorado
Filed July 29, 1968, Ser. No. 748,273
Int. Cl. F25c *1/14*
U.S. Cl. 62—320 **7 Claims**



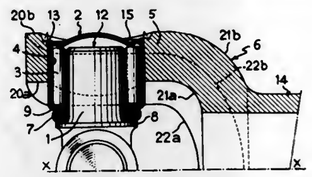
A flake ice machine of the type which provides an auger to scrape ice layers from the walls of a refrigerated cylinder, to move the layers upwardly in the cylinder and compress them against an abutment at the top of the cylinder whereby to congeal the same into a tubular ice column, and to discharge the column as ice chips from an opening in the side of the cylinder above the auger by breaking up the tubular column and below a bearing housing closing the top end of the cylinder. The underside of the bearing housing forms the abutment shoulder against which the ice is compressed. To prevent ice from freezing within the cylinder and jamming the machine, it was found that the machines could be proportioned by selecting a height H of the opening, a thickness T of the tubular ice column and the diameter D of the cylinder in such a manner as to produce a relationship

$$\frac{H}{T}\sqrt{D}$$

in units of inches, which is greater than 11.0.

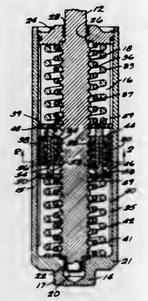
3,501,928
UNIVERSAL JOINTS
Alfred Pitner, Paris, France, assignor to Nadella S.A., Malmaison, France, a French corporation
Filed Oct. 24, 1967, Ser. No. 677,625
Claims priority, application France, Nov. 10, 1966, 83,342
Int. Cl. F16d *3/34*
U.S. Cl. 64—17 **11 Claims**

A universal joint comprising two forks having a tubular hub adapted to be fixed to a shaft and a cross, the four journals of which are each capped by a needle-containing cup maintained in the bore of the corresponding fork, the forks being of a sheet of metal so shaped that, in the



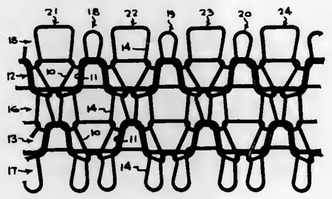
region of the bore, the section perpendicular to the axis of each fork branch has an inwardly-facing concavity.

3,501,929
TORSIONAL SHOCK ABSORBER
Gerald E. Kashmerick, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,751
Int. Cl. F16d *3/14*
U.S. Cl. 64—27 **11 Claims**



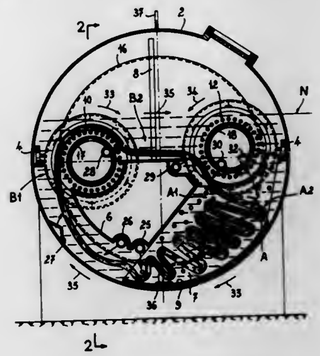
A torsional shock absorber comprising an output shaft with a hollow interior, and a co-axial input shaft having a threaded portion located within the hollow interior. The input shaft is connected to the output shaft by a nut carried on the threaded portion of the input shaft. The nut has an external spline which interfits with a spline on the hollow interior of the output shaft. Springs on each side of the nut center the nut in the hollow interior. Hydraulic fluid in the hollow interior and fluid flow orifices in the nut restrain axial movement of the nut.

3,501,930
SHEER KNIT FABRIC
Rufus P. Pruitt and Roy C. Slagle, Concord, and Robert M. Matthews, Charlotte, N.C., assignors to Chadbourn Inc., a corporation of North Carolina
Filed May 16, 1967, Ser. No. 638,882
Int. Cl. D04b *1/18, 1/26*
U.S. Cl. 66—169 **6 Claims**



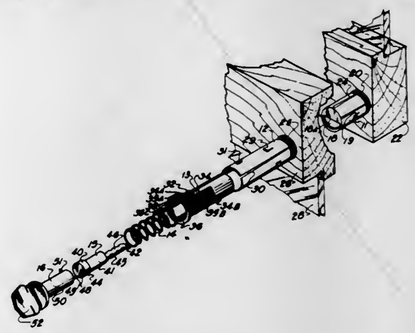
An open sheer knit fabric having a body yarn in all courses, an an auxiliary yarn in alternate courses which is knit in alternate loops and floated across adjacent loops, with the knit loops of auxiliary yarn in successive auxiliary yarn courses being staggered. The auxiliary yarn is a relatively heavy denier non-stretch yarn to add strength and wear qualities or a spandex yarn to give the fabric a compressive quality. The method of knitting the fabric includes feeding a body yarn to all needles and the auxiliary yarn to raised alternate needles at one feed station, forming the stitches, and feeding a second body yarn to all needles to form the courses without auxiliary yarn.

3,501,931
APPARATUS FOR THE LIQUID TREATMENT OF A CIRCULATING BAND OF MATERIAL IN A BATH
André Barriquand, Roanne, France, assignor to Etablissements Barriquand Freres, Roanne, France
Filed Nov. 6, 1967, Ser. No. 680,829
Int. Cl. D06f
U.S. Cl. 68—177 **10 Claims**



Apparatus for the wet treatment of textiles in which the material is circulated as an endless band in a liquid bath by means of rotating perforated cylinders and injection nozzles which cause liquid to impinge on and impregnate the material and at the same time cause the liquid in the bath to circulate and carry the material with it in proximity with the rotating cylinders.

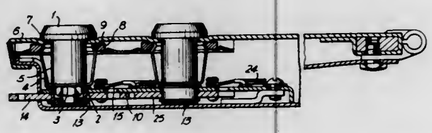
3,501,932
WINDOW LOCK
Winford R. Bishop, P.O. Box 13943, Atlanta, Ga. 30324
Filed Jan. 6, 1967, Ser. No. 607,684
Int. Cl. E05b *65/08*; E05c *5/02*
U.S. Cl. 70—90 **12 Claims**



This invention relates to a lock of the type utilized in locking the upper and lower halves or sashes of sliding windows together, and includes a key operated plunger

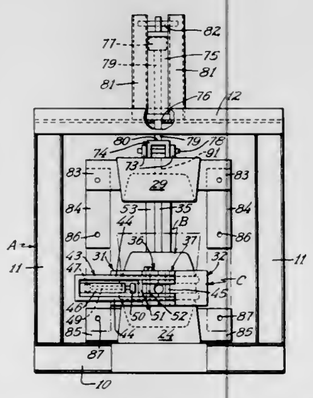
normally positioned in the lower sash of a window which may be partially inserted into a recess located in the upper sash to lock the sashes together.

3,501,933
ATTACHMENT MEANS FOR A LOCK CYLINDER
Rolf Carlsson, Enebyberg, Sweden, assignor to Oy Wartsila AB, Helsinki, Finland
Filed Oct. 6, 1967, Ser. No. 673,468
Claims priority, application Finland, Oct. 8, 1966, 2,651/66
Int. Cl. E05b *9/04*
U.S. Cl. 70—371 **8 Claims**



An attachment means for attaching a cylinder lock mechanism to a casing. The cylinder lock mechanism comprises a turnable, key operated inner cylinder to which an attachment member with a number of attachment arms is fixed. In the casing there is an opening with means for allowing the arms of the attachment member to pass through said opening when said arms are in a position between their end positions determined by the movement of said inner cylinder.

3,501,934
APPARATUS FOR REPAIRING KEGS
Albert W. Engel and Gerald J. Forbes, St. Paul, Minn., assignors to Engel-Forbes, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 20, 1967, Ser. No. 624,565
Int. Cl. B21d *26/08*
U.S. Cl. 72—62 **3 Claims**

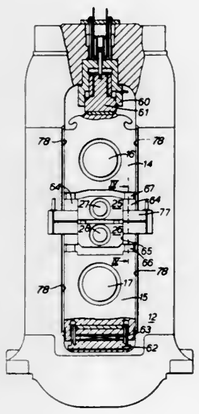


This disclosure resides in a method and apparatus for repairing metal kegs, such as the aluminum kegs used for containing beer. The apparatus includes a die shaped to the outside form of the keg. The deformed externally projecting parts of the keg are pressed into an area defining original confines of the keg. In other words all external projections are forced inwardly by pressure. To return the keg to its original condition, the keg is filled with water, and an explosive is placed in the keg. The explosive is detonated to blow the keg back to its original form. The method comprises a hydraulic means of expanding kegs against a closed die to return the kegs to their original shape.

3,501,935
METHOD OF FLATTENING METAL ARTICLES
Don P. Clausing, Wilkins Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,241
Int. Cl. B21d *1/06, 3/00*
U.S. Cl. 72—207 **8 Claims**

A method of flattening bowed metal articles such as plates, structural shapes, bars, etc. which have a concave and convex surface. The method involves plastically deforming the concave surface without exceeding the yield strength of the convex surface by, for example, rolling the bowed article in contact with a surface having protrusions which cause deformation of the concave surface.

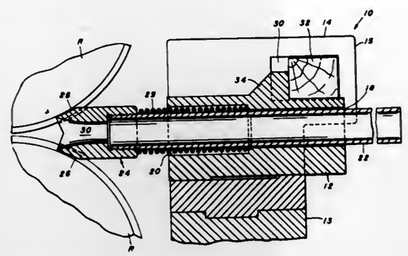
3,501,936
ROLLING MILLS
Dennis Stubbs, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England
Filed Nov. 15, 1966, Ser. No. 594,478
Claims priority, application Great Britain, Nov. 15, 1965, 48,335/65
Int. Cl. B21b *31/24*
U.S. Cl. 72—243 **13 Claims**



The invention is concerned with that type of rolling mill comprising a pair of spaced housings, each having therein a housing window and a pair of roll assemblies carried in chocks which are slidably arranged in the windows. The roll assemblies are spaced apart by spacing devices, each of which acts between the chocks of the two roll assemblies and each of which is adjustable in effective length to vary the separation of the chocks. Each of the spacing devices is mounted on and carried by its housing and can slide bodily on the housing in the direction of chock movement so as to accommodate itself to changes in the median plane between the chocks.

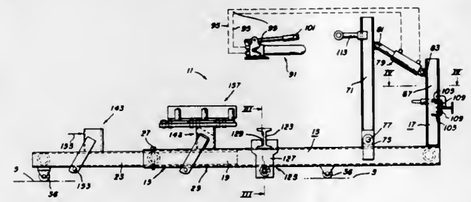
3,501,937
STRIPPER GUIDE
Charles E. Pierce, Brewerton, N.Y., assignor to Crucible Inc., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,141
Int. Cl. B21b *41/00*
U.S. Cl. 72—250 **4 Claims**

The invention relates generally to a stripper guide for use with a rod and bar mill and is adapted to receive the rolled workpiece from the mill and guide it along a substantially straight passline. More specifically, the stripper guide of the invention includes a guide body, in the form of a pipe section, and having at its head or inlet end a portion defining an inlet opening into which the workpiece exiting from the roll gap enters the guide body. The



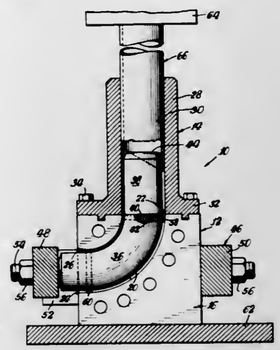
guide is mounted operatively adjacent the exit side of the roll gap. Means, such as a spring, is provided for urging the guide axially toward the work rolls adjacent the roll gap.

3,501,938
DEVICE FOR STRAIGHTENING WRECKED VEHICLES
Wesley C. Sprague, 990 Forrest Ave., Memphis, Tenn. 38105
Filed Nov. 9, 1966, Ser. No. 593,168
Int. Cl. B21d *1/12*
U.S. Cl. 72—305 **9 Claims**



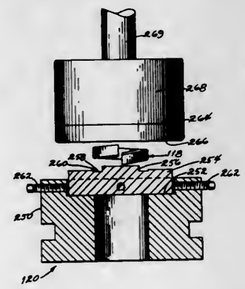
Automobile frame and body straightening apparatus having a broad generally rectangular base adapted to be arranged underneath a damaged automobile chassis and including anchor means for anchoring the substructure parts of the automobile to the broad base of the apparatus. The frame and body straightening apparatus including dual double-acting hydraulic piston-cylinder assemblies and individually operative dual push and pull pressure arms for exerting a push or pull or simultaneously operative tension or compression force on the damaged automobile parts. The apparatus also including a horizontal transverse bar adapted for vertical adjustment and including a plurality of attachment members horizontally adjustable along the vertically adjustable transverse bar. The attachment members providing horizontally and vertically adjustable anchor points for anchoring a mechanical winch or come-along type winch mechanism. The apparatus provides means for simultaneously applying both mechanical and hydraulic pressure simultaneously to several areas of the damaged automobile and provides means for returning the damaged parts to original positions with a minimum of bending, warping or crystallizing of the metal parts of the automobile. The apparatus also includes a cross member extending transversely across the broad rectangular base of the apparatus and includes adjustable anchor or engagement assemblies adapted for providing anchor points laterally or longitudinally of the automobile for anchoring the automobile or for providing anchor points for push or pull forces exerted on the damaged automobile parts in straightening the frame and body parts of the automobile.

3,501,939
APPARATUS FOR AND METHOD OF FORMING LONG TANGENT ELBOWS
Melvin E. Remus, Park Ridge, and Joseph F. Staroba, Des Plaines, Ill., assignors to Taylor Forge Inc., Bellwood, Ill., a corporation of Illinois
Filed Sept. 13, 1967, Ser. No. 667,502
Int. Cl. B21d *22/00*
U.S. Cl. 72—343 **8 Claims**



A die having an arcuate cavity of circular cross section, and an arcuate mandrel of circular cross section disposed in the cavity in radially spaced relation. One end of a tubular blank is forced through the cavity and about the mandrel whereby to form an elbow at the end of the tubular blank to produce a long tangent elbow.

3,501,940
APPARATUS FOR FLATTENING A SEVERED HELIX SEGMENT
Chester C. Moore, Aurora, Ill., assignor, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Original application Sept. 22, 1965, Ser. No. 489,141, now Patent No. 3,373,472, dated Mar. 19, 1968. Divided and this application June 9, 1967, Ser. No. 661,154
Int. Cl. B21d *37/00*
U.S. Cl. 72—412 **1 Claim**

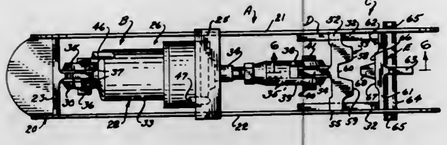


Apparatus for making planar a bar element having a lock washer like configuration. The apparatus comprises mating die plates between which the element is compressed.

3,501,941
STRAIGHTENER FOR POSTS AND THE LIKE
Sylvester F. Long, P.O. Box 7, Mossville, Ill. 61552
Filed June 28, 1967, Ser. No. 649,657
Int. Cl. B21d *9/05*
U.S. Cl. 72—705 **3 Claims**

A portable post straightener having a frame provided with an anvil member, plunger member, and power means for moving the plunger member toward and away from

the anvil member; the anvil member and plunger member having work engaging faces comprising contoured dies which mate with the surface of the post to be straightened; the contour of the mating surfaces thereof being variable by use of appropriate die inserts; one die having a convex curvature along the longitudinal axis of



the post to be straightened; and the other die having a concave curvature along the longitudinal axis of the post to be straightened, the curvature of the dies being mated to apply a sufficient degree of curvature to the post to be straightened to compensate for the rebound characteristics thereof.

3,501,942
METHOD FOR ACCELERATING NATURAL WEATHERING OF PAINT AND OTHER POLYMERIC MATERIALS

Emerson B. Fitzgerald, Wilmington, Del., Mark P. Morse, Jr., Springfield, Pa., Herman L. Wagner, Livingston, N.J., and Anne Willard, Pittsford, Vt., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

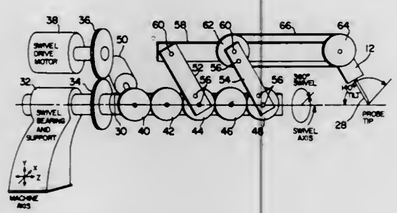
No Drawing. Filed Feb. 1, 1967, Ser. No. 613,139
Int. Cl. G01n *25/02*
U.S. Cl. 73—15.4 **4 Claims**

A method for simulating and accelerating the natural weathering of polymeric materials, especially paint, in which samples are subjected to cycles of wetting with water, drying and exposure to a particular kind of radiant energy.

3,501,943
TRACING PROBE MECHANISM

Leroy U. C. Kelling and John M. Rhoades, Waynesboro, and Richard A. Thomas, Staunton, Va., assignors to General Electric Company, a corporation of New York

Filed July 27, 1967, Ser. No. 656,449
Int. Cl. G01b *13/08*
U.S. Cl. 73—37.5 **17 Claims**

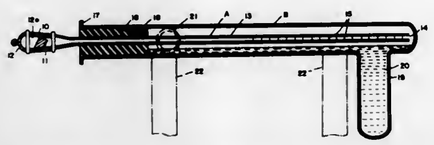


A tracer probe mechanism comprised of an apparatus for aiming the probe at any desired angle relative to the surface of the body to be traced with the probe tip remaining relatively fixed and a probe having an interchangeable elongated stylus member. The orienting apparatus is comprised of a support member with mechanical linkages for rotating the stylus member about the tip thereof and mechanical linkages for rotating the stylus member about the probe axis. A number of configurations of stylus members including those shaped to avoid interference with the body can be interchangeably connected to the probe unit.

3,501,944
APPARATUS FOR MEASURING PORE SIZE AND PORE VOLUME

Nathaniel M. Winslow, Cleveland, Ohio, assignor to Prado Laboratories, Inc., Lakewood, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 583,838, Oct. 3, 1966. This application Jan. 3, 1969, Ser. No. 788,849
Int. Cl. G01n *15/08*
U.S. Cl. 73—38 **12 Claims**

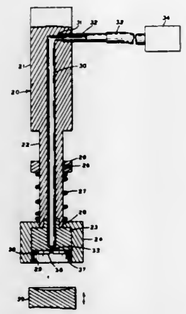


The penetrometer has at one end a chamber for receiving a sample of porous material and a removable sealing closure for the chamber together with a hollow stem communicating with the chamber at one end, the stem being open at its other end. The stem is supported within one end of a tubular body which has its other end closed and with the open end of the stem spaced from the closed end of the tubular body. Means are provided for connecting the tubular body alternately with vacuum and gas sources, and means are provided for supplying liquid through the tubular body for filling the penetrometer through the open end of the stem and for withdrawing liquid from the open end of the stem, the penetrometer having its material-receiving chamber outside the tubular member while its stem remains sealed and supported within the tubular body.

3,501,945
INSPECTION HEAD

Richard T. Bailey, Rohrerstown, James E. Hazeltine, Jr., Lancaster County, and Donald H. Straub, Mount Joy, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1965, Ser. No. 431,056
Int. Cl. G01m *3/04*
U.S. Cl. 73—40 **6 Claims**

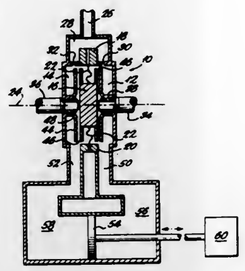


An inspection device for the testing of the linings for closures. The liner in a closure is tested by placing a plunger with a resilient ring adjacent the upper surface of the liner to form a pocket in which a vacuum may be pulled. A sleeve around the plunger presses on the outer edge of the closure. The direction of the pressure on the outer edge of the closure and the pressure on the center of the closure due to the existence of a vacuum result in a testing of the sealing quality of the liner.

3,501,946
FLUID OUTPUT CLOSED-LOOP ACCELEROMETER

Hugh E. Riordan, Wyckoff, and Harold J. Straut, Wayne, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware

Filed Dec. 28, 1966, Ser. No. 605,253
Int. Cl. G01p *15/02*
U.S. Cl. 73—515 **4 Claims**

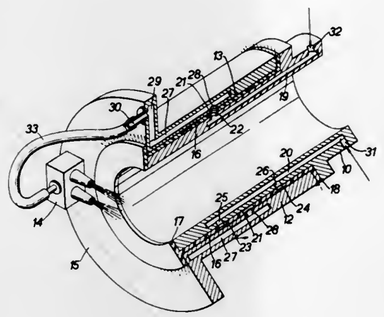


The patent specification discloses an accelerometer which produces an output in the form of a differential fluid pressure or mass flow that is linearly related to the input accelerational movement. The accelerometer includes two balanced fluid containing chambers separated by a movable seismic mass. A fluid balance within the chambers is maintained by a pair of control orifices which are juxtaposed to the seismic mass. When an acceleration force is encountered, the seismic mass is moved relative to the control orifices. This causes a change in pressure within the chambers from which the acceleration can be determined.

3,501,947
ULTRASONIC TESTING APPARATUS

Matthew J. Hetherington, East Carlton Park, near Market Harborough, England, assignor to Stewarts and Lloyds Limited

Continuation-in-part of application Ser. No. 334,371, Dec. 30, 1963. This application Jan. 12, 1967, Ser. No. 608,900
Claims priority, application Great Britain, Jan. 2, 1963, 248/63; Jan. 21, 1966, 2,958/66
Int. Cl. G01n *29/00*
U.S. Cl. 73—71.5 **6 Claims**

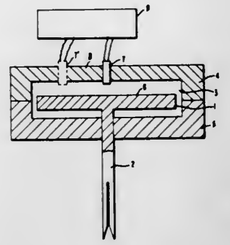


Ultrasonic testing apparatus comprising at least one ultrasonic jet probe mounted on a fluid bearing for rapid rotation around a longitudinally moving tube or other body to be tested.

3,501,948
PROCESS FOR DETERMINING STRESS IN AN ELASTOMERIC MATERIAL

James C. Spitsbergen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 7, 1967, Ser. No. 644,288
Int. Cl. G01n *3/24*
U.S. Cl. 73—101 **3 Claims**

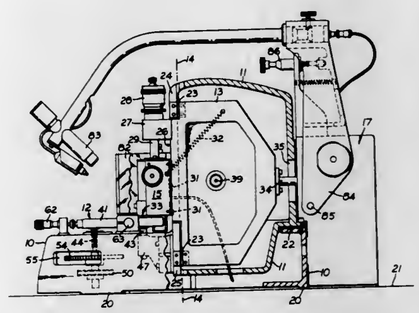


An improved process and viscometer whereby viscosity of an elastomeric material is measured by rotating or oscillating a circular disc to impose shearing stress on a test specimen of the material, the improvement being a pressure transducer communicating with the interior of the chamber to indicate pressure variations in the material at a position normal to the disc. The process and apparatus measures normal stresses in viscoelastic materials and permits their behavior during subsequent extrusion or calendering to be predicted.

3,501,949
SURFACE TESTING APPARATUS EMPLOYING ARCUATE SENSOR PATH

Richard Edmund Reason and John Reginald Adams, Leicester, England, assignors to The Rank Organisation Limited, London, England

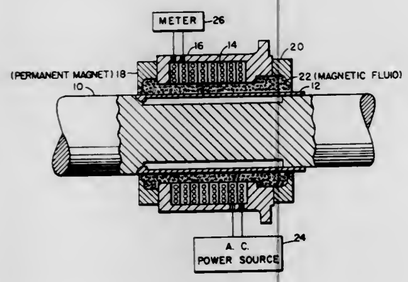
Filed Aug. 31, 1967, Ser. No. 664,871
Claims priority, application Great Britain, Sept. 15, 1966, 41,223/66
Int. Cl. G01b *5/28*
U.S. Cl. 73—105 **15 Claims**



In a surface testing apparatus a workpiece is supported on a table and its surface traversed in an arcuate path by a stylus which is supported in a pick-up head for rotation through a small angle about a main axis perpendicular to a worktable support. The worktable is tiltable relative to its support, thereby adjusting the plane of the arcuate stylus path so that it differs slightly from a perpendicular relation to the main axis, thereby compensating for any curvature of the workpiece surface along

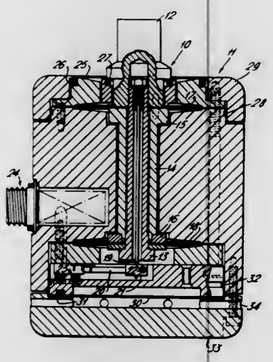
the path of traversal of the stylus. A transducer on the pick-up head is responsive to working movements of the stylus parallel to the main axis during traversal of the stylus.

3,501,950
ELECTROMAGNETIC TORQUEMETER HAVING ITS AIR GAP ELIMINATED BY A MAGNETIC FLUID
Rudolph Hohenberg, Trumbull, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,335
Int. Cl. G01l *3/10*
U.S. Cl. 73—136 **8 Claims**



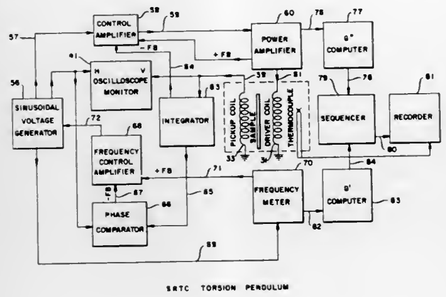
An electromagnetic torquemeter comprising a transformer surrounding a shaft having a magnetic sleeve is provided with a magnetic fluid in the air gap between the sleeve and the transformer. The fluid is captured within the gap by means of permanent magnets.

3,501,951
FORCE MEASURING INSTRUMENTS
Alan Frederick Giles, Wembley, England, assignor to Unilever Limited, Port Sunlight, England, a company of Great Britain
Filed June 6, 1967, Ser. No. 643,958
Claims priority, application Great Britain, June 9, 1966 25,719/66
Int. Cl. G01l *1/22*
U.S. Cl. 73—141 **3 Claims**



A force transducer particularly suitable for use as a check weigher in which the use of pivots and complex linkages which might give rise to error are eliminated by use of a direct flexible coupling.

3,501,952
AUTOMATIC TORSION PENDULUM
William P. Gergen, Garden Grove, and John C. Clark, Lakewood, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,808
Int. Cl. G01n *3/38*
U.S. Cl. 73—15.6 **3 Claims**



A system for automatically measuring and recording the viscous loss modulus and the modulus of elasticity of materials as a function of temperature. A sample material is driven into torsional forced oscillation where its motion is sensed, analyzed, and recorded automatically.

3,501,953
BATHYKYMOGRAPH AND METHOD
Stephen Cudlitz, Marblehead, and William W. Robblee, Randolph, Mass., assignors to KSC Semiconductor Corporation, Chelmsford, Mass., a corporation of Massachusetts
Filed Sept. 16, 1966, Ser. No. 579,992
Int. Cl. G01f *23/14*
U.S. Cl. 73—170 **3 Claims**

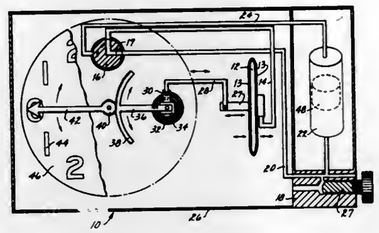


A system of ocean mapping is disclosed whereby the normal operations of fishermen drawing otter-trawl nets are utilised to collect data. A self-contained recording pressure instrument is adapted to be attached to the net headrope and handled as any other head-rope float. The instrument provides, upon return to port, a record of depth-versus-time which is correlated with position-versus-time records for the trawler obtained by other means, and compared with records from other boats to provide ever-improving bottom contour maps.

3,501,954
VERTICAL VELOCITY INDICATOR
Herbert J. Frank, 8 Country Club Road, Largo, Fla. 33540
Filed June 3, 1968, Ser. No. 733,993
Int. Cl. G01c *21/10*
U.S. Cl. 73—179 **7 Claims**

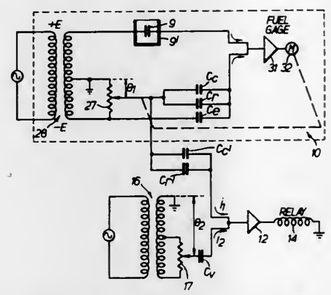
A vertical velocity indicator for aircraft capable of standard or instantaneous readings by the use of a valve

which, in accordance with preselection by the pilot, connects the diaphragm which senses atmospheric pressure



changes to a restricted orifice of a "G" responding pneumatic pump.

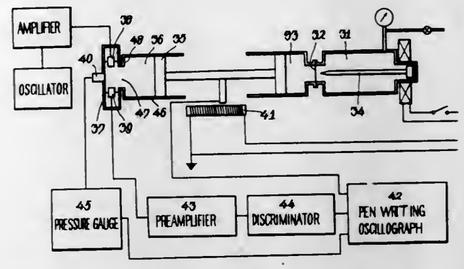
3,501,955
LOAD LIMIT CONTROL
Irving H. Cohn, Yonkers, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Feb. 23, 1968, Ser. No. 707,551
Int. Cl. G01f *23/00*
U.S. Cl. 73—304 **6 Claims**



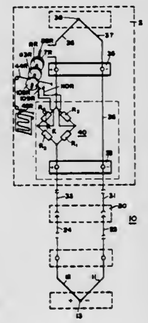
A fuel gage circuit includes a bridge circuit having a capacitive fuel tank sensor, a temperature compensating capacitor servo re-balancing means, the servo re-balancing means providing an output representative of a mass of fuel, and a temperature compensated conversion circuit responsive to the re-balancing circuit to provide an output representative of the actual volume of the fuel so as to be able to trigger a volume top-off valve when the fuel tank is full.

3,501,956
MEASURING APPARATUS FOR SUDDENLY VARYING GAS TEMPERATURES IN INTERNAL RECIPROCATING ENGINES UTILIZING ULTRASONIC WAVES
Joji Yamaga and Shuji Shibata, Tokyo, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a government corporation of Japan
Continuation-in-part of application Ser. No. 379,630, July 1, 1964. This application June 28, 1967, Ser. No. 649,529
Claims priority, application Japan, Aug. 31, 1963, 38/45,522
Int. Cl. G01k *3/10*
U.S. Cl. 73—339 **4 Claims**

A gas temperature measuring apparatus for measuring suddenly varying gas temperatures in internal reciprocating engines having therein a constant frequency sound generator discharging constant frequency sound waves into a varying temperature gas in a piston cylinder. The sound waves undergo a change in frequency when passing through the gas due to the temperature variations therein and are detected by a receiver and detector combination by which the frequency change is determined and used to determine the gas temperatures.



3,501,957
EXPENDABLE IMMERSION THERMOCOUPLE ASSEMBLY AND COMPENSATING CIRCUIT
Louis R. Jones, Jr., Huntington Valley, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania
Original application Apr. 6, 1965, Ser. No. 446,000. Divided and this application Feb. 26, 1968, Ser. No. 708,079
Int. Cl. G01k *7/14;* **H01v** *1/02*
U.S. Cl. 73—359 **4 Claims**

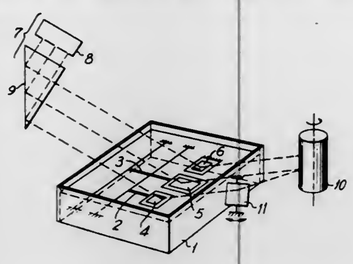


An expendable immersion thermocouple assembly for measuring the temperature of a molten metal bath including an expendable weight structure upon which a thermocouple is mounted. The weight structure is adapted to sink below the surface of the molten bath. A measuring circuit includes a pair of expendable uncompensated leadwires connected to the thermocouple. The leadwires extend out of the bath when the weight structure is immersed therein and are connected to a temperature indicator and means for adjusting the effect of the thermocouple on the temperature noted by the temperature indicator so as to eliminate any error introduced into the temperature measurement by way of the measuring circuit.

3,501,958
GRAVITY METER
Vladimir Alexeevich Kuzivanov, Ulitsa Televidenia 6/2, korpus B, kv. 24; Igor Alexandrovich Maslov, Leningradskoe shosse 104, korpus 1, kv. 6; and Igor Ilich Naumenko-Bondarenko, Ulitsa Gorkogo 29a, kv. 45, all of Moscow, U.S.S.R.
Filed Oct. 27, 1966, Ser. No. 589,874
Int. Cl. G01v *7/12, 7/16*
U.S. Cl. 73—382 **4 Claims**

A gravity meter suitable for measuring the force of gravity from a moving body is provided with at least two

pendulums placed in a damping medium and having reflective mirrors thereon for projecting light rays onto a recording instrument to produce an image constituting a graphical representation of oscillations of the pendulums. The images of the pendulum are brought into coincidence



for static conditions of the pendulums and the shape and size of the pendulums and the damping medium are selected so that the pendulums have the same identical sensitivity under static conditions and dissimilar sensitivities under dynamic conditions.

3,501,959

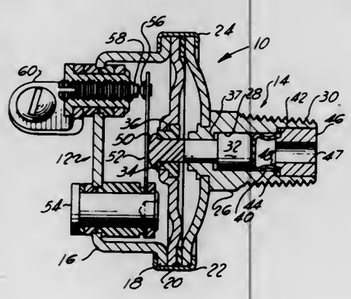
PRESSURE SENSING APPARATUS

Sherman E. Womack, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Continuation-in-part of application Ser. No. 633,006, Apr. 24, 1967. This application Feb. 11, 1969, Ser. No. 801,240

Int. Cl. G01l *7/16*

U.S. Cl. 73—395 **14 Claims**



This disclosure includes a rubber diaphragm sealed in a small diameter bore and easily expandible on the application of pressure to one side thereof for operating a pressure indicating device such as a switch or gauge with the diaphragm supported on all low pressure surfaces to prevent rupture.

3,501,960

FLUTED PRESSURE TRANSDUCER

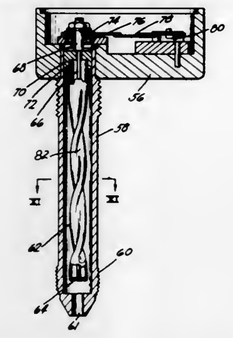
Russell E. Hightower, Albuquerque, N. Mex., and Charles B. Aufill, deceased, late of Albuquerque, N. Mex., by Paula J. Watkins, executrix, Albuquerque, N. Mex., assignors to Sparton Corporation, Jackson, Mich., a corporation of Ohio

Filed Aug. 19, 1968, Ser. No. 753,791

Int. Cl. G01l *9/18*

U.S. Cl. 73—398 **5 Claims**

The invention relates to a pressure transducer, and a fluted pressure-sensing element therefor, wherein the pressure-sensing element is of a tubular configuration having flutes spirally formed therein whereby a pressure differential acting upon either the interior or exterior wall of the sensing element causes a twisting and angular deflection of the element about its longitudinal axis proportional to the pressure differential. The trans-



ducer arrangement in accord with the invention has improved characteristics over the conventional twisted Bourdon tube, such as in increased amount of rotation for a given pressure differential, overpressure capabilities, and decreased hysteresis error.

3,501,961

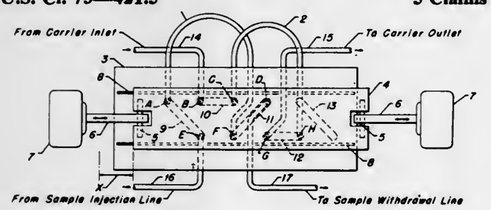
GAS SAMPLE COLLECTION APPARATUS

William L. Hable and Elwin S. Bitney, Bloomer, Wis., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 4, 1968, Ser. No. 773,207

Int. Cl. G01n *1/10, 1/22*

U.S. Cl. 73—421.5 **5 Claims**



A gas sample collection apparatus comprising two sample collection loops connected to the first of two body members of a gas sample valve body. The two body members of the gas sample valve body are in slideable contact and positionable in two relative positions. The first body member has passageways therethrough, and the second body member has channels which interconnect the aforesaid passageways in different sequences for each of the two relative positions, whereby alternately one sample collection loop is filled with sample gas while previously collected sample gas is carried from the other sample collection loop.

3,501,962

DIP-SAMPLER FOR USE IN STEEL-MAKING VESSEL

Eugene V. Abarotin and Yi-Chung Chang, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

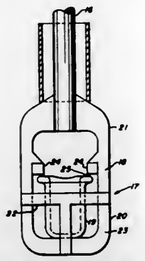
Filed Apr. 29, 1968, Ser. No. 724,921

Int. Cl. G01n *1/10*

U.S. Cl. 73—425.4 **2 Claims**

A cage composed of a yoke and basket is rigidly and coaxially carried on the lower end of a reach rod mounted to be lowered into a tiltable steel-making vessel. A crucible

is removably positioned in the basket and, when the latter is immersed in the vessel contents, collects a sample therefrom. Cooperating means on the yoke and crucible limit flotation uplift of the latter in the former. On partial rota-



tion of the crucible in the basket, disengagement of such means permits removal and replacement of the crucible. The reach rod is suspended from a jab crane for convenient manipulation.

3,501,963

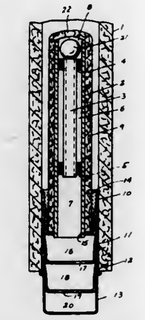
DEVICE FOR SAMPLING MOLTEN METAL

William J. Collins, Gary, Ind. (7005 Madison St., Merrillville, Ind. 46410)

Continuation-in-part of application Ser. No. 713,640, Mar. 18, 1968. This application Mar. 25, 1969, Ser. No. 810,232

Int. Cl. G01n *1/10*

U.S. Cl. 73—425.4 **10 Claims**



A molten metal sampling device of the type incorporated in the end of a cardboard tube. The specific structure comprises two concentric tubes with appropriate spacers, fixed in the receiving end of the cardboard tube handle so that two chambers with a connecting passageway are formed. A tortuous entryway is formed by a series of apertured nested cups. The device is utilized by inserting the sampler in the molten metal which flows into the chambers and passages and solidifies. Access to the sample is obtained by breaking away the surrounding structure.

3,501,964

ASSEMBLY FOR INJECTING LIQUID SAMPLES INTO THE CHAMBER OF A GAS CHROMATOGRAPHY APPARATUS

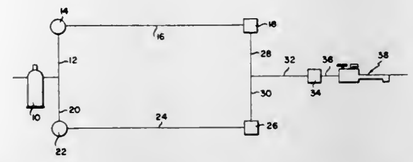
Edward L. Drummond and Michael E. Drummond, Bryn Mawr, Pa., assignors to Drummond Instrument Company, Broomall, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1968, Ser. No. 717,097

Int. Cl. G01n *1/14*

U.S. Cl. 73—425.6 **14 Claims**

An assembly for injecting liquid samples into the chamber of a gas chromatography apparatus which includes a high pressure line and a low pressure line connected at one end to a source of carrier gas. A valve permits selective gas flow from either gas line to an injector. The injector includes a disposable hypodermic syringe unit extending from a body portion having a longitudinal



bore in communication with the syringe unit. A movable member is positioned in a transverse bore communicating with the longitudinal bore, for inducing the flow of liquid into the syringe unit. A valve controls the flow of gas to the longitudinal bore.

3,501,965

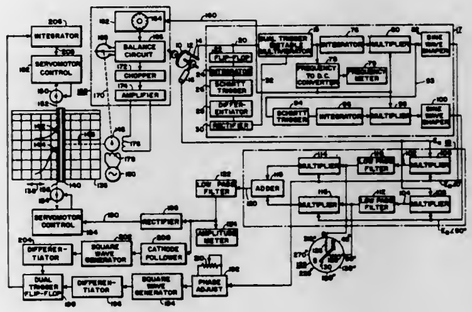
ELECTRONIC VIBRATION ANALYZING APPARATUS INCORPORATING AUTOMATIC PHASE AND AMPLITUDE RECORDING MEANS

Robert S. Morrow, Columbus, Ohio, assignor to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio

Filed June 30, 1966, Ser. No. 561,922

Int. Cl. G01m *1/16*

U.S. Cl. 73—462 **11 Claims**



Described is apparatus, usable with electronic vibration analyzing equipment for rotating bodies and the like, which automatically plots speed versus phase lag angle and vibration amplitude for a particular rotating body to provide a permanent record which will indicate those speeds which should be avoided during operation of a particular piece of equipment or during a balancing operation.

3,501,966

PHOTODYNAMIC PICKOFF MEANS HAVING A PULSE DURATION MODULATED OUTPUT

Sol Shapiro, Oakland, and Constant J. De Cotiis, Cranford, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware

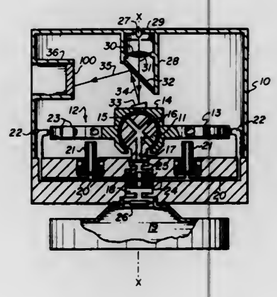
Filed Dec. 4, 1967, Ser. No. 687,860

Int. Cl. G01c *19/28*

U.S. Cl. 74—5.6 **11 Claims**

The pickoff system includes a light source and lens arrangement mounted on the housing for directing a parallel incident light beam toward one of the spin axis poles of the rotor member along the stator reference axis. A coplanar mirror is mounted on the rotor member

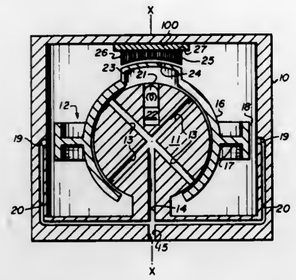
at the aforementioned spin axis pole to reflect the parallel incident light beam and form a reflected light beam which lies at an acute angle with respect to the rotor spin axis, so that the spinning rotor member causes the reflected light beam to rotate about the spin axis and trace a circular path. The center of this circular path will be free to move along two, mutually-perpendicular lines of movement which represent the agular deviations between the rotor spin axis and the stator reference axis in the first and second planes. A photodetector having four independently operable, substantially coplanar portions which are defined by a pair of mutually-perpendicular dividing lines is mounted on the interior of the housing for actuation by the rotating reflected light beam. The photodetector is so oriented that the two dividing lines are coincident with the two, mutually-perpendicular



lines of movement of the center of the circular path, so that the center of the circular path coincides with the point of intersection of the dividing lines of the photodetector and each of the four portions of the photodetector produce a series of output pulses having a pulse repetition rate corresponding to the rotor spin speed with the time durations or "widths" of all of the pulses being equal. When the rotor spin axis deviates from the stator reference axis, the center of the path traced by the reflected light beam on the photodetector will be shifted from the point of intersection of the dividing lines and the pulse widths of the four series of pulses will become unequal, so that the relative magnitudes of the pulse widths of the four series of pulses will completely define the angular position of the rotor spin axis with respect to the stator reference axis.

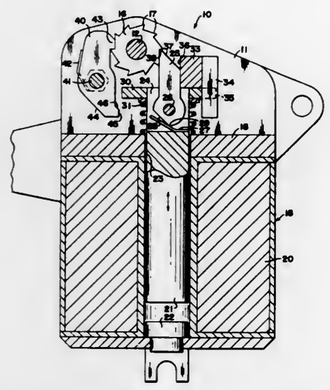
3,501,967
PHOTODYNAMIC PICKOFF MEANS HAVING A PULSE DURATION MODULATED OUTPUT
Constant J. De Cotiis, Cranford, N.J., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,552
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **12 Claims**

The pickoff system includes a light source which is mounted on the stator member and is arranged to illuminate the interior of the hollow hub portion of the rotor member. The hollow hub portion of the rotor is provided with an aperture which is spaced a distance from the rotor spin axis, so that the spinning rotor transmits a beam of light through the aperture and the light beam traces a circular path at each point along its length. A photodetector having four, independently operable, coplanar portions which are defined by a pair of mutually perpendicular dividing lines is mounted on the interior of the housing with the plane of the photodector perpendicular to the stator reference axis. The photodetector is so oriented that the two dividing lines lie in the two planes representing the two degrees of freedom of the rotor member, so that the rotating light beam traces a circular path on the photodetector when the rotor spin axis coincides with the stator reference axis. At this time, since the center of the circular path coincides with the point of intersection of the dividing lines of the photodetector, each of the four portions of the photodetector will produce a series of output pulses having a pulse repetition rate corresponding to the rotor spin speed and the time durations or "widths" of



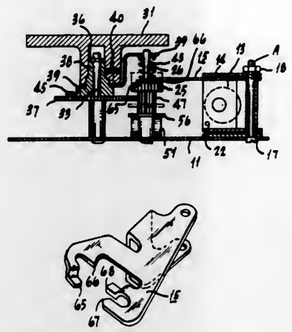
all of the pulses in the four series will be equal. When the rotor spin axis deviates from the stator reference axis, the center of the path traced by the light beam on the photodetector will be shifted from the point of intersection of the dividing lines and the pulse widths of the four series of pulses will become unequal, so that the relative magnitudes of the four pulse widths will completely define the position of the rotor spin axis with respect to the stator reference axis.

3,501,968
DRIVE MECHANISM
Gary D. Fredell, East Moline, Rock Island, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 676,264
Int. Cl. F16h *27/02*
U.S. Cl. 74—128 **9 Claims**



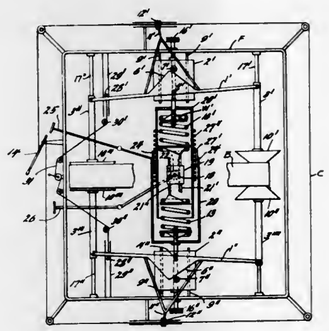
A shaft supporting a ratchet wheel is rotatably supported in a frame with a pawl reciprocating into and out of engagement with the teeth of the ratchet, thereby to impart rotation to the shaft. Lock means cooperate with the pawl and the ratchet wheel to restrict rotation of the ratchet wheel with each actuation to a predetermined amount in a single direction with the ratchet wheel being otherwise restricted from any movement in either direction.

3,501,969
STEPPER DRIVE DEVICE
Neil W. Burwell, Moorestown, John D. Callaghan, Cherry Hill, and Franklin R. Di Meo, Woodbury, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Sept. 23, 1968, Ser. No. 761,699
Int. Cl. F16h *27/02, 31/00;* **G05g** *1/00*
U.S. Cl. 74—143 **9 Claims**



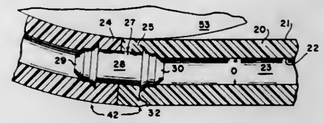
A reversible stepper drive device using a single pawl having four fixed teeth for ratcheting a stepper wheel is described. Two of the fixed teeth in opposed relation to each other are in one given plane perpendicular to the axis of the stepper wheel. The other two of the fixed teeth are in opposed relation to each other and are in a second different plane parallel to the one given plane. The pawl is energized by a single solenoid and a spring to move between two positions and return. The stepper wheel when positioned in the one given plane engages the first pair of teeth and is driven in one direction by the pawl and when positioned in the second plane engages the second pair of teeth and is driven in the reverse direction by the pawl.

3,501,970
INFINITELY VARIABLE BELT TRANSMISSION MEANS
Ralph C. Lee, 1901 Wyoming Ave. NW., Washington, D.C. 20009
Filed Sept. 2, 1966, Ser. No. 577,054
Int. Cl. F16h *55/56*
U.S. Cl. 74—230.17 **15 Claims**



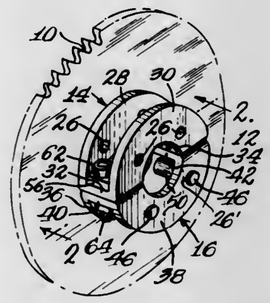
A variable speed control for two parallel shafts each having a pulley made of pulley elements which may be conical and interconnecting means for the pulley elements to make one pulley increase in size while the other reduces in size and a belt interconnects the pulleys, the invention providing for compensation for the difference in effective lengths of an ideal belt with respect to the varying diameter pulleys with such interconnecting means including cam means for controlling the change of size of the pulleys and yieldable means acting with the interconnecting means to maintain the desired force between the pulleys and the belt.

3,501,971
ENDLESS BELT ASSEMBLY WITH IMPROVED INSERT COUPLING
Arnold G. Peterson, Sunapee, N.H., assignor to L. M. & L. Corporation, Claremont, N.H., a corporation of New Hampshire
Filed Mar. 25, 1968, Ser. No. 715,869
Int. Cl. F16g *3/07*
U.S. Cl. 74—231 **6 Claims**



An improved continuous belt assembly suitable for use in high velocity, moderate-load power transmission applications comprising, in combination, a novel internal coupling means and a tough extensible, flexible and tear resistant polymeric belting. The coupling means includes a continuous, circular, external rib having an outer holding edge proximate each opposite end thereof, such edges being adapted to cut into and grip the interior walls of the belting when the coupling means is inserted into hollow ends of the belting and the belting is subsequently mounted on machinery. When made of rigid material, the sharp edges are joined by a connector shaft of at least about 20% larger than the inside diameter of the hollow tubular belting, thus providing means for maintaining the outer diameter of the elastomeric belt uniform between the points at which the aforesaid sharp edges cut into the belt. When made of flexible material, the diameter of the connector shaft may be equal to the inside diameter of the tubing.

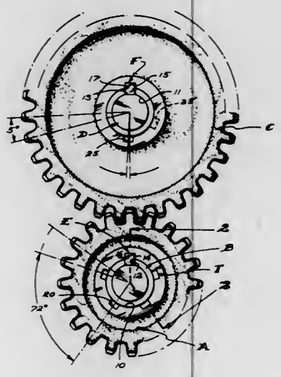
3,501,972
HUB FOR CHAIN SPROCKET OR THE LIKE
John H. Morrow, Oak Lawn, and Charles Mednick, Posen, Ill., assignors to Magnacraft Manufacturing Company, Chicago, Ill., a co-partnership
Filed Mar. 26, 1968, Ser. No. 716,135
Int. Cl. F16h *55/30;* **B60b** *27/06*
U.S. Cl. 74—243 **10 Claims**



An improved hub member for use with a chain sprocket or the like for fixedly mounting the latter on a shaft, the hub including a pair of stampings each of which is formed

to comprise one-half of the hub member, one of the hub half portions being permanently affixed to the sprocket member by rivets or other suitable means and the other hub half portion being releasably secured to the first hub half portion by screws or the like whereby the two hub half portions are clamped on a shaft in order to fixedly mount the sprocket thereon.

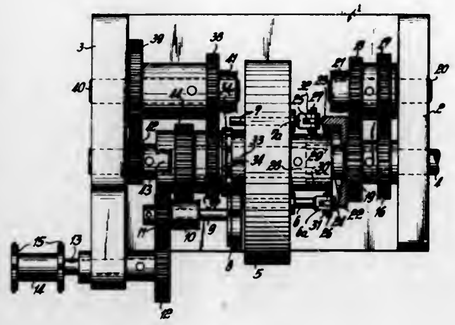
3,501,973
GEAR TIMING MEANS
Ernest R. Casale, Hacienda Heights, Calif. (% Casale Engineering, 161 8th Ave., City of Industry, Calif. 91744)
Filed July 29, 1968, Ser. No. 748,274
Int. Cl. F16h *35/06, 35/08;* **F011** *1/00*
U.S. Cl. 74—395 **11 Claims**



A means for adjusting the timing or relative rotative position of a pair of shafts driven by a pair of related meshed gears by fractions of the circumferential extent of one tooth of one and/or the other of said gears, which means includes a keyway in the shaft on which each gear is mounted, a plurality of circumferentially spaced keyways in the central shaft receiving opening in each gear and keys in keyways in the shafts and each engaged in a selected predetermined keyway in its related gear, the keyways in at least one gear being equally spaced circumferentially of the gear and even in number if the number of teeth is uneven and uneven in number if the number of teeth is even. The keyways in one gear, if desired, are circumferentially offset a distance equal to a predetermined fraction of the circumferential relative movement between the shafts effected by movement of the key related to the other gear from engagement in one keyway in the gear in the next adjacent keyway therein.

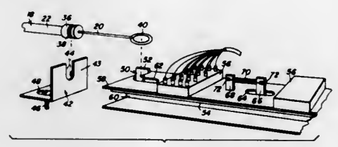
3,501,974
APPARATUS FOR TRANSPORTING CINEMATOGRAPHIC FILM
Albert Straub, Stuttgart-Bad Cannstatt, Germany, assignor to Robert Bosch Elektronik und Photokino G.m.b.H., Stuttgart, Germany, a corporation of Germany
Filed May 9, 1968, Ser. No. 727,928
Claims priority, application Germany, May 10, 1967, B 92,448
Int. Cl. F16h *27/06*
U.S. Cl. 74—436 **9 Claims**

Apparatus for transporting cinematographic film at periodically varying intervals comprises a flywheel (**5**) which is rotated at 30 revolutions per second (television frame frequency) and carries two axially parallel reciprocable driver pins (**6, 7**) for a Geneva wheel (**8**) which is indexible by the pins to drive the film transporting sprocket (**14**) at 24 frames per second whereby the dwells between successive indexing movements of the wheel alternately equal 1/30 and 1/20 of a second. A cam (**23**) which has a face extending along an arc of 150 degrees is co-



axial with the flywheel and receives motion from the drive (**4**) for the flywheel to rotate at 24 revolutions per second. That driver pin which engages with the face of the cam is operative to index the wheel in response to rotation of the flywheel.

3,501,975
BOWDEN WIRE SWITCH OPERATING MECHANISM
William Groemminger, Jr., Fairport, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 25, 1968, Ser. No. 762,494
Int. Cl. F16c *1/10*
U.S. Cl. 74—501 **6 Claims**

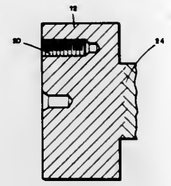


A Bowden wire arrangement is utilized to operate a gang of switches on a television chassis, means being provided to enable quick and easy attachment and detachment of the Bowden wire arrangement from the chassis, replacement of the Bowden wire arrangement being made without disturbing initial adjustment of parts.

3,501,976
CAMSHAFT
Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan
Filed Feb. 24, 1966, Ser. No. 529,831
Int. Cl. F16h *53/00, 53/02*
U.S. Cl. 74—567 **4 Claims**

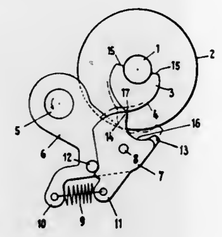
Camshafts for internal combustion engines are made of a high carbon high chromium alloy containing from about 1.3% to about 3.1% carbon, from about 15% to about 35% chromium with the remainder iron, with or without up to about 3.5% silicon, manganese and other residuals. The alloy is cast, cooled so quickly that a relatively small number of relatively large primary

chromium carbide particles are formed and widely dispersed in a matrix of austenite containing a solid solution of chromium and carbon. Then large numbers of relatively small particles of chromium carbides are precipitated from the matrix and distributed throughout the spaces between the large primary carbon particles leaving the remainder of the matrix containing carbon and susceptible to subsequent hardening. Then the casting is hardened by heating and subsequent quenching at such temperature and at such time that the matrix is substantially converted to martensite without significantly



changing the carbide particles. The cams may be formed of a metal different from the main body of the shaft, and cast thereon by forming a solid skin over previously poured metal, then remelting the skin to form a single mass of metal by pouring the second metal on the skin.

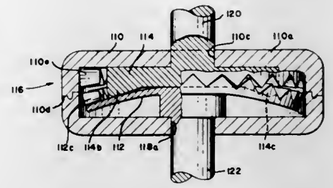
3,501,977
CARDIOID CAM RESETTING DEVICE
Werner Wahli, Bern-Buempliz, and Ernst Hofer, Spiegel, near Bern, Switzerland, assignors to W. Wahli A.G., Bern-Buempliz, Bern, Switzerland, a corporation of Switzerland
Filed May 20, 1968, Ser. No. 730,392
Int. Cl. F16h *53/00;* **G06c** *15/42*
U.S. Cl. 74—567 **9 Claims**



A zero resetting device has a cardioid cam rotatable about a spindle and a zero reset element operated by pivoting about a spindle parallel to the cam spindle. The zero reset element is formed by two members each having feeler projections for cooperation with the periphery of the cardioid cam. The second of the two members is resiliently and displaceably coupled to the first member.

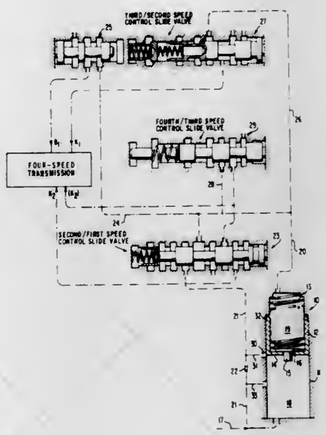
3,501,978
DIFFERENTIAL DRIVE MECHANISM
Robert L. Ferrell, Bothell, Wash., assignor to Digilog Electronics Corporation, Seattle, Wash., a corporation of Washington
Filed July 10, 1967, Ser. No. 652,144
Int. Cl. F16h *35/00*
U.S. Cl. 74—640 **7 Claims**

Two crown gears, having different numbers of gear teeth, are juxtapositioned for interengagement of their respective gear teeth. A rotatable member bears against one of the crown gears to effect sequential interengagement and dis-interengagement of the gear teeth. One



crown gear may be flexible and deflected by a rotatable cam to effect interengagement and dis-interengagement of the gear teeth.

3,501,979
ARRANGEMENT FOR THE AUTOMATIC SHIFTING OF A CHANGE-SPEED TRANSMISSION FOR VEHICLES, ESPECIALLY FOR MOTOR VEHICLES
Hans-Joachim M. Forster and Ulrich Eltze, Stuttgart-Riedenberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 2, 1966, Ser. No. 598,727
Claims priority, application Germany, Dec. 4, 1965, D 48,833
Int. Cl. F16d *11/00;* **F16h** *3/44, 57/10*
U.S. Cl. 74—753 **25 Claims**

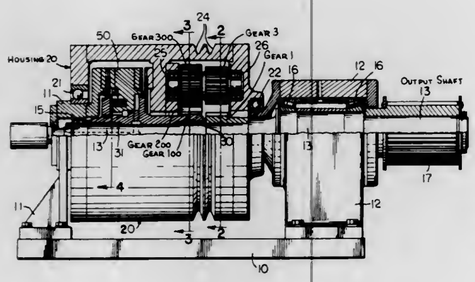


An arrangement for the automatic shifting of a change-speed gear for vehicles, in which the individual speeds are adapted to be selectively engaged by engageable devices such as brakes or clutches actuated by a pressure medium supplied by way of slide valves, whereby the working pressure of the pressure medium is selectively supplied to the respective slide valves from a common receiver by way of the receiver discharge line to which are connected several servo devices controlling the engagement of the brakes and clutches.

The receiver piston also controls a by-pass line for a throttle in the feed line to the shifting valves. In the alternative, an additional control slide valve which is con-

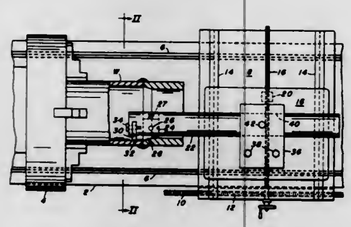
trolled by the flow in the receiver discharge line, may be connected with the receiver to control the by-pass of this throttle and also the by-pass of a measuring throttle forming part of the control of this additional control slide valve.

3,501,980
GEAR ARRANGEMENT
Robert E. Arick, Fort Wayne, Ind., assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio
Filed Apr. 8, 1968, Ser. No. 719,552
Int. Cl. F16h *1/28, 3/44*
U.S. Cl. 74—781 **9 Claims**



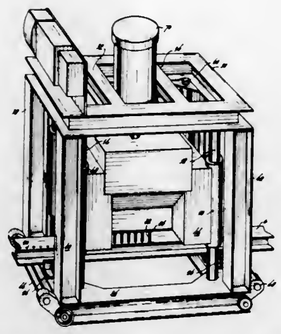
A rotatable housing is coupled to an output shaft through two gear trains having respective ratios greater than and less than unity. The ratio between the housing and output shaft is the difference between the two ratios of the gear trains, and may be made relatively high. The housing may also be connected through the gear trains to the output shaft for a unity ratio.

3,501,981
APPARATUS FOR MAKING TUBULAR MEMBERS
Samuel Katunich, Baldwin Borough, and Herbert J. Peterson, McKeesport, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 677,891
Int. Cl. B23b *3/28, 39/00;* **B23k** *31/02*
U.S. Cl. 77—3 **6 Claims**



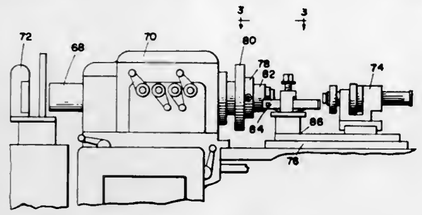
Apparatus for removing weld flashes from the inner and outer surface of a tubular workpiece including a boring bar having its axis substantially parallel to the axis of the workpiece with a transverse cutter transverse guide adjacent one end of the boring bar, and resilient means urging said boring bar transversely toward the workpiece so that said cutter and guide bear against the workpiece as it rotates.

3,501,982
MULTIPLE HEAD DRILLING APPARATUS
Ernest K. Haley, 134 Northwestern Parkway, Louisville, Ky. 40212
Filed May 31, 1968, Ser. No. 733,657
Int. Cl. B23b *39/18*
U.S. Cl. 77—24 **10 Claims**



A multiple head drilling apparatus of the type used in drilling a plurality of holes through a workpiece such as a steel beam and including a plurality of drilling chucks which are movable with respect to each other so as to vary the distances between holes being drilled.

3,501,983
METHOD AND APPARATUS FOR MODULE ALIGNMENT OF OCULAR SYSTEMS
Patrick J. Cassidy and Milton L. Quammen, Philadelphia, Pa., assignors to the United States of America as representated by the Secretary of the Army
Filed Feb. 23, 1966, Ser. No. 531,328
Int. Cl. B23b *1/00*
U.S. Cl. 82—1 **2 Claims**

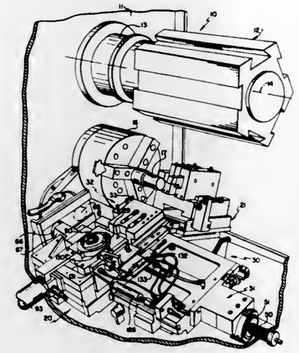


Method for obtaining optical and mechanical concentricity of the module assemblies of an ocular system by machining and apparatus therefor. Mounted upon a lathe carrying a cutting tool is a collimator, a light source, a microscope and the particular assembly to be aligned. The collimator image is transmitted through the assembly to the focal plane of the assembly. The geometrical optical axis of the assembly is adjusted to be concentric with the lathe axis. The microscope focal plane is positioned to the focal plane of the assembly, positioning the cutting tool with respect to the assembly. The precise reference of the cutting tool face and microscope focal plane is pre-positioned to the established reference focal distance.

3,501,984
THREADING ATTACHMENT
Walter A. Hofmann, Lyndhurst, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 15, 1966, Ser. No. 579,777
Int. Cl. B23g *1/00*
U.S. Cl. 82—5 **20 Claims**

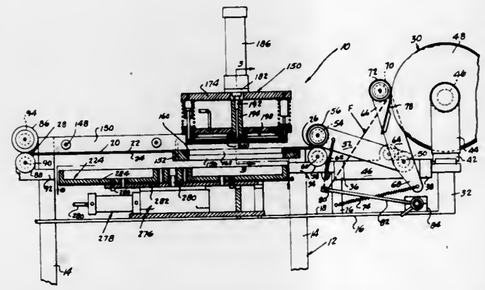
Apparatus for threading a workpiece includes a machine tool having a rotatable spindle for rotating a workpiece

and a cross-slide for movement toward and away from the axis of rotation of the workpiece. The apparatus includes a threading attachment mounted on the cross-slide. The threading attachment includes a longitudinal slide movable parallel to the axis of rotation of the workpiece and a drive mechanism for effective movement of the



longitudinal slide. The drive mechanism includes a clutch having an input clutch member drivingly connected with the drive of the spindle and an output clutch member movable with the cross-slide so that the output clutch member is movable into a position adjacent to the input clutch member upon movement of the cross-slide to effect formations of threads in the workpiece.

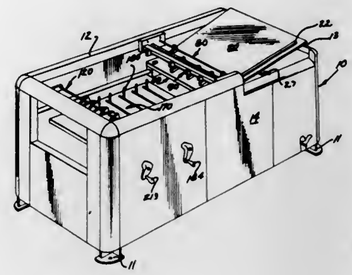
3,501,985
BLANKING THIN GAUGE MATERIAL
John Baran, P.O. Box 207, Kensington, Conn. 06037
Filed Oct. 31, 1967, Ser. No. 679,302
Int. Cl. B26d *7/06;* **B26f** *1/14*
U.S. Cl. 83—88 **5 Claims**



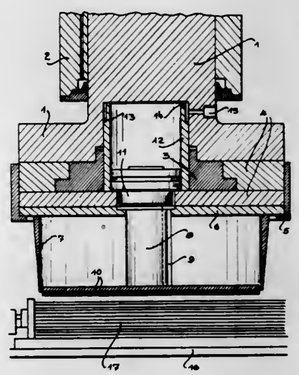
Foil blanking apparatus having a repetitive die and cutter engageable intermittently with an advancing strip of material, and having an indexed tray for sequential stacking of finished blanks.

3,501,986
SLITTING AND SCORING APPARATUS
James A. Black, 13700 Sparta NW., Kent City, Mich. 49330
Filed Oct. 18, 1967, Ser. No. 676,264
Int. Cl. B26d *7/16*
U.S. Cl. 83—94 **26 Claims**

A slitting and scoring apparatus having a feedboard from which the sheets of stock are adapted to be drawn by means of a reciprocating table which slides from a first position generally beneath the feedboard to a second position generally to the side of it. The table grips the sheets by means of vacuum apertures thereon and draws them beneath the series of laterally aligned scoring or slitting knives. A pair of vacuum ports are provided adjacent a shoulder on the feedboard for sensing proper stock alignment by means of a vacuumstat. The sensing of proper alignment enables operation of the knives and, additionally, the sucker assembly which removes the sheets from the table at the end of its delivery stroke.

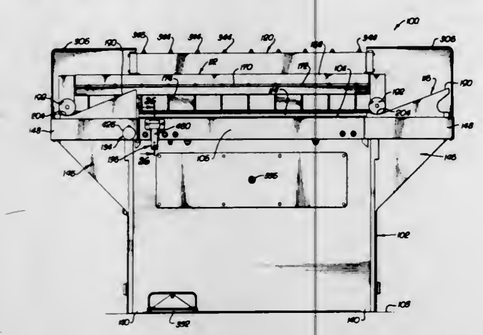


3,501,987
PROCESS AND APPARATUS FOR THE CUTTING OR PUNCHING OF SECTIONS FROM PILES OF SHEETS
Willi Schneider, Adliswil, Zurich, Switzerland, assignor to Trey, Wiederkehr & Cie, Zurich, Switzerland
Original application Sept. 9, 1964, Ser. No. 395,262, now Patent No. 3,344,697. Divided and this application July 21, 1967, Ser. No. 695,294
Claims priority, application Switzerland, Nov. 8, 1963, 13,749/63
Int. Cl. B26d *7/04, 7/06*
U.S. Cl. 83—125 **7 Claims**



Apparatus is provided to exert an adjustable pressure on a stack of sheets during a blanking operation to insure dimensional accuracy between the topmost and bottommost blanks. A pressure member having the same contour as the blank to be punched is movably mounted within a hollow die and an adjustable pressure is exerted on the member by a fluid-actuated drive means.

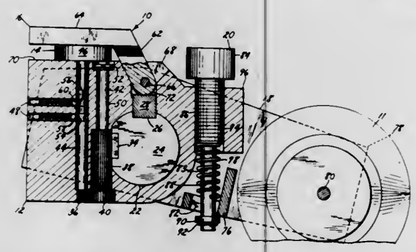
3,501,988
GUILLOTINE-TYPE PAPER CUTTER
Dino A. Morelli, Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed May 31, 1966, Ser. No. 554,029
Int. Cl. P26d *5/12*
U.S. Cl. 83—171 **16 Claims**



A paper cutter of the guillotine type which, for a given lift-size capacity, is considerably smaller and lighter than prior paper cutters of this type and which has a low profile so that the operator, from his station at the front of the machine, can readily observe the lift of paper and the operation of components, such as the backstop, rearwardly of the knife and clamp.

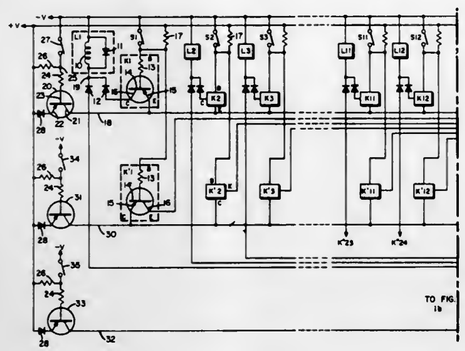
The paper cutter is hydraulically powered and all hydraulic components are located below the table to prevent contamination of the upper surface of the table with hydraulic fluid, the same being true of all of the lubricating systems. The knife bar is guided at its ends by laterally sloping ramps which resist only downward forces acting on the knife bar, so that the knife bar can disengage the ramps in the event that the knife encounters an obstruction. The knife-bar drive means includes a yieldable hold-down means normally maintaining the knife bar on the ramps. The ramps are upturned at their lower ends to decelerate the knife bar at the lower end of its stroke.

3,501,989
ADJUSTABLE SLITTER HOLDER
Michael Lukaczyn, Jr., 60 Gavin St., Yonkers, N.Y. 10701
Filed Jan. 18, 1968, Ser. No. 698,911
Int. Cl. B26d *1/22*
U.S. Cl. 83—504 **4 Claims**



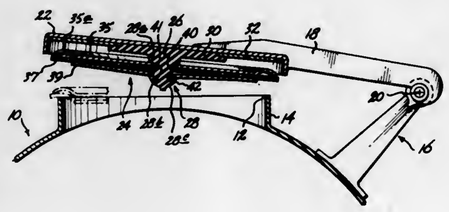
Adjustable slitter holder for use in printing presses paper processing machine, web treating equipment or any sheet-like material which is held by a moving cylinder, such as a sheet fed offset press, or the like in which the slitting element is minutely shiftable in position with relation to the web being treated by quickly, easily and precisely manipulatable adjustments, laterally and vertically of the web and is lockable in position laterally of the web. Slitting includes perforating and scoring.

3,501,990
TRANSISTORIZED SYSTEM FOR COUPLING AND UNIFICATION IN AN ELECTRIC PIPE ORGAN
Louis P. Jappe, P.O. Box 391, and George L. Garber, 1362 W. 5th St., both of Winona, Minn. 55987
Filed Feb. 21, 1968, Ser. No. 707,185
Int. Cl. G10b *3/10*
U.S. Cl. 84—337 **9 Claims**



Intra and interdivisional coupling as well as unification is provided in an electric pipe organ by the use of transistor circuits. A host of transistors are arranged and connected in groups or sets to serve as gates between the manually operated keys and the organ pipe coils. The transistor gates are controlled or enabled by control transistors which are selectively set to the operable condition by tabs or stop switches which are manually operated by the organist. Interconnections for coupling within the divisions and between the divisions and for unification among the various ranks of pipes produced by the transistor circuits result in a myriad of possible combinations which the organist can select so that even a relatively small organ has a degree of versatility which heretofore has been difficult to attain.

3,501,991
TONE HOLE CLOSURE MECHANISM FOR WIND INSTRUMENTS
Eben H. Carruthers, P.O. Box 40, Warrenton, Oreg. 97146, and Robert G. Cunningham, 2740 Elinor St., Eugene, Oreg. 97403
Filed Feb. 26, 1968, Ser. No. 708,194
Int. Cl. G10d *7/00*
U.S. Cl. 84—380 **16 Claims**



Mechanism for closing the tone hole of a wind instrument comprising a carrier movable toward and away from the tone hole, and a cover assembly supported through

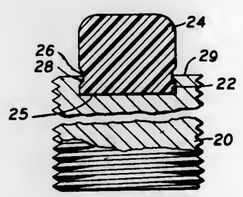
an elastomer post on the carrier. The cover assembly comprises stacked discs including an intermediate disc pad which is somewhat resilient, and forms a seal on the annulus that defines the tone hole. A backup disc backing up the disc pad recedes from the disc pad adjacent the region where it makes contact with such annulus. The elastomer post accommodates limited universal tilting of the cover assembly, whereby it can seek the plane of the annulus defining the tone hole.

3,501,992
APPARATUS FOR ELECTRONICALLY TUNING AN ELECTRIC GUITAR
Peter E. Osborn and Weldon Creamer, San Leandro, and Herbert W. Ferrell, Hayward, Calif., assignors to Tune-Tronics, Inc., San Leandro, Calif., a corporation of California
Filed Aug. 24, 1966, Ser. No. 574,788
Int. Cl. G10g *7/02*
U.S. Cl. 84—454 **3 Claims**



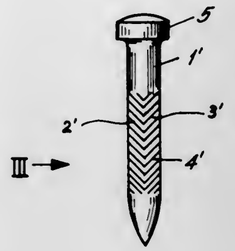
Apparatus for electronically tuning an electric guitar comprising means for producing oscillations at a selected frequency lying within the fundamental frequency range of said electric guitar, sound reproducing means for rendering said oscillations audible, and means for coupling said oscillations to said sound reproducing means.

3,501,993
SETSCREW WITH ROTATABLE PLASTIC END
Henry F. Swenson, 22 Homehill Lane, Roseland, N.J. 07068
Filed Dec. 17, 1968, Ser. No. 784,317
Int. Cl. F16b *35/00*
U.S. Cl. 85—1 **5 Claims**



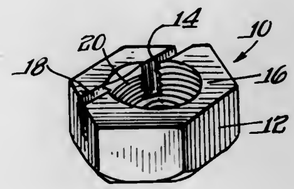
A setscrew is provided with a protruding resilient end member such as nylon, which end member is independently rotatable in or on the shank or body portion of the setscrew. This resilient portion is rotatably mounted and permits the body of the setscrew to be advanced in a hub until the resilient end portion is brought against a threaded or curved portion which is to be secured and to be tightened thereagainst without having the face of the protruding resilient end destroyed or deformed by abrading during the rotation of the setscrew.

3,501,994
ANCHORING ELEMENT HAVING OBLIQUE GRIPPING INDENTATIONS
Kurt Biermann, Triesen, Liechtenstein, and Walter Hummel, Rankweil, Austria, assignors to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed May 23, 1967, Ser. No. 640,647
Claims priority, application Germany, June 21, 1966, H 59,726
Int. Cl. F16b *15/06*
U.S. Cl. 85—21 **2 Claims**



An anchoring element for anchoring materials in hard surfaces comprsing a shank portion which is pointed at one end and an impact receiving head. The shank portion is provided with knurling in the form of two groups of indentations extending obliquely in opposite direction with respect to the axis of the shank with the indentations of each group extending throughout substantially half the circumference of the shank.

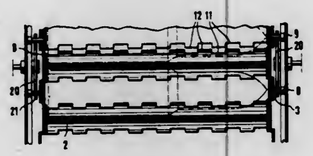
3,501,995
THREAD-CUTTING NUT
James Curtis Lanius, Jr., Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 2, 1968, Ser. No. 780,358
Int. Cl. F16b *37/00*
U.S. Cl. 85—32 **10 Claims**



This invention relates generally to thread-cutting nuts and the embodiment disclosed herein contemplates a conventional nut body having internal thread convolutions. Completely traversing the clamping side of the nut body is a slot or recess which, at said clamping side, is substantially tangent to the immediately adjacent thread

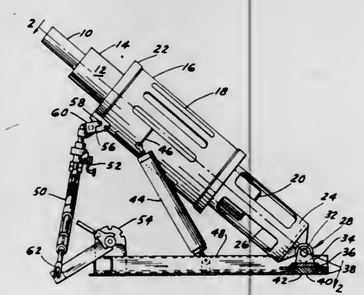
convolution. The slot has a depth which is sufficient to cut a full thread form in a shank or stud member and is inclined from the face of the nut toward the nut axis and terminates short of said axis. With this slot arrangement, a cutting edge is produced for effectively generating a full thread form on the periphery of an unthreaded stud member.

3,501,996
MAGAZINE FOR GUNS BUILT INTO ARMOURED CUPOLAS
Herbert Lipp and Adolf Nordmann, Dusseldorf, Germany, assignors to Rheinmetall G.m.b.H., Dusseldorf, Germany, a company of Germany
Filed Jan. 19, 1967, Ser. No. 610,429
Claims priority, application Germany, Jan. 26, 1966, R 42,487
Int. Cl. F41f *9/06*
U.S. Cl. 89—34 **4 Claims**



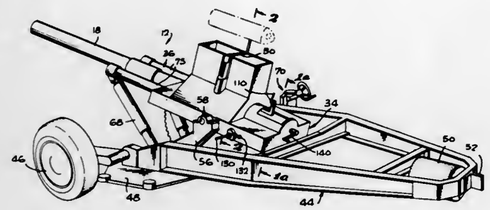
A magazine for guns, socket throwers or the like built into armoured cupolas, comprising holding members which are articulated together and in which the cartridges lying parallel to each other are fed in guides in the form of a loop to the loading mechanism, said holding members being trough-shaped on both sides of a plane extending at right angle to the feed path and comprising at their edges which are parallel to the cartridge axis serrated recesses and projections in such a manner that at the reversal points of the guides the projections of one holding member can engage in the recesses of the adjacent holding member.

3,501,997
DYNAMIC FORCE ATTENUATOR FOR A MORTAR
Robert F. Winsen, Oak Park, and Eugene C. Molnar, Warren, Mich., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 21, 1968, Ser. No. 714,868
Int. Cl. F41f *19/06*
U.S. Cl. 89—44 **3 Claims**



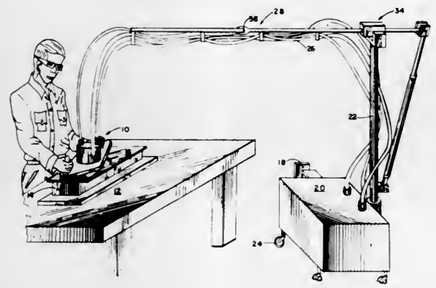
A mortar which utilizes an attenuating mechanism to sharply reduce the peak impact force of recoil. A volumetrically compressible material which surrounds the mortar tube absorbs the recoil force resulting in a substantially reduced counter-recoil force. The attenuating material is compressed against a housing by a compressing means which is connected to the tube.

3,501,998
OPEN CHAMBER BREECH MECHANISM WITH EXPLOSION ACTUATED CYLINDER
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 31, 1967, Ser. No. 664,829
Int. Cl. F41d *5/04;* **F41f** *11/06*
U.S. Cl. 89—156 **14 Claims**



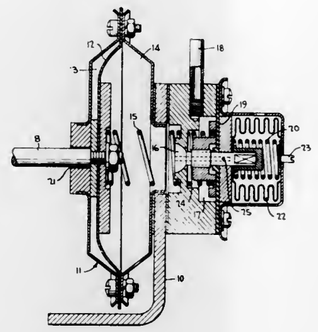
An open chamber breech mechanism having a rotary open chamber carrier or cylinder, and explosion actuated means for driving the cylinder to ammunition infeed, firing, and ejection positions in response to firing of rounds in the mechanism.

3,501,999
PORTABLE HAND MILL
Arthur E. Parks, Azle, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,442
Int. Cl. B23c *1/20;* **F16d** *31/06*
U.S. Cl. 90—12 **5 Claims**



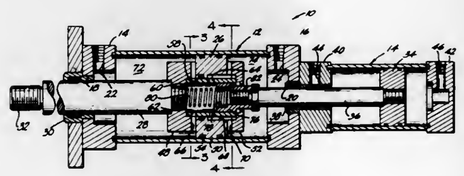
A portable hand mill for machining metals characterized by an exceptionally high power to weight ratio for machines of its class. It is further characterized by an inherent capacity for precluding development of operational chatter and vibration in its milling cutter by its smooth torque output and by modulation of the flow of power from its course, through a torque-shaft and into the cutter. Generally, the apparatus comprises a hydraulic power source for pumping hydraulic fluid at high pressure into a uniquely efficient hydraulic motor or rotary actuator of the radial-ball-piston-drive type, a suitable housing, hand grips, control switch, bearings, end-mill or other suitable milling cutter, cutter guide and a fly-wheel for regulating the speed and uniformity of its torque shaft and cutter, thereby providing an energy reservoir for inertially achieving smooth flow of power.

3,502,000
ADJUSTING DEVICE FOR THROTTLE VALVES
Christoph Heinrich Voges, 14 Algermissen Markt Str. 3201, Algermissen uber Hildesheim, Germany, and Gerd Johren, Kurt Schumacher Ring 29, Wolfsburg 318, Germany
Filed Mar. 10, 1967, Ser. No. 622,230
Claims priority, application Germany, Mar. 11, 1966, 1,526,548
Int. Cl. F15b *13/042, 11/10;* **F02d** *11/08*
U.S. Cl. 91—47 **1 Claim**



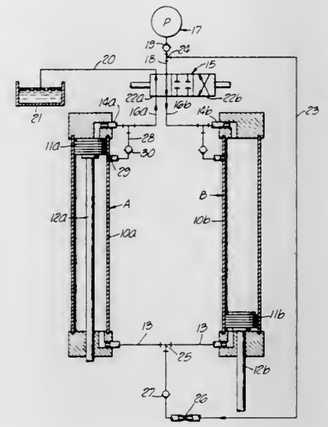
An adjusting device for the throttle valves for the carburetors of internal combustion engines operating in dependence on the underpressure of the suction pipe to the engine and effective independently of the altitude of the motor vehicle.

3,502,001
FLUID OPERATED CYLINDER
William L. Moore, 560 S. Ann Arbor St., Saline, Mich. 48176
Filed Dec. 6, 1967, Ser. No. 688,464
Int. Cl. F15b *13/02, 9/10, 13/04*
U.S. Cl. 91—49 **4 Claims**



A fluid-actuated cylinder for use in applying rectilinear power strokes wherein a minimum volume of fluid is utilized. The cylinder contains a piston which has a passageway therethrough for flow of fluid through the piston when the latter is moved under no load conditions so that no exhausting of fluid from the cylinder during such movement is necessary. A spool valve is positioned in the passageway for movement under predetermined load conditions to a position to close the passageway. A mechanism is connected to the spool for moving the piston in either direction with the passageway open under no load conditions, and for moving the spool to a closed position when the pre-established load condition is encountered. The cylinder is ported at opposite ends to permit ingress and egress of working fluid during the time periods when the spool valve is moved to the closed position.

3,502,002
MEANS FOR SYNCHRONIZING A PAIR OF HYDRAULIC POWER CYLINDER ACTUATORS
Marvin E. Whiteman, Jr., Northridge, Calif., assignor to Whiteman Manufacturing Company, Pacoima, Calif., a corporation of California
Filed Apr. 2, 1968, Ser. No. 718,098
Int. Cl. F01l *15/12;* **F15b** *15/22, 7/10*
U.S. Cl. 91—178 **8 Claims**

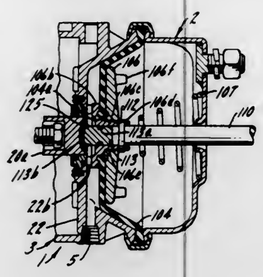


Means for synchronizing a pair of hydraulic power cylinder actuators and mutually slaving the operation of one to the other when it acts as the master, the cylinder of each actuator having a piston power delivery element therein. The cylinders of the actuators are connected for series operation by a flow connection between one set of the cylinder ends, while the other set of cylinder ends, are respectively provided with an inlet-outlet connection for the admission of fluid when the actuator operates as the master, and exhaust of fluid when it operates as a slave unit. Motion of the master piston is transmitted hydraulically through a make-up fluid which fills the space of the flow connection and connected cylinder portions, a venting one-way by-pass being provided at the inlet-outlet connection ends of the cylinders, controlled by the piston so as to open and permit replenishment flow of make-up fluid to compensate for leakage and assure complete filling of the make-up fluid space so that the slave piston will always have a full stroke and be synchronized with the operation of the piston movement of the actuator which is functioning as the master unit.

3,502,003
BRAKE ACTUATOR AND OVERTRAVEL ASSEMBLY
Harold L. Dobrikin, Highland Park, and Boleslaw Klimek, Des Plaines, Ill., assignors to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed May 8, 1967, Ser. No. 636,959
Int. Cl. F01b *7/00, 19/02;* **F16j** *1/10*
U.S. Cl. 92—63 **5 Claims**

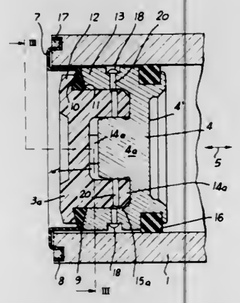
A brake actuator including an actuator arm, service and emergency chambers having elements for moving the arm through its normal travel in brakes-on direction,

there being a slidable engagement between the actuating arm and some of said elements, an extension of said arm



being exposed for engagement by an emergency brake actuating means for further movement of said actuating arm in said direction.

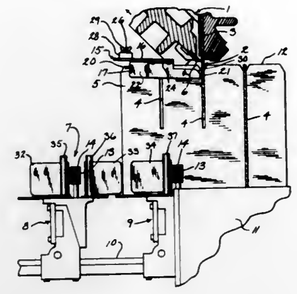
3,502,004
PISTON-AND-CYLINDER ARRANGEMENT FOR A WHEEL BRAKE
Gert Schrader, Walldorf, Hesse, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed July 9, 1968, Ser. No. 743,490
Claims priority, application Germany, July 21, 1967, T 34,371
Int. Cl. F16j *1/10, 15/18, 15/50*
U.S. Cl. 92—129 **5 Claims**



A piston for an automotive wheel brake having two telescopingly interfitted relatively movable parts, the front body being composed of synthetic resin and bearing against the brakeshoe while the rear part is of metal and is acted upon by the hydraulic fluid. An inner periphery of an elastomeric sealing cuff for sealing the brake against influx of contaminants is clamped between these parts.

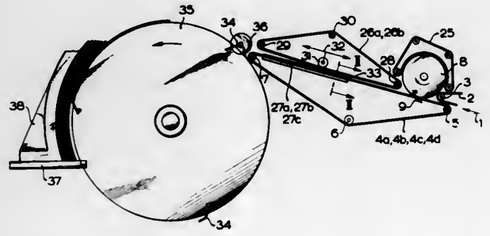
3,502,005
TOP GUIDE FOR MOVING PARTITION STRIPS IN PARTITION ASSEMBLY MACHINE
James L. Davis, Somerville, N.J., assignor, by mesne assignments, to Cleveland Container Corp., a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,208
Int. Cl. B31b *11/02*
U.S. Cl. 93—37 **4 Claims**

The top guide is made up of a transverse web with a pair of lateral guide plates subtending side-by-side from the top web to define between them a pasageway for the upper portion of a partition strip. The top guide is adjustably mounted on a transverse bar on a partition assembly



machine at the threshold to the assembly point of the moving partition strip with a transverse partition strip.

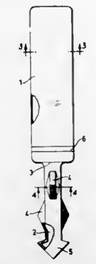
3,502,006
DELIVERY DEVICE FOR USE WITH BAG-MAKING MACHINES
Arno Finke, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher, Lengerich, Westphalia, Germany
Filed Mar. 18, 1968, Ser. No. 713,775
Claims priority, application Germany, Apr. 6, 1967, W 43,709
Int. Cl. B65h *33/00, 29/68*
U.S. Cl. 93—93 **5 Claims**



In a delivery device for use with bag-making machines for making paper or plastics materials bags, the bags made by the bag-making machine are deposited in a vertical position on a delivery table by means of a delivery cylinder, which is provided with grippers, and are combined in stacks on the delivery table. The delivery cylinder is preceded by means for collecting and superimposing two or more bags and for decelerating the resulting sets of bags. The output speed of the bag-making machine is selected to correspond to the product of the peripheral speed of the delivery cylinder and the number of bags in each set of bags.

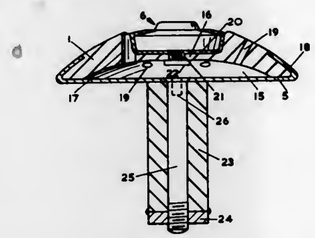
3,502,007
ROAD MARKER
Ingvar John Rune Andersson, Marsgatan 4, Halsingborg, Sweden
Filed July 13, 1967, Ser. No. 653,085
Claims priority, application Sweden, Jan. 23, 1967, 953/67
Int. Cl. E01f *9/01;* **E01c** *23/16;* **G09f** *9/00*
U.S. Cl. 94—1.5 **5 Claims**

A road shoulder marker is disclosed which includes a flexible upright portion connected to a shaft portion for insertion into the ground. The entire marker is hollow and is constructed of a plastic material. The upright portion is relatively thin and flexible and may be of differ-



ent cross section such as rectangular or circular while the shaft portion is relatively rigid and includes anchoring protrusions positioned therearound at the bottom thereof.

3,502,008
REFLECTING ROAD STUD
Robert Stuart Macrae, Beacon House, Beacon Way, Banstead, Surrey, England
Filed Nov. 29, 1967, Ser. No. 686,479
Int. Cl. E01f *9/00*
U.S. Cl. 94—1.5 **3 Claims**



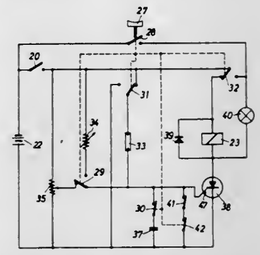
A reflecting road stud comprising a head with a flat base and convex upper surface in which a reflecting element is located and an air pocket in the head below the element and ducts through which air from the pocket is forced out round and over the element when a wheel passes over the stud giving a cleaning effect.

3,502,009
RACE TIMER SYSTEM
Fred J. Connors, 270 Andover St., Andover, Mass. 01810
Filed Dec. 22, 1967, Ser. No. 692,961
Int. Cl. G03b *17/24;* **G01d** *9/24*
U.S. Cl. 95—1.1 **6 Claims**



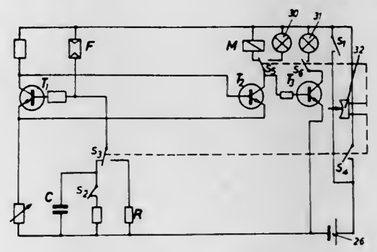
A photo finish camera apparatus having precision timing means at least to hundredths of a second, using a tuning fork timing source vibrating at a frequency of one thousandths of a second reduced down to hundredths of a second on an infield display board to show the winner's time and reduced further for photographing on the race film. A starting gate switch energizes the infield board circuit, multiple light beams across the finish line freeze the winner's time on the board when any beam is broken and a by-pass switch temporarily de-energizes the light beams to prevent actuation thereof by strays before the end of the race.

3,502,010
DUAL PURPOSE CIRCUIT ARRANGEMENT FOR CAMERA SHUTTER CONTROL AND LIGHT INTENSITY INDICATION
Bertram Kennel, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Jan. 21, 1966, Ser. No. 522,283
Claims priority, application Germany, Feb. 9, 1965, A 48,353
Int. Cl. G01j *1/44;* **G03b** *7/08*
U.S. Cl. 95—10 **14 Claims**



An arrangement adapted for photographic cameras by which the user can determine whether sufficient light intensity prevails to take a satisfactory exposure. A photosensitive resistor exposed to the prevailing light, varies in resistance with the magnitude of the light intensity. A resistor connected in series with the photosensitive resistor forms a voltage divider with the latter, when the series combination is applied across a source of DC voltage. The junction of the photosensitive resistor and the resistor is connected to a control switch which, in turn, turns a light on or off depending upon the state of the switch. With the junction voltage determined by the prevailing light intensity, the lamp provides an indication of the light intensity through the action of the switch.

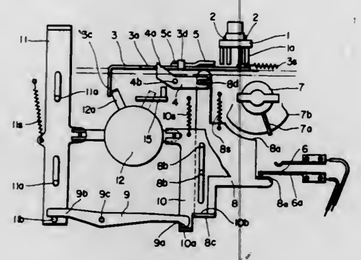
3,502,011
PHOTOGRAPHIC CAMERAS WITH AN EXPOSURE INDICATING CIRCUIT
Waldemar T. Rentschler and Winfried Espig, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany
Filed Mar. 4, 1966, Ser. No. 532,009
Claims priority, application Germany, Mar. 19, 1965, P 36,324
Int. Cl. G01j *1/42;* **G03b** *7/08*
U.S. Cl. 95—10 **10 Claims**



A photographic camera shutter which is provided with an electronic timing device. A photoelectric resistor controls the timing of the shutter and is provided with an

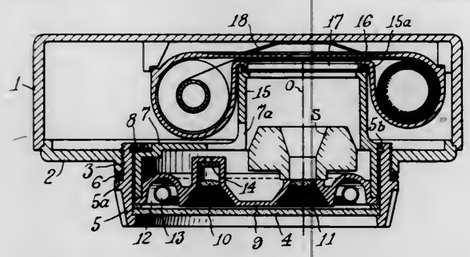
indicating device in the form of two lamps, one is actuated for an exposure time lying below a predetermined time limit, and the other is actuated for an exposure time lying about said limit.

3,502,012
DEVICE FOR AUTOMATICALLY ROTATING A ROTARY SOCKET FOR FLASHBULBS
Hideo Takeuchi, Gamagori, Japan, assignor to Minalta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan
Filed July 10, 1968, Ser. No. 743,848
Claims priority, application Japan, July 15, 1967, 42/45,723
Int. Cl. G03b *9/70*
U.S. Cl. 95—11.5 **7 Claims**



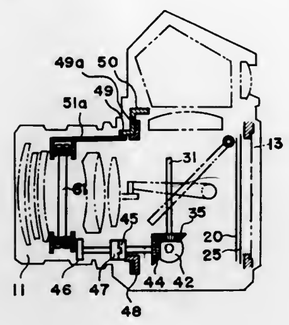
A device for automatically rotating a rotary socket for a flash cube, having an operating plate with a socket rotating lever actuated only during low light conditions in response to movement of the shutter release lever. Downward movement of the shutter release lever allows a pointer-checking plate to move upward under spring bias to either contact the exposure meter pointer or, during low light conditions, fail to contact the pointer, in which case the plate continues to move upward and releases the operating plate for movement toward and contact with the rotary socket.

3,502,013
PHOTOGRAPHIC CAMERA
Tsunezo Shimoda, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, a corporation of Japan
Filed Aug. 23, 1967, Ser. No. 662,779
Claims priority, application Japan, Sept. 7, 1966, 41/58,684
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **6 Claims**



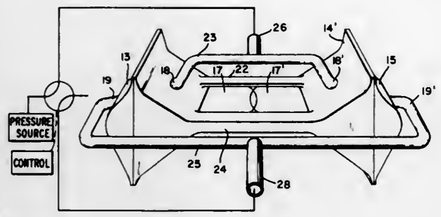
A photographic camera has a single aperture located on its front wall. The aperture is large enough to permit the loading of a film magazine through it and is shaped to hold a lens assembly in a sealing relationship. The magazine is located, after loading, in the camera on the back wall and the lens assembly is secured to the front wall of the camera. A rear frame on the lens assembly cooperates with the film magazine to hold it in an operable position. A rotatable ring is operable to hold the lens assembly in sealing relationship with the camera body.

3,502,014
CAMERA CAPABLE OF CARRYING AN INTERCHANGEABLE LENS ASSEMBLY
Takeshi Atake, Osaka, and Minoru Sekida and Shohei Tenkumo, Sakai, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed July 3, 1967, Ser. No. 650,724
Claims priority, application Japan, July 8, 1966, 41/64,556; May 12, 1967, 42/30,089
Int. Cl. G03b *9/00, 9/02, 3/00*
U.S. Cl. 95—53 **2 Claims**



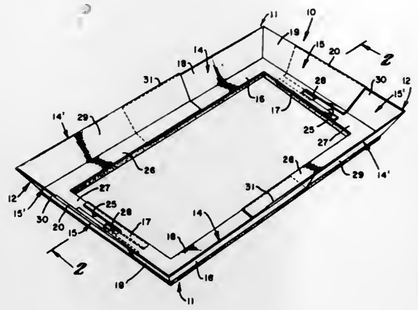
A camera having a body capable of receiving one of a plurality of interchangeable lens assemblies. Each lens assembly has self contained shutter blades and that portion of an electrical actuating circuit for actuating the blades and controlling the shutter speed. The remainder of the circuit is located in the camera body and is coupled to that portion of the particular lens assembly by an electrical connector between the body and the lens assembly. The body contains a focal plane shutter and a selector for controlling the operation of the focal plane shutter and the lens shutter.

3,502,015
PNEUMATICALLY OPERATED CAMERA SHUTTER
Chester L. Richards, Jr., Costa Mesa, Calif., assignor to Hycon Manufacturing Co., Monrovia, Calif.
Filed Oct. 31, 1966, Ser. No. 590,889
Int. Cl. G03b *9/00*
U.S. Cl. 95—54 **8 Claims**



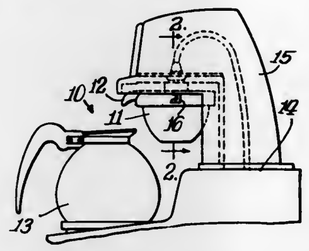
A camera shutter apparatus having, in a first embodiment, shutter blades fastened to lightweight inelastic membranes. Application of fluid pressure to one side of the membranes drives the shutters to the open position while fluid pressure to the opposite side of the membranes closes the shutters. In alternative embodiments, a continuous, inelastic web is fastened at opposite sides of the optical axis and defines a pair of expandable chambers. Fluid pressure applied to one side of the axis pulls the membrane across the optical axis to occupy a first chamber. Fluid pressure applied to the opposite side of the optical axis pulls the membrane back to fill a second chamber.

3,502,016
AIR VENT WALL PROTECTOR
Dave Steele, 5434 Orchard St., Montclair, Calif. 91763
Continuation of application Ser. No. 630,009, Apr. 11, 1967. This application July 19, 1968, Ser. No. 748,899
Int. Cl. F24f *13/00, 13/08*
U.S. Cl. 98—1 **7 Claims**



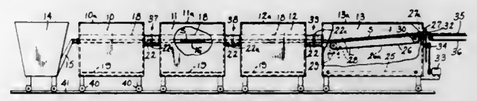
A rectangular air deflector comprising four straight outwardly-angled walls united at their corners and having narrow flanges extending inwardly from their lower edges in shape and the edge portions of which overlie said lie a rectangular marginal area of a wall or ceiling immediately surrounding an air vent opening formed therein. Said flanges are provided with a weather stripping material which makes a resilient contact with said wall area to prevent an outward flow of air, emitted from said opening, between said wall area and said deflector. Said deflector is associated with a grid which is rectangular in shape and the edge portions of which overlie said flanges and said grid and said deflector are adapted to be secured to said wall or ceiling by the same screws. The deflector walls are telescopic to permit said deflector to be adjusted to air vent openings and grids varying in size.

3,502,017
BEVERAGE BREWING APPARATUS
Edwin J. Alexander, Jr., Evanston, and Harvey R. Karlen, Chicago, Ill., assignors to Cory Corporation, a corporation of Delaware
Continuation of application Ser. No. 651,813, July 7, 1967. This application Feb. 10, 1969, Ser. No. 800,352
Int. Cl. A23f; A47j *31/00*
U.S. Cl. 99—295 **20 Claims**



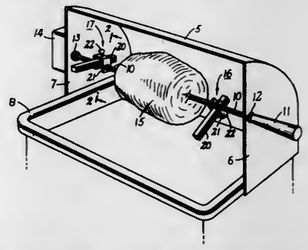
A beverage brewing apparatus having a brewing chamber in which is removably disposed a filter bag charge package and a supply means for delivering brewing liquid to the chamber to brew the beverage within the bag. The apparatus includes means for discharging the brewed beverage from the chamber.

3,502,018
APPARATUS FOR MANUFACTURING SAUSAGE
Charles L. Keszler, Salt Island Road, Westbrook, Conn. 06498, and William R. Stanwood, 132 N. Cove Road, Old Saybrook, Conn. 06475
Filed Mar. 17, 1967, Ser. No. 623,876
Int. Cl. A22c *11/00;* **B02c** *18/00*
U.S. Cl. 99—355 **8 Claims**



Apparatus for continuously producing cooked and formed meat products from raw emulsions by continuously forcing or extruding comminuted meat through one or more parallel cooking tubes which pass through a plurality of heating devices which may be held at the same or different temperatures. Heat is uniformly applied externally of the tubes in each heating device. Between the heating devices, the tube is insulated to prevent heat loss from the meat and minimize the temperature gradient across the cross-sectional area of the meat in the tube.

3,502,019
SPIT BALANCE
Walter E. Koons, Jr., 436 Pepper Ridge Road, Stamford, Conn. 06905
Filed July 9, 1968, Ser. No. 743,358
Int. Cl. A47j *37/04*
U.S. Cl. 99—421 **4 Claims**

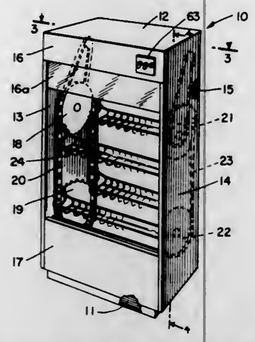


A slidably adjustable weight bar in combination with a U-shaped yoke carrying a locking thumb screw is adapted to be mounted on a barbecue spit as an adjustable counterweight for compensating any unbalance in weight distribution of food skewered on the spit. The spit shaft may normally have a rectangular cross-section passing through a pair of aligned circular holes in opposite arms of the yoke, the circular openings being of a larger diameter than the diagonal cross-section of the spit shaft whereby the unclamped balance may be rotated through 360°, and the weight bar may be securely clamped in any angular position, and also may be shifted radially with respect to the axis of the spit shaft to effect the required uniform balance of weight about the axis of rotation.

3,502,020
FOOD DISPLAY AND WARMING DEVICE
Tony J. Bressickello, 13015 S. Normandie Ave., Gardena, Calif. 90249
Filed Mar. 4, 1968, Ser. No. 710,092
Int. Cl. A47j *37/04*
U.S. Cl. 99—443 **2 Claims**

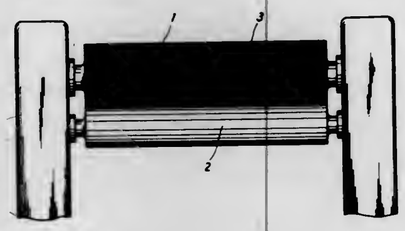
The invention includes a display cabinet having a conveyor assembly therein which includes a plurality of trays adapted for holding food products. The conveyor assembly is power driven to continuously move the trays past a frontal access opening in the cabinet. The device

includes a heater within the cabinet for maintaining the food products in a heated condition. The device further includes a system within the cabinet for continuously



directing a curtain of heated air upwardly between the trays and the access opening for preventing escape of heat from the cabinet.

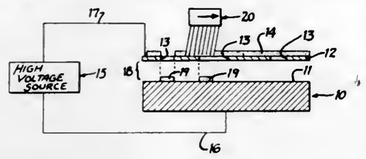
3,502,021
ROLLS FOR EQUIPMENT FOR THE PRESSURE TREATMENT OF WEBS TO REMOVE MOISTURE FROM THE SAME
Johannes Kutz, Schulstrasse 6, St. Tonis, near Krefeld, Germany
Filed Feb. 7, 1967, Ser. No. 614,459
Claims priority, application Germany, Feb. 8, 1966, K 58,354
Int. Cl. B30b *9/20*
U.S. Cl. 100—121 **2 Claims**



A roll, the active periphery of which is made from an elastic material and which is intended for equipment for the pressure treatment of webs for the removal of moisture from the same, in which equipment the webs pass between rolls, characterized in that the periphery of the roll is provided with incisions in the form of lines in a circumferential direction of said periphery, said incisions being arranged comparatively closely adjacent to each other.

3,502,022
PRINTING PROCESS APPLICABLE TO HOT GLASS ARTICLES
William H. Wood, Rockbridge, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 242,230, Dec. 4, 1962. This application Oct. 23, 1965, Ser. No. 505,319
Int. Cl. B41m *1/12, 1/34, 1/40*
U.S. Cl. 101—129 **7 Claims**

1. The method for the electrostatic decoration of glass which comprises projecting a finely divided glass color through an electrostatically charged foraminous metal member constituting a desired design in perforations adapted to electrically charge said glass color, onto a spaced oppositely charged glass article to be decorated having a sufficiently high temperature to cause said glass color to be fused thereon, whereby said glass article may



be formed and decorated with a glass color by a single annealing operation.

3,502,023
PARACHUTE-BORNE PYROTECHNIC DEVICE
Stanley Britton, Redhill, England, assignor to Schermuly Limited, Dorking, Surrey, England, a British company
Filed Nov. 17, 1967, Ser. No. 684,041
Claims priority, application Great Britain, Nov. 22, 1966, 52,217/66
Int. Cl. F42b *13/38*
U.S. Cl. 102—35.6 **6 Claims**

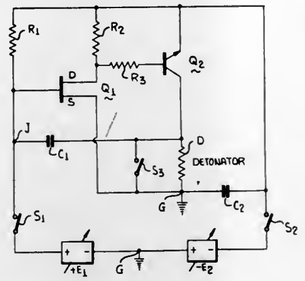


This invention relates to a pyrotechnic device of the kind comprising a container, a parachute packed in the container, a pyrotechnic store within the container and connected to said parachute and means for ejecting the parachute and the pyrotechnic store from the container, in which the parachute is connected to said container by a flexible member of a length sufficient to allow the pyrotechnic store to leave the container when said ejecting means is initiated and which is breakable as a consequence of separation of the container and the store following ejection of the latter from the former.

3,502,024
TIME FUZE
Garrard Mountjoy, Little Rock, Ark., assignor to Baldwin Electronics, Inc., Little Rock, Ark., a corporation of Arkansas
Filed May 18, 1967, Ser. No. 642,644
Int. Cl. F42b *9/08*
U.S. Cl. 102—70.2 **16 Claims**

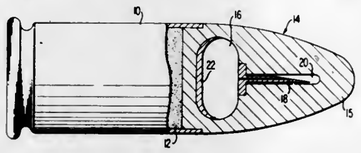
First and second capacitors are charged with respect to a common point of reference potential (ground). The first capacitor is small and it is connected to control firing potential of a first transistor switch. The second capacitor is large and it is connected in series with the first capacitor and with a timing resistance. A second transistor switch, normally open, is connected across the second capacitor only, and is closed in response to firing of the first transistor. A detonator is connected in the circuit of the second transistor switch, for firing by the discharge from the second capacitor.

Firing time of the detonator is a function of the initial capacitor voltages, and of values of capacities and timing resistance, and can be varied over a wide range by varying the initial voltage on the small capacitor, or the initial voltages on both capacitors. At the same time the capacitance of the large capacitor can vary by about 10% without substantially varying firing time, and the circuit operates by measuring time in terms of decay of voltage across a small capacitor through a zero value while that capacitor voltage is decaying at a rapid rate, to obtain great precision of time measurement.



It then becomes feasible to measure the values of the R and C of the timing resistance and of the small capacitor, or the time constant of the entire RCC circuit, and to impart to the capacitors voltages which reflect departure of these values or of the time constant, from standard, thereby providing near perfect time control without requiring precision components in the fuze itself.

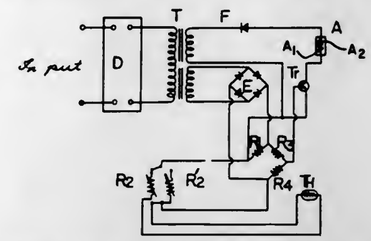
3,502,025
NONPENETRATING DRUG INJECTING BULLET
Peter R. Payne, Silver Spring, Md., assignor, by mesne assignments, to Wyle Laboratories, El Segundo, Calif., a corporation of California
Filed Oct. 2, 1967, Ser. No. 672,178
Int. Cl. F42b *5/12, 11/30*
U.S. Cl. 102—92 **4 Claims**



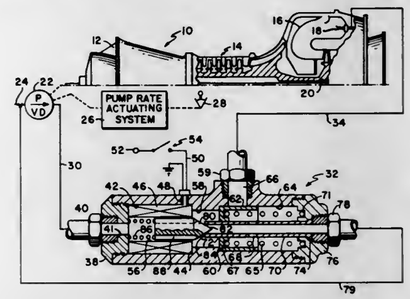
A nonlethal bullet for use in standard firearms has the same shape, size, and mass as a conventional bullet but is capable of greatly deforming upon impact to flatten and transmit its energy without penetration. The bullet may include a chamber containing an incapacitating drug, and injection needle, and a backing plate for forcing the drug through the needle upon bullet impact.

3,502,026
ELECTROMAGNETIC PUMP
Akira Toyoda, 13–16, 4-chome, Minamimagone, Ohta-ku, Tokyo, Japan
Filed Jan. 15, 1968, Ser. No. 697,865
Int. Cl. F04b *49/00, 17/00;* H01h *47/24*
U.S. Cl. 103—37 **9 Claims**

An electromagnetic pump comprising electromagnetic coil circuit connected in series to a transistor, an electromagnetic plunger operated by the circuit and forming a variable iron core of an electromagnetic pump having characteristics of discharge pressure and discharge quantity changeable according to the change of an input current. A signal circuit of the transistor is provided with a detection section substituting the first changed quantity such as temperature, pressure, concentration, illumination, etc. with the electric changed quantity such as voltage, current, etc., and a bridge circuit by a resistor adjusting the detected electric change, and a variable resistor making the predetermined desired value changeable or a circuit capable of performing the same function, whereby the condition of the limited region such as temperature, pressure, concentration, illumination, etc. is constantly maintained at a predetermined and desired value by controlling the condition at any stage which is in direct proportion to the change that affects the illuminated region of the first changed quantity.



3,502,027
FUEL CONTROL SYSTEM FOR GAS TURBINE ENGINES
Paul A. Avery, Shelton, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Apr. 30, 1968, Ser. No. 725,354
Int. Cl. F04b *49/08;* G05d *7/00, 11/00*
U.S. Cl. 103—42 **6 Claims**

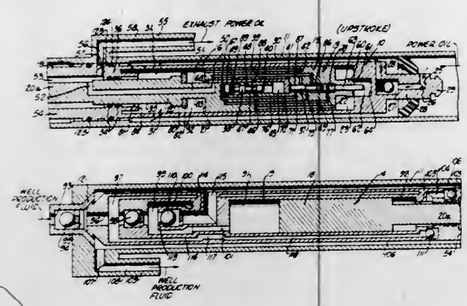


The disclosure illustrates a gas turbine engine, fuel control system which comprises a variable output, engine driven fuel pump controlled by a pump rate actuation system to produce a controlled flow of fuel to the engine. A valve assembly is interposed between the fuel pump and the engine to maintain the output pressure of the pump between predetermined minimum and maximum values. At the same time the valve provides a means to rapidly bypass the pump outlet to its inlet and terminate flow to the engine as during an emergency engine shutdown.

3,502,028
HYDRAULIC MOTOR AND PUMP
Roy F. Cooper, Huntington Park, Calif., assignor to Sargent Industries (Oil Well Equipment Division), Huntington Park, Calif., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 704,104
Int. Cl. F04b *47/00;* F01b *7/18*
U.S. Cl. 103—46 **9 Claims**

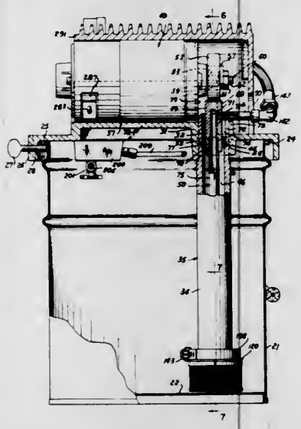
A reciprocating hydraulic motor and pump assembly is constructed to be lowered into position in a tubing in a well. Power oil under pressure from the tubing is con-

stantly applied to an annular space below the reciprocating plunger of the motor, and is alternately applied to and vented from a circular space above that plunger by



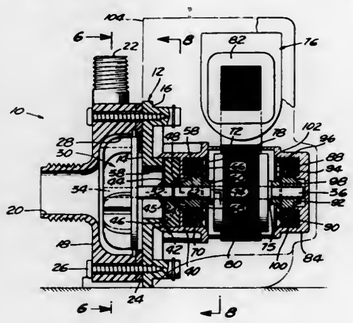
means of a main valve and a pilot valve contained within the plunger. A rod connects the motor plunger to the pump piston for simultaneous movement.

3,502,029
PUMPS
Grant Halladay, 3780 Vinecrest, Dallas, Tex. 75229
Filed Aug. 8, 1968, Ser. No. 751,299
Int. Cl. F04b *17/00, 21/04, 9/04*
U.S. Cl. 103—57 **17 Claims**



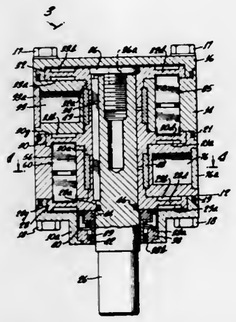
A pump apparatus for moving liquids from a container having a base mountable on the container to form a cover therefor on which is mounted a reciprocable piston pump which includes a tubular body extending downwardly of the base and having a check valve at its lower end and a hollow piston extending downwardly through the tubular support and having a check valve adjacent its lower end, upward movement of the pump causing movement of liquid into the body at its lower end past its check valve, and downward movement of the pump causing displacement of the liquid in the body above its check valve into the hollow piston past its check valve. The piston is biased upwardly and is movable downwardly by a motor mounted on the base and a motion translating means between the motor drive shaft and the piston. The upper end of the vertical passage of the tubular piston is connectable by a conduit means, which includes a flexible section, to an accumulator or surge tank having a piston movable against a biasing force to enlarge the effective capacity of the accumulator, as the pressure of the liquid delivered from the upper end of the hollow piston increases, to a pressure sensitive switch device which arrests operation of the motor when the pressure of the liquid delivered by the pump exceeds a predetermined limit, and a discharge conduit provided with any suitable dispensing device such as a spray gun, a grease gun, nozzle, or the like.

3,502,030
CLOSE-COUPLED CENTRIFUGAL PUMP
Ben S. Bukewihge, 2810 W. 232nd St., Torrance, Calif. 90505, and Harold A. Clarno, Jr., 235 Alster Ave., Arcadia, Calif. 91006
Filed May 8, 1968, Ser. No. 727,520
Int. Cl. F04d *13/06;* **F16c** *1/24*
U.S. Cl. 103—87 **8 Claims**



A close-coupled centrifugal pump which includes a mounting plate having a centrifugal pump casing releasably sealed to the pump side of the plate and a motor encapsulated on the other side of the plate, and one of a plurality of fluid tight shaft seals preventing the passage of fluid from the pump side to the motor side of the mounting plate.

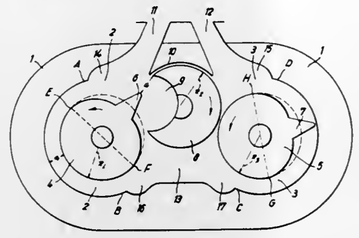
3,502,031
HIGH-SPEED/HIGH-PRESSURE ROTARY PUMP
Hellmut R. Voigt, 11821 Redbank St., Sun Valley, Calif. 91352
Filed Aug. 2, 1968, Ser. No. 749,825
Int. Cl. F04c *1/00*
U.S. Cl. 103—123 **11 Claims**



Three disk-like rotors on a shaft are formed with an arcuate recess in each axial face which varies in depth from a maximum to zero at a flat land that moves in close clearance with adjacent fixed structure to form a chamber. Two sliders reciprocate axially within the fixed

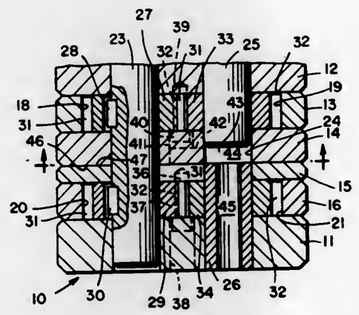
structure between the rotors with the slider ends fitting in sealing relation within the adjacent working chambers. The sliders divide the chambers into suction and pressure compartments which vary in volume as the rotors rotate to provide pumping action through fluid inlet and outlet ports opening into the chambers on opposite sides of the sliders.

3,502,032
ROTARY PISTON MACHINES
Karl Lauer, Brandenburische Strasse 16, Berlin-Wilmersdorf, Germany
Filed Mar. 28, 1968, Ser. No. 716,848
Int. Cl. F04c *1/06*
U.S. Cl. 103—125 **2 Claims**



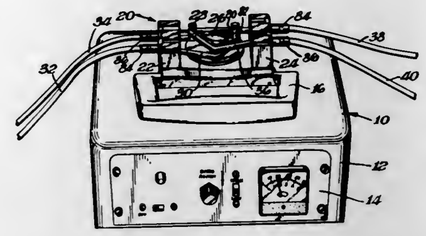
The invention concerns a rotary-piston machine which can be used either as a fluid pump or as a fluid-driven motor. The machine housing defines three cylinders in the two outer chambers of which piston hubs are mounted and in the central cylinder of which a blocking element is arranged. The pistons are so shaped relative to the blocking element that, when either of the piston hubs is in the part of its working cycle in which it is not performing any useful work, a gap is defined between the piston hub concerned and the blocking element such as to allow liquid to pass between these two elements. In this way a more smooth and uniform performance is achieved.

3,502,033
GEAR PUMP
Felix Kaczrowski, Remscheid-Lennep, Germany, assignor to Barmag Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal, Germany
Filed Dec. 23, 1968, Ser. No. 786,263
Claims priority, application Germany, Dec. 23, 1967, B 73,964
Int. Cl. F04c *1/04, 23/00*
U.S. Cl. 103—126 **7 Claims**



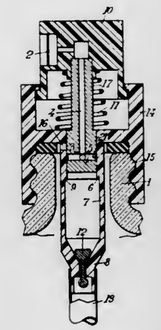
Gear pump having juxtaposed plates forming pump casing, at least two pairs of gears, the driven gear of one pair being journaled on a tubular shaft, and other set of gear pairs having a short, fluid-discharge passage including the tubular shaft.

3,502,034
ROLLER PUMP HEADS
Robert E. Pickup, Norristown, Pa., assignor to Extracorporeal Medical Specialties, Inc., a corporation of Pennsylvania
Filed Aug. 20, 1968, Ser. No. 753,935
Int. Cl. F04b *1/00, 43/08*
U.S. Cl. 103—149 **10 Claims**



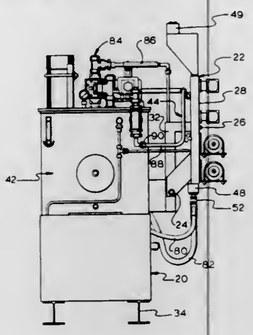
A roller pump of the type having one or more flexible tubular pumping chambers continuously and successively depressed uni-directionally by traveling pumping members wherein improved head arrangements are provided to facilitate replacement of the pumping tubes and removal of the pumping member rotor.

3,502,035
PISTON PUMP FOR DISPENSING LIQUIDS OR FLUID PASTES
René Fedit, Paris, and Marcel Janodet, Fresnes, France, assignors to Vaporisateurs Marcel Franck S.A., Paris, France, a French society
Filed Oct. 10, 1967, Ser. No. 674,216
Claims priority, application France, Oct. 12, 1966, 79,737
Int. Cl. F04b *21/08, 43/00*
U.S. Cl. 103—178 **13 Claims**



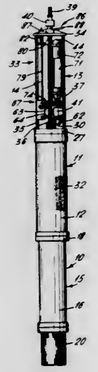
The pump fits on a container and includes a piston provided with a delivery conduit and adapted to reciprocate in a cylindrical part of a pumping chamber. The pumping chamber includes an elastically deformable part adapted to increase in capacity as the pressure therein increases, thus allowing the contents of this deformable part to be displaced by the piston during part of its compression stroke.

3,502,036
HYDRAULIC RESERVOIR AND ASSOCIATED MOUNTING MEANS ENCLOSURE FOR SYSTEM COMPONENTS
Robert E. Raymond, Zanesville, Ohio, assignor to International Basic Economy Corporation, New York, N.Y.
Filed Sept. 18, 1968, Ser. No. 760,403
Int. Cl. F04b *21/00*
U.S. Cl. 103—218 **5 Claims**



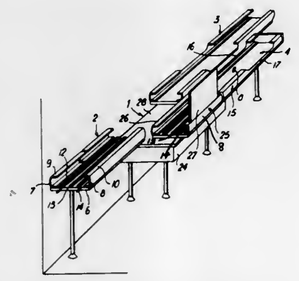
A hydraulic reservoir and associated mounting means enclosure for system components wherein the enclosure is in the form of an auxiliary frame means pivotally mounted to the reservoir so as to be selectively positionable in either in operational position or in a swing-down access position. In the access position said components are readily accessible for adjustment or servicing.

3,502,037
BORE PUMP ASSEMBLIES
Stanley James Pickard, 173A Parry St., Charleville, Queensland, Australia
Filed Aug. 1, 1967, Ser. No. 657,576
Claims priority, application Australia, Aug. 1, 1966, 9,097/66
Int. Cl. F24b *47/00;* **F24h** *3/06*
U.S. Cl. 103—219 **9 Claims**



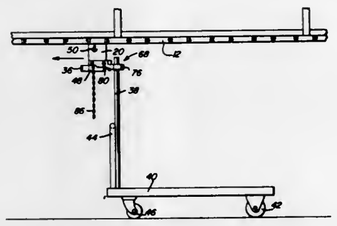
A bore pump to be positioned within a bore casing for pumping at a below-ground location. The bore pump assembly includes a pumping mechanism and a sealing mechanism. The sealing mechanism has an operative, sealing condition and an inoperative, non-sealing condition. In this latter condition of the sealing mechanism, the pumping mechanism can be introduced through the sealing mechanism into the casing, and then the sealing mechanism can be actuated to have its operative condition providing a seal with the bore casing. In this latter condition of the sealing mechanism the bore casing itself acts as a conduit for the liquid pumped by the pumping mechanism from beneath and through the sealing mechanism. A release member can be selectively actuated to trigger the sealing mechanism back to its non-sealing condition.

3,502,038
AUTOMATIC TRACK CONVEYOR INSTALLATION
Erich Wesener, Munich, Germany, assignor to Buro Patent AG., Glarus, Switzerland, a corporation of Switzerland
Continuation-in-part of application Ser. No. 443,714, Mar. 29, 1965. This application Mar. 27, 1967, Ser. No. 626,197
Claims priority, application Switzerland, Mar. 29, 1966, 4,480/66
Int. Cl. B61j *3/00;* **B61k** *1/00;* **B61b** *5/02*
U.S. Cl. 104—88 **24 Claims**



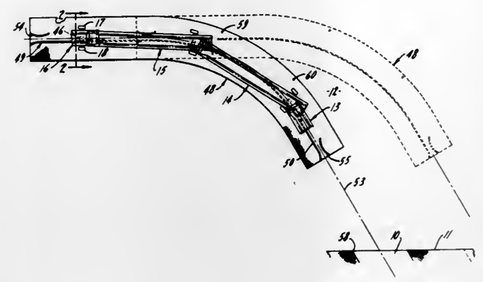
An automatic transportation system, utilizing both horizontal and vertical track sections, includes a transfer switch adapted to sense coded signals on passing carriages for automatically switching same to specified track sections in response thereto.

3,502,039
CONNECTOR FOR OVERHEAD CONVEYOR CHAIN
Jacob E. Patterson, P.O. Box 796, Minden, La. 71055
Filed Nov. 1, 1967, Ser. No. 679,682
Int. Cl. B60d *1/00*
U.S. Cl. 104—172 **7 Claims**



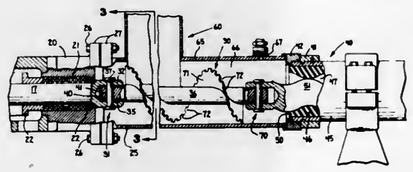
A connector attached to an overhead chain for engagement with an upstanding member on a wheeled cart or truck rollingly supported on a floor surface of an industrial plant or the like to move the cart with the overhead chain. The connector includes a forwardly opening guide structure, a jaw-type assembly closing the rear of the connector, a catch retaining the upstanding member in the jaw assembly together with a release mechanism for releasably retaining the jaws of the assembly in closed position but enabling outwardly opening movement of the jaws when moved to the released position.

3,502,040
VEHICLE AND GUIDE TRUCK SYSTEM
Donald C. Reilly, Downers Grove, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1967, Ser. No. 655,413
Int. Cl. B61f *9/00;* **B61d** *11/00;* **B61b** *13/00*
U.S. Cl. 104—247 **7 Claims**



A steering and guidance system for causing following units in a multi-unit train to change direction in a mining way without cutting corners comprising a guide roller carried by each train unit which bears against an upstanding wall or guide flange on a shiftable base, the steering system of each train unit being biased to oversteer so that the roller is maintained in contact with the guide flange in both directions of movement.

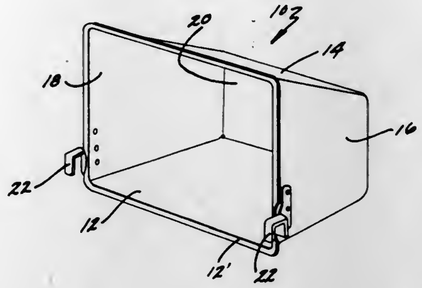
3,502,041
COMBINATION DOUGH DEGASSER AND TRANSFER MACHINE
William N. Lotz, Indianapolis, Ind., assignor to F. H. Langsenkamp Company, Indianapolis, Ind., a corporation of Indiana
Filed Mar. 22, 1968, Ser. No. 715,278
Int. Cl. A21c *9/00*
U.S. Cl. 107—7 **10 Claims**



A dough pump including a positive-displacement progressing-cavity pump section fed by a screw with a flight having notches at intervals along its external periphery. The screw discharges into a degassing chamber located at the entrance to the pump section.

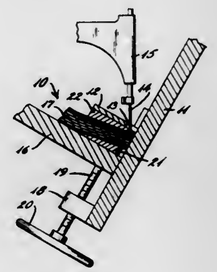
3,502,042
SERVING TRAY-RECEPTACLE COMBINATION
Clyde L. Bowman, 1544 Benjamin NE., Grand Rapids, Mich. 49505, and Dick O. Rottschafer, Jr., 3716 Chamberlain, SE., Grand Rapids, Mich. 49508
Filed May 27, 1968, Ser. No. 732,439
Int. Cl. A47b *37/00*
U.S. Cl. 108—46 **6 Claims**

An open-ended box-like or tub-like enclosure having a bottom wall, a top wall, a pair of spaced sidewalls, and one end wall, with hook-like mounting means for attaching the enclosure to an auto or the like with the open end of the device adjacent the window of the auto, in which the bottom wall is a flat member which is generally horizontally



oriented when the device is so attached to the auto so that such bottom wall provides a support surface for serving dishes, food, and the like.

3,502,043
BOOKBINDING OVERSEWING MACHINE ATTACHMENT
Jay Crawford, 754 Delaware Ave., Akron, Ohio 44303
Continuation-in-part of application Ser. No. 504,404, Oct. 24, 1965. This application May 5, 1967, Ser. No. 636,313
Int. Cl. B42b *1/04;* **B25b** *5/16*
U.S. Cl. 112—21 **3 Claims**

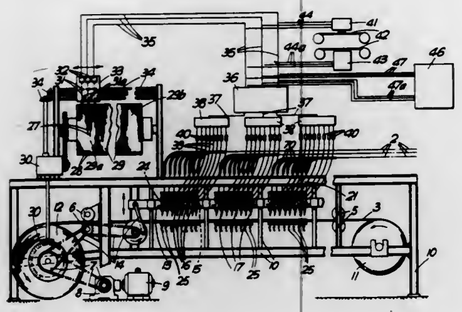


An attachment for altering the position of a section of pages of a book being sewn on an oversewing machine relative to the thread carrying needle.

3,502,044
APPARATUS FOR OPERATING TOOLS IN ACCORDANCE WITH A PREDETERMINED PROGRAMME
Philip Brown, 31 Princes Court, Wembley, Middlesex, and Peter Henry James, 9 Adamsrill Road, Sydenham, London, SE. 26, both of England
Filed May 10, 1967, Ser. No. 637,581
Claims priority, application Great Britain, May 16, 1966, 21,686/66; July 19, 1966, 32,343/66
Int. Cl. D05c *15/12, 11/06*
U.S. Cl. 112—79 **11 Claims**

An apparatus for selectively reciprocating a multiplicity of tools, for example needles in a carpet tufting machine, in relation to the material to be worked, comprises an assemblage of tool holders extending across the material; means for traversing the material across the tool holders;

means for imparting movement independently to any of said tool holders in a direction towards and away from the material so that the material is worked by the tools, for



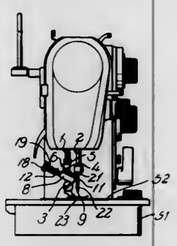
example the needles form tufts in the material and a programmer which ensures that the tool holders are moved in a required sequence.

3,502,045

THREADING DEVICE FOR A SEWING MACHINE

Susumu Hanyu, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan

Filed Sept. 6, 1967, Ser. No. 665,807
Claims priority, application Japan, Sept. 7, 1966, 41/83,806
Int. Cl. D05b *87/02*
U.S. Cl. 112—225 **19 Claims**



A stationary guide casing is mounted on the presser bar of a sewing machine and guides a second guide casing in which a threading member with a hook is guided. When manual pressure is applied to the threading member, the movable guide casing engages the needle and positions the threading hook whereupon a spring is compressed by the manual pressure and the threading hook is inserted into the needle eye.

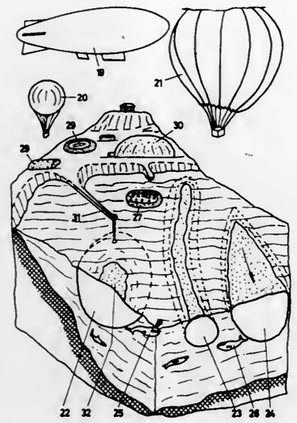
3,502,046

METHOD OF TRANSPORTING AND STORING LARGE QUANTITIES OF WATER

Hans J. Stauber, 65 Witikonerstrasse, CH. 8032, Zurich, Switzerland

Filed May 6, 1968, Ser. No. 726,755
Claims priority, application Germany, May 19, 1967, St 26,904
Int. Cl. B63b *35/00, 25/08*
U.S. Cl. 114—.5 **8 Claims**

The disclosed method for transporting and storing large quantities of water comprises the steps of gathering the water of a catchment area preferably by means of pumpless operating discharging machinery, of feeding the water from there to non-rigid underwater vessels suitable for holding large quantities thereof and being suitable for towing by ships, and of towing the vessels to arid areas where they are emptied again preferably by pumpless operating discharging machinery utilizing the



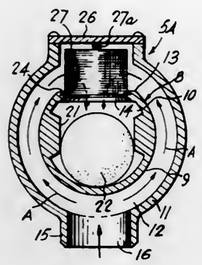
tides, if possible. It is further disclosed that the underwater vessels may be used as water supply containers for storage purposes, which vessels may be anchored swimming in the water or rested on a bed of sand or round pebble stones.

3,502,047

VENT CHECK VALVE

Alfred C. Crosbie, St. Laurent, Quebec, Canada, assignor to A. Crosbie & Sons Limited, Montreal, Quebec, Canada

Filed Feb. 29, 1968, Ser. No. 709,331
Claims priority, application Canada, Dec. 6, 1967, 8,611
Int. Cl. B63j *2/08*
U.S. Cl. 114—212 **6 Claims**



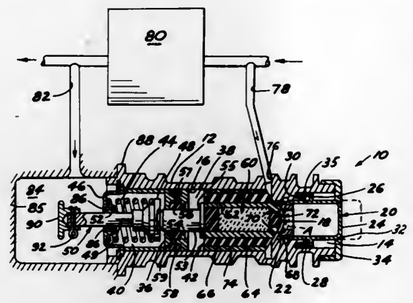
A vent check valve for installation on tanks where the valve is at times immersed in water comprising a casing having a valve compartment having a valve seat in communication with a surrounding vent channel connected to the tank to be vented, a floatable ball valve in the valve compartment raised into seating engagement with the valve seat when the valve casing is immersed in water, a flame barrier on the side of the valve seat facing the vent channel, louvres in said valve compartment to divert water from the compartment, and cover means to close off the valve compartment.

3,502,048

DIFFERENTIAL PRESSURE INDICATOR

Donald W. Bentzen, Grosse Pointe, and Jonathan Baker, Jr., Royal Oak, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Sept. 17, 1965, Ser. No. 488,066
Int. Cl. G01l *19/12;* **B01d** *35/00*
U.S. Cl. 116—70 **4 Claims**



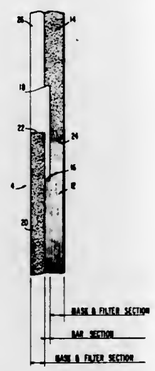
An improvement in a magnetic differential pressure indicator of the type wherein a spring-biased pressure responsive magnetic element either retains or releases a spring-biased armature member depending upon the position of the element in a cylinder receiving the higher of two pressures, the improvement comprising structure for admitting the higher pressure to equal-area opposite sides of the element and reducing the area of the spring-biased side thereof by an area equal to that acted upon by the lower pressure, the result being that the higher and the lower pressures act in opposite directions upon equal areas so as to increase the level of the pressure differential that can be sensed with the same magnetic and biasing forces that are operable for sensing lower level differential pressures.

3,502,049

SCALE EXPANSION METHODS AND APPARATUS

Frank Samet, New York, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Sept. 11, 1968, Ser. No. 759,153
Int. Cl. G09f *9/38*
U.S. Cl. 116—135 **4 Claims**



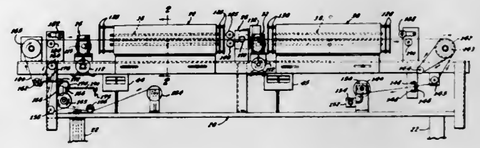
A linear scale indicator utilizing a moving tape having a pattern of opaque and translucent areas thereon for transmitting a source of light to a transparent scale member having a slot therein and through which is viewable an indexing pointer marked on the tape. For different positions of the tape in response to an actuating member, the movement of which is to be measured, different portions of the scale member will be illuminated corresponding to the position of the indexing pointer on the tape.

3,502,050

WIRE COATING APPARATUS

Sheridan S. Cannaday, Pasadena, Calif., assignor, by mesne assignments, to Physical Sciences Corporation, Los Angeles, Calif., a corporation of California

Application Apr. 19, 1963, Ser. No. 277,975, now Patent No. 3,403,659, dated Oct. 1, 1968, which is a division of application Ser. No. 46,576, Aug. 1, 1960, now Patent No. 3,257,245, dated June 21, 1966. Divided and this application Aug. 31, 1967, Ser. No. 683,038
Int. Cl. B05c *11/00*
U.S. Cl. 118—6 **1 Claim**



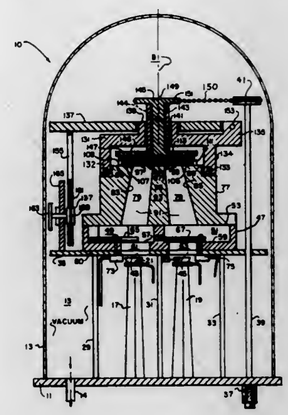
An apparatus for applying a ceramic sheath to a metal wire. The wire is moved successively through a first coating station where a coating of oxides is applied, a first furnace where the oxides are heated to form a ceramic coating, through a cooling station for cooling the coated wire, through a second coating station to coat the ceramic with a coat of oxides, and then through a second furnace where the oxides are heated to form a ceramic coating. The wire is maintained under substantially zero tension as it is moved through the successive stations.

3,502,051

VACUUM DEPOSITION APPARATUS

George D. Adams, 518 Harold's Drive NW., Huntsville, Ala. 35806

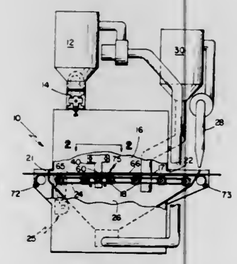
Filed Sept. 1, 1966, Ser. No. 577,115
Int. Cl. B05c *11/00;* **C23c** *13/00*
U.S. Cl. 118—11 **6 Claims**



The invention disclosed is an apparatus used to form thin film inductive windings. The apparatus comprises both a source of conductive and insulative coatings with appropriate masking means to effect a continuous deposit of the various layers of the thin film inductor. A conical

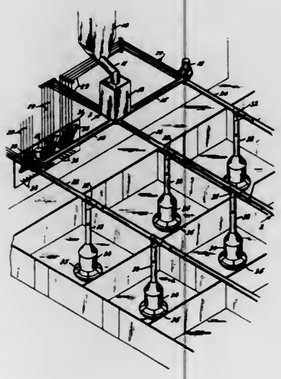
chamber is mounted above the coating sources and is divided into two separate passageways by a partition. The substrate to be coated is mounted above the coating sources and can be rotated into the appropriate position by suitable means pivotally mounted in the housing section of the apparatus. A vacuum is created within the apparatus and the coatings are heated and evaporated so as to form continuous alternate layers of conductive and insulative coatings upon the rotating substrate.

3,502,052
FLOCKING APPARATUS
David I. Walsh, Pawtucket, R.I., assignor to Indev, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Sept. 6, 1967, Ser. No. 665,876
Int. Cl. B05b 7/14; B05c 11/00
U.S. Cl. 118—57 **2 Claims**



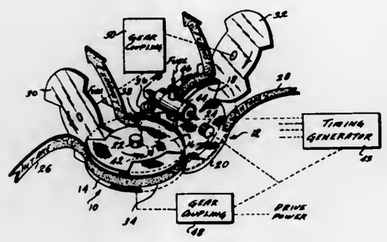
A flocking machine having a support for the article to be flocked which has surface portions for contacting the article and an air exhaust portion between the surface portions to provide a volume of air space beneath the article and in contact with it across its entire width.

3,502,053
APPARATUS FOR MIXING, DISTRIBUTING AND DISPENSING FEED FOR ANIMALS
Petrus J. Geerlings, P.O. Box 179, Waterloo, Iowa 50704
Filed June 10, 1968, Ser. No. 735,912
Int. Cl. A01k 31/14
U.S. Cl. 119—56 **4 Claims**



Apparatus for blending or mixing, distributing, and dispensing in individual feeding areas feed for animals subject to individual control from a central panel and including conveyors which extend to individual bins or feeding areas enabling the dispensing of a particular type of mix in certain areas and another type of mix in other areas.

3,502,054
INTERNAL-COMBUSTION ENGINE
James C. Hambric, Los Angeles, Calif., assignor to K.M.F. Development Corporation, a corporation of California
Filed Dec. 4, 1967, Ser. No. 697,253
Int. Cl. F02b 53/00
U.S. Cl. 123—13 **11 Claims**



A rotary engine is disclosed, in which a pair of synchronized rotors are driven by combustion to turn in intersecting, annular passages, the combustion gases expanding in spaces defined between radially extending lobes of the rotors and the walls of the annular passages. Combustion chambers, (removed from the annular passages) are provided for drive association with each of the rotors and are surfaced (along with the annular passages and to rotors) with material having a low thermal conductivity coefficient e.g. titanium, to enable very high temperature operation. The combustion chambers are of somewhat cylindrical form and receive a pair of opposed spark plugs (one at each end of the cylinder). The rotors are surface-etched and are somewhat hollow, defining internal cavities through which coolant is circulated. Coolant is also circulated through the engine housing to remove the heat therefrom which passes through the barrier material of low thermal conductivity. Commensurate with the temperature controlled operation of the engine, exhaust is provided through replaceable insulators which may comprise ceramic material. Other aspects of the engine, pertinent herein, include a particular gearing arrangement, a fuel-injection structure and provision for the coolant passages in the structure.

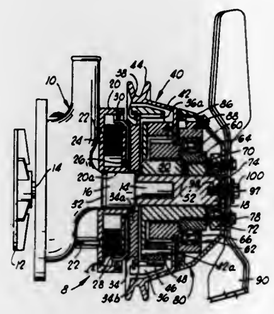
3,502,055
COMBINED SPARKPLUG AND FUEL-INJECTION DEVICE
Otto Beesch, Heinestrasse 131, Stuttgart-Sonnenberg, Germany
Continuation-in-part of application Ser. No. 561,854, June 30, 1966. This application Aug. 5, 1968, Ser. No. 750,359
Claims priority, application Germany, July 10, 1965, B 82,786
Int. Cl. F02p 23/00, 1/00, 13/00
U.S. Cl. 123—32 **12 Claims**

In a combined sparkplug and fuel-injection device a tubular outer electrode surrounds an inner electrode assembly consisting of a member provided with an axial bore, a bolt-shaped nozzle element threaded into the bore and being provided with an axial passage which communicates with the bore and which has an outlet located outside the same, and a compression ring surrounding a portion of the member in the region where the nozzle element is threaded into the bore thereof. The compression ring is in engagement with the nozzle element, and the inner surface of the compression ring and the outer surface of the member are provided with complementarily tapers so that,



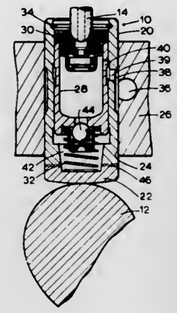
when the nozzle element is threaded deeper into the bore, the member will be drawn deeper into the compression ring with resulting radial compression of the member and compression of the threads in the bore and on the nozzle element into engagement with one another.

3,502,056
R.P.M. MULTIPLIER FOR AUTOMOBILE FAN
James W. Dillard, 346 S. Oak, Ponca City, Okla. 74601
Filed Mar. 26, 1968, Ser. No. 716,057
Int. Cl. F01p 7/04, 7/10
U.S. Cl. 123—41.11 **9 Claims**



Apparatus for driving the fan blade of an automobile from the shaft of the engine driven water pump at the same or at a greater rotational speed than the speed of rotation of such shaft. The apparatus includes a planetary gear system interposed between the water pump shaft and the fan blade. A magnetic clutch or fluid coupling is energized manually or automatically when engine speed is low and arrests an outer ring gear of the planetary gear system. Through the planetary gear system, the result is to drive the fan blade at a substantially faster speed than the engine speed so that an enhanced cooling effect is obtained at this time. A fluid coupling may be substituted for the magnetic clutch and operated automatically in response to pressure within the radiator.

3,502,057
ALLOY, ARTICLE OF MANUFACTURE, AND PROCESS
Earl A. Thompson, Bloomfield Hills, Mich. (1300 Hilton Road, Ferndale, Mich. 48220)
Filed Feb. 24, 1966, Ser. No. 529,690
Int. Cl. F01l 1/14; B22d 25/02
U.S. Cl. 123—90 **2 Claims**

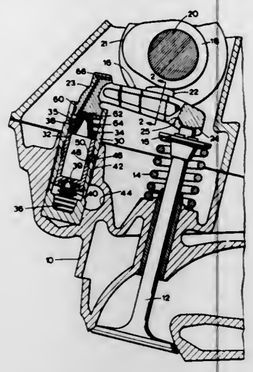


Articles of manufacture generally and in particular tappets for internal combustion engines are made of a high carbon high chromium alloy containing from about 1.3% to about 3.1% carbon, from about 15% to about 35% chromium with the remainder iron, with or without up to about 3.5% silicon, manganese and other residuals. The alloy is cast, cooled so quickly that a relatively small number of relatively large primary chromium carbide particles are formed and widely dispersed in a matrix of austenite containing a solid solution of chromium and carbon. Then large numbers of relatively small particles of chromium carbides are precipitated from the matrix and distributed throughout the spaces between the large primary carbon particles leaving the remainder of the matrix containing carbon and susceptible to subsequent hardening. Then the casting is hardened by heating and subsequent quenching at such temperature and at such time that the matrix is substantially converted to martensite without significantly changing the carbide particles.

3,502,058
ROCKER ARM
Earl A. Thompson, Bloomfield Hills, Mich. (1300 Hilton Road, Ferndale, Mich. 48220)
Filed Feb. 24, 1966, Ser. No. 529,829
Int. Cl. F01l 1/18
U.S. Cl. 123—90 **3 Claims**

Rocker arms for internal combustion engines are made of a high-carbon high-chromium alloy containing from about 1.3% to about 3.1% carbon, from about 15% to about 35% chromium with the remainder iron, with or without up to about 3.5% silicon, manganese and other residuals. The alloy is cast, cooled so quickly that a relatively small number of relatively large primary chromium carbide particles are formed and widely dispersed in a matrix of austenite containing a solid solution of chromium and carbon. Then large numbers of relatively small particles of chromium carbides are precipitated from the matrix and distributed throughout the spaces between the large primary carbon particles leaving the remainder of the matrix containing carbon and susceptible to subsequent hardening. Then the casting is hardened by heating and subsequent quenching at such temperature and at such time that the matrix is substantially converted to martensite without significantly changing the carbide particles. The cam-follower portion of the rocker arm may

be formed of a metal different from the main body of the arm, and cast thereon by forming a solid skin over previ-

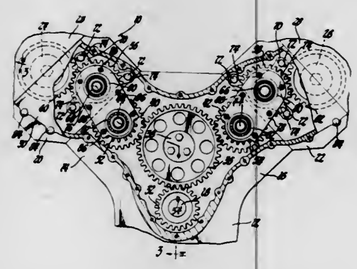


ously poured metal, then remelting the skin to form a single mass of metal by pouring the second metal on the skin.

3,502,059
ADJUSTABLE GEAR TRAIN

Dennis A. Davis, Rochester, and Harold A. Little, Dearborn, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 20, 1968, Ser. No. 714,483
Int. Cl. F16h *55/18*; F01l *1/00*
U.S. Cl. 123—90 6 Claims



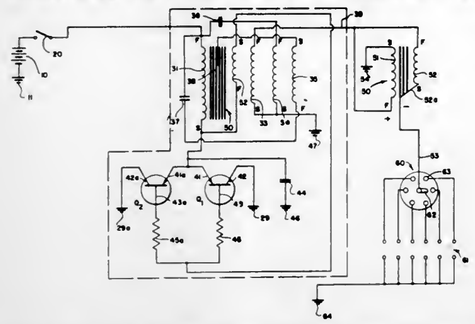
The preferred embodiment comprises a V-type engine having a gear train connecting the crankshaft with overhead camshafts mounted on cylinder heads which are separable from the engine cylinder banks. Center distances between all engaging gears except the idler and camshaft gears are fixed by mounting in the cylinder block or by tying together with connector brackets. The connector brackets permit movement of idler gear centers in each bank to provide a single adjustment of gear lash for each cylinder bank.

3,502,060
ELECTRONIC IGNITION SYSTEM

Oscar F. Tibbs, Ripley, Tenn., assignor to John W. Buzick, Monette, Ark.

Continuation-in-part of applications Ser. No. 580,795, Sept. 20, 1966, and Ser. No. 648,903, June 26, 1967.
This application Oct. 16, 1968, Ser. No. 768,119
Int. Cl. F02p *1/00*; H05b *37/02, 39/04*
U.S. Cl. 123—148 2 Claims

A transistorized ignition system for a multi-cylinder engine which employs no breaker points and no mechanical moving parts provides a constant voltage which is harmlessly absorbed by the system when the spark plugs are not firing. The system includes a transistorized trans-

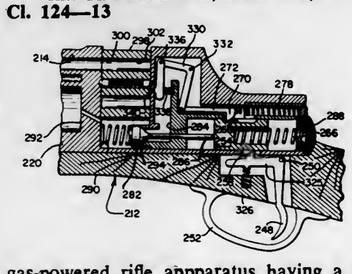


former control circuit which converts battery supplied D.C. into pulsating D.C., which is fed to the ignition coil.

3,502,061
GAS GUN HAVING REMOVABLE ROTATABLE MAGAZINE

Hyo Min Yoo, 73 1st St., Chung-Pa-Dong, Yong-san-ku, Seoul, Korea

Filed Feb. 16, 1967, Ser. No. 616,552
Int. Cl. F41b *11/00*; F41f *1/04, 7/02*
U.S. Cl. 124—13 5 Claims

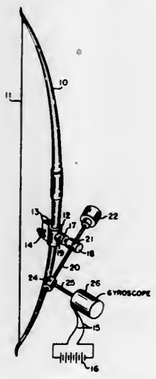


A gas-powered rifle appparatus having a pressurized gas reservoir communicative through a trigger-operated valve with a replaceable revolving magazine. The trigger is provided with a pair of actuating rods which, after the valve is actuated thereby, positively index the magazine.

3,502,062
ARCHERY BOW WITH GYROSCOPIC STABILIZER

Donald E. Shurts, 826 Shroyer Road, Dayton, Ohio 45416

Filed Jan. 23, 1967, Ser. No. 611,021
Int. Cl. F41b *5/00*
U.S. Cl. 124—23 2 Claims



An archery bow is provided having secured thereto a gyroscope having its axis of rotation capable of adjustment to different attitudes with respect to the bow.

3,502,063
TAKEDOWN BOW

Fred B. Bear, Grayling, Mich., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Filed May 20, 1968, Ser. No. 730,498
Int. Cl. F41b *5/00*
U.S. Cl. 124—23 10 Claims

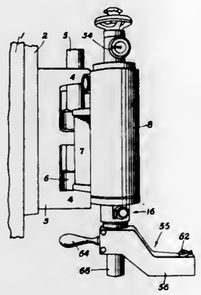


An archery bow having removable limbs attached to a handle section by means of a socket receptable including alignment means mating with the limb butt. A cover plate is pivotally attached to the receptacle and movable from an open position to a closed position providing a wedge locking action.

3,502,064
SHAFT MOUNTING ASSEMBLY FOR WHEEL DRESSER OR THE LIKE

Robert W. Cashman and Anthony Wasco, Jr., Saginaw, Mich., assignors to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan

Filed Feb. 23, 1967, Ser. No. 617,883
Int. Cl. B24b *53/00*; F16c *17/06*
U.S. Cl. 125—11 5 Claims

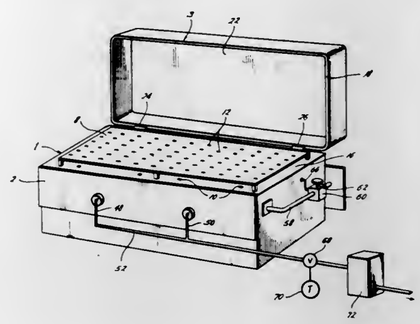


A mounting assembly for a grinding wheel dresser having an axially reciprocable and rotatable shaft journaled within a sleeve by means of angularly spaced bearings one of which is spring pressed into engagement with the shaft, and including means reacting between the shaft and the sleeve for indicating precisely the extent of longitudinal movement of the shaft.

3,502,065
STEAM HEATING DEVICE

Rush E. Lassiter, 1722 W. Thomas St., Hammond, La. 70401

Filed May 3, 1968, Ser. No. 726,497
Int. Cl. A21b *1/36*
U.S. Cl. 126—20 11 Claims

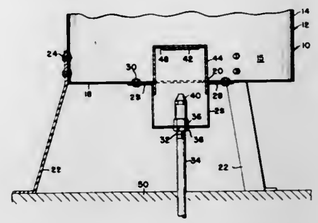


A steam heating device is provided which includes a couple of apertured plates spaced apart a certain distance in parallel relationship. The lower plate is larger than the upper plate, forming an uncovered peripheral area, and a lid is hingedly connected to fit over the plates so that a peripheral rim on the lid rests on the uncovered area. Steam generating tube construction, timing means and water treatment means are also provided.

3,502,066
BLOWERLESS HEATER

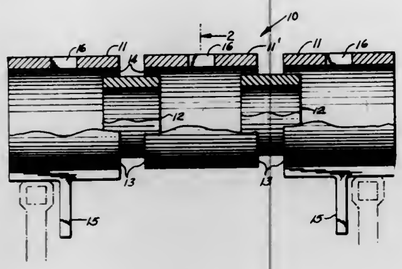
George K. Hurd, Pompano Beach, Fla., assignor to Joy M. Thomas, Pompano Beach, Fla.

Filed Aug. 26, 1968, Ser. No. 755,171
Int. Cl. A01g *13/06*; F23d *15/02*
U.S. Cl. 126—59.5 3 Claims



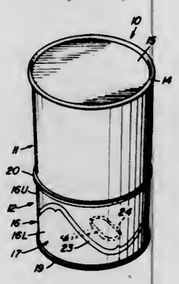
A blowerless or natural draft heater for orchards, groves and growing crops and the like, having an elongated tubular combustor including an outlet and a restricted inlet into which an atomized jet of liquid hydrocarbon fuel is injected, the jet of fuel entraining the proper quantity of air from the ambient atmosphere to assure complete, smokeless, combustion, and a baffle spaced inwardly of the opening to divert the incoming fuel and air, the dimensions, spacing, and relationship of parts being critical to assure such complete combustion of the fuel and atmospheric air without resorting to a blower or other positive air supply means.

3,502,067
BACKLOG FOR FIREPLACES
Raymond Hickman, P.O. Box 141, Pulaski, Tenn. 38478
Filed June 12, 1968, Ser. No. 736,304
Int. Cl. F24b *13/02*
U.S. Cl. 126—120 4 Claims



A backlog device for fireplaces having three spaced apart large diameter pipes with a pair of smaller diameter pipes relative to the interior, in order to allow the fire place to give off more heat while requiring less wood to achieve this purpose.

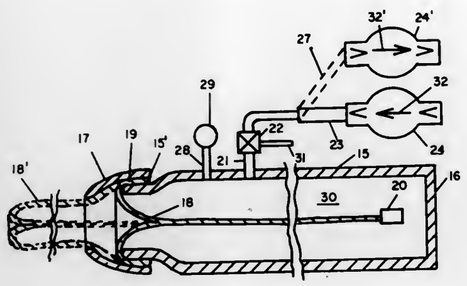
3,502,068
DISPOSABLE FOOD CONTAINER HEATER
George A. Henson, Colorado Springs, Colo. (P.O. Box 541, Monument, Colo. 80132)
Substituted for abandoned application Ser. No. 612,423, Jan. 30, 1967. This application Feb. 14, 1969, Ser. No. 824,331
Int. Cl. A47j *36/26*; F24c *1/16*; B65d *25/00*
U.S. Cl. 126—262 10 Claims



A disposable heater for a food container such as a can, the heater having a casing adapted to contain fuel. The casing is separable into upper and lower casing members having projections which may be seated on each other for supporting the upper casing member on the lower member with spaces between the projections providing vents for combustion of the fuel.

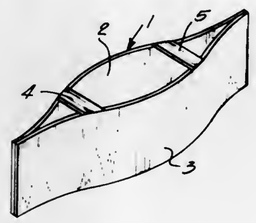
3,502,069
METHOD AND APPARATUS FOR PLACING IN AND RETRIEVING A TUBULAR PROBE FROM A BODY CAVITY
Daniel Silverman, 5969 S. Birmingham St., Tulsa, Okla. 74105
Filed Oct. 20, 1965, Ser. No. 498,653
Int. Cl. A61b *10/00, 17/24*; A61m *35/00*
U.S. Cl. 128—2 46 Claims

This invention is concerned with an instrument for the placement of a sampling, inspecting or treating device within an extended body cavity. The instrument comprises a rigid tubular casing and a flexible eversible tubing inside the casing. One end of the tubing is closed and the other end is sealed circumferentially over an open end of the casing. The other end of the casing is closed. Means are provided to pump fluid into the casing at a pressure higher



than the pressure outside the casing, to evert the tubing out of the open end of the casing. Means are provided to pump fluid out of the casing at a pressure lower than the pressure outside of the casing, to invert the tubing back into the casing. Various embodiments of tubular probes may be used in the instrument.

3,502,070
SKIN MARKER FOR USE IN BIOPSY EXCISIONS
Robert J. Bliss, 1025 Lemay Ave., Fort Collins, Colo. 80521
Filed Aug. 18, 1966, Ser. No. 573,338
Int. Cl. A61b *17/00*
U.S. Cl. 128—2 3 Claims



A surgical instrument for marking a pattern on the skin of a patient to guide a surgeon in subsequently incising to acquire an excision by a biopsy, or surgical debridement, with the use of a surgical cutting instrument, leaving a defect that can be accurately closed to provide a straight hairline scar.

3,502,071
HAND CONTROLLED LEG BRACE
Edward A. Holly, 6300 SW. 62nd Place, Miami, Fla. 33143
Filed Sept. 21, 1967, Ser. No. 669,461
Int. Cl. A61h *3/00*
U.S. Cl. 128—25 4 Claims

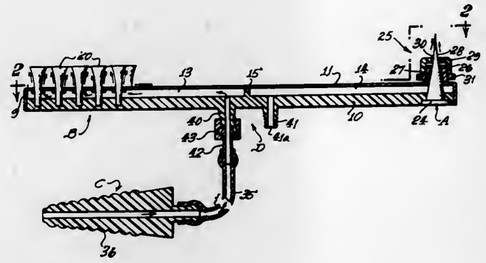
A leg brace which enables a user to cope with a paralyzed leg which cannot perform its natural function when standing or walking. It takes the place of a heavy cumber-

some full length leg brace. To use, merely strap the restraining shackle around the limb above the knee, catch



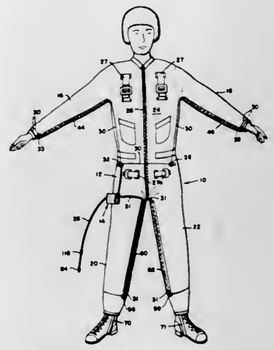
hold of the lifting and controlling handle means and, by practice, learn to use it with requisite skill.

3,502,072
WATER JET TOOTH CLEANSING AND THERAPEUTIC IMPLEMENT
Theodore Stillman, 17329 San Jose St., Granada Hills, Calif. 91344
Filed Sept. 23, 1966, Ser. No. 584,321
Int. Cl. A61h *9/00*; A61m *3/00*
U.S. Cl. 128—66 31 Claims



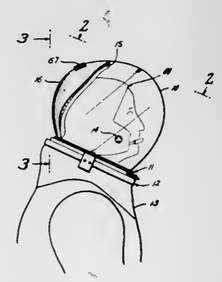
A therapeutic oral hygiene implement including a toothbrush unit at one end; a pick and massage device at the other end, means for delivering tubular jets of pure water or dentifricially beneficial solutions of water surrounding the bristle tufts of the brush, and surrounding the pick; means for coupling the implement to a faucet to deliver water to the implement; and means for selectively directing the water to the brush or to the pick, as desired. The bristle tufts and the pick are anchored in a mounting bar. The jacket and bar cooperatively function as a handle. The tufts and pick project through concentric apertures in a water jacket extending lengthwise of the mounting bar on one side thereof so as to provide water distribution ducts extending to the brush and the pick. The apertures are of larger diameter than the bristle tufts and pick which extend through them, whereby annular water delivery ports are defined about the tufts and the pick. Thus the water jets surround and travel along the surfaces of the tufts and pick so as to flush the areas being scrubbed by the bristle tufts or scraped by the pick. This invention also describes an elongated flexible casing that can be fitted over the average toothbrush or toothpick and thereby convert them to a water delivery toothbrush and toothpick.

3,502,073
LIMB RESTRAINT APPARATUS
Robert M. Stanley, Denver, Colo., assignor to Stanley Aviation Corporation, Aurora, Colo., a corporation of New York
Filed June 20, 1967, Ser. No. 647,417
Int. Cl. A61f *13/00, 5/37*
U.S. Cl. 128—134 15 Claims



The apparatus disclosed herein for restraining the limbs of a man escaping from a vehicle comprises a garment worn by the man and slack cords which are carried on the garment and which are connected either to a prime mover or a fixed part in the vehicle in such a manner that their effective lengths are shortened to forcibly draw and tightly bind the man's limbs together as he is ejected or extracted from the vehicle by operation of his escape equipment.

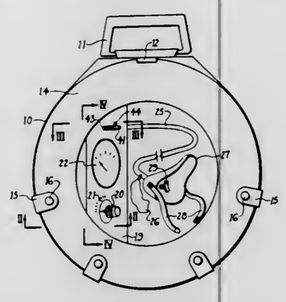
3,502,074
HELMET ASSEMBLY AND LATCH MEANS THEREFOR
Robert L. Jones, 705 Canary Circle, Pasadena, Tex. 77502, and James H. O'Kane, Melody Lane, Friendswood, Tex. 77546
Filed Jan. 3. 1966, Ser. No. 518,487
Int. Cl. A62b *7/00*; A42b *3/00*
U.S. Cl. 128—142.5 15 Claims



A helmet assembly formed of a transparent shell of polycarbonate resin of single unit construction. The shell is shaped so as to allow complete freedom of normal head movement, and at the same time be of as small volume as possible. An air distributing and shock absorbing pad is secured in the rear of shell and cooperates with an air valve in the suit for supplying air for breathing, cooling, and defogging. To secure the shell to the suit an automatic latching means allows the wearer to merely position shell over his head and push downward to securely latch the

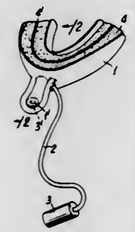
shell. A push button mechanism releases the shell. Impact protection for severe impact periods, e.g., launch, reentry, etc., is provided through the use of a removable internal bump cap and an external pad. The communications are carried on a skull cap which can be worn with or without the shell. An extravehicular, snap-on visor assembly is provided to protect the wearer against glare and radiation.

3,502,075
PORTABLE RESUSCITATOR APPARATUS
John James Cowley, Toronto, Ontario, Canada, assignor, by mesne assignments, to Abbott Laboratories, a corporation of Illinois
Filed Feb. 27, 1967, Ser. No. 618,636
Int. Cl. A62b *7/02*; A61h *31/00*
U.S. Cl. 128—145.8 **6 Claims**



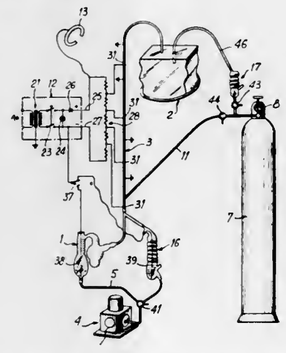
A portable resuscitator apparatus having a pressure vessel for gas consisting of a length of tubing wound upon itself, a jacket for the pressure vessel, an outlet capillary tube connected to the vessel, an adjustable restricting means connected to the capillary tube to limit gas flow therethrough, an expansion chamber on the side of the restricting means remote from the pressure vessel, further tube means extending from the expansion chamber, control tap means connected to the further tube means, flexible hose means connected to the control tap means and a breathing mask attachable on the flexible hose means. The apparatus is capable of either resuscitation or inhalation type operation.

3,502,076
ELECTRODE FOR TREATMENT OF TEETH
Adriano Bertolini, % Pensionato, G. Bertone, Via Ludovico il Moro I, Pavia, Italy
Filed Aug. 12, 1966, Ser. No. 572,093
Claims priority, application Italy, Aug. 27, 1965, 8,429/65
Int. Cl. A61c *19/06*; A61n *1/30*
U.S. Cl. 128—172.1 **5 Claims**



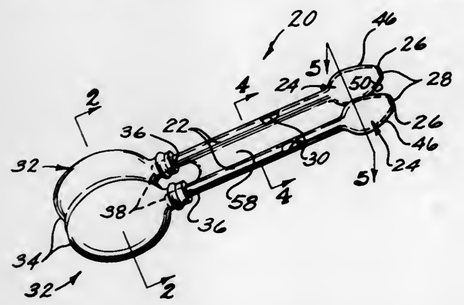
An electrode for iontophoretic treatment of teeth comprising a U-shaped support having a channel therein, an electrical conductor in the form of a flat plate having pointed upstanding protrusions disposed on the bottom of the channel, a handle having a socket therein for receiving electricity to be supplied to the conductor, and a sponge shaped to fit into the channel and over the pointed protrusions to make contact with the conductor and having a V shaped split running through the center thereof. The sponge is saturated with a curative substance and the electrode is grasped by the patient by biting with his teeth inserted in the slit to receive the curative substance.

3,502,077
APPARATUS FOR INTRODUCING MEDICINAL SUBSTANCES IN THE FORM OF A POLARIZED FLUX INTO THE SYSTEM BY THE ALVEOLAR ROUTE
Yves Joseph, 29 Rue Claude Lorrain, Paris 16, France
Filed July 7, 1967, Ser. No. 651,821
Claims priority, application France, July 11, 1966, 68,957
Int. Cl. A61m *31/00, 15/00*
U.S. Cl. 128—172.1 **7 Claims**



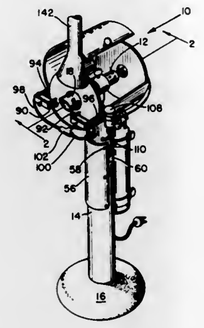
Apparatus for introducing medicinal substances as a polarized flux, atomized in aerosol form, together with oxygen into alveolar respiratory passages includes a pulsating voltage generator which applies an increasing potential to the path of the medicine into the body and supplies a connection to the body skin so that the medicine is polarized during passage into the body.

3,502,078
DUAL-TIPPED NASAL SYRINGE AND ASPIRATING DEVICE
Donald E. Hill and Fern B. Hill, both of 1927 N. Evergreen, Burbank, Calif. 91505
Filed Nov. 15, 1967, Ser. No. 683,314
Int. Cl. A61m *1/00*
U.S. Cl. 128—232 **9 Claims**



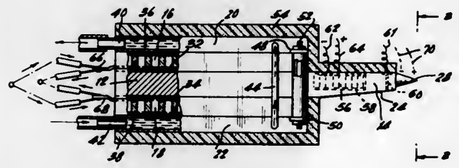
A nasal syringe and aspirating device having a pair of liquid flow path tubes or tube means, each provided with its own flexible, collapsible syringe bulb. The syringe bulbs are separated by a relatively rigid stiffening wall which permits simultaneous and similar operation of the syringe bulbs so that each open tip end of each liquid flow path tube will be operated in either a pumping or suction fashion to substantially the same extent.

3,502,079
CHICKEN DEBEAKER AND INOCULATOR
Augrum H. Simmons and Edwin H. Williamson, Graham, N.C., assignors to Edwin H. Williamson, Graham, N.C.
Filed Oct. 31, 1966, Ser. No. 590,645
Int. Cl. A61b *17/20, 17/36*; A61d *7/00*
U.S. Cl. 128—253 **11 Claims**



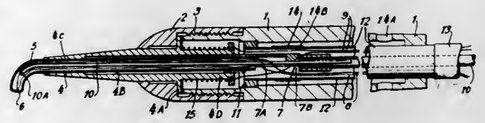
A debeaking and inoculating apparatus for chickens in which a beak-engaging element is heated by a flame to a temperature adequate for burning a chicken beak and a vaccine dispensing unit for discharging vaccine spray against the chicken head during chicken beak burning.

3,502,080
THERMOELECTRICALLY COOLED SURGICAL INSTRUMENT
Max L. Hirschhorn, 5601 13th Ave., Brooklyn, N.Y. 11235
Filed June 28, 1965, Ser. No. 467,781
Int. Cl. A61b *17/36*; A61f *7/00*
U.S. Cl. 128—303.1 **6 Claims**



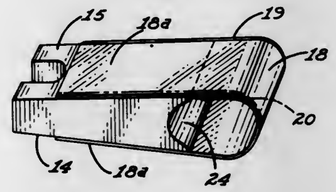
A surgical instrument comprising a heat conductive body having Peltier cells disposed on opposite sides of the body with their cool junctions adjacent to and electrically insulated from the body. Means are provided connecting the Peltier cells to a source of direct current and cooling fluid conduits are disposed on opposite sides of the body adjacent the hot junctions of the cells and handle means are disposed about the conduits holding the body, the cells and the conduits in an assembled relationship and a secondary Peltier cell having a cold junction facing said operating portion and a hot junction in heat conductor relation to said body.

3,502,081
CRYOSURGICAL INSTRUMENT
Selig Percy Amoils, 4 Griswold Road, Saxonwold, Johannesburg, Transvaal, Republic of South Africa
Filed Apr. 5, 1966, Ser. No. 540,274
Claims priority, application Republic of South Africa, Apr. 13, 1965, 65/1,952; June 25, 1965, 65/3,391
Int. Cl. A61b *17/36*; F25d *3/00*
U.S. Cl. 128—303.1 **24 Claims**



Cryosurgical instrument utilizing the Joule-Thomson effect. A body encloses a cavity having a wall of high thermal conductivity and an exhaust passage leading from the cavity. A conduit for the flow of pressurized gas from a remote source of gas leads into the cavity through a restricted orifice. A valve stops the flow of pressurized gas simultaneously with the opening of the exhaust passage to the atmosphere. A safety relief valve, a heater for localized heating, and a thermocouple for temperature indication are also provided.

3,502,082
CURETTE WITH DISPOSABLE BAND LOOP BLADE
Helen E. Chatfield, 1020 E. Georgia Ave., Phoenix, Ariz. 85014
Filed July 10, 1967, Ser. No. 652,135
Int. Cl. A61b *17/22*
U.S. Cl. 128—304 **2 Claims**

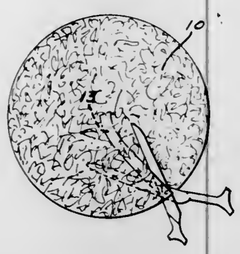


A surgical instrument comprising a curette having a disposable single or double-edged stainless steel razor band loop blade for cutting and cleaning out cavities in tissue and as a microtome, knife, eraser and abrader.

3,502,083
BREAST PADS AND METHOD OF MAKING THE SAME
Jack E. Howard and Lewis A. Kaplan, Los Angeles, Calif., assignors to United Cellular Products Corp., Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 570,519, Aug. 5, 1966. This application Feb. 19, 1969, Ser. No. 800,690
Int. Cl. A41c *3/00*
U.S. Cl. 128—516 **6 Claims**

A brassiere pad and method of making the same from flat fiberfill material. A fiberfill blank has at least one cut having a bevelled surface which is coated with adhesive. The blank is twisted into a conical shape and the bevelled surface adhered to another portion of the blank. The conical blank is then molded to provide a brassiere pad hav-

ing no stitching or tangible seam. The lower portions of the blank may be disposed in overlapping relationship to each other to form push up pads. An inner lining may be



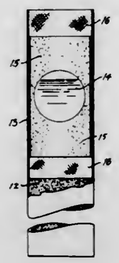
bonded to the pads at the same time that they are molded. An outer lining may be separately molded and then bonded to the outside of the pads.

3,502,084

FILTER ELEMENT FOR SMOKING DEVICES

Margaret F. Carty, Plainfield, Vt., assignor to The H-2-O Filter Corporation, New York, N.Y., a corporation of New York

Filed Aug. 24, 1967, Ser. No. 662,920
Int. Cl. A24f *7/04, 25/02*
U.S. Cl. 131—10.1 **1 Claim**



This invention relates to a filter for smoking devices, formed of a mass of compressed absorbent material and at least one rupturable capsule having a water content. When the filter mass is squeezed by the fingers, the capsule is broken and the released water, as it is absorbed, causes the absorbent material to expand and fill the void left by the collapsed capsule.

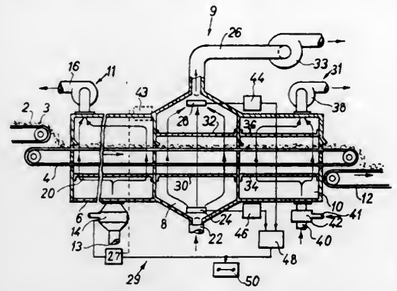
3,502,085

APPARATUS FOR DETERMINING THE TEMPERATURE OF TOBACCO

Waldemar Wochnowski, Hamburg-Volksdorf, Germany, assignor to Hauni-Werke Korber & Co. KG., Hamburg-Bergedorf, Germany

Filed Feb. 21, 1967, Ser. No. 617,618
Claims priority, application Germany, Mar. 12, 1966, H 58,789
Int. Cl. A24b *9/00, 3/04, 3/10*
U.S. Cl. 131—135 **11 Claims**

Apparatus for determining the temperature and/or moisture content of tobacco. Successive unit quantities of tobacco are passed through a transversely flowing current of gas in measured amounts and measuring means for determining the temperature of gas prior and subsequent to passage through the tobacco are located in the gas current flowing towards the tobacco and also in the gas flow which has passed transversely through the tobacco.



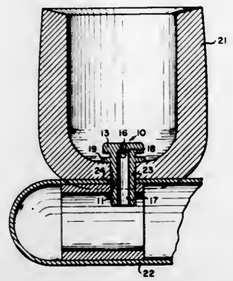
The difference between the two temperatures is indicative of the temperature and/or moisture content of tobacco.

3,502,086

ANTI-CLOGGING FLUID FLOW FITTING

William O. Smith and Theodore F. Karwoski, Burgaw, N.C., and Robert L. Smith, Rte. 1, Box 412, Burgaw, N.C. 28425; said William O. Smith and Theodore F. Karwoski assignors to Robert L. Smith

Continuation of application Ser. No. 541,362, Apr. 8, 1966. This application May 8, 1969, Ser. No. 824,750
Int. Cl. A24f *1/02, 7/04, 13/04*
U.S. Cl. 131—205 **7 Claims**



An anti-clogging fluid flow fitting particularly adapted for use in smoking pipes including a shank, one end of which is theadedly engaged with the stem of the pipe, the opposite end of the shank being provided with a head radiating outwardly from the shank, an axial bore extending through the shank and head, the bore being enlarged from a point adjacent the head to the opposite terminal thereof, a transverse bore immediately subjacent the head and in communication with the axial bore, and a peripheral flange radiating outwardly from the shank and spaced from the head a distance substantially equal to the diameter of the transverse bore, to prevent the entry of relatively large particles between the head and peripheral flange into the transverse bore, the peripheral flange further lying in contiguous relation with the bottom of the pipe bowl.

3,502,087

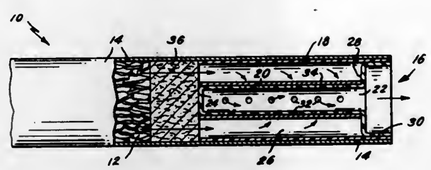
CIGARETTE FILTER

Ernest J. Romano, Warwick, R.I.
(48 High Point Drive, East Greenwich, R.I. 02818)

Filed July 5, 1968, Ser. No. 742,830
Int. Cl. A24d *1/04;* **A24f** *13/06*
U.S. Cl. 131—261 **9 Claims**

A cigarette filter comprising a cylindrical housing having a tubular member extending longitudinally and concentrically therein so as to provide an annular chamber

therebetween. The tubular member is open at its mouth end and closed at its opposite end, while the opposite is true of the annular chamber. A plurality of longitudinally and circumferentially spaced openings are provided in the peripheral surface of said tubular member, and an air-pervious sleeve filter covers said apertures. Additional filter means block the open end of the an-



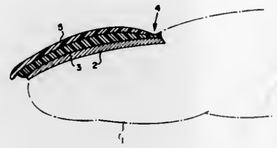
nular chamber, whereupon inhaled smoke must first pass through the additional filter means to the annular chamber and then subsequently through the filtered apertures to the interior of the air-pervious sleeve tubular member before reaching the mouth of the smoker. The volume defined by the annular chamber is several times the volume taken up by the air-pervious sleeve.

3,502,088

ARTIFICIAL NAIL COVERING AND METHOD OF PREPARING THE SAME

Sven Jarby, Salez, Saint Gall, Switzerland, assignor to Inter-Taylor AG., Chur, Switzerland

Filed June 21, 1966, Ser. No. 559,307
Claims priority, application Denmark, June 22, 1965, 3,159/65; Feb. 9, 1966, 676/66
Int. Cl. A45d *29/00*
U.S. Cl. 132—73 **9 Claims**



A set of components for forming an artificial finger nail consists of a plastic nail blank having an inner face concavely curved in three dimensions and a paste like adhesive having an acrylic monomer base. An oxidizing catalyst which is not initially present in the adhesive is provided either as a coating on the concave blank face or in a separate lacquer component of the set. The separate catalyst lacquer is applied to a digit and followed by the adhesive and the nail blank.

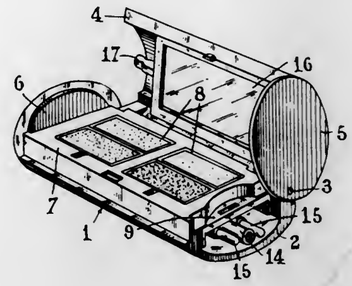
3,502,089

MAKE-UP CASE

Lucien Paradis, Pisa, Italy, assignor to Sopas Profumi, S.p.A., Pisa, Italy

Filed Oct. 12, 1967, Ser. No. 674,988
Int. Cl. A45d *33/28*
U.S. Cl. 132—82 **8 Claims**

A make-up vanity case consisting of an elongated box divided into two complementary halves wherein each box half comprises a longitudinal tray closing the corresponding box half and providing a free space between the tray and the bottom of this box half, at least one make-up cake secured to the top face of the tray closing the lower



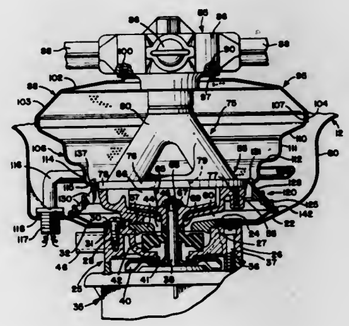
box-half constituting the box proper of the case, a mirror secured to the lower face of the tray closing the upper box-half constituting the cover of said box, and brushes and make-up accessories housed in said free spaces between said box-halves and their trays.

3,502,090

DISHWASHING APPARATUS

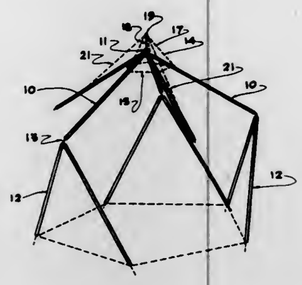
Ernst Grunewald, Troy, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio

Filed Dec. 14, 1967, Ser. No. 690,516
Int. Cl. B01d *29/04, 39/12*
U.S. Cl. 134—111 **8 Claims**



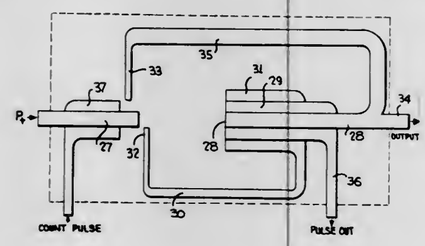
A dishwashing machine has a tank with a bottom sump in which is positioned a main pump operable to recirculate water through a rotatable reaction spray arm and over articles supported by racks within the chamber. A drain pump has a top inlet connected to the bottom of the sump and both pumps are driven by a vertically positioned motor. A removable annular fine filter has an inverted generally frusto-conical lower portion which surrounds the inlet of the main pump and an annular frusto-conical coarse filter is disposed under the fine filter surrounding the inlet of the drain pump and has an upper portion secured to the lower portion of the fine filter.

3,502,091
TENT SUPPORTING FRAME
John R. Corbin, Cherry Hill, N.J., assignor to Wendel V. Goltermann, Reutlinger, Wurttemberg, Germany, a corporation of Germany
Filed Sept. 12, 1968, Ser. No. 759,304
Int. Cl. A45f 1/16
U.S. Cl. 135—4 6 Claims



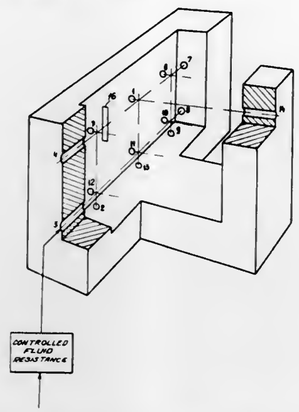
A supporting structure for a tent or the like having a dome-like roof truss formed by a plurality of ridge struts radiating from a common hub and a plurality of triangular side struts for supporting the ridge truss. Eave struts between the ends of the ridge struts and selected triangular side struts are made unnecessary and are eliminated by drawing the ridge struts, forming the roof truss, rigid by means of a cable truss at the hub. The cable truss includes first cables extending between adjacent ridge struts and second cables extending between the ridge struts and the upper end of an extendible compression rod extending above the hub. A similar roof truss may be supported in a cantilever manner from a main tent and held in place by an overhead cable attached to the common hub of the truss to provide an auxiliary tent utilizing no side supporting truss.

3,502,092
TURBULENCE AMPLIFIER AND CIRCUITS
Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Feb. 25, 1965, Ser. No. 435,168
Int. Cl. F15c 1/14
U.S. Cl. 137—81.5 43 Claims



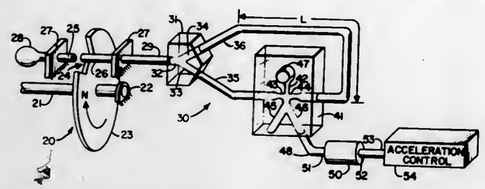
A turbulence amplifier having plural receiver ducts disposed such that power stream turbulence is manifested as a pressure differential between said ducts; an alternative feature comprises parallel disposed power and control nozzels to provide greater control over power steam turbulence; oscillators, counter stages, and logic circuits are disclosed employing one or both of the features.

3,502,093
MULTIFUNCTION LOGICAL JET ELEMENT
Henryk Józef Léskiewicz, Chodiewicza 4–10, Warsaw, Poland
Filed Jan. 12, 1966, Ser. No. 520,146
Claims priority, application Poland, Feb. 2, 1965, P 107,221
Int. Cl. F15c 1/14
U.S. Cl. 137—81.5 1 Claim



A jet logical element in which the jets controlling a main jet are positioned to interact with each other.

3,502,094
FLUID LOGIC CIRCUIT
Jerome L. Johnson, St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 623,663
Int. Cl. F16c 4/00
U.S. Cl. 137—81.5 5 Claims

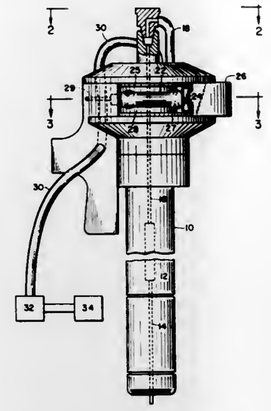


This disclosure describes a pure fluid logic circuit having an analog output which is proportional to the product of functions of two input parameters. The logic circuit comprises a signal source which produces fluid pulses whose repetition rate is proportional to a function of a first parameter, a pulse forming device which converts the pulses from the signal source into pulses having a like repetition rate and having a pulse duration which is proportional to a function of a second parameter, and a fluid capacitor which converts the pulses from the pulse forming device into an analog output.

3,502,095
FLOW CONTROL DEVICE
Gerhard B. Grenzberg and Ward C. Smith, Medfield, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 27, 1968, Ser. No. 740,682
Int. Cl. G01n 21/00; A61m 1/00; F16l 55/14
U.S. Cl. 137—205 8 Claims

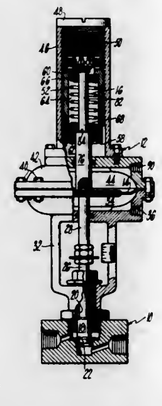
A device for controlling fluid flow into and out of a chamber, such as a sample testing chamber. The sample chamber is connected to a vacuum pump by means of a

conduit, which, in turn, communicates with a flexible tube having a roller in a position to compress the tube. The roller is moved along the flexible tube in order to create a vacuum, which is communicated through the conduit to the sample chamber. A valve located on the conduit between the vacuum source and its connection with the



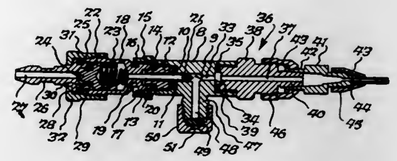
flexible tube is normally closed, except when the roller is at its most advanced position, in which position the flexible tube, the free end of which is vented to atmosphere, is no longer compressed by the roller. In this position the valve opens, and all fluid is withdrawn by the vacuum pump to a waste container.

3,502,096
REVERSIBLE VALVE ACTUATING MECHANISM
Robert B. Clay, Warren Township, N.J., assignor to Skinner Precision Industries, Inc., New Britain, Conn., a corporation of Connecticut
Filed May 16, 1968, Ser. No. 729,766
Int. Cl. F16k 31/12, 31/165
U.S. Cl. 137—270 5 Claims



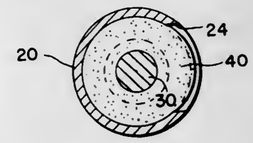
A valve actuating mechanism for reversing valve operation without change or removal of parts includes a sleeve-like spring cage axially adjustable relative to the mechanism housing and defining a spring chamber of fixed size, the spring cage permitting free relative movement of an actuator stem in response to the driving action of both a fluid operated member and a compression spring.

3,502,097
CATHETER-INFUSER CONNECTOR
Wolf F. Muller, New York, N.Y., assignor to United States Catheter & Instrument Corporation, Glen Falls, N.Y., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,221
Int. Cl. A61m 5/14, 25/00; F16k 15/06
U.S. Cl. 137—318 2 Claims



This invention is directed to a one way flow valve system to be positioned between a positive pressure infusion device and a catheter leading to a body passage or cavity, e.g. the circulatory system which has periodic pressure surges. The unit may be easily split to control flow of the infuser and/or catheter. The unit further provides an angular member to introduce supplemental liquid into the flow stream.

3,502,098
RISER VALVE
Bobbie J. Williams, Rte. 1, Saul Road, Sunnyside, Wash.
Filed Aug. 27, 1968, Ser. No. 755,634
Int. Cl. A01q 25/00; F16k 27/00, 31/50
U.S. Cl. 137—382 9 Claims

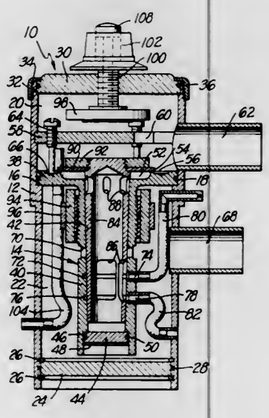


A hollow valve casing is open at the top thereof and has a lateral discharge opening formed therein. A movable valve means includes an elongated threaded member having an enlarged head at one end thereof with which an annular resilient sealing portion is engageable. A deflector means is in engagement with the resilient sealing portion and extends laterally through said discharge opening. A spacer member has a central hole formed therethrough through which the elongated threaded member extends, and a wing nut is threaded on the outer end of the elongated member and engages the spacer member for compressing and expanding the resilient sealing portion into engagement with the valve casing.

3,502,099
FLOW VALVE FOR RESPIRATION SYSTEM
Robert K. Wilson, Los Angeles, Calif., assignor, by mesne assignments, to Dynasciences Corporation, Los Angeles, Calif., a corporation of Pennsylvania
Filed Sept. 30, 1966, Ser. No. 583,297
Int. Cl. G05d 7/06; F16k 31/14, 17/00
U.S. Cl. 137—495 10 Claims

A flow sensitive valve used in conjunction with a positive pressure flow cutoff respiration system has a housing mounted valve member which is automatically movable to an open position from a fully closed position permitting

a positive pressure flow of upstream gas through the housing between inlet and outlet ports thereof upon the combination of an initial negative force downstream of the outlet port created through attempted inspiration by a patient causing a flow of gas away from and downstream of said outlet port initiating said opening movement immediately followed by said positive pressure upstream gas flow through the housing forcing completion of the valve member opening movement. The valve member is arranged so as to prevent any pressure of any gas upstream of the housing inlet port from moving the valve member from this fully closed position when positioned therein, and the valve member automatically moves to this fully closed position upon cessation of the positive pressure upstream gas flow therethrough when the lung capacity of the patient is reached to stop such flow. The valve member is balanced by magnets sensitive to the



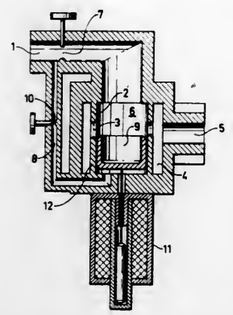
initial negative downstream force and the following positive pressure upstream gas flow, such magnetic balancing permitting the valve member movement as described. Balance overriding means is normally inactive and free of affecting the valve member movement and balance, but is actionable upon selective momentary operation thereof for momentarily altering such balance of the valve member in its fully closed position to initiate the movement of the valve member from said fully closed position despite any lack of any part of the initial negative downstream force created by the patient. The balance overriding means can be means for physically changing the magnet balancing of the valve member or means for creating a gas pressure build up totally within the valve member, in either case, replacing the negative downstream force as would be created by the patient and causing initiation of movement of the valve member from its fully closed position.

3,502,100
FLOW REGULATOR

Björn Lars Herman Jonson, Lomma, Sweden, assignor to Jarnhs Elektriska Aktiebolag, Stockholm-Solna, Sweden, a Swedish company

Filed Apr. 3, 1968, Ser. No. 718,413
Claims priority, application Sweden, Apr. 4, 1967, 4,636/67
Int. Cl. F16k *17/22, 31/163*
U.S. Cl. 137—495 **6 Claims**

A flow regulator has between an inlet and an outlet for fluid to be regulated, a cylinder bore and a piston reciprocable therein and co-acting with openings in the peripheral wall of the cylinder bore, said inlet communicating with said outlet through these openings and the cylinder bore through one end thereof. Upstream of a restriction in the inlet there is provided a connection to the cylinder bore at the other end thereof to apply to the piston the differential pressure over such restriction, the

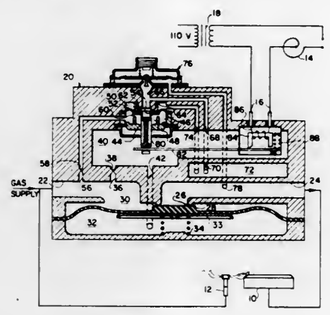


piston thereby being adjusted relatively to said openings to regulate the flow therethrough in dependence of said differential pressure.

3,502,101
THERMOSTATIC CONTROL DEVICE WITH A PRESSURE REGULATED STEPPED OPENED DIAPHRAGM VALVE

James R. Willson, Garden Grove, and Lauren D. Haskins, Long Beach, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 19, 1968, Ser. No. 738,225
Int. Cl. F24c *3/12;* **F16k** *31/145, 31/42*
U.S. Cl. 137—495 **10 Claims**



A control device for burner apparatus having a differential pressure operated diaphragm valve operated by an internal bleed system which is subjected to pressure regulation and to on-off control by a dual valve arrangement.

Initial operation of the on-off valve provides a step input at a reduced rate under pressure regulation which assures good ignition without "roll out" at the main burner. Full input is delayed until the bleed line fills a reservoir.

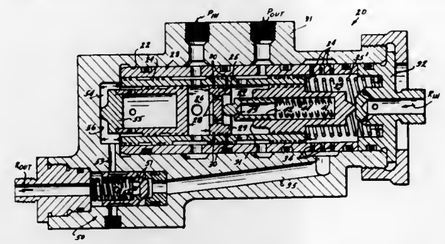
3,502,102
FLOW OPERATED SHUTOFF VALVE

Lewis J. Maltby, Burbank, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware

Filed July 26, 1967, Ser. No. 656,194
Int. Cl. F16k *31/36, 15/02*
U.S. Cl. 137—498 **9 Claims**

There is disclosed a valve mechanism which is adapted to be placed in the hydraulic system branch line extending between a source of hydraulic fluid under pressure and a utilizing apparatus such as an hydraulic actuator.

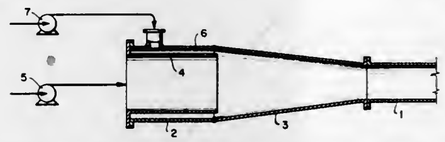
The valve compares the flow of hydraulic fluid from the source to the actuator with the flow of hydraulic fluid from the actuator to the system return. If a leak develops in the branch line downstream of the valve so as to create an imbalance in the flow patterns, the valve translates to a closed position thus shutting off flow, thereby to prevent leakage of hydraulic fluid from the source thereof. Also included as a part of the valve mechanism is a damper device which prevents transient flow surges from inadvertently actuating the valve. A check valve is housed internally of the valve structure to isolate system return from the apparatus return in the event of a leak occurring in the apparatus return line, and system return pressure is ported to and actuates the valve when the check valve is closed even though there is no flow of hydraulic fluid through the valve.



3,502,103
INLET DEVICE FOR INTRODUCING WATER AND OIL IN A PIPELINE

Eke Verschuur, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 707,817
Claims priority, application Netherlands, May 10, 1967, 6706568
Int. Cl. F17d *1/16;* **F15d** *1/06, 1/04*
U.S. Cl. 137—567 **6 Claims**



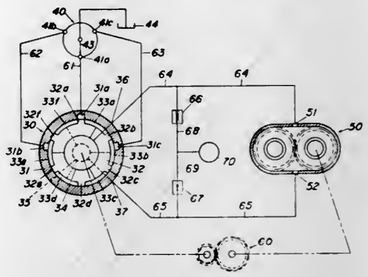
An inlet device for introducing water and oil in a pipeline in which an enlarged cylindrical housing is connected in axial alignment with a pipeline preferably by means of a conical shaped connector and housing an open-ended tubular section having a cross sectional area at least 50% greater than the cross sectional area of the pipeline. The annular chamber between the tubular section and the cylindrical housing serves to admit the water into the pipeline and the interior of the tubular section serves to admit a more viscous fluid, for example, oil.

3,502,104
CONTROL VALVE

Yoshitsugu Tsuchiya, % Mr. Hasegawa, 9–22, 1-chome, Kishi-machi, Urawa-shi, Saitama-ken, Japan, and Kazuyoshi Uyama, 23, 3-chome, Nishirokugo, Ota-ku, Tokyo-to, Japan

Filed Dec. 21, 1966, Ser. No. 603,654
Claims priority, application Japan, Dec. 23, 1965, 40/78,974; May 17, 1966, 41/30,890
Int. Cl. F15b *13/02;* **F16k** *11/10*
U.S. Cl. 137—596.14 **12 Claims**

The present invention relates to a control valve utilizing a single sleeve member and a single spool member mounted within the sleeve member for relative multi, incremental step-by-step movement in opposite directions, between said members, the walls of the sleeve and spool members being formed to define a plurality of spaced chambers interconnected into two groups of communicating chambers

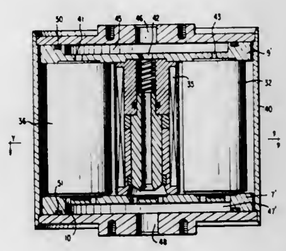


which in turn communicate with a plurality of port means formed in the sleeve. One of the members is further provided with at least two openings one of which communicates with one group of chambers and the other of which communicates with the other group of chambers.

3,502,105
ELECTROMAGNETIC VALVES AND APPLICATION THEREOF TO DIGITAL VALVES

Herbert Ernyei and Jean Salve, Paris, France, assignors to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France

Filed July 14, 1967, Ser. No. 653,455
Claims priority, application France, July 27, 1966, 71,012
Int. Cl. F16k *11/20*
U.S. Cl. 137—599 **2 Claims**



The electromagnetic valves of the present invention consist substantially of an electromagnet in the form of a hollow cylinder through which the fluid passes, the movable core of the said valve playing the role of valve stem, and of valve per se. The said core moves with reference to the fixed magnetic circuit of the coil, sliding in a toric joint seal. The end of the core constituting the valve cooperates with a fixed elastic seat which is used likewise as a joint seal of the closed valve. Ancillary arrangements provided in the magnetic structure allow:

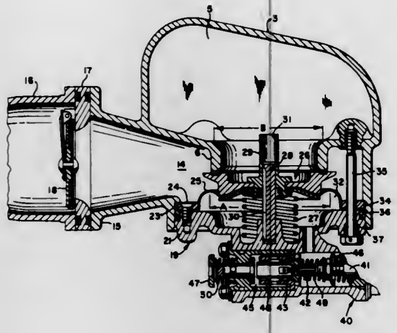
(1) the static balancing of the core constituting the valve in such a way as to reduce the current that energizes or commands each valve;
(2) indication of the position of the core;
(3) holding of the core in its position of the moment, in case of interruption of the energizing current from the coil.

A digital valve of the present invention presents an enclosed assembly of unit valves of the above characteristics.

3,502,106
MANIFOLD VALVE ASSEMBLY

Roger H. Blanchard, Palos Verdes Estates, and Richard L. Cisco, Torrance, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 19, 1967, Ser. No. 647,166
Int. Cl. B64d *37/14*; F16k *17/00*
U.S. Cl. 137—612.1 16 Claims

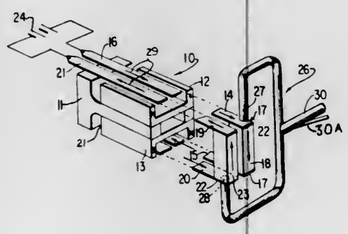


Manifold valve assembly for use as in aircraft fuel tank filling operations characterized by a unitary housing having a fuel inlet manifold communicating with a plurality of fuel outlet ports via valve assemblies operative independently or simultaneously. Manifold valve assembly further characterized in the provision of a de-fueling port communicating with the inlet manifold, whereby fuel in the tanks may be diverted to the de-fueling port for discharge through the port which is the inlet port for tank filling operations.

3,502,107
ELECTRIC TO FLUIDIC TRANSDUCER

Robert B. Hartman, Bridgeport, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware

Filed Nov. 14, 1967, Ser. No. 682,892
Int. Cl. F17d *3/02*
U.S. Cl. 137—612.1 11 Claims

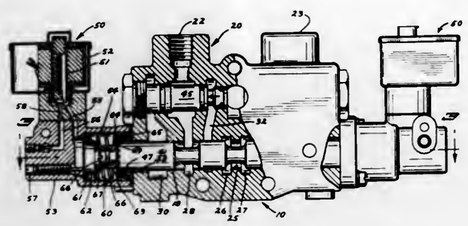


An electric to fluidic transducer with a flexible electrically conductive loop mounted for movement in a magnetic field when an electric current is passed through the conductive loop and a fluidic sensing device adjacent the flexible loop and responsive to the deflection thereof.

3,502,108
PILOT OPERATED VALVE

Clyde D. Merilatt, Mounds View Village, Minn., assignor to Gresen Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 15, 1966, Ser. No. 602,091
Int. Cl. F16k *11/07, 31/12*
U.S. Cl. 137—625.6 9 Claims

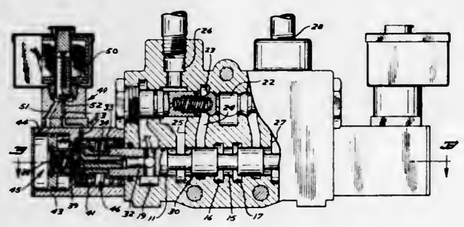


A pilot operated fluid valve using back pressure in chambers enclosing the ends of a valve spool to selectively actuate the valve spool and having a valve spool centering deactivating arrangement to allow actuation of the valve spool at substantially reduced pressures. A part of the valve spool centering apparatus is designated to act as a pressure differential operated piston in one direction only in response to the release of pressure in a chamber adjacent the end of a valve body and valve spool. This serves to inactivate the valve spool centering apparatus and to allow the flow of fluid to a second like chamber on the other end of the valve body to provide a pressure force on the opposite end of the valve spool.

3,502,109
QUICK RESPONSE PILOT OPERATED VALVE

Dwaine D. Straight, New Brighton, Minn., assignor to Gresen Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 7, 1967, Ser. No. 688,862
Int. Cl. F16k *31/363, 11/07*
U.S. Cl. 137—625.64 11 Claims

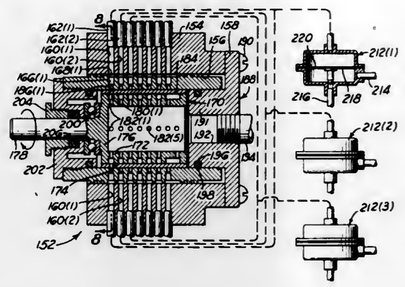


A pilot operated valve in which fluid under pressure is utilized to position a valve spool in accordance with the operation of a pilot valve. A pressure responsive flow restricting shuttle valve is positioned intermediate the source of fluid under pressure and the valve spool operating apparatus. A normally closed pilot valve is utilized to vent the spool operating apparatus to an exhaust, or tank, duct. The pressure drop across the shuttle valve causes it to move to a flow restricting position to allow a small volume of fluid to flow, and to maintain a low pressure in the valve operating apparatus. Subsequent closing of the pilot valve allows pressure to build up in the valve operating apparatus to which it is connected, to release the shuttle valve and cause a rapid return of the valve spool to a neutral position.

3,502,110
HYDRAULIC ENCODER

Kenneth M. Ogilvie, Arcadia, Calif., assignor to Bertea Products, Pasadena, Calif., a corporation of California

Continuation-in-part of application Ser. No. 413,196, Nov. 23, 1964. This application Apr. 14, 1966, Ser. No. 542,640
Int. Cl. F16k *11/02*
U.S. Cl. 137—625.11 8 Claims

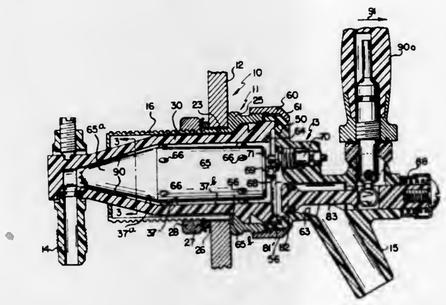


A hydraulic encoder having a rotatably mounted encoder cylinder wiith a plurality of apertures in spaced apart tracks in the outer wall thereof for selective registry with bit passageways in the fixed housing surrounding the encoder cylinder.

3,502,111
DISPENSING DEVICE

Howard J. Hansen, Bay Village, Ohio, assignor to The Hansen Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 369,186, May 21, 1964. This application Oct. 14, 1965, Ser. No. 496,068
Int. Cl. F15d *1/00*; F16k *47/16*; B67d *1/14*
U.S. Cl. 138—46 4 Claims

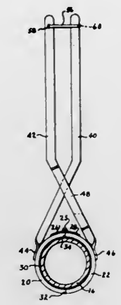


A fluid dispensing device has a body member which defines a flow restrictor chamber and a flow restrictor is located within the flow restrictor chamber. The flow restrictor chamber is defined in part by a conically shaped inlet end portion which receives a conically shaped portion of the flow restrictor. The surface which defines the conically shaped inlet portion extends at an angle greater than the angle formed between the surface defining the conical portion of the flow restrictor and the axis of the flow restrictor. A plurality of rib members are positioned between these conical surfaces. The rib members function to reduce foaming and noise during dispensing of the fluid.

3,502,112
PIPE CLAMP

Michael Hankila, 307 Cecil Ave., Buchanan, Mich. 49107

Filed July 5, 1966, Ser. No. 562,641
Int. Cl. F16l *55/16*; B25b *7/14*
U.S. Cl. 138—99 5 Claims

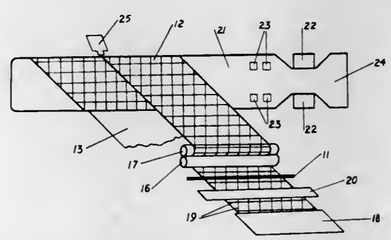


An emergency pipe clamp for use in temporarily repairing a leak in a pipe, comprising two pivotally connected arcuate pads having a layer of sealing material on the inner surfaces of the pads, a handle connected at one end to one of said pads, a second handle connected at one end to the other of said pads, one of said handles having a means forming a slot for receiving the other of said handles for movement of said other handle longitudinally with respect to said one handle in opening and closing said pads.

3,502,113
TUBULAR ARTICLE AND METHOD OF MANUFACTURE

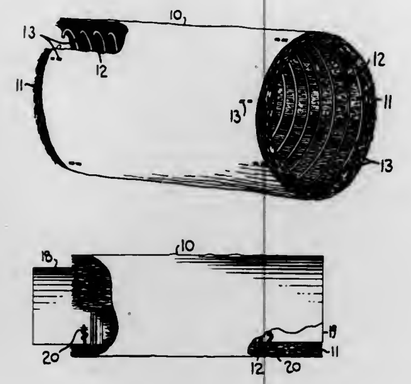
Johan Bjorksten, Fitchburg, Wis. (P.O. Box 265, Madison, Wis. 53701)

Filed Dec. 14, 1966, Ser. No. 607,591
Int. Cl. F16l *11/02*
U.S. Cl. 138—129 5 Claims



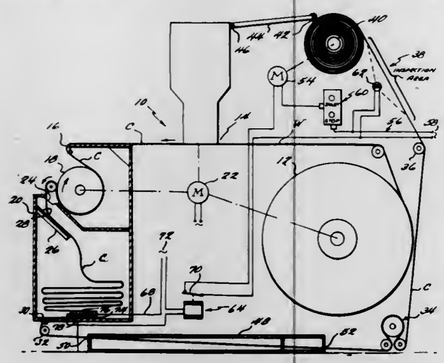
Reinforced plastic tubes are produced by spiral winding plastic film which is reinforced with a prearranged geometrical pattern of non-woven fibers, so arranged that in the final wound article the angular directions of the reinforcements are optimized in regard to the properties desired from the tube produced from them. Preferably the angle of at least one major group of fibers in the film or film laminate spiral wound to form the tube should bear such relationship to the angle of spiral winding in the process, that the tubes thus produced will have substantial reinforcement by fibers positioned in planes transversal to the longitudinal axis of the tube. Resultant tubes will preferably comprise multiple layers of plastic film bonded together with adhesive which permits some slippage of fibers in response to stresses, and in this adhesive parallel fibers which substantially form circles in planes perpendicular to the axis of resultant tubular articles.

3,502,114
FLEXIBLE DUCT
Malcolm Hay, Jr., Pittsburgh, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of abandoned application Ser. No. 414,984, Dec. 1, 1964. This application Jan. 29, 1968, Ser. No. 701,301
Int. Cl. F16l *11/02*
U.S. Cl. 138—129 24 Claims



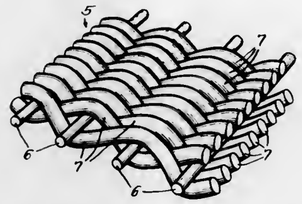
A flexible insulated duct produced by forming a continuous wire helix about a mandrel, securing connectors to each end of said wire helix, wrapping a coherent, strand-individual fiber insulating material about said helix, adhering said insulating material to said wire helix and disposing a flexible sleeve about said insulating material and said helix.

3,502,115
LOOM WITH INSPECTION STATION AND INDEPENDENTLY OPERABLE TAKE-UP MECHANISM
William T. Barnett, High Point, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed June 14, 1968, Ser. No. 737,189
Int. Cl. D03d *49/20;* D06c *3/00*
U.S. Cl. 139—1 11 Claims



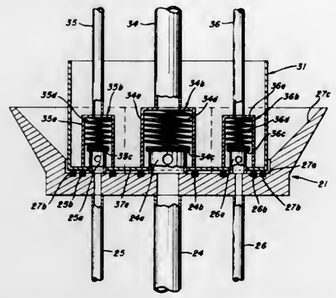
A loom with a take-up or cloth roller operable independently of the usual loom operating means. A storage or scray box is provided at the front of the loom for receiving cloth as the cloth is made, the cloth being fed upon demand from the storage box to the take-up or cloth roller upon which it is wound. An inspection station is positioned intermediate of the cloth roller and the storage box and the inspector has control of the cloth roller independent of the normal operation of the loom so that inspection may be made close to the fell of the cloth. Means are provided to insure an ample supply of cloth in the storage box and thereby eliminate any unnecessary tension on the cloth between the fell of the cloth and and the inspection station when the inspector catches up to the output of the loom.

3,502,116
WOVEN FILTER CLOTH
Richard A. Crawford, Corbin, Ky., assignor to National Standard Company, Niles, Mich., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,557
Int. Cl. D03d *15/02;* B21f *27/00;* B01d *33/06*
U.S. Cl. 139—425 7 Claims



Dutch like woven filter cloth having warps and wefts in which the wefts are driven up close to provide mesh openings of triangular configurations characterized by the warps being of greater yield strength than the wefts, the wefts being of greater cross sectional area than the warps, and the crimps in the wefts being substantially greater than the crimps in the warps.

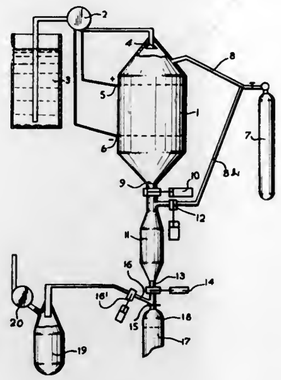
3,502,117
DEVICE FOR AUTOMATICALLY FILLING VEHICLE TANKS WITH MOTOR FUEL
Hilbert J. Nebelsiek, Hammond, Ind., and Lawrence T. Wright, Homewood, and Irwin Ginsburgh, Morton Grove, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed July 26, 1967, Ser. No. 656,078
Int. Cl. B67d *5/04;* B65b *31/00, 3/18*
U.S. Cl. 141—7 15 Claims



A vehicle mounted inlet means for mating with a dispensing means including a dispensing head for transferring fuel from bulk storage to a fuel tank. The vehicle mounted inlet means communicates with the vehicle tank through a plurality of conduits.

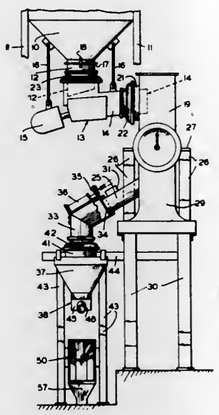
The dispensing head movably connected to a support means and communicating with a fuel supply mates with the vehicle mounted inlet means so that when final positioning occurs fuel is transferred in a controlled manner from the fuel supply through the dispensing head and the inlet means to the vehicle fuel tank.

3,502,118
AEROSOL FILLING APPARATUS
Louis Assalit, 20 Rue des Colonies, Marseille, France
Filed Oct. 10, 1966, Ser. No. 585,653
Claims priority, application France, Oct. 26, 1965, 21,168
Int. Cl. B65b *1/04, 3/04;* B67d *5/40*
U.S. Cl. 141—20 4 Claims



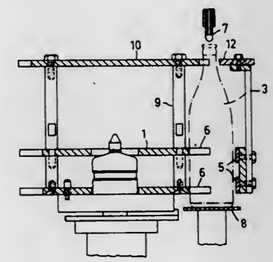
Apparatus for filling containers with a mixture of liquid product and a propellant gas comprises a mixing chamber having a valved outlet, means for supplying liquid product under pressure to said chamber, means for supplying gas under pressure to said chamber, a metering vessel communicating with the valved outlet and having a valved nozzle for connection to a container to be filled, means for supplying gas under pressure to the metering vessel, and valved means connected to the nozzle of the metering vessel downstream of its valve for applying suction to create a vacuum in a container connected to said nozzle.

3,502,119
BAG FILLING APPARATUS
John T. Sweeney, Lincroft, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 602,092
Int. Cl. B65b *3/10, 1/04*
U.S. Cl. 141—68 3 Claims



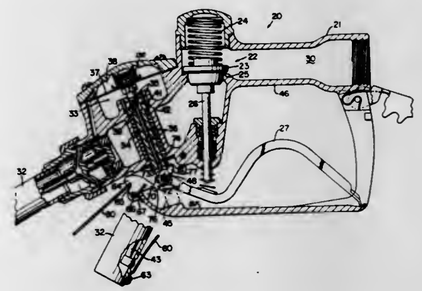
A bag packing organization wherein material is conveyed from a bulk source to a weighing chamber via a vibratory feeder. When a predetermined weight of material is collected in the chamber the feeder is stopped and the predetermined weight of material is discharged from the chamber to a bag filler having an angularly disposed filling spout with a screw conveyor therein. The bag to be filled is placed about the spout and is supported in a trough, a portion of which underlies the spout and is parallel thereto.

3,502,120
BOTTLING MACHINES FOR FILLING NARROW NECKED BOTTLES
Lars Gunnar Rydström, Molndal, Sweden, assignor to Christian Berner AB, Goteborg, Sweden, a body corporate of Sweden
Filed Feb. 28, 1968, Ser. No. 708,885
Claims priority, application Sweden, Mar. 31, 1967, 4,502/67
Int. Cl. B65b *43/50*
U.S. Cl. 141—165 5 Claims



In a machine for filling bottles having a narrow neck and a filling valve provided with a discharge tube adapted to enter the neck of the bottle, a feeding mechanism for the bottles being provided with a centering device adapted to grip and guide the neck of the bottle for temporarily holding said neck in a fixed position as the end of the discharge tube passes down through the mouth of the bottle.

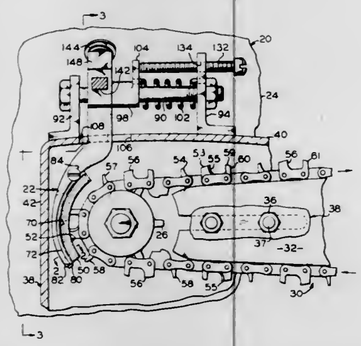
3,502,121
SAFETY MECHANISM FOR AUTOMATIC NOZZLE
Glenn E. Moore, Fairfield, and Chester Wood, Cincinnati, Ohio, assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,110
Int. Cl. B65b *1/30, 57/14, 3/28*
U.S. Cl. 141—207 10 Claims



The safety means includes a member extending in spaced relation along the inner side of said arcuate dispensing nozzle from the free end thereof, where it is fixedly attached to the other end, where it is operatively

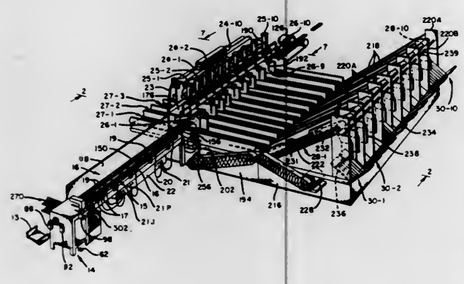
connected to the triggering cam means which is associated with the automatic shut-off means. The intake neck of the tank bends or forces the member into contact with the inner side of the nozzle and operates the triggering cam to permit normal operation of the shut-off means. The triggering cam is pivotally mounted on the end of the plunger of the shut-off means and is bodily movable therewith.

3,502,122
OSCILLATING SHARPENER
Kay Silvon, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 21, 1966, Ser. No. 588,449
Int. Cl. B27d *17/08*
U.S. Cl. 143—32 **12 Claims**



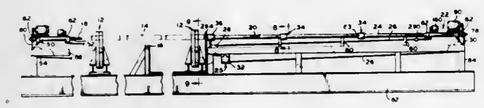
The sharpener is an assembly which may be quickly attached and detached from the frame of a chain saw and sharpens the saw chain as it travels around the drive sprocket for the chain. A carrier arm is slidable along a guide rod on a sprocket cover to advance a sharpening member toward tips of a saw chain as limited by an adjustment screw. The carrier arm also is pivotal on the guide rod to dress the sharpening member.

3,502,123
LUMBER SORTING MACHINE
Alexander J. Golick, 7518 23rd Ave., NW., Seattle, Wash. 98107, and Ernest D. Giuseponi and Arthur J. Randolph, Santa Rosa, Calif.; said Giuseponi and Randolph assignors to said Golick
Filed Dec. 22, 1965, Ser. No. 515,697
Int. Cl. B27d *31/08;* **B07c** *5/08*
U.S. Cl. 143—157 **22 Claims**



A lumber cutting and sorting apparatus and method wherein the lumber is cut into various predetermined lengths by abutting them against gage stops while making the cut. The gage stops have associated sensing means, controlling downstream lateral deflector means for sorting the lumber by size. Additional sensing means are provided for automatic sorting of the cut lumber on the basis of thickness, width, and grade. A cross conveyor system removes the cut lumber after sorting.

3,502,124
POLE BORING MACHINE
Milton H. Mater, 1415 Brook Lane, Corvallis, Oreg. 97330
Filed Oct. 2, 1967, Ser. No. 672,064
Int. Cl. B27c *3/02*
U.S. Cl. 144—113 **8 Claims**

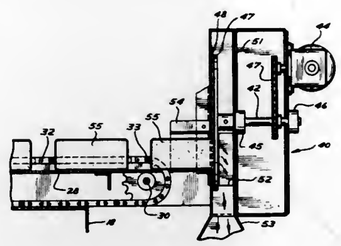


A pair of aligned drills each includes a drill tube carrying a drill bit including a forward pilot pin, forward cutters of a smaller diameter and rearward cutters of a larger diameter. The drill tube is rotated and drills an axial hole in a pole slightly larger than a guide tube, which extends to a point just behind the rearward cutters and journals the drill tube. Pressurized air fed into the guide tube through a rotary coupling travels through a venturi passage at the forward end of the guide tube and carries chips from the drill bit back through the drill tube. The guide tube is rotated slowly to dislodge chips and facilitate movement of the guide tube into the bore being formed. A carriage slidable on tubular ways and guides slidable on the ways support the guide tube and is moved forwardly slowly by a cable drive to feed the drill and is returned rapidly by the cable drive. The drills are moved forwardly from opposite ends of the pole to be drilled until one drill reaches the end of its feed stroke and then this drill is retracted while the other drill completes its stroke. A slidable interlock prevents the drills from coming together and reverses the motion of the carriage of one of the drills when the drills closely approach each other. Opposed clamps having generally V-shaped jaws on the ends of tongs grip and center the pole relative to the drills. The rotary coupling forms pressure-tight seals both with the drill tube and the guide tube. Spiders in the guide tube mount ball bearings journaling the drill tube and permit flow of air along the space between the drill tube and the guide tube.

3,502,125
ARTICLE MODIFYING APPARATUS
Mandel L. Desnick, 1832 E. 38th St., Minneapolis, Minn. 55407
Filed June 5, 1967, Ser. No. 643,603
Int. Cl. B02c *7/125, 11/04, 17/02*
U.S. Cl. 146—78 **3 Claims**

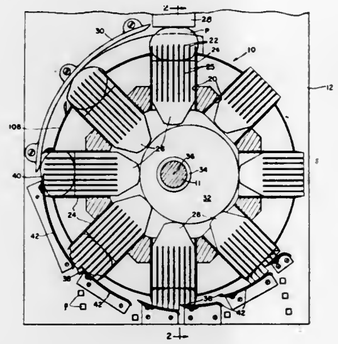
Apparatus for converting, for example, foodstuffs prepared or stored in large sizes to particulate material or material having a discrete size and shape characteristic, which includes the combination of a material modifying apparatus in the form of a rotating disc having material cutting members, material transporting portions disposed adjacent the cutting members and knife-like material severing members for controlling the size of the modified material and material receiving and conveying means adapted to controllably feed material to be modified in

such a manner as to allow uninterrupted operation through the utilization of a speed control conveyor ap-



paratus having a stall torque less than that of the drive mechanism for the material modifying apparatus.

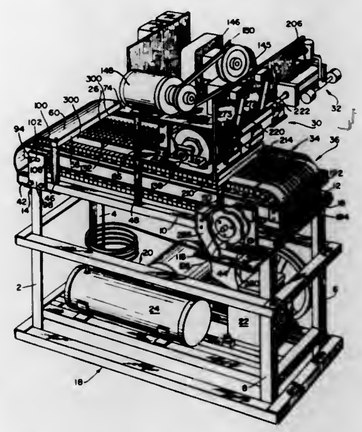
3,502,126
APPARATUS FOR SLICING VEGETABLES
James E. Howard, P.O. Box 709, Pocatello, Idaho 83201
Filed Sept. 25, 1967, Ser. No. 670,249
Int. Cl. A23p *1/00;* **B02c** *11/04;* **A47j** *47/00*
U.S. Cl. 146—78 **15 Claims**



An apparatus for slicing vegetables comprising a rotor having receptacles in the periphery thereof, in each of said receptacles there being a set of radially-extending, parallel splitting blades for slicing a vegetable pushed in to the receptacle. A slotted plunger is mounted in each receptacle and a cam is mounted interiorly of the rotor for forcing the plunger outwardly as the rotor turns to eject the slices in increments from the receptacles, additional stationary blades cutting the slices transversely as the rotor moves past such blades.

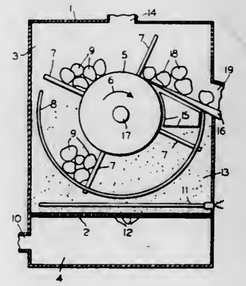
3,502,127
MEAT CUTTING MACHINE
Norman R. Nathanson, Natick, and Ralph D. Thompson, Arlington, Mass., assignors, by mesne assignments, to Doro-Mayo Equipment Co., Inc., Boston, Mass., a corporation of Massachusetts
Filed Dec. 11, 1967, Ser. No. 689,408
Int. Cl. B26d *3/18;* **A22c** *17/00*
U.S. Cl. 146—78 **17 Claims**

This invention is an apparatus for automatically dicing meat. It comprises a conveyor belt having upwardly projecting pins thereon which carry the meat toward a plurality of rotating cutting knives positioned above the conveyor belt, the knives being spaced apart to cut the meat into longitudinal strips. After the cut meat leaves these knives, a single knife, reciprocably movable across the conveyor belt, cuts the strips into separate cubes of



meat. As the conveyor belt moves to the exit end of the machine, the pins are automatically withdrawn from the cut pieces of meat, thus releasing the latter to fall into a receptacle placed below the end of the machine.

3,502,128
METHOD AND APPARATUS FOR PEELING FRUITS OR VEGETABLES
William J. Lawson, R.F.D. 1, Box 299E, Milton, Del. 19968
Filed June 6, 1967, Ser. No. 643,961
Int. Cl. A23n *7/00*
U.S. Cl. 146—231 **2 Claims**

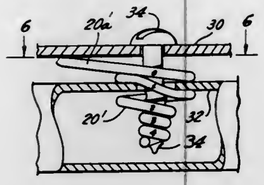


Method and apparatus for peeling thin-skinned fruits or vegetables by passing the fruit or vegetable through a fluidized bed of hot granules for a time sufficient to condition the skin for removal without causing the temperature of the body of the fruit or vegetable to be raised substantially.

3,502,129
SELF-LOCKING FASTENER
Kaiji Negoro, Montebello, Calif., assignor to Kimatic, Inc., Tustin, Calif., a corporation of Delaware
Filed Mar. 28, 1968, Ser. No. 716,876
Int. Cl. F16b *39/16, 39/26, 27/00*
U.S. Cl. 151—14 **4 Claims**

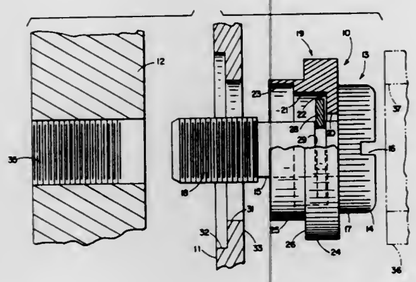
A self-locking fastener is described in this specification which takes the form of a helically wound wire which constitutes a resilient coil. The resilient coil is wound and

supported in a manner such that a screw can be readily threaded into it. However, any attempt to remove the



screw causes the turns of the coil to tighten against the screw and prevent its removal.

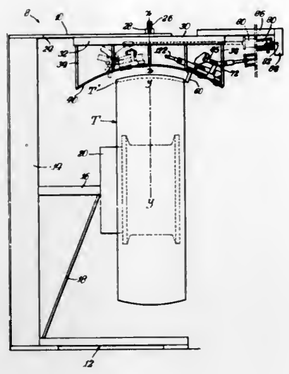
3,502,130
CAPTIVE JACKING SCREW
Bulent Gulistan, Malibu, Calif., assignor to Deutsch Fastener Corp., Los Angeles, Calif., a corporation of California
Filed Mar. 4, 1968, Ser. No. 710,294
Int. Cl. F16b *43/00, 19/00;* **B21d** *39/00*
U.S. Cl. 151—69 **2 Claims**



A fastener including a collar secured to a part to be fastened by means of a shoulder and a bent-over flange, a screw extending through the collar, and a retainer ring recessed within the collar and mounted on the shank of the screw adjacent a collar surface so that the retainer cooperates with the screw head in holding the screw to the collar, and so that the screw does not move axially relative to the collar. Consequently, the fastener jacks the part with which it is associated away from the adjoining part when the fastener is loosened. The screw may have a larger auxiliary head having an opening receiving the normal screw head with a press fit.

3,502,131
APPARATUS FOR CUTTING TREAD PATTERNS IN BUILT-UP TIRES
Vaughn Rawls, Lima, Ohio, assignor, by mesne assignments, to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 623,072
Int. Cl. B29h *17/36;* **B60c** *11/00*
U.S. Cl. 157—13 **4 Claims**

A tread portion of uncured rubber is applied over a tire carcass, whereupon a tread design is cut in this uncured tread portion by apparatus comprising an electrically heated knife mounted on a carriage which is reciprocated to and fro in a curved track extending approximately concentrically transversely across the uncured tread portion. The driving linkage for the carriage and knife is such that it is only when a pulling force is applied that the knife is forced down into cutting position. This enables one to start a cut in the middle of the

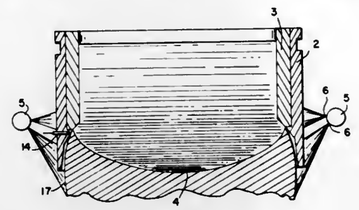


tread, as for the making of chevron treads. The apparatus also has a swiveled mounting for making diagonal cuts in the tread. After the making of the tread design the tire is cured.

3,502,132
CONCEALED, EXTENSIBLE AND CONTRACTIBLE, DRAPERY SUPPORTING STRUCTURE
Mark H. Hager, 938½ S. Serrano, Los Angeles, Calif. 90006, and Clarence R. Adams, Glendale, Calif.; said Adams assignor to said Hager
Filed Mar. 18, 1968, Ser. No. 713,606
Int. Cl. A47h *01/022, 05/02*
U.S. Cl. 160—331 **15 Claims**

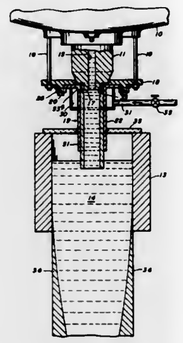
A cantilevered, horizontally extensible and contractible, drapery support which is completely concealed by a drape hung therefrom in both the extended and contracted positions of the support. The drape is so hung from the support that the drape is extended when the support is extended, and is retracted when the support is contracted. The drapery support comprises a series of telescopically connected sections including an innermost section, at least one intermediate section carried by and movable relative to the innermost section, and an outermost section carried by and movable relative to the intermediate section, the intermediate and outermost sections being cantilevered from the innermost section when the drapery support is extended. The drape is hung by means of fixed hooks connected to the inner end of the innermost section and the outer end of the outermost section, and by means of slidable hooks engageable with the various sections. The slidable hooks bear against the various telescopically connected sections in such a way as to minimize forward and downward tipping of the hooks, and to prevent inadvertent disengagement of the hooks from the support. A cable system operated either manually, or by an electric motor, serves to extend and contract the drapery support.

3,502,133
CONTINUOUS CASTING METHOD AND APPARATUS FOR CONTROLLING FREEZE LINE LOCATION
John William Carson, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,312
Int. Cl. B22c
U.S. Cl. 164—4 **16 Claims**



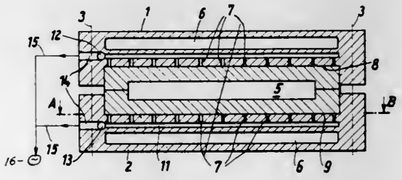
A continuous casting method and apparatus involving sensing temperature variations in the mold adjacent the surface of the incipient ingot being continuously cast in the region of the freeze line, especially in the casting of an ingot, such as of aluminum, at least about 6 inches thick and having a width to thickness ratio of at least about 3 to 1, and responsively to the sensed temperature variations controlling the application, as by spraying, of coolant, normally water, to minimize inward and outward movement of the freeze line. The sensing means, which may include a thermocouple, are preferably located opposite a wide face of the incipient ingot and at a location closer to the corner than to the center of the wide face and close enough to the corner to sense the temperature variations in the region of the corner. The coolant is preferably applied to the mold or/and ingot only at the wide faces of the ingot.

3,502,134
CONTINUOUS CASTING METHOD WITH INERT GAS PUFFS TO PREVENT SKULLING
Michael A. Orehoski, Duquesne, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 446,529, Apr. 8, 1965. This application July 19, 1967, Ser. No. 654,637
Int. Cl. B22d *21/02, 11/10*
U.S. Cl. 164—66 **2 Claims**



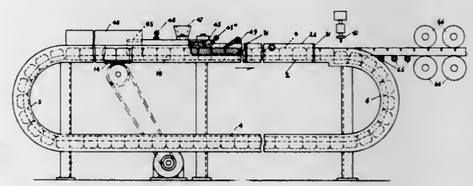
A pouring tube substantially sealed to the nozzle in the bottom of a teeming vessel extends below the surface of metal in a mold below the vessel. A barometric leg is thus afforded the teeming stream. The tube is larger than the nozzle in cross-section so, as the air initially in the tube is exhausted by entrainment, it fills up with molten metal and the velocity thereof is reduced on entering the tube. This avoids damage to the solid skin of a continuously cast section being formed, by excessive agitation of the metal in the mold. Means providing a limited controlled injection of inert gas into the top of the tube may be employed to cause just enough agitation to prevent skulling on the exterior of the tube.

3,502,135
CONTINUOUS CASTING APPARATUS HAVING SUCTION MEANS BETWEEN MOLD AND COOLING MEANS
Alfred J. Wertli, Poststrasse 15, CH 8406, Winterthur, Switzerland
Filed Feb. 24, 1967, Ser. No. 618,415
Claims priority, application Switzerland, Mar. 31, 1966, 5,060/66
Int. Cl. B22d *27/16*
U.S. Cl. 164—253 **7 Claims**



An apparatus for maintaining intimate contact between a mold and cooling device in a continuous casting operation. The contact surface between the mold and cooling device is subjected to a reduced pressure by a vacuum transmitted through apertures in the cooling device which communicate with the contact surface. The mold can also be sealed to the atmosphere and supplied with nitrogen to prevent oxidation where graphite molds are used.

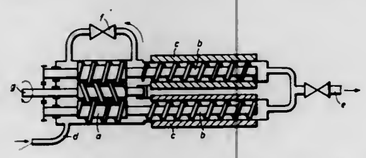
3,502,136
APPARATUS FOR THE CASTING OF GRATINGS AND OTHER STRUCTURES WITH PARALLEL MEMBERS AND TRANSVERSE CONNECTIONS
William H. Parmelee, Bethel Park, and Harry S. Nagin, Bala Cynwyd, Pa., assignors to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Substituted for abandoned application Ser. No. 428,501, Jan. 27, 1965, and a continuation-in-part of application Ser. No. 460,984, June 3, 1965. This application July 17, 1967, Ser. No. 659,272
Int. Cl. B22d *11/12*
U.S. Cl. 164—282 **5 Claims**



A continuous casting machine is disclosed for making gratings and other products having two or more longitudinally-extending bars connected by spaced cross bars.

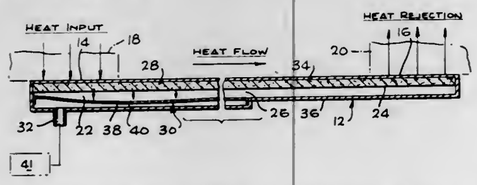
It utilizes a continuous series of mold elements moving in abutting side-by-side relation in a closed path having a casting reach and a return reach with the mold elements being connected for limited movement in a plane relative to one another after the cast material has set to release the mold elements from the cross bars of the casting.

3,502,137
METHOD OF INTENSIFYING HEAT TRANSFER IN WORMS HAVING A SINGLE SPINDLE
Juri Pawlowski, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed June 7, 1966, Ser. No. 555,855
Claims priority, application Germany, June 22, 1965, F 46,402
Int. Cl. F28f *5/06, 13/00*
U.S. Cl. 165—1 **4 Claims**



Process and apparatus for increasing the heat transfer in a worm-type heat exchanger by passing the substance being subjected to heat transfer through the worm-type heat exchanger at a rate greater than that attributable solely to the worm.

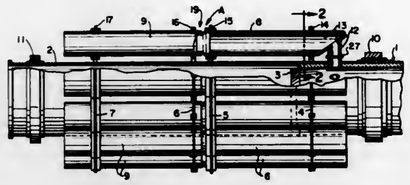
3,502,138
MEANS FOR REGULATING THERMAL ENERGY TRANSFER THROUGH A HEAT PIPE
Arnold P. Shlosinger, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 14, 1967, Ser. No. 660,400
Int. Cl. G05d *23/00;* **F28d** *15/00;* **F25b** *19/00*
U.S. Cl. 165—32 **1 Claim**



A method of and means for regulating the rate of thermal energy transfer through a heat pipe containing a heat transfer fluid in its liquid and vapor phase by regulating the pressure at the liquid-vapor interface. A regulated thermal generator embodying thermally regulated heat pipe means for transmitting thermal energy at a controlled rate to a heat sink or thermal load.

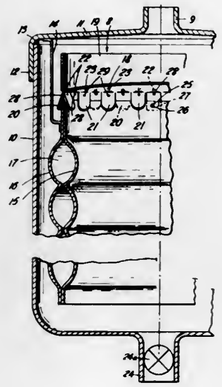
3,502,139
PLANETARY COOLERS FOR USE WITH ROTARY KILNS
Niels E. Andersen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1968, Ser. No. 714,613
Claims priority, application Great Britain, Mar. 22, 1967, 13,531/67
Int. Cl. F28d *11/08;* **F25b** *29/00;* **F27b** *7/00*
U.S. Cl. 165—88 **3 Claims**

Planetary cooling tubes for cooling cement clinker and other kiln products. Where these cooling tubes are of great length so that they cannot be easily handled they are made in two or more lengthwise sections and the sections are joined to one another by lengthwise slidable joints of special construction. The cooling tube sections are carried by supports which permit the adjacent ends



of the tube sections to shift lengthwise relatively to each other, the joints advantageously being so constructed as to collect dust escaping from the tubes and return the dust to the interior of the tube sections.

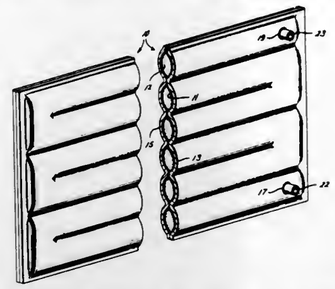
3,502,140
FALLING FILM HEAT EXCHANGER
Ida Violet Dawson, Broyle Place, Ringmer, Lewes, Sussex, England
Filed Oct. 25, 1967, Ser. No. 677,999
Claims priority, application Great Britain, Oct. 31, 1966, 48,647/66; Apr. 7, 1967, 15,992/67
Int. Cl. A23c *3/04;* **F28d** *3/02;* **B01d** *47/00*
U.S. Cl. 165—117 **21 Claims**



The invention provides a heat exchanger having two downwardly extending side walls between which a fluid flows and a distributor for distributing a liquid to flow over the outer surface of the two walls which distributor comprises a tray or trough arranged above the two walls and having two sets of holes for directing the liquid onto two sets of projections which extend downwardly from the bottom of the tray or trough one set on one outer side of the walls and one set on the other outer side of the walls.

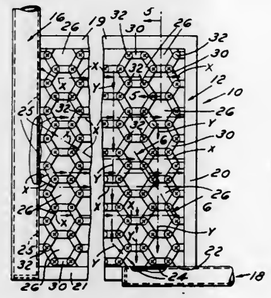
3,502,141
METHOD OF IMPROVING HEAT TRANSFER CHARACTERISTICS IN A NUCLEATE BOILING PROCESS
Lou D. Allen, Pasadena, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 23, 1965, Ser. No. 516,160
Int. Cl. F28f *13/18, 19/02*
U.S. Cl. 165—133 **5 Claims**

A method of reducing the cooldown time and enhancing the steady heat transfer characteristics of a circulating cryogenic cooling system comprising coating the surfaces, within the system, exposed to the cryogenic cooling liquid with high molecular-weight, plastic-resin material having a thickness in the range of .001 to .004 inch



and roughening the exposed surface of the plastic-resin material to establish a random pattern of pits and indentations. A cryopanel so processed is also disclosed.

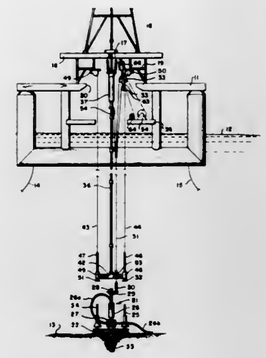
3,502,142
MULTI-DIRECTIONALLY DISTRIBUTED FLOW HEAT TRANSFER PLATE UNIT
James W. McGuffey, Lansing, Mich., assignor to Tranter Manufacturing, Inc., Lansing, Mich., a corporation of Michigan
Filed Apr. 1, 1968, Ser. No. 717,697
Int. Cl. F24h *3/00;* **F28b** *1/00;* **F28f** *3/14*
U.S. Cl. 165—170 **2 Claims**



A plate-type heat transfer unit is comprised of two identical sheet metal stampings mechanically embossed and seam welded flatwise to one another about the periphery thereof, being also welded together in equilaterally polygonal spot welding patterns at certain inner areas. Some of the embossments are of relatively large size and are relatively deeply drawn in locations partially defined by a spot weld pattern; while the remaining embossments are less deeply drawn, extending in zones between successive spot welds of the pattern. They thus complete the lateral definition of a deeper drawn embossment, and also complete a multi-sided communication of each such large embossment with adjacent similar ones. Relatively large intake and exhaust header pipes communicate marginally of the unit with spaces of the latter sided by certain of the deep drawn embossments.

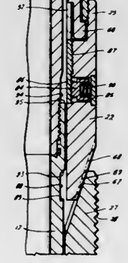
3,502,143
MARINE RISER SUPPORT SYSTEM
William H. Petersen, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 29, 1968, Ser. No. 732,916
Int. Cl. E21b *7/12, 33/035*
U.S. Cl. 166—.5 **9 Claims**

Method and apparatus for connecting a marine conductor pipe assembly depending from a floating vessel to an underwater wellhead structure by pulling said assembly downwardly into engagement with the structure



against an upwardly directed, substantially constant force being applied to the assembly.

3,502,144
WELL PACKER APPARATUS
David E. Young, Bellaire, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Apr. 22, 1968, Ser. No. 722,911
Int. Cl. E21b *23/06*
U.S. Cl. 166—216 **4 Claims**

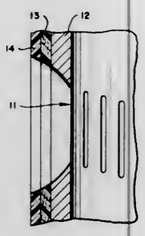


A retrievable well packer apparatus including a body member having upper and lower expander means slidably mounted thereon for movement toward and away from each other, normally retracted slip means between said expander members and slidably coupled to said body member and one of said expander means and expandable by said expander members into anchoring engagement with a well bore wall, packing means for sealing off a well bore in response to movement of said body member relative to slip and expander means in one longitudinal direction, and disarming means for preventing expansion of said slip means including laterally movable means which is normally retained in inoperative position and which can be operated by manipulation of said body member to prevent expansion of said slip means by said expander members.

3,502,145
OIL WELL LINER INCORPORATING REINFORCEMENT COATING

Joannes A. Du Mee, Oldenzaal, and Hans Krak and Herman F. Schwencke, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 19, 1968, Ser. No. 746,069
Claims priority, application Great Britain, Jan. 30, 1968, 4,642/68
Int. Cl. E21b *43/08*
U.S. Cl. 166—227 6 Claims



An oil well installation including a liner comprising an inner metallic tube covered by a reinforced resinous material. Slots are formed in the liner through both the metallic material and resinous material to permit the flow of production fluid into the interior of the liner while at the same time preventing inflow of gravel and sand which surround the liner. The resinous material resists the corrosive action of the production fluid to maintain slot size integrity.

3,502,146
OIL RECOVERY PROCESS WITH VISCOUS DISPLACING LIQUID FORMED IN SITU

Billy G. Hurd, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 673,882, Oct. 9, 1967. This application Dec. 22, 1967, Ser. No. 692,819
Int. Cl. E21b *43/22, 43/12*
U.S. Cl. 166—270 30 Claims

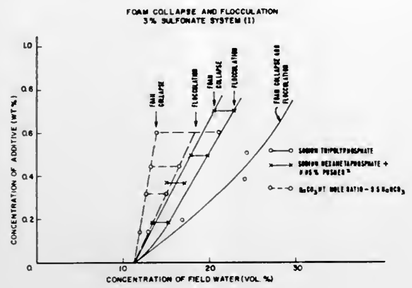
This specification discloses an oil recovery process which involves the sequential injection into an oil reservoir of first and second solutes to form a viscous displacing liquid. The second solute exhibits a saturation-adsorption value in its carrier liquid which is less than the saturation-adsorption value exhibited by the first solute in its carrier liquid. As the liquids move through the reservoir the transport rate of the second solute is greater than the transport rate of the first solute such that they become mixed within the reservoir and interact to produce the viscous displacing liquid. Preferably, the first solute exhibits a saturation-adsorption value in the second injected carrier liquid which is less than that exhibited in the first injected carrier liquid. The carrier liquids may be aqueous mediums and the sorption characteristics of the solutes in such liquids may be controlled through salinity and/or pH adjustments.

3,502,147
CHEMICAL FLOODING TECHNIQUE TO RECOVER OIL

Harold J. Hill, Houston, Tex., and Charles Stewart Sargent, Jr., Slidell, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 12, 1968, Ser. No. 736,402
Int. Cl. E21b *43/16, 43/22*
U.S. Cl. 166—274 11 Claims

An improved method for oil recovery from an underground oil-bearing formation using a driving fluid by pre-treating the oil-bearing formation zone prior to injecting a driving fluid therein with a slug of conditioning fluid comprising an aqueous solution containing surfactant

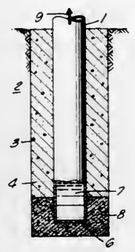


micelles in combination with molecules of an amphiphilic organic compound of low water solubility and a water-soluble polyphosphate.

3,502,148
METHOD OF IMPROVING BOND STRENGTH

Knox A. Slagle and Lloyd G. Carter, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Jan. 27, 1967, Ser. No. 612,232
Int. Cl. E21b *33/13, 43/24*
U.S. Cl. 166—292 5 Claims



In cementing a well casing in a formation, the thermal stability of the bond between the casing and the cement which fills the annulus between the casing and the formation wall is improved by first anchoring the lower portion of the casing, e.g., cementing the lower portion of the casing, applying tension to the casing at its upper end and cementing the remainder of the casing in the formation while the casing is held under tension.

3,502,149
SEALING COMPOSITION AND METHOD OF USE THEREOF

Samuel A. Pence, Jr., Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

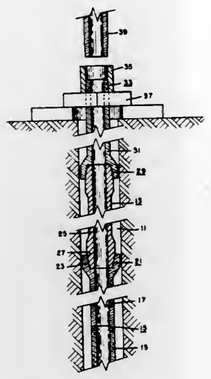
No Drawing. Filed Apr. 7, 1967, Ser. No. 629,089
Int. Cl. E21b *33/138, 33/13;* C08f *37/14*
U.S. Cl. 166—295 13 Claims

A sealant composition comprising an intimate admixture of a selected reducing agent, a small amount of water, a water-dispersible polymer, and a selected oxidizing agent, and use thereof. The strength and water-resistance of the composition made is especially suitable for sealing off underground openings.

3,502,150
METHOD OF JOINING OIL WELL CASING AND TUBING WITH ADHESIVE

Henry F. Dunlap, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 7, 1968, Ser. No. 727,218
Int. Cl. E21b *17/08*
U.S. Cl. 166—315 8 Claims

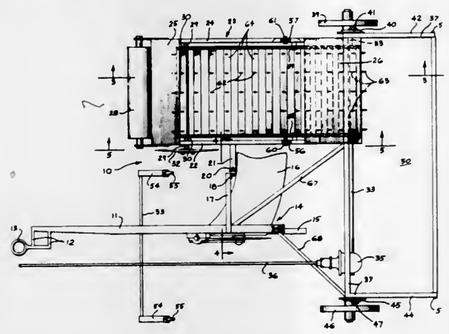


Two sections of casing or tubing made of steel, or glass, or one of steel and one of glass, being placed in well bore are joined with a very fast setting nonmetallic organic adhesive in a way that the adhesive sustains the tensile forces created when running the casing or tubing. The adhesive bonding system has sufficient tensile shear strength and area to withstand these tensile forces. The adhesive will either thermally decompose or become sufficiently plastic so that upon the application of the proper amount of energy the joints may be broken and cleaned whenever required. This method of joining casing or tubing replaces threaded and welded joints and is especially useful for joining glass casing or tubing.

3,502,151
GRASS PLOW

Hubbard Bullard, 2005 Elizabethtown Road, Lumberton, N.C.

Filed Sept. 11, 1967, Ser. No. 666,630
Int. Cl. B65g *47/44;* A01b *17/00*
U.S. Cl. 172—33 10 Claims

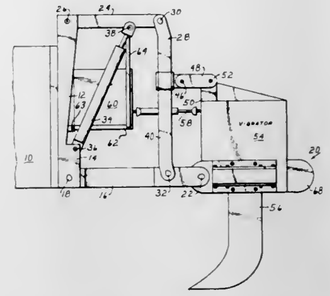


In abstract, a preferred embodiment of this invention is a plow type agricultural implement for removing grass from a field including a toothed conveyor mounted laterally adjacent the plow for conveying grass laden earth through separator means and into a hopper.

3,502,152
LONG-SHANK VIBRATING PLOW

Donald R. Johnson, Lubbock, Tex., assignor to Lubbock Manufacturing Company, Lubbock, Tex., a corporation of Texas

Filed Sept. 12, 1967, Ser. No. 667,246
Int. Cl. A01b *11/00, 59/06, 63/102*
U.S. Cl. 172—40 16 Claims

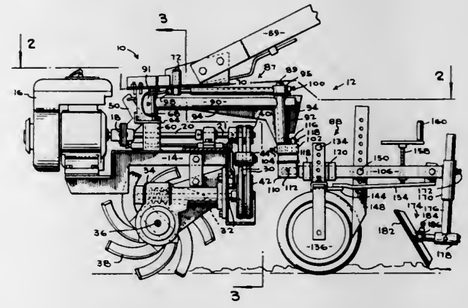


A heavy duty plow with extra long shanks is used for loosening the subsoil for road construction and is attached to the tractor by two four-member pivoted linkages. The plow itself is vibrated in a horizontal direction and the linkages primarily have ball joints to reduce transmission of the vibration from the plow to the tractor. The two four-member pivoted linkages provide for clearance or removal of the plow from the ground as well as isolation of the vibration from the plow to the tractor.

3,502,153
SOIL TILLING APPARATUS

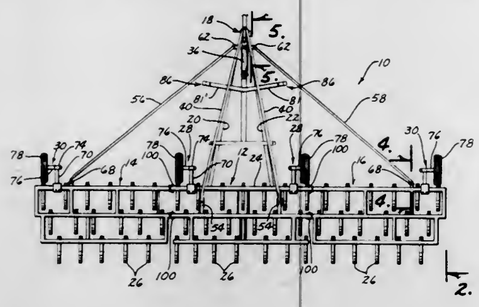
Jere T. Bradshaw, 1803 Glen Oaks Lane, and Ardell Ketchum, Rte. 3, both of Dyersburg, Tenn. 38024

Filed Mar. 20, 1967, Ser. No. 624,525
Int. Cl. A01b *3/58, 33/02, 63/26*
U.S. Cl. 172—71 7 Claims



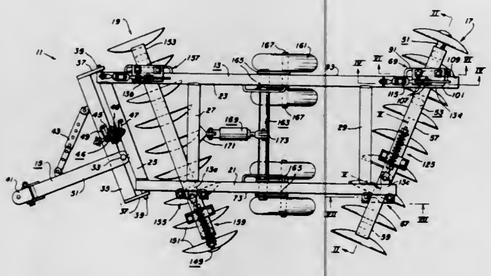
A rotary tiller having articulated trailing means mounting agricultural tools for soil engagement which is towed by the tiller. The trailing means is connected to the tiller chassis by a linkage which exerts a compensating force against the tiller chassis and the trailing means when the tiller chassis and the trailing means are not in alignment which tends to realign the elements so that the entire structure is very easily controlled by the operator. Another aspect is the provision of tool support means which is vertically adjustable during the tiller operation without stopping the tiller.

3,502,154
MINIMUM TILLAGE IMPLEMENT
John Harlan Rogers, Fort Dodge, Iowa, assignor to The Standard Engineering Company, Fort Dodge, Iowa
Filed Nov. 9, 1966, Ser. No. 593,031
Int. Cl. A01b *19/04, 63/20, 63/32*
U.S. Cl. 172—311 **3 Claims**



A minimum tillage implement including a frame having a plurality of ground working members secured thereto. A tongue assembly is connected to said frame and the frame is supported by a ground engaging wheel assembly. A lift assembly is connected between the frame and tongue for pivoting the frame between a horizontal working position to an upright travelling position. The frame also includes two wing frames which may be pivoted inwardly and forwardly of a center frame for travelling purposes.

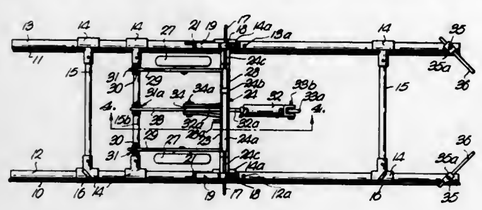
3,502,155
DISC HARROW HAVING AXIALLY RESILIENT DISC BLADES
William D. Kenney, Memphis, Tenn., assignor to Midland Manufacturing Company, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 3, 1967, Ser. No. 672,507
Int. Cl. A01b *35/28, 63/00*
U.S. Cl. 172—570 **11 Claims**



A rigid frame disc harrow pull-type implement having means for resiliently absorbing the axial thrust or side draft on the disc blades of the harrow, and also having means for readily adjusting the pitch angle or angle of attack of the disc blades on the land surface being worked.

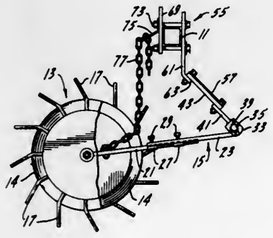
3,502,156
LAND LEVELER
Harold W. Sherman, 444 Ohio St., Lawrence, Kans. 66044
Filed Feb. 15, 1967, Ser. No. 616,316
Int. Cl. A01b *31/00, 63/00*
U.S. Cl. 172—660 **10 Claims**

A land leveler having at least two transversely extending blades which are so interconnected with one another that their relative angularity with respect to the ground may be individually or simultaneously adjusted from a



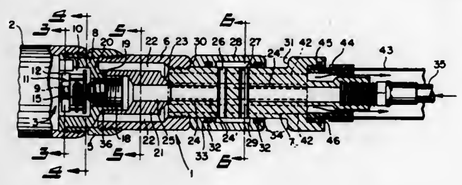
relationship in which the angle is acute into and through a parallel condition to an obtuse angularity.

3,502,157
UNIVERSAL MOUNTING FOR TOOLS
Edward Coats, Sac City, Iowa, assignor to Noble Manufacturing Company, Sac City, Iowa, a corporation of Iowa
Filed Aug. 8, 1967, Ser. No. 659,128
Int. Cl. A01b *23/06, 21/08, 35/28*
U.S. Cl. 172—741 **4 Claims**



A universal mounting for attachment of a ground engaging implement to a tool bar of a cultivator including a clamp means for connection to the tool bar which includes a pair of plates and a pair of threaded fastener means, a pair of elongated rigid links each of which is rotatably attached at one of its ends to the clamp member and extends therefrom in parallel relationship to one another, a pivot pin journal member attached to the opposite ends of the elongated rigid links, a locking strap extending from one end of one elongated rigid link to the opposite end of the other elongated rigid link and an implement arm affixed to a pivot rod journalled in said journal member.

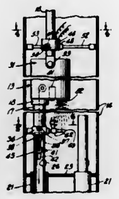
3,502,158
AIR OPERATED TOOL WITH REAR EXHAUST
Philip A. Snider, Fort Wayne, Ind., assignor to Dotco, Inc., Hicksville, Ohio, a corporation of Ohio
Filed June 18, 1968, Ser. No. 737,954
Int. Cl. B23q *5/06;* **B23b** *45/04;* **F01d** *15/06*
U.S. Cl. 173—12 **7 Claims**



An air operated tool having air exhaust passages extending from the air motor to the rear of the tool axially

offset from the air inlet passages and control valve therefor for directing the exhaust air away from the work. An overhose may be telescoped over the air supply hose for directing the exhaust air further from the work while reducing the noise level of the tool.

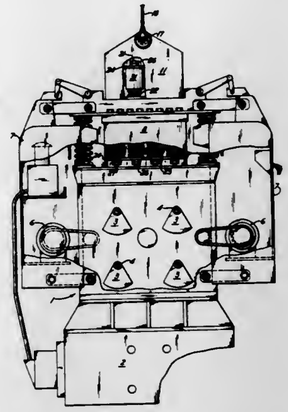
3,502,159
PILE DRIVING APPARATUS FOR SUBMERGED STRUCTURES
Ivo C. Pogonowski, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 26, 1968, Ser. No. 716,043
Int. Cl. E21d *1/03;* **E21c** *3/00, 2/00*
U.S. Cl. 173—43 **13 Claims**



The invention relates to a novel method and apparatus therefor, adapted to driving piles into the ocean bottom for anchoring an offshore, deep water marine platform. the apparatus contemplates use on a platform supported on one or more canted legs, each of which includes at least one, and usually a plurality of pre-positioned piles. A mobile pile driving mechanism is adjustably and guidably suspended in a casing surrounding the piles. The driving mechanism is then sequentially rotated to drive the respective piles through relatively short increments of length. Positioning means carried on the pile driving apparatus includes outwardly radiating arms which are demotedly controlled from the water's surface. The arms, when in contact with the wall of a platform leg, are actuatable to position the pile driving mechanism with respect to said wall.

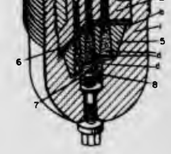
3,502,160
RESILIENT YOKE MOUNTING FOR VIBRATORY PILE DRIVER AND EXTRACTOR
Alvin E. Herz, Nutley, N.J., assignor to L. B. Foster Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1968, Ser. No. 783,869
Int. Cl. E02d *7/18*
U.S. Cl. 173—49 **5 Claims**

A combined vibratory pile driver and extractor has a yoke assembly connected to a hoisting cable and a body assembly attached to a pile. The pile is subjected to vibrations generated by the rotation of eccentric weights mounted on the body. When the weight of the mechanism rests on the pile, the pile is driven into the ground. With the cable exciting an upward pull on the yoke, a driven pile can be extracted from the ground. To prevent impacts between yoke and body when pile driving and to suppress cable vibrations when pile extracting, the yoke is connected to the body by two separate sets of spring means. The first set has a defined stiffness that is sufficient to resist the inertial tendency of the yoke to separate from the body when driving a pile, but not sufficient to prevent separation of yoke and body by a distance greater than the maximum amplitude of the vibrations of the body when extracting a pile in response to minimum upward pull of the cable on the yoke. The second set of spring means has substantially greater stiffness than the



first set for suppressing cable vibrations when substantially greater upward pull of the cable is required to extract a pile.

3,502,161
APPARATUS FOR PERFORATING WELL CASINGS
Nicolae Coman, Ploesti, Rumania, assignor to Ministerul Petrolului, Bucharest, Rumania, a firm
Filed Mar. 8, 1967, Ser. No. 621,548
Int. Cl. E21b *43/116*
U.S. Cl. 175—4.57 **3 Claims**



An apparatus for perforating well casings by firing bullets therethrough. The apparatus comprises a threaded socket member which has a plurality of gun barrels, each of which is about 3 mm. in diameter. The socket member is screwed into a mating cavity of a body structure, which has a corresponding plurality of frusto-conically shaped channels, in such a way that each gun barrel is aligned with a frusto-conically shaped channel. The body structure is also formed with an ignition chamber having suitable electrical ignition means. The ignition chamber and the plurality of frusto-conically shaped channels are filled with a predetermined quantity of gun powder. The body structure, furthermore, has passage means connecting the ignition chamber and the plurality of frusto-conically shaped channels. These passage means are designed and dimensioned to produce a simultaneous ejection of the bullets from the gun barrels at substantially equal velocities.

The device prevents the carrying off through the well casing of poorly consolidated sand in the oil and gas producing layers by providing a passageway through the casing.

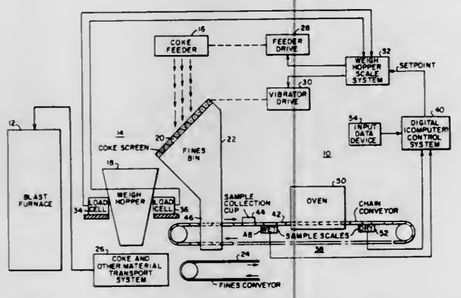
ERRATUM

For Class 175—24 see:
Patent No. 3,502,543

3,502,162
WEIGHT CORRECTING MATERIAL HANDLING CONTROL FOR VARIABLE WATER CONTENT MATERIALS USED IN BLAST FURNACES AND OTHER APPARATUS

William A. Munson, Amherst, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1967, Ser. No. 661,037
Int. Cl. G01g *19/52*
U.S. Cl. 177—50 **12 Claims**

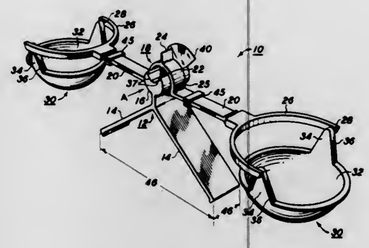


A material handling control detects the water content of material such as coke. On the basis of the difference between the actual water content and a reference water content value, the material handling control terminates and effects delivery of the amount of material (coke) required to supply a predetermined quantity of a substance (carbon) contained in the material in known proportion for use in a blast furnace or other apparatus.

3,502,163
EQUAL ARM BALANCE WITH C-SHAPED FULCRUM SLEEVE FORMED ON BEAM

George R. Stehl, Stoney Brook, N.Y., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y.

Continuation of application Ser. No. 729,024, May 14, 1968. This application Mar. 3, 1969, Ser. No. 805,111
Int. Cl. G01g *21/00*
U.S. Cl. 177—126 **15 Claims**

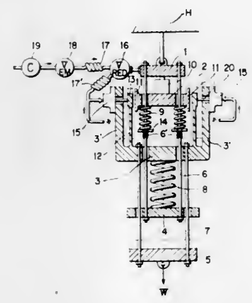


A simple, durable, inexpensive equal arm balance scale especially adapted for use by educational institutions below college level, in a preferred embodiment comprising an integral support and bearing member and a one piece equal arm beam member integrally including a fulcrum and an indicator finger, said equal arm beam member adapted to be slidably fitted with the support and bearing member in a direction normal to the plane of beam weighing movement, the ends of each arm of said equal arm beam member adapted to slidably receive in snug fit a C-shaped member terminating in means suspending a pan in gimbal fashion.

3,502,164
LOAD VARIATION MEASURING APPARATUS

Tomohiko Akuta and Atsumi Seya, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., and Mitsubishi Seiko Kabushiki Kaisha, both of Tokyo, Japan

Filed Oct. 23, 1967, Ser. No. 677,111
Claims priority, application Japan, Oct. 24, 1966, 41/70,143
Int. Cl. G01g *23/14*
U.S. Cl. 177—164 **3 Claims**

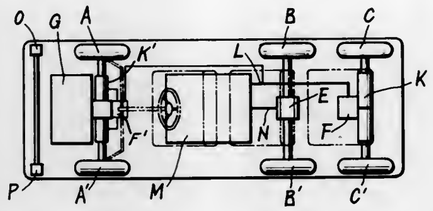


A load variation measuring apparatus using a load cell wherein a load cell receiving stand and a load receiving stand are separated from each other and only when a load variation is measured are both of said receiving stands brought into contact with each other through a friction clutch surface.

3,502,165
GAS-ELECTRIC DRIVEN VEHICLE WITH RETRACTABLE WHEELS

Kosuke Matsukata, 390 Tsurumi-cho, Tsurumi-ku, Yokohama, Japan

Filed Mar. 9, 1967, Ser. No. 621,958
Claims priority, application Japan, Jan. 16, 1967, 42/2,872
Int. Cl. B62d *3/00, 9/00;* **B60k** *1/00*
U.S. Cl. 180—23 **9 Claims**

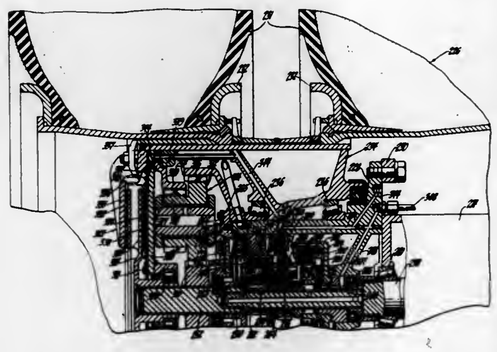


An automobile having an elongated body, preferably adapted to seat three persons one behind the other, and having a gasoline motor driven pair of front wheels, and two pairs of wheels of the rear, one pair being electric motor driven and the other pair being extendable downwardly and outwardly from a raised position so as to raise the rear end of the vehicle off said one pair of wheels. When it is necessary to run the vehicle in a zone where air pollution is strictly controlled, the said other pair of wheels is raised and the said one pair of wheels act as the drive wheels, being driven by the electric motor. When the vehicle is run in a zone where there is no control, the said other pair of wheels is extended and the said one pair raised off the ground, and the front wheels are driven by the gasoline motor driven wheels.

3,502,166
POWER WHEEL DRIVE ASSEMBLY

Howard W. Christenson and William G. Livezey, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Jan. 18, 1965, Ser. No. 426,330. Divided and this application July 19, 1968, Ser. No. 746,223
Int. Cl. B60k *1/00, 9/00*
U.S. Cl. 180—55 **4 Claims**

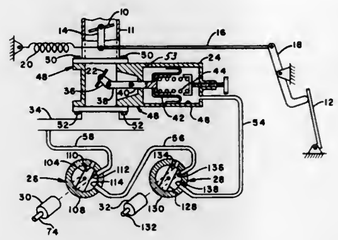


A power wheel drive assembly having a reduction gear unit providing final reduction drive from a motor to a vehicle wheel. A wheel brake is connected in the gear unit so that it handles less than wheel torque and its dynamic brake member rotates faster than wheel speed to provide pumping action for brake cooling.

3,502,167
GOVERNING SYSTEM FOR ENGINES AND AUTOMOTIVE VEHICLES

Donald J. Baxter, South Euclid, Robert L. Dangler, Shaker Heights, and William E. Hanrahan, Mentor, Ohio, assignors to The Marquette Metal Products Company, a corporation of Ohio

Filed Sept. 14, 1967, Ser. No. 667,756
Int. Cl. B60k *31/00*
U.S. Cl. 180—107 **5 Claims**

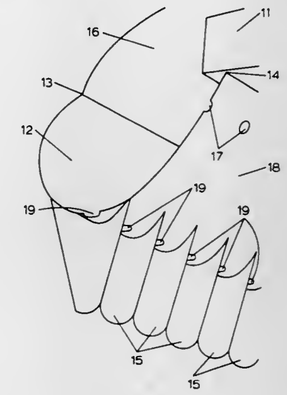


A governing system for automotive vehicles is operated by intake manifold air pressure in a manner dependent upon both vehicle and engine speed to exercise control over the position of an engine throttle to thereby prevent excessive vehicle speed and engine damage.

3,502,168
FLEXIBLE SKIRTING ASSEMBLIES FOR GROUND EFFECT MACHINES

Richard Stanton Jones, Isle of Wight, England, assignor to British Hovercraft Corporation Limited, Yeovil, Somerset, England

Filed Jan. 18, 1968, Ser. No. 698,813
Claims priority, application Great Britain, Feb. 20, 1967, 8,057/67
Int. Cl. B60v *1/16*
U.S. Cl. 180—127 **9 Claims**



A flexible skirt for a ground effect machine, the skirt consisting of an upper hollow flexible member inflated to a desired pressure and a lower part consisting of a plurality of independent flexible segments, the lower part depending from the upper part. Air flows from the upper member to generate and maintain the air cushion and is directed so that a portion flows downwardly into the segments and the remainder flows inwardly directly into the air cushion area, the division of air from the upper member to either the segments or to the air cushion area being governed by the size of the orifices through which the air is ejected. The height of the segments should be within the range 45% to 55% of the total height of the flexible skirt assembly, and preferably, 50%. The width of each segment should be within the range of ¼ and ½ of the vertical height of the segment.

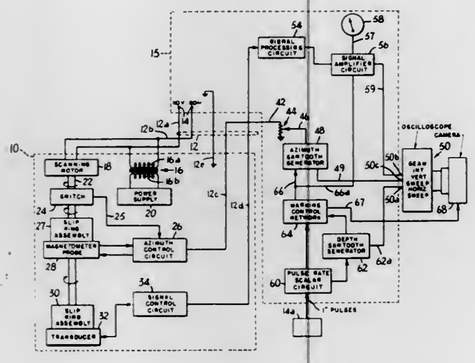
3,502,169
SONIC BOREHOLE TELEVIEWER APPARATUS

Joseph E. Chapman III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Jan. 15, 1968, Ser. No. 697,796
Int. Cl. G01v *1/40*
U.S. Cl. 181—0.5 **26 Claims**

As described herein, a borehole wall is scanned by a rotating instrument, situated within the borehole, which includes a 2 megacycle transducer and a magnetometer. The transducer is rotated to scan the circumference of the borehole and is moved at a selected velocity to provide a record consisting of horizontal circumferential scans over an interval of the well bore. The transducer emits and receives acoustic energy repetitively through each 360° of rotation. A magnetometer is similarly rotated to provide a reference to the direction North for each scan. Signals representative of the intensity of the reflected acoustic energy as developed by the transducer are converted into pulses for each transmitted burst of energy and supplied to an intensity input of an oscilloscope located at the surface. The signals developed by the magnetometer are converted into sawtooth voltage

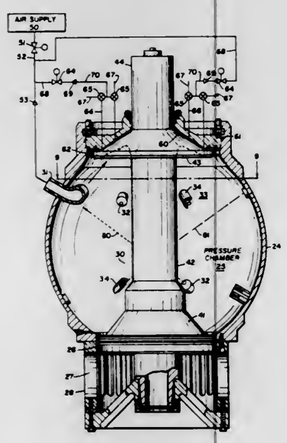
signals and supplied to the vertical sweep input of the oscilloscope. In addition, pulses representative of the rate at which the tool moves through the borehole and are integrated and filtered to form a slowly rising ramp voltage which is supplied to the horizontal input of the oscilloscope. Accordingly, the electron beam of the scope generates a raster across the face of the oscilloscope, the intensity of each segment of the raster being dependent upon the strength of the energy reflected from the borehole wall. A photographic film is exposed to this raster and records a picture or record representative of the surface of the borehole wall.



3,502,170
IGNITION SYSTEM IN PNEUMATIC ACOUSTIC SOURCE

Jarsel M. Pursell, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Feb. 27, 1969, Ser. No. 802,945
Int. Cl. G01v *1/06*
U.S. Cl. 181—.5 **9 Claims**

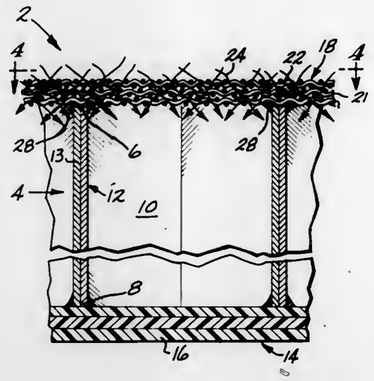


The specification discloses a repetitive acoustic source having a chamber in which an air-diesel fuel mixture is ignited to form high pressure gases which are rapidly released through a port by a quick-acting valve to generate an acoustic pulse in water. The fuel mixing and ignition system comprises an arrangement for injecting air into the chamber, a plurality of diesel fuel injectors, and a plurality of electrically energized igniters. Located adjacent each igniter is a block of carbon which, after the initial operation of the source, becomes heated to a temperature sufficient to ignite the air-diesel fuel mixture. The electrical igniters then are de-energized and the carbon blocks are employed to perform the function of igniting the air-diesel fuel mixture introduced in the chamber in subsequent cycles of operation.

3,502,171
COMPOSITE LAMINAR STRUCTURE FOR NOISE ATTENUATION OF FAST MOVING GAS STREAMS, AND METHOD OF MAKING THE SAME

Robert T. Cowan, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed May 31, 1968, Ser. No. 733,666
Int. Cl. F01n *1/24;* **G10k** *11/04*
U.S. Cl. 181—33 **12 Claims**

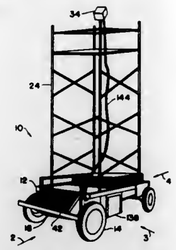


A composite laminar structure is disclosed which is especialy adapted for use with fast moving gas streams, as a means of attenuating the noise generated thereby. Moreover, a method is disclosed whereby the structure can be fabricated to maintain a constant noise attenuation efficiency as the gas stream changes from one speed to another. The composite structure comprises a mat of sound-absorbing material having opposing faces thereon of which one is perforated to admit sound waves to the mat and the other is closed to prevent the waves from escaping from the mat. The perforated face has a porous skin thereover which is bonded to the mat and comprised of at least two superposed and laminated woven cloth plies each having serially spaced rows of warp threads and serially spaced rows of weft or fill threads intersecting therein so that a multitude of interstices are formed within each ply. The threads of each ply are covered by a cured thermoset resin which bridges the intersections thereof so as to form a continuous matrix having substantial portions of the interstices remaining open therewithin. Moreover, corresponding threads of the two plies define an angle of less than 90° with respect to one another so that the open portions of mutually adjacent interstices in the plies are out of registry with one another to a preset degree dependent on the porosity desired. The degree of relative angular orientation can be adjusted in fabricating the skin to vary the porosity and therefore the Rayl of the skin depending on the expected speed of the gas stream and thus the expected frequency of the sound waves emanating therefrom.

3,502,172
SCAFFOLD VEHICLE

Thomas A. Ismond, Dearborn, Mich., assignor to W. D. Gale, Inc., Detroit, Mich., a corporation of Michigan

Filed Nov. 13, 1967, Ser. No. 682,389
Int. Cl. E04g *1/18, 3/10, 3/16*
U.S. Cl. 182—16 **14 Claims**

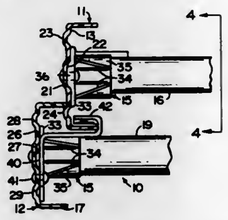


A motor driven scaffold carrying vehicle for servicing expressway signs and the like including a motor, steering transmission and braking structure; steering, shifting and braking means operably connected to the steering, transmission and braking structure for steering the scaffold vehicle, shifting the transmission structure to drive the vehicle forward and backward and braking the vehicle, and a control circuit for the steering, shifting and braking means whereby the steering, shifting and braking means may be remotely operated along with remote control of the starting and speed of the motor and other vehicle control functions.

3,502,173
ELECTRICALLY INSULATED LADDER

Harold G. Arnold, 1023 E. Wayne Ave., Wooster, Ohio 44691

Filed Dec. 9, 1968, Ser. No. 782,121
Int. Cl. E06c *1/12, 7/08*
U.S. Cl. 182—46 **10 Claims**



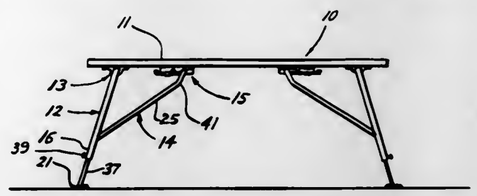
The electrically insulated ladder includes a pair of uprights of flattened U-shape in section each having a logitudinally extending groove in its base portion. A plurality of rungs having non-conductive surfaces are each secured to a pair of sockets which in turn are secured to the uprights in opposed relationship to each other. The sockets, rungs and uprights are all made from or surface covered by electrically insulating materials.

3,502,174
SAWHORSE OR TRESTLE

James W. Cannon, 5714 Los Angeles, Houston, Tex. 77026

Continuation-in-part of application Ser. No. 678,838, Oct. 30, 1967. This application Jan. 16, 1969, Ser. No. 791,706
Int. Cl. E04g *1/34*
U.S. Cl. 182—155 **10 Claims**

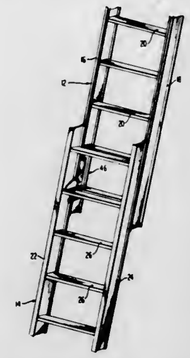
The sawhorse, when erected, disposes V-shaped pairs of legs with apices hingedly mounted under end portions of the beam or bench member, each pair having a cross-member mounting the open ends of a V-shaped brace with brace apex releasably latched in the further slot of an adjacent latch on the bench member under side. With sawhorse folded, cross-members are centrally, releasably latched in adjacent latch further slots, and braces, cross-folded, have apices releasably latched in opposite latch slots adjacent the beam end portion mounting the opposite latch.



3,502,175
CAMMED COMPRESSION LOCKING DEVICE FOR EXTENSION LADDERS

Robert E. Bullock, McComb, Miss., assignor to Croft Metal Products, Inc., McComb, Miss., a corporation of Mississippi

Filed Dec. 30, 1968, Ser. No. 787,758
Int. Cl. E06c *7/06*
U.S. Cl. 182—211 **8 Claims**



The latching mechanism for holding the sections of an extension ladder in an extension position is pivoted for movement about a vertical axis confined within the narrow space afforded between the adjacent edges of the steps of the sections, the steps being of wide tread configuration of approximately the width of the side rails of the ladder. A latching plate is pivoted along one edge on this axis and has a depending extension which carries the camming paddle for swinging the latching plate aside upon relative descent of the ladder sections.

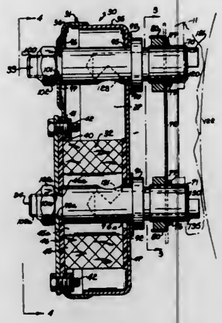
3,502,176
AXLE MECHANISM WITH ADJOINING FILTER HOUSING

Thomas H. Terry, deceased, late of Bay Village, Ohio, by Carol C. Terry, executrix, Bay Village, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 639,685, May 19, 1967. This application Jan. 14, 1969, Ser. No. 791,552
Int. Cl. F16n *7/16, 39/06*
U.S. Cl. 184—6 **24 Claims**

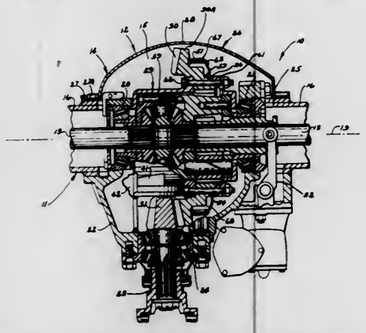
A ring gear of a differential gear mechanism in an axle housing rotates in a lubricant reservoir and conveys lubricant to a lubricant filtering unit which receives the lubricant filtering unit which receives the lubricant from the

ring gear. The lubricant filtering unit includes a filter housing which supports an annular filter member through which the lubricant flows prior to flowing back into the housing chamber. The filter housing is secured to the axle housing by a pair of threaded support members, each of



which have a lubricant passageway therein. One support member directs the lubricant from the axle housing to the filter member and the other support member directs the lubricant from the filter member back into the axle housing.

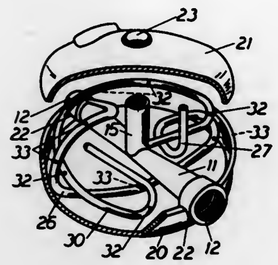
3,502,177
FILTER MECHANISM FOR TWO-SPEED AXLE
Chester D. Christie, Shaker Heights, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 18, 1967, Ser. No. 676,339
Int. Cl. F01m *1/00;* **F01n** *17/06, 29/00*
U.S. Cl. 184—11 **13 Claims**



A differential having a lubricant pick-up and filter apparatus in which lubricant is withdrawn from a sump by a drum coupled to a ring gear and caused to flow by centrifugal force through openings in the rim of said drum to the exterior thereof. A filter is provided inside the drum across said openings for removing impurities from the lubricant. The lubricant is then returned to the sump or further circulated as desired.

3,502,178
AIR LINE LUBRICATOR
Carl Anders Hansson, Johanneshov, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed June 6, 1967, Ser. No. 643,909
Claims priority, application Sweden, June 20, 1966, 27,508/60
Int. Cl. F16n *7/34*
U.S. Cl. 184—55 **4 Claims**

An air line lubricator comprising a casing incorporating two bowl-shaped halves joined to one another along their rim portions, a tube for the passage of compressed air therethrough and traversing said casing across said rim portions, a portion of reduced cross section in said tube, a pressure conduit for feeding air under pressure into said casing, said pressure conduit being in fixed communication with said tube at a point spaced from said reduced portion thereof and extending in coiled relation to said tube along the inner surface portions of both casing halves, and a suction conduit for sucking oil into

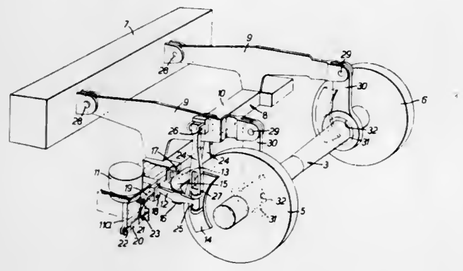


said tube, said suction conduit being in fixed communication with said reduced portion of said tube and extending in coiled relation to an axis transverse to said tube between opposed inner surface portions of said casing halves along the inner surface thereof, said suction conduit being perforated by a plurality of fine bores spaced there along and said pressure conduit being perforated by a plurality of fine bores spaced there along, said fine bores having a diameter of between about 0.75 and 2 millimeters.

ERRATUM

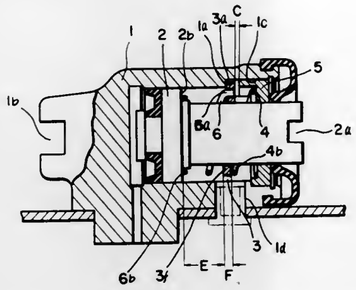
For Class 184—103 see:
Patent No. 3,502,186

3,502,179
RAILWAY BOGIES
Frederick William Sinclair, Gloucester, England, assignor to Gloucester Railway Carriage & Wagon Company Limited, Gloucester, England
Filed Nov. 20, 1967, Ser. No. 684,122
Claims priority, application Great Britain, Nov. 19, 1966, 51,895/66
Int. Cl. B61h *5/00*
U.S. Cl. 188—59 **9 Claims**



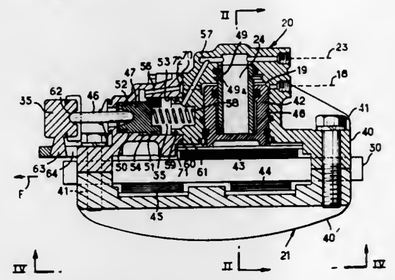
A railway bogie having a brake gear mounting comprising a torque reaction member supported between a transverse member or bolster of the bogie and a fulcrum structure to each of which it is pivotally attached. The fulcrum structure is mounted on an axle of the bogie by way of a journal bearing.

3,502,180
AUTOMATIC DEVICE FOR ADJUSTING BRAKE CLEARANCE FOR VEHICLES
Shigeo Aiki and Tatsumi Torii, Kariya, Japan, assignors to Aisin Seiki Kabushiki Kaisha, Kariya, Japan
Filed Dec. 21, 1967, Ser. No. 692,511
Claims priority, application Japan, Dec. 28, 1966, 42/1,470; Apr. 19, 1967, 42/33,007
Int. Cl. F16d *51/52, 65/54*
U.S. Cl. 188—79.5 **3 Claims**



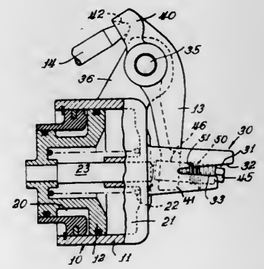
Automatic device provided in the brake wheel cylinder for adjusting the brake clearance, comprising a piston having a piston stem connected to a brake shoe, an annular control disc loosely mounted onto the piston stem and normally slightly inclined by means of springs to firmly engage with the piston stem, and a stopper provided in the cylinder and adapted for stopping and erecting said inclined control disc to release the firm engagement thereof with the piston stem, thereby allowing further movement of the piston stem alone for any increased amount of the brake clearance, so that the starting point of the piston is gradually advanced according to increase of the brake clearance, whereby the brake clearance is automatically adjusted.

3,502,181
DUAL CIRCUIT, SELF-ENERGIZING DISC BRAKE
Pierre Andre Georges Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a company of France
Filed Jan. 8, 1968, Ser. No. 696,438
Claims priority, application France, Jan. 16, 1967, 91,191
Int. Cl. B60t *11/10;* **F01b** *31/00*
U.S. Cl. 188—152 **2 Claims**



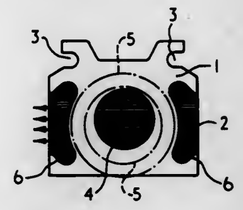
A double-circuit disc brake comprises a rotating disc, a stirrup member rotatably-mounted on at least one bearing coaxial with the axis of the disc and adapted to move parallel to said axis on said bearing, and a piston slidably-mounted in the stirrup parallel to the axis of the disc and acting through the intermediary of a first lining means on the disc. A second lining means is interposed between the disc and the side of the stirrup opposite to said piston, and at least one fluid cushion is interposed between a fixed point and the stirrup which receives the circumferential force developed by friction during braking. This fixed point and/or the fluid cushion are located on one of the sides of the disc at some distance from this latter, the centre of thrust of the second lining means being circumferentially displaced with respect to the centre of thrust of the first lining means.

3,502,182
SELF-ADJUSTING MECHANISM
George L. Wise, Muncie, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 585,398, Oct. 10, 1966. This application Jan. 23, 1969, Ser. No. 797,344
Int. Cl. H16d *13/75*
U.S. Cl. 188—196 **26 Claims**



An adjusting mechanism wherein a fluid pressure responsive piston moves a pivoted lever to engage a friction device including a threaded adjustable screw in said arm having a coil spring surrounding said adjustable screw wherein cam means are provided on the housing containing the piston to engage the coil spring and thereby rotate the adjusting screw to provide an automatic adjustment to compensate for wear of the friction device.

3,502,183
DISC BRAKES
Heinz Gunther Hahm, Frankfurt am Main, Germany, assignor to The Dunlop Company Limited, London, England, a corporation of Great Britain
Filed Apr. 23, 1968, Ser. No. 723,426
Claims priority, application Germany, Apr. 28, 1967, T 33,749
Int. Cl. F16d *65/02*
U.S. Cl. 188—250 **2 Claims**

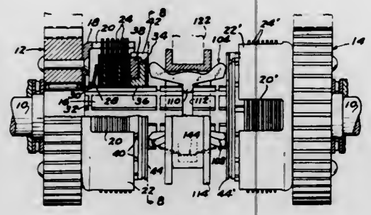


A backing plate for a disc brake friction pad having kidney shaped apertures formed in the region of the leading and trailing edges of the plate for locking a friction pad to the plate.

3,502,184
CLUTCH

Julian S. Pawlina, Elkhart, Ind., and Janis Tenisons, Edwardsburg, Mich., assignors to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan

Filed June 13, 1968, Ser. No. 736,647
Int. Cl. F16d *21/02*
U.S. Cl. 192—48.91 9 Claims

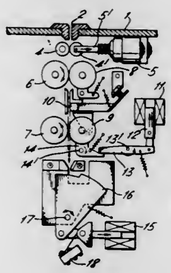


A friction clutch incorporating a shift spool fabricated from sheet metal stampings and adapted to rock a plurality of levers to develop clamping pressure against interleaved sets of friction discs connected to rotary members to couple driven and driving parts through the clutch. The levers pivot on a rounded projection engaged in a groove in one of the rotary members. A novel detent spring arrangement cooperates with the shift spool to maintain the shift spool in neutral position. The clutch also includes a pressure plate and lock spring member for holding a wear take up nut in adjusted position. The lock spring and nut are adapted to cooperate with a special adjusting tool also disclosed herein.

3,502,185
AUTOMATIC TICKET GATE

Keisuke Osaki, Kyoto, Japan, assignor to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan

Filed Feb. 5, 1968, Ser. No. 703,048
Claims priority, application Japan, Feb. 7, 1967, 42/7,848
Int. Cl. G07f *1/06*
U.S. Cl. 194—4 10 Claims

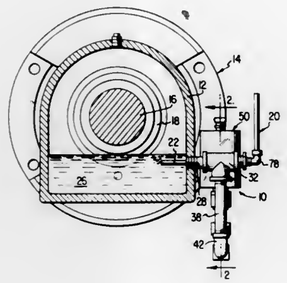


This invention provides an automatic ticket gate which is capable of accepting a plurality of passengers in rapid succession, that is, a succeeding passenger before a preceding passenger has not yet completely passed through the gate and yet regulating passage of each passenger through the gate, depending upon the validity or invalidity of the ticket he uses.

3,502,186
OIL-MIST FEED AND LEVEL SIGHT ASSEMBLY

Frederick M. Hewitt, Barrington, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed June 14, 1968, Ser. No. 737,051
Int. Cl. F16n *31/00*
U.S. Cl. 184—103 4 Claims



An assembly including a vertically adjustable, transparent oil level sight and bleed hole carried by a closed bearing housing with the oil mist delivery tube passing through the center of the coupling.

3,502,187
WRITING SYSTEM

Paul E. Becking, Lake Orion, James D. Bungard, East Detroit, and Donald J. McCormick, St. Clair Shores, Mich., assignors, by mesne assignments, to Intercontinental Systems, Inc., Los Angeles, Calif., a corporation of California

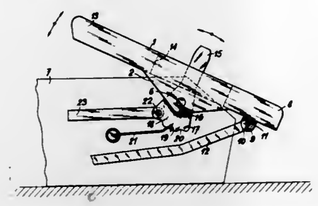
Original application Oct. 2, 1962, Ser. No. 227,767, now abandoned. Divided and this application Jan. 11, 1966, Ser. No. 519,872
Int. Cl. B41j *5/38*
U.S. Cl. 197—20 28 Claims

1. In an automatic typewriter system formed by a writing unit, a record forming means for producing a record of writing unit operations, a record reading means for reproducing writing unit operations, a common housing enclosing said system and defining front, rear and side wall portions connected by an upper covering wall, the upper wall of said housing connecting said side wall portions and being divided into front and rear portions, said front portion providing an inclined surface extending between said side wall portions and sloping downwardly to said front wall portion, keyboard and control receiving cut-outs formed in said front portion, a raised portion formed centrally of said rear portion and dividing said rear portion into spaced deck portions located at opposite sides of said housing, cut-outs formed in said deck portions, said writing unit being centrally mounted in said housing and having portions received in said raised portion, said record forming means being mounted in one end of said housing adjacent said writing unit and having record receiving portions mounted in the cut-outs in the adjacent deck portion, and said record reading means being mounted in the other end of said housing opposite said one end adjacent said writing unit and having record receiving portions mounted in the other of said cut-outs in the other of the adjacent deck portions.

3,502,188
CONTROLS FOR MACHINES SUCH AS TYPEWRITERS

Miroslav Blaha and Jaroslav Keprda, Brno, Czechoslovakia, assignors to Zavody Jana Svermy, narodni podnik, Brno, Czechoslovakia, a corporation

Filed Dec. 19, 1967, Ser. No. 691,759
Claims priority, application Czechoslovakia, Dec. 20, 1966, 8,140/66
Int. Cl. B41j *5/08, 5/10, 5/14*
U.S. Cl. 197—98 10 Claims

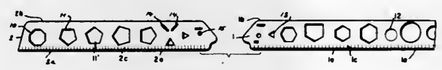


Controls for machines such as typewriters. The machine has a frame which carries a pin, and on this pin a first control means for providing a first control function is pivotally supported. This first control means includes an elongated bar pivotally carried by the pin and formed intermediate its ends with a longitudinal slot extending therethrough. A second control means is also supported for movement by this pin, and this second control means includes a member having an elongated portion extending from the pin through the slot of the first member beyond the latter where this second member has a free end portion accessible to the operator. Thus the operator can engage the latter free end portion of the second member to move the latter with respect to the pin to bring about a second control function of the machine, while at the same time the first member is independently movable on the pin to bring about the first control function.

3,502,189
LINE FINDER WITH CUTOUTS REPRESENTING SYMBOLS

Gertrude Hopp, Recklinghausen, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany

Filed Dec. 22, 1966, Ser. No. 604,072
Claims priority, application Germany, Dec. 24, 1965, H 54,083; Aug. 19, 1966, 1,561,271
Int. Cl. B41j *29/26, 29/42*
U.S. Cl. 197—113 9 Claims



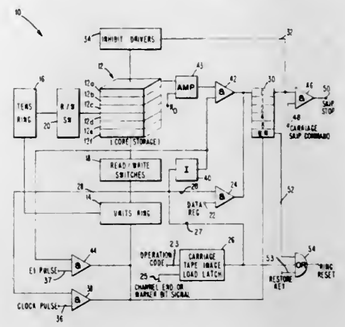
Symbols are drawn on a paper sheet supported by the platen of a typewriter carriage by following with a writing implement the outlines of different cutouts in the line finders of the typewriter. The symbol can be placed on any selected portion of the paper sheet by moving the carriage or turning the platen.

3,502,190
TAPELESS CARRIAGE CONTROL SYSTEM

John L. Smith, Hidden Hills, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 15, 1966, Ser. No. 601,888
Int. Cl. B41j *15/00*
U.S. Cl. 197—133 2 Claims

In a tapeless carriage control for a printer, images of channel skip commands are stored by clock pulses at particular line positions in a core storage device having a plurality of storage positions corresponding to the lines of a document to be printed. The storage device is addressed under control of carriage emitter pulses as the

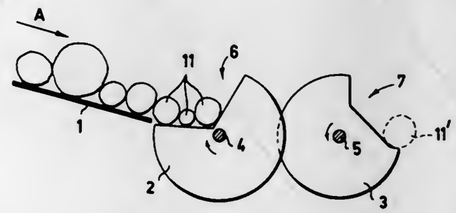


carriage advances until a compare is made with a skip command from a central processing unit whereupon a skip-stop magnet is energized to stop the carriage at the programmed address.

3,502,191
DEVICE FOR MOVING LOGS AND SIMILAR GOODS

Antti Valo, Lohja, Finland

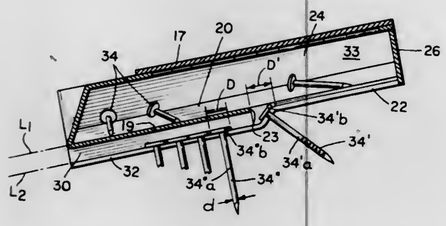
Filed Nov. 7, 1967, Ser. No. 681,241
Claims priority, application Finland, Nov. 8, 1966, 2,932/66; July 19, 1967, 1,991/67
Int. Cl. B65g *47/00*
U.S. Cl. 198—25 4 Claims



A device for the transferring of longitudinal objects such as logs and similar goods from a transversal conveyor to a longitudinal conveyor, and comprising horizontally displaced rotatable axis parallel to the logs in the first mentioned conveyor with at least two discs on each axis, said discs having peripheral notches dimensioned according to the logs to be transferred whereby the primary axis is arranged at the exhaust end of the transversal conveyor and the secondary axis adjacent the longitudinal conveyor and so that in one position of the rotating discs the primary discs receive logs escaping from the transversal conveyor, in another position the notches in the primary and secondary discs together form apertures of the form of a transversal section of a groove during which moment the logs are transmitted from the primary discs to the secondary discs, and in a third position the notches of the secondary discs deliver their log to the longitudinal conveyor, the arrangement being characterized by the combination of the features that the peripheries of the discs on the two parallel axes overlap each other, that the notches in the secondary discs are dimensioned according to the smallest logs to be handled so that when a ridge is created by the

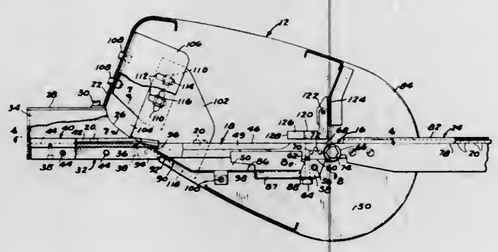
notch walls when the discs part from their groove position only one log might be remitted to the secondary disc, the transfer of the log being secured by a pushing element, mechanically operated to push the logs from the primary to the secondary disc notches.

3,502,192
BULK NAIL PAN FOR AUTOMATIC NAILING MACHINE
Harold J. Cohn, 1523 S. La Cienega Blvd., Los Angeles, Calif. 90035
Filed Jan. 15, 1968, Ser. No. 697,695
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **5 Claims**



A nail pan is provided for pneumatic nailing machines for holding bulk nails and facilitating feeding of the nails one at a time to the machine. The pan includes an elongated slot on its bottom wall including an enlarged opening at one end so dimensioned that only one nail at a time can fall through the bottom slot. A receiving guide structure for the nails in the form of L-shaped flanges are secured to the underside of the bottom wall and define a second elongated slot or guide track which receives nails passed through the first slot and confines them in an ordered array for dispensing to the machine.

3,502,193
HOPPER FOR ORIENTING AND DELIVERING ARTICLES
Casmir Greshaw, Royal Oak, Mich., assignor to The Clyde Corporation, Troy, Mich., a corporation of Michigan
Filed Apr. 29, 1968, Ser. No. 725,112
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **19 Claims**



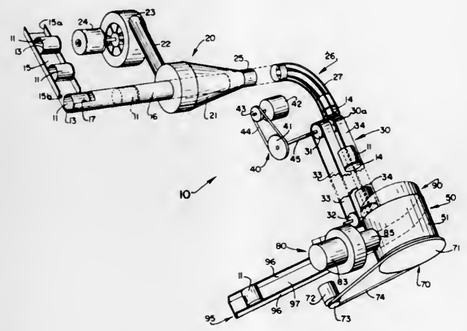
The body of a vertically oscillating hopper has an enclosure in extension thereof which contains an extension of an internal track which receives and delivers properly oriented articles to an external track in upward position thereof. Baffles are provided which limit the number of articles entering the enclosure in downward position of the hopper body.

3,502,194
CONVEYOR SYSTEM
John H. Perry, Doraville, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 27, 1968, Ser. No. 732,465
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **11 Claims**



A conveyor system for use in conjunction with a packaging operation receives in sequence a plurality of articles each of which may consist of a plurality of primary packages disposed within a wrapper. Each article is received first by accelerator means which increases its velocity along a predetermined path. The article is thereafter received by an orienting mechanism which simultaneously imparts longitudinal movement to the article while imparting rotary movement thereto about a vertical axis, such rotary movement being imparted to each article by transversely reciprocable pusher means. Transport means moving at a velocity less than the horizontal time rate of movement of the orienting means receives in sequence each article and imparts movement thereto along the predetermined path, the articles being in spaced relation to each other along the path of movement. An accumulator receives the articles from the transporter means and arranges the articles in close juxtaposition to each other. Thereafter as the articles so arranged in close proximity to each other are passed underneath a blank feeder element, a wrapper blank is placed atop the articles and means are provided thereafter for folding the sides and bottom panels of the wrapper and for gluing the bottom panels of the wrapper to the articles.

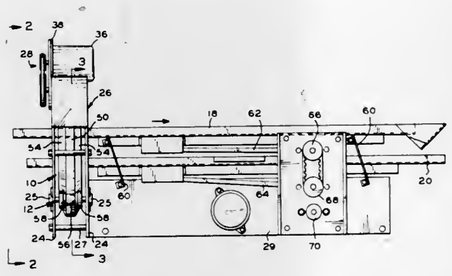
3,502,195
CONVEYING AND TRANSFER MECHANISM
William R. Benner, 126 W. Bluff St., Streator, Ill. 61364
Filed June 19, 1968, Ser. No. 738,269
Int. Cl. B65g *47/24, 37/60*
U.S. Cl. 198—33 **28 Claims**



There is disclosed a conveying and transfer mechanism which comprises a feed conveyor for conveying containers closed-ends first in the direction of the longitudinal axes

thereof, a transfer plate rotatably mounted adjacent to the feed conveyor and having a receiving surface for receiving the containers, drive mechanism for rotating the transfer plate, retention mechanism for releasably holding the containers against the receiving surface during rotation of the transfer plate, and a diverter to remove the containers from the transfer plate and to deliver them in a direction normal to the axes of the containers.

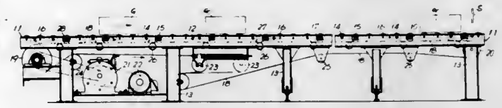
3,502,196
ANNULAR ELEVATOR MECHANISMS
Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon
Filed Oct. 9, 1967, Ser. No. 673,736
Int. Cl. B65g *37/00, 29/00*
U.S. Cl. 198—107 **11 Claims**



An annular trough **10** supported by a pair of rollers **12** for rotation on a horizontal axis is rotated by a drive roller **14** to carry fluent material in the lower portion of the trough upwardly to a deflector **16** fitting closely in and substantially filling the cross sectional area of the trough. The deflector scrapes the material from the trough **10** and the material falls into a trough-like conveyor **18**. The conveyor **18** drops the material onto articles to be dusted with the material in a trough-like conveyor **20** which carries the articles through the lower portion of the trough **10** and drops excess fluent material through a screen portion **22** into the annular trough **10** for recycling. The rollers **12** are carried by spaced arcuate frame plates **24**, and an arcuate, cupped cover **26** carries the roller **14** and an electric motor drive **28** therefor. The cover **26** is hinged relative to the frame plates **24** to provide access to the annular trough **10**. An annular elevator mechanism **100** (FIGS. 5 and 6) includes annular troughs **109**, **110** and **111** adapted to raise fluent material from the bottom of the lower trough **109** to the top of the uppermost trough **111** and deposit the material in a trough-like conveyor **118**.

3,502,197
ACCUMULATING CONVEYOR
Takeo Kato, 3–1724 Kamimeguro, Meguro-ku, Tokyo, Japan, and Toshiyuki Takahashi, 4327 Totsuka-cho, Totsuka-ku, Yokohama-shi, Kanagawa-ken, Japan
Filed Dec. 8, 1967, Ser. No. 689,031
Claims priority, application Japan, Dec. 10, 1966, 41/80,906
Int. Cl. B65g *13/02*
U.S. Cl. 198—127 **5 Claims**

Accumulating roller conveyor having combination conveyor rollers, pressure rollers and an endless driving belt adapted to release its driving engagement with the overlying conveyor rollers when an article carried on the rollers is forced to stop its forward movement in the course of conveying operation. The combination conveyor rollers are connected by a spring bracket which is formed suitably to move one of the combination rollers longitudinally of the conveyor path.



3,502,198
RETRACTABLE CLEAT
William G. Loye, 3266 Rickman, NE., Grand Rapids, Mich. 49505
Filed May 1, 1968, Ser. No. 725,780
Int. Cl. B65g *17/04*
U.S. Cl. 198—153 **10 Claims**

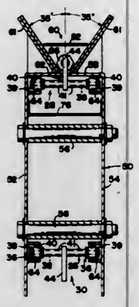


This invention is directed to a power driven conveyor having an endless member of the wide belt or web type which, as it makes its upper or operative run, automatically forms article carrying pockets. The web is equipped with spaced cross rods or stiffeners, the ends of selected ones of which are attached to chains which move the web along the upper run, the remaining rods are guided to a second track, which track is located below that along which the chain travels, thereby forming the web into pockets. The terminal pulleys for the web and the terminal sprockets for the chains have a radial relationship such that the excess in length of the web over that of the chains is taken up forming a flat surface at the conveyor's discharge end. These pulleys are also equipped with a compressible material permitting the rods to become embedded therein so that the top surface of the web is smooth as it passes around the pulley.

3,502,199
CONVEYOR ASSEMBLY
Orin B. Bramley, Euclid, Ohio, assignor to May-Fran Manufacturing Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 11, 1968, Ser. No. 712,028
Int. Cl. B65g *19/00*
U.S. Cl. 198—173 **5 Claims**

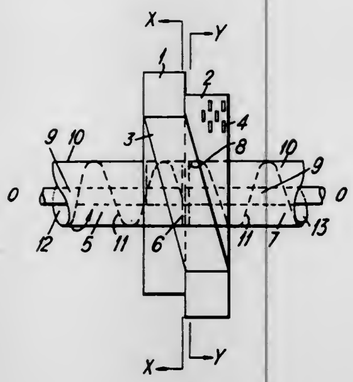
A small portable conveyor for transporting small objects such as bolts or screws away from a bolt, screw or other machine and to discharge the same preferably at a different elevation. The conveyor housing defines a trough above the upper run of the conveyor belt. A slot running

longitudinally along the base of the trough accommodates pusher bars attached to the conveyor belt extending up-



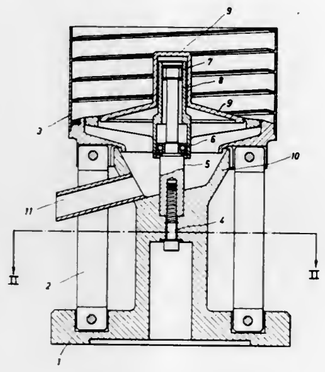
wardly through the slot and advanced along the slot by the belt.

3,502,200
APPARATUS FOR TRANSPORTING ARTICLES
Eivind Christian Thobroe and David Sidney Keyse, Stonehouse, and Roger Malcolm Dale, Runcorn, England, assignors to Hoffmann Manufacturing Company Limited, Chelmsford, and Imperial Chemical Industries Limited, London, England, both corporations of Great Britain
Filed Apr. 24, 1967, Ser. No. 633,182
Claims priority, application Great Britain, May 12, 1966, 21,075/66
Int. Cl. B65g *33/02*
U.S. Cl. 198—213 **12 Claims**



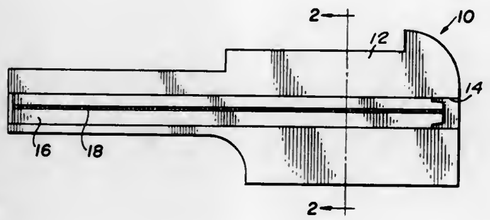
Apparatus for transporting small articles down into and up out of a fluid treatment medium, comprising a pair of spiral channels with partly foraminate walls, winding in opposite senses, intercommunicating at their outer ends and rotatable as an integral whole about a substantially horizontal axis, preferably with horizontally transporting feed and discharge channels in the form of Archimedean screws connected to the inner ends respectively of the two spirals. Pairs of spirals, each pair partly immersed in a separate vessel containing a treatment medium and linked to their neighbours along a common axis by lengths of similarly connected Archimedean screws, are employed for a sequence of treatments, for instance for treatments in degreasing solvent liquor/vapour for critical cleaning of bearing balls and rollers with reduced risk of shock and abrasion.

3,502,201
VIBRATORY CONVEYOR
Karl Spiess and Albert Fletzek, Herzogenaurach, Germany, assignors to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Jan. 12, 1968, Ser. No. 697,369
Claims priority, application Germany, Jan. 17, 1967, J 32,788
Int. Cl. B65g *27/02*
U.S. Cl. 198—220 **3 Claims**



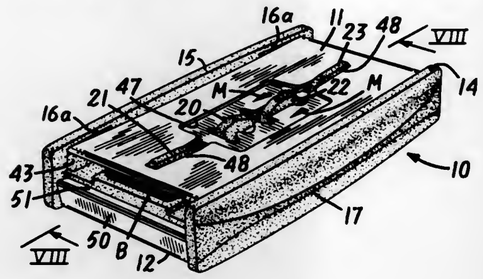
A vibratory conveying apparatus comprised of a stationary base plate, a bowl provided with a helical track and capable of executing periodic rotary and vertical vibrations, said bowl being attached to the base plate by elastic guide springs.

3,502,202
LEAD LINE DEVICE AND SYSTEM FOR TYPOGRAPHICAL CASTING MACHINES
Robert B. Stemler, Box 41, Kanes Road, Glen Arm, Md. 21057
Filed July 25, 1967, Ser. No. 655,847
Int. Cl. B41b *11/50, 11/52, 11/44*
U.S. Cl. 199—47 **8 Claims**



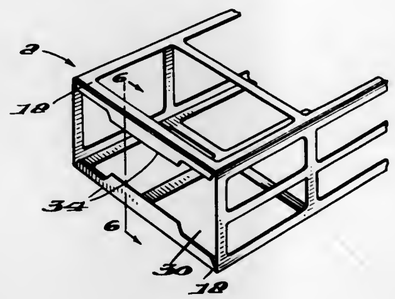
A modification to conventional Linotype typecasting machines which permits the semi-automatic development of lead lines such as a series of dashes across the right hand portion of a column. The individual lead line characters are vertically aligned by virtue of the positioning engagement of a pawl assembly with the right hand vise jaw horizontal rack. The inward surface of the right hand vise jaw is modified to contain a length of lead line mold characters and is positioned before the casting slot by energizing the quadding function. Line justification is accomplished by reactivating the justification bar.

3,502,203
BLADE HOLDER AND DISPENSER
Paul A. Braginetz, Augusta County, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Mar. 7, 1968, Ser. No. 711,289
Int. Cl. B65d *83/10, 85/162;* **A45c** *11/20*
U.S. Cl. 206—16 **14 Claims**



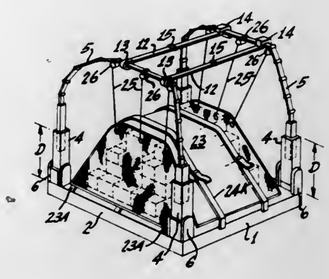
A holder and dispenser for razor blades of the type having double cutting edges and a central longitudinal slot, the blades being arranged in a stack in alternately longitudinally offset relation and adapted to be discharged one at a time from the end of the holder to which the particular blade is oriented, the blades being mounted on two pairs of vertical lugs or ribs extending upwardly certain ones of which are engaged through the slots in the respective blades, the lugs being supported on elastic mounts and shaped and arranged in conjunction with the dispenser cover to hold the blades normally against longitudinal movement but capable of flexing downwardly to release the respective blades when a finger is inserted in an opening in the cover.

3,502,204
CONTAINERS MADE FROM STRIPS OF THERMOPLASTIC RESIN FILM HAVING A NETWORK OF RIBS MOLDED TO A SURFACE OF THE FILM
David D. James, North Hills, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 560,001, June 23, 1966. This application July 18, 1968, Ser. No. 756,698
Int. Cl. B65d *25/00*
U.S. Cl. 206—45.34 **6 Claims**



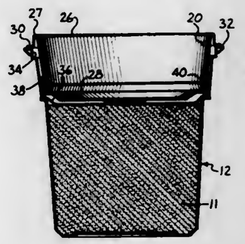
A container is made from strips of film having a network of ribs integrally molded to a surface of the film, with the strips forming a self-sustaining framework thereby forming a container. The ribs enable the film to retain integrity by preventing the propagation of ters therethrough.

3,502,205
CONTAINER
Charles R. Milton, 54 Surrey Lane, Sudbury, Mass. 01776
Filed Dec. 13, 1967, Ser. No. 690,200
Int. Cl. B65d *19/44*
U.S. Cl. 206—46 **7 Claims**



A container defining a volume of controllable size and profile is generated by providing at least one upright arch member which includes an upper, bow portion of bendable material.

3,502,206
PACKAGE FOR ORAL BARIUM AND THE LIKE
Wayne M. Hultberg, Glenview, and Joe E. Irvin, Highland Park, Ill., assignors to Baxter Laboratories Inc., Morton Grove, Ill., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,075
Int. Cl. B65d *79/00, 81/32*
U.S. Cl. 206—47 **8 Claims**

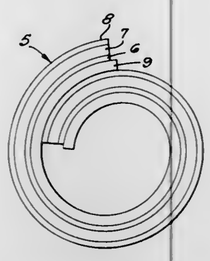


A measuring cap for a liquid nests in a cup to cover a measured quantity of a material such as barium sulfate, and when arranged on said cup in inverted condition provides a head space for shaking a carrier and the material. A lubricious divider separates the inverted cap and the material in the cup and facilitates cap removal from nested condition.

3,502,207
FLOCKED PROTECTIVE COVERINGS
Leon Rollin Alexander, Los Angeles, Calif. (9058 Walnut St., Bellflower, Calif. 90706)
Continuation-in-part of application Ser. No. 191,598, May 1, 1962. This application Apr. 19, 1966, Ser. No. 556,250
Int. Cl. C09j *7/00;* **B44d** *1/44*
U.S. Cl. 206—59 **12 Claims**

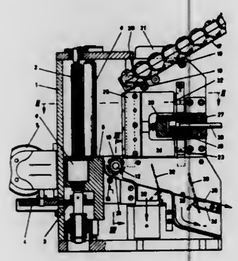
This application describes an exceedingly pliant protective covering for finished surfaces of metal or plastic sheeting, comprising a distensible adhesive film base and a discrete layer of flocking attached imbeddedly to one

surface thereof, the other surface being normally pressure sensitive and self-adhesionable to said sheeting. The specification also discloses the winding of pressure sensitive



product into a roll without separable interliner and its capacity to be unwound therefrom when suitably structured.

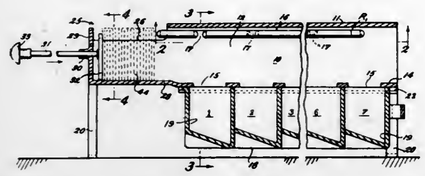
3,502,208
AUTOMATIC GEAR TESTING DEVICE
Karl Müller, Zurich, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland
Filed Jan. 22, 1968, Ser. No. 699,599
Claims priority, application Germany, Jan. 20, 1967, M 72,487
Int. Cl. B07c *5/34*
U.S. Cl. 209—73 **7 Claims**



In an automatic gear testing device, the master toothed piece comprises a rack having a length substantially corresponding to the circumference of the gears to be tested. This rack is movable, perpendicularly to its length, and radially of the test gear, through a distance which is only of the approximate order of magnitude of the relatively small measuring and testing movements of a measuring head and control device. A slide is displaceable longitudinally of the rack and provided with centering means for rotatably receiving a gear to be tested, the gear being rotated in mesh with the rack during descent of the slide. Cams on the slide operate limit switches to release the centering device at the lower limit of movement of the slide to drop the gear to roll along a discharge path where the gears are sorted as to oversize, undersize and within predetermined tolerances.

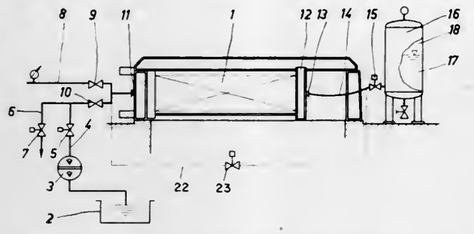
3,502,209
CARD SORTING DEVICE AND SYSTEM
Joseph D. Shaw, 508 Church St., Brownsville, Pa. 15417
Filed Jan. 24, 1968, Ser. No. 700,155
Int. Cl. B07c *5/34*
U.S. Cl. 209—110.5 **8 Claims**

A card sorting device and system wherein the cards have supporting tabs along one edge thereof, the cards being coded by predetermined deletion of certain of said tabs, and the coded cards, indiscriminately mingled in a pack, being sorted by face-wise movement of the pack through a gravity chamber having tab supporting ways



located in the top of the chamber, the ways being restricted at certain points along their longitudinal extents to provide non support for certain of the cards.

3,502,210
FILTERING PROCESS AND SYSTEM FOR CARRYING THE PROCESS INTO EFFECT
Oswald Anton Busse and Erwin Hugo Klesper, Michelbach, Nassau, Germany, assignors to Passavant-Werke of Michelbacher Hutte, near Michelbach, Nassau, Germany
Filed June 27, 1966, Ser. No. 560,630
Claims priority, application Germany, June 25, 1965, P 37,144
Int. Cl. B01j *25/12, 37/04*
U.S. Cl. 210—65 **5 Claims**

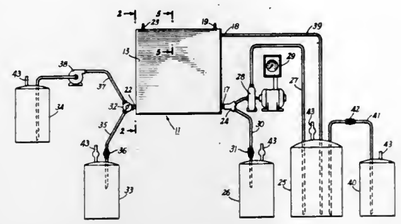


A process for operating a filter press having a stack of filter plates provided with central apertures precluding during the process of filtration clogging of these apertures and concomitant generation of dangerous pressure levels inside the press. The fluid to be filtered is admitted at one discrete point of the stack and during the process of filtration non-filtered liquid is drained from the stack at another discrete point thereof. The liquid so withdrawn is stored under gas pressure in a storage tank. Admission of fluid to the first discrete point and drainage of fluid from the second discrete point are effected simultaneously. Thus during the process of filtration a flow of liquid is established through the central apertures of the constituent filter plates of the stack in a direction longitudinally thereof.

3,502,211
PROCESS AND APPARATUS FOR RECOVERING SOLIDS IN ENRICHED AND PURIFIED FORM
Wolfgang von Pölnitz, Frankfurt am Main, and Hermann Engelhardt and Georg Erbach, Marburg an der Lahn, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main-Hoechst, Germany, a company of Germany
Continuation-in-part of application Ser. No. 91,390, Feb. 24, 1961. This application Nov. 1, 1965, Ser. No. 505,725
Claims priority, application Germany, Feb. 25, 1960, B 56,813
Int. Cl. B01d *23/24*
U.S. Cl. 210—79 **3 Claims**

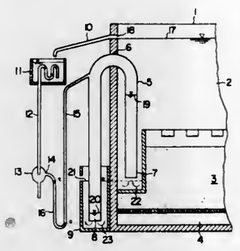
Method and apparatus for filtering suspensions by passage thereof through a single continuous sinuous chan-

nel in contact with a filter, wherein the suspension is continuously recycled through the channel and wherein



the direction of flow of the suspension within the channel is periodically reversed.

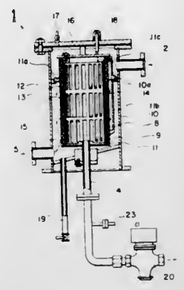
3,502,212
AUTOMATIC WASHING SYSTEM WITH SIPHON FOR LIQUID FILTER CELLS
Yoshihiko Ueda, Yamaguchi-shi, Japan, assignor to Chiyoda Kako Kensetsu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 12, 1967, Ser. No. 652,946
Claims priority, application Japan, July 15, 1966, 41/46,417; June 5, 1967, 42/35,447
Int. Cl. B01d *23/24*
U.S. Cl. 210—98 **11 Claims**



A system having a siphon which is disposed below the limiting level of the filter cell liquid for discharging liquid out from a liquid filter cell to cause back-washing of a filter bed, the siphon being normally sealed at its open ends by liquid and containing entrapped air, which is compressed as the filter cell liquid rises, because of increasing the loss of head through the filter bed, until the liquid reaches a limiting overflow level, whereupon overflow liquid activates a hydraulically operated deaerating device to release the compressed air, thereby disrupting air-liquid pressure equilibrium in the siphon to accomplish automatic starting of siphoning action.

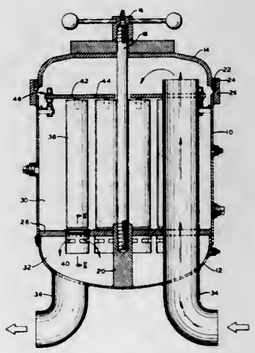
3,502,213
STRAINER
Sadatomo Kuribayashi, 11–21 2-chome, Kakinokizaka, Meguro-ku, Tokyo, Japan
Filed Feb. 15, 1968, Ser. No. 705,710
Claims priority, application Japan, Apr. 15, 1967, 42/23,729
Int. Cl. B01d *27/12*
U.S. Cl. 210—108 **7 Claims**

A strainer screening element of stainless steel notched wire is doubly protected for foreign matter. In a first step, one part of fluid introduced into the strainer is caused to move around the screening element along a helical passage without being filtered so as to wash off any collected foreign matter. In a second step, the matter is blown off by pneumatic pressure which is introduced into the strainer reversely through a filtrate delivery conduit. Blowing is automatically controlled by means of a pressure differential switch, a controller and electromagnetic valves. Thus



the screening element is doubly protected from dirt or foreign matter by means of one portion of fluid intended to be filtered and a pneumatic blowing device.

3,502,214
CHECK VALVE FOR FILTER APPARATUS
James M. Mills and Floyd Coomer, Cookeville, Tenn., assignors to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Mar. 4, 1968, Ser. No. 710,045
Int. Cl. B01d *35/12*
U.S. Cl. 210—136 **7 Claims**

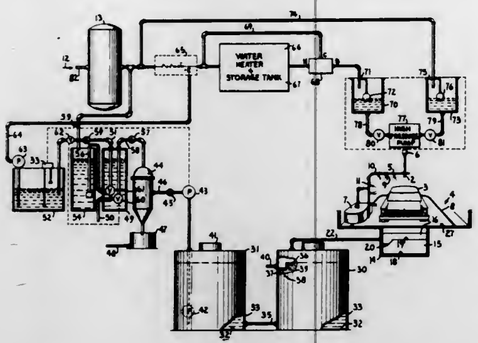


Check valve for filter apparatus using a plurality of filter cartridges and wherein a filter cartridge in proper operative position will open its pertaining check valve, whereas a filter cartridge not in proper position or removed from the apparatus will permit its pertaining check valve to close.

3,502,215
WATER RECLAMATION APPARATUS
Nissen N. Cahan, Kansas City, Mo., assignor to Robo-Wash, Inc., Kansas City, Mo., a corporation of Missouri
Filed Nov. 27, 1967, Ser. No. 685,761
Int. Cl. B60s *3/02;* **B08b** *3/10*
U.S. Cl. 210—167 **2 Claims**

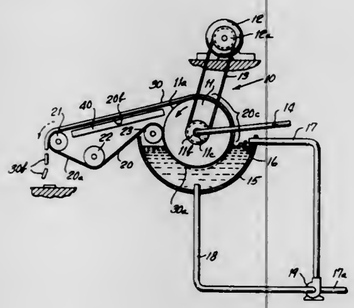
Water reclamation method and apparatus for reclaiming water from a water using apparatus and returning reclaimed water to the water using apparatus wherein used water is collected, flowed to a settling reservoir

from which water is moved to a centrifugal separation to remove suspended solids whereby water substantially free of solids is provided, the water then being chemically



treated as by an ion exchange for reducing the water hardness, the water is then stored and moved as needed to the water using apparatus for reuse therein.

3,502,216
ROTARY FILTER APPARATUS
Frank W. Dittman, Bridgewater Township, Somerset County, N.J., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Jan. 12, 1968, Ser. No. 697,352
Int. Cl. B01d *35/18*
U.S. Cl. 210—179 **1 Claim**

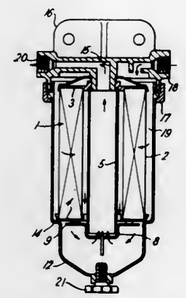


A rotary filter of the type wherein an endless filter cloth is carried upon a continuously rotating porous or perforated drum partially immersed in a mother liquor, a vacuum being applied at the interior of the drum to cause filtrate from the mother liquor to enter the drum through the intervening filter cloth, leaving behind a filter cake, and a portion of the endless filter cloth being located remote from the drum for discharge of the filtered cake, further characterized by the improvement including heating means located between the drum and the filter cake discharge point adapted to heat the underside of the filter cloth remote from the filter cake on the overside thereof, sufficient to substantially dry the filter cloth without substantially drying the filter cake, so that an improved comprise between thinness of the filter cake and ability of the filter cake to separate from the filter cloth is achieved, thereby allowing higher filtration rates per unit of filter cloth area without resultant deleterious adherence of the filter cake to the filter cloth at the point of discharge of the filter cake.

3,502,217
ABRASION-RESISTANT CHROMATOPLATES
Klaus Brückner, Darmstadt-Eberstadt, Herbert Halpaap, Jugenheim, and Hubert Rössler, Darmstadt, Germany, assignors to E. Merck AG., Darmstadt, Germany
No Drawing. Filed June 17, 1966, Ser. No. 558,288
Claims priority, application Germany, June 18, 1965, M 65,630
Int. Cl. B01d *15/08*
U.S. Cl. 210—198 **28 Claims**

A chromatographic plate comprising a support plate having superimposed thereon an intimate mixture of, in percent by weight, 0.1 to 10 percent of a polymeric binder selected from a group consisting of a normally solid vinyl-type polymer containing carboxyl groups, and salts thereof, and 73 to 99.9% of a chromatography adsorbent selected from the group consisting of silica gel, kieselguhr, aluminum oxide, magnesium silicates, and calcium phosphate.

3,502,218
WATER SEPARATING FUEL FILTERS
Derrick Percival Tuffnell, Southampton, and Stanley William Kemp, Totton, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,645
Claims priority, application Great Britain, May 26, 1966, 23,647/66; Feb. 25, 1967, 9,116/67
Int. Cl. B01d *29/06*
U.S. Cl. 210—305 **9 Claims**

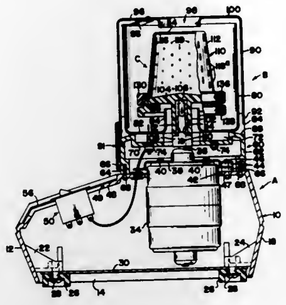


A fuel filter element in which a pleated paper element is arranged coaxially around and spaced from an imperforate tube to which end caps are secured, the upper end cap sealing the annular space between the tube and element and the lower end cap permitting filtered fuel, and entrained water droplets to pass radially outwards through a narrow gap between outlet openings in the end cap and a base plate member which is spaced a small distance from the lower end cap and extends to near the outer periphery thereof. The effect of this is to slow up the flow of liquid so that water droplets are delivered towards the outer periphery of a casing in which the filter element is arranged and do not tend to be re-entrained in the flow of filtered fuel which enters at the lower end of the centre tube.

3,502,219
LABORATORY CENTRIFUGAL SEPARATOR APPARATUS
Bernard J. Starkoff, Shaker Heights, and Edward M. Klopp, Seville, Ohio, assignors to The Chemical Rubber Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 11, 1968, Ser. No. 712,018
Int. Cl. B01d *33/06*
U.S. Cl. 210—380 **8 Claims**

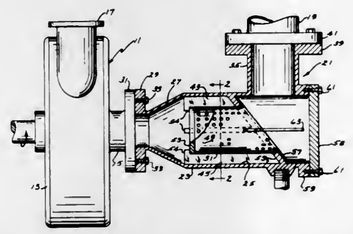
An improved centrifugal-type solid-liquid separator which includes a vertically extending shaft mounted for rotation about its longitudinal axis and, motor means

for rapidly rotating the shaft. A generally circular filter drum support member is axially aligned with the shaft and drivingly connected thereto. The filter drum for the unit comprises a hollow plastic member having a relatively thin, perforate, cylindrical side wall terminating



in upper and lower circumferential edges defining open upper and lower ends. The drum forming member is positioned on the support member with its lower edge in engagement therewith and, releasable connecting means sealingly engage the lower edge and connect the drum member to the support member for rotation therewith.

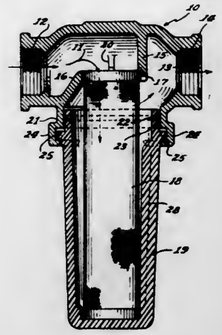
3,502,220
PUMP INLET STRAINER
Lawrence F. Kohlberg, 4332 Kay Lane, Affton, Mo. 63123
Filed Dec. 18, 1967, Ser. No. 691,504
Int. Cl. B01d *29/20*
U.S. Cl. 210—416 **4 Claims**



A strainer is disclosed for use at the inlet of a pump to which liquid is provided through a supply pipe which extends transversely to the pump inlet. Liquid is admitted through the side of a substantially cylindrical chamber which is of larger diameter than the pump inlet. The liquid passes substantially radially outwardly through the peripheral straining surface of a substantially cylindrical strainer element and is then guided, by longitudinal fins extending inwardly into the chamber, to the outlet of the chamber. The outlet is funnel shaped and conducts the liquid into the pump without substantial turbulence.

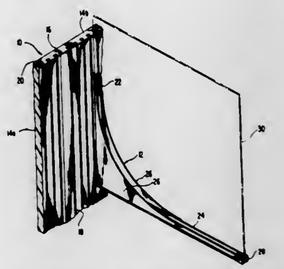
3,502,221
FILTER UNIT FOR SPRAYERS
Ted Lee Butterfield, Naperville, Ill., assignor to Spraying Systems Co., a corporation of Illinois
Filed May 14, 1968, Ser. No. 729,002
Int. Cl. B01d *27/08*
U.S. Cl. 210—444 **6 Claims**

A strainer for fluid systems having a quick detachable screen housing for the strainer screen. The housing is held in position by a special lug and groove arrangement which permits expansion of the cover when the strainer is pres-



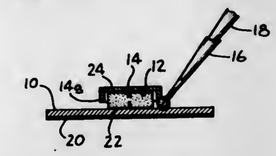
surized to thus lock the housing and strainer screen in position.

3,502,222
ADJUSTABLE SUPPORT RACK
Sixten A. Crafoord, 1851 E. 21st St., Jacksonville, Fla. 32212
Filed Jan. 8, 1968, Ser. No. 696,235
Int. Cl. A47f *5/00, 5/10*
U.S. Cl. 211—40 **12 Claims**



An adjustable support structure comprising interconnecting slotted support members with arms hingedly mounted thereon at selectable locations. The arms are keyed for slidable reception in inwardly enlarged slots formed in the support for removal or repositioning as desired. Certain of the arms are specifically adapted as holders for phonograph records.

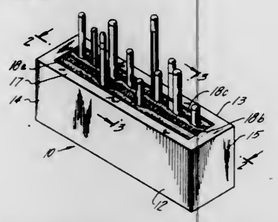
3,502,223
MAGNETIC PEN HOLDER
Ahmet K. Bey, Chicago, Ill., assignor to Frances Budreck
Filed Aug. 15, 1968, Ser. No. 752,963
Int. Cl. A47f *7/00;* **B43m** *11/08*
U.S. Cl. 211—69.6 **3 Claims**



A magnetic pen holder which includes a flat base member of magnetizable material. A flat disc-shaped permanent magnet is mounted on top of the base member and a cup-shaped cap member of magnetizable material is mounted over the magnet with a lower marginal edge spaced from the base member. Complementary, adjacent

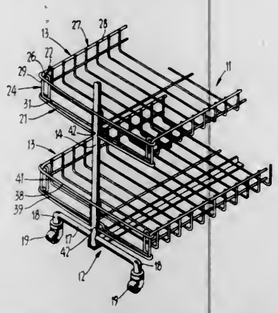
concave recesses are formed in the top of the base member and the lower marginal edge of the cap member to receive a spherical, magnetizable portion of a pen receiving socket.

3,502,224
HOLDER FOR PENCILS, CRAYONS AND LIKE ELONGATED ARTICLES
Fred Heinze, 215 Aycrigg Ave., Passaic, N.J. 07055
Filed Nov. 14, 1967, Ser. No. 682,823
Int. Cl. A47f *97/00, 7/00*
U.S. Cl. 211—69.8 **7 Claims**



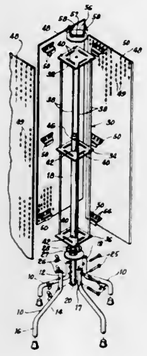
A holder or container for pencils, crayons and like elongated articles in which strips or sections of elastic material are disposed on edge in a container with opposed faces of adjacent strips being normally in substantial contact, the articles, when inserted between the opposed faces, being held in upward positions.

3,502,225
ADJUSTABLE POSITION TRAY SUPPORT ARMS FOR MERCHANDISING RACK
Earl J. Oliver, Fremont, Calif.
(555 W. Ave. 135th, San Leandro, Calif. 94577)
Continuation-in-part of application Ser. No. 541,304, Apr. 8, 1966. This application Nov. 14, 1966, Ser. No. 594,229
The portion of the term of the patent subsequent to June 11, 1985, has been disclaimed
Int. Cl. A47f *3/14;* **A47j** *47/00*
U.S. Cl. 211—133 **6 Claims**



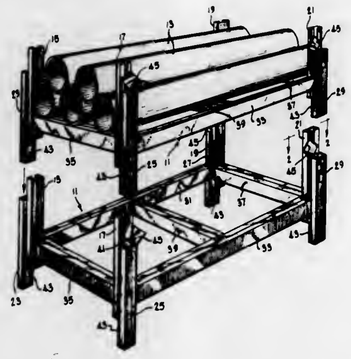
A wire merchandising rack is described which has trays secured to vertical posts in such a manner that the location of the trays may be vertically adjusted with respect to the posts and yet a rigid securance of the trays to the posts at any chosen vertical location is assured. The rack includes a support frame having a pair of upright support posts between which the trays are mounted. The mounting means for each of the trays comprises a pair of resilient arms, one on each of the posts and each of which has portions extending on opposite sides of its associated post for securance to the end of a tray. Each resilient arm is secured to its post by means of an element of the arm defining an eye projecting inwardly from a transverse edge of the arm which is in engagement with the post. The eye is traversed by the post, and the element defining the same engages the post on the opposite side thereof from that engaged by the transverse edge of the arm. When the end of a tray is secured to the arm, the tray rotates the arm to cause a binding engagement of the post by the element defining the eye and the aforementioned transverse edge so that the arm is locked in position on the post, but when a tray is not engaged with the arm, the arm may be slid vertically along the post to change its vertical location with respect thereto.

3,502,226
DISPLAY STAND
Howard J. Marschak, Evanston, Ill.
(855 W. North Ave., Chicago, Ill. 60622)
Filed May 29, 1968, Ser. No. 733,137
Int. Cl. A47f *5/02, 5/04*
U.S. Cl. 211—163 **3 Claims**



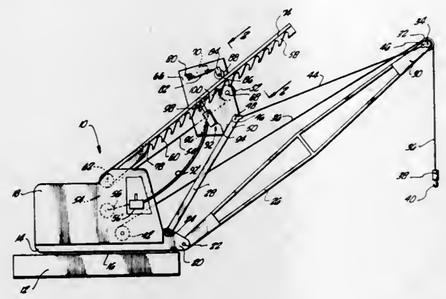
A display stand formed of components which may be boxed and shipped disassembled to occupy a minimum amount of space but which can be readily set up and put together, and in which the stand has a rotatable center hub to which are detachably secured and locked in position a plurality of panels which serve to support and display merchandise, and in which the panels are arranged to provide the maximum display surface in a minimized area.

3,502,227
STORAGE RACK
Anthony N. Konstant, Mount Prospect, and Burt E. Schell, Jr., Long Grove, Ill., assignors to Speedrack Inc., Skokie, Ill., a corporation of Illinois
Filed Oct. 18, 1967, Ser. No. 676,139
Int. Cl. A47f *5/10*
U.S. Cl. 211—177 **10 Claims**



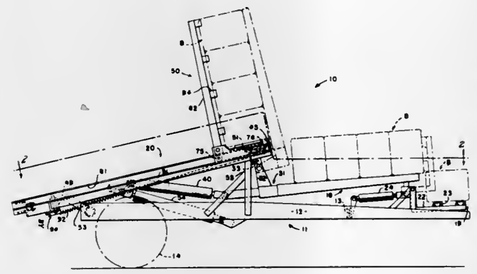
A rack structure is described adapted for vertical stacking. A frame is provided with supports, such supports being of a configuration to be able to nest with corresponding supports on an identical rack. The manner in which this is accomplished provides sufficient space under the lowermost rack in a stack to insert a heavy duty platform truck, while avoiding a corresponding loss of space between all racks stacked above the lower rack.

3,502,228
SAFETY DEVICE FOR CRANE BOOM
Joseph Tamborino, 235 S. Beach Blvd., Space 90, Anaheim, Calif. 92804
Filed July 27, 1967, Ser. No. 656,397
Int. Cl. B66c *13/48, 23/06*
U.S. Cl. 212—39 **16 Claims**



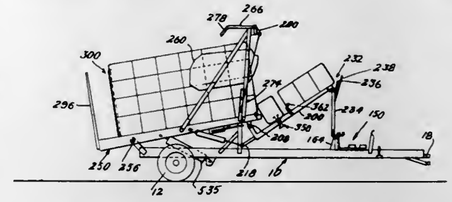
A crane having a raisable boom pivotally secured to a platform, an extender cable secured to a free end of the boom, a draw cable connected with the extender cable by a bridle including bridle shaft and safety bar connected to the platform. The safety bar extends past the bridle shaft and includes dogs facing the bridle shaft. The safety bar is caused to be moved toward the bridle shaft by the operator should failure of the draw cable occur and one of the dogs engages the bridle shaft to prevent the boom from falling toward the ground.

3,502,229
BALE WAGON
Lee Dennis Butler, Kingsburg, Calif., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,811
Int. Cl. B65g *57/32, 57/24*
U.S. Cl. 214—6 **9 Claims**



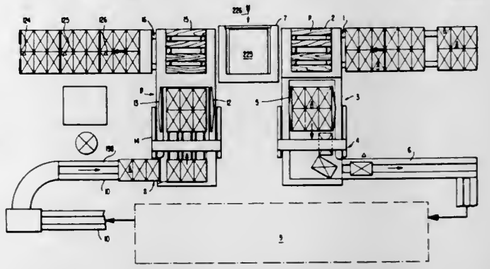
A bale wagon having a bale-retaining rack which is adapted to move longitudinally on a load-carrying bed and having a device for positively holding the rack in a series of positions along the load-carrying bed.

3,502,230
BALE WAGON
Donald M. Grey, Selma, Lee D. Butler, Kingsburg, and Jerry W. Welker, Selma, Calif., and Jack W. Crane, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,141
Int. Cl. B65g *60/00;* **B65p** *1/04*
U.S. Cl. 214—6 **21 Claims**



A bale wagon which unloads bales one at a time. The wagon is provided with a bale pick-up, a bale tier former, and a load rack which receives the tiers of bales from the bale tier former. A cross conveyor is mounted on the bale tier former, and when discharging the bales are dropped a tier at a time from the load rack onto the bale tier former, the lowest layer of bales on the tier being engaged by the cross conveyor and discharged, while the layer next above the lowest layer is held from interference with the lowest layer.

3,502,231
MATERIAL HANDLING SYSTEM
Warren S. Raynor, Port Hope, Ontario, and Keith A. Burgess, Cobourg, Ontario, Canada, assignors to Rex Chainbelt Inc., a corporation of Wisconsin
Original application Dec. 11, 1964, Ser. No. 417,714, now Patent No. 3,448,867. Divided and this application Jan. 2, 1969, Ser. No. 804,727
Int. Cl. B65g *60/00*
U.S. Cl. 214—6 **2 Claims**

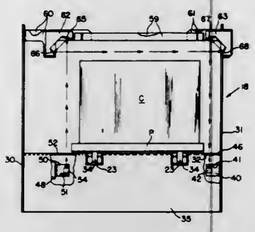


This invention relates to a material handling system including a pallet unloader, a pallet loader, and an empty pallet magazine adapted to receive and store empty pallets received from the pallet unloader and dispense empty pallets to the pallet loader as required.

3,502,232
LOAD SIZE AND POSITION DETECTOR FOR AUTOMATIC STORAGE APPARATUS
Elmer C. Hartman III, Geneva, Ontario County, N.Y., assignor to Hartman Metal Fabricators, Inc., Waterloo, N.Y., a corporation of New York
Filed Oct. 4, 1967, Ser. No. 672,859
Int. Cl. B65g *1/04, 65/02;* **H01j** *39/12*
U.S. Cl. 214—16.4 **2 Claims**

To prevent picking up a load which is too wide or too high for a storage bin, the load carrier of an automatic storage apparatus, used for transferring loads between a loading station and the bins of a storage rack,

is provided with means defining a first pair of parallel, light beams spaced horizontally from one another a distance equal to the width of the widest bin in the rack, with means defining a third, horizontally disposed light beam, which is spaced above the fork mechanism, that



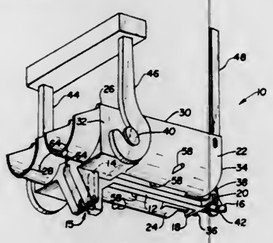
is used to move loads on and off the carrier, a distance equal to the height of the highest bin of the rack, and with means operative to stop the movement of said carrier, when a load carried thereby or being moved thereon interrupts one of said beams.

3,502,233

SCRAP HANDLING AND CHARGING APPARATUS

Ernst A. Mevissen, Coraopolis, and Ira W. Lakin, Volant, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 31, 1968, Ser. No. 701,881
Int. Cl. C21b *3/02*
U.S. Cl. 214—18 **13 Claims**



This application discloses a novel arrangement for conveying scrap metal from a source of supply and dumping it into the mouth or charging opening of a furnace. It comprises essentially a carrier having parallel scrap boxes pivotally supported thereon in such manner that the boxes may be transported from a point of loading by overhead crane in a level position and set down on a charging car designed to receive the carrier and its scrap boxes. When the carrier has been positioned on the charging car and the charging car moved to a charging position, the scrap boxes may be selectively tilted endwise, rear-end up, by operating means on the charging car to discharge the contents from the front end into the furnace opening. When one box has been emptied, the charging car may be moved to bring the second box into charging position.

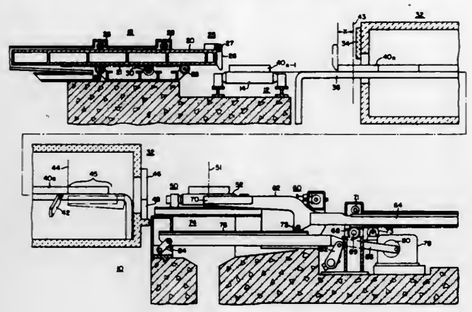
3,502,234

SYSTEM FOR CONTROLLING THE ENTRY AND EXIT OF WORKPIECES INTO AND FROM A HEATING FURNACE

John W. Cook, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 7, 1968, Ser. No. 735,276
Int. Cl. B66c *17/12, 17/08*
U.S. Cl. 214—26 **11 Claims**

This invention relates to a control system for controlling the delivery and discharge of workpieces or slabs into and from a furnace operative with a hot strip rolling mill. A computer may be utilized to control a pusher assembly to serially deliver one or more of the slabs from a furnace charging table onto the skids that run the length of the furnace. At the exit side of the furnace, the computer controls an extractor assembly to enter the furnace and to extract each slab to be delivered and to place it onto a delivery table. The slabs are disposed within the furnace in an abutting relationship so that as a



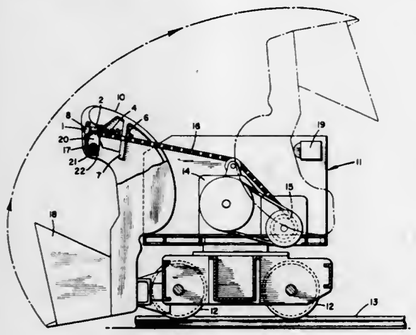
slab is pushed from the furnace charging table and against the first slab in the series of slabs within the furnace, then the last slab in the furnace is pushed into a position where the extractor may withdraw it from the furnace. The computer has a capability for storing the dimensions of each individual slab and serves to control the distance the series of slabs are pushed to ensure that the last slab in the furnace is disposed in a position so that the extractor may readily take it from the furnace.

3,502,235

SHOCK ABSORBING DEVICE FOR A BUCKET LOADER

Jerzy Sawarski, Gliwice, Zbigniew Gebicki, Tarnowskie Gory, Zbigniew Raczka, Zabrze, Jozef Palik, Tarnowskie Gory, and Pawel Waclaw, Zabrze, Poland, assignors to Zaklady Konstrukcyjno Mechanizacyjne Przemyslu Weglowego, Luzycka, Poland

Filed June 1, 1967, Ser. No. 642,971
Claims priority, application Poland, June 10, 1966, P 115,027
Int. Cl. E02f *3/68, 3/82;* **B66f** *9/00*
U.S. Cl. 214—131 **1 Claim**



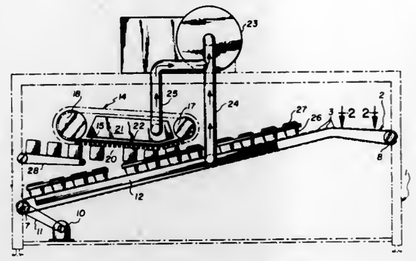
An arrangement for coupling a shock absorbing device to a chain operated beam which rotates the bucket of a front end loader and comprising spring loaded slides slidably mounted on pins adjacent the ends of the beam and moved therealong by nose members fixedly protruding from the beam. The biasing force of the springs on the slide may be adjusted by means of a nut.

3,502,236

DEPANNING APPARATUS FOR BAKERY PRODUCTS

Frank Stadelman, 427 Orchard St., Cranford, N.J. 07016

Filed Aug. 23, 1968, Ser. No. 754,904
Int. Cl. B65b *69/00;* **B65g** *65/34*
U.S. Cl. 214—309 **3 Claims**



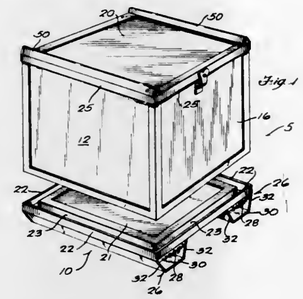
A depanning appartus for bakery products comprising upper and lower endless conveyors each encompassing a suction box, the upper conveyor carrying a plurality of compressible resilient suction applying members communicable with its suction box, the lower conveyor having a plurality of openings therethrough communicable with its suction box whereby when pans containing bakery products are passed between the conveyors with the top surfaces of the bakery products in contact with the resilient suction applying members of the upper conveyor and the bottom of the pans in contact with the lower conveyor, the combined suction boxes operate to provide suction forces opposing each other to lift the bakery products out of the pans along the forward direction of travel of the upper conveyor while retaining the pans on the lower conveyor along its forward direction of travel.

3,502,237

BASE FOR A COLLAPSIBLE CONTAINER

Donald Verhein, 2116 N. Peninsula Road, Oconomowoc, Wis. 53066, and Gene D. Verhein, 150 Main St., Wales, Wis. 53183

Filed Mar. 25, 1968, Ser. No. 715,610
Int. Cl. B65d *19/06, 19/40*
U.S. Cl. 220—4 **6 Claims**



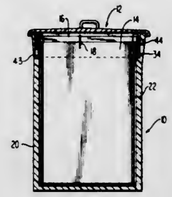
Disclosed herein is a base for a container having side walls and end walls adapted to be seated in a channel around the outer periphery of the base and a top which matingly engages the top of the side and end walls, said base having a pair of support legs extending the full length of each side of said base, said legs each having a bottom panel to provide area contact with the supporting surface and a replaceable top panel. An insert leg having a bottom panel is positioned between said support legs with the bottom panel of the insert leg forming a continuous surface with the bottom panels of said support legs.

3,502,238

TRASH RECEPTACLE

Robert A. Kelley, 216 W. 10th St., Tifton, Ga. 31794

Filed Sept. 27, 1968, Ser. No. 763,216
Int. Cl. B65d *25/16*
U.S. Cl. 220—63 **5 Claims**



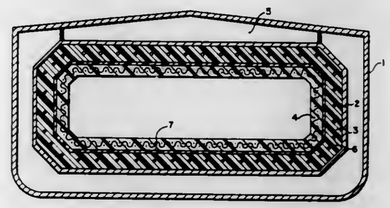
The disposable liner bag for a trash receptacle is held in mouth-open position within the receptacle by means of an open frame to which the liner mouth is clipped. The frame is nested within the top of the receptacle to rest upon a ledge formation and is removable to leave the liner remaining in the receptacle.

3,502,239

THERMALLY INSULATED CONTAINER FOR TRANSPORTING LOW TEMPERATURE LIQUIDS

Robert V. Worboys, Cheshire, and Joseph Estebanez, Glamorgan, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 31, 1968, Ser. No. 702,039
Int. Cl. B65d *25/18*
U.S. Cl. 220—9 **3 Claims**



A thermally insulated container which is especially suitable for the bulk storage and transportation of low temperature liquid materials comprises a rigid, impact-resistant outer shell internally lined with a first layer of a low-density polyurethane foam, a second layer of an impervious resinous material and a third layer of high-density polyurethane foam being in direct contact with the contained liquid.

3,502,240

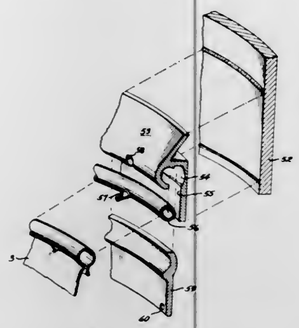
MEMBRANE EDGE-ATTACHING STRUCTURE

Hamilton Neil King Paton, Bellevue, Wash., assignor to Dynabulk Corporation, Bellevue, Wash., a corporation of Washington

Continuation-in-part of applications Ser. No. 307,447, Sept. 9, 1963, and Ser. No. 408,467, Oct. 30, 1964. This application Oct. 30, 1967, Ser. No. 679,082
Int. Cl. B65d *25/00*
U.S. Cl. 220—22 **2 Claims**

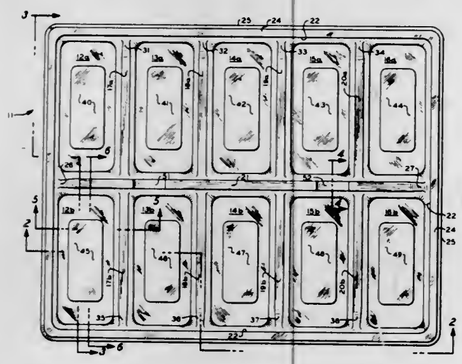
Edges of membranes such as used for lining containers are attached and sealed to a container wall by confining a membrane margin in an attaching structure recess. The

membrane margin is enlarged either by having on it a marginal bead or by being tubular or by being wrapped around a tube and such enlargement is confined in the attaching structure recess either by the margin being inflated in position or by an inflatable securing member being expanded into contact with a marginal bead of the membrane. Confinement of an inflatable membrane margin in



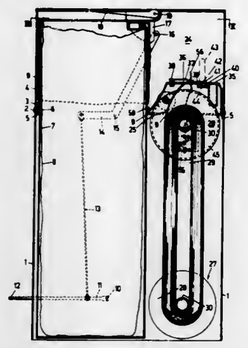
the attaching structure recess can be assured in case of deflection by providing a filler member in the inflatable margin. The attaching structure recess can be formed by restricting the entrance to a channel by application to it of a removable retainer which may be a bar or an angle or a rod. The inflatable membrane margin or inflatable securing member can be inflated after the retainer has been secured in position constricting the channel opening.

3,502,241
COMPARTMENTED TRAY REINFORCED AGAINST BENDING
Ernest L. Smith, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,776
Int. Cl. A01c *11/00;* **B65d** *21/02, 1/34*
U.S. Cl. 220—23.6 **10 Claims**



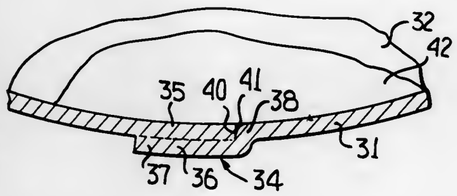
In a thermoformed tray containing rows of compartments, each pair of adjacent rows is joined by an inverted U-shaped reinforcing member and each pair of adjacent compartments within a row is joined by an inverted U-shaped divider member. The peripheral wall of the tray has a height greater than the height of each reinforcing member, which in turn is greater than the height of the divider members. The ends of each reinforcing member and the peripheral ends of the divider members are inclined upwardly from the remainder of the respective members to join the tray peripheral wall. A portion of the bottom wall of each compartment is raised to provide a support surface. Off-center stacking lugs are provided in each reinforcing member.

3,502,242
REFUSE CONTAINERS
Georges Fernand Dubois, 39 Rue Joseph II, Brussels 4, Belgium
Filed Jan. 10, 1968, Ser. No. 696,836
Claims priority, application Belgium, Aug. 3, 1967, 702,225
Int. Cl. B65d *43/26, 25/16*
U.S. Cl. 220—63 **4 Claims**



A refuse container comprises a hollow body with a bag receiving receptacle installed within the body. The receptacle has a top edge and a bags storing zone is provided in the hollow body near the receptacle, with a bags storing means being provided therein. The height of each bag exceeds the height of the receptacle thus providing an excess portion adapted to be folded back around the top edge of the receptacle. The bag has a length which is sufficient to permit, after the bag is filled up to the height of the receptacle, the constriction of the bag for closing the mouth thereof. The height of the receptacle exceeds the height of the body by an amount substantially equal to the folded portion of the bags. A removable hood is provided on the hollow body and includes a top and a skirt. The top is provided with an opening into the receptacle. A lid is provided on the top which covers the opening and the skirt has a length which is at least equal to the excess portion of the receptacle.

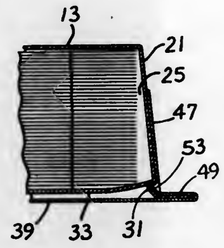
3,502,243
CONFORMED SEAM STRUCTURE AND CONTAINERS EMPLOYING SAME
Paul M. Erlandson, Palos Park, and Donald J. Roth, Chicago Heights, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 12, 1968, Ser. No. 697,398
Int. Cl. B65d *7/38*
U.S. Cl. 220—75 **8 Claims**



This disclosure has to do with a container body having a bonded lapped seam which may either be of the welded

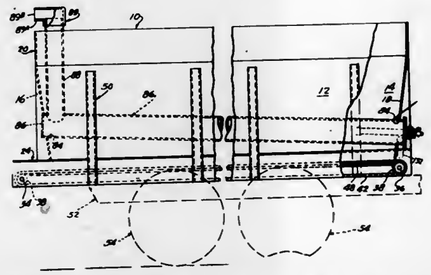
or easily bonded type. The container body, particularly in the area of the seam, is reshaped or conformed so that one surface of the container body in the area of the seam will be substantially continuous, thereby eliminating raw edges along such surface. The lap seam is formed in the normal manner and thereafter reshaped or conformed.

3,502,244
TOP OPENING DISPENSER FOR PLASTIC GLOVES OR OTHER SOFT ARTICLES
Joe E. Irvin, Highland Park, Ill., assignor to Barter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,216
Int. Cl. B65h *1/00*
U.S. Cl. 221—63 **7 Claims**



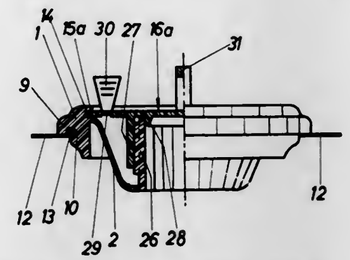
A container comprising a plastic shell with a dispensing opening in its top wall has a plurality of integrally fashioned shoulders which are adapted for shell support to facilitate shell separation from nested storage condition. The shell also has inwardly projecting integrally fashioned lugs for a snap in retainer which closes said dispenser from below after bottom loading thereof. Outwardly opening grooves generated in the shell when said retainers are formed provide an anchoring seat for indicia bearing flaps which may be used to describe container contents and are extensions of a cover member sealed to shell below its retainer.

3,502,245
HEATING MEANS FOR GRAVITY FLOW TYPE HOPPERS HAVING CONVEYOR DISCHARGE MEANS
George O. Hoffstetter, Jerseyville, Ill., assignor to Baughman Manufacturing Company, Jerseyville, Ill., a corporation of Illinois
Filed May 27, 1968, Ser. No. 732,334
Int. Cl. B67d *5/62;* **E01c** *19/45*
U.S. Cl. 222—146 **9 Claims**



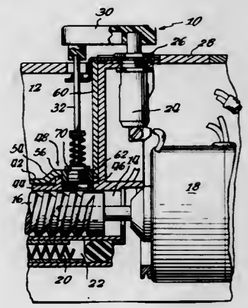
Hopper heating means for gravity flow type hoppers and comprising an elongated open-ended conduit extending longitudinally and centrally thereof adjacent its lower material discharge end, the conduit being disposed in heat exchange relationship with granule, particle, particulate, lump and other relatively sized materials received within the hopper to be discharged therefrom via conveyor means adjacent the lower discharge end of the hopper, the heat source being derived from the manifold exhaust gas of an internal combustion engine and/or from burner means supplied by an independent source of fuel energy.

3,502,246
CONTAINER CLOSURE WITH POURING SPOUT AND DESTRUCTIBLE SEALING CAP
Günther Kelbch, Stettiner Str. 8f, Stockelsdorf, Lubeck, Germany
Filed Oct. 3, 1967, Ser. No. 672,478
Claims priority, application Germany, June 3, 1967, Sch 40,826
Int. Cl. B67d *5/32*
U.S. Cl. 222—153 **8 Claims**



This invention relates to closure members made from plastic materials to be fitted to the open mouth of a container, particularly for liquids. Such closure members conventionally comprise a base ring which may be pushed into or onto the container mouth to enclose a beaded edge of said mouth. The base ring is connected to a thin-walled bellows which may be pushed inwardly and outwardly through the base ring and has a perforated upper part carrying an outlet tube or a housing for a rotatable cap plug. In such a closure member, a rigid protective and sealing cap of plastic material is provided and has a radial peripheral edge so connected to the base ring that when the bellows is pushed inwards, after the base ring has been elastically pushed into or onto the beaded edge of the mouth, it releasably grips the cap. The release is effected by means of a portion of the upper part of the cap which may be pulled or cut off.

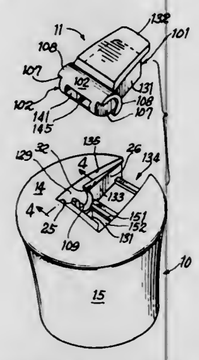
3,502,247
LATHER PRODUCING MACHINE
Albert B. Campbell, Glen Ellyn, Ill., assignor to Royal Products Company, Bensenville, Ill., a corporation of Illinois
Filed May 29, 1968, Ser. No. 732,955
Int. Cl. B67d *5/58*
U.S. Cl. 222—190 **6 Claims**



An improved sealing connection for lather machines between the bottom wall of a detachable liquid soap reser-

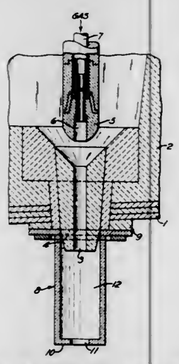
voir and the top wall of the whipping chamber. An internally threaded sleeve projects from the reservoir into a boss extending from the whipping chamber to a point near the entrance of the whipping chamber. An improved liquid soap valve threadably engages the sleeve.

3,502,248
FLUID DISPENSING CLOSURE WITH A SWIVEL SPOUT
Sidney M. Libit, 441 Lakewise Terrace, Glencoe, Ill. 60022, and Arthur Wesley Newby, 1265 Schaumburg Road, Elgin, Ill. 60120
Filed June 9, 1967, Ser. No. 644,891
Int. Cl. B67d *3/00, 5/06*
U.S. Cl. 222—534 **10 Claims**



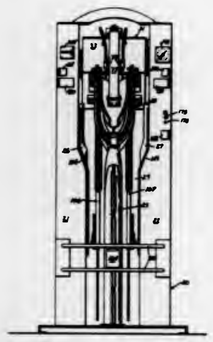
Dispensing closures of the type which includes a base part including means for attaching the device to the container and a spout part held in the base with snap-type resilient engagement for swivelling movement between open and closed conditions of the device. Swivelling engagement is constituted by a pivot portion at the inner end of the spout and at least three pads or equivalent areas on the base spaced circumferentially of the pivot and acting together as a three-point support for the pivot.

3,502,249
EXPANSION-CHAMBER EXTENSION FOR GAS-CONTROLLED TEEMING NOZZLE
James B. Wagstaff, Franklin Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,760
Int. Cl. B65d *47/32*
U.S. Cl. 222—544 **1 Claim**



A refractory-lined expansion chamber mounted in a concentric and downwardly extending position with respect to a teeming nozzle in the bottom of a ladle for molten metal, said chamber forming an extension for the nozzle and providing space for thermal expansion of gas introduced into the metal to regulate the rate at which it teems through the nozzle, and for the dispersion of such gas in the metal.

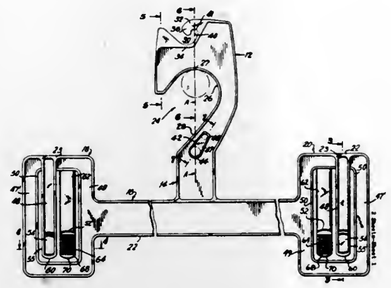
3,502,250
MACHINE FOR FINISHING TROUSERS
Jerry N. McMillan, Box 167 Colville, Wash. 99114
Continuation-in-part of application Ser. No. 633,224, Apr. 24, 1967. This application Apr. 8, 1968, Ser. No. 725,560
Int. Cl. D06c *15/00*
U.S. Cl. 223—73 **21 Claims**



The disclosure describes a machine for finishing trousers. The machine has a frame **20** with an elongated upstanding center buck **25**. A torso expanding and pressing device **28** is movably mounted on the frame **20** from a first position elevated from and forward of the center buck **25** to a second position immediately overlying the center buck **25**. The torso device **28** has stationary hip bucks **51** and **52**, movable front bucks **63** and **64** movable seat bucks **85**, stationary fly buck **74**, a movable fly press **76** and a movable back press **90** depending therefrom for receiving the torso portion of the trousers. Leg expanders **106** and **107** are attached to the torso device **28** in a depending manner for movement therewith. Side chests **26** and **27** are movably mounted on opposite sides of the center buck **25** for movement against the center buck **25**, the seat bucks **85**, the front bucks **63** and **64** and the hip bucks **51** and **52** for pressing the trousers from the cuffs to the waist band after supersaturated steam is injected into the interior of the trousers.

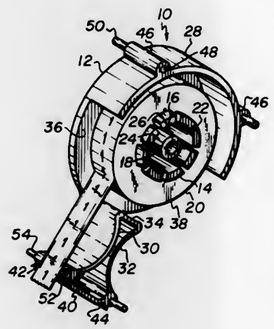
3,502,251
GARMENT HANGERS
Robert L. Hart, Manhasset Hill, N.Y. (% Packaging Development Corporation·Design Workshop Inc., 235 E. 45th St., New York, N.Y. 10017)
Filed Sept. 13, 1968, Ser. No. 759,556
Int. Cl. A41j *51/08*
U.S. Cl. 223—96 **10 Claims**

A unitarily molded plastic garment hanger includes two vertically aligned suspension hooks. A smaller of the two hooks is positioned above the other conventional size hook. A horizontal bar is suspended at its midpoint from a neck to the upper end of which the hooks are connected and rectangular closed loops are positioned on opposite ends of the bar. Two resilient clips mutually offset axially of the bar have their tips extend in opposite directions through the loop. The clips depend from the upper edges of the loops, the suspension points being appreciably higher than the bar so that the bar and major parts of the loops are concealed within the upper end of a suspended garment. The front and back layers of the open upper end of the garment are caught between



the opposing clips and the side edges of the loops. A post projects forwardly from the neck to support another hanger.

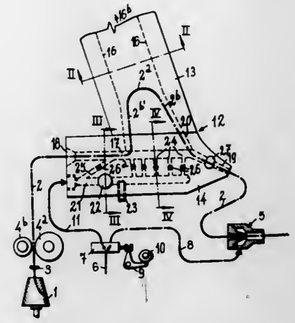
3,502,252
DISPENSER FOR MULTIPLE MARKER TAPES
Remo Mariani, Berkeley Heights, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 1, 1968, Ser. No. 709,550
Int. Cl. B26f *3/02*
U.S. Cl. 225—33 **7 Claims**



The dispenser is composed of a plurality of discrete modules which can be positioned with respect to one another by hermaphroditic coupling means and joined by a fastening means. Each module comprises one outer wall, a web hub, a tape guide and two cutting edges. The fastening means is removable so that individual modules may be removed or replaced. Alternate use of particular cutting edges permits close spacing of the modules.

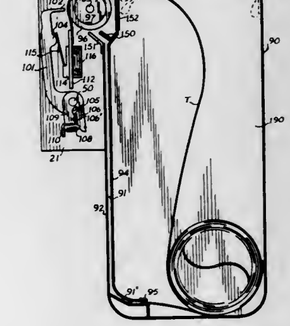
3,502,253
DEVICE FOR TEMPORARILY STORING A LENGTH OF A THREAD
Hubert Peter van Mullekom, Deurne, Netherlands, assignor to N.V. Machinefabriek L. Te Strake, a Dutch company
Filed Jan. 10, 1968, Ser. No. 696,765
Claims priority, application Netherlands, Jan. 18, 1967, 6700828
Int. Cl. B65h *59/10*
U.S. Cl. 226—97 **6 Claims**

The device comprises a relatively wide, thin channel for receiving a length of the thread in the form of an elongated loop, the lateral side walls of the channel being substantially parallel. One or more jet nozzles are arranged adjacent to one end of the channel and extend across substantially the entire width of the channel from one lateral side wall of the channel to the other. The nozzle or nozzles are so directed as to discharge fluid into the channel in a flow which is generally longitudinal and



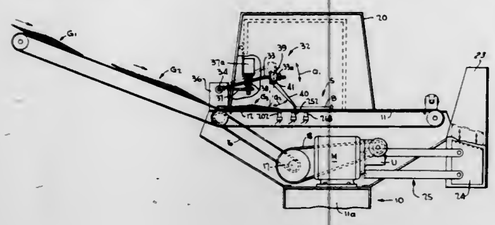
laterally symmetrical with respect to the channel, and which extends across the entire width of the channel so as to draw the elongated loop of thread into the channel while maintaining the two legs of the loop close to the two opposite lateral side walls of the channel in order to prevent the thread from tangling in the channel.

3,502,254
TAPE MAGAZINE
Harrison G. Hooper, 2101 Enon Road SW., Atlanta, Ga. 30331
Continuation of application Ser. No. 591,909, Nov. 3, 1966. This application July 23, 1968, Ser. No. 751,672
Int. Cl. B65h *23/00*
U.S. Cl. 226—196 **8 Claims**



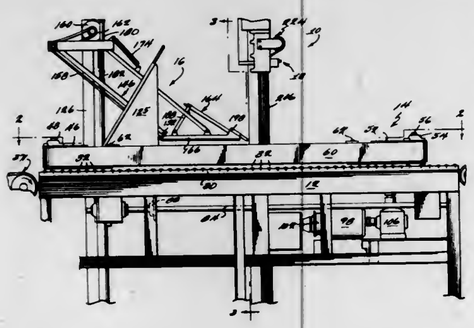
What is disclosed herein is a tape magazine in which tape is stored in a random serpentine manner and which includes a tape guide channel extending from the lower end of the magazine to a feed means at the upper end of the magazine and a displacing means for separating the tape from the bottom of the magazine as the tape moves across the bottom and into the tape guide channel. The tape guide channel serves as a first tape guide means and the tape magazine is disclosed as also having a second tape guide means for guiding the tape from the tape guide channel toward the feed means and a third tape guide means for guiding the tape from the feed means into the upper end of the magazine.

3,502,255
STAPLING MACHINE
Joseph R. Hermann, Kenmore, N.Y., and Karl T. Bye, Dover, N.H., assignors to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Aug. 31, 1967, Ser. No. 664,663
Int. Cl. B27f 7/08
U.S. Cl. 227—3 16 Claims



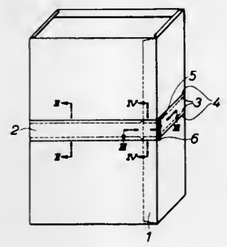
A high speed stapling arrangement for operating on collated material fed by an endless conveyor and jogged against stop means at a stapling station. An overhead jogger which cooperates with said conveyor urges the last sheets of the collated material against the stops with progressively decreasing force with the actuation of the stapler and stop means being by means of rotating cams. In-line photocells with attendant high speed circuitry insures proper sequential operation of the stop means, jogger, and stapler and the sheets are handled in reversely shingled form to allow rapid transport and efficient jogging action against the stop means.

3,502,256
APPARATUS FOR CLOSING AND STAPLING CARTONS VARYING IN SIZE
Henri A. Boulay, West Warwick, and Joseph Silva, Cranston, R.I., assignors to Bostitch Division of Textron, Inc., East Greenwich, R.I., a corporation of Rhode Island
Filed Dec. 8, 1966, Ser. No. 600,163
Int. Cl. B21j 15/28; B27f 7/06; B25c 5/00
U.S. Cl. 227—7 10 Claims



The specification discloses an apparatus for closing and stapling cartons of varying sizes of the type having a pair of end flaps and a pair of side flaps, which when opened are disposed in a coplanar relationship with respect to the side walls of the carton, the dimensions of the flaps measured in the direction of the outward extent thereof being generally equal to one half the width of the carton. The apparatus includes means for automatically feeding successive open-topped cartons of varying size through the apparatus, during which a flap closing mechanism is operable to close the open top flaps and a staple driving means is operable to drive staples into the closed top flaps to secure them in a closed relation. The staple driving means cooperates with the conveying means for moving successive cartons through the apparatus and with a carton width sensing means to automatically position the carton in stopped relation with respect to the staple driving means in a plurality of different positions at which staples are driven, the arrangement being operable to automatically drive staples into the side flaps and the underlying end flaps only of each successive carton at positions spaced longitudinally in accordance with the width of the carton, the staples associated with each end flap being spaced apart a distance not exceeding a predetermined distance and at least one of which is within approximately one inch from the adjacent end of the carton.

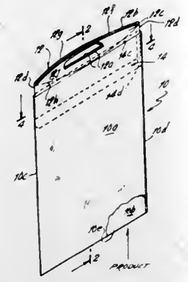
3,502,257
CARDBOARD PACKAGE OF ORTHOGONAL PRISMATIC SHAPE
Ismo Topi Virros, Mantytie 15A, Helsinki 27, Finland
Filed July 12, 1968, Ser. No. 744,532
Claims priority, application Finland, July 14, 1967, 1,951/67
Int. Cl. B65d 5/54, 17/24
U.S. Cl. 229—51 3 Claims



An improvement in a cardboard package of orthogonal prismatic shape, most appropriately a coffee package, which has been shaped from a plane blank by folding the blank to form a tube with a rectangular cross section and by forming alongside one of the edges a glued joint holding the tube together, in which the longitudinal edges of the cardboard overlap, and by closing the ends of the tube, whereat on the package a transversal, tear-off zone has been formed which is bounded both on the inside and on the outside by two weakening lines, the inside weakening lines being located between the outside weakening lines, and whereat the tear-off zone has been cut off by means of a straight cut longitudinal to the package. The invention is characterized in that for the purpose of forming a gaping cut, the cut has been placed in the side of the package adjacent the glued joint close to the common edge of these sides but spaced in entirety from this edge.

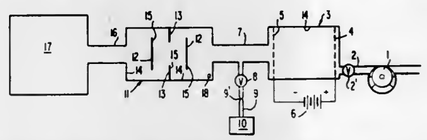
When a cardboard package is opened in the household, certain difficulties are encountered, and for this reason various proposals have been made in order to facilitate the opening procedure. One of the most appropriate means to achieve this is that in which in the package a transversal, tear-off region has been provided which has for its boundaries both on the inside and on the outside two weakening lines, the inner weakening lines being located between the outer ones, and the tear-off zone having been cut off by means of a straight cut in the longitudinal direction of the package. In this known package, the cut is located exactly at the edge. In that case the cut does not gape, as a result of which it is difficult to grasp with the fingers.

3,502,258
GUSSET BAG WITH CLOSURE
Emanuel Kugler, Lawrence, and Edna Lowenberg, Brooklyn, N.Y., assignors to Emanuel Kugler, Lawrence, N.Y.
Filed June 27, 1968, Ser. No. 740,699
Int. Cl. B65d 33/06
U.S. Cl. 229—54 2 Claims



A plastic bag having mounted in its upper opening a cardboard folding member which primarily serves as a bag closure when folded into an operative closed position relative to said upper opening and, in an operative open position relative to said upper opening, also doubles as a convenient carrying handle for the bag.

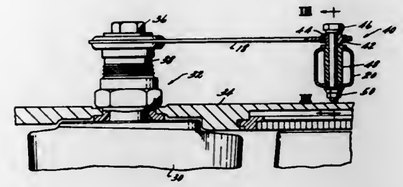
3,502,259
STABILIZED ION-PUMPING SYSTEM
Donald J. Santeler, Scotia, N.Y., assignor to Aero-Vac Corp., Troy, N.Y., a corporation of New York
Filed Feb. 14, 1968, Ser. No. 705,371
Int. Cl. F04b 37/02; H01j 7/16
U.S. Cl. 230—69 21 Claims



Pumping systems for production of high vacuums frequently employ combinations of ionic and gettering pumping action and a trap which may be of the gettering or cryogenic type, but are limited by inert gas instability in the ion pump, which is avoided according to this invention by introducing a selected gas between the ion pump and a trap which is located between the ion pump and the high vacuum chamber, the gas being of a kind effectively removed by both the pump and the trap. Selected combinations of ion pumping, trapping or gettering, and introduced gas reduce the residual pressure to a point some orders of magnitude below the instability pressure at which argon, helium and other noble gases otherwise present cause interruption in the operation of the ion pump. By this invention one releases oxygen, hydrogen, etc., into the ion pump then ion pumps the mixture of noble gas and introduced gas to reduce residual pressures in combination with gettering or trapping the introduced gas in an improved trap.

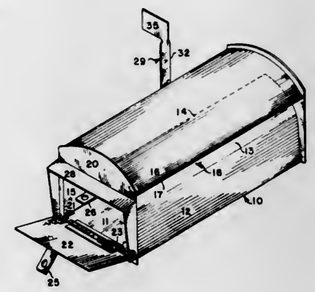
3,502,260
STATOR VANE LINKAGE FOR AXIAL FLOW COMPRESSORS
Bernard L. Koff, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 22, 1967, Ser. No. 669,748
Int. Cl. F04d 27/00
U.S. Cl. 230—114 4 Claims

The disclosure shows an actuation system for variable stators of an axial flow compressor. Unison rings are respectively provided for each circumferential row of adjustable stators and each stator of a given row has a lever arm attached to the unison ring for that row. Means are provided for controlled rotation of the unison rings



relative to the axis of the compressor to change the angles of the stators about axes radially of the compressor. The levers are connected to the unison rings by a ball rigidly mounted on the outer surface of the unison ring and a corresponding socket secured to the free end of the lever.

3,502,261
MAIL RECEPTACLE
Antonio Solis, 2767 Benrus Blvd., San Antonio, Tex. 78222
Filed Sept. 25, 1967, Ser. No. 670,250
Int. Cl. A47g 29/12
U.S. Cl. 232—33 5 Claims

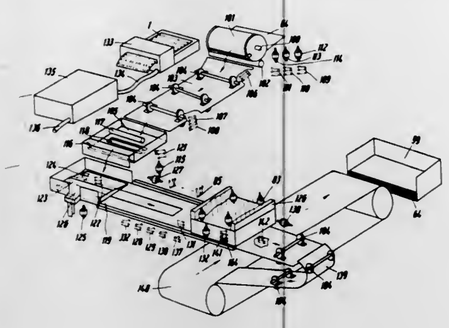


A mail receptacle comprising an elongated body portion including a floor section, sidewalls, a rear wall and an arcuate roof, a hooded rainproof lockable door closing a rectangular access opening. An arcuate mail chute formed by the roof and a uniformly spaced paralleling security shield extending from the sidewall internally of the elongated body to an apex substantially coinciding with the center line of the roof section; an exterior outgoing receptacle attached to the elongated body opposite the mail chute and a postman's signal flag movably mounted adjacent said outgoing mail receptacle.

3,502,262
RECORD CARRIER CONTROLLED PRINTING AND RECORDING APPARATUS
Gerhard Ritzerfeld, Franzensboder Str. 21, Berlin-Grunewald, Germany
Filed Dec. 13, 1967, Ser. No. 690,358
Claims priority, application Germany, Dec. 16, 1966, R 44,829
Int. Cl. G06k 1/20
U.S. Cl. 234—35 10 Claims

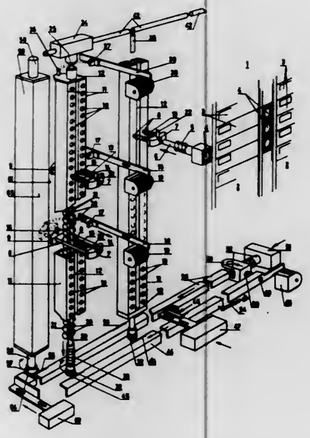
A card is imprinted by a printing machine with information, and punched by a punching device with the same information. Punching operations take place under control

of read-out means which sense information on a record carrier and set the punching device accordingly. The record carrier is transported in synchronism with the



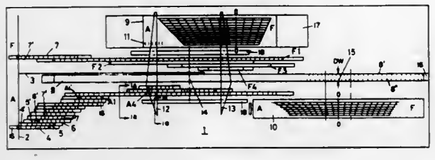
punching operations, and independently of the printing operations so that the printing machine and the punching device can operate at different speeds.

3,502,263
SELECTING MACHINE
Wilhelm Aart van Zeggeren, Rijswijk, South Holland, Netherlands, assignor to N. Samson N.V. Alphen aan den Rijn, Netherlands, a corporate body of the Netherlands
Filed June 27, 1968, Ser. No. 740,559
Claims priority, application Netherlands, June 30, 1967, 6709141
Int. Cl. G07c *13/00*
U.S. Cl. 235—51 **10 Claims**



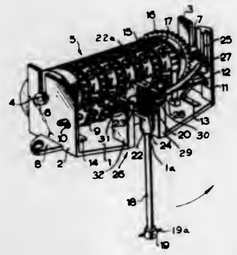
A machine for selecting an element from a number of groups of elements and for the registration of a choice, and provided with a tableau with selector knobs, which are arranged in groups and represent elements, with behind each group a unit, provided with a rotatable shaft carrying plungers that can be activated and locked by a selector knob, and provided with counters upon which the selection of an element is recorded and with a recording device that with the aid of a rotating device the shafts turns from an actuation position to a position for the recording of a selection.

3,502,264
APPARATUS FOR DISPLAYING MOMENTS SHEARING FORCES ETC. ON BOARD SHIPS
Knut E. Börseth, Horten, Norway, assignor to A/S Horten Verft, Horten, Norway
Filed Feb. 27, 1968, Ser. No. 708,563
Claims priority, application Norway, Feb. 28, 1967, 160,999
Int. Cl. G06g *1/06*
U.S. Cl. 235—69 **2 Claims**



An apparatus for indicating moments, shearing forces and similar values aboard a vessel, wherein a plurality of slideable elements, each corresponding to the weight of the various holds in the vessel, both fore and aft, and a dead weight slideable rod are provided on a panel relative to a base line thereon. A pair of rods, for indicating draught and trim, respectively, are also provided on the panel along with sliders, for the purpose of coordinating the values set by means of the slideable elements and to transfer the results to the rods.

3,502,265
ANGULAR TRANSMISSION, PARTICULARLY FOR RECORDING INSTRUMENTS
Karl Vögtlin, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Germany
Filed Jan. 9, 1968, Ser. No. 696,623
Int. Cl. G01c *22/00;* **G06m** *1/04*
U.S. Cl. 235—96 **10 Claims**

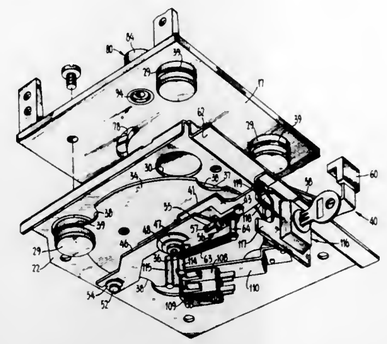


A counter is mounted on the hinged cover of a casing in whose main part a drive means is located. An angular transmission connects the counter with the drive means in open and closed positions of the cover, and includes at least one flexible transmission shaft means which is in a resiliently deformed condition to hold itself in bearings.

3,502,266
LOCKING DEVICE FOR A POSTAGE METER
Cecil F. Clemons, San Leandro, Calif., assignor to The Singer Company, a corporation of Delaware
Filed June 18, 1968, Ser. No. 737,959
Int. Cl. G07g *1/00*
U.S. Cl. 235—101 **11 Claims**

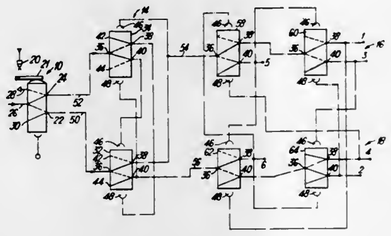
A mechanism for locking a detachable postage meter unit in operating position on a mailing machine base. The locking of the meter unit in place on the machine base is

under the control of an adjustable member having three positions. In the first of such three positions of the adjustable member, the meter unit may be removed from the machine base with the print drum shaft locked and the electrical circuitry open. In the second position, the ad-



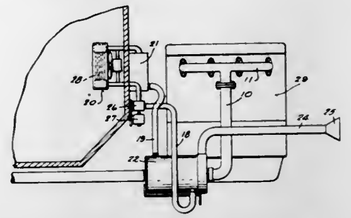
justable member secures the meter unit in place for envelope sealing only, with the print drum shaft locked. In order to lock the meter unit on the machine base for envelope sealing and the printing of the postage indicia, the adjustable member is moved to the third position.

3,502,267
COUNTERS
Francis Xavier Kay, Winslow, England, assignor to Instruments and Movements Limited, London, England, a British company
Filed Mar. 18, 1968, Ser. No. 714,129
Int. Cl. G06m *1/12*
U.S. Cl. 235—201 **6 Claims**



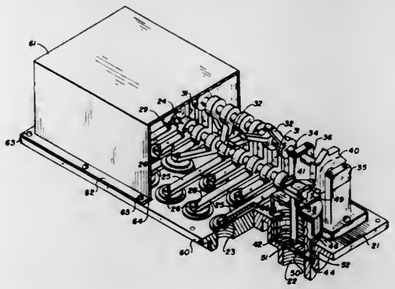
A fluidic counter comprises a signal detector which for every signal received emits a primary and a secondary pulse to the inlet ports of a first and second pressure operated valves of an encoder, having their control and output ports interconnected so that successive primary pulses are passed from two output ports of the first valve alternately to two chains each comprising a plurality of 5-port double pressure operated valves connected in series through their one outlet port and having their other outlet ports connected to output ports corresponding to different integer counted. Lines connect each said other outlet port of a valve in each chain with control ports of valves in the other chain so that each pulse at an output port operates a valve in the other chain to transmit the next primary pulse to the output port corresponding to the next integer and reset previously operated valves in the other chain.

3,502,268
AUTOMOTIVE HEATERS
Martin P. Miskulin, 2563 N. 37th St., Milwaukee, Wis. 53210
Filed May 7, 1968, Ser. No. 727,308
Int. Cl. B60h *1/02*
U.S. Cl. 237—12.3 **2 Claims**



An automotive heater assembly interposed between the exhaust manifold and exhaust pipe of an automobile including a central perforated tube in a heat chamber embraced by a sleeve form water jacket connected by a short circuit of tubing to and from the conventional heater of the vehicle and the adjacent insulated storage tank.

3,502,269
AUTOMATIC DISTRIBUTOR VALVE MECHANISM FOR LAWN SPRINKLING SYSTEMS
Duane D. Robertson, 1922 Del Mar Parkway, Aurora, Colo. 80910
Filed Sept. 8, 1967, Ser. No. 666,288
Int. Cl. A01g *27/00, 25/00*
U.S. Cl. 239—66 **2 Claims**

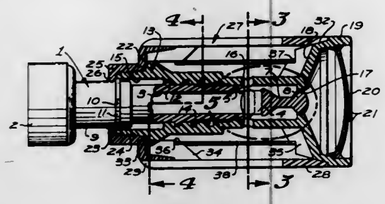


The described self-contained sealed distributor valve arrangement includes a plurality of valves actuated by cams operated by a ratchet mechanism. A timer in the sprinkling system actuates a solenoid valve to momentarily shut off water pressure to the distributor valve thereby actuating the ratchet mechanism. Periodic closing and opening of the water line by the timer results in sequential operation of the distributor valve mechanism to direct water to groups of sprinkler heads.

3,502,270
WATER DISCHARGE CONTROL FOR GARDEN HOSES
Luigi Prencipe, 1408 Opal St., San Diego, Calif. 92109
Filed Feb. 19, 1968, Ser. No. 706,432
Int. Cl. A01g *25/00*
U.S. Cl. 239—458 **7 Claims**

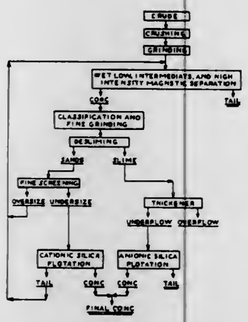
A water discharge control adapted for attachment to a garden hose. A bubbler having discharge openings of large area and internal baffles and a spray head are longitudinally adjustable as a unit on a nozzle mandrel. A valve

operable by the longitudinal adjustment of the unit directs flow through the spray head for forcible discharge



of water, or through the bubbler for low pressure high volume flow therefrom, or effects complete shutoff.

3,502,271
IRON ORE TREATING PROCESS
Ronald Martin Hays, Golden Valley, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
Filed May 29, 1967, Ser. No. 641,867
Int. Cl. B03b *7/00;* **C21b** *1/08;* **B03c** *1/30*
U.S. Cl. 241—20 **11 Claims**

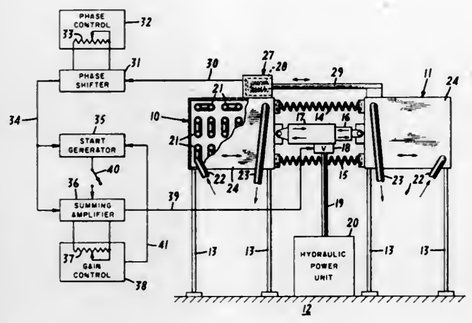


A process for the beneficiation of low-grade iron ore containing principally goethite and hematite to produce a concentrate of uniform chemical composition and structure from which pellets containing at least 60 percent iron and 7 percent or less of silica and preferably at least 65 percent iron and 5 percent or less of silica can be produced. The concentrate is produced by crushing and grinding the ore to liberation size and subjecting in a series of steps to wet high-intensity magnetic separation, cationic silica flotation and anionic silica flotation.

3,502,272
COMPACTING METHOD FOR FINELY GRAINED POTASSIUM SULPHATE INTO SHELLS AND COMMINUTING OF THE LATTER
Hans Kellerwessel, Porz-Eil, and Claus Kreutzberg, Surth, near Cologne, Germany, assignors to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,222
Claims priority, application Germany, Nov. 16, 1966, K 60,726
Int. Cl. B02c *9/00*
U.S. Cl. 241—25 **4 Claims**

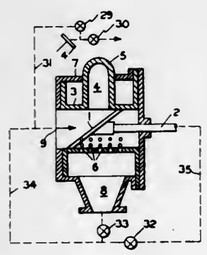
Finely grained potassium sulphate having a water content between approximately .5 and 2.5% is compacted into shells and the latter are then comminuted.

3,502,273
SELF-REGULATED RESONATING APPARATUS
Henry W. West, Long Branch, and Chauncey L. Mitchell III, Fair Haven, N.J., assignors to Electronic Assistance Corporation, Red Bank, N.J., a corporation of New York
Filed Feb. 6, 1967, Ser. No. 614,295
Int. Cl. B02c *17/24;* **B01f** *9/02, 11/00*
U.S. Cl. 241—36 **10 Claims**



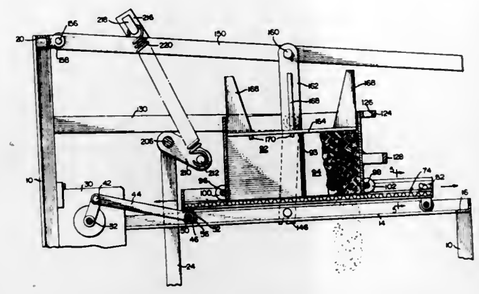
A resonant dispersion system for fluid materials including two spaced masses having tubes through which the fluid passes and connected by springs and by a hydraulic piston and cylinder. The masses are mounted on flexible supports to permit opposed oscillatory motion and a transformer having a movable core connected between the masses detects the frequency and phase of oscillation. A feedback circuit, responsive to signals from the transformer, controls application of hydraulic fluid to the piston and cylinder so as to assure synchronism of the driving force with the resonant frequency of the system.

3,502,274
COMMINUTING PUMP
Georg Neidl, Im Bisch 664, Schaan, Principality of Liechtenstein
Filed May 3, 1965, Ser. No. 452,502
Int. Cl. B07b *13/00, 1/00, 15/00*
U.S. Cl. 241—46.11 **7 Claims**



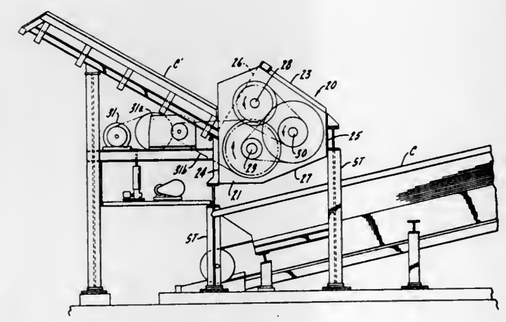
The pump chamber in which an inclined rotor is operated in contact with the walls of the chamber is enclosed in a housing with which it communicates through strainer passages in the separating wall. An outlet for heavy particles separated in the pump chamber passes through the housing in sealed relationship thereto while the finer particles expelled from the pump chamber through said passages into the housing are discharged therefrom by a separate outlet.

3,502,275
SOIL CONDITIONER
Charles L. Watson, 410 N. Broadway, Hugo, Okla. 74743
Filed Sept. 20, 1968, Ser. No. 761,266
Int. Cl. B02c *19/20*
U.S. Cl. 241—84 **17 Claims**



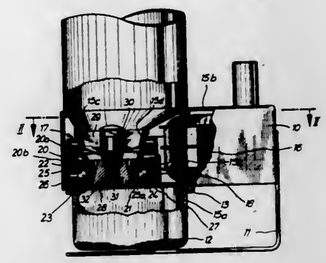
A supporting framework supports a reciprocating screen rack thereon, this screen rack supporting a removable screen. A material receiving box is supported in overlying relationship to the screen, the material box being held in a fixed position. A pressure plate is received through the upper part of the material box for engaging material therewithin. The pressure plate is pivotally interconnected with an elongated operating member which is adapted to be resiliently pressed in a downward direction and held in a down position to apply pressure to the material in the material box.

3,502,276
SHREDDING MACHINE
Martin H. Panning, 304 Sunny Lane, Thiensville, Wis. 53092, and Bruce R. Curry, 4731 N. Oakland Ave., Whitefish Bay, Wis. 53217
Filed June 1, 1967, Ser. No. 642,967
Int. Cl. B02c *9/04, 15/08*
U.S. Cl. 241—111 **5 Claims**



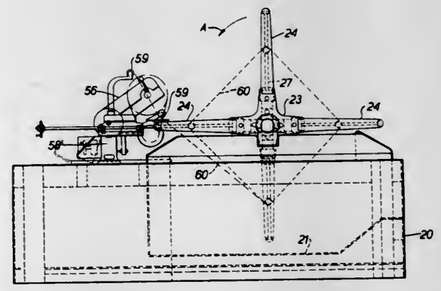
A shredding machine with shredding teeth arranged on plural axes and designed to operate with slow speed, high torque characteristics to enable the use of relatively small horsepower motors as compared to the load which is being shredded. The machine is arranged to handle extremely large objects of complex shapes and formed from various types of materials such as are represented in automobile bodies. An automatic control circuit protects against overloads.

3,502,277
COMMINUTING MACHINE WITH ADJUSTABLE ROTARY MEMBER
Hans Baier, Garmisch-Partenkirchen, Rolf Mayer, Giengen, Helmut Braun, Herbrechtingen, Harry Preiss, Giengen, and Walter Ilg, Ulm, Germany, assignors to Robert Bosch Hausgeraete G.m.b.H., Giengen, Germany
Filed Apr. 11, 1968, Ser. No. 720,514
Int. Cl. B02c *7/08, 7/14*
U.S. Cl. 241—259 **12 Claims**



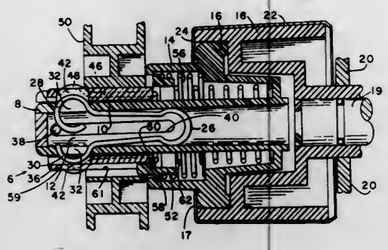
A comminuting machine includes the housing and a comminuting unit arranged in the housing. The comminuting unit includes a substantially conical first member and a rotatable annular second member surrounding the first member so that a gap exists between their juxtaposed surfaces. The second member is movable axially of the conical member so that the gap can be increased and decreased depending on whether material to be comminuted is to be comminuted coarsely or finely.

3,502,278
ARRAYS OF HEATING WIRES FOR INCORPORATION IN LAMINATED TRANSPARENT PANELS
John Ernest Powell, Birmingham, and Malcolm Walter Lacey, Tipton, England, assignors to Triplex Safety Glass Company Limited, London, England, a British company
Filed May 5, 1965, Ser. No. 453,433
Claims priority, application Great Britain, May 5, 1964, 18,599/64; Jan. 28, 1965, 3,728/65
U.S. Cl. 242—7.13 **11 Claims**



Apparatus for forming arrays of heating wires for incorporation in a laminated transparent panel comprising a frame rotatably mounted on a stand, a wire feed device being movable parallel with the axis of rotation of the frame, the frame including means uniformly and simultaneously adjusting the size thereof.

3,502,279
SPINDLE FOR SELECTIVELY ACCOMMODATING REELS HAVING DIFFERENT SIZE OPENINGS
John J. Bundschuh and Victor J. Witkowski, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 26, 1967, Ser. No. 678,304
Int. Cl. B65h 17/02
U.S. Cl. 242—68.3 9 Claims



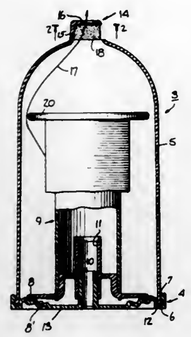
A spindle is disclosed having a reel supporting post, and a reel supporting adapter sleeve slidably mounted on the post and movable between an operative position, in which the sleeve supports and drives a reel having a center opening of one size, and an inoperative position, in which the sleeve is disabled and the post supports and drives a reel having a center opening of a different size.

3,502,280
RETRACTOR DEVICE WITH SHIFTABLE BRAKE
James B. Jessup, Los Angeles, and Walter T. Matthews, Van Nuys, Calif., assignors to Duplex, Inc., Los Angeles, Calif., a corporation of California
Filed May 21, 1968, Ser. No. 730,768
Int. Cl. B65h 75/48; F16d 63/00; E05f 1/08
U.S. Cl. 242—107.3 6 Claims

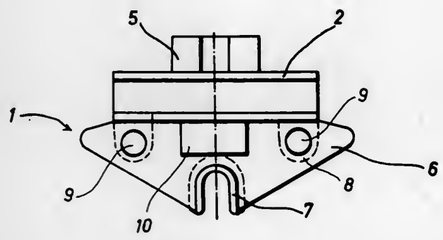
The device is a cable retractor wherein a cable drum and a brake drum are interrelated in a manner whereby a cable may be unwound from the cable drum against opposition of a spiral spring but free of any braking action, a flexible band type brake being provided which is applied to the brake drum during wind up of the cable. The amount of braking force applied is controlled by cable tension acting on the brake.

3,502,281
THREAD CANISTER
Philippe Hardy-Thé McLain, Columbia, S.C., assignor to Soo Valley Company, Columbia, S.C., a corporation of South Carolina
Filed Apr. 12, 1968, Ser. No. 720,983
Int. Cl. B65h 49/18
U.S. Cl. 242—137.1 13 Claims

The base of the canister is configured to have a pair of sockets to receive different sized spools. The received spool flange forms a substantially continuous surface with the base surface so that a coil of thread is prevented from becoming caught between the spool flange and base during unwinding from the canister.



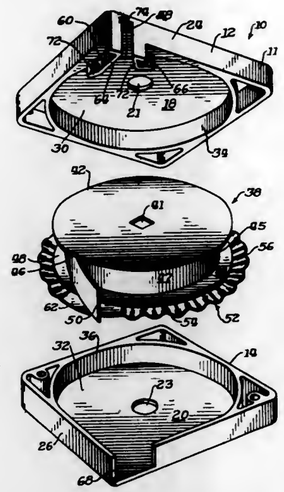
3,502,282
TRAVERSE YARN GUIDE
Felix Graf, Winterthur, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Oct. 26, 1967, Ser. No. 678,221
Claims priority, application Switzerland, Nov. 3, 1966, 15,996/66
Int. Cl. B65h 57/00
U.S. Cl. 242—157 7 Claims



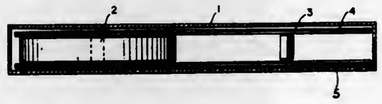
The slotted yarn guide is mounted in a releasable manner on the slidable support through means of the cooperating thin flexible connecting member of the slotted yarn guide and the mating projections on the support. The slidable support is made of a synthetic material to absorb the wear and tear of the sliding movements on the rails and to be disposed of separately from the slotted yarn guide.

3,502,283
FILM CARTRIDGE, CASE AND SPOOL
Maynard C. Gross, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 2, 1967, Ser. No. 672,181
Int. Cl. G11b 23/04
U.S. Cl. 242—197 14 Claims

A retainer rotatable with a film spool for preventing retention of the lead end of a film strip coiled about the spool by curved parts of a spool case during spool rotation. A deflector diverts said retainer adjacent an outlet opening in said case to liberate the film strip for exiting from said cartridge.



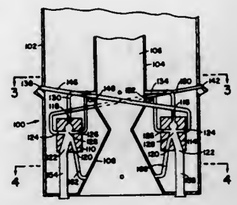
3,502,284
MAGNETIC TAPE CARTRIDGE
Gustav Loewenberg and Adolf Diebold, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed July 10, 1967, Ser. No. 652,192
Claims priority, application Germany, June 8, 1967, 1,270,298
Int. Cl. G11b 23/04
U.S. Cl. 242—199 4 Claims



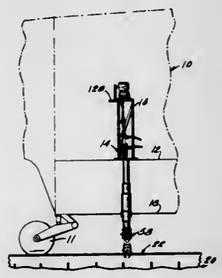
A magnetic tape cartridge having a top wall and a bottom wall between which a magnetic tape is adapted to be reeled. There is disposed on the interior surfaces of said walls a liner of plastic material, the side of the liner facing the tape being provided with a thin layer of a metal which is not affected by atmospheric influences.

3,502,285
MISSILE SYSTEM WITH PURE FLUID GUIDANCE AND CONTROL
Russell T. Gambill, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Continuation of application Ser. No. 466,869, June 24, 1965. This application Apr. 19, 1968, Ser. No. 723,650
Int. Cl. F41g 7/12; F42b 15/02; G06f 15/50
U.S. Cl. 244—3.22 2 Claims

A missile system in which differential pressures from opposite sides of a missile are picked off and used to control fluid amplifiers. The fluid amplifiers in turn have output ports thereof that are controlled by said differential pressures to provide fluid control to exhaust gases from the rocket motor of the missile. By utilizing four fluid amplifiers and their control on the exhaust gases from the rocket nozzle, the missile is guided in two degrees of freedom.



3,502,286
AUTOMATIC LOCKING TAIL PROBE TIP
Sidney Charles Warren, Pierrefonds, Quebec, Canada, assignor to United Aircraft of Canada Limited, Quebec, Canada
Filed Jan. 16, 1968, Ser. No. 698,184
Int. Cl. B64f 1/16
U.S. Cl. 244—17.17 12 Claims

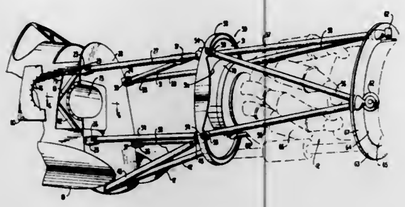


A mooring device for the rear end of a helicopter which has a telescopic leg and an expandable ball-segment locking unit on the end of the leg. As the ball-shaped locking unit at the end of the leg touches in a slot on the deck, it expands and locks the helicopter to the deck.

3,502,287
AIRCRAFT ENGINE MOUNTING SYSTEM
David B. Lindsay, Box 1719, Sarasota, Fla. 33578
Filed Oct. 1, 1968, Ser. No. 764,061
Int. Cl. B64d 27/14, 27/08
U.S. Cl. 244—54 11 Claims

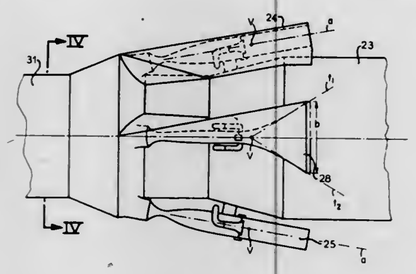
A mounting system for supporting a turbo-prop power plant in aircraft, both of new construction and of aircraft converted from piston engine power, in which a cantilevered support framework mounted on a structural wall of the aircraft supports the power plant forward of the structural wall a distance sufficient to permit the exhaust gasses from the turbine to be ducted overboard forward of the structural wall. The cantilevered support framework includes two sets of strut members, one detachably mounted on the structural wall of the aircraft and supporting a second wall in forwardly spaced relation thereto, and the second detachably mounted on the second wall and projecting forwardly therefrom. The second set of struts are detachably mounted to the engine in the

vicinity of its center of gravity, with the engine extending rearwardly so that at least a portion of the engine's exhaust nozzle projects through the second wall. An ex-



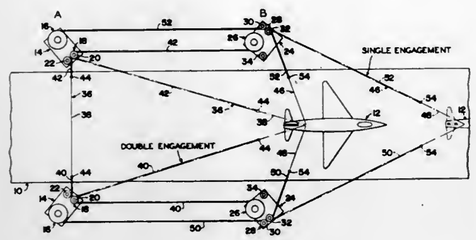
haust duct extends laterally and rearwardly from the exhaust nozzle to conduct the exhaust gasses overboard between the second wall and the support wall.

3,502,288
MISSILE-PILOTING SYSTEM
Cyrille François Pavlin, Saclay, and François Charles Oudin, Noisy-le-Rol, France, assignors of one-half to Bertin & Cie, Paris, France, and one-half to Engins Matra, Paris, France, both a corporation of France
Filed Mar. 21, 1967, Ser. No. 624,813
Claims priority, application France, Mar. 22, 1966, 54,510
Int. Cl. B64g *1/20*
U.S. Cl. 244—73 **16 Claims**



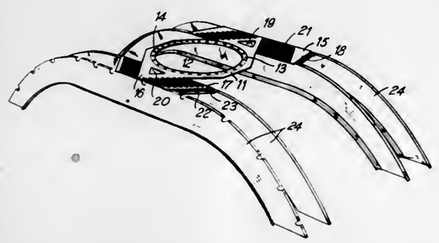
The attitude of a missile or other flying body is controlled by pairs of bistable nozzles disposed on opposite sides of the longitudinal axis of the body, the nozzles of each pair being flattened so that their outlet ends have parallel major dimensions extending transversely to a common axial plane and defining with the respective nozzle axes two rearwardy diverging planes in which the fluid jets discharged by these nozzles periodically swing between alternate positions along lines skew to the longitudinal body axis. For a veering motion about the pitch or yaw axis, the jet oscillations of a corresponding nozzle pair are modulated in parallel so that the average residence time of both jets is lengthened on one side of their common axial plane and commensurately shortened on the opposite side; for a rolling motion about the longitudinal axis, the jet oscillations of a pair of nozzles are modulated in mutual opposition so that the lengthened residence time of one jet on one side of the common axial plane is accompanied by a lengthened residence time of the other jet on the opposite side of that plane. Modulation may be accomplished by passing an asymmetrical biasing flow through a conduit system carrying a control fluid to a pair of lateral ports provided on opposite nozzle walls diverging, preferably along curves that are convex to the nozzle axis, in the plane of swing of its jet.

3,502,289
ARRESTING SYSTEM
Terence C. Kelly, Collingdale, Pa., and Charles S. Thompson, Vincentown, N.J., assignors to E. W. Bliss Company, Stark County, Ohio, a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,766
Int. Cl. B64f *1/02*
U.S. Cl. 244—110 **9 Claims**



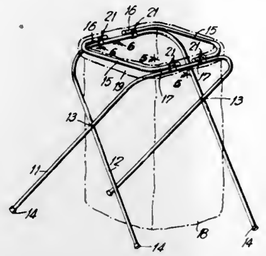
There is provided an improvement in aircraft arresting systems of the type adapted to be mounted adjacent a runway and having pendant means extending across the runway to receive landing aircraft, and for arresting the forward progress of the aircraft. The improvement includes a pair of interconnected arresting systems, in which pairs of arresting gear engines are anchored on opposite sides and adjacent the runway, and wherein pendant means extend across the runway between the anchorages of each pair. Each pendant means is controlled by the arrestment engines that are mounted in the other pair of anchorages. Deck sheaves, mounted with the arresting gear engines, direct the pendant means to the appropriate engines. The system is made to be bi-directional to accept aircraft approaching from either direction.

3,502,290
VIBRATION DAMPING HELICOPTER ROTOR SUPPORT
Louis François Legrand, Aix-en-Provence, and Charles Henri Tresch, Eguilles, France, assignors to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France
Filed Nov. 14, 1967, Ser. No. 682,860
Claims priority, application France, Nov. 17, 1966, 83,906
Int. Cl. B64c *27/04;* **F16f** *15/10*
U.S. Cl. 248—15 **4 Claims**



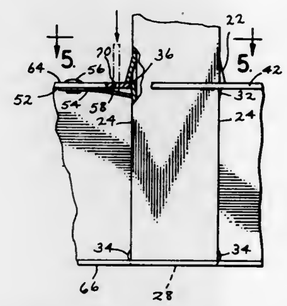
A vibration damping support between a gear box for a helicopter rotor and helicopter structure, which includes rigid members interposed between an upper part of said box and the frame of said helicopter, with a supporting base disposed between a lower part of said box and the structure of said helicopter, said base providing at least one area having a directional flexibility.

3,502,291
COLLAPSIBLE FRAME
Lorraine R. Ackerman and Herbert I. Ackerman, Westwood, N.J., assignors to L & H Designs, Inc.
Filed Aug. 19, 1968, Ser. No. 753,486
Int. Cl. B65b *67/00*
U.S. Cl. 248—97 **8 Claims**



A frame which is collapsible for compact storage and which opens to receive and support disposable bags. The frame adjusts for receiving and supporting disposable bags of various sizes.

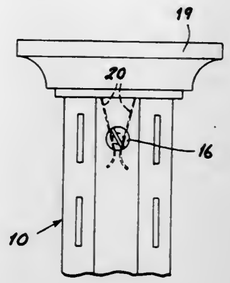
3,502,292
JOINT FOR MERCHANDISE DISPLAY UNIT
Joseph Yoder, Middlebury, Ind., assignor, by mesne assignments, to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed Apr. 8, 1968, Ser. No. 719,470
Int. Cl. F16b *1/00, 5/00, 7/00*
U.S. Cl. 248—158 **6 Claims**



A merchandise display unit having a base which includes a horizontal frame support. An upright for supporting backboards, trays and the like and having a stop protruding therefrom is inserted into vertically aligned apertures in said support and is positioned therein by engagement of said stop with the upper surface of said support and by contact of projecting pimples thereon with the support at said apertures. A flexed spring mounted interiorly of said support and engaging said upright locks the upright within the support.

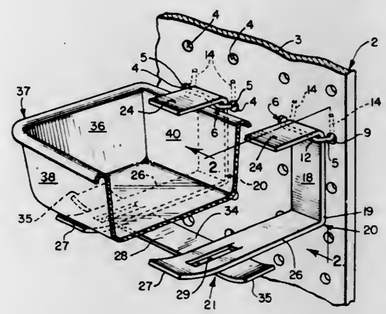
3,502,293
SHELF-SUPPORTING STANDARD WITH REMOVABLE HEAD
Martin Bard, 953 45th St., Brooklyn, N.Y. 11219
Filed June 28, 1967, Ser. No. 649,627
Int. Cl. A47f *5/04, 5/10*
U.S. Cl. 248—243 **5 Claims**

Standard comprising an upright tubular bar of polygonal cross-section having vertical slits in at least two nonadjoining faces to receive shelf-carrying brackets extending in different directions, a possibly unslitted intermediate face having holes to receive screws for fastening



the bar to a supporting wall and a spring retained head member at the top of the bar.

3,502,294
MOUNTING ASSEMBLY
William H. Kalbow and Wayne R. Kalbow, both of 3318 Pearl St., Franklin Park, Ill. 60131
Filed Sept. 23, 1968, Ser. No. 761,636
Int. Cl. A47f *5/08;* **A47g** *29/02*
U.S. Cl. 248—311 **10 Claims**

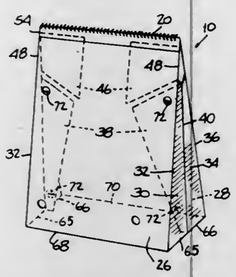


A mounting assembly for attachment to an apertured board, comprising a generally C-shaped mounting element having a bight portion adapted to embrace a shelf support against the board, the legs of the element being V-shaped in plan and having rearwardly converging rear portions extending through selected apertures in the board and wedging thereagainst to urge the bight portion toward the board, the distal ends of the legs having upwardly extending hook portions which are angled upwardly forwardly and further serve to bias the bight portion toward the board.

3,502,295
TEACHING DEVICE
Francis Thomas Sganga, New Smyrna Beach, Fla., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Sept. 14, 1967, Ser. No. 667,706
Int. Cl. A47b *97/08;* **B42d** *3/16*
U.S. Cl. 248—459 **5 Claims**

A device for teaching counting in different number systems including an easel-like member having a forward face with a plurality of columns of slots, each being

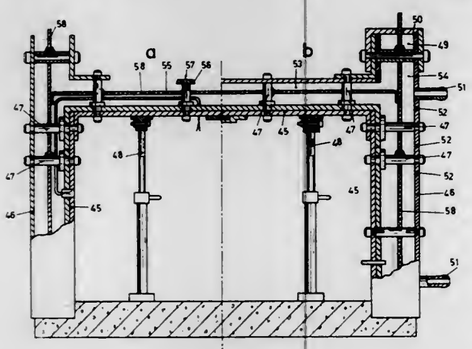
adapted to receive an indicator. A plurality of pages are provided which overlie the forward face, and each of the pages has indicia thereon corresponding to a particular number base and each of the pages is of a different length to expose various number of slots corresponding to its particular number base.



3,502,296
FORM FOR CONSTRUCTING BUILDINGS

Paul Comment, 2892 Courgenay, Switzerland

Filed Mar. 2, 1967, Ser. No. 620,181
Claims priority, application Switzerland, Mar. 8, 1966, 3,296/66
Int. Cl. E04g *11/02*
U.S. Cl. 249—27 8 Claims

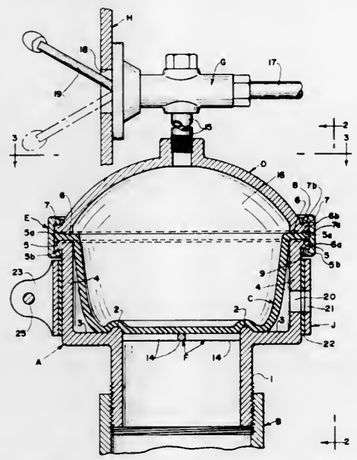


Form for the construction of buildings having the shape of a mould in which there can be cast in one shot at least a complete story of the building and made by the assembly of dismountable elements, these elements being standardized and having as a result only a certain determined number of possible shapes and modular shapes, provided in advance and corresponding each to a type of elements or "modules," the assembly of different types of modules forming a set of modules in which there can be selected exclusively the elements going into the making of the form, two identical modules being inter-changeable, there being a distinction between the modules between those intended for making foundations or "modules of foundations" and those intended for making parts of the form intended for moulding the building itself or "modular forms," these different modules having means permitting their assembling to one another and other means for introducing concrete and for permitting the passage or the later placing of auxiliary members. The invention also is concerned wtih means for assembling this form comprising several classes of cloth pieces intended to reciprocally maintain the walls of the form and means permitting the mutual assembly of different modules forming the form. The invention is also concerned with a mode of using this form wherein the modules of the foundation are first assembled, these foundations are cast, the modules of the foundation are withdrawn and there is assembled on these foundations the form intended for moulding the building itself.

3,502,297
AIR OPERATED AND DIAPHRAGM CONTROLLING WATER SPRINKLER VALVE WITH ADJUSTABLE OUTLET

Willis W. Wardrup, 482 Mariposa Ave., Mountain View, Calif. 94041

Filed Aug. 30, 1968, Ser. No. 756,665
Int. Cl. F16k *7/17*; B05b *1/32*
U.S. Cl. 251—25 4 Claims

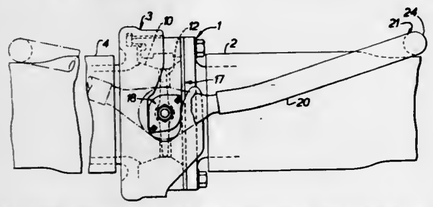


A water sprinkler valve in which compressed air is used to move a diaphragm to keep the valve closed and the pressure of the water is used for moving the diaphragm to open the valve. A portion of the diaphragm extends across the water inlet when the valve is closed and a spider in the water inlet supports this diaphragm portion. The operator can adjust the air pressure to permit the water under pressure to open the valve to the desired extent to deliver a desired quantity of water. A spray adjusting ring is used to control the size of the water outlet opening and to direct the apron-like spray in the desired direction.

3,502,298
PIPE COUPLING

Arthur Loftus Paddington, Langley, England, assignor to Dracone Developments Limited, London, England, a British company

Continuation-in-part of application Ser. No. 385,168, July 27, 1964. This application Apr. 29, 1966, Ser. No. 546,429
Claims priority, application Great Britain, May 17, 1963, 19,742/63; May 3, 1965, 18,553/65
Int. Cl. F16l *29/00, 17/00*; F16k *35/00*
U.S. Cl. 251—149.9 22 Claims



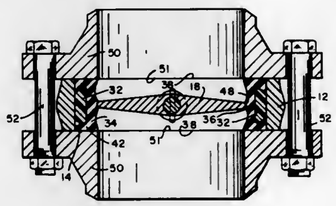
A pipe coupling of the bayonet type with slots on one part engaged by spigots on the other part which are cam-

shaped and rotatable to tighten up the coupling after initial "push and twist" engagement. The spigot-cams may be diametrically opposite and mounted on a transverse shaft carrying a butterfly valve which is opened only when the coupling is tightened up. Both coupling parts may have both spigots and bayonet slots, the spigots on one part not being cam-shaped and acting only to resist sag of the coupling after tightening up by rotation of cam-shaped spigots on the other part. The slot assembly on one part of the coupling may be rotatable on the rest of that part to obviate twisting a pipe connected by the coupling.

3,502,299
RESILIENT LINER FOR BUTTERFLY VALVES

Donald R. Phillips, Tulsa, Okla., assignor to The Hale Company, Tulsa, Okla., a corporation of Ohio

Filed May 3, 1967, Ser. No. 635,719
Int. Cl. F16k *1/226*
U.S. Cl. 251—306 4 Claims

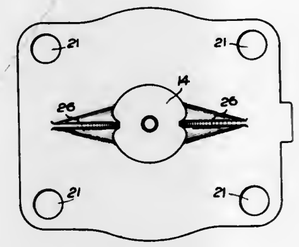


This invention relates to improvements in resilient liners for butterfly valves. The improved liner is characterized by provision in the internal cylindrical surface of increased diameter valley portions between an intermediate reduced internal diameter disc engaging portion and the ends of the member. The configuration provides means whereby the seat may be dimensioned to have increased length end portions to afford cold flow as the seat is positioned between flanges in a valve body bore but in a manner wherein the cold flow does not effectively alter the internal diameter of the disc engaging portion.

3,502,300
DIAPHRAGM WITH TAPERED RIBS

Derek John Harris, Cwmbran, England, assignor to Saunders Valve Company Limited, Cwmbran, England

Filed July 7, 1966, Ser. No. 563,496
Claims priority, application Great Britain, July 26, 1965, 31,774/65
Int. Cl. F16k *7/16*
U.S. Cl. 251—331 2 Claims

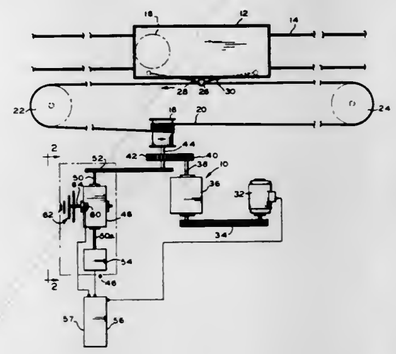


A diaphragm for a flow control valve having a conical side opening in the valve body running tangentially into the valve bore and the diaphragm having a hollow conical body with a flat peripheral flange with two diametrically opposed ribs upstanding from the body and tapering in height and base width.

3,502,301
REVERSING CONTROL

George E. Davis, Portland, and William E. Warren, Beaverton, Oreg., assignors to Western Machinery Corporation, Portland, Oreg., a corporation of Oregon

Filed Aug. 16, 1967, Ser. No. 661,036
Int. Cl. B66d *1/48*; B63b *21/00*; H01h *3/16*
U.S. Cl. 254—173 7 Claims



A mechanical reversing control for controlling the distance through which a car-pulling mechanism pulls a railroad car along a section of track in one direction before automatically reversing the direction of pull. The mechanism includes a motor-driven winch drum with a cable anchored to the car so that rotation of the drum in opposite directions reciprocates the car along the track. The reversing control includes a speed reducer (**48**) driven off the winch drum drive. The output shaft (**64**) of the speed reducer has an actuating lever (**74**) movable into contact with one of two arms (**82, 81**) of a two-position, motor-reversing limit switch (**60**). The same output shaft (**64**) loosely mounts a pair of adjustably spaced tripping bars (**88, 102**). Both bars can be selectively clamped to a plate (**84**) rotatable with the shaft to rotate the bars with the shaft. When the trip bars rotate through a certain distance in one direction, one of them forces the actuating lever (**74**) against one of the two switch arms (**82, 81**) of the reversing switch (**60**) to reverse the electric motor and thus the direction of movement of the winch drum, railroad car and output shaft of the gear reducer. Since the speed of the output shaft is proportional to the speed of the car-pulling mechanism, adjustment of the distance between the two tripping bars is used to control the distance through which a railroad car will be reciprocated by the car-pulling mechanism.

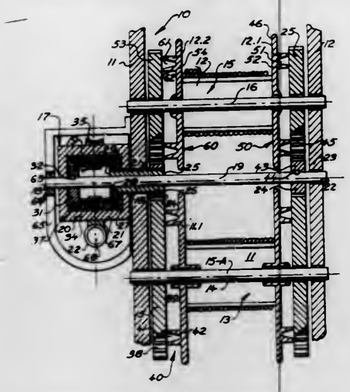
3,502,302
DIFFERENTIAL INTERLOCK FOR A YARDER OR SKIDDER

Walter R. Hamersley, Sayward Post Office, British Columbia, Canada

Filed June 26, 1968, Ser. No. 740,333
Claims priority, application Great Britain, June 28, 1967, 29,806/67
Int. Cl. B66d *1/26*; F16h *1/40*
U.S. Cl. 254—185 6 Claims

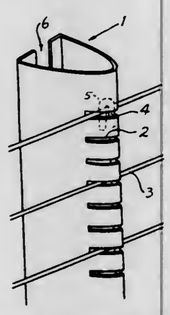
Differential means operatively connected to drive a haulback drum at a constant speed or, with a differential element being rotated, at a determinate varying speed

giving a variable r.p.m. ratio between the haulback drum and a mainline drum to control line tension. Clutch means releasably interconnecting the differential to the



haulback drum, clutch means releasably interconnecting the haulback drum with a bull drive gear, and clutch means for reverse direct drive of the haulback drum with the differential clutch released.

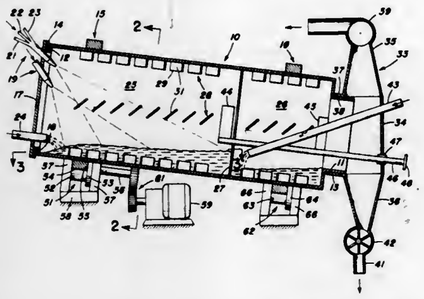
3,502,303
FENCING
Charles Edward Bishop, Box 137, Minyip 3392, Victoria, Australia
Filed Oct. 31, 1968, Ser. No. 772,153
Claims priority, application Australia, Nov. 7, 1967, 29,527/67
Int. Cl. E04h *17/20*
U.S. Cl. 256—48 **4 Claims**



The present invention provides a novel fencing post or dropper which comprises a steel post, or a steel or aluminium dropper having a number of longitudinally spaced transverse slots therein to accommodate fencing wires or mesh. A locking wire or rod extends the length of the post through the slots to retain the fencing wires in the slots and within the post or dropper.

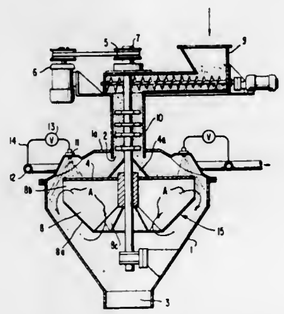
3,502,304
PROCESS AND APPARATUS FOR PRODUCING AGGLOMERATES
Otto Pfrengle, 13 Idsteiner Strasse, 62 Wiesbaden, Germany
Filed Nov. 21, 1966, Ser. No. 595,788
Claims priority, application Germany, Nov. 26, 1965, C 37,509, C 37,510
Int. Cl. B01f *15/00*
U.S. Cl. 259—3 **35 Claims**

An apparatus and method for producing agglomerates wherein the agglomerates are produced by introducing powder into one end of a rotating drum and providing a liquid spray at the one end thereof which is directed to the bottom of the drum at an inclined angle with respect to the axis of the drum thereby imparting a component of motion to the powder surface in a direction toward the other end of the drum through which the resulting agglomerates are withdrawn. The spray may be introduced through jet mixing nozzles, permitting the simultaneous mixing and spraying of two different liquids.



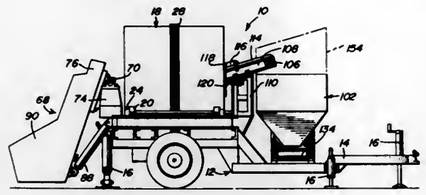
In accordance with a preferred embodiment, the interior of the drum is provided with a plurality of mixing vanes inclined at an angle with respect to the axis of the drum which continuously lift powder from the bottom of the drum and return the powder to a point in the drum closer to the spray, thereby imparting a component of motion in a direction opposite to the motion caused by the spray, resulting in increased mixing.

3,502,305
METHOD OF AND APPARATUS FOR ADDING LIQUID TO PULVERULENT OR GRANULAR MATERIALS
Gustav Grün, Lissberg, Germany, assignor to Gebruder Grun KG., Maschinenfabrik, Lissberg, Upper Hesse, Germany, a company of Germany
Filed Aug. 16, 1968, Ser. No. 753,174
Claims priority, application Germany, Aug. 16, 1967, 1,667,071
Int. Cl. B01f *7/16, 15/00*
U.S. Cl. 259—8 **6 Claims**



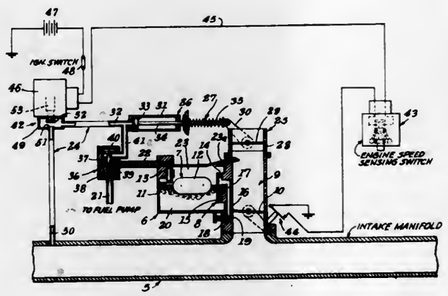
For a thorough mixing of a liquid with a pulverulent or granular material there is provided a treating chamber in which there rotates a mixer comprising a horizontal distributor disc on which the continuously fed dry material is sprayed by nozzles. The material thereafter is drawin into a double whirl consisting of a circulating main stream and a superimposed secondary stream orbiting in a planetary manner. The dual whirl is caused by a plurality of vanes secured radially to the underside of said distributor disc and carrying a frusto-conicla shell.

3,502,306
CEMENT MIXING APPARATUS
Glenn L. Beardsley, 1421 S. 22nd Ave., Phoenix, Ariz. 85034
Filed May 29, 1968, Ser. No. 733,011
Int. Cl. B28e *7/00*
U.S. Cl. 259—161 **16 Claims**



A Gunite blender including a hydraulically controlled loading hopper which introduces sand and cement into a tumbling mixer from which the blended or mixed sand and cement is discharged by a conveyor into an enlarged collection hopper for subsequent discharge, by a second conveyor, to a Gunite applying machine. Suitable vibrating units are associated with both hoppers with the various units of the apparatus being independently driven by hydraulic motors.

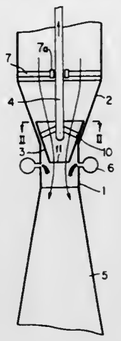
3,502,307
MEANS FOR SHUTTING OFF FUEL FLOW IN THE IDLE SYSTEM OF CARBURETORS
Niel C. Thuesen, 6021 S. Compton Ave., Los Angeles, Calif. 90001, and Ralph N. Thuesen, 926 Riverside Ave., Newport Beach, Calif. 92660
Filed July 3, 1968, Ser. No. 742,215
Int. Cl. F02m *19/02*
U.S. Cl. 261—52 **5 Claims**



In a carburetor, means automatically operable upon deceleration of the speed of an internal combustion engine to shut off flow of fuel in the idle system, and means, sensitive to the speed of the engine, to restore normal idling operation thereof at the end of the period of deceleration.

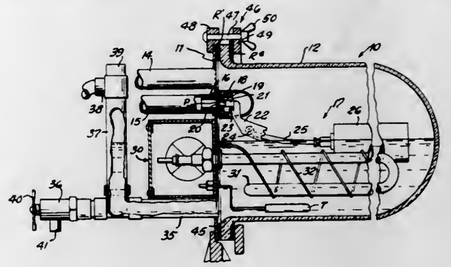
3,502,308
WET TYPE GAS SCRUBBER
Kiyosi Simizu, Kitakyushu, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed May 29, 1968, Ser. No. 732,912
Claims priority, application Japan, June 3, 1967, 42/35,135
Int. Cl. B01d *47/10*
U.S. Cl. 261—64 **3 Claims**

This invention is a Venturi type scrubber wherein, in a throttling part above a throat part, an inner tube having a flow passage area smaller than the cross-sectional area of said throat part is provided so as to come into contact with the internal surface of the throttling part so that, when said inner tube is moved vertically in the



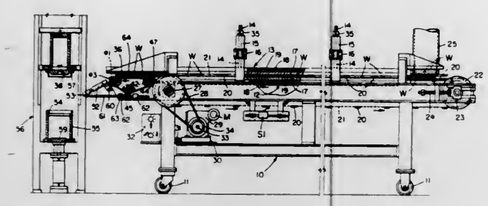
same direction as the gas flow along the axis, the flow passage area in the throat part may be varied to make the gas flow velocity constant.

3,502,309
HUMIDIFIER
Fernando E. Flores, Parlin, N.J., assignor to Tenney Engineering, Inc., Union, N.J.
Filed June 27, 1967, Ser. No. 649,227
Int. Cl. B01f *3/04*
U.S. Cl. 261—130 **2 Claims**



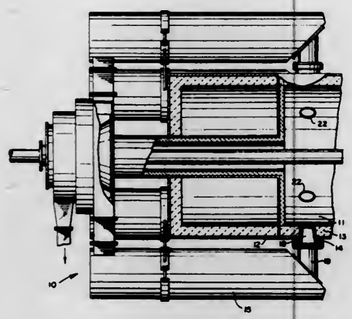
A low pressure vapor generator for conditioning atmosphere in a test chamber in which the vapor supply to the test chamber is controlled according to the demands of the percentage of humidity desired. The device maintains and modulates a predetermined quantity of water at a desired level and is transparent for inspection and easily cleaned. The vapor generator consists of a transparent horizontally extending bell jar having an opening with an enlarged lip clamped to a vertical mounting plate by means of releasable wing nuts. A float unit including a valve and connecting arms is fixed to the mounting plate and extends horizontally into the bell jar. A heater and thermostat is submerged in the water contained in the bell jar. The thermostat controls the on and off period of the heater to maintain the water at a predetermined temperature. A vapor outlet is provided in the upper portion of the bell jar and a conduit including an external overflow pipe extends upwardly to a level with the vapor outlet. A drain valve is located at the lower portion of the bell jar downstream of the overflow pipe. The conduit connected through the mounting plate to drain the bell jar without unclamping said jar. A moisture responsive element for mounting in a test chamber for indicating a predetermined moisture content and a switch to turn on and off the heater to modulate the flow of low pressure vapor to a test chamber.

3,502,310
HOT PLATE BILLET HEATER AND METHOD OF HEATING
Paul M. Coffman, Cherry Hill, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,142
Int. Cl. F27b *9/14*
U.S. Cl. 263—6 **9 Claims**



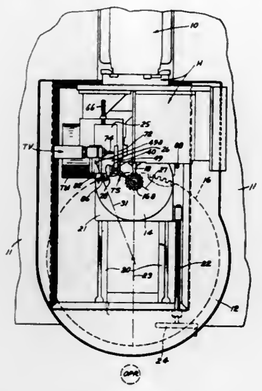
This application discloses billet heating apparatus and method employing a billet heater having elongated hot plates which engage and heat an advancing line of billets at closely controlled temperature conditions, releasing the billets at predetermined intervals and, while released, feeding them forward to deliver a leading heated billet for processing.

3,502,311
COOLERS FOR ROTARY KILNS
Flemming Edvin Jensen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,275
Claims priority, application Great Britain, May 17, 1967, 22,877/67
Int. Cl. F02m *37/00*
U.S. Cl. 263—32 **6 Claims**



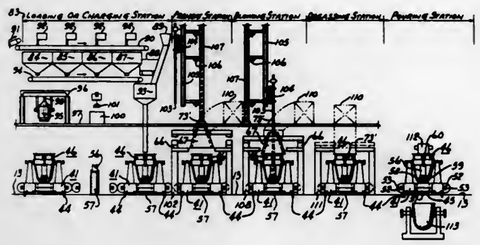
An improvement in rotary kilns of the type having a number of cylindrical cooler tubes mounted around the outlet end of the kiln with their axes generally parallel to the axis of the kiln. The inlet end of each tube is connected to an outlet of the rotary kiln by a supply chute through which material to be cooled enters the cooler tube. The improvement is in the inlet end of each supply chute which is formed by a sleeve having a heat-resistant lining. The sleeve is inserted from the outside of the kiln into an outlet in the wall of the kiln and extends through the kiln shell to the interior surface of the kiln lining. This construction reduces wear on the supply chutes and permits ease of replacement of any worn parts.

3,502,312
GEAR HARDENING MACHINE
Arthur R. Douglass, Richmond, Ind., assignor to National Automatic Tool Company, a corporation of Indiana
Filed Jan. 23, 1967, Ser. No. 612,287
Int. Cl. C21d *1/06, 9/32, 1/54*
U.S. Cl. 266—5 **11 Claims**



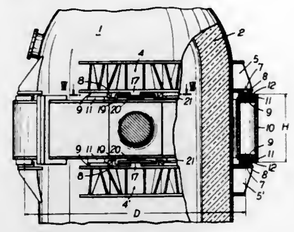
An induction hardening machine which includes a tracer stylus responding to the surface of one of several similar surfaces and which is operable to effect accurate guidance of an induction intensifier in properly spaced relation to another of such surfaces.

3,502,313
STEEL PRODUCING PLANT WITH UMBILICALLY OPERATIVE FURNACE TOP MEANS
Richard L. Pastorius, 2122 E. Carson St., Pittsburgh, Pa. 15203
Filed May 3, 1966, Ser. No. 547,263
Int. Cl. C21c *5/56*
U.S. Cl. 266—13 **13 Claims**



A steel producing plant providing a consecutive series of stations for standby, loading, preheating, blowing, degassing, blocking, pouring, or discharge with a carriage supporting a refractory line steel producing vessel to move through the consecutive series of stations for the melting and refinement of steel. The carriage supported vessel is an upwardly open refractory line vessel with a shape similar to that of a ladle wherein the chamber expands from the bottom thereof upwardly to its largest diameter which continues to the mouth thereof and may be interiorly lined with brick or provided with an integral lining. The ordinary frustum top sections for these furnaces are provided at each of the stations requiring the preheating and blowing or possibly the degassing stations. This permits decentralization of the furnace proper and all the attending equipment necessary for the operation of a steel producing plant.

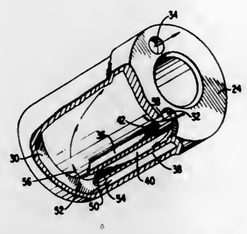
3,502,314
TILTABLE CRUCIBLE OR CONVERTER FOR REFINING PIG IRON
Othmar Pühringer, Linz, Austria, assignor to Vereingte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Nov. 30, 1967, Ser. No. 686,993
Claims priority, application Austria, Jan. 17, 1967, A 452/67
Int. Cl. C21c *5/46, 5/50*
U.S. Cl. 266—36 **7 Claims**



A tiltable converter for metallurgical processes is supported from an annular carrying ring by a plurality of brackets, each of which employs an inclined plane bearing surface to allow for thermal expansion. The bearing surfaces are formed between fixed wedges secured to flanges projecting radially from the converter and respective adjustable wedges mounted on both the top and bottom of the carrying ring. The preferred inclination of the bearing surface (to a plane normal to the converter axis) is substantially equal to the ratio of the distance parallel to the longitudinal axis of the converter between opposed bearing surfaces on top and bottom of the carrying ring, divided by four times the radial distance of a fixed wedge from the longitudinal axis.

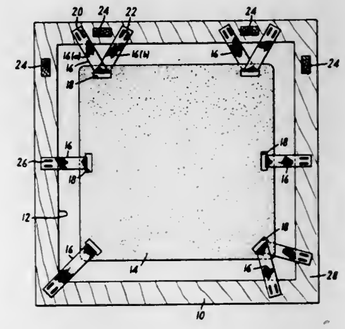
Two pairs of upper and lower carrying flanges and one pair of tilting flanges are provided, the former above and below the respective converter trunnions and the latter midway between the trunnions. Both separate flange segments at each support location and continuous flanges about the converter periphery are disclosed.

3,502,315
FURNACE EQUIPMENT
Edward J. Ostrowski, Steubenville, Ohio, assignor to National Steel Corporation, a corporation of Delaware
Filed Dec. 7, 1967, Ser. No. 688,820
Int. Cl. C21b *7/16;* **C21c** *5/48*
U.S. Cl. 266—41 **11 Claims**



Tuyeres and the like articles include a baffle arrangement which splits a stream of cooling water into two portions and conducts one portion to the hot end of a cooling chamber in the article. The other portion passes into the back of the cooling chamber. The one portion is formed into components which are directed in opposite directions into the cooling chamber and improve heat exchange in the hottest region of the chamber. If the hot end of the article is cut away by material in the furnace, the water entering the back of the chamber still effects partial cooling. Orientation of the article with outlet at 12 o'clock assures complete filling of the cooling chamber. The paths of the cooling fluid in the chamber are free of obstructions, to avoid formation of spaces void of cooling fluid in the chamber.

3,502,316
ELASTOMERIC PLATFORM AND SUPPORT THEREFOR
Tore V. Saether, Mattapoisett, Mass., assignor to Acushnet Process Company, a corporation of Massachusetts
Continuation-in-part of application Ser. No. 438,959, Mar. 11, 1965. This application Jan. 26, 1968, Ser. No. 710,418
Int. Cl. A47c *7/02*
U.S. Cl. 267—110 **6 Claims**

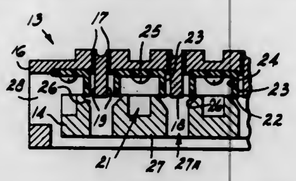


An elastomeric platform for furniture is manufactured with particular control and correlation over four of its physical properties, so that the durometer, Shore A, hardness of the platform is from about 55 to about 80 (measured by ASTM D–676–59T); the modulus at 50% elongation of the platform is from about 150 to about 600 p.s.i. (measured by ASTM D–412–62T); the tear resistance of the platform is at least about 100 pounds per inch (measured by ASTM D–624–54, die C); and the tension set of the platform is not more than about 35% (measured by ASTM D–412–62T). Such control and correlation achieve substantial improvements in the performance of the platform when installed under tension as a supporting member in a furniture frame, these improvements including minimum permanent deflection and distortion of the platform by cold flow, minimum stress relaxation and consequent long life of the platform under severe conditions of use, and capability of the platform to be installed over a range of tensions from slightly above zero up to about 20% with full retention of the aforesaid advantages, whereby the platform is more versatile and useful as a supporting member in a greater variety of specific applications.

3,502,317
CLAMP FOR RETAINING AN ELONGATED MEMBER
Walter E. Killerby, Lowell, Albert L. Pepin, Methuen, and Richard J. Watson, Danvers, Mass., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 5, 1968, Ser. No. 719,040
Int. Cl. B25b *1/20, 1/24, 5/16*
U.S. Cl. 269—43 **8 Claims**

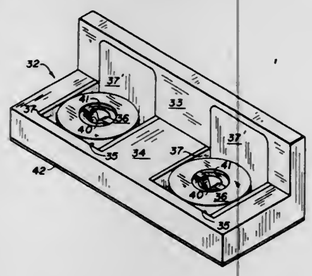
A clamp for retaining wires arrayed in rows includes rows of wire-receiving apertures through a plate and

walls projecting from the plate adjacent the apertures. Flexible skirts are mounted on the plate and positioned spaced from the apertures to face the walls. A frame is moved toward the plate and beveled camming surfaces on



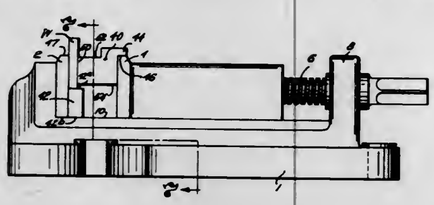
on the frame push the flexible skirts toward the walls. Thus, portions of wires projecting from the apertures are clamped between the walls and the skirts.

3,502,318
SEPARABLE PRESSURE-FACE OVERLAYS FOR CLAMP JAWS
Max G. Merz, 2210 Marshall St., Denver, Colo. 80214
Filed July 10, 1967, Ser. No. 652,148
Int. Cl. B25b *5/16*
U.S. Cl. 269—276 **8 Claims**



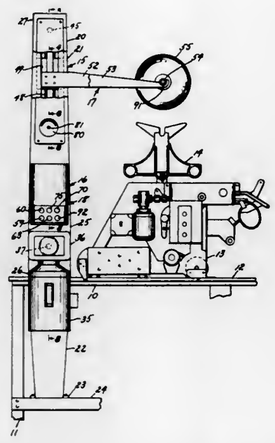
Removable pressure-face overlays are magnetically held on the clamp jaws of a vise to protect workpieces held between the jaws. Ceramic magnets are recessed within liners of magnetically responsive material.

3,502,319
VISE PARALLEL MEANS
William P. Kazolias, 80 Palmer St., Adams Shore, Quincy, Mass. 02150
Filed Mar. 13, 1967, Ser. No. 622,686
Int. Cl. B25b *1/24, 5/16*
U.S. Cl. 269—280 **4 Claims**



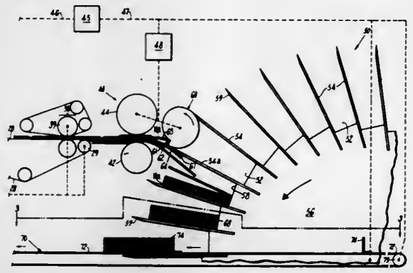
A vise and parallel assembly including a vise and a compensating vise parallel formed with a vise jaw engaging part for engaging with the movable jaw of the vise. The compensating parallel has vertically spaced parallel surfaces which enable the vise to handle a range of workpiece sizes any one of which may be based on a horizontal parallel surface in the vise in a position to provide for convenient use of feeler gauges.

3,502,320
ROLL LIFTING DEVICE FOR CLOTH LAYING MACHINES
Emil A. Scordato, Bronxville, N.Y., assignor to Cutting Room Appliances Corp., New York, N.Y., a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,845
Int. Cl. B65h *29/46, 19/30;* **B66b** *1/00*
U.S. Cl. 270—31 **4 Claims**



A table-mounted cloth roll lifting device adapted to elevate individual cloth rolls from the surface of a table to enable the same to be mechanically positioned upon a cloth laying carriage, including adjustable limit switch means for arresting the descent of a cloth roll at a point which permits transfer to said carriage when required.

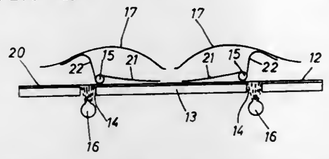
3,502,321
SHEET DELIVERY AND COLLATING MACHINE
Henry L. McWhorter, Mountain Lakes, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed June 19, 1967, Ser. No. 646,918
Int. Cl. B65h *39/02, 45/16*
U.S. Cl. 270—58 **15 Claims**



The machine of this invention includes a conveyor for delivering a series of sheets in uniformly overlapped condition, a collator continuously rotatable about a fixed horizontal axis at a delivery end of the conveyor and having a plurality of peripheral sheet collecting pockets successively movable into and out of registry with oncoming sheets for collecting complements of a predetermined number of sheets, and a sheet separating and shifting member positioned between and rotatable in

timed relation to the conveyor and the collator for deflecting a last sheet of a complement of sheets to ensure its entry into a receding pocket while permitting the next sheet of a following complement to freely enter an adjacent advancing pocket of the collator.

3,502,322
FOLDING OF SHEET MATERIAL
William Broadbent Gordon Cran, Shelley, near Huddersfield, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, England
Filed Aug. 10, 1967, Ser. No. 659,744
Claims priority, application Great Britain, Aug. 17, 1966, 36,751/66
Int. Cl. B65h *45/22*
U.S. Cl. 270—69 **14 Claims**

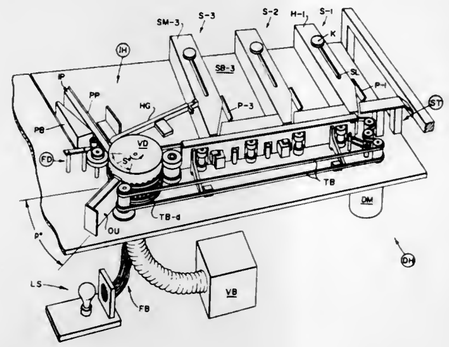


A method of folding foldable limp sheet material, for example laundry workpieces, which comprises supporting the sheet material in an open condition, restraining it along a fold line against upward movement, directing a curtain of air upwardly against the material from below along a line to one side of the fold line to raise the material at said one side of the fold line from its supported position and causing the raised material to swing across the fold line and then downwardly by constraining at least some of the air of the curtain to flow across the fold line.

In a preferred method two marginal portions of the material are folded inwardly towards one another about spaced parallel fold lines.

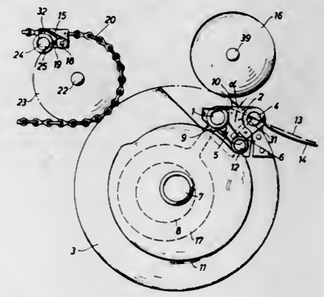
The disclosure includes apparatus for performing the method.

3,502,323
MEANS FOR SENSING INDIVIDUAL DOCUMENTS IN A CONTINUOUS CHAIN FEED
Vince G. Dempsey, Framingham Centre, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,177
Int. Cl. B65h *5/12, 3/06*
U.S. Cl. 271—3 **20 Claims**



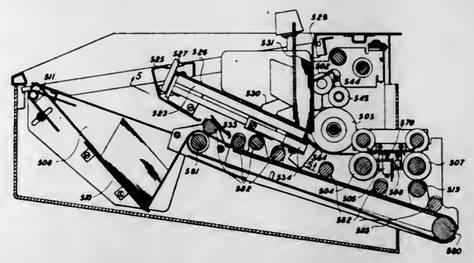
Document handling apparatus including an "in-feed" for receiving a pack of documents in an input hopper and select-advancing them singly to a transport line; this arrangement being characterized in a prime embodiment by elements for "pre-throating" each document, i.e. advancing it through a select throat somewhat to there await subsequent picking; also elements for "flipping" the document tail out of the nominal feed path and detecting tail-passage at this time, plus related feed elements making the arrangement especially apt for high speed picking and subsequent processing of documents with practically no delay, even in a continuous, chain feed mode.

3,502,324
GRIPPER DEVICE FOR SHEET-PROCESSING ROLL COATING MACHINES
Konrad Billhöfer, Nuremberg, Germany, assignor to Maschinenfabrik Richard Billhöfer, Nuremberg, Germany, a firm of Germany
Filed Dec. 14, 1967, Ser. No. 690,678
Claims priority, application Germany, Dec. 16, 1966, M 72,052
Int. Cl. B65h *29/06*
U.S. Cl. 271—82 **6 Claims**



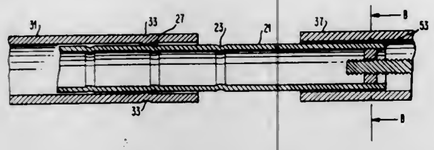
Device for taking up and delivering the sheets on coating machines working with applicator roll and backing roll in which pick-up gripper-fingers and a co-operating seating ledge are carried by two side brackets which carry out a controlled rocking movement so that the edge of a sheet bent by the action of the grippers is brought into a plane at a tangent to the periphery of the backing roll at the discharge print there to be gripped by the grippers of the sheet removing mechanism.

3,502,325
CARD HANDLING APPARATUS
Robert L. Greco, Penfield, and Jack O. Wilson, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,642
Int. Cl. B65h *3/06*
U.S. Cl. 271—36 **6 Claims**



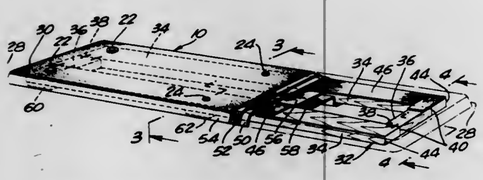
Feeding apparatus for feeding card stock retained in a shingled relationship under constant pressure against feeding wheels including gating means for timing the feeding of the card stock and alignment means for laterally positioning the feeding apparatus and maintaining the card stock centered about the feeding wheels.

3,502,326
TELESCOPICALLY ADJUSTABLE EXERCISE BAR
Bernarr C. Schaeffer, Lawrenceville Road, Rosendale, N.Y. 11422
Filed Mar. 17, 1966, Ser. No. 535,251
Int. Cl. A63b *1/02*; **E04g** *25/02*; **E21d** *15/02*
U.S. Cl. 272—62 **5 Claims**



An adjustable support device includes two telescpoing tubular members, the inner member having a plurality of axial annular grooves at spaced intervals along its length, the outer member having a single axial groove. An open band or ring designed to fit within the annular groove is expansible to permit axial movement along said inner tubular member to a selected groove. When positioned within the selected groove, it will intersect the single groove of the outer tubular member preventing further telescopic movement. A threaded adjustment is provided at the end member for vernier positioning between the annular grooves.

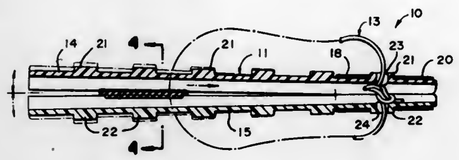
3,502,327
FIBER GLASS DIVING BOARD HAVING INNER FRAME
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif. 91790
Filed Apr. 6, 1966, Ser. No. 540,571
Int. Cl. A63b *5/08*; **B32b** *1/04, 3/02*
U.S. Cl. 272—66 **8 Claims**



A fiber glass diving board having a multi-layer composite of fiber glass materials including fiber glass mat and fiber glass woven roving in which a frame is embedded. The frame which may be made of wood comprises two spaced apart stringers of predetermined length and cross-sectional configuration. The width, or thickness of the stringers may vary along their length to vary the overall spring characteristics as desired. Butt anchor plates and fulcrum support plates are provided on the frame at the butt end and at the fulcrum support position respectively to obtain the necessary strength in these critical regions.

3,502,328
PUBOCOCCYGEUS MUSCLE EXERCISER
Hector O. Hamilton, 1777 Ala Moana Blvd., Apt. 1509, Honolulu, Hawaii 96815
Filed Nov. 30, 1966, Ser. No. 597,907
Int. Cl. A63b *23/00*; **A61b** *21/00*
U.S. Cl. 272—80 **12 Claims**

A novel mechanism for exercising the perivaginal pubococcygeal muscle, and particularly to restore, improve and/or maintain the muscular tone of the pubococcygeal and related muscles by the user's conscious exercising thereof against the resistance offered by spaced body portions of the mechanism. The exercising mechanism also includes means for selectively adjusting the spacing between the body portions to vary the resistance against



which the muscle is exercised, and may preferably though not necessarily be provided with stop means and/or indicating means for respectively limiting the insertion of the mechanism into the body of the user and indicating the resistance of the mechanism to exercising forces.

3,502,329
EXERCISING BAR WITH REMOVABLE WEIGHT DISC
Newton F. Brazier, 19 Gillis Court, Fitchburg, Mass. 01420
Filed Apr. 15, 1968, Ser. No. 721,372
Int. Cl. A63b *13/00, 23/04*
U.S. Cl. 272—81 **10 Claims**

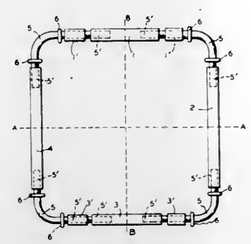


A body conditioning exerciser having a straight bar with a body engaging member such as a handgrip at one end and a body engaging member such as a foot-engaging yoke at the other end. Disc weights are removably and adjustably mounted on the bar. One of the body-engaging members is tangled relative to the bar to displace the weights away from the body of the user. One method of use is to grasp the hand grip with one hand, place the yoke over the instep of the foot, and swing the leg backward and forward.

3,502,330
REBOUND DEVICE FOR PHYSICAL EXERCISES AND GAMES HAVING A DEFORMABLE FRAME
Cyrille Cheftel, 1 Ave. Marechal-Joffre, Meudon, Seine-et-Oise, France
Continuation-in-part of application Ser. No. 289,845, June 24, 1963. This application Jan. 16, 1967, Ser. No. 609,661
Claims priority, application France, June 22, 1962, 901,559; Feb. 27, 1963, 926,132
Int. Cl. A63b *67/00*
U.S. Cl. 273—1 **31 Claims**

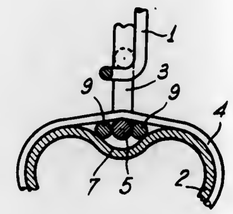
The rebound device involves a frame with a plurality of sides fixedly assembled at their ends and having each

a swivelable connection about its own longitudinal axis so that each side is swivelably connected to an opposite side by means of the swivelable connections of the adjacent sides to obtain a unit deformable by warping by rotating simultaneously and in contrary directions two pairs of opposite sides around an intermediate axis of the



frame. Elastic means are stretched across the sides of the frame and supporting means for said frame are attached thereto for engagement with a supporting surface. The warping permits easier mounting upon a support without sacrificing the requisite rigidity and firmness required in the device.

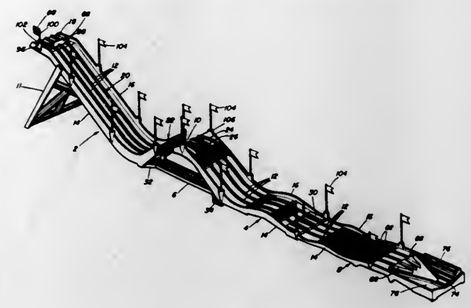
3,502,331
RACKETS FOR TENNIS OR SIMILAR GAMES
Jean René Lacoste, Paris, France, assignor to Patentex S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Sept. 14, 1967, Ser. No. 667,774
Claims priority, application France, Oct. 7, 1966, 79,157
Int. Cl. A63b *49/02, 51/00*
U.S. Cl. 273—73 **7 Claims**



The specification discloses, in a known type of racket in which the strings are mounted on the frame through an intermediate annulus, stop members which prevent or limit lateral displacement of the annulus relative to the frame. The stop members take many forms, and can be continuous or discrete elements secured either to the frame or to the annulus so as to achieve the desired purpose.

3,502,332
RACEWAY WITH OBSTACLES FOR TOY VEHICLES
Tobin Wolf, 447 Essex Ave., Bloomfield, N.J. 07003
Filed Mar. 3, 1967, Ser. No. 620,417
Int. Cl. A63f *9/14*
U.S. Cl. 273—86 **4 Claims**

A racing toy having an obstacle course to be negotiated by racing cars or the like can be quickly assembled from the packaged condition in which it is stored. The course comprises a plurality of tracks arranged in an accelerating section and a coasting section. The sections are separated by a gap which can be adjusted in length to provide an initial obstacle to be negotiated by the racers. The terminal portion of each track is provided with a number of obstacles to slow the racers. A marble is held in a depression at the end of each track and is ar-



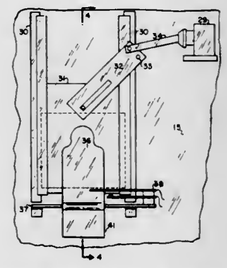
ranged to be struck and released from the depression by each racer. Each marble is guided by a chute into a trough. The order of marbles in the trough determines the order of finish of the racers.

3,502,333
ELECTRONIC TRAP AND SKEET TARGET
Glendon K. Fleury, 121 Ferguson Ave., Burlington, Vt. 05401
Filed Oct. 4, 1967, Ser. No. 672,820
Int. Cl. A63f *9/02*
U.S. Cl. 273—101.1 **12 Claims**



A self-contained re-usable light detecting target adapted to simulate the trap or skeet type clay target having a disk shaped two part housing containing a photocell to detect incident light. The photocell triggers a battery powered alarm system which is capable of automatic or manual reset to provide a visual indication of a target hit.

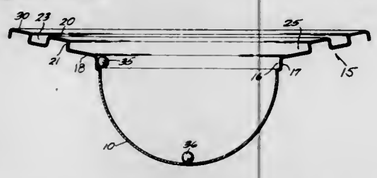
3,502,334
INDOOR COMBAT FIRING TRAINER
Wylie A. Tippit, 115 Hurley Drive, San Antonio, Tex. 78218
Filed Nov. 10, 1966, Ser. No. 593,333
Int. Cl. A63f *9/02*
U.S. Cl. 273—102.2 **4 Claims**



An indoor combat firing trainer presenting surprise targets of opportunity for pre-selected periods of time. The device comprises of an up-right metal screen having aper-

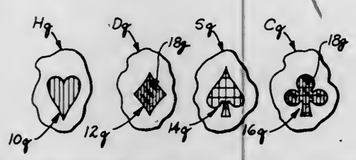
tures, tiltable stationary targets in the rear of the apertures are normally obscured to the marksman by metal curtains. The curtains are raised for limited periods of time by solenoids which are activated by a programmed timer, other running targets move across an elongated aperture at varying rates of movement and speed. All targets are pre-programmed and hits are collectively counted by a mutual score counted. The tiltable targets include an integral repositioning arm which projects ink the path of an associated curtain when the target is in a knocked-down position. The descending curtain thereby resets the target which has pivoted to a downed position.

3,502,335
ORBITING AND SOARING SKILL TOY
William C. Sholin, P.O. Box 106, Oconomowoc, Wis. 53166
Filed Sept. 5, 1967, Ser. No. 665,326
Int. Cl. A63b *71/00*
U.S. Cl. 273—106 **8 Claims**



A semispherical dome shaped toy with a rim extending radially from its edge and having a plurality of annular grooves. One or more small balls are placed inside the dome which is then maneuvered to place the balls in orbit and the object is to orbit the balls into the annular grooves with each succeeding groove being of increasing difficulty to reach. For diversification, the dome may be placed on the head of the player and balls disposed in annular grooves in the rim may be placed in orbit by gyrating the head and torso. The toy may also be tossed into the atmosphere with a spinning motion to cause it to soar, and its configuration is such that a breeze will react on its surface to propel it further in intricate paths of travel.

3,502,336
DECK OF PLAYING CARDS HAVING A PLURALITY OF DIFFERENT TYPES OF SUIT MARKINGS, EACH OF WHICH IS VISIBLY DISTINCTIVE FROM THE OTHERS IN SURFACE APPEARANCE
George K. Krueger, Jr., P.O. Box 253, Culver City, Calif. 90230
Filed Feb. 14, 1967, Ser. No. 616,127
Int. Cl. A63f *1/62*
U.S. Cl. 273—152.43 **2 Claims**



The specification discloses a novel means for visibly distinguishing from each other the like-colored suits of playing cards because of visibly distinctive identifications provded thereon by differences in homogeneous surface appearances of card pips of different like-colored suits, such as differences in depth of color, color intensity, color shade, or the like, or differences in over-all surface reflectivity, or combinations thereof which provide visibly distinctive surface appearance differences between like-colored suit cards such as hearts and diamonds, clubs and spades, and not relying upon the pip shape.

3,502,337
GAME DEVICE HAVING A RESILIENTLY TETHERED BALL
Peter J. Butkus, 27 Burnet St., Maplewood, N.J. 07090
Continuation of application Ser. No. 637,749, May 11, 1967. This application May 19, 1969, Ser. No. 830,194
Int. Cl. A63b *69/36*
U.S. Cl. 273—200 **2 Claims**

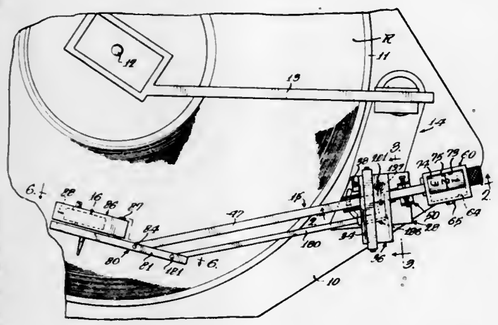


A ball tether cord comprises two cord sections each having one end connected to one end of the other, the other ends of said sections being connected respectively to a ball and to a tethering pin, one of said sections being longitudinally resilient or elastic and the other being relatively non-stretchable, and a non-stretchable check cord is connected to said tethering pin and to said non-stretchable section beyond the ends of the elastic section, to positively limit the extent of stretch of said elastic section, said check cord and said non-stretchable section of the tether cord comprising in some cases integral portions of one piece of cord.

3,502,338
GOLF BALL MADE FROM A VULCANIZED ELASTOMER COMPOSITION
Alvon R. Cox, Ashland, Ohio, assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 317,052, Oct. 17, 1963. This application Aug. 10, 1967, Ser. No. 659,580
Int. Cl. A63b *37/00;* **C08c** *11/00*
U.S. Cl. 273—218 **8 Claims**

A golf ball made from a unitary solid elastomer prepared by vulcanizing a composition consisting essentially of highly resilient polybutadiene elastomer, trimethylol propane trimethacrylate, a white pigment, a filler material, and a cross-linking agent such as dicumyl peroxide.

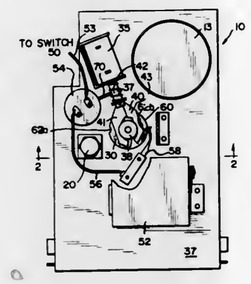
3,502,339
TONE ARM FOR A RECORD PLAYER
Ernest O. P. Tatter, Addison, and Phillip Vazzano, Des Plaines, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed June 27, 1968, Ser. No. 740,528
Int. Cl. G11b *3/10*
U.S. Cl. 274—23 **11 Claims**



A tone arm assembly for a record player including a tone arm mounted on a support at the side of a turntable for pivotal movement about a first axis perpendicular to

the turntable, a carrier member pivotally connected to the outer end of the tone arm and having a pickup including a stylus at one end thereof, and a control arm having one end mounted for pivotal movement about a second axis on the support that is parallel to the first axis, the opposite end of said control arm being pivotally connected to the end of said carrier member remote from said stylus. The control arm pivots the carrier member relative to the tone arm during playing of a record to maintain the longitudinal axis of the pickup tangent to the record groove as the stylus follows an arcuate path. The pivoting of the carrier member also functions to increase the effective lever arm of the tone arm to thereby gradually increase the tracking force. A spring is connected to the control arm for urging the stylus away from the center of a record to balance the force urging the tone arm inwardly and the spring approaches a dead center position as the stylus approaches the end of the playing area of a record, so that the balancing force of the spring gradually diminishes during record play.

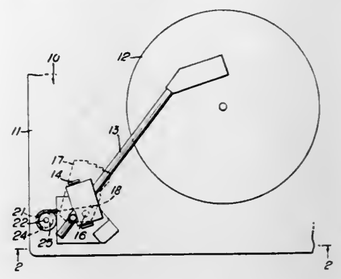
3,502,340
AUTOMATIC TAPE HEAD INDEXING DEVICE
Kenneth D. Klein, Bloomingdale, and Robert A. Wolf, Oak Lawn, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 17, 1967, Ser. No. 631,483
Int. Cl. G11b *21/12, 21/08*
U.S. Cl. 274—4 **10 Claims**



This device uses a sensing switch operated by the removal of a cartridge from a cartridge-type tape player to energize a solenoid for automatically rotating a cam to position the tape head to a selected track on the tape. A cycle switch operated by the solenoid momentarily deenergizes the solenoid to allow the armature to return to the extended position to complete a cycle of rotation of the cam. A track sensing switch operates when the head is positioned to the first track of the tape to deenergize the solenoid.

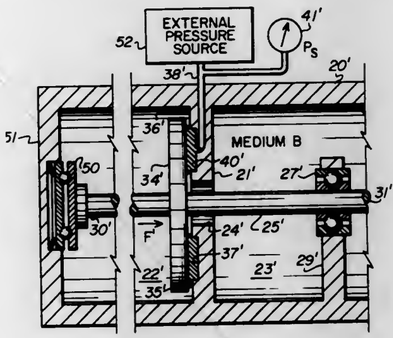
3,502,341
PICK-UP ARMS FOR RECORD PLAYERS
Norman Lane, Halesowen, England, assignor to BSR Limited, Warley, England, a British company
Filed Feb. 9, 1968, Ser. No. 704,326
Int. Cl. G11b *3/12, 3/28*
U.S. Cl. 274—23 **8 Claims**

An "anti-skate" device for record players comprising a coil tension spring connected between the pick-up arm vertical spindle and the base plate of the record player to bias the vertical spindle, and hence the pick-up arm, outwardly away from the centre of a record to reduce or prevent the tendency for inward skating of the pick-up arm resultant from friction between the record and the stylus carried by the pick-up arm. One end of the tension spring may be connected to a rotatable member to enable the tension in the spring to be adjusted by stretching the



spring so as to enable adjustment of the "anti-skating" force.

3,502,342
FACE TYPE LIQUID METAL SEAL AND METHOD OF MAKING THE SAME
William C. Albert, Waldwick, N.J., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 1, 1967, Ser. No. 687,286
Int. Cl. F16j *15/40*
U.S. Cl. 277—17 **13 Claims**



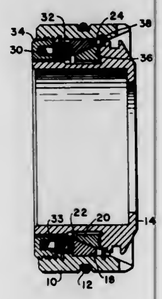
A face type liquid metal seal is provided for applications of the type wherein the rotary motion of a shaft is to be transmitted through an aperture in a wall separating two fluid mediums. The surface of the wall surrounding the aperture constitutes one face of the seal and is provided with an annular groove surrounding the aperture and substantially concentric with the axis of rotation of the shaft. The annular groove is connected to a fill tube which is disposed in the wall and which provides a means of filling the groove with a liquid metal to create the seal. A collar is disposed on the shaft for rotation therewith adjacent the first seal face and functions to provide a second seal face which is equidistantly spaced from the first seal face. When the motion to be transmitted by the shaft is a simple rotary motion, the seal faces may be parallel surfaces. If the motion to be transmitted is both rotary and pivotal, as is, for example, the motion of the rotor float output shaft in certain types of gyroscopes and other spatial orientation responsive devices wherein the shaft is disposed at one end thereof in a universal pivot arrangement, the seal faces are made spherical in shape with the center of curvature of both faces coincident with the pivot point of the shaft to preserve the equidistant spacing of the faces upon pivotal movement of the shaft.

When the fill tube and annular groove are filled with a liquid metal, such as mercury, a mercury alloy, gallium, or a gallium alloy, for example, a ring of the liquid metal is formed around the aperture between the faces of the seal and functions to provide a fluid-tight seal separating the two fluid mediums. Since the liquid metal of the ring will readily shear upon rotation of the shaft, the only frictional resistance presented by the seal will be that arising from the viscosity of the liquid metal and the seal will be virtually frictionless in operation. In order to create a satisfactory seal, the liquid metal must be non-reacting and non-wetting with respect to the two fluid mediums and the materials of which the seal faces are made. Additionally, the internal pressure of the liquid metal ring must be greater than the pressure of each of the two fluid mediums involved. A method of making the seal is also disclosed and comprises the steps of holding the seal faces together while evacuating the annular groove and fill tube, filling the evacuated groove and fill tube with the liquid metal, crimping the end of the tube closed, and flattening a predetermined length of the fill tube to force the seal faces apart and create the required seal gap.

3,502,343
SLIPPING CONE SEAL

Werner Pustelnik, West Haven, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware

Filed Mar. 4, 1968, Ser. No. 710,305
Int. Cl. F16j *15/16;* **F16k** *41/00*
U.S. Cl. 277—25 **5 Claims**



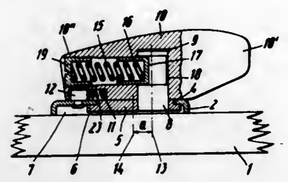
A seal comprises two concentric piston rings having contacting complementary conical surfaces. The piston rings are axially spring biased. The outer piston ring is split. An axial spring fore is translated into axial and radial components, the radial component resulting from the relative movement between the adjacent conical surfaces. The seal is effective at zero speeds and has increased effectiveness due to centrifugal force at operating speeds.

3,502,344
FRONT JAW SAFETY SKI BINDING

Paul Unger, Bruckwiesenstrasse 113, Altenberg, near Nuremberg, Germany

Filed Apr. 19, 1968, Ser. No. 722,675
Claims priority, application Germany, Apr. 21, 1967, U 13,810
Int. Cl. A63c *9/085*
U.S. Cl. 280—11.35 **10 Claims**

Safety binding for ski made as a front cheek with a housing supporting the sole catch which swings laterally in a horizontal plane to release against spring bias, where a vertical pivot axis is rotatably mounted on a carrier member upon a base and eccentrically with respect to the pivot of the carrier member and where the housing is furthermore slidable longitudinally of the ski by guide means

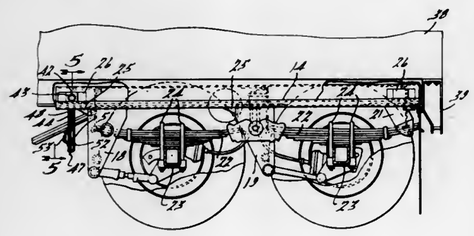


ahead of the pivot of the carrier member, which means prevents transverse movemennt of the forward end of the housing.

3,502,345
SLIDING VEHICLE SUBFRAME

Adrian F. Hulverson, Grosse Pointe Woods, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 26, 1968, Ser. No. 708,378
Int. Cl. B62d *21/00;* **B60g** *11/04*
U.S. Cl. 280—81 **8 Claims**

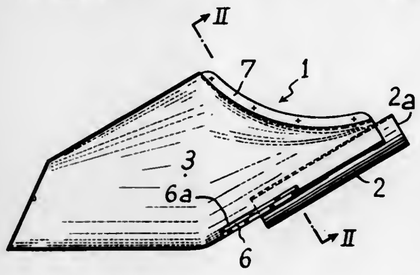


The sub-frame of the present invention has the wheels, such as those for a semitrailer, mounted thereon to form a wheeled unit with brakes thereon. The sub-frame is slidable relative to spaced flanges on the bottom of a semitrailer body or container which, when located relative to each other is locked in fixed relationship.

3,502,346
VEHICLE STEERING COLUMN SUPPORT

Jean G. Cadiou, Paris, France, assignor to Societe Anonyme Automobiles Citroen, Paris, France, a French society

Filed Feb. 26, 1968, Ser. No. 708,411
Claims priority, application France, May 16, 1967, 99,014
Int. Cl. B62d *1/16, 1/02*
U.S. Cl. 280—87 **5 Claims**

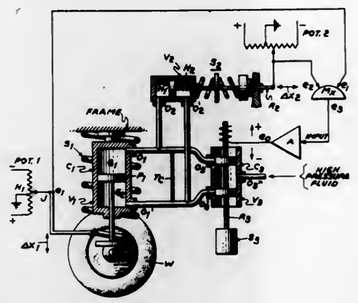


A vehicle steering column support having a hollow column guide-support and a fixing assembly for securing the guide support to the vehicle structure composed of first and second pairs of support members disposed in substantially perpendicular planes and joined together. The fixing assembly is non-detachably fixed both to the column support and to the vehicle structure.

3,502,347
APPARATUS FOR VEHICLE SUSPENSION CONTROL

Henri G. Busignies, Montclair, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Nov. 6, 1967, Ser. No. 680,792
Int. Cl. B60g *9/00*
U.S. Cl. 280—124 **10 Claims**

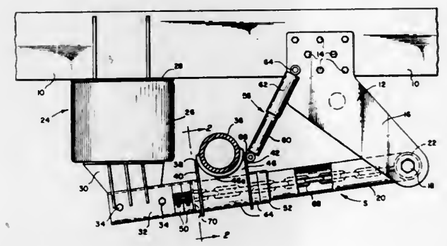


To the body of a car which is normally suspended through a spring, there is provided apparatus comprising pneumatic or hydraulic equipment which is controlled by electronic means and mounted in parallel to the normal spring system.

3,502,348
SUSPENSION SYSTEM FOR AUXILIARY AXLE UNIT

Gale Bellamy, Hiltons, Va., and Harold Wyant, Sioux City, Iowa, assignors to Hil-Air Corporation, Hiltons, Va.

Filed May 23, 1968, Ser. No. 731,479
Int. Cl. B62d *49/06, 61/12*
U.S. Cl. 280—124 **9 Claims**

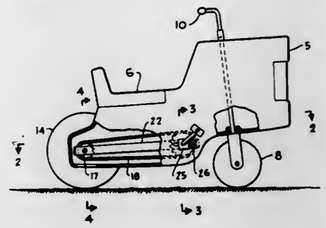


A suspension system for an auxiliary axle unit includes a spring hanger for pivotably mounting one end of a torque tube which mounts an axle seat. The other end of the torque tube is supported by an air spring secured to the frame of the vehicle. A safety chain located within the torque tube provides a supporting connection in the event of failure of the tube as well as an indication of such a failure as the chain is tensioned from a normal slack position. The mounting for the axle seat permits both pivotable and longitudinal movement of the tag axle.

3,502,349
VELOCIPEDE WITH CHAIN DRIVE

Janvier F. O'Hara, 757 Idle Hour Lane, Sierra Madre, Calif. 91024

Filed June 6, 1968, Ser. No. 734,903
Int. Cl. B62k *9/00, 19/16*
U.S. Cl. 280—261 **2 Claims**

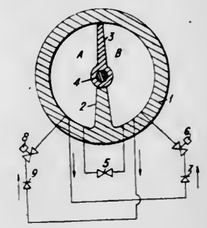


A velocipede having a vehicle body made of a thermoplastic material and having a pedalcranked chain drive system connected to the vehicle body. The means permitting the vehicle body to thermally expand and contract independently of the driving and driven axles and of the chain tension relate to the materials and apparatus employed in the vehicle construction.

3,502,350
STABILIZING DEVICE FOR AN ARTICULATED VEHICLE

Stephen Haswell Pearson, Glasgow, Scotland, assignor to Adrolic Engineering Company Limited, Glasgow, Scotland

Filed Oct. 21, 1968, Ser. No. 769,001
Int. Cl. B62d *53/08*
U.S. Cl. 280—432 **10 Claims**

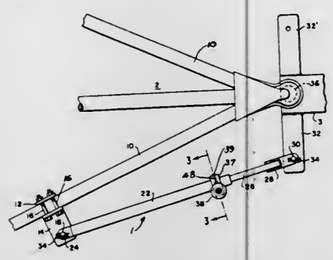


A stabilizing device for an articulated vehicle comprising two parts, one part for connecting to one element of the articulated vehicle and the other for connecting to the other vehicle element, the first part having two chambers and the second part having a device for varying the volumes of the chambers differentially and simultaneously during relative movement of the vehicle elements, the chambers being interconnected through two sets of valves one of which is open to give free fluid flow between the chambers when the vehicle is not braked, but closed when the brakes are applied, and the second set of valves being operable when the second part is disposed with respect to the first part so that one chamber volume is greater and the other chamber volume is less than their respective volumes when the vehicle elements are axially in alignment to provide access only from the greater to the smaller chamber.

3,502,351
SWAY CONTROL DEVICE FOR TRAILERS

Russell M. Gray, Lynn, Mass., assignor to Gardner Reynolds, Peabody, Mass.

Filed Aug. 1, 1968, Ser. No. 749,529
Int. Cl. B60r 27/00; B60d 1/00
U.S. Cl. 280—446 2 Claims

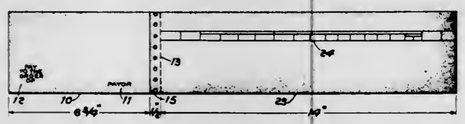


A device connected between a trailer and a towing vehicle to give complete control. The device consists of a cylinder and piston assembly pivotally attached at one end to the towing vehicle and at the other end to the trailer in a position laterally offset from the towing axis. An adjustable split collar on the cylinder promotes frictional resistance between the cylinder and the piston to thereby control sway of the trailer. The split collar may be adjusted for greater or lesser friction consistent with the desire for turning, as well as sway control.

3,502,352
CHECK-STUB BLANK

Frank V. Grabler, Sunnyside, N.Y., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Oct. 30, 1967, Ser. No. 679,058
Int. Cl. B41l 1/24
U.S. Cl. 282—22 1 Claim



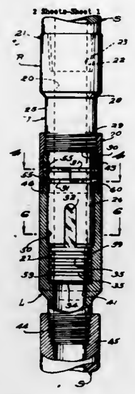
A check and stub blank form in which two sheets are placed back-to-back with the top sheet including a check portion and a tear-away portion. The bottom sheet is the check stub and the two sheets are temporarily secured at their ends by perforated portions. In this manner the check portion may be addressed by one standard equipment machine after which the two sheets may be opened by tearing along one perforation after which the stub and check may be filled in by a second standard equipment machine adapted to handle a different length of form.

3,502,353
RELEASING COLLAR

Erwin Burns, Los Angeles, Calif., assignor of one-half to Audrey S. Carr, Anaheim, Calif.

Filed Apr. 24, 1968, Ser. No. 723,779
Int. Cl. F16l 35/00
U.S. Cl. 285—2 15 Claims

An elongate substantially vertical fluid conducting rotary tubing string for use in oil wells comprising, a plurality of axially aligned, interconnected steel tubing sections of substantially uniform weight and tensile strength, said string being of predetermined length and weight and subjected to varying predetermined deadweight tensile forces which increase uniformly downwardly throughout the longitudinal extent of the string, an elongate, fluid conducting releasing collar with separable upper and lower sections and set releasing means therebetween engaged in the string a predetermined distance below the upper end thereof with its upper and lower sections connected with the opposing lower and upper ends of a predetermined pair of adjacent tubing sections, said set releasing means being set to release the sections of the collar before the cumulative forces of vertical pulling forces applied to the upper end of the string, the deadweight of

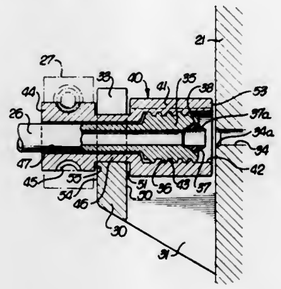


the portion of the string below the collar and a predetermined maximum of supplemental frictional and holding forces acting on and through the portion of the string below the collar exceeds the tensile limits of the portion of the string above the collar, said upper and lower sections being telescopically engaged for free relative axial shifting, said holding means including one or more shear pins engaged in and extending between the upper and lower sections, said collar further including drive means to prevent relative rotation between the sections and sealing means to prevent the leakage of fluid within the collar outwardly between the sections.

3,502,354
WELLHEAD PIPE CONNECTOR MEANS

Raymond W. Walker, Huntington Beach, Calif., assignor to Deep Oil Technology, Inc., Long Beach, Calif., a corporation of California

Filed July 3, 1968, Ser. No. 742,435
Int. Cl. F16l 37/26, 19/02, 17/00
U.S. Cl. 285—24 11 Claims

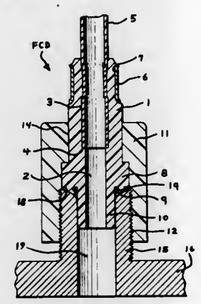


A wellhead pipe connector means for securing a pipe, conduit, or the like, to a subsea wellhead having an opening so as to provide a sealed flow passageway from the wellhead to the pipe. The connector means includes a support and alignment member mounted on the wellhead including an abutment wall spaced from the wellhead opening and having a U-shaped opening for supporting a rotatable collar in which the pipe is received. The collar has internal threads engaging a threaded member secured to the end of the pipe and has a reduced outer diameter portion for reception in the U-shaped opening so as to constrain the collar from axial movement relative to the wellhead when rotated so as to move the pipe into and out of sealing engagement with the wellhead.

3,502,355
PIPE, HOSE OR TUBE FLUID CONNECTION DEVICE

Henry William Demler, Sr., Lebanon, and William Sewell Watts, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 630,744, Apr. 13, 1967. This application Apr. 3, 1969, Ser. No. 817,239
Int. Cl. F16l 15/00, 41/00
U.S. Cl. 285—110 5 Claims

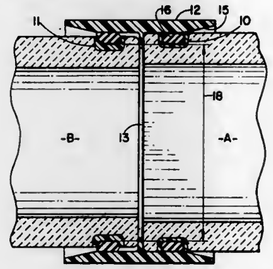


A pipe, hose or tube fluid connection device having a body member provided with an opening extending therethrough, a sleeve member having one end securable to a pipe, hose or tube and the other end mateable with the body member, the other end of the sleeve member having a flexible flange engageable with the body member to provide a seal, and means for securing the sleeve member and body member together.

3,502,356
PLAIN END SEWER PIPES AND COUPLING FOR SAME

John D. Schmunk, Findlay, Ohio, assignor to The Hancock Brick and Tile Company, Findlay, Ohio, a corporation of Ohio

Filed Nov. 2, 1967, Ser. No. 680,078
Int. Cl. F16l 49/00
U.S. Cl. 285—230 5 Claims

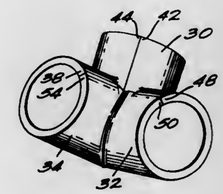


Ceramic plain end sewer having varying diameters, circumferences and degrees of roundness are provided adjacent each end with an external annular groove, which is of constant depth in relation to the outer surface of the pipe regardless of the out-of-roundness of the pipe. The cross section of the groove is constant for all pipes. The circumference root of all grooves is made constant by means of a plastic filler. The root diameter of the plastic-containing grooves varies with the diameter of the pipe and such grooves with the filler finish at a uniform depth around the pipe. O-rings of elastomeric material of uniform circumference and cross section fit the grooves and the adjacent pipe ends are forced into a flexible coupling sleeve, which conforms to out-of-roundness regardless of where it occurs in the adjacent pipe ends, so that the space between the pipes and the sleeve is uniform and is occupied by the O-rings, which are equally and uniformly compressed around the pipes to effect liquid-tight seals.

3,502,357
METHOD OF FORMING PIPE RAILING FITTING

Adolph A. Wagner, 3454 N. Shepard Ave., Milwaukee, Wis. 53211

Filed Oct. 4, 1967, Ser. No. 672,839
Int. Cl. E04g 7/00; E16f 7/00; F16l 41/00
U.S. Cl. 287—54 6 Claims

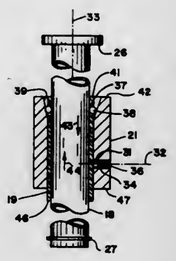


This disclosure comprises a pipe railing fitting made by stamping a blank from a sheet of metal and then shaping the blank into a fitting by a series of forming steps.

3,502,358
ADJUSTABLE POST ASSEMBLY

Guy L. Alspaugh and Harry W. Mitchell, Claypool, Ind., assignors to Claypool Aluminum Products, Incorporated, Claypool, Ind., a corporation of Indiana

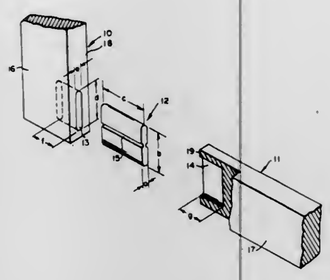
Filed May 17, 1968, Ser. No. 730,041
Int. Cl. E04g 25/08
U.S. Cl. 287—58 4 Claims



A post freely slidable vertically in a first sleeve coaxial therewith, and a second sleeve received on the first sleeve and coaxial therewith and having a conical internal clutch surface. A plurality of clutch balls received in locating apertures of the first sleeve and operable by gravity to permit upward post movement only. A lower collar on the post engageable with the first sleeve upon upward post movement to release the clutch, and an upper collar or seat on the post engageable with the upper

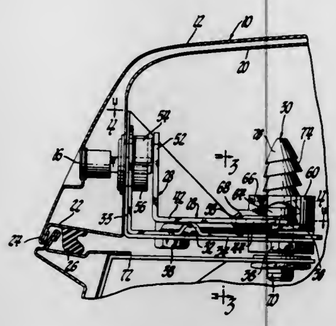
end of the first sleeve near a lower limit of downward post movement to reestablish the one-way clutch action on the post.

3,502,359
JOINTING METHODS AND MEANS
Donald E. Lucci, Aliquippa, Pa. 15001
Filed Nov. 24, 1967, Ser. No. 691,094
Int. Cl. E04b *1/48;* **F16b** *7/00, 13/00*
U.S. Cl. 287—127 **5 Claims**



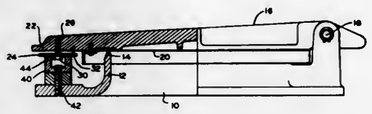
A blind dowel joint which precisely aligns the joined members in a predetermined, facially abutting relationship is formed by a rigid dowel which is glued and driven into complementary dowel sockets. Channels for the venting of glue and air are provided in the dowel.

3,502,360
CLOSURE LATCH
Thomas E. Lohr, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,787
Int. Cl. E05c *3/40*
U.S. Cl. 292—224 **3 Claims**



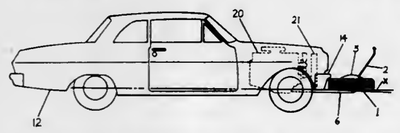
A flanged support plate mounts a combined bolt and actuating lever having a lateral arm extending along the flange of the plate and terminating in a cam follower flange. A torsion spring holds the flange in engagement with a key actuated cam to locate the lever in unlatched position. The engagement of the cam with the follower flange moves the lever to unlatched position. An offset slotted guide mounted on the plate slidably receives a leg of the lever, and a buttress threaded striker projected through the guide is engaged by the angled free edge portion of the leg of the lever to provide the latch and also provide take-up.

3,502,361
MAGNETICALLY BIASED TANK VENT
Walter J. Sieverin, Buffalo Grove, Ill., assignor to GPE Controls, Inc., Morton Grove, Ill., a corporation of Illinois
Filed May 29, 1968, Ser. No. 732,972
Int. Cl. E05c *17/56, 19/16*
U.S. Cl. 292—251.5 **2 Claims**



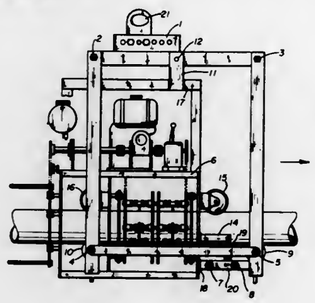
A tank vent fitting having a cover which is held in the closed position by the biasing force of a permanent magnet and also having means for preventing breakage of the magnet due to impact upon closure of the cover.

3,502,362
SHOCK ABSORBING TIRE BUFFER
Cheston Lee Eshelman, 621 NE. 30th Terrace, Miami, Fla. 33137
Filed July 30, 1968, Ser. No. 748,785
Int. Cl. B60r *19/10;* **B62d** *43/04;* **B61f** *19/04*
U.S. Cl. 293—19 **10 Claims**



In an automotive highway vehicle, a vehicle wheel and wheel-mounted pneumatic tire positioned at the front of the vehicle immediately in front of the bumper with the wheel and tire substantially parallel to the highway surface and having means for supporting said wheel and tire in that position, the supporting means being rigidly connected to the front axle cross member, then extending horizontally forward with means at its forward end for removably mounting the wheel thereon. A removable cover for the wheel is provided to protect it from the elements, and a guide is removably attached to the wheel to aid the driver to operate the vehicle.

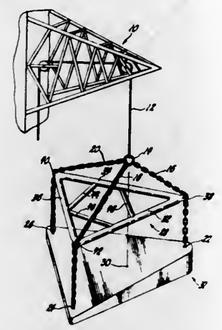
3,502,363
SELF-BALANCING CRADLE
Rayburn M. Ramsey, Rte. 1, Box 236, Broken Arrow, Okla. 74012
Filed Mar. 29, 1967, Ser. No. 626,747
Int. Cl. B66c *1/00*
U.S. Cl. 294—67 **5 Claims**



A mechanical device used in combination with a cleaning, priming and tape-wrapping machine. This mechanical device is used as a supporting cradle for the machine in

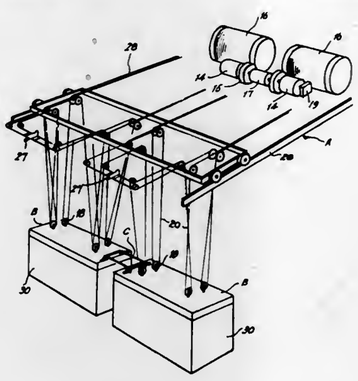
field operations. A plurality of rollers support a pipe on a cradle frame which is constructed so as to be self-balancing and permit rotation of the cradle frame as the treating machine progresses along a pipeline.

3,502,364
HOIST SLING WITH TUBULAR FRAME
George V. Moore, Milford, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,393
Int. Cl. B66c *1/00*
U.S. Cl. 294—67 **6 Claims**



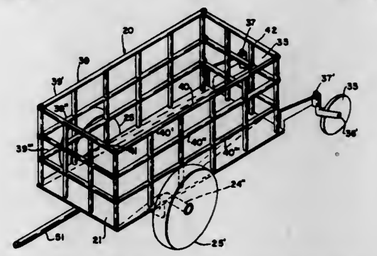
A sling of tubular construction for use with a hoist is disclosed wherein the hoist has a load ring with three chain members depending therefrom and the sling is a spreader for the chain members having three attaching points for preventing movement of the chain relative to the sling. The sling is adjustable on the chains, when unloaded, to permit the center of gravity, of the load to be raised, to be aligned with the load ring of the hoist.

3,502,365
APPARATUS FOR COUPLING TOGETHER CARGO CONTAINER HANDLING SPREADERS
John Frederick Callow, Tuart Hill, Western Australia, Australia, assignor to Vickers Hoskins Pty. Limited, Ashfield, Western Australia, Australia, a corporation of Western Australia, Australia
Filed May 14, 1968, Ser. No. 730,215
Int. Cl. B66c *1/10*
U.S. Cl. 294—81 **15 Claims**



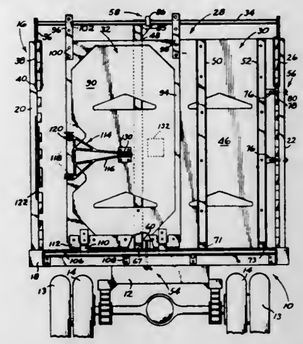
Apparatus for coupling together two or more cargo container handling spreaders during loading and unloading. The cargo containers are each suspended from an individual spreader, each spreader being independently supported from lifting apparatus. The lifting apparatus is adapted to raise and lower the independently suspended spreaders together for simultaneous loading and unloading of the containers engaged by the spreaders. A coupling unit is adapted to part its connection between adjacent spreaders in response to objects, such as support structures, passing between the adjacent spreaders. Means are incorporated in the coupling unit for varying the spacing between the spreaders when connected together.

3,502,366
TRAILER DEVICE
Carl Poleschook, Max, N. Dak. 58759
Filed Sept. 25, 1967, Ser. No. 670,208
Int. Cl. B60p *3/00*
U.S. Cl. 296—8 **1 Claim**



The invention comprises a farm trailer having a rectangular platform having a plurality of upright type frames forming walls along the sides of the platform. The upright type frames being stacked one above the other to form vertical walls with hollow vertical end pipes at their outer ends. Pegs connecting the pipes together. Caster wheels mounted to the forward end of the platform and a pair of wheels mounted to the rear of the platform.

3,502,367
TAILGATE CONSTRUCTION
Joseph C. Oliver, John Day, Oreg. 97845
Filed June 27, 1968, Ser. No. 740,673
Int. Cl. B62d *33/04, 25/00*
U.S. Cl. 296—50 **9 Claims**

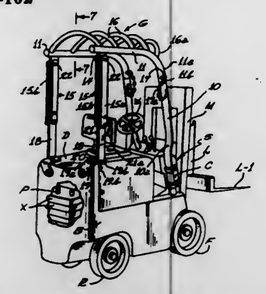


A tailgate construction for closing off the opening framed at the rear of a truck body by its bed and opposed sides, including an elongated elevated bar spanning the sides of the truck body supporting a shiftable panel section for closing off one side of the opening. A fixed panel section secured to the bed of the truck body and its opposite side, and supported by the bar, closes off the other side of the opening. The bar and fixed panel section are removable. The shiftable panel section may be detachably locked at each of its opposed side margins, to a side of the truck and to the fixed panel section, respectively.

3,502,368
COLLAPSIBLE OVERHEAD GUARD STRUCTURE FOR LIFT TRUCKS

Raymond R. Maxa, Lakeville, Minn., assignor to Material Handling Engineers, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed July 18, 1968, Ser. No. 745,795
Int. Cl. B62d *25/06*
U.S. Cl. 296—102 **2 Claims**

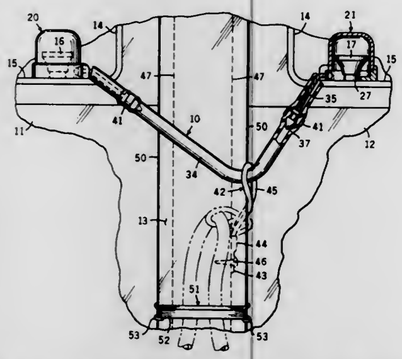


A collapsible overhead guard for lift trucks of the type having a compact, self-propelled body and which, when attached to a lift truck, makes provision for a rugged overhead, generally horizontal guard disposed a few feet above the level of the head of the driver, but which, while still attached to the truck, may be collapsed including the redisposal of all parts of the guard structure in compact, non-protruding position relative to the lift truck and the driver. The generally horizontal guard is rigidly supported in operative position from a set of upstanding forward posts and a set of upstanding rearward posts. One set of these posts is made of a collapsible nature and actually has fixed attachment to the guard so that, when collapsed, the guard is disposed with no parts protruding from the general configuration or peripheral confines of the truck. When so collapsed, the other set of supporting means is so shortened that the truck, with the collapsed device thereon, may readily go through all manipulations in low-ceiling structures such as semi-trailers, storage bins and rooms.

3,502,369
SAFETY GUARD DEVICE FOR AUTOMOBILE DOOR LOCK BUTTON

Earl M. Trammell, Jr., 39 Salem Estates Drive, Ladue, Mo. 63124

Filed June 14, 1967, Ser. No. 645,908
Int. Cl. B60j *5/00*
U.S. Cl. 296—146 **14 Claims**

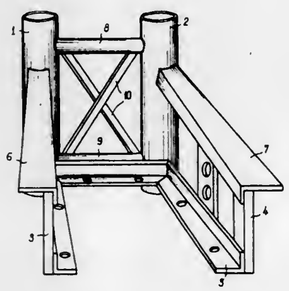


A safety guard device for use with an automobile door lock button that projects upwardly from an aperture in the door molding, and which is mounted for movement between a raised door-unlatched position and a lowered door-latched position. The guard device includes a hollow dome-shaped shield receiving and overlying the lock button, and includes a resilient tube attached to the shield and holding the shield against the door molding to preclude digital access to the lock button and to preclude lifting of the shield and lock button by a child. The shield has a lock shoulder that fits under a portion of the lock button to prevent removal of the shield from the button under the tension exerted on the shield by the resilient tube. The guard device, consisting essentially of a pair of shields operatively interconnected by the resilient tube, can protect both lock buttons of adjacent front and rear doors. An attachment means fixes the resilient tube to the intervening door post under a tension tending to hold the shields over their associated lock buttons. A storage band is carried by the door post and holds the guard device when not in use, yet, held by the attachment means.

3,502,370
SEATS, NOTABLY FOR HEAVY VEHICLES

Olivier Pommellet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Apr. 8, 1968, Ser. No. 719,349
Claims priority, application France, Apr. 13, 1967, 102,577
Int. Cl. A47c *3/00*
U.S. Cl. 297—285 **13 Claims**

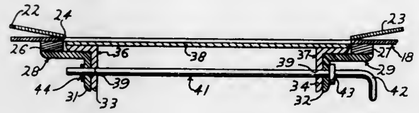


A seat for heavy vehicles of the type generally having no suspension or shock-absorbing mechanisms and comprising a seat having a bottom, a back and two arm rest portions, suspension arms resiliently mounting the seat on the vehicle, and means on the back of the seat to impart vertical stability to the seat. The last-mentioned means preferably comprises symmetrically disposed resiliently sprung masses operating as inertia weights.

3,502,371
SELF-UNLOADING VEHICLE BODY

Henry B. Cleveland, Box 193, Magnolia Springs, Ala. 36555

Filed June 17, 1968, Ser. No. 737,635
Int. Cl. B60p *1/56*
U.S. Cl. 298—1 **4 Claims**

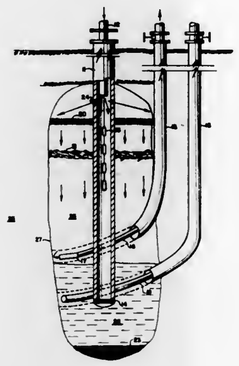


A self-unloading body connected to a vehicle for pivotal movement relative thereto and having a bottom wall comprising a longitudinally extending central portion with upwardly and outwardly extending side portions. A cover member, movable to selected positions relative to a discharge opening adjacent the rear of the central portion, controls and discharge of materials.

3,502,372
PROCESS OF RECOVERING OIL AND DAWSONITE FROM OIL SHALE

Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 23, 1968, Ser. No. 769,909
Int. Cl. E21b *43/24, 43/28*
U.S. Cl. 299—5 **8 Claims**

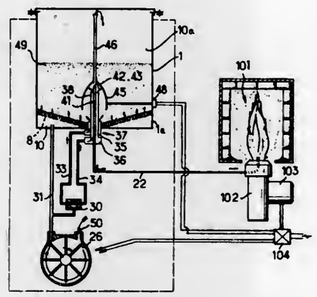


A method of shale oil and dawsonite recovery from dawsonite-containing oil shale formations utilizing sequentially an in situ pyrolysis technique for shale oil recovery and solution mining for dawsonite recovery. The pyrolysis is controlled to prevent conversion of the dawsonite to insoluble oxides.

3,502,373
MEASURING APPARATUS FOR DISPENSING PULVERULENT MATERIALS

Andre Janot, 3 Avenue de l'Association, Colombes, Hauts-de-Seine, France

Filed May 10, 1968, Ser. No. 728,248
Claims priority, application France, May 12, 1967, 106,390
Int. Cl. B65g *53/04, 53/40*
U.S. Cl. 302—17 **2 Claims**

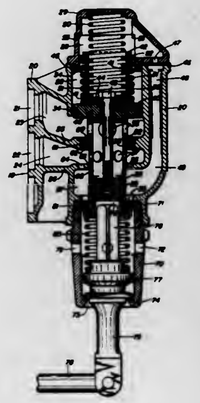


Measuring apparatus for dispensing pulverulent materials, comprising, housed in a casing, a tight removable container divided by a frusto-conical filtering sieve into two superimposed compartments. The upper compartment receives the material to be measured and it contains a member in the shape of a bell associated with a central pipe leading to the place of utilization of the measured material. An air distributing block is connected to a blower which forces the pressurized air under and into the aforementioned bell member.

3,502,374
BRAKE CYLINDER RELEASE VALVE

Henry R. Billeter, Deerfield, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 700,633, Jan. 25, 1968. This application Sept. 23, 1968, Ser. No. 776,294
Int. Cl. B60t *15/32*
U.S. Cl. 303—69 **20 Claims**

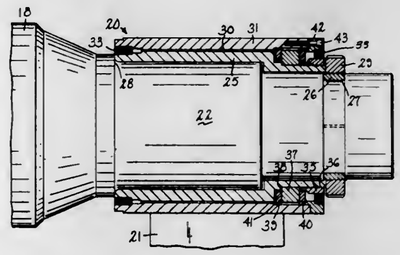


A brake cylinder release valve for railway cars which is manually tripped to vent the air pressure from the brake cylinder to release the brakes while conserving the air pressures in the reservoirs, and which is automatically reset when the car is again placed in service and brake pipe pressure is restored.

3,502,375
BEARING ASSEMBLY

Warren C. Whittum, Orange, Conn., assignor to Farrel Corporation, Ansonia, Conn., a corporation of Connecticut

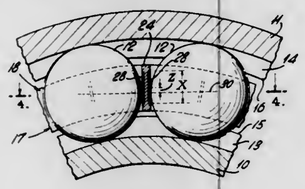
Filed Sept. 6, 1967, Ser. No. 665,856
Int. Cl. F16c *1/24, 33/72;* **F16r** *15/00*
U.S. Cl. 308—36.1 **5 Claims**



A bearing assembly for a roll journal or the like, comprising a sleeve, a liner surrounding the sleeve, sealing

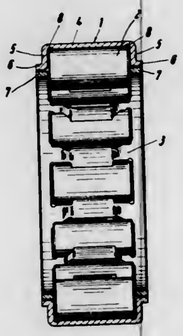
means between said sleeve and said liner at both ends thereof, and first means attached to the sleeve for axially positioning said liner with respect to said sleeve.

3,502,376
BEARING RETAINER
Howell L. Potter, New Britain, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 5, 1968, Ser. No. 702,974
Int. Cl. F16c *33/00, 19/20, 33/38*
U.S. Cl. 308—193 **2 Claims**



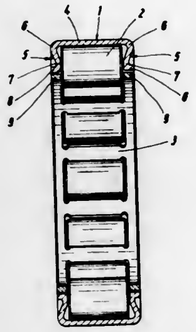
The invention contemplates application to a ball bearing having a stayrod-type retainer for locating balls in opposed raceways of the bearing rings. The retainer is a rugged assembly of spaced annular side plates having ball-locating pockets, and heavy-gauge spacer or "stayrod" plates secure the side plates to each other, at locations between balls. Localized recesses in faces of the spacer plates provide clearance with respect to adjacent balls, without sacrifice of retainer strength and soundness, thus permitting a maximum ball complement for a given size bearing.

3,502,377
ROLLER BEARING
Georg Schaeffler and Leo Linz, Herzogenaurach, Germany, assignors to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Apr. 3, 1968, Ser. No. 718,578
Claims priority, application Germany, Apr. 15, 1967, J 16,378
Int. Cl. F16c *33/58*
U.S. Cl. 308—212 **3 Claims**



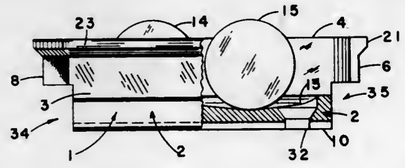
A roller bearing comprised of a thin-walled outer race formed without cutting and provide with abutment flanges at each end and a plurality of cylindrical rollers travelling thereon.

3,502,378
ROLLER BEARINGS WITH CYLINDRICAL ROLLERS
Leo Linz, Herzogenaurach, Germany, assignor to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Apr. 3, 1968, Ser. No. 718,580
Claims priority, application Germany, Apr. 15, 1967, J 16,377
Int. Cl. F16c *33/58*
U.S. Cl. 308—213 **2 Claims**



A roller bearing with cylindrical rollers comprising a thin-walled outer race formed without cutting provided with abutment flanges on both sides and a plurality of cylindrical rollers guided on the said race.

3,502,379
SIDE BEARING HOUSING
Orville Ingram, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 8, 1968, Ser. No. 751,294
Int. Cl. F16c *19/00*
U.S. Cl. 308—224 **4 Claims**

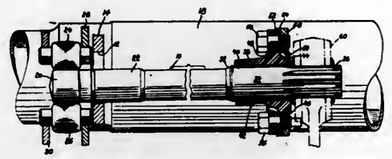


A self-clearing, self-centering side bearing structure having a composite housing formed by irregular rolled steel bulb angles united to the underside of a base portion by weld metal, said sides are relieved at the juncture of the sides and the top portion of the base member to avoid binding of the roller within the housing, said base portion at the distal ends are arcuate and conforming to the circumference of the roller forming in cooperation with the body bolster wear plate an effective limiting stop to avoid roller contact with the ends of the housing and damage to the ends under operating conditions.

3,502,380
BEARING STRUCTURE
Bernard Adinoff, Southfield, Mich., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,496
Int. Cl. F16c *27/00, 33/00*
U.S. Cl. 308—238 **17 Claims**

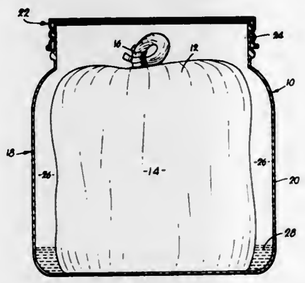
A dry bearing structure for brake cam shafts and the like in which the shaft has a synthetic plastic sleeve

(preferably of the thermoplastic acetal resin known as "Delrin") fixed thereto and that sleeve is journalled



within the bore of the synthetic plastic rigid support body (preferably formed of the polyamide resin nylon).

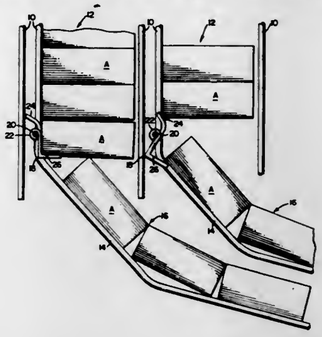
3,502,381
ARTICLE PACKAGE
Mary Mikel Stockwood Fish, 112 Kendall Road, Independence, Mo. 64050
Filed Apr. 1, 1968, Ser. No. 717,631
Int. Cl. B01f *3/06;* **B65d** *81/00*
U.S. Cl. 312—31 **4 Claims**



An article package comprising a bag formed of plastic material having the characteristics of permitting the passage of minute quantities of water when exposed to humid conditions for a relatively long time interval. A container larger than the bag receives the later and a quantity of water is received in the space between the container and bag to maintain a humid environment around the bag.

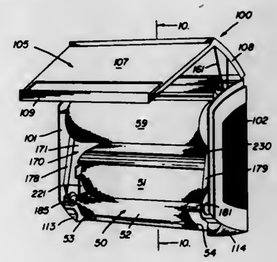
3,502,382
DISPENSING APPARATUS MECHANISM FOR SHIFTING ARTICLES FROM STORAGE TO DISCHARGE POSITION
Don E. Rainey, East Pompano Beach, Fla., assignor of forty-six percent to Don E. Rainey, fourteen and one-half percent to Melvin E. Hopstetter, twenty-three and one-half percent to Albert Florio, Americo Florio and George F. Florio, as co-tenants, one percent to Rufus H. NeSmith, five percent to John Serlo, all of Fort Lauderdale, Fla., two percent to Alfred F. Hall, six percent to A. J. Musselman, Jr., both of Pompano Beach, Fla., and two percent to Henry Grannemann, Deerfield Beach, Fla.
Continuation-in-part of application Ser. No. 614,768, Jan. 18, 1967, now Patent No. 3,433,545. This application Oct. 8, 1968, Ser. No. 765,936
Int. Cl. A47f *1/00*
U.S. Cl. 312—42 **6 Claims**

Improved substantially L-shaped transposer means pivotally supported for shifting articles from a vertical storage chute onto a downwardly inclined discharge trackway, the said transposer means having an arcuate camming surface in lieu of a spring for returning it from



inclined article discharge position to normal horizontal article engaging position.

3,502,383
TOWELING DISPENSER WITH LOOP CONTROL
Robert L. Steiner, Wilmette, and Erwin B. Bahnsen, Hinsdale, Ill., assignors to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada
Filed May 7, 1968, Ser. No. 727,157
Int. Cl. A47f *1/08*
U.S. Cl. 312—38 **34 Claims**

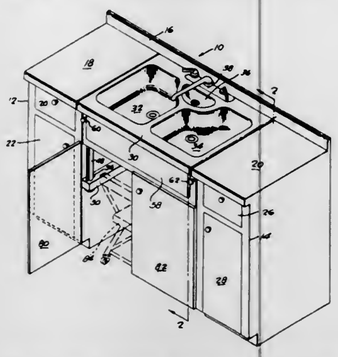


There is disclosed a toweling dispenser of the continuous type having a housing with a loop of toweling that extends along an exit path from a clean towel supply within the housing to an exposed use position accessible to a user, and thence along a return path to a soiled toweling storage position within the housing, the dispenser having drive mechanism interconnecting a dispensing mechanism and a take-up mechanism that takes up soiled toweling at a rate greater than that at which clean toweling is dispensed, and control mechanism responsive to the length of toweling in the loop for rendering the take-up mechanism temporarily ineffective when the length of toweling in the loop reaches a predetermined value, whereby to maintain substantially constant the average length of toweling in the loop at the exposed use position accessible to a user; there also are provided novel anti-milking devices and novel toweling braking devices.

3,502,384
ADJUSTABLE SINK WITH CABINETS
Ethel L. Gipson, Foley, Ala. (Rte. 1, Box 171, Elberta, Ala. 36530)
Filed Apr. 5, 1968, Ser. No. 719,150
Int. Cl. A47b *51/00;* **E03c** *1/18*
U.S. Cl. 312—228 **4 Claims**

In combination, a pair of cabinets each presenting an upper counter surface; a unitary sink structure slidably

mounted between said cabinets; spring means biasing said sink structure to an upward position with its upper surface flush with said cabinets; latch means operable from the



front of the sink means for locking said sink means in either upper or lower position and cabinet means below said sink means normally storing seating means when said cabinet is in its upper position.

3,502,385

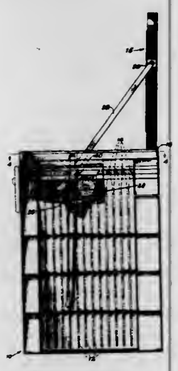
VERTICAL FILING CABINET COVER AND CONTROL MECHANISM THEREOF

Forest G. Stark, Jamestown, N.Y., assignor to Art Metal-Knoll Corporation, Chicago, Ill.

Filed May 3, 1968, Ser. No. 726,393

Int. Cl. B42f 7/06; A47b 63/00

U.S. Cl. 312—319 4 Claims



An improved cover counterbalancing mechanism and novel mounting arrangement thereof in an open top filing cabinet of the type adapted for vertically filing therein maps, blueprints, drawings or the like. Such devices employ relatively heavy covers hingedly mounted thereon for swinging upwardly to vertically standing "open" positions; and the present invention features an improved counterbalance mechanism and a novel mounting arrangement thereof in the cabinet wall structure whereby the counterbalance mechanism is more readily accessible for adjustment, repair, or replacement purposes; without necessitating any disturbances of the cabinet contents or requiring any dismantling of the cabinet structure.

3,502,386

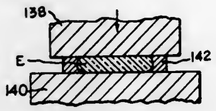
INFRARED TRANSMITTING ELEMENT

Eugene C. Letter, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Original application June 17, 1959, Ser. No. 821,040, now Patent No. 3,431,326, dated Mar. 4, 1969. Divided and this application July 31, 1964, Ser. No. 386,583

Int. Cl. G02b 1/00

U.S. Cl. 350—1 7 Claims



Disclosed is an infrared transmitting element consisting of a shaped body of an isotropic crystalline alkaline earth fluoride. The articles are characterized in that at 2 mm. thickness at least 50% of the radiation of a wavelength between 1 and 12 microns is transmitted.

3,502,387

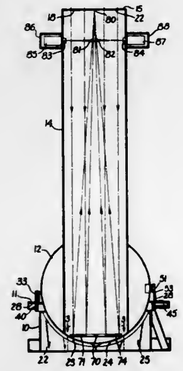
TELESCOPE SYSTEM

Emerson E. Hadley, Eau Gallie, Fla.; Doris J. Hadley, Eau Gallie, Emerson Rea Hadley, Titusville, and Joanne B. Long, Eau Gallie, Fla., heirs of said Emerson E. Hadley, deceased

Filed July 19, 1966, Ser. No. 566,321

Int. Cl. G02b 17/00, 21/24, 23/16

U.S. Cl. 350—55 9 Claims



A telescope having multiple primary mirrors whose fields of view overlap so that separate television cameras receive an image from each mirror and feed the optical information to either separate monitors for display, an overlaping display system providing a single image with a large field of view or a color display system. The mounting system of the telescope is a hollow sphere with an elongated portion extending therefrom; the sphere portion being in a center cavity with connecting drive cables for the smooth tracking of bodies in the skies.

3,502,388

OPTICAL DELAY LINE WITH IMAGE PRESERVATION

Donald J. Mary, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Army

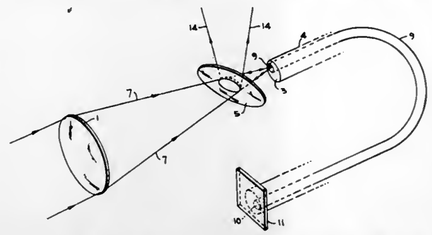
Filed Mar. 1, 1968, Ser. No. 709,645

Int. Cl. G02b 5/16

U.S. Cl. 350—96 3 Claims

A delay line for preserving an optical image having an incoherent fiber optical bundle which is arranged with one end in the plane of the image. Each fiber transmits the

light from the portion of the image that falls upon it and after traveling the length of the fiber the light is reflected by a mirror in optical contact with the far end of



the bundle. The reflected light reverses itself and travels back along the same fiber. The image emerging from the input end of the fiber bundle is deflected by a beam splitter.

3,502,389

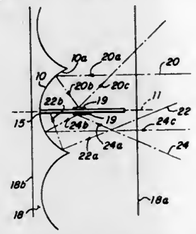
SCREEN FOR FRONT SURFACE PROJECTION

Edwin H. Hilborn, Framingham, Mass. (62 Boylston St., Boston, Mass. 02112)

Filed Dec. 5, 1967, Ser. No. 688,155

Int. Cl. G03b 21/56

U.S. Cl. 350—129 8 Claims



A screen for front surface projection having an intersecting array of light energy absorbing partitions and a plurality of discrete parabolic reflector elements. Each intersection of the partitions coincides with a principal axis of a parabolic reflector element and includes the focus of the parabolic reflector element. The partitions are light-absorbing except for a highly reflective area surrounding the focus. The entire structure may be embedded in a transparent material so as to present a substantially planar front surface to the viewer.

3,502,390

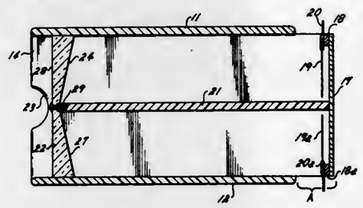
DENTAL STEREOSCOPE

Burdette B. Gilmore, Jr., 10511 E. Mary Katherine Drive, Scottsdale, Ariz. 85251

Filed Mar. 13, 1967, Ser. No. 622,783

Int. Cl. G02b 27/22

U.S. Cl. 350—133 6 Claims



A stereoscope for viewing a pair of dental X-ray frames picturing the same area taken from a pair of angles so as to provide a stereoscopic pair of frames. The stereoscope has adjustable X-ray frame holders adapted for binocular visual adjustment of the frame.

3,502,391

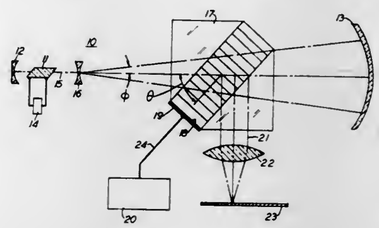
OPTICAL BEAM DEFLECTOR USING DIVERGING OR CONVERGING BEAMS

Ivan P. Kaminow, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 5, 1966, Ser. No. 599,255

Int. Cl. G02f 1/28

U.S. Cl. 350—161 8 Claims



An acoustic diffraction grating light deflector in which a focused optical beam and a plane acoustical beam interact in a suitable element which is positioned in an optical cavity resonant at the optical frequency.

3,502,392

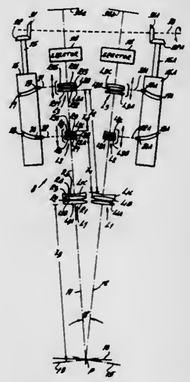
VARIABLE MAGNIFICATION STEREO OPTICAL SYSTEM

Robert M. Muller, Cheektowaga, N.Y., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware

Filed Feb. 9, 1968, Ser. No. 704,369

Int. Cl. G02b 15/14

U.S. Cl. 350—184 3 Claims

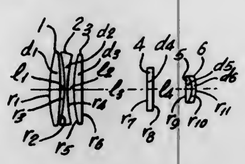


A continuously variable magnification stereo optical system including two identical optical sub-systems, the axes of which intersect at an acute angle. Along each axis there is one fixed lens element and two lens elements which are movable relative to one another and to the fixed lens element. Each lens element consists of a cemented doublet and a singlet. The particular characteristics of all the singlets and doublets, including their radii, thicknesses, refractive indices and dispersions, result in a system having well corrected aberrations over the entire magnification range while still achieving the desired continuously variable magnification function.

3,502,393
LENS SYSTEM WITH LARGE TELEPHOTO RATIO

Tomokazu Kazamaki and Tohru Matsumoto, Tokyo-to, Japan, assignors to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed Mar. 28, 1967, Ser. No. 626,583
Claims priority, application Japan, Apr. 5, 1966, 41/20,964
Int. Cl. G02b *9/60, 13/02, 11/30*
U.S. Cl. 350—216 1 Claim

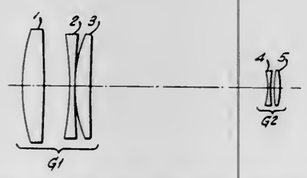


A telephoto lens system having a low telephoto ratio includes a first positive lens, a second negative lens, a third positive lens, a fourth positive lens, a fifth positive lens and a sixth negative lens, the fifth and sixth lenses being cemented together. The index of refraction of the sixth lens is less than that of the fifth lens, the focal length of the combined first three lenses is less than that of the lens system focal length f, the focal length of the first four lenses is less than $f/19$, the distance between the fourth and fifth lens is equal to or greater than $0.07f$ and the rear face of the fourth lens is convex and has a radius of curvature less than $3f$.

3,502,394
LENS SYSTEM OF LARGE TELEPHOTO RATIO

Koichi Kobayashi, Tokyo-to, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed Sept. 21, 1967, Ser. No. 669,444
Claims priority, application Japan, Sept. 26, 1966, 41/63,320
Int. Cl. G02b *9/60, 11/30, 13/02*
U.S. Cl. 350—216 1 Claim



A telephoto lens system of high telephoto ratio and in which the oblique aberration and axial aberration are well balanced comprises five lenses which are consecutively positive, negative, positive, negative and positive and satisfying the following conditions:

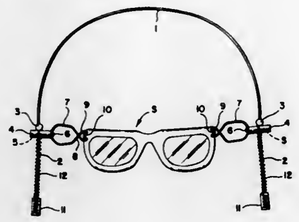
$$n_1,\ n_3<1.55$$
$$4F>|R_2|>1.2F$$
$$4F>R_6>2F$$
$$d_2>0.03F$$

wherein F is the focal length of the telephoto lens system, n_1 and n_3 are the refractive indices of the first and third lenses respectively, R_2 and R_6 are the radii of curvature of the rear faces of the first and third lenses respectively, the rear face of the first lens being convex, and d_2 is the distance between the rear face of the first lens and the front face of the second lens, the axial aberration and the oblique aberration of said lens system being balanced in a range from the paraxial image plane to —0.001F or in a positive range from the paraxial image plane.

3,502,395
ADJUSTABLE HOLDER

Gertie Henrietta Wretman, Gyllenstiernsgatan 4, Stockholm, and Axel Borje Pettersson, Gubbkarrsbacken 25, Bromma, both of Sweden

Filed Jan. 16, 1968, Ser. No. 698,187
Claims priority, application Sweden, Jan. 17, 1967, 647/67
Int. Cl. G02c *3/00*
U.S. Cl. 351—156 7 Claims

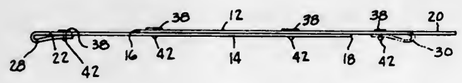


An adjustable holder or support device for spectacles for use when the spectacles cannot be normally supported by the ears. The device includes an arched frame fitting over the head of the wearer and including a pair of rod-like end portions. Adjusting members pivotably mounted on the end portions include gripping claws for gripping the templates of the spectacles. Coil springs surrounding the rod-like frame portions and compressed between the adjusting members and end stops formed on the rod-like frame portions, when released, to cause the frame to engage the head of a wearer.

3,502,396
NONSTRETCH ADJUSTABLE EYEGLASS HOLDER

Samuel Greenberg, Philadelphia, Pa. (Stump Road and Commerce Drive, Montgomeryville, Pa. 18936)

Continuation-in-part of application Ser. No. 736,309, June 12, 1968. This application July 24, 1968, Ser. No. 747,359
Int. Cl. G02c *3/00*; B65d *63/06*; A44b *17/00*
U.S. Cl. 351—157 2 Claims



An eyeglass holder comprised of a nonstretch adjustable strap to encircle a portion of the rear of the head whose ends can be adjustably looped about the temples so that the eyeglasses are held in place with a minimum of tension against the nose.

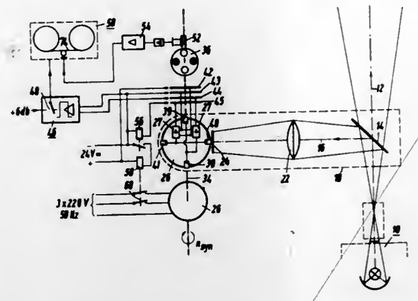
3,502,397
METHOD AND APPARATUS FOR CUTTING AND SPLICING PICTURE SYNCHRONIZED SOUND RECORDINGS

Otto Bühler, Bavaria, Germany, assignor to Riva film- und lichttechnische Betriebe GmbH., Unterfohring, near Munich, Germany

Filed Nov. 14, 1966, Ser. No. 594,010
Claims priority, application Germany, Nov. 19, 1965, R 42,026
Int. Cl. G03b *31/04*
U.S. Cl. 352—5 23 Claims

For accomplishing phase-coherent splicing of pilot-frequency controlled tape in post-synchronization a starter film is connected between the beginning and end of a film strip to form an endless loop. The starter film has light

and dark hands which are projected onto a plane being scanned by a pair of scanning photo diodes mounted at diametrically opposite points on a rotating cylindrical

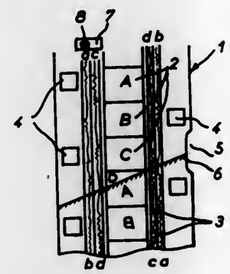


carrier. The signal produced by the photo diodes is phase-coherent with the pilot frequency and serves as a signal for locating the splicing point.

3,502,398
SOUND FILM

Charles Michelson, Paris, France, assignor to Teverama S.A., Lausanne, Vaud, Switzerland, a company of Switzerland

Filed Aug. 3, 1966, Ser. No. 570,027
Claims priority, application France, Aug. 9, 1965, 27,719
Int. Cl. G03b *31/00*; G03c *1/76*
U.S. Cl. 352—37 2 Claims



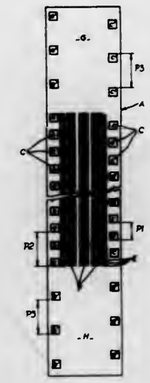
An endless cinematograph sound film formed into a Moebius band and bearing one or more rows of interlocked images belonging to different sequences. The images to be successively projected are separated by an interval comprising at least one image of another sequence. Corresponding sound tracks are provided for the different sequences. Two longitudinally extending rows of perforations extend along opposite edges of the film, one row of perforations being staggered with respect to the other row. The sound tracks and the perforation rows are symmetrically distributed about the longitudinal axis of the film.

3,502,399
CINEMATOGRAPHIC FILM

Charles Michelson, Paris, France, assignor to Teverama S.A., Lausanne, Vaud, Switzerland, a company of Switzerland

Filed Oct. 4, 1966, Ser. No. 584,160
Claims priority, application France, Oct. 6, 1965, 33,956; Feb. 25, 1966, 51,219; May 3, 1966, 60,089
Int. Cl. G03b *31/00*; G03c *1/76*
U.S. Cl. 352—37 4 Claims

A cinematograph film for use in a movie projector having a conventional drive dog or claw, the film bearing one or more rows of intercalated images belonging to different sequences. The images to be successively projected are separated by an interval comprising at least one image of another sequence, and the film has, in addition to a conventional body portion perforated at a standard pitch or interval for engagement by the drive claw, at least one

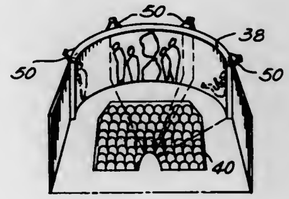


extension or end section having perforations differing in spacing from the standard pitch and so arranged that, under the action of the drive claw, the film is automatically shifted longitudinally through a distance equal to a sequence change shift.

3,502,400
METHODS OF CINEMATOGRAPHY

Benjamin Schlanger, 16 W. 16th St., New York, N.Y. 10011

Filed Oct. 26, 1966, Ser. No. 589,629
Int. Cl. G03b *21/13, 21/32*
U.S. Cl. 352—40 7 Claims



Methods and apparatus for cinematography providing a high level of visual impact, simulation of realistic visual experience and the effect of participation to the audience by projecting a series of images each of which comprises a high resolution psycho-physical focus region and diminished discernible detail outwardly thereof in plural positions on a screen providing a substantial total available image placement area fixedly positioned relative to an audience or viewer location.

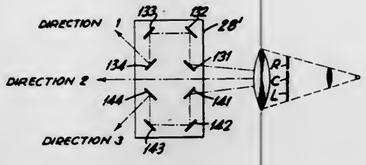
3,502,401
SIMULTANEOUS MULTIPLE-IMAGE DISPLAY

E Francis Thompson, 231 E. 51st St., New York, N.Y. 10022

Filed July 7, 1966, Ser. No. 563,498
Int. Cl. G03b *37/06*
U.S. Cl. 352—69 1 Claim

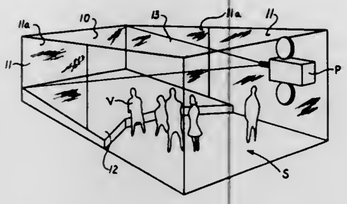
A photographic system for displaying several distinct moving pictures in a synchronized manner is described

wherein a master film has a plurality of at least three separate non-overlapping movie tracks stored thereon in longitudinal tracks parallel to the longitudinal dimension of the film which is projected by a lens system onto a screen to provide at least three images thereon. The film



is prepared by placing thereon a plurality of movie tracks in an anamorphic manner whereby the tracks are compressed in one dimension to enable their non-overlapping placement on the film. The placement of the tracks in one embodiment is accomplished by rotating the image 90° before storing onto the master film.

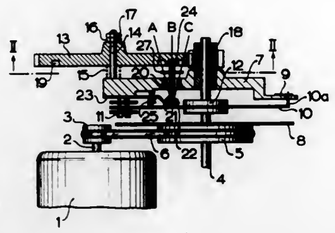
3,502,402
MULTIPLE IMAGE PROJECTION SYSTEM
Morley Markson, 167 Madison Ave., Toronto 5, Ontario, Canada
Filed Sept. 20, 1967, Ser. No. 668,998
Int. Cl. G03b *37/00*
U.S. Cl. 352—69 **9 Claims**



A projection system having a screen in a viewing chamber on which an image is projected from a projector to fill the screen and mirrors abutting on at least two of the edges of the screen arranged at selective angles around the screen extending towards a viewer from the screen. The image on the screen is repeated on the mirrors with a high order of definition, giving a resultant pattern of apparent or virtual images thereon and an appearance of an ultra-wide screen projection to the viewer.

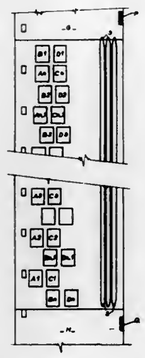
3,502,403
MOTION PICTURE PROJECTOR WITH FRAME FREQUENCY CONTROL
Wolfgang Riedel, Winnenden, Germany, assignor to Robert Bosch, Elektronik und Photokino G.m.b.H., Stuttgart-Unterturkheim, Germany
Filed July 26, 1967, Ser. No. 656,242
Claims priority, application Germany, May 2, 1967, B 88,458
Int. Cl. G03b *1/22*
U.S. Cl. 352—194 **12 Claims**

The in-and-out cam of the pulldown for motion picture projectors has several concentric cam faces tracked by one end of a follower the other end of which transmits motion to the pulldown lever. The follower is fulcrumed at its other end so that its one end can be moved into registry with a selected cam face. Each cam face can cause the pulldown lever to advance the film at a different



frequency independently of the shutter speed. The in-and-out cam derives motion from the drive for the shutter.

3,502,404
MOVIE FILM WITH MULTI-SEQUENCE STAGGERED IMAGES
Charles Michelson, Paris, France, assignor to Teverama S.A., Lausanne, Vaud, Switzerland, a company of Switzerland
Filed Feb. 3, 1967, Ser. No. 613,811
Claims priority, application France, Feb. 25, 1966, 51,218
Int. Cl. G03c *1/76;* **G03b** *31/00, 21/50*
U.S. Cl. 352—239 **6 Claims**

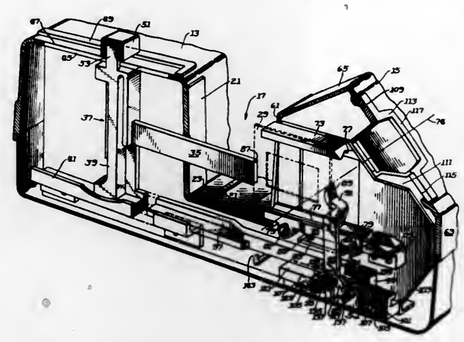


A motion picture film bearing several intercalated image sequences with images belonging to the same sequence designed to be projected in succession. The images are aligned in a row which does not extend parallel to the longitudinal axis of the film but at a small angle of inclination with respect to the axis, the successive images of a sequence having a slight mutual offset in the transverse direction besides being longitudinally spaced. A sound track is provided for each sequence.

3,502,405
SLIDE PROJECTOR WITH SLIDE EDITING CAPABILITY
Frank C. Badalich, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,868
Int. Cl. G03b *21/00, 23/04*
U.S. Cl. 353—21 **13 Claims**

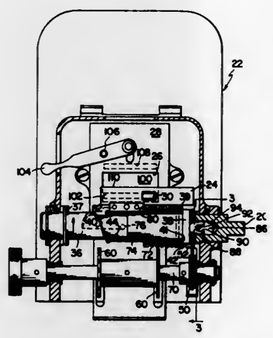
A slide projector with slide editing capability is provided with a slide transfer mechanism to move slides from a supply magazine into a projection station from

which a slide if oriented erroneously, may be removed manually and re-inserted without displacement of any carrier mechanism of the projector. The transfer mechanism includes a slide control arm which is movable



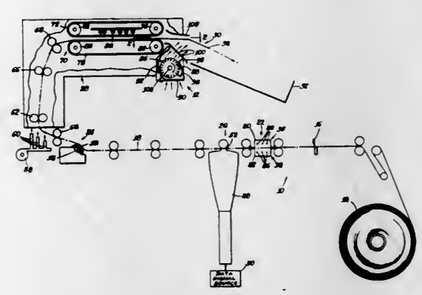
away from the frame of the slide as the slide moves into the projection station but returns to a slide control position to remove the slide from the station for return of the slide to the supply magazine.

3,502,406
PROJECTION READER
James Keith Macomber, Rockville Centre, N.Y., assignor to Consolidated Educational Publishing, Inc., a corporation of New York
Filed July 19, 1966, Ser. No. 566,349
Int. Cl. G03b *21/10*
U.S. Cl. 353—74 **51 Claims**



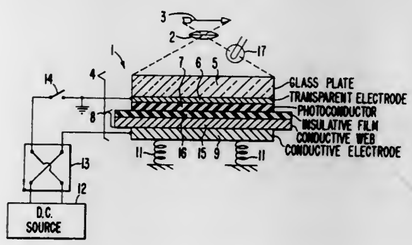
A projection reader used to project lines of reading material intermittently. The projection reader has a variable speed main drive mechanism to advance the film at various selected speeds and to traverse a screen mechanism, which has a window (or clear portion), forward along the projected lines of reading material. When the film is moved to its next position the screen mechanism is returned in the opposite direction simultaneously and substantially instantaneously, at speeds independent of the speed of the main drive mechanism. The main drive of the projector may advance the film at a steady adjustable speed past an aperture mask while a traversing screen cooperates to scan successive lines of reading material while the film passes the aperture mask. The projection reader may also project groups of words to be comprehended in eye fixations.

3,502,407
PNEUMATIC DELIVERY DEVICE
Daniel B. Granzow, Arlington Heights, and James B. Ellis, Chicago, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed July 26, 1967, Ser. No. 656,204
Int. Cl. G03g *15/00*
U.S. Cl. 355—3 **4 Claims**



A pneumatic delivery device for a fuser unit delivers a copy sheet bearing a developed and fused image into a receiving tray at the fuser's exit. An upwardly directed stream of air established by a blower impinges the backside of the copy sheet as it emerges from the exit thereby immediately cooling the sheet and maintaining the general horizontal movement of the sheet as the sheet crosses the span between the exit and tray.

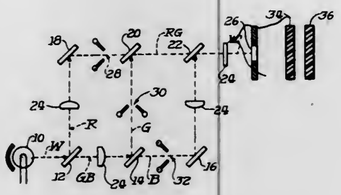
3,502,408
ELECTROPHOTOGRAPHY EMPLOYING A FILM HAVING A THIN CHARGE RETENTIVE COATING ON A CONDUCTIVE WEB
Ivor Brodie, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 5, 1966, Ser. No. 599,069
Int. Cl. G03g *13/00, 15/00*
U.S. Cl. 355—16 **5 Claims**



The present invention relates in general to electrophotography and, more particularly, to an improvement wherein the electrographic charge image to be developed is formed on a web having a thin dielectric charge retentive coating thereon, such web being preferably made of conductive paper, whereby the charge retentive coating may be made extremely thin for greater charge retention and improved contrast while facilitating handling of the web for development and viewing. Such an improved electrophotographic web is especially useful for, but not limited in use to, microfilm printers and oscilloscope

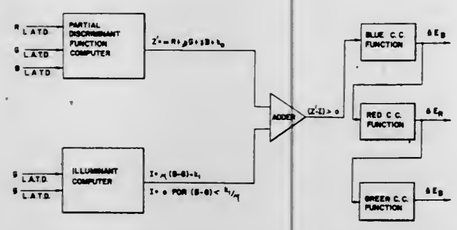
cameras of the electrophotographic type, whereby contrasting prints are obtained on an inexpensive and durable web material.

3,502,409
MALFUNCTION DETECTION SYSTEM FOR AUTOMATIC FILM PRINTERS
Andrew Balint, Park Ridge, and Willi G. Engel, Evanston, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 26, 1967, Ser. No. 641,532
Int. Cl. G03b 27/76, 27/04
U.S. Cl. 355—36 23 Claims



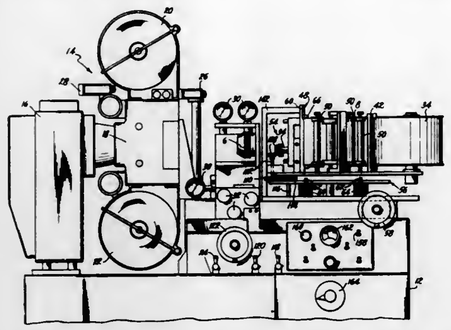
There is herein described a bar-type adder for adjustably controlling a vane or shutter which intercepts selectively predetermined portions of a film printer's light beam. A switching circuit including a plurality of reed switches is operative to instantly detect bar adder malfunctions thereby preventing the spoilage of vast quantities of film due to improper exposure.

3,502,410
APPARATUS AND METHOD FOR REDUCING EXPOSURE DETERMINATION ERRORS IN COLOR PRINTERS
James L. King, Gary E. Jones, and Edwin Uhrich, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 25, 1967, Ser. No. 633,523
Int. Cl. G03b 27/78
U.S. Cl. 355—38 6 Claims



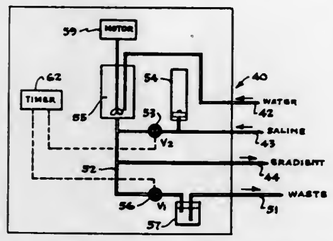
An apparatus and method of exposure determination for use in photographic color printing systems which reduces the exposure errors that are commonly encountered when the original subject matter contains a predominance of one color ("subject failure"). A statistical discriminant function of the large area transmission densities of the negative or transparency to be printed is used to predetermine the likelihood that this original will exhibit subject failure along some particular color axis. The magnitude of this discriminant function is an estimate of the degree of failure, and is used to compute proportionate amounts of correction to be applied in the determination of more nearly optimum red, green and blue exposures.

3,502,411
OPTICAL STEP PRINTER
Leon W. Wells, Closter, N.J., assignor to Panopix Research Inc., New York, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,682
Int. Cl. G03b 27/44
U.S. Cl. 355—54 5 Claims



A projector arranged to project successive frames from conventional moving picture film having a single row of picture frames arranged crosswise thereon onto a wider film to form multiple longitudinal parallel rows thereon with all frames extending longitudinally. The conventional film extends and always moves vertically downwardly while the wider film extends and moves horizontally so that successive frames in each row are side by side. After each row is exposed on the wide film its direction of movement is reversed and it is stepped upwardly to receive another row of exposures parallel to and immediately below the previous row but with the action progressing in the opposite direction.

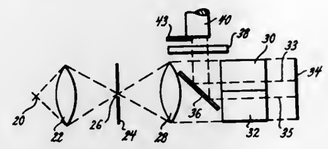
3,502,412
METHOD AND APPARATUS FOR MEASURING OSMOTIC FRAGILITY OF RED BLOOD CELLS BY CONSTANTLY REDUCING THE CONCENTRATION OF THE SALINE SOLUTION SUSPENDING THE CELLS
Donald A. Burns, Kenosha, Wis., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Oct. 16, 1967, Ser. No. 675,414
Int. Cl. G01n 33/16
U.S. Cl. 356—40 8 Claims



A method for automatically determining the osmotic fragility of red blood cells by continually admixing a stream of red blood cells with a stream of saline solution gradient of continually changing salt concentration to produce a suspension of the cells in the gradient and then measuring the light transmission through the suspension to determine the osmotic fragility. At the same time that red blood cells are being added to the stream of saline solution ensuing from a mixing vessel, the salt concentration of the saline solution in the mixing vessel is continually being decreased by withdrawing solution

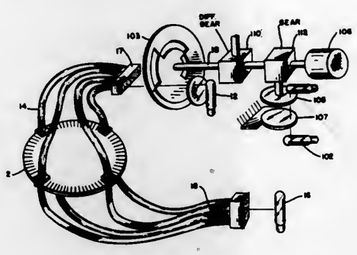
while simultaneously adding water. By varying the rate of saline solution withdrawal in comparison to water addition, a preselected salt gradient may be maintained.

3,502,413
APPARATUS FOR PRODUCING A DISPLAY OF THE TRANSMISSION OR REFLECTION CHARACTERISTICS OF A SAMPLE BY COMPARISON WITH A STANDARD
Gene E. Lightner, University City, Mo. (R.D. 1, Unionville Road, Kennett Square, Pa. 19348)
Filed Dec. 23, 1965, Ser. No. 515,963
Int. Cl. G01j 3/42; G01n 21/22, 21/48
U.S. Cl. 356—84 19 Claims



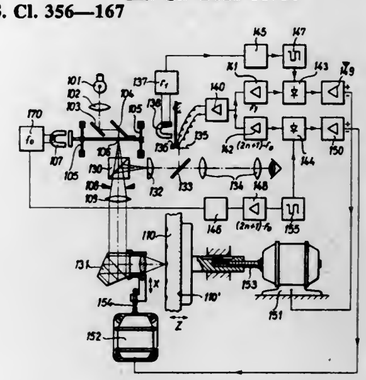
A sampled data control system has a read out on which it establishes and displays a voltage-fixed dark level line which can be considered to represent a zero percent transmission or reflection level, establishes and displays a voltage-fixed reference line which can be considered to represent a one hundred percent transmission or reflection level, and displays an intermediate trace which represents the spectrum of the radiation transmitted through or reflected from a sample.

3,502,414
OPTICAL ELECTRIC SYSTEM
Kurt H. Kreckel, Penfield, Erwin G. Loewen, East Rochester, and Robert J. Meltzer, Irondequoit, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 275,540, Apr. 25, 1963. This application Aug. 8, 1967, Ser. No. 659,108
Int. Cl. G01b 11/26
U.S. Cl. 356—152 18 Claims



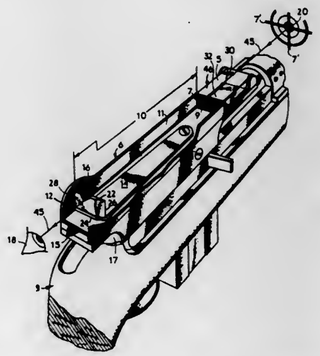
Apparatus for accurately measuring movement including a scale mounted for movement with respect to a plurality of reticles arranged in optical series with the scale and having a positional phase shift between various reticles and the markings on the scale thereby defining a plurality of light valves. Radiation is sequently directed from a single light source through the plurality of light valves to a single photosensor. The photosensor generates an electrical signal, the phase of which changes with the position of the scale. The phase relation between the electrical signal and a reference signal is maintained substantially constant to provide an indication of the position and/or movement of the scale.

3,502,415
OPTICAL MEASURING INSTRUMENT FOR MEASUREMENTS IN TWO COORDINATE DIRECTIONS
Fromund Hock, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Continuation-in-part of application Ser. No. 541,645, Apr. 11, 1966. This application July 7, 1966, Ser. No. 563,543
Claims priority, application Germany, July 24, 1965, L 51,213
Int. Cl. G01b 11/28
U.S. Cl. 356—167 5 Claims



An optical measuring instrument for determining the position of an object of measurement in two coordinates simultaneously. A cyclically moving image of a scanning mark such as a transilluminated optical slit is projected onto the object of measurement or a target secured thereto (e.g., a transparent scale) and after reflection of the incident rays conveying the image of said mark from the object or target the dissymetry of light distribution in a pupil in the path of the reflected rays caused by the position of the object of target is determined by means of a circuit comprising two stationary photoelectric cells or one cell which is alternately exposed to two halves of the pupil.

3,502,416
SIGHTING DEVICE
Glenn E. Rickert, Community State Bank Bldg., Huntington, Ind. 46750
Continuation-in-part of application Ser. No. 356,403, Apr. 1, 1964. This application Apr. 12, 1965, Ser. No. 447,483
Int. Cl. G02b 23/10
U.S. Cl. 356—251 1 Claim



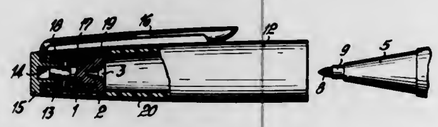
An optical sighting device is disclosed which includes a rear sighting element consisting of a periscopic optical element; and a front sighting element consisting of light

transmitting indicia on an otherwise opaque and darkened face. The face is lighted from behind by a fluorescent material which in turn is energized by ambient incident light causing the indicia to appear in a vivid contrasting color to an observer. The front sighting element is viewed through the periscopic optical element while a target is viewed over an edge of the periscopic optical element, thus allowing the user to superimpose target and indicia for the purpose of aligning the sight.

3,502,417
ARRANGEMENT FOR IMPROVING THE WRITING PROPERTIES OF FIBER-POINT PENS AND THE LIKE

Heinrich Hartmann, Hannover, Germany, assignor to Geha-Werke GmbH, Hannover, Germany

Filed Nov. 3, 1967, Ser. No. 680,420
Claims priority, application Germany, Nov. 7, 1966, G 48,380; Dec. 24, 1966, G 48,850
Int. Cl. B43k 9/00
U.S. Cl. 401—202 6 Claims

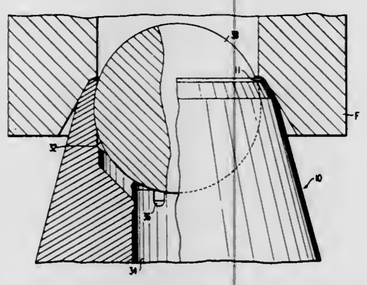


The invention provides an improved fiber-point pen and the like with which a point former containing a cavity is associated. The cavity comprises two different coaxial coned sections of which the inner apical section serves to reshape the writing point of the writing utensil when the same is not in use and when its protective cap is screwed on or off.

3,502,418
HEAT-TREATED BERYLLIUM COPPER TIP FOR A BALL-POINT WRITING INSTRUMENT AND THE METHOD OF PRODUCING SAME

William B. Payne, College Park, Ga., assignor to Scripto, Inc., a corporation of Georgia

Filed Nov. 16, 1967, Ser. No. 683,533
Int. Cl. B43k 7/00
U.S. Cl. 401—215 3 Claims

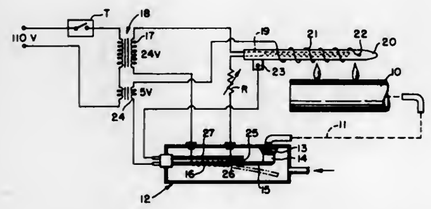


This invention relates to a new improved ball tip for ball-point writing instruments and a method for producing same. The ball tip of the present invention is made of a heat-treated beryllium copper and incorporates a tungsten carbide ball of a mirror finish. In addition to the conventional steps utilized in producing a ball tip for a ball pen, the method of the present invention incorporates the uniqe steps of shaping the metal around the ball by a forming tool prior to a spinning operation utilized to free the ball and then subjecting the completed ball tips to an atmospherically controlled heat treatment operation. The ball tip of the present invention renders a greatly improved wear resistant construction having an initially established controlled clearance between the ball and housing thereby rendering an initially intense ink deposit which does not increase to any extent during use due to the wear resistant properties of the housing.

3,502,419
FLAME-PROVING IGNITION SYSTEM FOR GAS BURNERS

Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio

Filed Nov. 3, 1967, Ser. No. 680,458
Int. Cl. F23n 5/00
U.S. Cl. 431—66 7 Claims

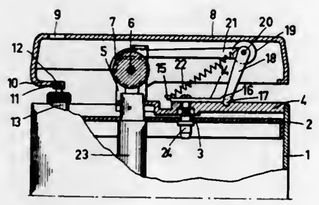


A gas burner ignition system using a hot wire ignitor in association with a control thermistor, the ignitor being initially heated electrically to the ignition temperature for the burner fuel and heating the thermistor to lower the resistance of the same. When the ignitor is at operating temperature, the decrease in the thermistor resistance is used to open the fuel supply valve to the burner; after a short interval following the fuel supply, the electric heating of the ignitor is interrupted so that the thermistor will be held at its elevated control temperature only if the burner has ignited and generates sufficient heat.

3,502,420
GAS-FUELED LIGHTER

Martin Grünbacher, Offenbach am Main, Germany, assignor to Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany, a German firm

Filed Apr. 8, 1968, Ser. No. 719,439
Claims priority, application Germany, Apr. 7, 1967, R 45,709
Int. Cl. F23q 1/04
U.S. Cl. 431—254 5 Claims



The invention relates to a gas-fueled lighter having mechanical ignition means for igniting the fuel consisting of a one-piece operating member covering the top face of the lighter. This operating member controls opening and closing of the burner valve and drives an abrasive wheel for effecting sparks for igniting the flow of fuel thereby causing a flame emerging through an aperture within the operating member.

CHEMICAL

3,502,421
DYEING OR PRINTING SYNTHETIC POLYAMIDE MATERIALS AND THE MATERIALS DYED OR PRINTED BY THIS PROCESS

Donald Keighley Clough, Bolton, Bradford, England, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Nov. 4, 1966, Ser. No. 591,960
Claims priority, application Great Britain, Nov. 8, 1965, 47,192/65
Int. Cl. D06p 5/02
U.S. Cl. 8—4 8 Claims

Wet fastness properties of dyeings with water-soluble dyestuffs containing at least one primary or secondary amino group are improved by after-treating the dyeings with a polyhalogenoquinone.

3,502,422
DYE-BATH TREATMENT FOR POLYMERIC ARTICLES

Robert Miller, Columbia, S.C., and Milton Farber, Verona, and Daniel Shichman, Cedar Grove, N.J., assignors to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,076
Int. Cl. D06p 3/02, 5/00
U.S. Cl. 8—4 31 Claims

The present invention relates to a process for dyeing an article shaped from a polymeric composition comprising an inherently undyeable polymer selected from the class consisting of polyolefins or polyesters in admixture with from 0.5 to 10% of a thremoplastic basic nitrogen containing dye receptor polymer, said process comprising exposing said article to an aqueous dye bath containing an anionic dye and a sufficient quantity of selected acids which render the article dyeable with said anionic dye.

3,502,423
CHLORINATED OR BROMINATED DIAMINO-DIHYDROXY-ANTHRAQUINONES AND MIXTURES THEREOF

Paul Buecheler, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 1, 1967, Ser. No. 619,551
Claims priority, application Switzerland, Mar. 4, 1966, 3,152/66
Int. Cl. C09b 1/56; D06p 3/54
U.S. Cl. 8—25 8 Claims

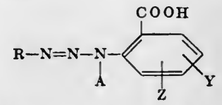
Disperse dyestuffs of the diamino-dihydroxyanthraquinone-series in which the molecules are substituted, on the average, by 1.2 to 2 mercapto groups and 1.5 to 2 chlorine or bromine atoms. Polyester, polyamide and cellulose triacetate fibers are a dye with mixture of these dyes or with a single dye in the dispersed dyeing process.

3,502,424
PROCESS FOR THE PRODUCTION OF WATER-INSOLUBLE AZO DYESTUFFS ON TEXTILE MATERIAL OF CELLULOSE OR PROTEIN FIBERS

Hasso Hertel and Werner Kirst, Offenbach am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,191
Claims priority, application Germany, Mar. 28, 1964, F 42,458; Dec. 12, 1964, F 44,682; Feb. 19, 1965, F 45,283; Feb. 20, 1965, F 45,301
Int. Cl. D06p 1/02, 5/18
U.S. Cl. 8—45 3 Claims

Production of water-insoluble azo dyestuffs on textile materials of cellulose or protein by treating the textile in an alkaline bath containing (1) a coupling component highly substantive for the textile, (2) an alkali metal or alkaline earth metal salt of a diazoamino compound of the formula:



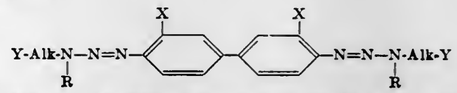
wherein R represents the radical of an aromatic amine having a dissociation constant of $<1.10^{-10}$, A represents lower molecular weight alkyl, hydroxyalkyl or carboxyalkyl, Y represents hydrogen, halogen, nitro, carboxylic acid, sulfonic acid, alkylsulfonyl, aralkylsulfonyl, sulfonic acid aryl ester and sulfonic acid mono or dialkylamide wherein the alkyl groups may be substituted or closed to form a heterocyclic ring, and Z represents a hydrogen or halogen atom, (3) a wetting or dispersing agent and, if desired, a mineral salt, and then causing formation of the dyestuff by a treatment with an acid agent at temperatures below 40° C. without intermediate drying of said textile material.

3,502,425
PROCESS FOR THE PRODUCTION OF WATER-INSOLUBLE AZO-DYESTUFFS ON TEXTILE MATERIALS CONSISTING OF CELLULOSE FIBERS OR NATURAL SILK

Hasso Hertel and Werner Kirst, Offenbach am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 20, 1965, Ser. No. 473,481
Claims priority, application Germany, July 31, 1964, F 43,627
Int. Cl. D06p 3/68
U.S. Cl. 8—45 2 Claims

The production of water-insoluble azo-dyestuffs on textile materials of cellulose fibers or natural silk by treating the textile material in an alkaline bath containing (1) an aryl amide of the 5-hydroxy-1,2,1',2'-benzocarbazole-4-carboxylic acid, (2) a tetrazo-amino compound of the formula:



wherein X represents hydrogen, lower alkyl or lower alkoxy, R represents lower alkyl, Alk represents alkylene having 1 or 2 carbon atoms and Y represents the grouping —COOMe or —SO_3Me wherein Me stands for the monovalent radical of an alkali metal or alkaline earth metal, (3) a wetting or dispersing agent and, optionally, (4) inorganic or organic salts, and subsequently forming the dyestuff in the same bath, without intermediate drying by treatment with acid agents at a temperature below 40° C.

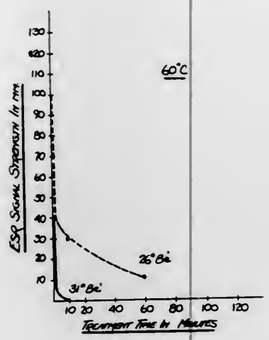
3,502,426
TREATMENT OF TEXTILE MATERIALS WITH RADIATION AND CAUSTIC ALKALI

Hans Krässig, Fritz Münzel, and Hans-Joerg Schenkel, Schwerzenbach, Switzerland, assignors to Heberlein Patent Corporation, New York, N.Y., a corporation of New York

Filed Mar. 3, 1965, Ser. No. 436,810
Claims priority, application Switzerland, Mar. 13, 1964, 3,272/64
Int. Cl. D06m 1/00
U.S. Cl. 8—116 8 Claims

1. A process for removing excess energy which comprises subjecting a cellulosic textile material selected from

the group consisting of native cellulose and regenerated cellulose to ionizing radiation in an amount not greater than about 10^7 rad and treating the irradiated textile material for from about five to about twenty minutes



in an aqueous alkaline bath containing from about 4 to about 9 N alkali-metal hydroxide when said material is native cellulose and from about 2.5 to about 5 N alkali-metal hydroxide when said material is regenerated cellulose.

3,502,427

PROCESS FOR THE PRODUCTION OF ADSORBENT CARBON AND REMOVAL OF SULFUR DIOXIDE, SULFUR AND NITROGEN OXIDES FROM GASES

Friedrich Johswich, Essen, Germany, assignor to Chemieban Dr. A. Zieren G.m.b.H. & Co. KG, Cologne, Germany, a German company

No Drawing. Filed July 13, 1965, Ser. No. 471,742

Claims priority, application Germany, July 15, 1964, R 38,382

Int. Cl. C01b *31/08*; B01d *53/02*

U.S. Cl. 23—2 **6 Claims**

A process for the production of an activated carbon for removal of sulfur, sulfur oxide or nitrogen oxide from a gas stream and a process for removing these components from the gas stream wherein an acid residue of petroleum refining, treated with sulfuric acid, is subjected to coking at 300° C. to 600° C. to form an acid coke which is heat-treated in the absence of air at 800° C. to 1000° C. to increase porosity and absorptive capacity. The adsorptive capacity of the substance is increased further by subjecting it to at least four adsorption-desorption cycles wherein the acid coke is used to adsorb sulfur oxides from a gas stream at a temperature below 200° C. and the adsorbed materials are desorbed therefrom at a temperature above 300° C.

3,502,428

PURIFICATION OF GASES

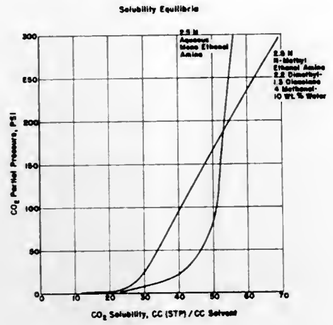
Abraham P. Gelbein, Plainfield, William G. Lloyd, Dover, and Benjamin J. Luberoff, Summit, N.J., assignors to The Lummus Company, Bloomfield, N.J., a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,246

Int. Cl. B01d *47/00*

U.S. Cl. 23—2 **19 Claims**

Acid gases are removed from gaseous streams by contact with a solvent comprising (a) a 1,3-dioxo heterocyclic compound having a ring of from 5 to 6 members including two oxygen atoms bonded to a common carbon atom and (b) an alkanolamine.



3,502,429

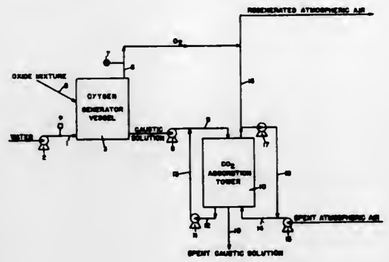
REGENERATION OF AN ENCLOSED ATMOSPHERE

Burton H. Sanders, Brookline, Mass., assignor to Ionics, Incorporated, Cambridge, Mass.

Filed Apr. 2, 1965, Ser. No. 445,197

Int. Cl. A61l *9/10*; B01d *53/00*

U.S. Cl. 23—4 **4 Claims**



The invention is directed to a process for regenerating exhaled air. The process comprises dissolving compacted pellets or bars of metal higher oxides in water to allow the generation of oxygen gas and the formation of a caustic solution. The CO_2 content of the exhaled air is removed by absorption on the caustic solution, the resulting air then being added to the generated oxygen gas for rebreathing of the same.

3,502,430

PROCESS FOR PREPARING AMMONIUM PERCHLORATE

Joseph Sanlaville, Pierre-Benite, France, assignor to Ugine Kuhlman, Paris, France, a French company

No Drawing. Filed Mar. 28, 1967, Ser. No. 626,392

Claims priority, application France, Mar. 29, 1966, 55,308

Int. Cl. C01b *11/18*

U.S. Cl. 23—85 **5 Claims**

Ammonium perchlorate is prepared by reacting sodium perchlorate with a stoichiometric amount of ammonium sulfate in an anhydrous ammonia under superatmospheric pressure and at an ambient temperature. The amount of liquid ammonia used is sufficient to provide a final ammoniacal solution containing about 10% to 55% of ammonium perchlorate.

3,502,431

PROCESS AND REACTANTS FOR THE PREPARATION OF AMMONIA AND HYDROCHLORIC ACID FROM AMMONIUM CHLORIDE

Andre Steinmetz, Aubervilliers, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Paris, France

No Drawing. Filed June 22, 1966, Ser. No. 559,387

Claims priority, application France, July 2, 1965 23,200

Int. Cl. C01b *7/08, 7/12*

U.S. Cl. 23—154 **10 Claims**

1. A two-step process for the production of ammonia and hydrochloric acid from ammonium chloride, comprising as a first step, bringing ammonium chloride into reactive contact with a reactive mass comprising an element selected from the group consisting of Cu, Ni and Co, whereby the metal is converted to a chloride by reaction with the chlorine liberated from the ammonium chloride, and ammonia and hydrogen are liberated, collecting the ammonia, and as a second step, contacting the chlorided reaction mass with a stream of reducing gas, to re-convert the metal chloride thereof to the metallic state and hydrochloric acid is released, and collecting the hydrochloric acid.

3,502,432

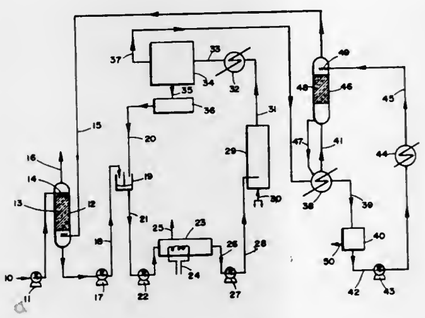
RECLAMATION OF SPENT HYDROCHLORIC ACID

Carl W. Phelps, Miami, Fla., assignor to Ross Engineering Co., Inc., Miami, Fla., a corporation of Florida

Filed Sept. 9, 1968, Ser. No. 758,490

Int. Cl. C01b *7/08*

U.S. Cl. 23—154 **2 Claims**



The process of regenerating spent hydrochloric acid which contains ferrous chloride in aqueous solution with or without hydrochloric acid consisting of the bringing of same into intimate contact in an absorber with gaseous combustion products discharged from a second absorber, forming condensed hydrochloric acid which is then mixed with iron oxide particles to form appropriate chlorides, concentrating the chlorides and percolating combustion products through the chlorides, then cooling the mixture and removing the iron oxide therefrom and mixing hydrochloric acid produced by the second absorber in a heat exchanger to form hydrochloric acid of certain strength, a portion of which is drawn off, cooled and directed to the second absorber and brought into intimate contact with combustion products having hydrogen chloride therein, the hydrochloric acid combining with the hydrogen chloride and being drawn off and discharged into the heat exchanger to form concentrated hydrochloric acid of desired degree.

3,502,433

PREPARATION OF NITRIC ACID

Jean-Marie Lerolle, Paris, and Serge Hardouin, Lyon, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Paris, France, and Pintsch Bamag Aktiengesellschaft, Berlin, Germany

Filed Sept. 9, 1965, Ser. No. 486,058

Claims priority, application France, Sept. 10, 1964, 987,707

Int. Cl. C01b *21/40, 21/26*

U.S. Cl. 23—162 **1 Claim**

The oxidation of ammonia produces products which are cooled by the gaseous effluent of an absorption-oxidation tower, are suddenly chilled below the dew point, producing weak HNO_3 and NO, the NO is oxidized to NO_2 and medium HNO_3, the NO_2 is put into the base of the column, the medium HNO_3 is put into the column thereabove, and the weak HNO_3 is put into it at a higher level. The effluent used in cooling the products of ammonia oxidation drive a compressor which produces hot air to to heat the ammonia, mixes with the concentrated HNO_3 from the tower to sweep out unabsorbed gases and coloring matter, and is injected into the oxidation of NO gas. The acid is over 70% HNO_3. The process uses all water formed by its reactions in the acid, adds only enough water to attain the selected concentration, discharges no water, operates at medium pressure of 3.5 to 4.5 atm. abs. The apparatus is novel but not claimed in this patent application.

3,502,434

PROCESS AND APPARATUS FOR REMOVING MERCURY FROM CAUSTIC SODA SOLUTIONS

John Buchanan MacMillan, Cornwall, Ontario, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 27, 1967, Ser. No. 626,238

Claims priority, application Canada, Apr. 22, 1966, 958,679

Int. Cl. C01d *1/28*

U.S. Cl. 23—184 **13 Claims**

A process and apparatus for removing mercury from a mercury cell caustic soda liquor whereby the crude liquor is allowed to pass in a generally upward direction through a composite bed of particulate material selected from polyethylene shreds, polytetrafluoroethylene shreds, graphite, charcoal and activated carbon and pieces of a metal selected from nickel, stainless steel and tantalum. Caustic soda solutions are obtained containing as low a concentration of mercury as 0.1 p.p.m. and 75% of the mercury suspended in the crude caustic liquor can be recovered.

3,502,435

METHOD FOR THE QUALITATIVE IDENTIFICATION OF ISOBUTYLENE RUBBER

Panagiotis L. Panagoulias, Highland Park, Mich., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Mar. 2, 1967, Ser. No. 621,107

Int. Cl. G01n *33/44*

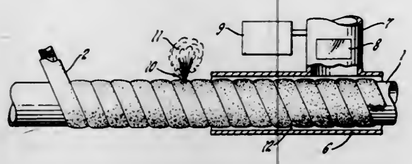
U.S. Cl. 23—230 **11 Claims**

A method for the qualitative identification of isobutylene rubber comprising the steps of dissolving a test sample in 2,2,4-trimethylpentane; simultaneously oxidizing said sample with an aqueous alkaline permanganate; and reacting said test sample with nitric acid; said method yielding a color producing oxonium salt when said test sample contains isobutylene rubber.

3,502,436
LEAK VISUAL WARNING AND DETECTION DEVICE

Charles T. Hoover and Rowland L. Stedfeld, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,842
Int. Cl. G01m *3/00, 3/12, 3/22*
U.S. Cl. 23—253 3 Claims

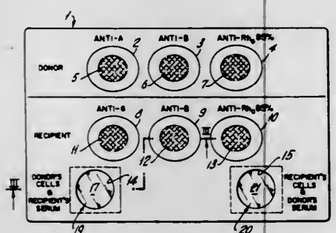


A leak-detection device including a tape-like material which is applied to a conduit. The tape is composed of an outer envelope around an inner absorbent material which is saturated with a substance which, when reacted with the substance conveyed in the conduit, provides a visual indication of that reaction, and hence the occurrence of a leak in that conduit.

3,502,437
IDENTIFICATION CARD

Morris Mass, Kew Gardens, N.Y., assignor to Haematronics, Inc., New Rochelle, N.Y., a corporation of New York

Filed Mar. 13, 1967, Ser. No. 622,558
Int. Cl. G01m *33/16, 31/02*
U.S. Cl. 23—253 9 Claims



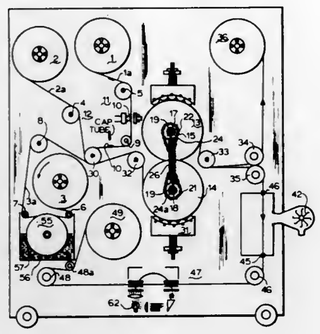
An identification card, including means for indicating information relating to blood, and wherein a flat member having indicia on one surface thereof corresponding to an analysis of blood, together with means for comparing said analysis to a donor of said blood, are provided. The identification card includes means for preserving such information.

3,502,438
AUTOMATED TAPE CHEMICAL ANALYZER

Samuel Natelson, Chicago, Ill., assignor to Scientific Industries, Inc., Hempstead, N.Y.

Filed Nov. 13, 1967, Ser. No. 682,063
Int. Cl. G01n *33/16*
U.S. Cl. 23—253 15 Claims

A device for automatic chemical analysis having two drums, which are spring loaded. The drums move in opposite direction and move a multiple tape combination. The two drums are rotated by a positive drive mechanism so that they move at a definite predetermined rate of speed. The tapes are contained on payoff reels which are to be moved at the constant rate of speed. Guide rollers and collecting means bring the tapes together in alignment before passing these tapes through a point of contact of the drums. Past the point of contact, distributing means separate the tapes after a definite time of contact and take-up means collect the tapes. A sample is dispensed on one of the tapes at a sample dispensing

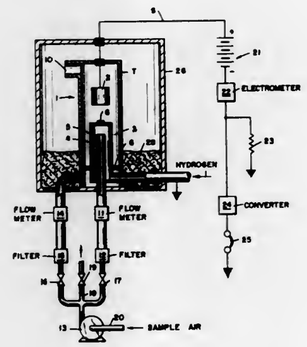


station. This sample is transferred to another tape by passing the tapes through the two drum arrangement. This transfer provides a sample spot which can be read by electric reading means located at a reading station just before the take-up reel of the tape to which the sample has been transferred.

3,502,439
PORTABLE GAS-LEAK DETECTOR

Donald Reece, Lower Bebington, Leonard F. Creaser, Neston, and George J. Boyle, Thornton Hough, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 13, 1967, Ser. No. 653,146
Claims priority, application Great Britain, Dec. 19, 1966, 56,731/66
Int. Cl. G01n *27/62, 31/12*
U.S. Cl. 23—254 3 Claims

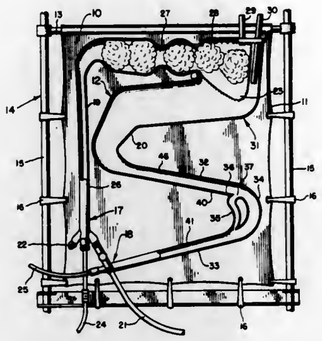


A portable apparatus for detecting small leaks in buried gas mains using a flame-ionization detector to detect the trace amounts of the escaping gases. A pump is used to collect a sample of the atmosphere that is then used to support the combustion in the detector and sweep the combustion products from the detector. A small tank of hydrogen is mounted on apparatus to supply the combustion gas for the detector.

3,502,440
BLOOD OXYGENATOR

Douglas L. Tompkins, Evanston, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,890
Int. Cl. A61m *1/03*
U.S. Cl. 23—258.5 3 Claims

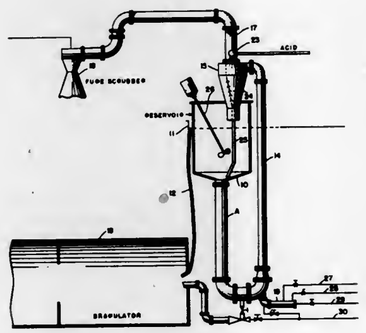


A blood oxygenator of the "bubble" type including a gas bypass conduit which connects angularly disposed upper and lower sections of a gas stripping chamber arranged for downward flow of oxygenated blood to provide an escape path for undissolved gas, said gas bypass conduit being S-shaped and having opposite end openings facing downstream of the path of blood flow in the gas stripping chamber.

3,502,441
APPARATUS FOR NEUTRALIZING ACIDS WITH AMMONIA

John W. Hudson, Atlanta, Ga., assignor, by mesne assignments, to United States Steel Corporation, a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 596,903
Int. Cl. C05b *1/10*
U.S. Cl. 23—259.1 1 Claim

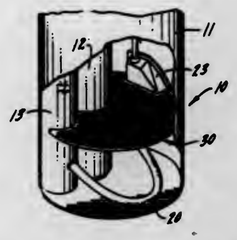


This invention relates to apparatus for neutralizing acids, such as phosphoric, sulfuric, nitric, or combinations of these with ammonia, and the invention is particularly useful for increasing the production rate of high nitrogen fertilizers. The apparatus includes a cyclone separator which may be supported above a reservoir for discharging into the reservoir and a slurry recycle conduit communicating with the lower portion of the reservoir and cyclone separator and providing a generally vertical reaction leg which extends upwardly and discharges tangentially into the separator, means being provided for introducing into the bottom of the vertical leg acid and ammonia whereby the heat of reaction generates steam which propels the slurry upward and onto the walls of the separator.

3,502,442
SALT PLATFORM AND SEAL ARRANGEMENT

Donald S. Campbell, North St. Paul, and Raymond A. Tessier, White Bear, Minn., assignors to Union Tank Car Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 19, 1968, Ser. No. 785,147
Int. Cl. B01f *1/00*
U.S. Cl. 23—272.6 1 Claim

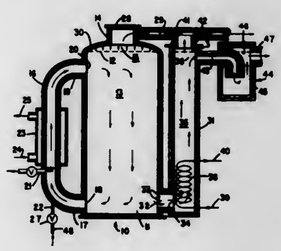


A salt plaform and seal arrangement for retaining a salt bed in the brine drum of a water conditioning system. The plaform and the seal are formed unitarily of plastic. The seal comprises a flexible gasket edge formed in sections which flex individually to adapt to wall configuration. A narrow, particle tight seal is established in the brine drum by merely inserting the platform; subsequently the platform is easily removed.

3,502,443
CHLORINE DIOXIDE GENERATOR

Gothe O. Westerlund, Vancouver, Canada, assignor to Chemech Engineering Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Filed Oct. 6, 1966, Ser. No. 584,736
Claims priority, application Canada, Sept. 6, 1966, 969,582
Int. Cl. B01j *7/02*
U.S. Cl. 23—282 15 Claims



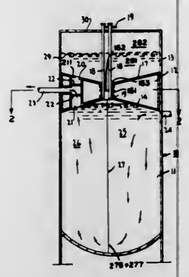
A chlorine dioxide generator comprising in combination a vertically disposed primary reactor, combined liquor circulating and material feed means attached thereto, a vertically disposed secondary reactor connected near its lower end to said primary reactor, gas collecting means at the top of each reactor, a gas outlet from each gas collecting means, and liquor outlet means from the secondary reactor. Each of the reactors has an upper gas outlet zone which is provided with a frangible explosion cover. The liquor outlet means from the secondary reactor includes a liquor seal.

3,502,444

REACTION VESSEL FOR LIQUIDS CONTAINING ENTRAINED GASES

Gothe O. Westerlund, Vancouver, British Columbia, Canada, assignor to Chemech Engineering Ltd., Vancouver, British Columbia, Canada

Filed Mar. 3, 1967, Ser. No. 620,419
Claims priority, application Canada, Oct. 6, 1966, 972,276
Int. Cl. B01d *19/00*
U.S. Cl. 23—285 10 Claims



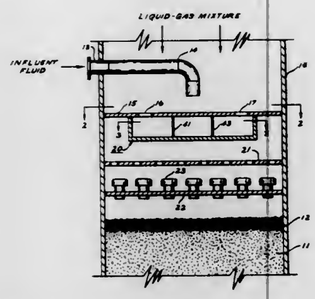
The vessel includes a main reaction chamber having liquor inlet means, liquor outlet means and gas outlet means. The vessel also includes both a surge tank and a gas collector. Means are provided which interconnect the surge tank to the liquor inlet to place main reaction chamber in direct liquid communication with the surge tank. Means are also provided which interconnect the gas collector and the gas outlet, to place the main reaction chamber in direct gaseous communication with the gas collector.

3,502,445

APPARATUS FOR MIXING FLUIDS IN CONCURRENT DOWNFLOW RELATIONSHIP

John H. Ballard, Whittier, and John E. Hines, Jr., Newport Beach, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Nov. 2, 1966, Ser. No. 591,476
Int. Cl. B01f *9/04, 1/14*
U.S. Cl. 23—288 15 Claims



A fluid mixing device for intimately mixing vapors and liquids passing downwardly through a downflow contacting vessel, the device comprising a horizontal tray extending across the cross-section of the vessel and having two spaced apertures opening into a mixing box attached to the underside of the tray, the mixing box having a constricted cross-section or internal baffles to cause the fluids entering the box through the apertures in the tray to impinge within the box prior to discharge therefrom.

3,502,446

PRODUCTION OF POWDER, STRIP AND OTHER METAL PRODUCTS FROM REFINED MOLTEN METAL

Maurice D. Ayers, Stamford, Conn., assignor to Metal Innovations, Inc., Stamford, Conn., a corporation of Delaware

Application Oct. 8, 1964, Ser. No. 402,480, now Patent No. 3,334,408, which is a continuation-in-part of application Ser. No. 321,246, Nov. 4, 1963. Divided and this application Aug. 7, 1967, Ser. No. 658,837
Int. Cl. B22f *3/00, 5/00, 7/00*
U.S. Cl. 29—182.5 4 Claims

The invention is directed to the production of iron strip from atomized iron, and particularly to the production of an iron strip having superior electrical and mechanical characteristics for use in electrical applications, such as small motors, solenoids, transformers, etc.

3,502,447

COMPOSITIONS OF WEAR RESISTANT MATERIALS BONDED WITH ELECTRICALLY CONDUCTING NITRIDES AND METALS

Alma U. Daniels, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 18, 1968, Ser. No. 776,741
Int. Cl. B22f *3/00, 5/00, 7/00;* C22c *29/00, 31/04*
U.S. Cl. 29—182.5 11 Claims

Dense, homogeneous compositions having an average grain size less than about 10 microns are disclosed. The compositions comprise:

(1) 30–87% by vol. of alumina, aluminum nitride, zirconia, or mixtures thereof;
(2) 10–60% by vol. of a nitride of titanium tantalum, zirconium, hafnium, niobium, or mixtures thereof; and
(3) 3–15% by vol. of a metal component having:
  (A) 50–80% by vol. of tungsten, molybdenum, or mixtures thereof, and
  (B) 20–50% by vol. of nickel, iron, cobalt, or mixtures thereof.

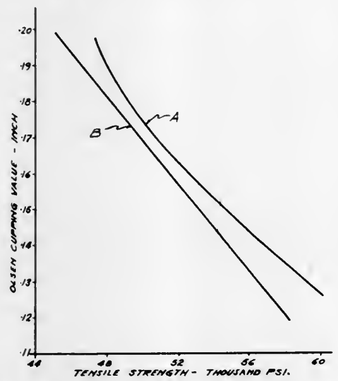
The compositions are useful as cutting tools.

3,502,448

ALUMINUM ALLOY SHEET

William A. Anderson, Pittsburgh, and John K. McBride, New Kensington, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1967, Ser. No. 688,740
Int. Cl. B21b *3/00*
U.S. Cl. 29—183.5 4 Claims



Work hardened aluminum alloy sheet, 0.008 to 0.017 inch thick, in the extra hard temper and containing 4 to 5.5% magnesium, 0.2 to 0.7% manganese, the balance being essentially aluminum, possesses a combination of strength and formability which make it especially useful for aluminum can ends. To achieve such, the manganese content is related to the magnesium content according to the following relation:

$$\text{Percent Mn} = 1.700 - 0.9\,(\text{In percent Mg}) \pm 0.15\%$$

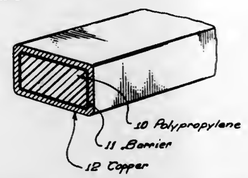
The extra hard temper is achieved by cold rolling to effect a reduction in thickness of at least 85%.

3,502,449

DIFFUSION BARRIER FOR POLYPROPYLENE

Eugene Phillips, Diamond Bar, Calif., assignor to General Dynamics Corporation (Pomona Division), Pomona, Calif., a corporation of Delaware

Original application Mar. 15, 1965, Ser. No. 439,669, now Patent No. 3,377,259, dated Apr. 9, 1968. Divided and this application July 20, 1967, Ser. No. 664,584
Int. Cl. B32b *15/08*
U.S. Cl. 29—195 7 Claims



The disclosure provides means and methods for eliminating catalytic oxidation degradation of copper plated or copper laminated polypropylene by interposing a noncatalytic barrier between the polypropylene substrate and the copper layer. This barrier may be silver or other noncatalytic metal which has good electrical conductivity; for example, aluminum, gold, platinum, tin, etc. Noncatalytic metals are defined as those metals which when in contact with polypropylene are significantly less active than copper in promoting oxidative degradation. Thus stripline circuit boards, phase shifters, and other microwave components may be fabricated from polypropylene.

3,502,450

COMPOSITE STRUCTURE WELDED WITH TUNGSTEN-CONTAINING NICKEL-BASE FILLER METAL

Herbert E. McCoy and Domenic A. Canonico, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 8, 1967, Ser. No. 659,567
Int. Cl. B32b *15/00*
U.S. Cl. 29—198 3 Claims

The welding of nickel base alloys is accomplished by employing weld filler metal of the base metal and modifying this filler metal so as to incorporate a sufficient quantity of tungsten which will provide a weldment containing 0.5 to 5.0 weight percent tungsten. The tungsten is added to the filler metal by alloying or by providing the filler metal with a coating of tungsten or a tungsten-containing material. Improved welding characteristics and weldment properties are realized by employing tungsten-containing filler metal.

3,502,451

MOTOR FUEL COMPOSITION

Fred W. Moore and Bruce S. Bailey, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,212
Int. Cl. C10l *1/10*
U.S. Cl. 44—58 14 Claims

Motor fuel compositions for four-cycle spark-ignited internal combustion engines to which are added polymers of C_2 to C_6 unsaturated hydrocarbons, such as ethylene, propylene, isobutylene and isoprene, in relatively small amounts effective to reduce engine deposits on the intake valves and ports.

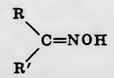
3,502,452

GASOLINE COMPOSITION

Seymour H. H. Patinkin, Chicago, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 675,019, Oct. 13, 1967. This application Mar. 4, 1969, Ser. No. 809,458
Int. Cl. C10l *1/26, 1/22, 1/30*
U.S. Cl. 44—69 23 Claims

A gasoline composition consisting essentially of hydrocarbon gasoline, an anti-knock quantity of tetra-lower-alkyl lead compound and a gasoline-soluble metal oximate of an oxime having the formula



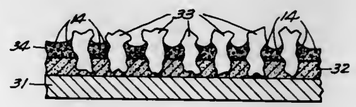
wherein R is a hydrocarbon radical of up to 30 carbon atoms and R' is R or hydrogen. The metal of the salt is selected from the group consisting of Groups Ia–IIIa, Va, Ib–VIIb, VIII and tin and the salt is added in an amount sufficient to provide 0.002 to 0.8 milligram atoms of metal per gallon of gasoline.

3,502,453

ABRASIVE ARTICLE CONTAINING HOLLOW SPHERULES FILLED WITH LUBRICANT

Eugene L. Baratto, East Oakdale Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 478,043, Aug. 9, 1965. This application Aug. 22, 1968, Ser. No. 755,517
Int. Cl. B24d *3/00*
U.S. Cl. 51—295 8 Claims



An abrasive article containing a multiplicity of separately prepared hollow spherules filled with a lubricant. The spherules rupture under grinding conditions and release the lubricant.

3,502,454

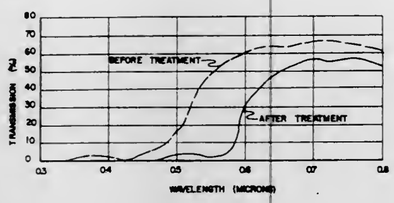
STRENGTHENING AND COLORING OF ARTICLES MADE OF REDUCED SODA-LIME GLASS COMPOSITIONS

Francis J. Shonebarger, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 540,080, Apr. 4, 1966. This application Mar. 28, 1967, Ser. No. 626,504
Int. Cl. C03c *17/08*
U.S. Cl. 65—30 12 Claims

A method of altering the spectral transmission of amber colored soda-lime glass articles by changing their surface coloration while simultaneously increasing their strength. The article is made of a reduced glass composition and is heated to a temperature which is above the annealing point of the glass composition but below the

temperature at which the article will deform. While heating, the article is exposed to the vapor of a cuprous halogen, with no contact being made between the article and the cuprous halogen in non-vaporous form. The heat-

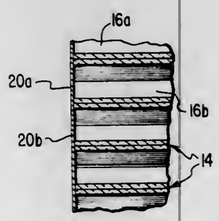


ing and exposing continues until a copper ion-enriched surface zone is formed on the article. Then, the article is cooled below the annealing point in a non-reducing atmosphere, after terminating the exposure to the cuprous halogen vapor.

3,502,455
METHOD OF FABRICATING A THIN FILM VITREOUS CONTINUOUS MEMBRANE PRODUCT

William L. Gardner, Wellesley, Mass., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1967, Ser. No. 673,571
Int. Cl. C03b *15/00*
U.S. Cl. 65—31 **11 Claims**



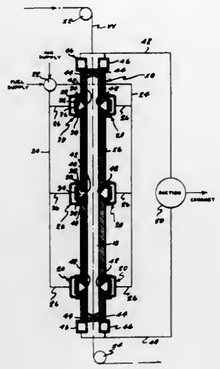
A method of fabricating thin film membranes. The surface of a substrate, having an etch resistant core casing or an etch resistant matrix encasing etchable core or cores forming a flat surface, is coated with an etch resistant vitreous continuous thin film and the core or cores are subsequently entirely removed by etching to produce a free standing, edge supported vitreous continuous membrane in the range of 15 to 100 microns composed of the thin film supported by the core casing or matrix.

3,502,456
METHOD AND APPARATUS FOR HEAT CLEANING GLASS FIBER FABRIC

Campbell B. Fetner, Charlotte, N.C., assignor to Gas Heat Engineering Corporation, Charlotte, N.C., a corporation of North Carolina

Filed Sept. 6, 1968, Ser. No. 758,079
Int. Cl. C03c *25/00*
U.S. Cl. 65—32 **6 Claims**

A process and apparatus for heat cleaning glass fiber fabric to free it of size. The sized fabric is moved continuously through a cleaning chamber. The heat cleaning is accomplished by subjecting the fabric, within the cleaning chamber, to flameless size-volatilizing heat by an impinging convection action of inert combustion gas generated in and ejected from a plurality of burners installed in the side walls of the cleaning chamber in spaced relation along the path of fabric travel. Each burner has a combustion chamber which terminates in a nozzle opening into the cleaning chamber. There is a mixing valve for pressure feeding a regulated air-fuel mixture to each burner, and each burner has a felt layer for finely dispersing the mixture within the combustion chamber. The cleaning chamber is thus pressurized, by

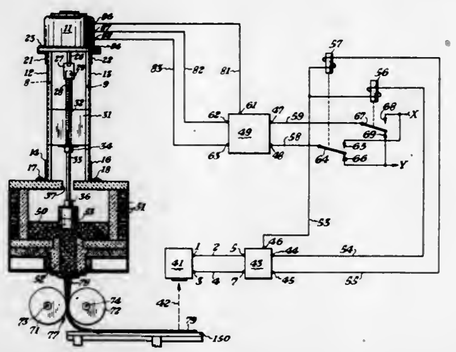


the ejection of the inert combustion gases, against infiltration of air at the entrance and exit ports of the chamber. Baffles are provided at these ports for restricting them sufficiently so that the openings serve to maintain pressurization of the chamber. Suction plenums are further provided adjacent the ports but exterior to the chamber for disposing of the volatilization products.

3,502,457
AUTOMATIC SYSTEM FOR CONTROLLING THE WIDTH OF A GLASS RIBBON

Arthur T. Bublitz and Raymond J. Mouly, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Apr. 5, 1965, Ser. No. 445,374
Int. Cl. C03c *13/00, 17/00*
U.S. Cl. 65—161 **9 Claims**



A system for continuously controlling the width of a ribbon of viscous molten material such as molten glass flowing from an outlet of a furnace or forehearth by automatically adjusting the flow rate of said material from said orifice in accordance with signals derived by a non-contacting type of gage which continuously senses said ribbon width, such signals representing deviations of such width from a preset valve therefore and used for controlling apparatus for readjusting said flow rate in accordance with such deviations.

3,502,458
METHOD OF MAKING A SLOW RELEASE FERTILIZER

Roy U. Schenk, Cincinnati, Ohio
(411 S. Brooks St., Madison, Wis. 53715)

Continuation-in-part of application Ser. No. 560,945, June 16, 1966. This application Feb. 28, 1967, Ser. No. 632,865
Int. Cl. A01g *29/00;* **C05**
U.S. Cl. 71—64 **7 Claims**



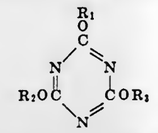
A method of producing a slow release prolonged duration fertilizer. A dry fibrous organic material, a dry fertilizing material, and a bonding agent are mixed in the proportions of at least 10% organic material and at least 3% binder. The mixture is then heated to a temperature up to 380° F. at a pressure between 100–8000 p.s.i. The product formed is a rigid mass.

3,502,459
NOVEL ALKYNYLOXY TRIAZINE COMPOUNDS AS BIOLOGICAL TOXICANTS

John H. Cornell, Jr., Arlington, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Feb. 25, 1966, Ser. No. 529,966, now Patent No. 3,395,147, dated July 30, 1968. Divided and this application Jan. 30, 1968, Ser. No. 725,553
Int. Cl. A01n *9/22*
U.S. Cl. 71—93 **4 Claims**

A method for controlling the growth of animal or vegetable organisms which involves applying to said organism, a toxic amount of a composition containing a 2,4,6 tris(alkynyloxy)-s-triazine having the formula



where each R_1, R_2 and R_3 represents the same or different unsubstituted alkynyl radicals of from 3 to 8 carbon atoms.

3,502,460
PRODUCTION OF ANOSOVITE FROM TITANIFEROUS MINERALS

Ian Douglas Martin, Maida Vale, Western Australia, and Harry William Hockin, Capel, Western Australia, Australia; said Martin assignor to Commonwealth Scientific and Industrial Research Organisation, East Melbourne, Victoria, Australia, a body corporate, and said Hockin assignor to Western Titanium N.L., West Perth, Western Australia, Australia

No Drawing. Filed Apr. 27, 1967, Ser. No. 634,126
Claims priority, application Australia, Apr. 29, 1966, 4,897/66
Int. Cl. C21b *1/00;* **C22b** *1/00*
U.S. Cl. 75—1 **11 Claims**

A process for producing a readily separable mixture of anosovite and metallic iron from ilmenite or other titaniferous mineral.

3,502,461
METHOD OF REDUCING OXIDIC RAW MATERIALS

Helmut Güttler and Joachim Müller-Berghaus, Dusseldorf, Germany, assignors to Gesellschaft fur Elektrometallurgie m.b.H., Dusseldorf, Germany

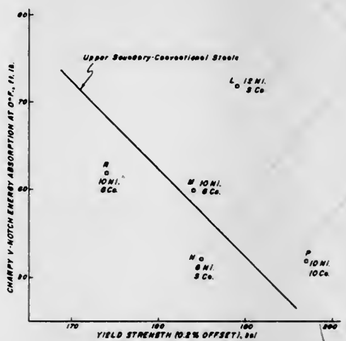
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,122
Claims priority, application Germany, Dec. 10, 1964, G 42,235
Int. Cl. C22d *7/02, 7/04, 9/06*
U.S. Cl. 75—10 **9 Claims**

There is disclosed a process in which a partial reduction of metal oxides to metal or metal carbide is performed in the solid state in a first stage with carbon and/or reducing gas and a final reduction in the liquid state is performed in a second stage which comprises reducing to metal those oxides which had not yet been completely reduced in the first stage, using a metallothermal or electrometallothermal smelting process in the said second stage.

3,502,462
NICKEL, COBALT, CHROMIUM STEEL

Donald S. Dabkowski, Pittsburgh, Paul J. Konkol, Plum Borough, Lew F. Porter, Monroeville Borough, and Allan M. Rathbone, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Nov. 29, 1965, Ser. No. 510,341
Int. Cl. C22c *39/20, 39/50, 39/10*
U.S. Cl. 75—128 **1 Claim**



A steel of high yield strength and good notch toughness adapted for use in wrought form as well as weld filler metal has the essential composition, by weight: nickel 9.5–14%; cobalt 6–10%; carbon 0.06–0.16%; molybdenum 0.7–1.5%; chromium .5–3%; and the balance iron except for residuals and minor impurities.

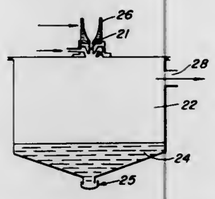
3,502,463
NICKEL BASE ALLOYS AND PROCESS FOR THEIR MANUFACTURE

Frederick C. Holtz, Jr., Evanston, Ill., assignor to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Continuation-in-part of application Ser. No. 435,733, Feb. 26, 1965. This application Jan. 3, 1966, Ser. No. 518,145

Int. Cl. C22c *19/00;* **B22f** *7/06;* **B22d** *23/08*

U.S. Cl. 75—171 **4 Claims**



Nickel base alloys having a relatively large quantity of carbide phase exhibit improved metallurgical and physical properties. Novel alloys disclosed have a composition by weight consisting essentially of from 10 to 20 percent tungsten, from 8 to 12 percent cobalt, from 8 to 20 percent chromium, from 2 to 4 percent titanium, from 1.5 to 3 percent aluminum, from 1 to 3 percent carbon, balance nickel with incidental impurities.

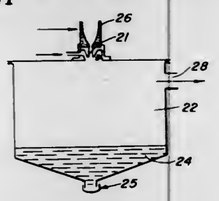
3,502,464
NICKEL BASE ALLOYS AND PROCESS FOR THE MANUFACTURE THEREOF

Frederick C. Holtz, Jr., Evanston, Ill., assignor to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Continuation-in-part of application Ser. No. 435,733, Feb. 26, 1965. This application Jan. 3, 1966, Ser. No. 518,442

Int. Cl. C22c *19/00*

U.S. Cl. 75—171 **3 Claims**



Nickel base alloys having a relatively large quantity of carbide phase exhibit improved metallurgical and physical properties. Novel alloys disclosed have a composition by weight consisting essentially of from 4 to 8 percent molybdenum, from 15 to 20 percent cobalt, from 18 to 30 percent chromium, from 2 to 4 percent titanium, from 3 to 5 percent aluminum, from 1 to 3 percent carbon, balance nickel with incidental impurities.

3,502,465
CONTACT ALLOYS FOR VACUUM CIRCUIT INTERRUPTERS

Yozo Nakajima, Sagamihara, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed May 24, 1967, Ser. No. 640,831

Int. Cl. C22c *9/00*

U.S. Cl. 75—153 **1 Claim**

In order to decrease the chopping current upon interrupting the vacuum type of circuit interrupters as well as improving the property of resisting to welding of contacts, the disclosed contact alloys comprise from 10 to 20% by weight of cobalt, from 0.1 to 1.0% by weight of bismuth and the balance copper except for small amounts of incident impurities. Contact alloy suitable for use as materials for contacts of vacuum circuit interrupters adapted to interrupt relatively low currents have also been disclosed comprising from 5 to less than 10% by weight of one element selected from the group consisting of bismuth, tellurium and lead, and the balance copper except for small amounts of incident impurities. These contact alloys are relatively low in chopping current characteristics and good in property of resisting to welding.

3,502,466
MANUFACTURE OF ARTICLES FROM POWDERED METALS

Ronald C. Vickery, Northport, N.Y., assignor, by mesne assignments, to Ceramco Industrial Products Corp., Long Island City, N.Y., a corporation of New York

Filed Feb. 9, 1968, Ser. No. 704,400

Int. Cl. B22f *7/00*

U.S. Cl. 75—208 **10 Claims**

Manufacture of articles from powdered metals, particularly powdered precious metals, characterized in that the powdered metal is first mixed with a binder to form a putty or paste, the paste thereafter being formed or sculptured by hand into the desired shape, and the shape then heated whereby the binder is driven off and the powdered metal sintered into a compact mass.

3,502,467
HIGH TEMPERATURE PROCESSING IN DYE-DEVELOPER DIFFUSION TRANSFER SYSTEMS

Richard W. Becker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 12, 1967, Ser. No. 689,779

Int. Cl. G03c *7/00*

U.S. Cl. 96—3 **20 Claims**

Processing of dye developer diffusion transfer system in presence of a bis-benzothiazolium salt wherein two benzothiazolium salt groups are joined by a long chain alkylene group results in increased densities at elevated temperatures.

3,502,468
COLOR DIFFUSION TRANSFER PROCESS WITH A METHINE OR METHYLENE COUPLER

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed May 12, 1965, Ser. No. 455,302

Int. Cl. G03c *5/54, 7/30*

U.S. Cl. 96—29 **37 Claims**

Photographic diffusion transfer systems using a dihydroxyphenyl silver halide developing agent, including systems employing dye developers containing a dihydroxyphenyl developing function to obtain color transfer images, wherein unwanted transfer of oxidized developing agent formed as a function of development is obviated by contacting said oxidized developing agent with a coupler, e.g., a compound containing a methine or methylene group substituted by at least one activating group having no formal charge, to form a more bulky molecule which is substantially less mobile in the processing composition.

3,502,469
DYE DEVELOPER DIFFUSION TRANSFER SYSTEM AND YELLOW DYE DEVELOPER THEREFOR

Walter M. Bush, Victor, and Derek D. Chapman and Richard W. Becker, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 29, 1967, Ser. No. 694,397

Int. Cl. G03c *5/54, 1/40*

U.S. Cl. 96—29 **12 Claims**

A yellow hydroquinone dye developing agent having a lower alkoxy group substituted on the 5-position of the hydroquinone nucleus is provided for dye developer diffusion transfer systems. Precursors for such dye developers are produced by reacting a lower aliphatic alcohol with a quinone in the presence of zinc chloride. Novel photosensitive materials containing the dye-developers are provided.

3,502,470
COMPOSITION AND PROCESS FOR PHOTOCHEMICAL CROSS-LINKING OF POLYMERS

Gerard Albert Delzenne and Urbain Leopold Laridon, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel-Belgium, a Belgian company

No Drawing. Filed Feb. 8, 1967, Ser. No. 614,542

Claims priority, application Great Britain, Feb. 28, 1966, 8,728/66

Int. Cl. G03c *5/00, 1/70, 1/52*

U.S. Cl. 96—35.1 **9 Claims**

A process is described for the photochemical cross-linking of a light-sensitive composition, comprising exposing to actinic light rays a composition comprising (A) a polymeric material carrying groups which are reactive with intermediates derivable from the photochemical decomposition of quinone diazide groups, and (B) quinone diazide groups present either in the same polymeric material or in a separate polymeric material mixed with said polymeric material containing reactive groups. The cross-linked compositions are insoluble and infusible materials and accordingly are advantageous in the production of printing plates and etching resists.

3,502,471
NEW LIGHT-DEVELOPABLE PHOTOGRAPHIC MATERIAL AND RECORDING PROCESS

Paul Desire Van Pee, Edegem, and Jozef Frans Willems, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel-Belgium, a Belgian company

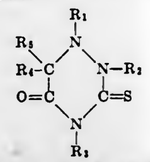
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,731

Claims priority, application Great Britain, Oct. 11, 1965, 42,969/65

Int. Cl. G03c *5/32*

U.S. Cl. 96—45.2 **22 Claims**

Photographic elements are defined which comprise a radiation-sensitive silver halide emulsion layer of the light developable type. The layer is applied from a coating composition containing a silver iodide sol and/or a compound which will release free iodide ions and a halogen acceptor corresponding to the formula or to a tautomeric structure thereof as follows:



wherein each of R_1, R_2, R_3, R_4 and R_5 is hydrogen, an alkyl group or an aryl group, with the proviso, however, that at least one of the substituents R_2 and R_3 is hydrogen; R_4 and R_5 may also be the atoms necessary to complete a carbocylic ring. These light-developable silver halide materials are useful in high-speed recording such as high-speed oscillographic recording of events which occur in rapid sequence, and the like.

3,502,472
DEVELOPMENT ACCELERATORS FOR SILVER HALIDE EMULSION LAYERS

Jozef Frans Willems, Wilrijk-Antwerp, Francis Jeanne Sels, Kontich, and Robrecht Julius Thiers, Brasschaat, Belgium, assignors to Gevaert-Agfa N.V., Mortsel-Belgium, a Belgian company

No Drawing. Filed Oct. 6, 1966, Ser. No. 584,650

Claims priority, application Great Britain, Oct. 11, 1965, 42,972/65

Int. Cl. G03c *5/30, 1/72*

U.S. Cl. 96—66.3 **4 Claims**

Process for producing a photographic silver image by development of exposed light-sensitive silver halide in the presence of compound influencing the sensitometric characteristics of a light-sensitive silver halide emulsion by an increase of the speed and/or the gradation.

3,502,473
PHOTOGRAPHIC ELEMENTS CONTAINING A SYNTHETIC SURFACE ACTIVE MATERIAL AND INERT PARTICLES

Raymond Snellman and George D. Hill, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 5, 1965, Ser. No. 453,509

Int. Cl. G03c *1/86*

U.S. Cl. 96—67 **22 Claims**

Photographic elements which contain layers containing a synthetic surface active material in which there is an acid function and a substituted amino group, such as the sodium salt of N-oleyl-N-methyl taurine, and inert particles, such as silica, barium sulfate, polymeric particles and the like, which have a particular particle size range provide desired properties for very rapid access processing.

3,502,474
PROCESS FOR PRODUCING PHOTOGRAPHIC LIGHT-SENSITIVE ELEMENTS

Momotoshi Tsuda, Teruo Kobayashi, and Keisuke Shiba, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

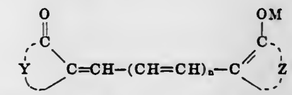
No Drawing. Filed July 28, 1966, Ser. No. 568,414

Claims priority, application Japan, July 28, 1965, 40/45,503

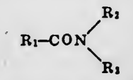
Int. Cl. G03c *1/84*

U.S. Cl. 96—84 **3 Claims**

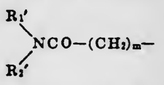
A process for producing photographic light-sensitive elements including applying an emulsion which contains a solution of a water-insoluble oxonol dye having the formula:



where Y and Z are unsubstituted or substituted carbon ring-forming groups or substituted or unsubstituted heterocyclic ring-forming groups. M is hydrogen or HNR′R″R‴ (where R′, R″ and R‴ are hydrogen, lower alkyl or lower hydroxyalkyl) and n is 0, 1 or 2, the oxonol dye solvent can be represented by the formula:



where R_1 is an alkyl group of less than 14 carbon atoms or



where R_1' and R_2' are lower alkyl and m is a positive integer of less than 10 and R_2 and R_3 are alkyl.

3,502,475

HIGHLY ADHERENT COATED FILMS AND METHOD OF PRODUCING SAME

William Paul Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 13, 1967, Ser. No. 653,046

Int. Cl. G03c 1/78

U.S. Cl. 96—87 12 Claims

A process for producing coated highly adherent films by applying to at least one treated surface of the film an aqueous dispersion of a copolymer of an ethylenically unsaturated arylene monoisocyanate with at least one other ethylenically unsaturated monomer (e.g., the copolymer of substituted isopropenyl benzyl isocyanates with acrylates). And, as new products of manufacture polyolefin or polyester films coated with the above aqueous dispersion and bearing a topcoat of a vinylidene chloride copolymer or a light sensitive photographic emulsion, respectively.

3,502,476

LIGHT-SENSITIVE PHOTOGRAPHIC MATERIALS

Kohei Itano, Masashi Nakano, Shoichiro Hoshino, and Akira Kato, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 11, 1966, Ser. No. 585,768

Claims priority, application Japan, Oct. 20, 1965, 40/64,069

Int. Cl. G03c 1/72, 5/24

U.S. Cl. 96—90 7 Claims

A composition contains a compound capable of producing free radicals upon exposure to light and an organic compound which reacts with the said free radicals to produce a color change. The free radicals progenitors are halogenated organic sulfoxides or sulfone compounds.

3,502,477

SILVER HALIDE EMULSION STABILIZED WITH A POLYMER DERIVED FROM AZIRIDINYL AZINE COMPOUNDS

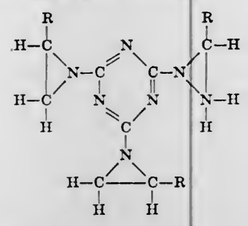
Reiichi Ohi, Nobuo Yamamoto, and Jun Hayashi, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

No Drawing. Filed Jan. 26, 1966, Ser. No. 523,208

Int. Cl. G03c 1/10, 1/28

U.S. Cl. 96—109 6 Claims

An anti-foggant agent produced by heating a compound shown by the general formula



in water wherein R is selected from the group consisting of hydrogen, methyl and ethyl. A photographic material contains a silver-halide emulsion layer which contains said reaction product.

3,502,478

RUMINANT FEED

Eugene S. Erwin, Tolleson, Ariz., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 167,953, Jan. 22, 1962. This application Dec. 20, 1965, Ser. No. 515,153

Int. Cl. A23k 1/00; C07c 127/00

U.S. Cl. 99—2 5 Claims

An adduct of urea and a hydrocarbon of about 6 to about 26 carbon atoms in a straight chain provide a source of non-protein nitrogen for ruminants which is more effective and efficient than the use of urea alone.

3,502,479

PROCESS OF MAKING A SNACK PRODUCT

Norman S. Singer, Somerset, and Ernesto G. Beltran, Maywood, N.J., assignors to Thomas J. Lipton, Inc., Englewood Cliffs, N.J., a corporation of Delaware

No Drawing. Filed June 20, 1966, Ser. No. 558,565

Int. Cl. A23l 1/10, 1/18

U.S. Cl. 99—100 8 Claims

A process of preparing low density, low calorie snack-type food products which includes the steps of (1) forming a dough comprising a pregelatinized starch, water and a saturated monoglyceride, (2) extruding the dough to form a thin sheet of uniform thickness, (3) subdividing the dough into dough pieces, and (4) drying the dough pieces to a moisture content of 5%–8% to form a half-product. The half-product is (5) subjected to intense infrared radiation to puff the product and form the low density, low calorie snack.

3,502,480

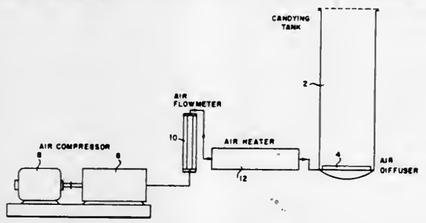
METHOD FOR CANDYING CITRON AND OTHER FRUITS

Luis E. Cancel and Rafael Vazquez Romero, Rio Piedras, and Elba Diaz Negron, Mayaguez, Puerto Rico, assignors to The Commonwealth of Puerto Rico

Filed Mar. 26, 1965, Ser. No. 443,139

Int. Cl. A23l 1/06

U.S. Cl. 99—102 2 Claims



Method for candying fruit in which the fruit is immersed in a column of dilute sugar solution having a height 3 times its diameter and the concentration of the solution is progressively increased by bubbling heated air upwardly through the solution, evaporating water therefrom without reducing the volume of the solution to below the level of the fruit or adding water or sugar to the solution.

3,502,481

FOOD SPREAD

Jacob Arie Schaap, Dordrecht, and Lim Torenvliet, Vlaardingen, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,493

Claims priority, application Netherlands, May 3, 1966, 6605933

Int. Cl. A23c 19/02

U.S. Cl. 99—116 7 Claims

Food product comprising milk protein curd and fat, wherein the milk protein curd is derived from milk which has been heated in the presence of a calcium salt at a temperature between 70° C. and 150° C.

3,502,482

EMULSIFIER FOR USE IN BAKING AND METHOD OF PREPARING THE SAME

Hermann Birnbaum, 5701 Munhall Road, Pittsburgh, Pa. 15217

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,276

Int. Cl. A23d 5/00, A21d 15/00

U.S. Cl. 99—118 4 Claims

A thick smooth plastic dispersion for use as an emulsifier in baking and a method of its preparation. The diperly saturated fat-forming fatty acid having an iodine number of less than 5, triglyceride in about the ratio of 20% triglyceride to 80% monoglyceride, and 0.25 to 1% of tartaric acetyl esters of a monoglyceride or diglyceride of a fat-forming fatty acid.

3,502,483

COLD WATER-SOLUBLE EUCHEUMA GEL MIXTURES

Martin Glicksman, Valley Cottage, Elizabeth Farkas, Yonkers, and Robert Edward Klose, Bronx, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,522

Int. Cl. A23l 1/04; A23g

U.S. Cl. 99—131 4 Claims

A cold water soluble gel-producing mixture containing cold water soluble sodium, potassium or ammonium salts of Eucheuma. A quick setting modification is made by incorporating a slightly soluble calcium salt, or a soluble calcium or potassium salt. In the latter case, the Eucheuma salt and the soluble calcium or potassium salt is packaged separately and dissolved in water separately as formation of a gel upon dissolution of the two components in water is immediate.

3,502,484

ANTIOXIDANT SALT

Richard Kolasinski, Richmond, Mich., assignor to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,380

Int. Cl. A23l 1/22

U.S. Cl. 99—143 2 Claims

A finely powdered butylated hydroxyanisole (BHA)-diluent mixture is prepared by melting the BHA by heating, intermixing the melted BHA with the diluent material, cooling to produce a friable mixture, particulating the friable mixture into finely divided particles and separating the particles to a size less than 100 mesh.

3,502,485

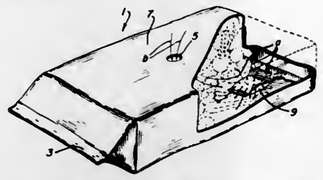
PROCESS AND DEVICE FOR PRESERVING PLANT PRODUCTS BY MEANS OF BACTERICIDAL GAS

Charles Illouze, 4 Rue des Abbesses, Paris, France

Filed May 11, 1966, Ser. No. 550,092

Int. Cl. B65b 25/02; A23b 7/00

U.S. Cl. 99—154 11 Claims



Plants, such as fruits and vegetables are enclosed within an impervious, preferably plastic material container, in the presence of a bactericidal gas generator, such as metabisulfite which releases sulfur dioxide. Air is permitted to enter inside the container and to circulate therein to allow respiration of the plant products. The apparatus comprises the above impervious container, a bactericidal gas generator placed inside the container, the container having an opening to allow a circulation of air inside the container for a proper respiration of the plant products.

3,502,486

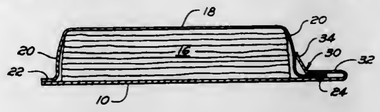
RECLOSABLE PACKAGE FOR FOOD PRODUCTS

Burton R. Lundquist, Highland Park, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,344

Int. Cl. B65b 25/06

U.S. Cl. 99—171 10 Claims



A reclosable food package, comprising a resilient blister in combination with a rigid backing member to enclose a food product therebetween, and a biasing member permanently attached to one portion of said blister and said backing member to act as a biasing hinge whereby said blister is urged into contact with said backing member.

3,502,487

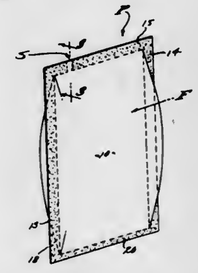
FOOD PRESERVING PACKAGE AND METHOD OF CLOSURE

James T. Byrd, Burbank, Calif. (1269 W. Baker St., Apt. B, Costa Mesa, Calif. 92626)

Filed July 15, 1968, Ser. No. 744,766

Int. Cl. B65b

U.S. Cl. 99—171 5 Claims



A packaging of foods, or the like, and to the closing of a package for containment and preservation of the same, wherein said package is vented for the exhaust of vapors and/or fluids that are in excess within the confines of the package and sealed so as to prevent re-entry of vapors and/or fluids therein, and to the end that extreme temperature changes and/or pressure conditions are accommodated.

3,502,488

COMBINED FROZEN DOUGH PACKAGE AND BAKING CONTAINER

Hugh H. Bridgford, 5415 Bergerline Ave., West New York, N.J. 07093

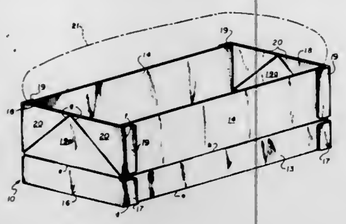
Filed July 25, 1968, Ser. No. 754,131

Int. Cl. B65b 25/16

U.S. Cl. 99—172 6 Claims

A frozen yeast-containing, developed dough fills a shallow aluminum lined cardboard rectangular carton having upper closure walls which are swingable to a position projecting upwardly from the carton peripheral walls.

The dough filled carton is stored in a frozen state and in use the dough-containing carton is stored at room temperature to thaw and effect the raising of the dough, the rising



dough swinging the closure walls to open extended positions, and the raised dough then being baked in the opened carton.

3,502,489
METALIZING COMPOSITIONS FIREABLE IN AN INERT ATMOSPHERE

George Rolland Cole, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,455
Int. Cl. C09d 5/00
U.S. Cl. 106—1 7 Claims

Metalizing compositions comprising a noble metal(s) and a particular inorganic binder consisting essentially of a glass composed of TiO_2, SiO_2, Na_2O, Li_2O, BaO, K_2O, B_2O_3, and Sb_2O_3 in critical proportionate amounts. These compositions are fired in an inert atmosphere on a dielectric ceramic substrate to form thereon electrically conductive, adherent, and solderable fired-on films.

3,502,490
HEAT AND FIRE-RESISTANT PLASTER COMPOSITIONS

Frank Ware, 12092 Chillicothe Road, Chesterland, Ohio 44026

No Drawing. Continuation-in-part of application Ser. No. 238,861, Nov. 20, 1962. This application Jan. 15, 1968, Ser. No. 697,616
The portion of the term of the patent subsequent to Mar. 5, 1985, has been disclaimed
Int. Cl. C09d 5/14, 5/16
U.S. Cl. 106—15 8 Claims

This invention is directed to the addition of a naturally-occurring phosphate rock or shale having a high content of phosphorus pentaoxide to a plaster composition to improve the heat and fire-resistant properties thereof.

3,502,491
METHOD OF MASKING EDGE OF GLAZED CERAMIC TILES

William H. Orth, Baltimore, Md., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

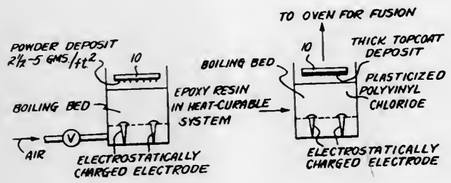
No Drawing. Filed Aug. 2, 1967, Ser. No. 657,789
Int. Cl. C03c 1/00, 5/00; B44d 1/52
U.S. Cl. 117—5.5 7 Claims

A process for the manufacture of glazed ceramic articles is described. An aqueous dispersion of a virtually ashless resin, having a decomposition temperature below that at which a glaze slip is converted to ceramic glaze, is applied to at least the edges of an unfired, planar clay body to strengthen the body during further handling. A glaze slip is then applied to the surface of the body by the waterfall method with some of the slip overrunning onto the resin treated edges. The overrun deposit is then mechanically removed without damage to the unfired body. The clay body is then fired at a temperature sufficient to convert the slip to ceramic glaze thus producing a glazed body with unglazed edges.

3,502,492
METAL SUBSTRATE COATED WITH EPOXY POWDER PRIMER AND PLASTICIZED POLYVINYL CHLORIDE TOPCOAT AND METHOD OF MAKING SAME

Lester L. Spiller, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana

Filed Dec. 13, 1965, Ser. No. 513,295
Int. Cl. B44d 1/094, 1/44
U.S. Cl. 117—17 12 Claims



Metal substrates are provided with adherent polyvinyl chloride topcoats by electrostatically depositing from 2.5–5.5 grams per square foot of finely divided particles of epoxy resin in a heat-curable system on the substrate. The substrate with the epoxy particles adhered thereto then has electrostatically deposited thereover finely divided particles of plasticized polyvinyl chloride in a heavy layer and the substrate, with both particles electrostatically adhered thereto is then heated to simultaneously coalesce all of the particles and provide a layer of plasticized polyvinyl chloride adherently associated with the substrate by means of the epoxy particles.

3,502,493
DEPOSITION OF MICRON-SIZED PARTICLES INTO POROUS SURFACES

Clarence W. Forestek, Broadview Heights, Ohio, (% Forestek Plating & Manufacturing Co., 9607 Quincy Ave., Cleveland, Ohio 44106)

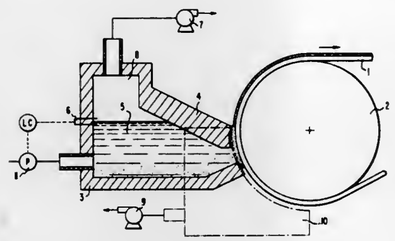
No Drawing. Continuation of application Ser. No. 522,362, Jan. 24, 1966, which is a continuation-in-part of application Ser. No. 414,423, Nov. 27, 1964. This application Sept. 20, 1968, Ser. No. 768,952
Int. Cl. B44d 1/34; B05b 7/14
U.S. Cl. 117—22 9 Claims

The invention disclosed comprises a process of depositing finely divided particles of metal or metal compounds in the fissures or pores of a surface while the surface is at a raised temperature, the temperature of the finely divided particles being inserted into the fissures or pores being lower than that of the surface, the temperature differential being such that the particles are relatively contracted in size and the fissures or pores are expanded in size and when equilibrium temperature between the particles and the surface is eventually reached, the walls of the fissures or pores are tightly clasped around the individual particles so as to have a firm or tight grip on the particle. The size of the particles are in the range of 0.05 to 50, preferably 0.5–30 microns and the size of the fissures or pores is in about the same range, but under the raised temperature conditions at the time the particles are being inserted, the dimensions of the fissures are considerably increased. The temperature differential between the particles and the surface is at least 300° F. and preferably at 400° F. with the particles having the lower temperature.

3,502,494
PROCESS AND APPARATUS FOR CONTINUOUS FLUID COATING OF A TRAVELING WEB

Mamoru Ishiwata and Yosuke Uchida, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

Filed Nov. 4, 1966, Ser. No. 592,096
Claims priority, application Japan, Nov. 4, 1965, 40/67,667
Int. Cl. B05c 3/12
U.S. Cl. 117—34 7 Claims



Process for coating a traveling web utilizing a doctor blade wherein improved results are obtained by reducing the pressure on the fluid coating composition in a fluid coating composition holding chamber, and simultaneously reducing the pressure on the backside and transverse sides of the composition as it is drawn from the doctor edge. A thinner coating is withdrawn than otherwise obtainable.

Apparatus for forming the above process comprising means to reduce the pressure on the fluid coating composition, a vacuum chamber surrounding the back and transverse sides of the coating composition is also disclosed. The means of reducing the pressure on the fluid coating composition comprises means for evacuating the space above the composition in the chamber containing the composition.

3,502,495
PRINTING RESINS WITH PENETRATING INK

Akiyuki Akamatsu, Yokohama, Japan, assignor to Toyo Kako Co., Ltd., Tokyo, Japan, a corporation of Japan

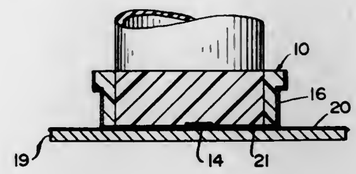
No Drawing. Continuation-in-part of application Ser. No. 332,025, Dec. 20, 1963. This application Nov. 6, 1967, Ser. No. 680,971
Claims priority, application Japan, Dec. 28, 1962, 37/59,348
Int. Cl. B41m 1/30; B44d 1/24; C09d 11/06
U.S. Cl. 117—38 10 Claims

A process for printing on a thermoplastic resin article and an article printed by this process. Said process comprises heating a thermoplastic resin article and a special ink at a temperature 1° to 50° C. lower than the softening point of the thermoplastic resin article, cooling said article and removing the ink remaining on the printed surface with a suitable solvent, said ink consisting of (1) a colorant which is permeable to said article, (2) a liquid medium which can wet or swell the thermoplastic resin and is a non-volatile or slowly volatile liquid or solid which becomes liquid on heating and (3) adjuvants which cannot be fixed to the resin, cooling said article and removing the ink remaining on the printed surface with a suitable solvent. Since said colorant penetrates into the resin, the printed article obtained by said process is as a "tattoo."

3,502,496
METHOD OF FINISHING PLASTIC ARTICLES

Thomas F. Jarvis, La Mesa, Calif., and Carl W. Osborne, Moline, Ill., assignors to Montgomery Elevator Company, a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,522
Int. Cl. B44d 1/14, 1/52; B29c 9/00
U.S. Cl. 117—45 11 Claims

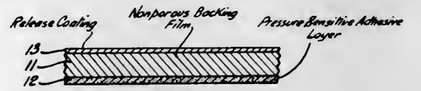


A method of finishing a transverse face of a plastic article, such as a push button, which includes the steps of forming a removable protective layer on the longitudinal perimetrical surface of the article, with an edge of said layer in the plane of the face and surrounding the latter, coating the entire face with a liquid, settable material which adheres to the face but not to the protective layer, curing the coating in contact with a smooth release surface to provide a hard smooth coating on the face, and breaking the article with the coating thereon from the release surface. If the article is to have a design such as a letter or numeral on the transverse face the design may first be engraved on the face, the engraving filled with a contrasting settable material which contrasts visually with the face, and the face with the design on it may then be finished as above described.

3,502,497
PRESSURE-SENSITIVE ADHESIVE PRODUCT

Guy J. Crocker, North Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Continuation-in-part of applications Ser. No. 392,197, and Ser. No. 392,219, both Aug. 26, 1964. This application Aug. 31, 1967, Ser. No. 678,467
Int. Cl. C09j 7/00; B44d 1/14
U.S. Cl. 117—68.5 22 Claims



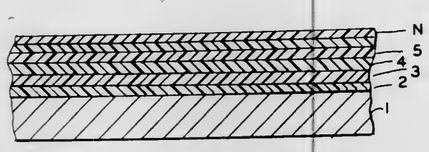
Normally tacky pressure-sensitive sheets and tapes having a release coating comprising a release agent copolymer of stearyl methacrylate and acrylonitrile in proportions ranging from about 50 parts by weight of stearyl methacrylate and 50 parts by weight of acrylonitrile to about 80 parts by weight of stearyl methacrylate and 20 parts by weight of acrylonitrile, applied to or coated on the surface of the sheet or tape opposite to that of the adhesive. The same release coating also may be applied to the surface of a separate liner or release sheet to be placed in contact with a normally tacky pressure-sensitive adhesive surface. The release agent may be applied directly to a nonporous backing sheet or on a porous sheet which has been precoated, or it may be mixed into a backsize or release coating when a film former is needed for any reason or when it is desired to modify the release agent or other surface properties of the backing, or the like.

3,502,498

METAL-FLUOROCARBON ADHERENT COMPOSITE STRUCTURES AND PROCESS FOR PREPARING SAME

John V. Petriello and Michael La Torra, Babylon, N.Y., assignors, by mesne assignments, to Dilectrix Corporation, Farmingdale, N.Y., a corporation of Delaware

Filed Aug. 18, 1967, Ser. No. 661,702
Int. Cl. B44d *1/14;* B32b *15/08*
U.S. Cl. 117—75 6 Claims



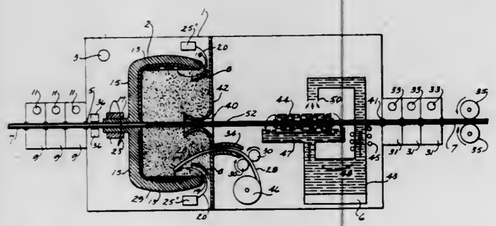
A composite thin flexible metal-fluorocarbon polymer fused multi-layered laminate comprising interlayers of mixtures of melt-fusible copolymer of tetrafluoroethylene (FEP) and sinterable polytetrafluoroethylene (TFE) in consequent layers starting from a high FEP content adjacent to a metal substrate on at least one side followed by decreasing ratio FEP/TFE layers to provide at least one interlayer of substantially all-TFE.

3,502,499

CLADDING METHOD AND APPARATUS

Brian C. Coad, Fairfield, England, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 22, 1967, Ser. No. 640,248
Int. Cl. C23c *13/02, 13/10*
U.S. Cl. 117—101 4 Claims



This disclosure relates to the coating or cladding of a continuous length of substrate material from a centrifugal type of evaporator and condensation onto the substrate. A bath of the coating material is maintained continuously molten in the centrifugal evaporator and is evaporated therefrom by electron beam heating. A preheated length of the substrate is moved axially through the centrifugal evaporator. Vapor condenses on the moving substrate to form a dense, even coating. The evaporator and electron beam apparatus are located in a vacuum chamber having inlet and outlet seals. The substrate is preheated to a temperature suitable to ensure that the coating is ductile, dense, and fully adherent to the substrate. The coating thickness is controlled by varying the speed at which the substrate passes through the evaporator (i.e., the time of exposure to the vapor) or by varying the power input to the evaporator (i.e., the rate of evaporation) or both. After the substrate is coated, it may be quenched by passing it through a bath of a suitable material or through other suitable cooling means.

3,502,500

METHOD OF CURING AND COATING CONCRETE AND RESULTING PRODUCT

William S. Hoock, Flossmoor, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 1, 1965, Ser. No. 506,008
Int. Cl. C04b *41/30;* B44d *1/02*
U.S. Cl. 117—123 12 Claims

The coating of freshly laid concrete to diminish loss of water due to evaporation and prevent spalling is disclosed. The coating is accomplished with a composition of a diene polymer having at least 1.8 predominantly primary, terminal, allylic hydroxyl groups per polymer molecule and a polyisocyanate curing agent. The diene has 4 to about 12 carbon atoms and the use of a solvent is optional.

3,502,501

PROCESS FOR PREPARING AUXILIARY LAYERS FOR PHOTOGRAPHIC MATERIALS PREPARED FROM SYNTHETIC POLYMERS

Leonhard Burczyk and Renate Credo, Berlin-Friedrichshafen, Ernst Faulhaber, Berlin, and Willibald Muhlsteph, Schkopau, Germany, assignors to VEB Fotochemische Werke Berlin, Berlin-Kopenick, Germany

No Drawing. Filed Mar. 6, 1967, Ser. No. 620,660
Int. Cl. C03c *1/00;* B44d *1/40*
U.S. Cl. 117—34 2 Claims

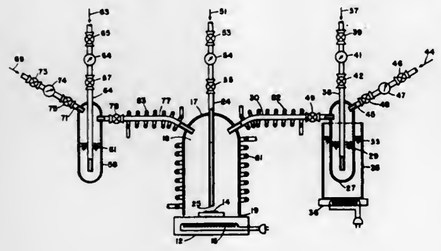
A protective layer is provided on the emulsion side of a photographic film by applying on that side a synthetic latice prepared by mixing (a) an aqueous dispersion of a copolymer of an acrylic acid derivative with vinyl compounds, with (b) an aqueous solution of polyvinyl alcohol or a dispersion of low molecular weight vinyl ethinylcarbinol and (c) an additive such as an ester or ether of fatty acids, and homogenizing the composition.

3,502,502

PROCESS FOR DEPOSITING A TANTALUM OXIDE CONTAINING COATING

Thomas W. Elsby, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 5, 1967, Ser. No. 607,503
Int. Cl. B44d *1/18;* C23c *13/02*
U.S. Cl. 117—201 6 Claims



A process for depositing an oxide on a substrate. A substrate is subjected to a gaseous mixture of a volatile alkoxide and oxygen while the substrate is maintained above a minimum temperature high enough to decompose the alkoxide. Oxide combinations may be formed by introducing more than one alkoxide or other decomposable compounds, such as triethyl aluminum.

3,502,503

DESCALING OF TITANIUM AND ALLOYS THEREOF

Louis J. Bartlo, Youngstown, and Octavian Bertea and Layne F. Plock, Warren, Ohio, assignors to Reactive Metals, Inc., a corporation of Delaware

No Drawing. Filed May 10, 1967, Ser. No. 637,339
Int. Cl. C23g *1/28*
U.S. Cl. 134—2 6 Claims

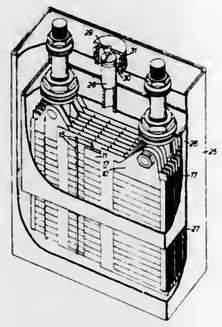
Process of descaling articles of titanium or titanium alloys which involves contacting the articles to be descaled with a substantially non-aqueous mixture of 35 to 50% potassium nitrate and 50 to 65% potassium hydroxide at a temperature in the range of 450° to 1000° F. to remove undesirable scale from the surfaces, thereafter rinsing and pickling in acid for residue removal.

3,502,504

ELECTRIC STORAGE BATTERIES

Charles Arthur John White, Redditch, England, assignor to Alkaline Batteries Limited, Redditch, England, a company of Great Britain

Filed Jan. 26, 1968, Ser. No. 700,762
Claims priority, application Great Britain, Jan. 30, 1967, 4,540/67
Int. Cl. H01m *35/00*
U.S. Cl. 136—6 10 Claims



A sealed electric storage cell of alkaline type has certain areas of the upper parts of the plates separated by thin absorbent separator material while other areas have a clear path for gas to flow between plates of opposite polarity, and the upper parts of the plates are mounted in a compartment open at the bottom.

3,502,505

METHOD OF MAKING LOW DENSITY PASTE MATERIAL FOR BATTERY PLATES

Ernest J. Jackson, Racine, and Anthony Sabatino, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

No Drawing. Original application July 22, 1963, Ser. No. 296,474. Divided and this application July 1, 1968, Ser. No. 800,011
The portion of the term of the patent subsequent to Aug. 6, 1980, has been disclaimed
Int. Cl. H01m *35/02, 5/00*
U.S. Cl. 136—27 14 Claims

The method of making battery paste for lead-acid batteries consisting of the steps: (a) mixing a slurry of lead oxide and water, including in said slurry small amounts of a foam producing agent and a stabilizing agent, and a strengthening material uniformly dispersed throughout; and (b) redistributing the water in such slurry by aeration with a gas containing carbon dioxide.

3,502,506

ELECTROCHEMICAL CELL WITH TUNGSTEN BRONZE CATALYST ON ANODE

Barret Broyde, New York, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,596
Int. Cl. H01m *27/04, 13/06*
U.S. Cl. 136—86 4 Claims

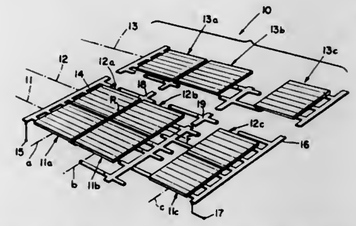
1. In combination with an electrochemical cell which includes an anode, a cathode, and an electrolyte positioned between and communicating with said anode and cathode, the improvement which comprises an oxidation catalyst for said anode wherein said catalyst is a metal mixed oxide tungsten bronze having the stoichiometric formula of T_xWO_y where T is a metal selected from the group consisting of titanium, vanadium, manganese, iron, zinc, and nickel; x is between 0 and 1 and y is between 2 and 4.

3,502,507

SOLAR CELLS WITH EXTENDED WRAP-AROUND ELECTRODES

Alfred E. Mann, Sylmar, Calif., assignor to Textron, Inc., a corporation of Delaware

Filed Oct. 28, 1966, Ser. No. 590,283
Int. Cl. H01m *15/02*
U.S. Cl. 136—89 8 Claims



A solar cell is provided with a top solar sensitive surface wrapping around at least one edge portion of the cell to lie in close electrically separated relationship with a second electrode means on the bottom surface of the cell. The geometry of the electrodes is such that interconnecting tab or strip-like conductors can extend across the bottom electrode to effect pairs of positive and negative connection points, the connections in each pair being in close relationship to each other and the pairs themselves being at spaced portions of the cell remote from each other. With this arrangement, the risk of circuit discontinuity should the cell crack is minimized. Further, the interconnecting means lies substantially in the plane of the bottom of the cell thereby enabling the cells to be packed relatively closely to each other.

3,502,508

CATHODE FOR A DEFERRED ACTION BATTERY HAVING A HIGH CAPACITY DEPOLARIZER ENCASED IN A HUMIDITY RESISTANT DEPOLARIZER MATERIAL

Harold N. Honter, Wonewoc, Wis., assignor to ESB Incorporated, a corporation of Delaware

Filed Aug. 2, 1967, Ser. No. 657,927
Int. Cl. H01m *15/06, 13/00, 15/04*
U.S. Cl. 136—100 10 Claims

A cathode for a water activated deferred action battery comprising a high capacity depolarizer mixture of a compound yielding cuprous ions, graphite and a sulfur, selenium or tellurium additive encased in a humidity resistant depolarizer material. The humidity resistant depolarizer must have approximately the same operating voltage as the high capacity depolarizer, and silver halides and mercurous halides have been found to be suitable humidity resistant depolarizers. It is preferred that both the high

capacity depolarizer and the humidity resistant depolarizer be rapidly activated when contacted by aqueous solutions.

3,502,509

SILVER CATALYZED FUEL CELL ELECTRODE

John F. Sindorf, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

No Drawing. Filed May 23, 1966, Ser. No. 551,891
Int. Cl. H01m 13/06, 35/22
U.S. Cl. 136—120 5 Claims

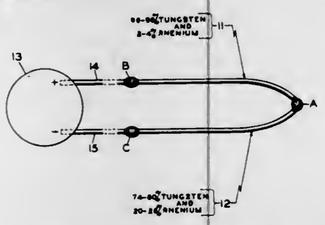
1. A process for producing a fuel cell electrode comprising the steps of: reducing a silver salt to flocculent silver particles by admixing a solution of the silver salt heated to a temperature between about 50° C. to about the boiling point of the solution with a solution of a reducing agent cooled to a temperature below the freezing point of the solution of reducing agent, coating said silver particles with a discontinuous film of a polymeric resin, and compressing the particles into a cohesive mass to form a fuel cell electrode.

3,502,510

THERMOCOUPLE HAVING TUNGSTEN-RHENIUM ALLOY LEG WIRES

Edward D. Zysk, Livingston, and Eugene E. Osovitz, Englishtown, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Oct. 6, 1966, Ser. No. 584,822
Int. Cl. H01v 1/14
U.S. Cl. 136—227 5 Claims



A thermocouple having a leg and lead wire combination comprising a positive leg wire of 96–98% tungsten and 2–4% rhenium joined to a negative leg wire of 74–80% tungsten and 20–26% rhenium, a lead wire connected to the positive leg composed of 95%–97.5% nickel, 1.5%–2.2% chromium, 0.7%–1.1% aluminum, 0.3%–1.0% silicon and 0%–1.2% tungsten, and a lead wire connected to the negative leg composed of 95–97% nickel and 3%–5% tungsten, said percentages of ingredients being by weight.

3,502,511

ELECTROPHORETIC COATING PROCESS

John W. Forsberg, Mentor-on-the-Lake, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application Jan. 15, 1965, Ser. No. 425,949, now Patent No. 3,364,081, dated Jan. 16, 1968. Divided and this application Aug. 30, 1967, Ser. No. 672,673
Int. Cl. C23f 7/10; C23c 1/10
U.S. Cl. 148—6.15 3 Claims

Aqueous solutions containing phosphate, nitrate and lead ions are useful for forming phosphate coatings on metal surfaces. Such coatings may be formed by contacting the metal with the solution at room temperature. The phosphate solutions are particularly useful in that they improve the drawing properties of metals treated therewith, and metal surfaces thus treated remain weldable. The phosphate coatings also improve the adhesion of siccative organic coatings to the metal.

3,502,512

METHOD OF APPLYING NONPERMANENT DECORATIVE COATING TO HIGH-STRENGTH, LOW ALLOY STEEL

Joseph Bigosi, Plum Borough, and Bruno M. Perfetti, Jeanette Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,908
Int. Cl. B44d 1/34; C09d 3/26; C23c 11/10
U.S. Cl. 148—6.35 3 Claims

The surface of certain high-strength low-alloy steels weathers through oxidation to a decorative dark earthy color, but the natural weathering process takes several years. The steel does not have its full attractiveness until the weathering is completed. The invention provides a method of treating the steel to impart the same appearance initially that it acquires later on weathering. The steel is coated with a paint composition which degrades gradually and uniformly at approximately the same rate as the steel weathers, but does not interfere with weathering. The pigment of the paint matches the color of the weathered steel.

3,502,513

METHOD OF MAKING HIGH-STRENGTH COLD-DRAWN WIRE

Lynwood C. Rice, Hudson, and Gordon T. Spare, Chardon, Ohio, assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,033
Int. Cl. C21d 1/46, 1/18
U.S. Cl. 148—12.1 8 Claims

A method of producing high-strength, cold-drawn wire of steel having up to 0.12% carbon, 0.2 to 1.25% manganese, 0.15 to 0.75% silicon, 0.25 to 0.55% copper, 0.3 to 1.25% chromium, up to 0.65% nickel and up to 0.1% vanadium by pickling rod of the aforementioned composition to remove scale, heating the rod to austenitizing temperature in a non-oxidizing atmosphere, quenching the rod in a molten cascading salt at a temperature in the range of 400 to 600° F., tempering said rod in a molten cascading salt at a temperature in the range of 750 to 950° F., rinsing to remove a substantial portion of said salt, and subsequently cold-drawing said rod to desired gauge.

3,502,514

METHOD OF PROCESSING STEEL

Raymond A. Grange, Washington Township, Westmoreland, Pa., assignor to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Jan. 30, 1968, Ser. No. 701,554
Int. Cl. C21d 7/02, 1/00
U.S. Cl. 148—12.4 8 Claims

A method of processing carbon and low-alloy steels to develop a fibrous martensite-ferrite mixture including the steps of cold reducing steel which is preferably in the hot-rolled or heat-treated condition to at least a 50% smaller cross sectional area than initially to lengthen same, and then heating to a critical temperature (T_x) which is determined for the steel by a specified equation and thereafter quenching to transform austenite fibers to martensite.

3,502,515

METHOD OF FABRICATING SEMICONDUCTOR DEVICE WHICH INCLUDES REGION IN WHICH MINORITY CARRIERS HAVE SHORT LIFETIME

James J. McMullen and Donald M. Brettner, Sunnyvale, Calif., assignors, by mesne assignments, to Philco-Ford Corporation, a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,583
Int. Cl. H01l 7/36
U.S. Cl. 148—175 8 Claims

Reduction of minority carrier lifetime in a selected region of an epitaxial layer of a semiconductor device

is achieved by incorporating atoms of certain metals into said region. In one embodiment, molybdenum pentachloride, in vapor or powder form, is added to vapor or liquid silicon tetrachloride, which contains a suitable dopant such as boron tribromide or phosphorus trichloride. The resultant mixture is employed during epitaxial growth of the selected region of the epitaxial layer onto a silicon substrate in order to incorporate molybdenum atoms into said region. Other suitable metals are tantalum, iron, manganese, titanium, vanadium, and tungsten.

3,502,516

METHOD FOR PRODUCING PURE SEMICONDUCTOR MATERIAL FOR ELECTRONIC PURPOSES

Heinz Henker, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Oct. 20, 1965, Ser. No. 498,666
Claims priority, application Germany, Nov. 6, 1964, S 94,061
Int. Cl. H01l 7/36
U.S. Cl. 148—175 15 Claims

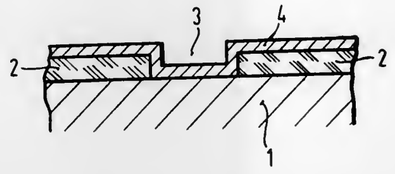
Method of producing semiconductor material for electronic purposes by precipitating it from a reaction gas comprising a mixture of gaseous compound of a semiconductor element and carrier gas upon a substrate having its crystalline structure laid bare and having its surface contacted by the flowing gas mixture in a processing vessel whose walls are kept at a lower temperature than the substrate includes providing a substrate having a specific electric resistance of at most 0.1 ohm-cm., heating the substrate by high frequency inductive heating to a temperature below the melting point of the semiconductor element yet sufficiently high to effect deposition of the semiconductor element from the gas phase onto the surface of the substrate, and adjusting the composition of the reaction gas so that throughout the deposition process the temperautre at which the rate of deposition is at a maximum is below the temperature to which the surface of the substrate is heated, and the temperature to which the surface of the substrate is heated lies in a temperature range wherein the rate of deposition decreases with increasing temperature at a constant rate.

3,502,517

METHOD OF INDIFFUSING DOPING MATERIAL FROM A GASEOUS PHASE, INTO A SEMICONDUCTOR CRYSTAL

Erhard Sussmann, Poing, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany

Filed Dec. 5, 1966, Ser. No. 598,986
Claims priority, application Germany, Dec. 13, 1965, S 100,933
Int. Cl. H01l 7/44, 7/36
U.S. Cl. 148—175 3 Claims



A new method of indiffusing doping material into a semiconductor body is shown. This method consists of preparing and SiO_2 layer on the semiconductor body, cutting a window therein, depositing a doped semiconductor layer thereon and indiffusing the dopant from the doped semiconductor layer.

3,502,518

METHOD FOR PRODUCING GALLIUM ARSENIDE DEVICES

George Richard Antell, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 1, 1967, Ser. No. 665,094
Claims priority, application Great Britain, Sept. 20, 1966, 41,973/66
Int. Cl. H01l 7/34
U.S. Cl. 148—186 26 Claims

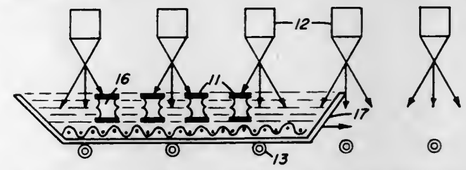
The invention provides a method for producing gallium arsenide devices including the steps of providing a slice of gallium arsenide of a first conductivity, forming a layer of semi-insulating material in a major surface of the slice using oxygen, and diffusing a dopant into the major surface of the layer of insulating material to form therein a layer of gallium arsenide of desired conductivity.

3,502,519

PROCESS FOR THRU-HOLE ETCHING OF A METAL PLASTIC

Robert M. White, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 8, 1966, Ser. No. 600,226
Int. Cl. C23b 3/04
U.S. Cl. 156—5 3 Claims



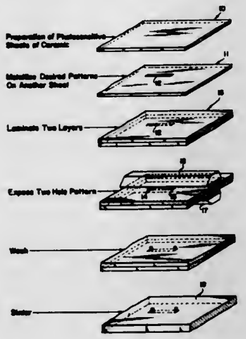
A method for improving the lateral cross-sectional profile of an etched-through article in which the article is submerged in an etchant bath with its upper resist coated surface slightly below the surface of the bath and an external etchant spray is impinged thereon to agitate the bath.

3,502,520

PROCESS OF MAKING PATTERNED UNITARY SOLID BODIES FROM FINELY DIVIDED DISCRETE PARTICLES

Bernard Schwartz, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 30, 1965, Ser. No. 527,408
Int. Cl. C23f 1/00; C04b 35/64; G03c 5/00
U.S. Cl. 156—6 13 Claims



A unitary body is formed in a selected pattern by mixing suitable particles with a binder and a photodevelopable medium, exposing the mixture to radiation to

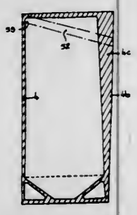
sensitize the photodevelopable medium, which is differentiated from the unexposed medium upon development. The soluble material is removed by washing, leaving insoluble material in the form of the selected pattern. This material is sintered to remove the binder and form a unitized mass from the particles. A plurality of layers of the "green" material before sintering may be superimposed with conductors between them, and the material then sintered to form a unitized mass with conductor embedded therein.

3,502,521

METHOD OF PRODUCING PLASTIC CONTAINERS

Louis Doyen and Leon Doyen, both of 79 Rue de Bourgogne, Lyon, Rhone, France

Continuation-in-part of application Ser. No. 322,887, Nov. 12, 1963. This application Mar. 14, 1966, Ser. No. 534,107
Claims priority, application France, Aug. 26, 1965, 45,916
Int. Cl. B29h *7/04;* **B29c** *27/02*
U.S. Cl. 156—69 **1 Claim**



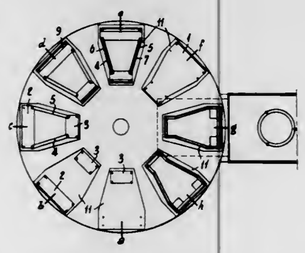
A method of making containers of plastic material in which a pair of thermoplastic sheets are disposed one above the other and are joined at their base while being thermally welded together along flat seams on opposite longitudinal sides from the base toward an upper end of the assembly with convergence of these seams. One of these seams may be of progressively increasing width toward the top to form a handle.

3,502,522

METHOD FOR MANUFACTURING PLASTIC KNICKERS AND A MACHINE FOR CARRYING OUT THE METHOD, AS WELL AS BABY PANTS THUS OBTAINED

Francesco Adamoli, % Saplm-Sesto S. Giovanni, Viale Casiraghi 413, Milan, Italy

Filed Oct. 18, 1966, Ser. No. 587,544
Claims priority, application Italy, Oct. 23, 1965, 10,448/65; Aug. 9, 1966, 21,239/66
Int. Cl. A41b *13/04;* **B32b** *3/00*
U.S. Cl. 156—70 **7 Claims**



In an improved method and apparatus for manufacturing baby pants, plastic material is cut into pieces including a body piece and side pieces. The side pieces are welded to the body piece to provide the baby pants with front and back pockets for receiving the ends of a disposable napkin or diaper.

3,502,523

ORIENTED POLYAMIDE ARTICLE CONTAINING POLYETHYLENE

Arthur N. Ingalls, Vienna, W. Va., and Gerald G. Hayes, Camden, S.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del.

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,228
Int. Cl. B29c *27/08*
U.S. Cl. 156—73 **3 Claims**

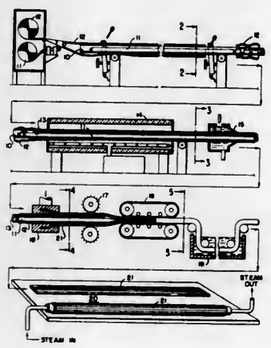
Oriented polyamide articles, such as strapping and power transmission belting, exhibit improved friction weldability and resistance to delamination when the polyamide resin from which the article is formed is blended with from 0.20 to 3.0% by weight of branched polyethlyene resin and the resultant blend is thereafter formed into the oriented article.

3,502,524

PROCESS OF MAKING FIRE HOSE AND THE LIKE

Harry W. Stanhope, Hohenwald, Tenn., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware

Original application Apr. 24, 1964, Ser. No. 362,280. Divided and this application July 27, 1966, Ser. No. 568,154
Int. Cl. B32b *1/08, 25/04, 31/16*
U.S. Cl. 156—84 **5 Claims**



A process of making fire hose and the like characterized by the employment of a mandrel having its upper side cut away in a wide longitudinal zone of sufficient area to admit freely a straight length of rubber hose, supplemented by the cooperative employment of a closed sizing mandrel upon which the rubber tube is assembled within a preformed fabric tube.

3,502,525

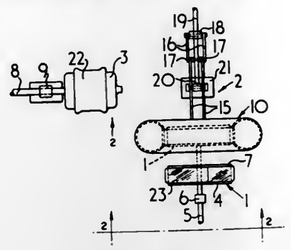
METHODS AND APPARATUS FOR MANUFACTURING RUBBERIZED TEXTILE FABRIC

John Oswald Wood, Tamworth, England, assignor to The Dunlop Company Limited, London, England, a British company

Filed July 13, 1966, Ser. No. 564,812
Claims priority, application Great Britain, July 17, 1965, 30,477/65
Int. Cl. B29h *17/36, 17/08, 5/02*
U.S. Cl. 156—111 **15 Claims**

Method and apparatus for longitudinally compressing the cord in an unvulcanized rubberized parallel cord

fabric for use in the construction of pneumatic tires and the like, which consists of forming the fabric into an annulus, positioning the annulus within an annular member, and the reducing the radially inner diameter of the annular member to reduce the diameter of the fabric annulus and thereby compressing the cords therein.

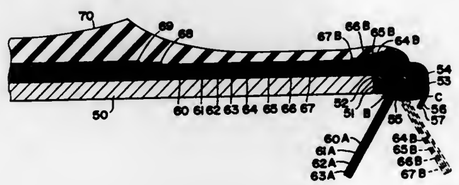


3,502,526

METHOD OF MANUFACTURING A TWIN BEAD PNEUMATIC TIRE ON A FLAT BUILDING DRUM

William Robert Woodall, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Feb. 6, 1967, Ser. No. 614,331
Int. Cl. B29h *17/24*
U.S. Cl. 156—132 **4 Claims**



This invention relates to a new method for building a twin bead pneumatic tire on a flat building drum. This novel method comprises firstly, setting a first bead bundle at the edge of the flat drum; secondly, applying the body plies to the flat drum and turning down the ply edges around the first bead bundle; thirdly, setting a second bead bundle axially outwardly of the first bead bundle and concentric therewith; and lastly, engulfing the bead bundles with groups of body plies.

3,502,527

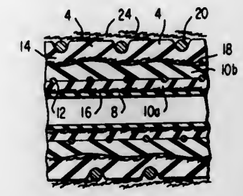
METHOD OF MAKING A HELICALLY GROOVED REINFORCED HOSE

Clarence W. Borden, Trenton, N.J., assignor to Goodall Rubber Company, Trenton, N.J.

Filed May 12, 1967, Ser. No. 638,004
Int. Cl. B31c *3/00*
U.S. Cl. 156—143 **12 Claims**

A helically grooved hose has successive layers of elastomeric material, braided fabric and helical reinforcement wire. The helical grooves or depressions do not extend between the convolutions of the reinforcement wire due to their location radially outwardly thereof. The outwardly extending projections which lie between the depressions are substantially flat.

The method includes steps of helically wrapping a cord around a hose body which has an outer layer of moldable plastic material and then wrapping the corded hose with a flexible sheet material which flattens the projections between adjacent convolutions of the cord. The corded, wrapped hose is then cured in order to retain the desired shape.

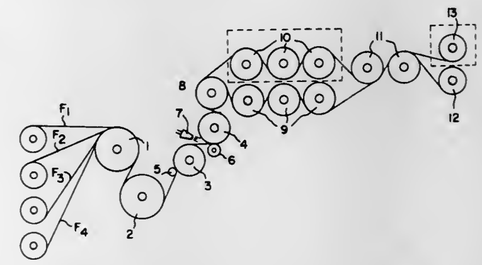


3,502,528

METHOD FOR PREPARING POLYPROPYLENE FILMS

Shohei Yoshimura, Ootsu, Japan, assignor to Toyo Boseki Kabushiki Kaisha, Osaka, Japan

Filed Apr. 19, 1967, Ser. No. 632,027
Claims priority, application Japan, Apr. 22, 1966, 41/25,716
Int. Cl. B32b *31/08*
U.S. Cl. 156—164 **9 Claims**



A method of producing a polypropylene film laminate which comprises superposing a plurality of polypropylene films, cold-drawing the superposed films between a low speed roll and a high speed roll associated with a heating roll, the superposed film laminate being passed over the low speed roll and then between the high speed roll and the heating roll, the directing being at a rate sufficient to cause the formation of voids in the films, keeping the temperature no higher than 45° C. on at least one surface of the film laminate as it is fed to the cold-drawing rolls, and then heat treating the resulting film laminate by press-contacting the same on a series of heated rolls. The method includes the step of directing cooling air against one surface of the laminate immediately before it contacts the high speed roll so as to produce a temperature difference of at least 10° C. between the surface of the laminate as it is fed to the high speed roll.

3,502,529

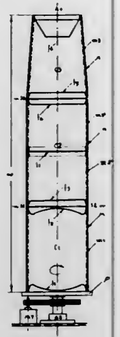
METHOD OF MAKING RESIN IMPREGNATED FILAMENTED WOUND STRUCTURES

Gian Pietro Borgnolo, Via Tarvisio 20, and Giovanni Spangaro, Via Codroi-po 112, both of Udine, Italy

Filed July 18, 1966, Ser. No. 566,094
Int. Cl. B65l *81/00*
U.S. Cl. 156—172 **5 Claims**

A plurality of transverse members are axially spaced along a longitudinal axis and sleeves are inserted between

at least some of the members to thereby define a column. A filamentary, resin impregnated material is wound about the entire length of the column and after the resin is



cured the column is cut transversely in the plane of at least some of the transverse members to thereby define a plurality of containers.

3,502,530

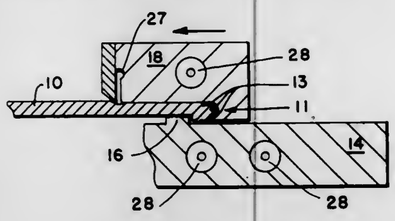
METHOD OF PRODUCING A FINISHED REINFORCED EDGE ON FLEXIBLE WEBS OR SHEETS

Charles L. Adams and Richard J. McFalls, Troy, N.Y., assignors, by mesne assignments, to Clupak, Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 221,175, Sept. 4, 1962. This application Jan. 14, 1966, Ser. No. 520,803

Int. Cl. D06c *25/00;* **B31f** *1/12;* **B32b** *3/02*

U.S. Cl. 156—183 **4 Claims**



Method of reinforcing flexible fibrous webs by strengthening the edges in an edge upsetting action in which the web is supported along a line inward of the edge to be reinforced to create an unsupported portion and then upset to create random multiple pleats and folds. The compressed edge may be held by adhesive or softening of web fibers.

3,502,531

METHOD FOR BEDDING PANELS INTO FRAMES

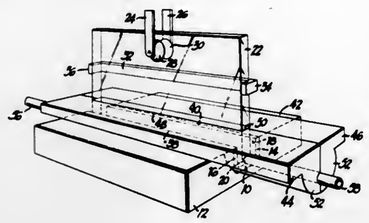
Howard J. Shockey, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana

Filed Mar. 28, 1966, Ser. No. 538,001

Int. Cl. C03c *27/04;* **B32b** *17/06*

U.S. Cl. 156—293 **3 Claims**

The method relates to the bedding of a panel into a frame which has interior surfaces defining a recess for receiving a marginal edge of the panel. In the method, a marginal edge portion of the panel is placed in the recess and sealing means are applied between the frame and the panel to form a liquid-tight cavity. A vacuum is then applied to this cavity and liquid bedding material is then drawn into the cavity as the result of the suction created



to fill the cavity. The bedding material is then heated to cure to a solid form where it is adhered to the panel and frame.

3,502,532

METHOD FOR THE MANUFACTURE OF LAMINATE ARTICLES

Hans Frielingsdorf, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,956

Int. Cl. B32b *3/26, 5/18;* **C09j** *7/00*

U.S. Cl. 156—309 **4 Claims**

1. A method for the manufacture of a laminate of paper and foamed plastic sheet which comprises:

(1) contacting by simultaneously passing along a guiding surface

(a) an extruded sheet of foamed thermoplastic vinyl-aromatic polymer composition having a thickness of at least about 0.07 mm., a density in the range from 15 to 400 g./l., and cell diameters not in excess of about 0.5 mm.; and

(b) a sheet of paper coated on the side opposite said guiding surface with a continuous film, applied thereto in coherent form of a heat-softened thermoplastic vinyl-aromatic polymer composition in a thickness not exceeding 0.2 mm.,

whereby the coated side of said paper is pressed against and fused with said foamed plastic sheet.

3,502,533

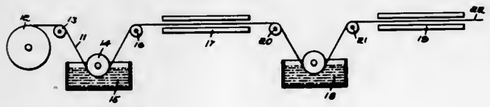
METHOD OF MAKING A VENEER SURFACING SHEET MATERIAL

Ernest Reiss, 37 Woodbine Road, Belmont, Mass. 02178

Filed Jan. 18, 1966, Ser. No. 521,266

Int. Cl. C09j *5/04*

U.S. Cl. 156—315 **5 Claims**



A melamine sheet material which does not require a balancer sheet to prevent shrinkage and warping when laminated with a substrate, is prepared by coating with alkylated melamine formaldehyde resin, partial curing, coating with a conventional melamine formaldehyde resin and heating to complete the curing of the first coat but only partially curing the second coat. Curing is completed when laminating the sheet with a substrate.

3,502,534

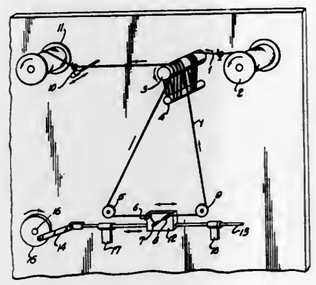
METHOD OF SEPARATING ADHERING COLLAGEN MONOFILAMENTS

Ernest J. Griset, Jr., Bound Brook, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

Original application Aug. 10, 1962, Ser. No. 216,247, now abandoned. Divided and this application June 29, 1967, Ser. No. 650,004

Int. Cl. B32b *31/16, 31/32*

U.S. Cl. 156—344 **5 Claims**



A group of parallel adherent collagen monofilaments are separated by isolating a section of the bonded multifilament between two fixed points and applying a variable tension thereto.

3,502,535

APPARATUS FOR TENSIONING REINFORCING STRANDS FOR BELTS AND THE LIKE

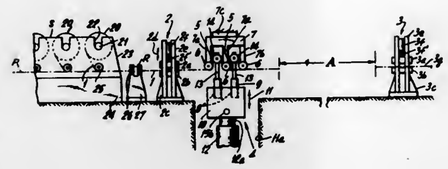
Hendrikus Johannes Bongers and Winfried Moltzfeld, Krefeld, Germany, assignors to G. Siempelkamp & Co., Krefeld, Germany, a corporation of Germany

Filed Apr. 28, 1967, Ser. No. 634,749

Claims priority, application Germany, Apr. 30, 1966, S 103,571

Int. Cl. B32b *15/04, 32/10;* **B65h** *77/00*

U.S. Cl. 156—494 **10 Claims**



Apparatus for the production of reinforced elongated flexible belts wherein an array of mutually parallel longitudinally extending tensioned reinforced strands are bonded respective layers, wherein the wire-tensioning device includes a support (e.g. a cylinder block) extending transversely of array and provided with a plurality of individually movable tensioning members in the form of individual pistons respectively aligned and engageable with the strands; a hydraulic arrangement for shifting the support relative to said array in vertical direction for preliminary tensioning of the strand; and hydraulic cylinders for shifting the members individually for final tensioning of the respective strands.

3,502,536

MECHANISM FOR PRODUCING TEAR STRIPS

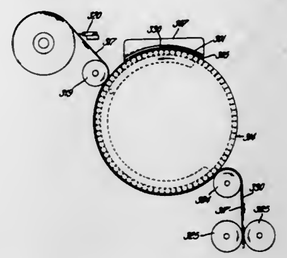
Derek Henry Youngman and Robert William Davies, Deptford, London, England, assignors to The Molins Organisation Limited, London, England, a British company, a corporation of Great Britain

Filed Nov. 8, 1965, Ser. No. 506,789

Claims priority, application Great Britain, Nov. 10, 1964, 45,784/64

Int. Cl. B32b *31/10, 31/18*

U.S. Cl. 156—519 **9 Claims**



Apparatus for producing tear-strips from a continuous web (of width equal to the desired length of tear strip) comprises an intermittent web feed, a conveyor to receive strips cut from the web, and knives operable while the web is stationary to cut across the web progressively from the down-stream edge (relative to the conveyor movement), together with means continuously urging each strip during cutting towards the conveyor. The conveyor is conveniently a suction belt or drum, the suction serving to produce an air-stream which urges the strips towards the conveyor. The apparatus may also include provision for continuously feeding a wrapper web and attaching the tear-strips thereto.

3,502,537

AIR-PERMEABLE PROTECTIVE MATERIALS

William M. Pearson, Halifax, and Thomas S. Crosby, Huddersfield, England, assignors to Bondina (B.D.A.) Limited, Halifax, England, a British company

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,491

Claims priority, application Great Britain, Jan. 4, 1966, 341/66; Aug. 23, 1966, 37,743/66

Int. Cl. B32b *5/16*

U.S. Cl. 161—87 **9 Claims**

An air-permeable protective fabric comprising a composite of a woven or knitted fabric and a non-woven fabric impregnated with a binder and having a layer of charcoal bonded to one side of said composite by means of a binder composition comprising an acrylate resin which is capable of forming a soft film.

3,502,538

BONDED NONWOVEN SHEETS WITH A DEFINED DISTRIBUTION OF BOND STRENGTHS

Joseph Claine Petersen, Laramie, Wyo., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 390,020, Aug. 17, 1964. This application June 14, 1968, Ser. No. 747,405

Int. Cl. B32b *5/16*

U.S. Cl. 161—150 **8 Claims**

Bonded nonwoven sheets of defined bond parameters exhibit high tufted-grab-tensile strength and dye-beck-width stability. Such sheets contain matrix fibers having an average breaking strength of at least 7 grams and a multiplicity of bonds having a strength greater than 0.1 gram, the average strength of these bonds being at least

0.9 gram and less than the matrix fiber breaking strength, the bond strength distribution being characterized by a variance of at least 4, the number of bonds being such that the product of the number of bonds per cubic centimeter and the average bond strength is greater than 5×10^4 g./cm.^{3} and this product divided by the fiber breaking strength is less than 9×10^3/cm.^{3}.

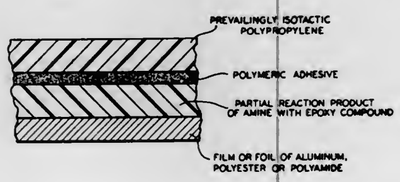
3,502,539
LAMINATED PRODUCT AND PROCESS
David D. MacPhail, Sr., Thompsonville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,148
Int. Cl. B32b *5/18*
U.S. Cl. 161—160 **10 Claims**

Disclosed herein is a laminated wall structure comprising: (A) a resinous foam core; (B) an absorbent paper facing sheet adhered to at least one side of the resinous foam core; (C) an adhesive adhered to the absorbent paper facing sheet and permeating it thereby coming into contact with and adhering to the resinous foam core; and (D) an outer veneer surface adhered to the adhesive. A method of preparing such a laminated wall structure is also claimed.

3,502,540
NOVEL COMPOSITE BUT MONOLITHIC LAMINATED PLASTIC AND PROCESS OF MANUFACTURING THEREOF
Roberto Pietrocola, Via Cavriana 3, Milan, Italy
Continuation-in-part of application Ser. No. 436,535, Mar. 2, 1965. This application June 26, 1968, Ser. No. 747,414
Claims priority, application Italy, Mar. 4, 1964, 44,675/64
Int. Cl. B32b *27/06, 27/20;* **B29h** *8/00*
U.S. Cl. 161—165 **5 Claims**

A novel composite laminated plastic material is prepared from impact resistant polystyrene. The laminate comprises two or three plies; an opaque backing sheet, a thin outer film, preferably containing an ultraviolet-radiation absorbing substance and, optionally, a thin colored ply placed between the outer film and the backing sheet. If desired a design may be printed on the inner surface of the thin outer film prior to lamination. If further desired, the surface of the material may be engraved or indented.

3,502,541
PLASTIC POLYOLEFIN LAMINATES AND METHOD OF MAKING SAME
Franco Barbieri Hermitte and Mario Angeletti, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed Apr. 21, 1966, Ser. No. 544,110
Claims priority, application Italy, Apr. 27, 1965, 9,497/65
Int. Cl. B32b *27/38, 15/20, 27/32*
U.S. Cl. 161—186 **10 Claims**

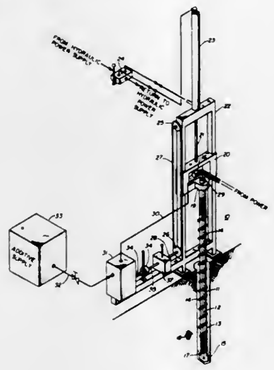


Plastic laminates, having high impermeability, strength, transparency and brilliance, particularly useful for packaging, comprising a top layer of a stretched or unstretched polypropylene film, a layer of polymeric adhesive, a layer of the reaction product of an amine with an oxirane compound and a bottom layer of a film or foil of aluminum, a polyester or a polyamide. Methods for preparing the laminates are also disclosed.

3,502,542
METHODS OF IMPROVING ADHESION
Werner J. Wenisch, Rutherford, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed June 14, 1965, Ser. No. 463,882
Int. Cl. B32b *15/08;* **C09j** *3/12*
U.S. Cl. 161—216 **19 Claims**

Elastomer adhesion to metal surfaces is markedly improved by curing in the presence of N-maleamic acids, or N-maleimido compounds having at least one —COOH or —OH group, in a free radical environment while contacting the elastomer with the metal.

3,502,543
MEANS FOR OPERATING AN AUGER WITH ADDITIVE SUPPLY
Ben W. Sewell, 4700 Mohawk Blvd., Tulsa, Okla. 74115
Filed July 28, 1966, Ser. No. 568,458
Int. Cl. E21b *21/04*
U.S. Cl. 175—24 **3 Claims**



An auger is connected to a power source and actuated to be rotated and advanced. Material is particulated and delivered to the flights of the auger. A source of fluid lubricant is arranged to supply lubricant between the auger flights and the particulated material. A control system coordinates the rate of material and the rate of material volume and the rate of fluid lubricant delivered to maintain a desired ratio.

3,502,544
PROCESS FOR PRODUCING L-ISOLEUCINE BY FERMENTATION
Zenjiro Sugisaki, Katsuji Yamamoto, and Hirokazu Koyama, Noda-shi, Japan, assignors to Noda Institute for Scientific Research, Chiba-ken, Japan
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,532
Int. Cl. C12b *1/00;* **C12d** *13/06*
U.S. Cl. 195—29 **6 Claims**

Process for producing L-isoleucine which involves cultivating prototrophs of glutamic acid-producing bacteria, such as *Brevibacterium divaricatum,* under an aerobic condition in a medium containing a carbon source, a nitrogen source, inorganic salts, biotin and DL-alpha-amino-n-butyric acid, said cultivating medium not requiring any

nutrients other than vitamins. The aforementioned process is characterized with respect to the ease of cultivating, and also in the high producibility and high selectivity for producing the L-isoleucine.

3,502,545
PROCESS FOR THE SEPARATION OF WATER-SOLUBLE POLYMERIC MATERIALS FROM UNBOUND PROTEIN OR PEPTIDE USING SEMIPOROUS GEL
Thomas L. Westman, St. Louis, and Bernard S. Wildi, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 27, 1968, Ser. No. 763,384
Int. Cl. C12d *13/06*
U.S. Cl. 195—66 **16 Claims**

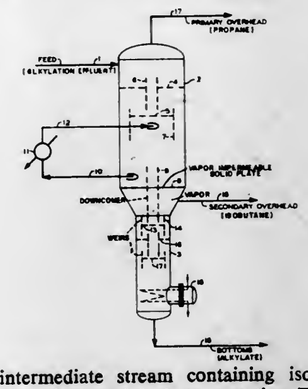
Preparation of soluble protein-polymer or peptide-polymer products involves reaction of protein or peptide, e.g., an enzyme or hormone, with a water-soluble polymer. Recovery of unbound unreacted protein or peptide from unreacted polymer and soluble polymeric protein- or peptide-containing product presents difficulties. Present invention permits facile separation of unreacted protein or peptide from unreacted polymer, as well as from soluble protein- or peptide-polymer products if present, by chromatography employing a semiporous gel, e.g., cross-linked dextran, column. The unreacted polymer, as well as soluble protein- or peptide-polymer product if present is eluted in the void volume of such column whereas unbound protein or peptide is not, despite the fact that the exclusion limits of the column would not indicate exclusion of unreacted polymer of the molecular weight involved. Fractionation and recovery of protein or peptide can thus be readily effected.

3,502,546
CULTURE AND DIAGNOSTIC METHOD FOR TREPONEMA PALLIDUM ORGANISMS
Kenneth Wade Thompson, Waunakee, Wis., and Richard Thompson Price, Verona, Rita Cecelia Prodell, East Orange, and Matilda Martha Sipsey, Morristown, N.J., assignors to Organon, Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,570
Int. Cl. C12k *3/00*
U.S. Cl. 195—96 **2 Claims**

Spirochaetal organisms, such as *Treponema pallidum,* are cultured in either batch or continuous culture in a cell culture type medium, under controlled oxygen concentrations, and especially in the presence of bacteria of the family Bacillaceae. The antigen formed in the culture is adsorbed on a finely divided solid carrier to provide a diagnostic reagent for syphilis.

3,502,547
SEPARATION AND RECOVERY OF LIQUID FRACTIONS
Ronald E. Bridgeford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,664
Int. Cl. B01d *3/22*
U.S. Cl. 203—71 **8 Claims**

A feed stream comprising propane, isobutane and C_6 alkylate is introduced into the top section of a single fractional distillation column having a top section and a bottom section separated by a solid, vapor impermeable plate. At least one downcomer, which serves as the only fluid passageway through said plate, extends downwardly into the liquid on a tray in the top portion of the bottom section to permit the passage of only liquid from the top section to the bottom section while preventing the passage of vapor from the bottom section to the top section. Each section is provided with means for reboiling the liquid contained therein. An overhead product stream containing propane is withdrawn from the top of the top section



while an intermediate stream containing isobutane is withdrawn from the top of the bottom section. The bottom section can have a smaller diameter than the top section.

3,502,548
METHOD OF ELECTROPLATING GOLD ON CHROMIUM
Ernest H. Lyons, Jr., Elsah, Ill. (1550 Bay Laurel Drive, Menlo Park, Calif. 94025)
Continuation-in-part of application Ser. No. 493,560, Oct. 6, 1965. This application Oct. 24, 1966, Ser. No. 589,088
Int. Cl. C23f *17/00;* **C23b** *5/28, 1/02*
U.S. Cl. 204—32 **5 Claims**

A plating process for adhering gold to chromium. The surface of the chromium is depassivated in an acid bath and is then placed in aqueous acid gold plating bath having a pH between 2.5 and 4.5. It is then plated with a thin layer of gold from the acid bath while preventing the formation of loose displacement deposits on the surface. One way of preventing the formation of loose displacement deposits is by providing an acid plating bath containing from 0.1 gram per liter to 10 grams per liter of a base alloying metal such as iron, nickel, or cobalt in the form of a soluble salt. Another way is to employ a bath containing chelating agents.

3,502,549
METHOD FOR THE PROTECTION OF ZIRCONIUM AND ZIRCONIUM-BASE ALLOYS
Michel Charveriat, Albertville, France, assignor to Ugine Kuhlmann, Paris, France, a corporation of France
No Drawing. Filed Apr. 17, 1968, Ser. No. 721,935
Claims priority, application France, Apr. 17, 1967, 102,932
Int. Cl. C23b *5/06, 5/52*
U.S. Cl. 204—37 **5 Claims**

The method of protecting zirconium and its alloys by the electrolytic deposition of chrome thereon, utilizing an electrolytic bath comprising an aqueous solution of from 400 to 550 g./l. CrO_3, 10 to 40 g./l. $SrSO_4$, and 30 to 80 g./l. K_2SiF_6, maintained at a temperature between 10 and 30° C. and at a current density of 5 to 40 A./dm.^{2}.

3,502,550
NICKEL ELECTROPLATING ELECTROLYTE
Frank Passal, Detroit, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 1, 1965, Ser. No. 506,005
Int. Cl. C23b *5/08, 5/46*
U.S. Cl. 204—49 **1 Claim**

A process is provided for electroplating a semi-bright nickel deposit with a plating solution which includes

therein as semi-bright additive piperonal and a water-soluble acetylenic compound. Also, a nickel plating solution is provided for said process which consists essentially of an acidic aqueous nickel plating solution and including as semi-bright additive therein a composition consisting essentially of piperonal and a water-soluble acetylenic compound, and such compositions.

3,502,551

ACID ELECTROLYTE FOR THE DEPOSITION OF BRIGHT, LEVELLING COPPER COATINGS

Hans Gunther Todt and Wolfgang Clauss, Berlin, Germany, assignors to Schering AG., Berlin, Germany

No Drawing. Filed Aug. 10, 1967, Ser. No. 659,608
Claims priority, application Germany, Aug. 20, 1966, 39,431
Int. Cl. C22d *1/16*; C23b *5/18, 5/46*
U.S. Cl. 204—52 **6 Claims**

Acid electrolyte copper baths have improved copper coatings by the inclusion in said baths of luster forming oxygen containing high molecular compounds, organic thio compounds and at least one compound having the generic formula:

$$(-CH_2-\underset{\underset{R}{|}}{CH}-)_n$$

wherein R is the amino group or its functional derivative, or a heterocyclic radical combined through a nitrogen atom, and possibly containing additional hetero atoms, and *n* is an integer ranging between about 5 and 1000.

3,502,552

METHOD FOR ANODIC OXIDATION OF TITANIUM AND ITS ALLOYS

Wataru Mizushima, Neyagawa-shi, Osaka-fu, and Yoshio Iida, Hirakata-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Nov. 21, 1966, Ser. No. 595,784
Claims priority, application Japan, Nov. 30, 1965, 40/74,566; Dec. 1, 1965, 40/74,419; Feb. 4, 1966, 41/6,823, 41/6,824; Feb. 24, 1966, 41/11,514, 41/11,516
Int. Cl. C23b *9/00*
U.S. Cl. 204—56 **12 Claims**

Dielectric films having high insulating properties are formed on titanium and titanium alloys by anodic oxidation in an electrolyte comprising inorganic fluorides, borates, phosphates, organic solvents, and water. Preheating the titanium at above 1000° C. in a reduced pressure of air or at 400°–1000° C. in hydrogen prior to anodizing improves the dielectric properties of the films. Etching of the metal substrate in hydrofluoric and nitric acid before anodizing is also helpful.

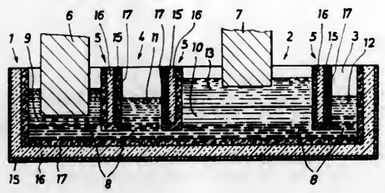
3,502,553

PROCESS AND APPARATUS FOR THE ELECTROLYTIC CONTINUOUS DIRECT PRODUCTION OF REFINED ALUMINUM AND OF ALUMINUM ALLOYS

Hans Gruber, 14 Birkenstrasse, 5205 St. Augustin, Germany

Filed Aug. 2, 1965, Ser. No. 476,460
Claims priority, application Switzerland, Feb. 16, 1965, 2,131/65
Int. Cl. C22d *3/12, 3/20, 3/02*
U.S. Cl. 204—67 **15 Claims**

A process and apparatus for processing aluminum in which a first vessel containing liquid aluminum alloy is spaced from a second vessel containing liquid alloy via at least one channel connecting the vessels at the lower portions thereof and through which the liquid alloy can flow from one vessel to the other, there being electrodes extending downwardly into the vessels to positions above



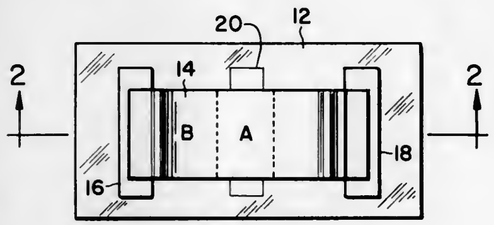
the channel, the electrodes associated with one of the vessels losing material into the alloy therein.

3,502,554

METHOD FOR FORMING THIN FILMS

Francis P. Fehlner, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed July 14, 1967, Ser. No. 653,431
Int. Cl. B01k *1/00*; C01d *7/34*
U.S. Cl. 204—130 **14 Claims**



A method is disclosed for forming thin films consisting of at least two materials, one of the materials being a constituent of a solid electrolyte. Under suitable environmental conditions, a metal can be deposited at the cathode of an electrochemical cell which utilizes glass as the electrolyte. If the temperature is sufficiently high, the deposited metal can form an alloy with the metal which forms the cathode.

3,502,555

SELECTIVE ETCHING OF CHROMIUM-SILICA LAMINATES

Ralph D. Di Stefano, Mercerville, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed June 8, 1967, Ser. No. 644,649
Int. Cl. H01l *7/56*
U.S. Cl. 204—143 **8 Claims**

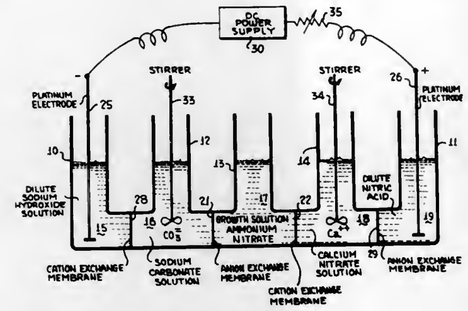
In the manufacture of thin film capacitors employing silica as the dielectric and chromium as the electrode material, the silica is pyrolytically deposited on the underlying chromium layer. At the elevated temperature at which the silica is deposited, a reaction occurs at the interface between the silica and chromium layers producing a transition layer including one or more chromium compounds which are extremely difficult to etch without dissolving portions of other layers which are to be retained. An electrolytic etching technique is employed for removal of this interface layer in which the laminate is immersed in a sodium hydroxide electrolyte and a potential applied between the electrolyte and the transition layer in order to remove selected portions of said transition layer.

3,502,556

METHOD OF GROWING LARGE SINGLE CRYSTALS

Horace W. Chandler, New York, N.Y., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey

Filed July 25, 1967, Ser. No. 655,829
Int. Cl. B01d *13/02*
U.S. Cl. 204—180 **5 Claims**



Large single crystals are grown by introducing cations and anions, for forming the desired crystal, from respective "nutrient" solutions thereof into a growth solution for supporting the desired crystal growth, under the influence exerted by an external source of D-C power. Current flow through the solution is effected by movement of the ions, and is a function of the magnitude of voltage applied from the external source across a pair of electrodes introduced into the overall solution. To prevent any effect upon crystal growth as a result of undesirable ions generated by electrode reaction, the electrodes are immersed in special respective solutions isolated from the nutrient solutions by ion exchange membranes which permit current flow but block the passage of the undesired ions to either the nutrient solutions or the growth solution.

3,502,557

ELECTRODEPOSITION OF AMINE-ALDEHYDE CONDENSATE AND HYDROXY-CONTAINING CARBOXYLIC ACID COREACTION PRODUCTS

Michael Yurcheshen, Parma Heights, Morris Levine, Cleveland Heights, and Ralph M. Brane, Avon Lake, Ohio, assignors to PPG Industries Inc., a corporation of Pennsylvania

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,793
Int. Cl. B01k *5/02*; C23b *13/00*
U.S. Cl. 204—181 **13 Claims**

Ungelled thermosetting products are produced by reacting an amine-aldehyde condensate, such as melamine-formaldehyde or urea-formaldehyde resin, with a polyfunctional material containing both hydroxyl and carboxyl groups. Preferred polyfunctional materials include di(hydroxyaryl) alkylidene carboxylic acids. Water-dispersed compositions in which the vehicle comprises such reaction products alone or in combination with other resins are applied by electrodeposition.

3,502,558

METHOD OF DEPOSITING GELATIN

Harvey A. Hodes, Eatontown, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Nov. 3, 1967, Ser. No. 681,064
Int. Cl. B01k *5/02*; C23f *13/00*
U.S. Cl. 204—181 **6 Claims**

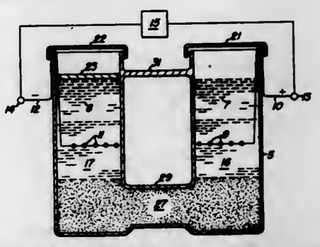
Gelatin is deposited on a cathode from an aqueous colloidal dispersion of gelatin by adding a water soluble inorganic salt of silver, nickel, or cobalt to an aqueous colloidal dispersion of gelatin provided with a suitable anode and cathode, and then applying an EMF across the electrodes.

3,502,559

BIOELECTROCHEMICAL TRANSDUCER

Nelson E. Alexander, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 28, 1966, Ser. No. 605,523
Int. Cl. G01n *27/02*; C12k *1/04*
U.S. Cl. 204—195 **8 Claims**



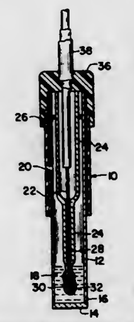
A bioelectrochemical device having two chambers containing a cathode and anode which are immersed in a biological organism inoculated electrolyte, wherein the growth and metabolism of the biological organism generates an electrical current indicative of its activity.

3,502,560

ELECTROCHEMICAL APPARATUS

Warren M. Wise, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed May 1, 1968, Ser. No. 725,786
Int. Cl. B01k *3/10*
U.S. Cl. 204—195 **15 Claims**



An improved electrode for determining the concentration of ionic species in an aqueous solution and more particularly, an organic ion exchange electrode having a solid state internal reference electrode.

3,502,561

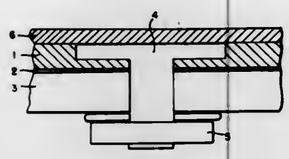
ALKALI-CHLORINE CELL HAVING A HORIZONTAL MERCURY CATHODE

Wilhelm Rasche and Ewald Wygasch, Ludwigshafen (Rhine), and Gotthard Csizi, Bad Duerkheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Aug. 30, 1967, Ser. No. 664,349
Claims priority, application Germany, Sept. 5, 1966, 1,567,910
Int. Cl. C22d *1/04*
U.S. Cl. 204—219 **3 Claims**

An electrolytic cell having a horizontal mercury cathode for the electrolysis of aqueous solutions of alkali metal

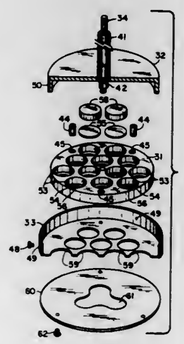
chlorides by the amalgam method consists of aluminum onto which a thin layer of steel has been applied and then onto that a chemically resistant, electrically insulating material. Current is supplied by means of mushroom-shaped members extending through the bottom of the cell, said members being distributed over the bottom of the electrolytic cell in a definite number and arrangement.



3,502,562
MULTIPLE CATHODE SPUTTERING FIXTURE

Richard S. Humphries, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Apr. 19, 1967, Ser. No. 631,982
Int. Cl. C23c *15/00*
U.S. Cl. 204—298 **10 Claims**



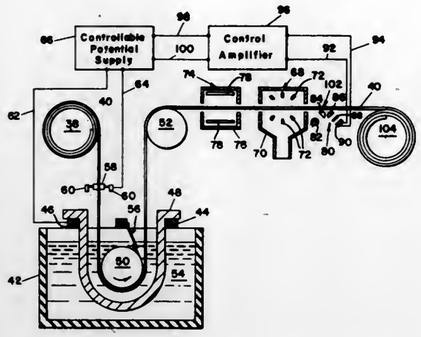
A multiple cathode sputtering fixture is described which permits the simultaneous sputtering of a plurality of cathodes. Because of the simple cathode shapes accommodated by this fixture, even hard brittle materials are easily supported for sputtering. When differing cathode materials are used, thin film mixtures or alloys may be deposited.

3,502,563
CONTROL OF ELECTRODEPOSITS

Francis J. Schmidt, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 331,766, Dec. 19, 1963. This application June 29, 1965, Ser. No. 470,330
Int. Cl. B01k *5/02*; C23b *13/00*
U.S. Cl. 204—299 **3 Claims**

Parameter of single-component electrophoretic deposit which is function of deposition voltage may be adjusted by adjustment of voltage to compensate for other changes, e.g. depletion of bath. Composition of plural component deposit may be changed by voltage change because of inventor's discovery that rate of deposit of any given component is not, in general, linearly proportional to applied potential (as prior art taught), and therefore parameter dependent upon ratio of different components in deposit may be controlled by voltage adjustment. Closed-loop



servo system of parameter sensor measuring parameter of deposit, controlling voltage to bath in which deposit has been produced.

3,502,564
HYDROPROCESSING OF COAL

Russell L. Hodgson, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

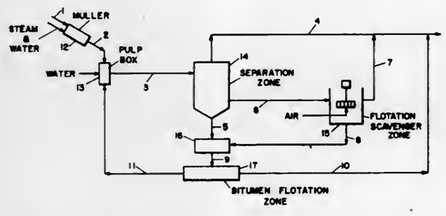
No Drawing. Filed Nov. 28, 1967, Ser. No. 686,345
Int. Cl. C10g *1/06*
U.S. Cl. 208—9 **6 Claims**

The in situ preparation of a hydrogenation-liquefication catalyst impregnated on the coal results in significant improvement in catalytic activity. Metal naphthenates and sulfides are particularly appropriate catalysts for in situ preparation.

3,502,565
EFFLUENT DISCHARGE BITUMEN RECOVERY BY SETTLING

Robert A. Baillie, West Chester, Pa., assignor to Great Canadian Oil Sands Limited, Toronto, Canada, a corporation of Canada

Filed Sept. 9, 1966, Ser. No. 578,303
The portion of the term of the patent subsequent to July 16, 1985, has been disclaimed
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 **6 Claims**

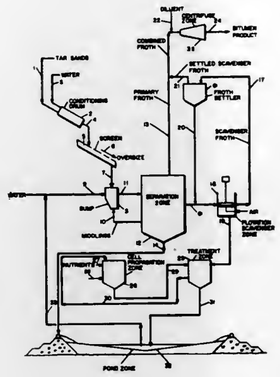


The specification discloses a process for recovering bitumen from the effluent discharge from a hot water process for treating bituminous tar sands. The effluent discharge comprises water, sand, silt and bitumen. The effluent is discharged into a quiescent bitumen flotation zone, is settled to form a bitumen layer on top of the water and the bitumen layer is then separately recovered.

3,502,566
BACTERIAL TREATMENT OF HOT WATER PROCESS EFFLUENT DISCHARGE

Richard L. Raymond, Wilmington, Del., and James O. Hudson, Springfield, and Virgina W. Jamison, Prospect Park, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed May 29, 1968, Ser. No. 733,003
Int. Cl. C10g *1/00*; C02c *5/02, 5/10*
U.S. Cl. 208—11 **5 Claims**



This invention relates to a process for treating the water effluent from a hot water process for treating tar sands. By this invention the settling of clay is facilitated by incorporating viable microorganisms into the water, such microorganisms being capable of sorbing bitumen. Upon settling, the treated water separates into a clean supernatant and a sludge of about ten percent solids.

3,502,567
PROCESS FOR PRODUCING CABLE OILS BY SEQUENTIAL REFINING STEPS

Ivor W. Mills, Glenolden, and Glenn R. Dimeler, West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 622,398, Mar. 13, 1967. This application July 10, 1967, Ser. No. 652,026
Int. Cl. C10g *31/14, 17/02, 23/00*
U.S. Cl. 208—14 **10 Claims**

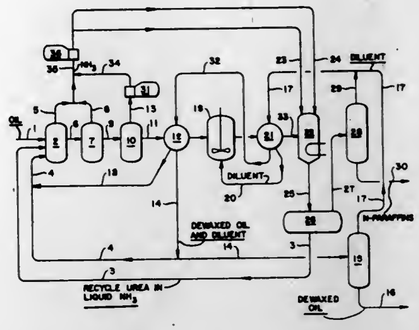
Low ADF, 3000–8000 SUS (at 100° F.) cable oils are prepared from naphthenic lube fractions which have been acid-treated (e.g., SO_3 HF, H_2SO_4), neutralized, hydrorefined at 550°–750° F. and 800–3000 p.s.i. of hydrogen and contacted with an adsorbent comprising bauxite or a naturally-occurring fuller's earth bleaching clay, such as attapulgite.

3,502,568
PROCESS FOR THE SEPARATION OF MIXTURES OF ORGANIC COMPOUNDS BY ADDUCT FORMATION

Rudolf J. Maas and Johan G. A. Bitter, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,290
Claims priority, application Netherlands, Nov. 2, 1966, 6615430
Int. Cl. C10g *29/20, 43/02*
U.S. Cl. 208—25 **10 Claims**

A process for dewaxing of oils by urea adduction wherein the oil is contacted with urea ammoniate at NH_3-pressure, the adduct formation between urea in statu nascendi and n-paraffins being induced by lowering its pressure and/or increasing the temperature; the adduct formed is separated from the oil and is subsequently decomposed



into paraffins and urea or urea ammoniate by increasing the ammonia pressure and/or temperature, the urea or urea ammoniate being recycled.

3,502,569
HIGH OCTANE MOTOR FUEL PRODUCTION BY ALKYLATION AND REFORMING

George L. Hervert, Woodstock, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

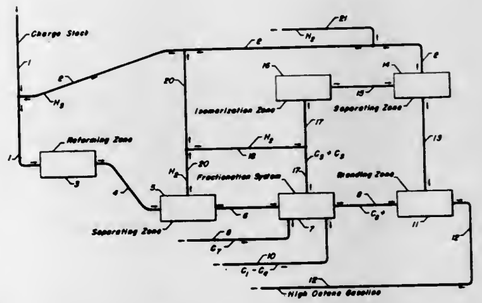
No Drawing. Continuation-in-part of application Ser. No. 668,684, Sept. 18, 1967. This application June 16, 1969, Ser. No. 833,684
Int. Cl. C10g *39/00*
U.S. Cl. 208—49 **8 Claims**

High octane number motor fuel is produced by alkylating isobutane with a C_4 mono-olefin to produce an alkylate separable into distinct low octane and high octane fractions, reforming the low octane fraction and blending it with the high octane number alkylate fraction.

3,502,570
PRODUCTION OF HIGH OCTANE GASOLINES

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 672,053
Int. Cl. C10g *35/08, 39/00*
U.S. Cl. 208—65 **6 Claims**



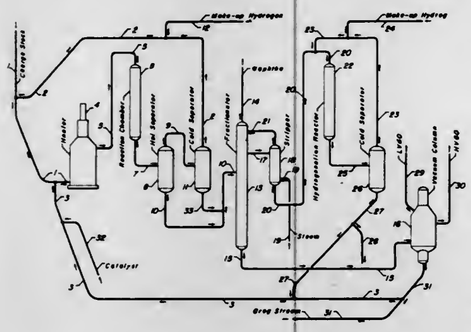
Concerns a combination process for the production of a gasoline fraction rich in high octane aromatics and

isoparaffins. Input stream is a relatively low octane gasoline fraction containing substantial quantities of relatively straight chain paraffinic components. Output streams are: the desired high octane gasoline, a light gas stream, a C_7 paraffinic cut, and hydrogen. Process comprises the steps of: low pressure reforming, separation of reforming products, isomerization of a C_5 to C_6 fraction, and final product blending. Principal features of the process are: (1) octane number of product gasoline of about 104 F–1 clear, (2) relatively high volume yields of the product gasoline, (3) relatively uniform distribution of anti-knock characteristics as a function of boiling point for the resulting gasoline product.

3,502,571
CATALYTIC CONVERSION OF HYDROCARBONACEOUS BLACK OIL

Frank Stolfa, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 27, 1967, Ser. No. 693,925
Int. Cl. C10g *13/02*
U.S. Cl. 208—108 **10 Claims**



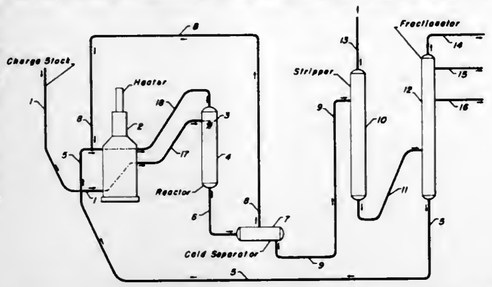
The use of a metal phthalocyanine catalyst for the conversion of hydrocarbonaceous black oil into lower-boiling, normally liquid hydrocarbon products. The thermally stable phthalocyanine catalyst is employed in an amount within the range of about 250 p.p.m. to about 5000 p.p.m., based upon the weight of the black oil; preferred metal phthalocyanine catalysts are selected from Groups V, VI and VIII, and especially those containing cobalt, nickel, platinum, vanadium and molybdenum. A phthalocyanine-containing residuum fraction is recycled to combine with the black oil, necessitating only a minor quantity of additional metal phthalocyanine catalyst in order to maintain the desired concentration thereof within the reaction chamber.

3,502,572
SINGLE-STAGE HYDROCRACKING FOR VARIED PRODUCT DISTRIBUTION

Charles H. Watkins, Arlington Heights, and Laurence O. Stine, Western Springs, Ill., Leslie C. Hardison, Norwalk, Conn., and Robert A. Lengemann, Arlington Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 676,232
Int. Cl. C10g *13/02*
U.S. Cl. 208—111 **4 Claims**

A single-stage hydrocracking process for maximizing the production of gasoline and middle-distillate boiling range hydrocarbons. Charge stocks are generally those contaminated fractions having an initial boiling point about 650° F. The charge stock is introduced into the reaction zone at a locus intermediate thereof, and preferably about one-third from the top of the catalyst bed



therein. Catalytic composites include Groups VI–B and VIII metals combined with a siliceous carrier material.

3,502,573
CONTINUOUS, LOW PRESSURE CATALYTIC REFORMING PROCESS WITH SULFUR INCLUSION, WATER EXCLUSION, AND LOW SPACE VELOCITY

Ernest L. Pollitzer, Skokie, and John C. Hayes, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 659,301, Aug. 9, 1967. This application June 16, 1969, Ser. No 833,778
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **7 Claims**

A hydrocarbon charge stock boiling in the gasoline range is continuously reformed by contacting, in a substantially water-free reforming zone, the hydrocarbon charge stock, hydrogen, and sulfur or a sulfur-containing compound with a reforming catalyst containing a platinum group component at reforming conditions, including a pressure of about 50 to about 250 p.s.i.g. and a liquid hourly space velocity of about 0.1 to about 0.9 $hr.^{-1}$, selected to produce a C_5+ reformate having an F–1 clear octane number greater than 98. The sulfur or sulfur-containing compound is continuously introduced into the reforming zone both during start-up and thereafter for the duration of the reforming operation in an amount, calculated on an elemental basis, equivalent to about 300 to about 3,000 wt. p.p.m. of the hydrocarbon charge stock. Key feature of the resulting process is the capability to achieve a temperature stability level substantially less than 10° F./bbl./lb. at the low pressure condition, thereby enabling a substantial increase in catalyst life before regeneration becomes necessary.

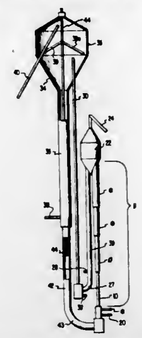
3,502,574
APPARATUS AND METHOD FOR CONVERTING HYDROCARBONS

Lloyd A. Baillie, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 20, 1968, Ser. No. 706,907
Int. Cl. C10g *13/14, 35/00, 35/10*
U.S. Cl. 208—148 **7 Claims**

A catalytic reactor in which feed and diluent gas enter the bottom of a reactor of increasing diameter along the flow path. Atop the reactor is a disengagement vessel of relatively large diameter in which the product gases are separated from the catalyst. The catalyst drops through a stripper culminating in a bend which collects catalyst to provide a seal between the reactor and a regenerator. A lift line carries the catalyst to the top of the regenerator through which the catalyst moves downward to a transfer line that returns the catalyst to the reactor. Flue gases are removed from the top of the regenerator. The transfer line culminates in a bend to collect solid

catalyst, providing a seal between the regenerator and the reactor. Fluidizing gas is introduced into the transfer line by an inlet probe which can be moved vertically

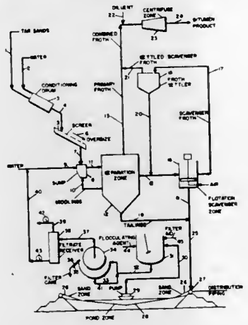


so that the level within the transfer line at which the gas is introduced can be varied to control the catalyst flow rate.

3,502,575
TREATING HOT WATER PROCESS DISCHARGE WATER BY FLOCCULATION AND VACUUM PRECOAT FILTRATION

Peter S. Hepp, Needham, Mass., and Frederick W. Camp, West Chester, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed June 20, 1968, Ser. No. 738,653
Int. Cl. B01d *21/01, 37/02*
U.S. Cl. 210—42 **17 Claims**



The specification discloses a process for clarifying water discharged from a hot water process for separating bitumen from tar sands. This water is subjected to flocculation of its clay component followed by vacuum precoat filtration to produce a clarified water suitable for recycle as at least a portion of the feed water to the hot water process.

3,502,576
PROCESS FOR DETOXIFICATION OF CYANIDE AND NITRITE CONTAINING AQUEOUS SOLUTIONS

Johannes Müller, Frankfurt am Main, and Rudolf Kuhn, Koppern, Taunus, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Oct. 14, 1968, Ser. No. 767,467
Claims priority, application Germany, Nov. 4, 1967, 1,621,568
Int. Cl. C02b *1/34*
U.S. Cl. 210—63 **8 Claims**

Detoxification of cyanide and nitrite containing aqueous solutions is accomplished by mixing the cyanide and nitrite solutions and reacting the cyanide with the nitrite at a pH of not over 5 in the presence of a contact catalyst.

3,502,577
RECOVERY OF COLOR DEVELOPING AGENTS

Bernard A. Hutchins, Livonia, and Robert S. Walsh, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1968, Ser. No. 716,367
Int. Cl. C02c *5/02*
U.S. Cl. 210—59 **14 Claims**

Potential water pollutants including primary aromatic amine color developing agents are recovered, alone, or simultaneously with color-forming couplers or benzyl alcohol from developer solutions in a separable, second phase by admixture with a water-soluble salt under limited pH conditions.

3,502,578
CORROSION INHIBITING METHOD AND COMPOSITION THEREFOR

Philip J. Raifsnider, Denver, Colo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 260,289, Feb. 21, 1963. This application June 30, 1966, Ser. No. 561,734
Int. Cl. C23f *11/00*; E21b *43/20*
U.S. Cl. 252—8.55 **3 Claims**

A new and novel corrosion inhibitor for use on ferrous metals in contact with aqueous and nonaqueous fluids and fluids containing said inhibitor, which inhibitor is an adduct formed by reacting a C_{8-32} alkyl substituted 5- or 6-membered cyclic amidine with at least one mol of SO_2 in an anhydrous medium.

3,502,579
PERFLUOROCARBONDINITRILE BEARINGS

Iral B. Johns, Marblehead, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 324,213, Nov. 18, 1963. This application Nov. 13, 1964, Ser. No. 411,140
Int. Cl. C10m *7/30*
US. Cl. 252—12 **8 Claims**

High polymers of an aliphatic dinitrile free of alpha hydrogen atoms are presented as novel polymers. The polymers are produced by heating a dinitrile free of alpha hydrogen atoms with a catalyst at elevated pressures. The novel polymers are useful as antifriction drive train elements.

3,502,580
GREASE COMPOSITION

Keith Coupland, Hornsea, England, assignor to BP Chemicals (U.K.) Limited, London, England, a British company

No Drawing. Filed Oct. 4, 1967, Ser. No. 672,693
Claims priority, application Great Britain, Oct. 29, 1966, 48,603/66
Int. Cl. C10m *7/44*
U.S. Cl. 252—42.1 **5 Claims**

The invention is a grease composition suitable for use under extreme pressure conditions comprising a base fluid, an alkali metal salt of a fatty acid and a tris-(2-chloroalkyl) ester of an oxyacid of phosphorus.

3,502,581

ANTIOXIDANT COMPOSITION AND USE THEREOF

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 13, 1967, Ser. No. 682,587
Int. Cl. C10m *1/32, 3/26*
U.S. Cl. 252—51.5 10 Claims

Antioxidant composition comprising an alkoxyphenylalkylaminophenyl or cycloalkylaminophenyl ether or a dialkylaminodiphenyl or dicycloalkylaminodiphenyl ether and a copolymer of a vinyl pyrrolidone and at least one alkylacrylate or at least one alkylmethacrylate. The novel antioxidant composition is particularly suitable for use in the stabilization of lubricants and especially lubricating oil.

3,502,582

IMAGING SYSTEMS

Carl F. Clemens, Webster, and Myron J. Lenhard, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 380,045, July 2, 1964. This application June 19, 1967, Ser. No. 647,218
Int. Cl. G03g *9/02*; C08f *47/04, 47/02*
U.S. Cl. 252—62.1 16 Claims

Disclosed is a method of making spherical electrostatic toner particles comprising a colorant and a resin whereby they are prepared as a latex in the presence of at least one chain transfer agent. The resin is a vinyl polymer having a Tg value of from about 30° C. to about 85° C. and a weight average molecular weight between about 10,000 and 500,000. This toner may be employed in xerographic developers to develop electrostatic latent images.

3,502,583

FLUORESCENT FERROMAGNETIC POWDER AND METHOD OF MAKING SAME

Bruce C. Graham, Arlington Heights, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

No Drawing Filed Sept. 24, 1965, Ser. No. 490,060
Int. Cl. H01f *1/36*; G01n *27/84, 21/16*
U.S. Cl. 252—62.52 18 Claims

Fluorescent particles for use as flaw detection particles in a non-destructive testing procedure prepared by dispersing the particles in a reaction medium containing an aromatic aldehyde and a diamine which react to produce an azine which is precipitated directly on the surface of the ferromagnetic particles to provide a fluorescent coating.

3,502,584

MAGNETIC COMPOSITE MATERIALS

Peter A. Denes, 5101 Crestwood Ave. NE., Albuquerque, N. Mex. 87112

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,985
Int. Cl. H01f *1/09, 1/33*; H01p *1/36*
U.S. Cl. 252—62.55 2 Claims

A composite magnetic material utilizing magnetic ferrite material and metallic ferromagnetic material in particulate form in which the ferrite and ferromagnetic materials are admixed in a given manner so that each of the component materials is separately distinguishable in the composite material thereby allowing the composite material to have better overall characteristics than the individual component materials in such devices as switching cores and attenuators.

3,502,585

DETERGENT COMPOSITIONS CONTAINING PROPANEPOLYPHOSPHONATE COMPOUNDS

Oscar T. Quimby, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Nov. 15, 1965, Ser. No. 507,662, now Patent No. 3,400,176, dated Sept. 3, 1968. Divided and this application May 13, 1968, Ser. No. 736,908
Int. Cl. C11d *3/36*
U.S. Cl. 252—89 7 Claims

A detergent composition is provided containing an organic detergent and a propanepolyphosphonate builder in a ratio by weight of 5:1 to 1:10, respectively.

3,502,586

PROCESS OF REGENERATING FLUOROCARBON EMULSIONS

Albert W. Bauer and Howard E. Phillips, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,215
Int. Cl. B01d *15/00*; B01j *13/00*
U.S. Cl. 252—153 5 Claims

A process for removing water from a water-in-oil emulsion without breaking the emulsion, which process comprises contacting an emulsion containing about 0.25–25 weight percent, but not greater than a saturation amount, of water, about 0.1–30 weight percent of isopropylammonium dodecylbenzenesulfonate, and at least 30 weight percent of a fluorochlorocarbon having a boiling point of 70–200° F., for example, 1,1,2-trichloro-1,2,2-trifluoroethane, with silica gel drying agent, and thereafter separating the silica gel and the regenerated emulsion.

3,502,587

SCALE INHIBITING COMPOSITIONS

James R. Stanford and Paul G. Vogelsang, Jr., Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 6, 1966, Ser. No. 584,672
Int. Cl. C23f *14/02*
U.S. Cl. 252—180 15 Claims

At least partially water soluble phosphated mixed esters of polyols containing at least one hydroxyethyl group and monohydric surface active compounds containing oxyethylene groups are added to water containing scale forming chemicals to inhibit scale deposition on solid surfaces, especially in oil wells, waterflooding systems in oil wells, cooling systems, boiler feedwaters, and in the prevention of scale deposits in effluent and disposal waters. The invention is especially useful in squeeze-type operations in oil recovery systems where the chemical must be adsorbed on the underground formation in such a manner that it is slowly released into the water as its passes over the formation.

3,502,588

CHEMILUMINESCENT AEROSOLS

Hilmer E. Winberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,927
Int. Cl. C09k *3/30, 1/02*
U.S. Cl. 252—188.3 10 Claims

Described and claimed are chemiluminescent aerosols containing tetrakis(disubstitutedamino)ethylenes in suitable propellants, e.g., tetrakis(dimethylamino)ethylene in a fluorinated hydrocarbon.

3,502,589

CATHODOLUMINESCENT PHOSPHOR-ORGANOPOLYSILOXANE RESIN COMPOSITIONS

Charles W. Newing, Jr., Sylvania, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed June 21, 1965, Ser. No. 465,724
Int. Cl. C09k *1/02, 1/04*; H01j *29/20*
U.S. Cl. 252—301.3 10 Claims

Luminescent polysiloxane compositions and articles are described which luminesce when subjected to cathodic excitation and which are formed by heating, in the presence of water, a hydrolyzable silane compound of the formula:

$$R—Si(OR')_3$$

wherein R is methyl or phenyl and R' is a hydrolyzable group, and optionally a silane of the formula:

$$(R)_3—Si—OR'$$

and wherein the amount of water is at least 1.5 moles water per mole of hydrolyzable silane. The heating is carried out for at least one hour at a temperature of at least 50° C. Thereafter the hydrolysis product is condensed by raising the temperature over a time period of at least 5 minutes to a temperature of at least 100° C. to yield a heat curable polysiloxane. The latter is then partly cured by heating to a temperature of at least 100° C. to volatilize water. A phosphor in finely divided state or in solution is then homogeneously mixed with the partly cured siloxane and thereafter the cure of the siloxane is completed in the presence of the phosphor.

3,502,590

PROCESS FOR PREPARING PHOSPHOR

Martin R. Royce, Lancaster, Pa., and Soren M. Thomsen, Pennington, and Perry N. Yocom, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware

No Drawing. Filed Mar. 1, 1967, Ser. No. 619,587
Int. Cl. C09k *1/14*
U.S. Cl. 252—301.4 10 Claims

A process for preparing luminescent materialss consisting essentially of europium-activated oxysulfides of yttrium, gadolinium, lanthanum and/or lutetium. The process is comprised of heating at a temperature between 700 and 1250° C., a mixture including (1) at least one oxide of the group consisting of yttrium, gadolinium, lanthanum and lutetium, (2) a compound of europium, (3) a composition which yields alkali metal sulfides and polysulfides upon heating, (4) and, optionally, at least one member of the group consisting of sulfates, phosphates, arsenates, and germanates of alkali metals, and then cooling the heated mixture.

3,502,591

EUROPIUM ACTIVATED PHOSPHOR BASED ON YTTRIUM ORTHOVANADATE

Tsuyoshi Kano, Tokyo, Yoshiro Otomo, Mitaka-shi, and Masayuki Emoto, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 17, 1967, Ser. No. 631,388
Claims priority, application Japan, Apr. 25, 1966, 41/25,881
Int. Cl. C09k *1/44*
U.S. Cl. 252—301.4 3 Claims

A europium activated yttrium vanadate phosphor containing silicon which is useful as a red color-emitting phosphor for color televisions and as a phosphor for high-pressure mercury lamps and plant-nurturing phosphor lamps. To the precipitate from the combined mixture of the solution containing component raw materials or to the combined mixture of component compounds, silicon compounds such as water glass or SiO_2 are added before firing. The amount of silicon in the final phosphor is 0.05–0.5% by weight, preferably 0.17–0.39%.

3,502,592

CALCIUM AND STRONTIUM β-ALUMINA-PHOSPHORS ACTIVATED BY TERBIUM AND EUROPIUM

Robert L. Amster, Great Neck, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed July 26, 1967, Ser. No. 656,159
Int. Cl. C09k *1/68*
U.S. Cl. 252—301.4 6 Claims

A phosphor system consisting of calcium or strontium β-alumina activated by divalent europium and trivalent terbium and having the general formula

$$ZO \cdot 6Al_2O_3 : xEu^{2+}, yTb^{3+}$$

where Z is an alkaline earth selected from the group consisting of calcium and strontium, x is a quantity in the range 0.025 to 0.25 and y is a quantity in the range 0.025 to 0.30. These phosphors are photoluminescent and are suitable for use in fluorescent lamps.

3,502,593

METHOD FOR PREPARING A SMALL PARTICLE SIZE SILICA SOL

Morris Mindick, Clarendon Hills, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 18, 1966, Ser. No. 587,435
Int. Cl. C01b *33/14*; B01j *13/00*; C09j *1/00*
U.S. Cl. 252—313 1 Claim

This invention relates to small particle size silica sols and more particularly to aqueous silica sols containing particles having an average diameter ranging from 5 to 10 millimicrons, wherein said sols have high concentration of silica. The invention further pertains to a method for preparing sols of the above type, in which method alkali metal silicate is added to acid sol in controlled proportions, and water is evaporated under vacuum from the resulting mixture, while sufficient additional acid sol is added to maintain constant volume.

3,502,594

SYNERGISTIC ANTIOXIDANT COMPOSITION FOR NATURAL OLEAGINOUS MATERIALS

Gerhard W. Ahrens, 1781 E. 15th St., Brooklyn, N.Y. 11229

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,103
Int. Cl. C09k *3/00*; A61k *7/00*; A61l *23/00*
U.S. Cl. 252—404 4 Claims

Liquid, lipid-soluble, antimicrobially active synergistic antioxidant compositions for natural phospholipid-containing, nonhardening type oleaginous materials useful in cosmetic, perfume, baby-care and/or medical preparations are provided which consist essentially of predominant amounts of edible, antimicrobially active, liquid phenylic aromatic alcohols selected from the group having the OH-group on a straight side chain of from 1–3 CH_2 groups attached to a benzene ring carrying permanently solvated therein minor amounts of a synergistic antioxidant system formed between synergistically active ratios of Δ-ascorbic acid and alpha-tocopherol.

3,502,595

PREPARATION OF SILICA-ALUMINA, TITANIA-ALUMINA, AND PHOSPHOROUS OXIDE-ALUMINA CATALYSTS

Marvin F. L. Johnson, Homewood, Norman J. Williams, Park Forest, and Robert A. Sanford, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 28, 1965, Ser. No. 505,472
Int. Cl. B01j *11/40, 11/32*; C10g *11/04*
U.S. Cl. 252—437 11 Claims

A new process has been discovered for the preparation of highly acidic silica-alumina, titania-alumina and phosphorous oxide-alumina catalysts and supports. The process includes heating, preferably under reflux, and reaction in

an inert organic solvent, of a solid, uncalcined, hydroxyl-containing alumina having at least about 15 to 40 percent vaporizable material and having a surface area of at least about 300 m.²/gm. with one or more of the following esters:

$$R_{(4-x)}Si(OR')_x$$

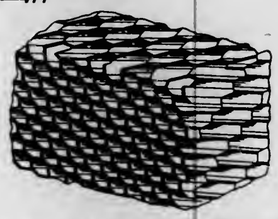
$$Ti(OR)_4$$

and

$$(RO)_3PO$$

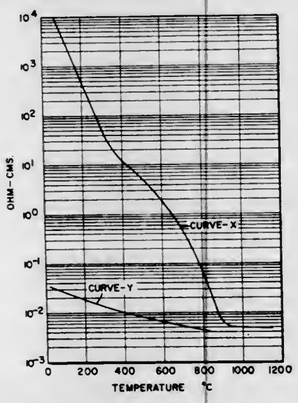
wherein R and R' are the same or different hydrocarbon groups of up to 18 or more carbon atoms, advantageously of 1–8 carbon atoms, and x is a number from 1 to 4, and removing the resulting solid, inorganic oxide-alumina composition from the solvent and alcohol derived from the reaction. The solid product can be calcined to a more active state.

3,502,596
CERAMIC STRUCTURES
Donald Maurice Sowards, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,073
Int. Cl. B01j *11/46, 1/20*
U.S. Cl. 252—477 **5 Claims**



Honeycomb structures having the shape of solids the surfaces of which all form angles with the longitudinal axes of the honeycomb cells are useful as packing in chemical process vessel and as catalyst supports in chemical reactors.

3,502,597
METHOD OF IMPROVING THE ELECTRICAL CONDUCTIVITY OF SINTERED TIN OXIDE ELECTRODES
Edward A. Bush, Painted Post, N.Y., assignor, by mesne assignments, to Corhart Refractories Company, a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,671
Int. Cl. H01b *1/08, 5/00;* **C01g** *19/02*
U.S. Cl. 252—518 **15 Claims**



The electrical volume resistivity of sintered tin oxide electrodes for glass melting applications is greatly reduced by cooling the heated electrode from about 1200° C. to about 900° C. in an inert, nonoxidizing, nonreducing atmosphere including vacuum. Reduction of resistivity from 10^5 ohm-cm. to 10^{-1} or 10^{-2} ohm-cm. is possible. Electrodes may be treated after manufacture or method may form a step in manufacturing process.

3,502,598
PIEZOELECTRIC CERAMICS
Tsuneharu Nitta, Osaka-fu, Kaneomi Nagase, Kyoto-fu, and Shigeru Hayakawa, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Company Limited, Osaka, Japan
No Drawing. Filed July 17, 1967, Ser. No. 653,604
Claims priority, application Japan, Aug. 11, 1966, 41/53,118; Apr. 3, 1967, 42/21,690, 42/21,689; Apr. 18, 1967, 42/25,643
Int. Cl. H01v *7/02;* **C04b** *35/00;* **H03h** *9/00*
U.S. Cl. 252—62.9 **2 Claims**

Piczoelectric ceramics having a low dielectric constant, high Curie point, and a small temperature coefficient of resonant frequency over a wide temperature range consist, according to this invention, of a single phase solid solution composed essentially of

	Mol percent
Sodium oxide	33.3–54.95
Lithium oxide	0.05–21.70
and	
Niobium oxide	44.4–49.95

3,502,599
REGENERATION OF ANION EXCHANGE RESINS STRATIFIED BY FLOTATION
William Fries, Philadelphia, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Sept. 20, 1967, Ser. No. 669,256
Int. Cl. B01d *15/06*
U.S. Cl. 260—2.1 **1 Claim**

Process for simultaneously regenerating exhausted mixtures of strong and weak base anion exchange resins having some difference in density between them when in the regenerated form, which difference essentially disappears when in the exhausted form. The regenerant medium causes flotation of the lighter regenerated resin which then settles in separate strata upon the more dense regenerated resin.

3,502,600
PROCESS FOR PREPARING FOAM PLASTICS
Alfred Kühlkamp, Hofheim, Taunus, Rudolf Nowack, Frankfurt am Main, Heinz Lehmann, Kriftel, Taunus, and Reinhold Müller, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 19, 1966, Ser. No. 566,256
Claims priority, application Germany, June 30, 1965, F 46,760
Int. Cl. C08f *47/08, 53/08*
U.S. Cl. 260—2.5 **14 Claims**

A process for preparing a foam plastic composition which comprises mixing an aqueous plastic dispersion with an organic compound containing at least two acidic hydrogen atoms each on a carbon atom immediately adjacent to an electron-attracting group and with about one equivalent of a carbamate that is the reaction product of a polyamine and carbon dioxide, adding to said mixture about one equivalent of an aldehyde, and reacting said organic compound, said carbamate and said aldehyde to form a foamed plastic composition containing said dispersion.

3,502,601
NOVEL POLYURETHANES AND PROCESSES OF PREPARING THE SAME
Leslie C. Case and Laura K. Case, both of 14 Lockeland Road, Winchester, Mass. 01890
No Drawing. Continuation-in-part of applications Ser. No. 168,062, Jan. 23, 1962, Ser. No. 188,842, Apr. 19, 1962, Ser. No. 456,816, May 18, 1965, and Ser. No. 485,932, Sept. 8, 1965. This application Jan. 26, 1967, Ser. No. 611,826
Int. Cl. C08g *23/44, 53/10*
U.S. Cl. 260—2.5 **39 Claims**

This invention relates to polyurethanes formed from the reaction of organic polyisocyanates and novel polyols containing both ether and ester segments. These novel polyols are prepared by the reaction of a polyfunctional organic compound selected from among alcohols, thiols and carboxylic acids, a cyclic anhydride of an aromatic or carbocyclic organic polycarboxylic acid, and an epoxide or oxetane. The subject polyurethanes have especially good physical properties at high polyol equivalent weight.

3,502,602
SOLUBLE UNSATURATED POLYESTER AMIDE RESINS
Dietrich Helm, Unna, and Rainer Janssen, Kamen, Germany, assignors to Schering AG, Berlin, Germany
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,286
Claims priority, application Germany, Dec. 13, 1966, Sch 39,954; Oct. 28, 1967, Sch 41,488
Int. Cl. C08g *20/30, 20/26*
U.S. Cl. 260—22 **12 Claims**

Unsaturated polyester-amide resins, soluble in organic solvents, comprising condensation products of (A) a polymeric fatty acid and/or an ester thereof and/or a high molecular weight branched polycarboxylic acid having at least 12 carbon atoms and/or an ester thereof with (B) a difunctional compound containing hydroxy and amino groups, e.g. an alkanolamine or a mixture of an aliphatic or cycloaliphatic diamine and a dihydroxy alcohol, into which condensation products (C) maleic acid is terminally introduced; a method for making said resins; hardenable compositions containing said resins together with vinyl compounds.

3,502,603
ADHESIVE BONDING OF α-OLEFIN HYDROCARBON COPOLYMERS
George Arthur Gallagher, Media, Pa., and Henry Clement Walter, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 359,441, Apr. 13, 1964. This application Aug. 10, 1966, Ser. No. 571,393
Int. Cl. C08f *29/10;* **C09j** *3/14*
U.S. Cl. 260—29.3 **6 Claims**

An adhesive composition suitable for bonding sulfur-curable, chain-saturated hydrocarbon copolymers to polyamide, polyester or cellulosic substrates which comprises an aqueous dispersion of (a) a chlorosulfonated polyethylene and (b) a resorcinol-aldehyde type resin is disclosed. The hydrocarbon copolymer is adhered to the substrate by coating the latter with the adhesive, drying the coating, and curing the hydrocarbon copolymer while pressing it in contact with the coated substrate. When the substrate is a polyester it is pretreated with (I) a mixture of a polyepoxide and an aromatic polyisocyanate adduct with an overcoating of a mixture of a resorcinol-formaldehyde resin and a vinyl pyridine copolymer latex, or (II) a mixture of 2-pyrrolidine, polyepoxide, alkaline catalyst and a blocked polyisocyanate or formaldehyde.

The adhesives disclosed are useful, e.g., in adhering tire cords in pneumatic tires and the like.

3,502,604
IMPACT RESISTANT RESIN COMPOSITIONS AND METHOD OF PRODUCTION THEREOF
Kazuo Nakatsuka, Fumio Ide, and Ryoji Handa, Ohtakashi, and Seiji Deguchi, Hiroshima-ken, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 13, 1966, Ser. No. 601,317
Claims priority, application Japan, Dec. 15, 1965, 40/76,729; Dec. 28, 1965, 41/80,550
Int. Cl. C08f *29/46, 29/38;* **C09d** *5/02*
U.S. Cl. 260—29.6 **5 Claims**

A thermoplastic resin composition consisting of a rigid resin polymer and a novel cross-linked acrylic elastomer is prepared by cross-linking a polymer in the form of a latex with an organic peroxide. The resin composition thus prepared has excellent impact and weather resistance.

3,502,605
ADHESIVE COMPOSITION FOR WOOD AND METAL
Trevor P. Clark, 3650 Sunnycrest Drive, North Vancouver, British Columbia, Canada, and Paul C. Trussell, 7407 Granville St., Vancouver, British Columbia, Canada
No Drawing. Continuation-in-part of application Ser. No. 425,693, Jan. 13, 1965. This application Nov. 13, 1967, Ser. No. 682,605
Int. Cl. C08d *7/06, 7/08*
U.S. Cl. 260—29.7 **27 Claims**

An adhesive composition which readily and strongly bonds to wet and dry solid surfaces in and out of water to protect the surfaces against attack by biological, chemical and physical agents, and withstands temperature changes, vibratory shock, direct impact and abrasion, said composition comprising by weight cationic polymerized chloroprene emulsion from about 20 to about 60%, hydraulic cement from about 4 to about 40%, and an inert, short fibre material from about 1 to 45%.

3,502,606
PRODUCTION OF SHAPED POLYBENZIMIDAZOLE ARTICLES
Anthony B. Conciatori, Chatham and Charles L. Smart, Millington, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,501
Int. Cl. C08g *53/14, 33/02*
U.S. Cl. 260—32.6 **8 Claims**

An improved process is provided for the formation of shaped polybenzimidazole articles in which the polymer solution which is extruded contains an additive having the ability to prevent its separation into various phases containing greater and lesser concentrations of the polymer prior to its extrusion. A minor amount of the following additives are utilized to prevent phase separation in the present process: lithium chloride, zinc chloride, N-methyl morpholine, triethyl amine, or triethanol amine.

3,502,607
ART OF MAKING DYEABLE POLY-ACRYLONITRILE PRODUCTS
Louis E. Trapasso, Westfield, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,460
Int. Cl. C08f *45/46, 29/54, 47/12*
U.S. Cl. 260—32.6 **17 Claims**

The invention is directed to polyacrylonitrile compositions containing an adduct of certain polymeric cyclic ethers and a specified sultone which adducts render the acrylonitrile polymer dyeable with cationic dyes. The adducts function as both dyesites for cationic dyes and dye diffusion promoters in the noted polymer. The shaped article, such as a fiber, and method of producing is also claimed.

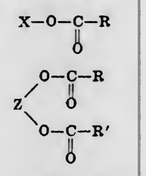
3,502,608

VINYL CHLORIDE COPOLYMERIC PAINT SOLUTIONS IN AROMATIC HYDROCARBONS

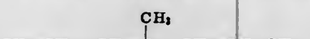
Katsumi Sugimoto, Tokyo, and Mizuho Sugawara, Kamakura-shi, Japan, assignors to The Japanese Geon Co., Ltd., Tokyo, Japan

Filed Oct. 9, 1967, Ser. No. 673,768
Claims priority, application Japan, Oct. 7, 1966, 41/65,688
Int. Cl. C08l 45/28; C08k 1/22
U.S. Cl. 260—33.6 19 Claims

A paint composition having good heat, weather, water, chemical and flame resistance and a non-stimulant odor comprising a vinyl chloride copolymer comprising 50–80% by weight of vinyl chloride, 2–50% by weight of at least one ethylenically unsaturated monomers as represented by the structural formulas:



in which X is selected from the group consisting of



and

Z is



R is selected from the group conisstng of hydrogen, acyclic or cyclic hydrocarbon groups having 1–12 carbon atoms, and 0–48% by weight of another monomer copolymerizable with vinyl chloride, and a solvent selected from the group consisting of aromatic hydrocarbons and a mixture containing an aromatic hydrocarbon.

3,502,609

EPOXY RESIN-BIPHENYL ANHYDRIDE ADHESIVE COMPOSITIONS

Walter P. Barie, Jr., Glenshaw, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 334,716, Dec. 31, 1963. This application June 2, 1967, Ser. No. 643,075
Int. Cl. C08g 51/04; C08k 1/02
U.S. Cl. 260—37 15 Claims

A new epoxy resin adhesive composition having high initial tensile lap shear strength which is retained on heat aging is claimed as is the method of preparation. The composition contains an epoxy resin, certain solid biphenyl anhydrides having at least one anhydride function on each phenyl group, and a powdered metal. The composition is prepared by suspending the solid biphenyl anhydride in the epoxy resin by a high shear mixing force.

3,502,610

SYNTHETIC RESIN COMPOSITION, METHOD AND PRODUCT

Henry C. Thompson, Saratoga, Calif., assignor to Thompson Chemicals, Inc., San Carlos, Calif., a corporation of California

No Drawing. Filed Sept. 10, 1965, Ser. No. 486,528
Int. Cl. C09d 5/18; C08g 51/04
U.S. Cl. 260—38 8 Claims

A new synthetic resin having fire-retardant properties, comprising a polyhydric phenol-aldehyde resin with 2–6% hydraulic cement, based on the weight of the polyhydric phenol. The cement lowers the viscosity of the resin and gives it high temperature strength and fire retarding properties useful in laminates, coatings, moldings, and expanded foam applications.

3,502,611

VINYL CHLORIDE POLYMER AND PLATY TALC COMPOSITIONS AND PROCESSES FOR THEIR PREPARATION

Leon B. Palmer, Little Falls, and Robert P. Conger, Park Ridge, N.J., assignors, by mesne assignments, to Congoleum Industries, Inc., Kearny, N.J., a corporation of Delaware

Continuation-in-part of application Ser. No. 262,014, Mar. 1, 1963. This application Nov. 13, 1967, Ser. No. 710,413
Int. Cl. C08f 45/06
U.S. Cl. 260— 71 8 Claims

This invention relates to the discovery that a particular form of platy talc having a maximum particle diameter of less than 100 microns, a surface area of at least 3 square meters per gram and a particle having a length of about 1 to 2 times its width has a reinforcing effect and improved dimensional stability in vinyl chloride compositions containing at least 60% vinyl chloride. The platy talc is utilized in from 65 to 200 parts in compositions containing from 65 to 400 parts of filler and about 20 to about 60 parts of plasticizer per 100 parts of polyvinyl chloride. Thin sheets of the composition formed into tiles have improved dimensional stability. The invention also relates to a process for producing such sheets by mixing the components of the vinyl chloride composition together to form a homogeneous mass and then passing the mass between calender rolls to form a sheet.

3,502,612

RUBBER STABILIZED WITH MIXTURES OF A PHENYLENE DIAMINE AND A DIFFERENT AMINE COMPOUND

Edwin J. Latos, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 29, 1967, Ser. No. 642,158
Int. Cl. C08c 11/46
U.S. Cl. 260—45.8 8 Claims

Preserving a phenylene diamine antiozonant in vulcanized rubber by incorporating in the rubber polymer prior to vulcanization the phenylene diamine antiozonant and a nitrogen-containing compound of different chemical composition.

3,502,613

LIGHT AND HEAT STABILIZED POLYPROPYLENE COMPOSITIONS

Richard S. Berger, Bartlesville, Okla., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 725,193, Apr. 29, 1968, which is a continuation-in-part of application Ser. No. 408,397, Nov. 2, 1964. This application Apr. 29, 1969, Ser. No. 820,277
Int. Cl. C08f 45/60
U.S. Cl. 260—45.8 6 Claims

Polypropylene is stabilized against actinic radiation and against heat degradation by incorporating therein a synergistic combination of light stabilizers consisting of a 2,4-di-tert-alkylphenyl 3,5-di-tert-alkyl-4-hydroxybenzoate and a 2-(2-hydroxy-3,5-dialkylphenyl)chlorobenzotriazole in combination with one or more specific heat stabilizers such as the alkylated phenols and the dialkyl esters of beta-thiodipropionic acid.

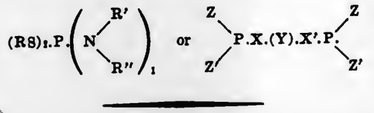
3,502,614

STABILISATION OF POLYOLEFINES

Derek Harold Wood, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,401
Claims priority, application Great Britain, Nov. 11, 1965, 47,900/65
Int. Cl. C08f 45/60, 45/58
U.S. Cl. 260—45.9 3 Claims

A polyolefine composition of improved resistance to degradation is disclosed, wherein the polyolefine composition is stabilised by at least one compound of the formula:



or

3,502,615

SYNERGISTIC ANTIOZONANT MIXTURE AND USE THEREOF IN RUBBER

Robert H. Rosenwald, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 25, 1967, Ser. No. 611,587
Int. Cl. C08c 11/46; C09k 3/00; B01j 1/16
U.S. Cl. 260—45.9 10 Claims

Synergistic mixture of phenylenediamine antiozonant and N,N'-bis-(phenylalkyl)-p-phenylenediamine, and use thereof in rubber.

3,502,616

ORGANOTIN SULFIDE STABILIZER COMPOSITION AND POLYMERS STABILIZED THEREWITH

Christian H. Stapfer, Echo Farm, Stony Brook Road, Newtown, Pa. 18940

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,591
Int. Cl. C08f 45/62; C09k 3/00; B01j 1/16
U.S. Cl. 260—45.75 6 Claims

A mixture of a dialkyltin sulfide and 0.1 to 35 percent by weight, calculated on tin, of a monoalkyltin sulfide is an improved stabilizer for halogen-containing resins.

3,502,617

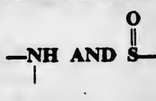
POLYISOUREAETHERS AND THEIR PREPARATION

Hans-Dieter Schminke, Cologne-Mulheim, Wilhelm Gobel, Cologne-Flittard, Ernst Grigat, Cologne-Stammheim, and Rolf Putter, Duesseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 442,167, Mar. 23, 1965. This application Aug. 1, 1967, Ser No. 657,510
Int. Cl. C08g 33/02, 49/04
US. Cl. 260—47 12 Claims

Novel polyisoureaethers are prepared by reacting polyvalent organic cyanic acid esters with polyvalent primary or secondary amines.

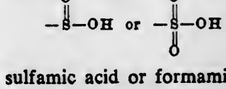
3,502,618

ADHESIVE PRODUCTS COMPRISING AN EPOXY RESIN, AN AZIRIDINYL COMPOUND AND A CATALYTIC AMOUNT OF A COMPOUND CONTAINING BOTH —NH AND  GROUPS

Heinz Uelzmann, Cuyahoga Falls, and David C. Hidinger, Jr., Akron, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Sept. 28, 1967, Ser. No. 671,187
Int. Cl. C08g 30/14, 45/06
U.S. Cl. 260—47 9 Claims

Epoxy resin adhesives with improved adhesive properties, e.g., higher shear strengths under conditions of shorter cure time and/or lower cure temperature, are formed from mixtures of epoxy resins and aziridinyl compounds containing catalytic amounts of compounds that have both >NH and



groups, e.g., sulfamic acid or formamidine sulfinic acid.

3,502,619

METHOD OF PREPARATION OF PERHALOACETONEEPOXIDE POLYMERS

Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 15, 1968, Ser. No. 776,259
Int. Cl. C08g 15/00
U.S. Cl. 260—63 6 Claims

This invention is concerned with a process for the preparation of interpolymers of perhaloacetones and epoxides employing metals of Groups Ia, II, III and VIII as initiators for the polymerization reaction. The polymers produced thereby are useful as structural materials, films, coatings and the like.

3,502,620

BRANCHED POLYESTERS CONTAINING TERMINAL CARBOXYL GROUPS

John Richard Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 11, 1967, Ser. No. 637,623
Int. Cl. C08g 17/00, 17/08
U.S. Cl. 260—75 8 Claims

Branched polyesters having improved adhesive properties and containing terminal carboxyl groups are prepared by reacting [A] a linear polyester of (1) at least one glycol and at least one dicarboxylic acid, (2) at least one hydroxycarboxylic acid, or (3) a mixture of at least one glycol, at least one dicarboxylic acid, and at least one hydroxycarboxylic acid; and [B] at least one polycarboxylic acid having 3 to 6 carboxyl groups.

3,502,621

POLYURETHANES BASED ON A POLYESTER HAVING NITRILOTRIACETIC ACID AS A COMPONENT

Bruce N. Wilson, Niagara Falls, and Edward J. Quinn, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 26, 1968, Ser. No. 700,703
Int. Cl. C08g 22/12
U.S. Cl. 260—75 8 Claims

Moisture curable polyurethane coatings are produced by reacting excess organic polyisocyanate with a poly-

hydroxy composition of ingredients comprising (1) nitrilotriacetic acid and (2) a polyhydric alcohol.

3,502,622

METHOD FOR THE CONTINUOUS PRODUCTION OF HIGH POLYMERIC POLYESTERS AND MIXED POLYESTERS

Gottfried G. E. K. Reichel, Premnitz, Kreis, Rathenow, Lothar E. H. Sass, Rathenow, Kreis, Rathenow, and Andreas E. P. Labahn, Premnitz, Kreis, Rathenow, Germany, assignors to VEB Chemiefaserwerk "Friedrich Engels," Rathenow, Germany

No Drawing. Filed Feb. 8, 1968, Ser. No. 703,900
Int. Cl. C08g *20/17*
US Cl 260—75 5 Claims

In the production of high molecular weight polyesters and mixed polyesters involving monomer production by esterification of a dicarboxylic acid or transesterification of a dicarboxylic acid ester with a bi- or higher polyfunctional alcohol followed by preliminary condensation and polycondensation, an improved method of maintaining the viscosity of the final product within predetermined limits is provided. This method involves carrying out the preliminary condensation to an excess degree to result in an excess viscosity of the preliminary condensation product and then lowering the viscosity of the preliminary condensation product to a predetermined value by introducing into the preliminary condensation stage either a bi- or higher polyfunctional alcohol or a solvent which is readily vaporizable under the conditions of the polycondensation.

3,502,623

POLYESTERS OF CAPROLACTONE, TEREPHTHALIC ACID, AND ETHYLENE GLYCOL

Neville Robert Hurworth and Derek McHardy Brewis, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing Filed May 8, 1967, Ser. No. 636,619
Claims priority, application Great Britain, May 18, 1966, 22,041/66
Int. Cl. C08g *17/08, 17/02;* C09j *3/16*
U.S. Cl. 260—76 7 Claims

Copolyesters, having a specified minimum molecular weight, comprising poly(ethylene terephthalate) having specified proportions of units derived from ε-caprolactone or derivatives thereof incorporated into the macromolecular chains, such copolyesters being useful as adhesive and coating materials. Also, a process for the preparation of such copolyesters which comprises heating together ε-caprolactone, or a derivative thereof, and poly(ethylene terephthalate) or poly(ethylene terephthalate)-forming compounds. The copolyesters may have a proportion of the poly(ethylene terephthalate) units replaced by poly (ethylene isophthalate) units, may be cross-linked and may be blended with other resinous or polymeric materials.

3,502,624

PREPARATION OF DIAMINE-DICARBOXYLIC ACID SALTS FOR POLYCARBONAMIDES

Carl Bruno Flack, Woodbury, and Robert Howard Weir, Pittman, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 4, 1966, Ser. No. 539,983
Int. Cl. C09k *3/00;* C08g *20/20*
U.S. Cl. 260—78 3 Claims

Concentrated aqueous solution of certain diaminedicarboxylic acid salts for use in the preparation of polycarbonamides.

3,502,625

POLYIMIDES AND POLY(AMIDE - ACIDS) PREPARED FROM DIAMINES AND THIANTHRENETETRACARBOXYLIC ACID 5,5,10,10-TETRAOXIDES

Melvin Harris, Arlesheim, Switzerland, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 10, 1968, Ser. No. 696,723
Int. Cl. C08g *20/32*
U.S. Cl. 260—78 10 Claims

Polyimides of diamines and thianthrenetetracarboxylic acid 5,5,10,10-tetraoxides and poly(amide-acids) from which the polyimides are obtained.

3,502,626

HIGH MOLECULAR WEIGHT CRYSTALLIZABLE COPOLYMERS OF CYCLOOLEFINS AND PROCESS FOR PREPARING SAME

Gino Dall'Asta, Giuseppe Motroni, and Giovanna Carella, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed July 12, 1967, Ser. No. 652,719
Claims priority, application Italy, July 15, 1966, 16,488/66
Int. Cl. C08f *17/00*
U.S. Cl. 260—80.78 17 Claims

This invention provides new random copolymers of unsubstituted cycloolefins of the formula



wherein z is 2, 3, 5, 6, 7, 8, 9 or 10. The copolymers are crystalline at room temperature or crystallizable under stretching at room temperature or below, and may have a predetermined melting point adapting the same for particular uses. The copolymers are obtained by contacting a mixture of two or more cycloolefins, under polymerizing conditions, with a catalytic system obtained by mixing

(a) A tungsten salt or mixture thereof with an aluminum halide;

(b) An organometallic compound or hydride of aluminum, beryllium, magnesium, zinc or calcium; and

(c) Optionally, a peroxidic compound or molecular oxygen.

3,502,627

N-ACRYL(POLYOXYALKYL)-OXAZOLIDINES AND N - ACRYL(POLYOXYALKYL) - TETRAHYDRO-1,3-OXAZINES AND SALTS THEREOF

John A. Dupont, North Hills, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 532,015
Int. Cl. C08f *15/16, 3/64*
U.S. Cl. 260—86.1 3 Claims

1. A compound of the formula

$$H_2C{=}C(R^\circ)—CO—(O—\text{alkylene})_n—NH—Y—OH$$

wherein

R° is H or methyl,

$(—O—\text{alkylene})_n$ is a poly(oxyalkylene) group, having a molecular weight in the range from 88 to 348, in which the individual alkylene radicals are the same or different and are either ethylene or propylene, and

Y is ethylene or ethylene having one of its hydrogen atoms substituted by a methyl group.

2. An addition polymer of a compound as defined in claim 1 or of a salt of such a compound.

3,502,628

VULCANIZATION ACCELERATORS FOR FLUORINATED POLYMERS AND COMPOSITIONS THEREOF

Arthur Livingston Barney and Wolfgang Honsberg, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 661,230, Aug. 17, 1967. This application May 22, 1968, Ser. No. 736,786
Int. Cl. C08f *45/72*
U.S. Cl. 260—87.7 10 Claims

The acceleration of the vulcanization of saturated, fluorinated polymers by the use of tropolone and 1,10-phenanthroline. The accelerators enable a more rapid cure with conventional amine-based vulcanization systems and also enable a satisfactory rate and state of cure with weakly basic bis-nucleophiles otherwise incapable of adequately curing fluorinated polymers.

3,502,629

PROCESS FOR POLYMERIZING CHLOROPRENE IN THE PRESENCE OF A HINDERED PHENOL

Richard John Strachan Matthews, Surrey, England, assignor to BP Chemicals (U.K.) Limited, London, England, a British company

No Drawing. Continuation-in-part of application Ser. No. 387,771, Aug. 5, 1964. This application Feb. 19, 1968, Ser. No. 706,684
Claims priority, application Great Britain, Aug. 24, 1963, 33,612/63
Int. Cl. C08f *3/20;* C08d *3/14*
U.S. Cl. 260—92.3 7 Claims

A method for the manufacture of polychloroprene wherein chloroprene monomer containing an alkali soluble aromatic hydroxy compound capable of inhibiting polymerisation and oxidation of the monomer is treated with an aqueous alkali to remove the aromatic hydroxy compound and polymerised in the presence of a catalytically effective amount of peroxy compound characterized in that the monomer throughout the treatment with alkali and the polymerisation contains a hindered phenol. The presence of the hindered phenol protects the monomer against premature polymerisation and acts as an oxidation inhibitor throughout the polymerisation process.

3,502,630

PROCESS FOR THE PRODUCTION OF POLYVINYL CHLORIDES WITH HIGH STEREOREGULARITY

Giancarlo Borsini, Milan, and Carlo Nicora, Varese, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,811
Claims priority, application Italy, Apr. 2, 1964, 7,036/64
Int. Cl. C08f *1/34, 1/42, 3/30*
U.S. Cl. 260—92.8 14 Claims

Process for producing vinyl-chloride polymers having a syndiotactic index greater than 2 wherein a monomeric component containing at least 75% by weight vinyl chloride is polymerized at a temperature between substantially —60° C. and 0° C., in the presence of an organic solvent with a catalyst system having an oxidizing component and a reducing component, said oxidizing component being constituted essentially by at least one tetravalent-cerium compound soluble in the organic solvent, said reducing compound being constituted essentially by an organometallic compound of germanium, tin and lead; the polymer is recovered from the reaction mixture and the trivalent cerium compounds (following polymerization) are oxidized to render them suitable for reuse in further polymerization of vinyl-chloride monomer components.

3,502,631

POLYMERS OF CYCLIC INTERNAL OLEFINS

Burton C. Anderson, Graylyn Crest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,851
Int. Cl. C08f *5/00*
U.S. Cl. 260—93.1 3 Claims

Cycloalkenes having at least 5 carbon atoms in the ring can be polymerized to polymers having a molecular weight of at least 800 by heating the monomers to temperatures of 200° C. to 400° C. at pressures of 20 to 100 kilobars. The polymers range from viscous oils to hard solids.

3,502,632

HYDROCARBON UREA ADDUCT

Norman C. Ross, Franklin, and Bernard K. Mueller, Bakersfield, Pa., assignors to Witco Chemical Company, Inc., New, York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,250
Int. Cl. C08d *13/08;* C07c *127/00;* C08c *17/08*
U.S. Cl. 260—96.5 2 Claims

Method of preparing a non-caking, readily incorporated rubber compounding ingredient suitable for use as a sponge rubber blowing agent promoter and vulcanization activator comprising admixing urea and a stoichiometric excess of a solution of about 25 percent to 75 percent by weight of a n-paraffin hydrocarbon having between about 17 and 30 carbon atoms in light neutral paraffinic oil heated to a temperature between about 105° F. and 125° F. adding to said admixture a small amount of organic solvent, continuously agitating said admixture while maintaining a temperature between about 105° F. and 125° F. until all the urea has been reacted, and separating the urea reaction product from the unreacted portion of the neutral paraffinic oil solution.

3,502,633

POLYMERIZATION PROCESS

Robert H. Schwaar and E. Gordon Foster, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 116,653, June 2, 1961. This application May 31, 1966, Ser. No. 554,213
Int. Cl. C08f *3/10*
U.S. Cl. 260—93.7 10 Claims

A continuous process for the polymerization of alpha-monoolefins, particularly, propylene, comprises an integrated sequence of processing steps. Monomer is polymerized in liquid phase in a low-boiling diluent by contact with a Ziegler-type catalyst to produce a polymer which is insoluble in the reaction mixture. A portion of the reaction slurry is continuously withdrawn, treated to deactivate the catalyst, washed to remove catalyst residues and subjected to evaporative separation of volatile components of the slurry from the polymer. The process is characterized, inter alia, by the absence of the usual step of separating freshly produced polymer from the reaction liquid, and by the maintenance of pressure from the reaction step through the drying step.

3,502,634

PROCESS AND CATALYST FOR POLYMERIZATION OF ALPHA-MONOOLEFINS HAVING THREE OR MORE CARBON ATOMS PER MOLECULE

Joachim Stedefeder and Hans Lautenschlager, Ludwigshafen (Rhine), Germany, assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 139,852, Sept. 22, 1961. This application Sept. 21, 1966, Ser. No. 580,856
Claims priority, application Germany, Sept. 24, 1960, B 59,518
Int. Cl. C08f *1/56;* B01j *11/84*
U.S. Cl. 260—93.7 13 Claims

Alpha-monoolefins are polymerized with a catalyst prepared from an organometal compound such as triethylaluminum or diethylaluminum chloride, a compound of a metal of the fourth to sixth and eighth subgroups, such as a compound of titanium trichloride, and a compound of phosphorus, arsenic, antimony or bismuth, such as triphenylphosphite. Solid thermoplastic polymers are obtained which have many uses such as molding buckets, plates and the like.

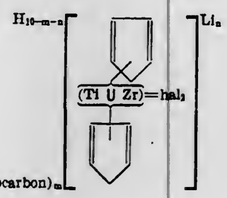
3,502,635

PROCESS FOR BUTADIENE POLYMERIZATION USING ZIRCONOCENE OR TITANOCENE AND LITHIUM HYDROCARBON REACTION PRODUCT AS CATALYST

Adel F. Halasa and George E. P. Smith, Jr., Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,906
Int. Cl. C08d *1/14, 1/32*
U.S. Cl. 260—94.3 6 Claims

Conjugated diolefins or mixtures thereof with other ethylenically unsaturated compounds copolymerizable therewith, are polymerized in the presence of catalytic compounds of the formula



wherein

the cyclic structures



are cyclopentadiene nuclei, it being understood that the carbon atoms in the rings carry hydrogen atoms unless they are attached to hydrocarbon radicals or to the titanium or zirconium atoms;

"Hydrocarbon$_{0-3}$" indicates the attachment of up to 3 hydrocarbon groups to the cyclopentadiene ring, each hydrocarbon group containing from 1 to 10 carbon atoms. It will be understood a bridging hydrocarbon chain may take the place of two of the hydrocarbon groups, as in the indene nucleus;

the titanium or zirconium atom is attached to one of the carbons in each of the cyclopentadiene rings;

"hal_3" indicates the attachment of two halogen atoms to the titanium or zirconium atoms. The halogen atoms, independently in each occurrence, may be chlorine, bromine or iodine;

(Ti ∪ Zr) indicates an atom selected from the group consisting of titanium and zirconium;

m is an integer from 0 to 3;

n is an integer from 1 to $(8-m)$;

The resultant polymers are characterized by excellent green strength and building tack, and by desirable underlying fundamental properties, viz, broad molecular weight distribution, high cis-1,4 structure, and desirable microgel content.

3,502,636

SOLUTION POLYMERIZATION OF ISOPRENE WITH ALUMINIUM TRIALKYL TITANIUM TETRACHLORIDE CATALYST ACTIVATED BY ETHERS AND HALOGENATED ALKANES

Josef Witte, Cologne-Stammheim, and Gottfried Pampus and Nikolaus Schön, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 8, 1966, Ser. No. 532,587
Claims priority, application Germany, May 24, 1965, F 46,132
The portion of the term of the patent subsequent to June 4, 1985, has been disclaimed
Int. Cl. C08d *1/14, 3/12*
U.S. Cl. 260—94.3 7 Claims

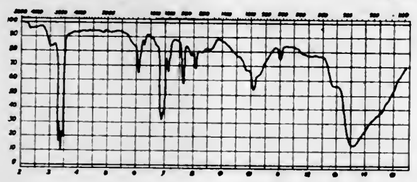
Production of polyisoprenes having predominantly 1,4-cis-linkages by polymerizing isoprene in a hydrocarbon solvent containing an aluminium trialkyl-titanium tetrachloride catalyst activated by 0.05 to 5 mols of an ether per mol of aluminium trialkyl and 0.05 to 50 mols, per mol of titanium compound, of an alkane having at least two halogen atoms on the same or on adjacent carbon atoms.

3,502,637

HOMOGENEOUS STEREOSPECIFIC CATALYSTS AND POLYMERIZATION OF BUTADIENE THEREWITH

Gerlando Marullo, Alessandro Baroni, Umberto Maffezzoni, Ermanno Susa, and Carlo Longiave, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Continuation of application Ser. No. 545,167, Apr. 25, 1966, which is a continuation of application Ser. No. 791,456, Feb. 5, 1959. This application May 6, 1968, Ser. No. 727,092
Claims priority, application Italy, Apr. 24, 1958, 6,416/58
Int. Cl. C08d *1/14, 3/08;* B01j *11/84*
U.S. Cl. 260—94.3 14 Claims



Process for stereospecifically polymerizing butadiene whereby the catalyst system is composed of (1) a dialkyl aluminum halide and (2) a solution of a cobalt compound which is a soluble complex of a normally insoluble salt of cobalt.

3,502,638

PROCESS FOR REMOVING IMPURITIES FROM CIRCULATING GASES IN THE HIGH-PRESSURE POLYMERIZATION OF ETHYLENE

Manfred Rätzsch and Horst Grundmann, Leuna, and Rolf Kilian, Bad Durrenberg, Germany, assignors to VEB Leuna-Werke Walter Ulbricht, Leuna, Germany

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,712
Int. Cl. C08f *1/88, 1/96, 1/06*
U.S. Cl. 260—94.9 8 Claims

Impurities are removed from the recycle gas stream in the high pressure polymerization or copolymerization of ethylene by passing the gas through a layer of generator slag, coke or pumice.

3,502,639

NOVEL ORIENTED STRUCTURES OF LINEAR POLYETHYLENE AND A METHOD FOR THEIR PREPARATION

William O. Statton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,778
Int. Cl. C08f *47/14;* B29d *7/24*
U.S. Cl. 260—94.9 7 Claims

A process for obtaining coherent, oriented highly crystalline polymer sheet structures by depositing single crystal platelets of linear polyethylene into a thin cake, heating the cake at a temperature slightly below its melting point and applying a shear stress in at least one direction in the plane of the cake to form a film thereof.

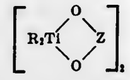
3,502,640

CATALYTIC PROCESS FOR THE POLYMERIZATION OF OLEFINS

Yasusuke Shuto, Mitsuru Uchiyama, Hirozo Sugawara, Yasuhiro Takeshita, Shiro Higashimori, Mitsuhiro Ogawa, and Toshihide Nishimura, Tokuyama-shi, Japan, assignors to Idemitsu Kosan Co., Ltd., Tokyo, Japan

No Drawing. Filed Oct. 4, 1967, Ser. No. 672,696
Claims priority, application Japan, Oct. 17, 1966, 41/67,862; Feb. 14, 1967, 42/8,929; Mar. 31, 1967, 42/19,883
Int. Cl. C08f *1/42, 3/06, 3/10*
U.S. Cl. 260—94.9 3 Claims

Polyolefins are prepared by polymerizing an olefin in the presence of a catalyst. The catalyst is a mixture of a halide of Ti, Va, or Zr and an organo-titanium compound. The organo-titanium compound has the formula



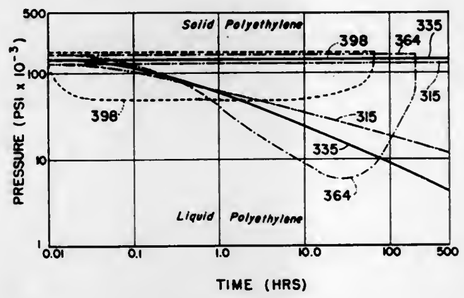
wherein R is an alkyl group and Z is $(CH_2)_m$; m being 2, 3 or 4.

3,502,641

PROCESS FOR CROSSLINKING POLYETHYLENE

John D. Harrison, 3853 Grove Court, Palo Alto, Calif. 94303, and Don E. Harrison, 2818 Orlando Place, Pittsburgh, Pa. 15235

Filed Sept. 3, 1968, Ser. No. 756,987
Int. Cl. C08d *3/04*
U.S. Cl. 260—94.9 2 Claims



A process for randomly crosslinking polyethylene by subjecting liquid polyethylene simultaneously to both heat and pressure, the temperature being above 250° C. and below 450° C. and the pressure being from $5(10)^3$ to $10(10)^4$ p.s.i.

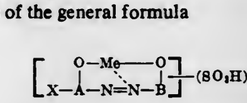
3,502,642

REACTIVE COPPER-CONTAINING BENZENE-AZONAPHTHALENE DYES CONTAINING A TRICHLOROPYRIMIDINE GROUP

Paul Dussy, Munchenstein, Switzerland, assignor to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation of application Ser. No. 425,942, Jan. 15, 1965, now Patent No. 73,200, dated Dec. 2, 1960. This application July 24, 1967, Ser. No. 655,668
Int. Cl. C09b *62/24;* D06p *3/60, 3/04*
U.S. Cl. 260—146 6 Claims

Dyestuffs of the general formula



give good fastness to wet and light on cellulose and polyamide fibers.

In the above formula:

X represents a dizinylamino group the organic radical of which contains at least one mobile substituent which reacts with alkalies while splitting off as anion,

A represents a possibly further substituted, at most dinuclear radical of the benzene series which contains the oxygen atom in a position ortho to the azo linkage,

B represents a possibly further substituted radical of the naphthalene series which contains the oxygen atom in o-position to the azo linkage,

Me represents a heavy metal of the atomic numbers 24 to 29 which can also contain other co-ordinated complex formers, and

n represents a positive whole number from 1 to at most 5.

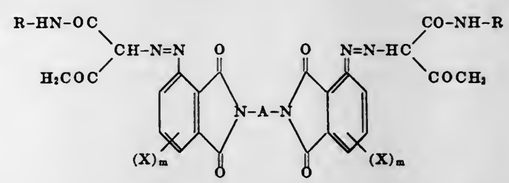
3,502,643

DIS AZO IMIDE CONTAINING DYESTUFFS

Walter Horstmann, Cologne-Buchheim, Germany, and Edgar Siegel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,708
Claims priority, application Germany, Nov. 2, 1965, F 47,574
Int. Cl. C09b *31/10*
U.S. Cl. 260—152 8 Claims

Azo dyestuffs which correspond to the formula:



in which R stands for identical or different radicals selected from the group consisting of aromatic and heterocyclic radicals, the radicals X stand for identical or different substituents, m stands for integers from 0 to 3, and A represents a member taken from the class consisting of aliphatic, aromatic, and heterocyclic radicals.

The dyestuffs are free from sulphonic acid groups and may be used as pigment dyestuffs for the coloring of plastics, lacquers, pigment pastes, and printing inks.

3,502,644

MONO- AND DISAZO DYESTUFFS CONTAINING A DIAZINE OR TRIAZINE GROUP

Horst Nickel and Fritz Suckfull, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

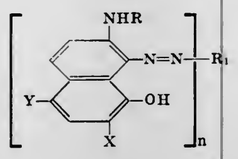
No Drawing. Filed June 20, 1966, Ser. No. 558,551

Claims priority, application Germany, June 30, 1965, F 46,471; Sept. 18, 1965, F 47,242

Int. Cl. C09b *29/30, 33/10;* **D06p** *1/02*

U.S. Cl. 260—154 **3 Claims**

Azo dyestuffs of the formula:



wherein Y stands for sulphonic acid, sulphonamide, or substituted sulphonamide, X stands for hydrogen or sulphonic acid, R stands for hydrogen, alkyl or substituted alkyl, R_1 stands for the residue of a diazo or tetrazo compound containing at least one group selected from the class consisting of a sulphone and sulphonic acid, and *n* stands for the integer 1 or 2; these dyestuffs being particularly useful in dyeing fibrous materials containing hydroxyl or amido radicals, e.g. cellulose, wool, silk, and superpolyamide and the resulting dyeings are characterized by good fastness properties.

3,502,645

WATER-INSOLUBLE BENZOTHIAZOLE MONOAZO DYES

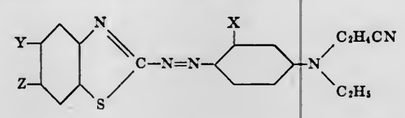
Duncan G. Carmichael, Gastonia, N.C., assignor to Martin Marietta Corporation, a corporation of Maryland

No Drawing. Filed Feb. 16, 1968, Ser. No. 705,921

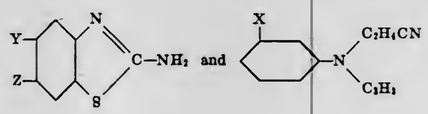
Int. Cl. C09b *29/08*

U.S. Cl. 260—158 **5 Claims**

Water-insoluble dyes of the formula



are prepared by coupling, under acid conditions, equimolar amounts diazotized



wherein X is H or CH_3, Y and Z are Cl or Br, and Y and Z are the same. The dyes may be used for coloring synthetic linear polyester, acetate rayon, polyacrylic and polypropylene textile fibers.

3,502,646

REACTIVE MONO- AND DISAZO DYESTUFFS SUITABLE FOR DYEING MODIFIED POLYPROPYLENE

Luigi Canonica, Milan, Argento Crotti, Cogliate, Milan, and Giampiero Pieri, Saronno, Milan, Italy, assignors to Aziende Colori Nazionali Affini Acna S.p.A., Milan, Italy

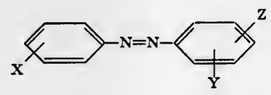
No Drawing. Filed July 29, 1966, Ser. No. 568,758

Claims priority, application Italy, Aug. 2, 1965, 17,464/65

Int. Cl. D06p *1/02;* **C09b** *29/08, 31/04*

U.S. Cl. 260—186 **3 Claims**

Dyestuffs having the general formula



wherein X and Z are each a radical selected from the group consisting of $—SO_3CH_3$, alkyl, NO_2, halogen, carboxyl, hydrogen, alkoxy, dialkylamino, aryl, and alkylamino; Y is either the same as Z or is the radical $—A—C_6H_4—R$ wherein R is hydrogen, $—SO_3CH_3$, an alkyl radical, an alkoxy radical, $—NO_2$ or halogen and A is —N=N— or —NH—; at least one of the substituents X, Y and Z representing the radical $—SO_3CH_3$; are particularly suitable for dyeing polypropylene modified with a basic organic dye receptivity modifier.

3,502,647

PERIMIDINE DERIVATIVES

Vasken Paragamian, Dresher, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 564,554, July 12, 1966. This application Apr. 28, 1967, Ser. No. 636,575

Int. Cl. C07c *47/18, 95/04;* **C07d** *51/28*

U.S. Cl. 260—209 **11 Claims**

The compounds are of the class of perimidines, useful for their central nervous system depressant effects as evidenced by their ability to produce ataxia and protection against metrazol-induced seizure patterns.

3,502,648

7-HALO-7-DEOXYTHIOLINCOSAMINIDES AND PROCESS FOR PREPARING THE SAME

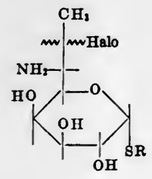
Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, and Fred Kagan, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 431,184, Feb. 8, 1965, Ser. No. 498,989, Oct. 20, 1965, Ser. No. 511,288, Dec. 1, 1965, and Ser. No. 588,305, Oct. 21, 1966. This application Dec. 22, 1967, Ser. No. 692,727

Int. Cl. C07d *7/04*

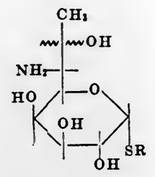
U.S. Cl. 260—210 **15 Claims**

Compounds of the formula:



I

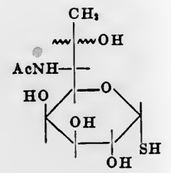
are prepared by replacing by chlorine, bromine, or iodine, the 7-hydroxy of a compound of the formula:



II

by means of a Rydon reagent or a modified Rydon reagent. The compounds of Formula I are useful as intermediates, for example, for making 7-halo-7-deoxylincomycin analogs.

The starting compounds of Formula II are prepared by hydrazinolysis of a compound of the formula:



III

3,502,649

N(6) SUBSTITUTED ADENOSINE DERIVATIVES

Max Thiel, Mannheim, and Wolfgang Kampe, Kurt Stach, Wolfgang Schaumann, and Karl Dietmann, Mannheim-Waldhof, Germany, assignors to Boehringer Mannheim G.m.b.H., Antsgeich, Mannheim, Germany, a corporation of Germany

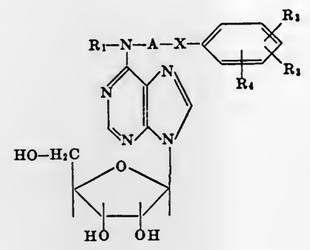
No Drawing. Filed Mar. 22, 1967, Ser. No. 625,001

Claims priority, application Germany, May 7, 1966, B 87,038

Int. Cl. C07d *51/54*

U.S. Cl. 260—211.5 **7 Claims**

Novel N(6)-substituted adenosine derivatives which are suitable for use in the treatment of cardiac and circulatory disturbances having the following structural formula:



wherein R_1 is hydrogen or lower alkyl, R_2, R_3 and R_4 which may be the same or different are hydrogen, halogen, hydroxyl, alkyl, haloalkyl, alkoxy, aryloxy, acyloxy, or alkylmercapto, A is alkylene containing 2 to 5 carbon atoms or alkylene substituted by hydroxyl or acyloxy and X is a valency bond, an oxygen or sulfur atom or the group —N—R' wherein R' is hydrogen, lower alkyl or acyl.

3,502,650

D-GLUCOFURANO IMIDAZOLINES

Charles Morel, Arlesheim, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 461,185, June 3, 1965. This application Mar. 14, 1968, Ser. No. 712,969

Claims priority, application Switzerland, June 9, 1964, 7,494/64

Int. Cl. C07d *99/04, 49/34;* **A61k** *27/00*

U.S. Cl. 260—211.5 **10 Claims**

Phenyl substituted 3-phenyl-4,5-D-glucofurano-Δ^1-imidazolines are prepared from 2-thiono-3-phenyl-4,5-D-glucofurano-imidazolidines or 2-alkylthio-3-phenyl-4,5-D-glucofurano-Δ^1-imidazolines; these compounds as well as pharmaceutically acceptable acid addition salts thereof have antiinflammatory, analgesic and antipyretic properties; methods for treatment of inflammatory diseases and therapeutical compositions containing said compounds are provided; an illustrative embodiment is 3-(3,4-dichlorophenyl)-4,5-D-glucofurano-Δ^1-imidazoline.

3,502,651

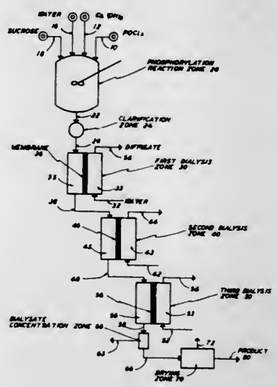
DIALYSIS OF SUGAR PHOSPHORYLATION REACTION SOLUTIONS

Charles C. Oldenburg, Mill Valley, Calif., assignor, by mesne assignments, to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a corporation of Australia

Filed Feb. 2, 1967, Ser. No. 613,639

Int. Cl. C13d *3/16;* **C07c** *47/18;* **C01f** *11/00*

U.S. Cl. 260—234 **15 Claims**



A process for selectively separating calcium chloride from a liquor containing a calcium sugar phosphate, inorganic calcium phosphate, and calcium chloride by (1) maintaining the liquor in mass transfer relationship through a suitable dialysis membrane, such as parchment, with a second liquor, such as water, which is relatively dilute with respect to calcium chloride under conditions including a temperature below 30° C. such that calcium chloride is selectively diffused through the membrane into the second liquor and (2) recovering phosphate containing liquor substantially depleted in calcium chloride.

3,502,652

BASICALLY SUBSTITUTED BENZOIC ACID AMIDES

Ernst Jucker, Ettingen, and John Gmünder, Muttenz, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

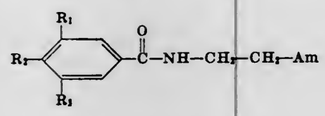
No Drawing. Filed Jan. 17, 1966, Ser. No. 520,847

Claims priority, application Switzerland, Jan. 19, 1965, 734/65; Apr. 6, 1965, 4,769/65

Int. Cl. C07d *51/74, 53/00*

U.S. Cl. 260—239 13 Claims

This application relates to new benzoic acid amides of the formula:



in which Am is 1-pyrrolidinyl, piperidino, 2,6-dimethyl-piperidino, 9-aza-9-bicyclo[3,3,1]nonyl, morpholino, 4-methyl-1-piperazinyl or 5-methyl-octahydro-1,5-diazocin-(1)-yl, and either

(i) one of R_1, R_2 and R_3 is hydrogen, the second is hydrogen, fluorine, chlorine or methyl, and the third is sulphamoyl or nitro, or

(ii) one of R_1, R_2 and R_3 is hydrogen, and each of the remaining two is chlorine,

and physiologically acceptable acid addition salts thereof.

3,502,653

PROCESS FOR PREPARING 1,4-DIAZA-CYCLOHEPTENES

Giuseppe Cantatore and Alberto Bonvicini, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,509

Claims priority, application Italy, Feb. 25, 1966, 4,329/66

Int. Cl. C07d *53/02*

U.S. Cl. 260—239 9 Claims

Preparation of alkyl substituted 1,4-diaza-cycloheptenes by reacting an alkyl diamine with an alpha, beta-unsaturated aliphatic carbonyl compound in the presence of a condensing agent which is preferably an alkali or alkaline earth metal hydroxide, carbonate or alkoxide. As new products: 5,7-dimethyl - 1,4 - diaza-4-cycloheptene, tetramethyl-1,4-diaza-4-cycloheptene (obtained by reacting mesityl oxide with 1,2-propylene diamine).

3,502,654

PROCESS FOR PREPARING ALKYLENIMINE DIMERS

John D. Young, Mexico City, Mexico, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 12, 1967, Ser. No. 630,193

Int. Cl. C07d *23/02, 23/06*

U.S. Cl. 260—239 12 Claims

Alkylenimine dimers are prepared by contacting an alkylenimine (e.g., ethylenimine) with catalytic amounts of an alkali metal salt of the alkylenimine (e.g., potassium ethylenimide) at a temperature of about 50°–200° C. in an inert (e.g., nitrogen) atmosphere under pressure sufficient to maintain the alkylenimine in a liquid phase.

3,502,655

PENICILLINS AND PROCESS FOR PREPARING THEM

Heinz Oppinger, Hofheim, Taunus, Hinrich Hoffmann, Kelkheim, Taunus, Max Kornlein, Frankfurt am Main, Adolf Oppermann, Hofheim, Taunus, and Manfred Schorr, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

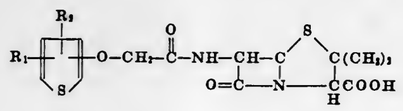
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,527

Claims priority, application Germany, Dec. 21, 1965, F 48,063

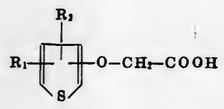
Int. Cl. C07d *99/14*

U.S. Cl. 260—239.1 2 Claims

Thienyloxy-methyl penicillins of the formula



where R_1 and R_2 are hydrogen or methyl, and salts thereof. Method for preparing such penicillins by fermenting a culture medium with a penicillin-forming fungus in the presence of a thienyloxy acid acid precursor of the formula



or of its functional equivalents.

3,502,656

ALKYL, BENZYL AND NITRO-BENZYL ESTERS OF α-CARBOXY-α(FURYL OR THIENYL) METHYL PENICILLINS

David Patrick John Neal, Leigh, near Reigate, Surrey, and Edward Raymond Stove, Redhill, Surrey, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company

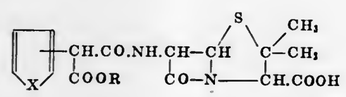
No Drawing. Filed May 8, 1967, Ser. No. 636,621

Claims priority, application Great Britain, May 13, 1966, 21,274/66

Int. Cl. C07d *99/16;* A61k *21/00*

U.S. Cl. 260—239.1 6 Claims

Compounds of formula:



(I)

in which R is an alkyl aralkyl or a ring-substituted aralkyl group and X is a sulfur or oxygen atom, and their non-toxic salts, are valuable antibacterial agents and show activity against Gram-positive and Gram-negative bacteria.

3,502,657

PRODUCTION OF 2,3-EPITHIOSTEROIDS

Taichiro Komeno, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Continuation-in-part of application Ser. No. 520,868, Jan. 17, 1966. This application Sept. 29, 1967, Ser. No. 671,569

Claims priority, application Japan, Dec. 19, 1961, 36/46,266

Int. Cl. C07c *173/00, 169/22*

U.S. Cl. 260—239.5 11 Claims

The 2,3-epithio-steroids:

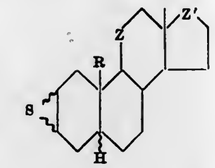
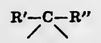


exhibit specific physiological activities such as marked inhibition of gonadotropin secretion, anti-esterogenic activity, androgenic and anabolic activities, progestational activity, ovulation inhibition and/or delay activities, etc. and accordingly they are useful as medicinals for human and veterinary use.

Wherein R is hydrogen or methyl, Z is methylene, hydroxymethylene or carbonyl and Z' is carbonyl or a group of the formula:



in which R' is lower alkyl, hydroxy, acyloxy, acetyl, hydroxyacetyl or an acyloxy acetyl group and R'' is hydrogen, lower alkyl, lower alkenyl, lower alkynyl, hydroxy or acyloxy.

3,502,658

AMIDINOHYDRAZONES OF 3-KETOSTEROIDS

Kurt W. Ledig, Philadelphia, and Gerhard R. Wendt, Havertown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1968, Ser. No. 738,805

Int. Cl. C07c *169/20, 173/10*

U.S. Cl. 260—239.5 12 Claims

There is described the preparation of various unsaturated 17-hydroxygonane-3-one, amidinohydrazones and salts thereof, as well as the corresponding 17-ethers and esters of those compounds. The compounds have been found useful as antimicrobial agents.

3,502,659

14α,15α-KETONIDES OF ALKYL 3-OXYGENATED-14α,15α-DIHYDROXY-4,17(20)-CIS-PREGNADIEN-21-OATES, DERIVATIVES THEREOF, AND INTERMEDIATES AND PROCESSES THEREFOR

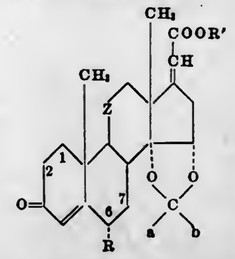
Philip F. Beal III, Kalamazoo, and Robert W. Jackson, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,658

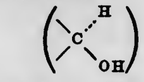
Int. Cl. C07c *173/00, 169/00*

U.S. Cl. 260—239.55 24 Claims

This invention relates to novel steroid compounds and processes for their preparation; more particularly to those compounds embraced by the formula



wherein the 1(2)-and 6(7)-carbon atom linkages are selected from the group consisting of single bonds and double bonds; R and R' are selected from the group consisting of hydrogen and lower alkyl; Z is selected from the group consisting of the methylene radical (>CH_2), the β-hydroxymethylene radical



and the carbonyl radical (>C=O); *a* and *b* are selected from the group consisting of lower alkyl of from one through twelve carbon atoms, phenyl and benzyl. The compounds of the invention possess anti-inflammatory, anti-viral, anti-microbial, and antihormonal activities.

3,502,660

2-[(5'-(3' AND/OR 4'-SUBSTITUTED)ISOXAZOYL) METHYLIDENE]-3,4,10-TRIOXO-1,2,3,4,4a,9,9a,10-OCTAHYDROANTHRACENES

Kenneth Butler, Waterford, and Lloyd H. Conover, Quaker Hill, Conn., and Robert B. Woodward, Belmont, Mass., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 484,723, Sept. 2, 1965. This application Jan. 12, 1967, Ser. No. 608,736

Int. Cl. C07d *85/26*

U.S. Cl. 260—240 14 Claims

A multi-route process for the synthesis of tetracycline-type antibiotics involving (1) the aldol condensation of a 3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracene and a 3- and/or 4-substituted-5-formylisoxazole; (2) dehydration of the aldol condensation product to a 2-[(5'-(3'- and/or 4'-substituted)isoxazolyl)methylidene]-3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracene; followed by (3) Michael addition of an amine to produce 2-[(5'-(3'- and/or 4'-substituted)isoxazolyl)substituted aminomethyl] - 3,4,10 - trioxo - 1,2,3,4,4a,9,9a,10 - octahydroanthracenes; (4) chemical or catalytic reduction of the [(isoxazolyl)aminomethyl] - 3,4,10-trioxo-octahydroanthracenes to 3-hydroxy-4,10-dioxo- and 4,10-dioxo derivatives, respectively; (5) cleavage of the isoxazole ring of the reduced compounds to the corresponding 4,10-dioxo-1,2,3,4,4a,9,9a,10 - octahydroanthracene-2-[α-(amino)acetonyl-α-nitriles]; (6) followed by cyclization of 12a-deoxytetracycline or tetracycline derivatives; or, alternatively, (7) cyclization of [(isoxazolyl)aminomethyl] - 4,10 - dioxo-octahydroanthracenes to naphthaceno(3,2 - D)isoxazoles with subsequent cleavage of the isoxazole ring to produce 12a-deoxytetracyclines; and (8) 12a-hydroxylation to a tetracycline. The intermediate compounds of the process are limited to the following classes: 2-[5'-(3' and/or 4' substituted)isoxazolyl)methylidene] - 3,4,10-trioxo-1,2,3,4,4a,9,9a,10 - octahydroanthracenes; 2 - [(5'-(3' and/or 4' - substituted isoxazolyl)aminomethyl]-4,10-dioxo-1,2,3,4,4a,9,9a,10-octahydroanthracenes, the 3-oxo, the 3-hydroxy, the 3-lower alkanoyloxy and the 3,4-cyclic carbonates thereof; 4,10-dioxo-1,2,3,4,4a,9,9a,10-octahydro-

anthracene - 2 - [α-(amino)acetonyl-α-nitriles]; and naphthaceno (3,2-D)isoxazoles, all of which are useful as bactericides and/or chelating agents.

3,502,661

PROCESS FOR MAKING 1,4,5,6-TETRAHYDRO-2-[(2-SUBSTITUTED)VINYL] PYRIMIDINES AND 2-[(2-SUBSTITUTED)VINYL]-2-IMIDAZOLINES

Robert V. Kasubick, Gales Ferry, and James W. McFarland, Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 643,391, June 5, 1967, which is a continuation-in-part of application Ser. No. 615,897, Feb. 14, 1967. This application Nov. 9, 1967, Ser. No. 681,907

Int. Cl. C07d *51/38, 49/34;* **A61k** *27/00*

U.S. Cl. 260—240 **10 Claims**

In the direct aldehyde condensation process for making 2-[(2-substituted)vinyl]cyclic amidines, e.g. tetrahydropyrimidines and imidazolines by the condensation of an aldehyde with a 2-methyl substituted cyclic amidine, the improvement which comprises conducting the condensation in the presence of a chemical water scavenger such as an ester of formic acid, of chloroformic acid or of carbonic acid.

3,502,662

N-(9-XANTHENYL OR THIOXANTHENYL)-3-AMINO OR IODO-PROPIONAMIDES AND 4-(9-XANTHENYL OR THIOXANTHENYL)-THIOSEMICARBAZONES

Scott J. Childress, Philadelphia, and Stephen I. Sallay, Wynnewood, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 595,602, Nov. 21, 1966. This application Mar. 18, 1968, Ser. No. 714,032

Int. Cl. A61k *27/00;* **C07d** *71/42, 65/16*

U.S. Cl. 260—240 **6 Claims**

The invention is directed to new xanthenyl derivatives, including amides and thiosemicarbazides, and a process for their preparation. The compounds have pharmacological activity in that they have exhibited anticholinergic properties and are particularly useful as anticonvulsants or mydriatic agents.

3,502,663

CRYSTALLINE CEPHALOSPORIN, METHOD FOR ITS MANUFACTURE

Albert J. Barnes, Jr., Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 21, 1969, Ser. No. 818,057

Int. Cl. C07d *99/24*

U.S. Cl. 260—243 **1 Claim**

Cephalexin monohydrate crystals, dense, large crystals, useful in formulations of the antibiotic, are prepared by spraying cephalexin with an excess of water and drying to constant weight.

3,502,664

3' - (HETEROCYCLIC AMINO) - SPIRO[NORBORNENE - 2,2'-THIENTHANE] - 1',1'-DIOXIDES AND PROCESS FOR THEIR PREPARATION

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Original application Sept. 13, 1963, Ser. No. 308,690, now Patent No. 3,372,161, dated Mar. 5, 1968. Divided and this application Dec. 27, 1967, Ser. No. 725,968

Int. Cl. C07d *91/00, 87/46*

U.S. Cl. 260—247.1 **10 Claims**

The title compounds are prepared by reacting a 5-norbornene-2-enamine with a methane sulfonyl chloride and hydrogenating the resulting 5-norbornenes to the corresponding norbornanes. The compounds have biocidal activity.

3,502,665

PREPARATION OF 7-ACYLAMIDO DERIVATIVES OF 7-AMINOCEPHALOSPORANIC ACID AND RELATED COMPOUNDS

Lewis Aubrey Wetherill, Harrow, William Graham, Pinner, and Michael John Covill, London, England, assignors to Glaxo Laboratories Limited, Greenford, Middlesex, England, a British company

No Drawing. Filed May 24, 1965, Ser. No. 458,383

Claims priority, application Great Britain, May 28, 1964, 22,154/64

Int. Cl. C07d *99/24*

U.S. Cl. 260—243 **9 Claims**

The preparation of a 7-acylamidocephalosporanic acid by the acylation of 7-aminocephalosporanic acid, an acid addition salt thereof or a derivative thereof having at the 3-position a group $—CH_2Y$, wherein Y is a group derived from a nucleophile, with an acyl halide under substantially anhydrous conditions in an inert Lewis base liquid under the conditions of the reaction which has a dielectric constant above 15 and contains a hydrogen halide acceptor which may be the Lewis base itself.

3,502,666

3,1-BENZOTHIAZINE DERIVATIVES

Heinz Kuch, Karl Schmitt, and Gunther Seidl, Frankfurt am Main, and Irmgard Hoffmann, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 16, 1967, Ser. No. 683,454

Claims priority, application Germany, Nov. 26, 1966, F 50,772

Int. Cl. C07d *93/08;* **A61k** *27/00*

U.S. Cl. 260—243 **5 Claims**

2-amino-4,4-di-substituted benzothiazine derivatives having an action on the central nervous system.

3,502,667

INDOLE DERIVATIVES

Michio Nakanishi and Ryosuke Kobayashi, Nakatsu, and Masahiro Torigoe, Chikujo-gun, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

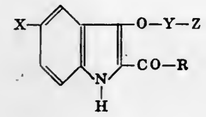
No Drawing. Filed Mar. 2, 1967, Ser. No. 620,246

Claims priority, application Japan, Mar. 2, 1966, 41/13,094; Dec. 10, 1966, 41/81,197; Dec. 16, 1966, 41/82,570

Int. Cl. C07d *27/56*

U.S. Cl. 260—247.2 **37 Claims**

Compounds of the formula



wherein X is H, halogen, lower alkyl or lower alkoxy; Y is C_2–C_4 alkylene or 2-hydroxytrimethylene; Z is lower alkyl-amino, di-lower alkyl-amino, 1-pyrrolidinyl, piperidino, morpholino or 4-lower alkyl-1-piperazinyl; and R is amino, lower alkyl-amino, hydroxyl or lower alkoxy, are useful as drugs for asthma and as antispasmodics.

3,502,668

2-PHENYL-5-TERTIARYAMINO ALKYL-1,3,4-OXADIAZOLES

Giuseppe Palazzo and Bruno Silvestrini, Rome, Italy, assignors to Angelini Francesco-Aziende Chimiche Riunite S.N.C., Rome, Italy, a company

No Drawing. Filed July 26, 1966, Ser. No. 567,825

Claims priority, application Italy, Mar. 2, 1966, 15,087/66

Int. Cl. C07d *87/38, 87/40*

U.S. Cl. 260—247.5 **5 Claims**

1,3,4-oxadiazoles having an aryl, alkaryl, alkoxyaryl or haloaryl substituent in the 2 position and a disubstituted aminoalkyl group at the 5 position and their nontoxic acid addition salts are disclosed. These compounds have anti-inflammatory activity, analgesic properties and low toxicity.

3,502,669

3-AZABICYCLO[3,3,1]NONANE DERIVATIVES

Michio Nakanishi, Oita, Katsuo Arimura, Fukuoka, and Tomio Muro, Oita, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

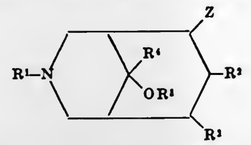
No Drawing. Filed Sept. 5, 1967, Ser. No. 665,221

Claims priority, application Japan, June 7, 1967, 42/36,723

Int. Cl. C07d *29/26, 51/70, 87/40*

U.S. Cl. 260—247.5 **47 Claims**

3-azabicyclo[3,3,1]nonane derivatives of the formula



wherein R^1 is benzyl, phenethyl or alkyl having 1 to at most 4 carbon atoms, each of R^2 and R^3 is H or CH_3, R^4 is H, alkyl having 1 to at most 4 carbon atoms, phenyl, tolyl, methoxyphenyl or trifluoromethylphenyl, R^5 is H, alkanoyl having 1 to at most 4 carbon atoms or alkylsulfonyl having 1 to at most 4 carbon atoms, and Z is pyrrolidino, piperidino, morpholino or 4-methyl-1-piperazinyl, are useful as psychoanaleptics and as hypoglycemic agents.

3,502,670

S-((4-OXO - 1,2,3-BENZOTRIAZIN-3(4H)-YL)-METHYL) PHOSPHOROTHIOATES AND PHOSPHORODITHIOATES

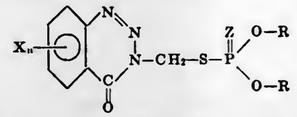
Raymond H. Rigterink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 5, 1967, Ser. No. 636,581

Int. Cl. C07f *9/16;* **C07d** *55/08;* **A01n** *9/22*

U.S. Cl. 260—248 **11 Claims**

The present invention is directed to S-((4-oxo-1,2,3-benzotriazin-3(4H)-yl)methyl) phosphorothioates and phosphorodithioates of the formula



and to methods employing and compositions comprising these phosphorothioates and phosphorodithioates for controlling parasities, especialy arthropod pests such as insects and arachnids. In the above and succeeding formulae in the present specification and claims, Z represents oxygen or sulfur; each X independently represents bromo or chloro; each R independently represents lower-alkyl; and *n* represents an integer of from 1 to 4, both inclusive.

3,502,671

SELECTED N-SUBSTITUTED DIAZOLES AND DIAZINES AND PROCESSES FOR PREPARING SAME

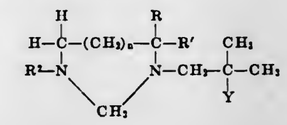
Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,779

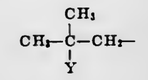
Int. Cl. C07d *51/18, 49/30*

U.S. Cl. 260—251 **20 Claims**

Compounds having the formula



and methods of preparing such compounds by reacting a polyamine, formaldehyde and 2-nitropropane. R and R′ are hydrogen or lower alkyl, Y is NO_2 or NH_2, *n* is 0 or 1, and R^2 is a radical containing from about 1 to 25 carbon atoms selected from the group consisting of aryl, alkyl, cycloalkyl and



3,502,672

HEXAHYDROPYRIMIDONE DERIVATIVES

Harro Petersen, Mannheim, and Heinz Bille and Wilhelm Ruemens, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,425

Claims priority, application Germany, Aug. 17, 1965, 1,545,610; Aug. 18, 1965, 1,469,269; May 18, 1966, 1,594,907

Int. Cl. C07d *51/18;* **D06m** *13/34*

U.S. Cl. 260—251 **4 Claims**

N,N′-dihydroxymethyl and N,N′-dialkoxymethyl derivatives of hexahydropyrimidones which bear in the 4-position a hydroxyl or alkoxyl group. These compounds are useful finishing agents for textile materials consisting of or containing natural or regenerated cellulose.

3,502,673

ARYL-PYRIMIDINE-ALKANOIC ACID DERIVATIVES

Walter Hepworth and Thomas Walton Thompson, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 16, 1967, Ser. No. 638,726

Claims priority, application Great Britain, June 17, 1966, 27,083/66

Int. Cl. C07d *51/36;* **A61k** *27/00*

U.S. Cl. 260—251 **5 Claims**

The disclosure relates to phenyl (and benzyl)pyrimidyl-alkanoic acids and related compounds which possess anti-inflammatory, analgesic and antipyretic activity, processes for making said acids and compounds, pharmaceutical compositions containing at least one of said acids and compounds, and the method of using said acids and compounds in a host needing said activity. Representative of the compounds disclosed are methyl 2-p-chlorophenyl-6-methoxypyrimid-4-ylacetate, diethyl 2-(2-p-chlorophenyl-6 - methoxypyrimid - 4 - yl)malonate, 2-p-chlorophenyl-6-methoxy - 4 - methylpyrimid-5-ylacetic acid, and methyl α-(2-p-chlorophenyl-6-methoxypyrimid-4-yl)propionate.

3,502,674
THIOL-TYPE THIAMINE THIONOCARBONATES

Akira Takamizawa, Osaka Prefecture, and Yoshio Hamashima, Kyoto Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Oct. 26, 1967, Ser. No. 678,200
Claims priority, application Japan, Nov. 2, 1966, 41/72,530
Int. Cl. C07d *51/42*
U.S. Cl. 260—256.5 16 Claims

S-substituted or unsubstituted phenoxythionocarbonylthiamines being prepared by an interaction of an alkali metal salt of thiol-type thiamine with a substituted or unsubstituted phenoxythionocarbonyl group introducing agent, and possessing anti-inflammatory activity and also rapid, prolonged and high level vitamin B_1 activity.

3,502,675
5,6-SUBSTITUTED DIHYDROPYRIMIDINES

Robert Duschinsky, Montclair, and Max Hoffer, Nutley N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 20, 1966, Ser. No. 558,553
Int. Cl. C07d *51/30*
U.S. Cl. 260—260 2 Claims

5-bromo-5-nitro-6-lower alkoxy hydrouracils and 5-bromo - 5 - trifluoromethyl-6-lower hydroxy hydrouracils are prepared inter alia by treating 5-nitrouracil or 5-(α,α,α-trifluoromethyl)uracil with a lower alkyl ester of hydrobromic acid. The compounds are useful as anti-bacterial/anti-fungal agents.

3,502,676
PRODUCTION OF AROMATIC THIOAMIDES

Friedrich Becke, Heidelberg, and Helmuth Hagen, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 26, 1968, Ser. No. 715,949
Claims priority, application Germany, Mar. 30, 1967, 1,272,287
Int. Cl. C07c *153/05*
U.S. Cl. 260—267 9 Claims

An improved process for the production of aromatic thioamides by reaction of aromatic compounds having up to eighteen carbon atoms and containing halogenated methyl groups with sulfur and ammonia, primary amines or secondary amines at temperatures of from 25° to 200° C., the improvement consisting in the use as starting materials of aromatic compounds having up to eighteen carbon atoms and containing once or more than once in the molecule the group having the formula $—CH_2X$ in which X denotes a chlorine atom, bromine atom or iodine atom. Aromatic thioamides are used as accelerators in vulcanization.

3,502,677
NITROGEN-CONTAINING AND PHOSPHORUS-CONTAINING SUCCINIC DERIVATIVES

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1963, Ser. No. 288,481
Int. Cl. C07d *51/70, 49/34, 87/02*
U.S. Cl. 260—268 14 Claims

1. A substituted polyamine prepared by the process comprising the reaction at a temperature between about 25° C. and below the decomposition temperature of the process mixture of one mole of an alkylene polyamine having *n* amino groups with a substantially hydrocarbon-substituted succinic acid-producing compound selected from the class consisting of acids, anhydrides, halides, and esters having at least about 50 aliphatic carbon atoms in the substantially hydrocarbon substituent and a phosphorus acid-producing compound selected from the class consisting of phosphoric acids, phosphorous acids, phosphonyl acids, phosphinyl acids, and the ester, the halides and the anhydrides thereof and the corresponding thio-analogs thereof; the amount of the succinic acid-producing compound being at least about 0.25 mole, the amount of the phosphorus acid-producing compound being at least about 0.001 mole, and the combined amounts of the succinic acid-producing compound and the phosphorus acid-producing compound being no greater than *n* moles.

3,502,678
NITROBENZOTHIOXANTHENE DICARBOXYLIC ACID IMIDE

Otto Fuchs and Helmut Troster, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 567,813, July 26, 1966. This application Oct. 23, 1967, Ser. No. 677,473
Claims priority, application Germany, Aug. 12, 1965, F 46,869
Int. Cl. C07d *39/16*
U.S. Cl. 260—281 7 Claims

Benzothioxanthene dicarboxylic acid imide dyestuffs which are substituted in the 1-position by a nitro group and in the 6-position by an alkoxy group. The dyestuffs have a red or bluish red shade and are suitable for dyeing synthetic materials such as polyethylene-glycolterephthalate.

3,502,679
10b-SUBSTITUTED 1,2,3,5,6,10b - HEXAHYDROPYRROLO[2,1-a]ISOQUINOLINES AND PROCESS THEREFOR

William J. Houlihan and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 480,479, Aug. 17, 1965, now Patent No. 3,383,388, dated May 14, 1968. This application May 31, 1967, Ser. No. 642,311
Int. Cl. C07d *39/12, 57/04, 35/24*
U.S. Cl. 260—286 15 Claims

10b - R - 1,2,3,5,6,10b-hexahydropyrrolo[2,1-a]isoquinolines, 11b-R-1,2,3,4,6,7-hexahydro-11bH-benzo[a]quinolizines and 12b-R-1,2,3,4,5,7,8,12b-octahydroazepino[2,1-a]isoquinolines are useful as analeptics, anti-inflammatories and hypotensive-antihypertensives. They are prepared from β-phenethylamines and ω-acylalkylenecarboxylic acids having from two to four carbons in the alkylene chain.

3,502,680
4[2' - (BIS - HYDROXYMETHYLMETHOXY CARBONYL) - PHENYLAMINO] - 7 OR 8-CHLOROQUINOLINES

André Allais, Les Lilas, and Pierre Girault, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,042
Claims priority, application France, Mar. 17, 1966, 53,869
The portion of the term of the patent subsequent to Feb. 1, 1983, has been disclaimed
Int. Cl. C07d *33/52*
U.S. Cl. 260—287 3 Claims

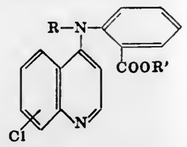
4[2'-(bis-hydroxymethylmethoxy carbonyl) - phenylamino]-7 or 8-chloroquinolines and acid addition salts thereof having analgesic and anti-inflammatory activity and their preparation.

3,502,681
7- OR 8-CHLORO-4-PHENYLAMINO-CHLOROQUINOLINES

André Allais, Les Lilas, and Jean Meler, Coeuilly-Champigny, France, assignors to Roussel-UCLAF, Paris, France

No Drawing. Filed Apr. 10, 1968, Ser. No. 720,345
Int. Cl. C07d *33/52*
U.S. Cl. 260—287 11 Claims

7- or 8-chloroquinolines of the formula



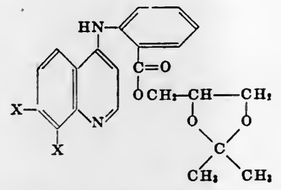
wherein R is selected from the group consisting of alkyl of 1 to 8 carbon atoms, alkenyl of 2 to 8 carbon atoms and carboxyalkylene of 2 to 7 carbon atoms and R' is selected from the group consisting of hydrogen and alkyl of 1 to 8 carbon atoms and their non-toxic, pharmaceutically acceptable acid addition salts which products possess strong anti-inflammatory activity without analgesic activity.

3,502,682
ACETONIDES OF α-MONOGLYCERIDES OF 4 - (2'-CARBOXYPHENYLAMINO)-CHLOROQUINOLINES

André Allais, Les Lilas, Pierre Girault, Paris, Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Bernard Goffinet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Continuation of application Ser. No. 523,911, Feb. 1, 1966. This application May 15, 1969, Ser. No. 827,103
Claims priority, application France, Apr. 2, 1965, 11,769; July 2, 1965, 23,310; Aug. 13, 1965, 28,308
Int. Cl. C07d *33/52*
U.S. Cl. 260—287 3 Claims

Acetonides of α-monoglycerides of 4-(2'-carboxyphenylamino)-chloro-quinolines of the formula



wherein one X is chlorine and the other X is hydrogen. The invention also relates to novel anti-inflammatory and analgesic compositions.

3,502,683
CERTAIN N-SUBSTITUTED NORATROPINE AND NORTROPIDINE TROPIC ACID ESTERS AND DERIVATIVES THEREOF

Rolf Banholzer, Alex Heusner, Otto Korndorfer, Werner Schulz, Gerhard Walther, and Karl Zeile, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Aug. 29, 1967, Ser. No. 663,986
Claims priority, application Germany, Sept. 2, 1966, B 88,749; Sept. 29, 1966, B 89,140; Oct. 7, 1966, B 89,253
Int. Cl. A61k *27/00*; C07d *43/06*
U.S. Cl. 260—292 2 Claims

A process for the preparation of tropic acid derivatives which comprises an ester exchange reaction between an α-formyl-phenylacetic acid alkyl ester and a bicyclic heterocyclic alcohol, followed by reduction with a metal borohydride.

3,502,684
N-[2-(2-AZA-ADAMANT-2-YL)-ETHYL]-GUANIDINES

André R. Gagneux, Basel, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1966, Ser. No. 554,327
Claims priority, application Switzerland, June 2, 1965, 7,711/65
Int. Cl. C07d *29/30, 29/28;* A61k *27/00*
U.S. Cl. 260—293 2 Claims

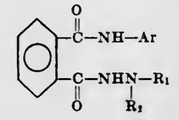
The compounds are of a class of N-[2-(2-aza-adamant-2-yl-ethyl]-guanidines which are useful for the treatment of hypertension and are prepared by reacting 2-(2-aminoethyl)-2-aza-adamantane with e.g. S-methyl-isothiourea, N-alkyl derivatives thereof, nitrosoguanidine, etc. A typical embodiment is N-2-,2-aza-adamant-2-yl)-ethyl-guanidine.

3,502,685
N-ARYL-N'-SUBSTITUTED AMINO PHTHALAMIDES

Arthur H. Gevirtz, New Haven, Ronald B. Ames, Naugatuck, and Allen E. Smith, Bethany, Conn., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 20, 1967, Ser. No. 676,695
Int. Cl. C07c *103/24, 27/30;* A01n *9/20*
U.S. Cl. 260—294 7 Claims

Chemical compounds having the general formula



where Ar is naphthyl, dichlorophenyl or trichlorophenyl, and R_1 and R_2 are hydrogen or lower alkyl or compositely with the nitrogen atom form a heterocyclic ring, or if R_1 is hydrogen, R_2 is phenyl or naphthyl. These compounds are useful as herbicides.

3,502,686
2-HYDROXY-DIBENZAZULENE COMPOUNDS

Eugene E. Galantay, Morristown, N.J., assignor to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 455,989, May 14, 1965. This application Apr. 14, 1966, Ser. No. 542,494
Int. Cl. C07d *29/16, 51/70;* C07c *103/32*
U.S. Cl. 260—294.7 16 Claims

The compounds are 1-substituted or unsubstituted aminodibenzazulenes, e.g., 1-amino-2-hydroxy-1,2,6,7-tetrahydro-11bH-benzo[j]benz[c,d]azulene, and are useful as pharmaceuticals. Compounds having a 2-hydroxy function may be prepared, e.g., by reduction of an appropriate 1-substituted or unsubstituted amino-dibenzazulen-2-one.

3,502,687
DIOXINOPIPERIDINES

John H. Biel, Milwaukee, Wis., assignor to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,545
Int. Cl. C07d *95/00;* A61k *27/00*
U.S. Cl. 260—293.4 9 Claims

2,2-substituted-4H-m-dioxino[4,5-e]piperidines possess antispasmodic activity and are useful to relax smooth muscle in the alimentary tract.

3,502,688
5-(4-PYRIDYLETHYL)-PYRIDOINDOLE DERIVATIVES

Leo Berger, Montclair, and Alfred John Corraz, Wayne, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 10, 1968, Ser. No. 758,711
Int. Cl. C07d *31/36*
U.S. Cl. 260—295 **20 Claims**

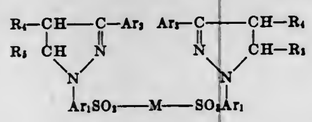
5-(4-pyridylethyl)-pyridoindole derivatives having analgesic activity, prepared from the correspondingly substituted 4-piperidones and N-amino-N-arylaminoethylpyridines, are described.

3,502,689
METAL BIS-DIARYLPYRAZOLINES

Harry A. Bliech, 8 Cooke Road, Lexington, Mass. 02173; Emery Nyilas, 7 Elm Brook Road, Bedford, Mass. 01730; and Imre James L. Pinter, 76 Nob Hill Drive, Framingham, Mass. 01701

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,251
Int. Cl. C07f *3/00, 15/00;* **C08k** *1/58*
U.S. Cl. 260—299 **5 Claims**

Novel metal bis-diarylpyrazolines useful in small amounts as optical brighteners and stabilizers in polymeric materials and conforming to the structural formula:



where M is a divalent metal selected from the group consisting of barium, cadmium, tin, zinc, lead, calcium, cobalt or nickel; Ar_1 is phenyl or phenyl substituted with alkyl, alkoxy, alkylamino, acylamino, halogen, or nitro monovalent radicals; Ar_3 is an aryl radical or aryl radical substituted with alkyl, alkoxy, alkylamino, hydroxy, halogen, nitro or phenoxy monovalent radicals; and R_4 and R_5 are individually, hydrogen, lower alkyl, phenyl, hydroxyphenyl, dimethyl aminophenyl, methoxyphenyl, nitrophenyl or benzyl monovalent radicals.

3,502,690
(BIS - DIMETHYLAMINO)-(3 - PHENYL - 5 - AMINO-1,2,4-TRIAZOLO) - PHOSPHINEOXIDE TRIPHENYL-CHLOROSTANNATE

Ludwig Schroder, Klaus Thomas, Richard Sehring, and Dietrich Jerchel, Ingelheim am Rhein, Germany, assignors to C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, a limited partnership of Germany

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,197
Claims priority, application Germany, Sept. 3, 1965, B 83,585
Int. Cl. C07d *55/00*
U.S. Cl. 260—299 **1 Claim**

(Bis - dimethylamino) - (3 - phenyl - 5 - amino - 1,2,4-triazolo)-phosphineoxide triphenyl-chlorostannate, useful as an antimicrobial agent.

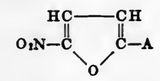
3,502,691
CERTAIN (5-NITRO-2-FURYL)TRIAZOLES

Eva B. Akerblom, Uppsala, Sweden, assignor to Pharmacia AB, Uppsala, Sweden, a Swedish company

No Drawing. Filed Feb. 10, 1967, Ser. No. 615,087
Claims priority, application Sweden, Feb. 14, 1966, 1,831/66
Int. Cl. C07d *55/06;* **A61k** *27/00*
U.S. Cl. 260—308 **3 Claims**

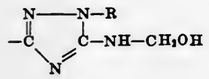
The present invention concerns novel 5-nitro-2-furans and a process for the preparation thereof.

The novel compounds are of the Formula I



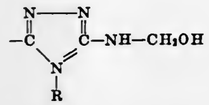
(I)

wherein A represents a member selected from the group consisting of radicals having the general Formulae II and III



(II)

and



(III)

wherein R represents an alkyl, containing from 1 to 4 inclusive carbon atoms.

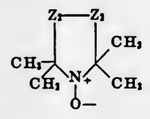
The invention also encompasses therapeutically acceptable salts thereof. The compounds have antibacterial properties.

3,502,692
CYCLIC NITROXIDES AND PROCESS FOR PREPARING SAME

Allan Murry Feldman, Norwalk, and Arthur Kentaro Hoffmann, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Application Apr. 26, 1965, Ser. No. 457,899, now Patent No. 3,334,103, dated Aug. 1, 1967, which is a division of application Ser. No. 202,050, June 13, 1962. Divided and this application June 6, 1967, Ser. No. 666,525
Int. Cl. C07d *27/00*
U.S. Cl. 260—326.3 **3 Claims**

Cyclic nitroxides derived from pyrrolidines are provided having the formula



in which Z_2 is selected from the group consisting of $>CH_2$, $>C=O$, $>C(CH_3)_2$, $>CHCONH_2$, $>CHNH_2$, $>C=NOH$, $>CHOH$, $>C(CN)OH$, $>C(COOCH_3)OH$, and $>C(COOC_2H_5)OH$, and Z_3 is $>CH_2$; however, when Z_2 is $>C=O$, Z_3 may also be selected from the group consisting of $>C=O$, $>C=CHCH_3$, $>CBr_2$ and $>C=NOH$.

3,502,693
2-HYDROXYMETHYLINDOLE QUINONES

Keizo Uzu and Kinichi Nakano, Shizuoka-ken, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Feb. 28, 1967, Ser. No. 619,267
Claims priority, application Japan, Mar. 5, 1966, 41/13,164
Int. Cl. C07d *27/56;* **C07c** *49/62*
U.S. Cl. 260—326.16 **2 Claims**

The present disclosure relates to 2-hydroxymethyl-3-alkyl-5-alkoxyindole quinones-(4,7) and to a process for preparing them. The process involves selectively

nitrating the 4-position of a 2-carboalkoxy-3-alkyl-5-alkoxyindole by reacting the same with fuming nitric acid, treating the resultant nitrated derivative with lithium aluminum hydride so as to reduce the carboalkoxy group at the 2-position to a hydroxymethyl group, then selectively catalytically reducing the nitro group to an amino group, and finally oxidizing the reduced product, preferably with an alkali metal nitroso disulfonate, to give the quinone product. The synthesis of 2-hydroxymethyl-3-methyl-5-ethoxyindole quinone-(4,7) is specifically described.

3,502,694
1,3,5-BENZOXADIAZEPINES

George Francis Field, West Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,306
Int. Cl. C07d *51/00*
U.S. Cl. 260—333 **3 Claims**

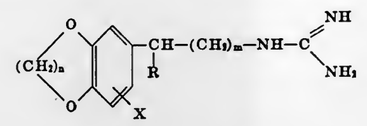
1,3,5-benzoxadiazepines which are useful as antibacterial agents.

3,502,695
BENZODIOXANE DERIVATIVES OF GUANIDINE

Darius Molho, Boulogne-sur-Seine, Eugene Boschetti, Venissieux, and Louis Fontaine, Lyon, France, assignors to Lipha Lyonnaise Industrielle Pharmaceutique

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,463
Claims priority, application France, Feb. 28, 1966, 51,313; Nov. 22, 1966, 84,498
Int. Cl. C07d *15/04, 13/10, 17/00*
U.S. Cl. 260—340.3 **6 Claims**

The substituted guanidines of the formula



in which n is an integer from 1 to 3, m is equal to 0 or 1, X is a member of the group formed by hydrogen and the halogens and R is a member of the group formed by hydrogen and the hydroxy radical, and their acid addition salts, useful as hypotensive agents.

3,502,696
ANTIBACTERIAL AGENTS

Lloyd H. Conover, Quaker Hill, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 234,511, Oct. 31, 1962, which is a continuation-in-part of application Ser. No. 132,287, Aug. 18, 1961. This application June 17, 1966, Ser. No. 558,267
Int. Cl. C07c *103/10, 49/76*
U.S. Cl. 260—351 **5 Claims**

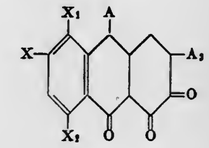
A series of 4,10 - dioxo - 1,2,3,4a,9,9a,10-octahydroanthracenes having at the 2-position a formyl, carboxy, carboalkoxy, carbobenzyloxy, carbothioalkyl, carbothiobenzyl, chloroformyl, cyanoaminomethyl, or cyanohydroxymethyl group which are useful as intermediates for the synthesis of tetracycline-type antibiotics, as bactericides and/or chelating agents; and methods for their preparation. Tetracyclines are produced by a multi-step process beginning with 4,10-dioxo-1,2,3,4,4a,9,9a,10-octahydro-2-anthraldehyde comprising: (1) condensation with acetone cyanohydrin followed by reaction with an amine to give a 2-(cyanoaminomethyl)-4,10-dioxo-1,2,3,4,4a,9,9a,10-octahydroanthracene; (2) hydrolysis of the nitrile to the corresponding 2-(carboxyaminomethyl)1,2,3,4,4a,9,9a,10-octahydroanthracene; (3) conversion of the acid to a mixed anhydride; (4) acylation of a malonic ester derivative with the mixed anhydride; (5) followed by cyclization of the acyl malonate derivative to a 12a-deoxytetracycline which is then hydroxylated to a tetracycline.

3,502,697
ANTIBACTERIAL AGENTS

Robert B. Woodward, Belmont, Mass., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 2, 1966, Ser. No. 576,826. Divided and this application Jan. 3, 1967, Ser. No. 606,554
Int. Cl. C07c *69/76*
U.S. Cl. 260—351 **6 Claims**

1. A compound of the formula



wherein:

X is selected from the group consisting of hydrogen, hydroxy, trifluoromethyl, amino, mono- and di-lower alkyl amino, alkanoylamino containing 2 to 4 carbon atoms, lower alkyl, alkanoyloxy containing 2 to 4 carbon atoms; and OR wherein R is selected from the group consisting of lower alkyl and benzyl;

X_1 is selected from the group consisting of hydrogen, chloro, trifluoromethyl and lower alkyl;

X_2 is selected from the group consisting of hydrogen, hydroxy, and OR wherein R is as previously described;

A is selected from the group consisting of hydrogen and lower alkyl;

A_3 is selected from the group consisting of lower carbalkoxy, carbobenzyloxy and cyano.

3,502,698
NOVEL 13α-LOWER ALKYLGONA-1,3,5(10)-TRIENES

Reinhardt P. Stein, Conshohocken, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 16, 1968, Ser. No. 721,592
Int. Cl. C07c *169/08, 169/10;* **A61k** *17/06*
U.S. Cl. 260—397.4 **3 Claims**

The disclosure involves the production of novel 13α-lower alkylgona-1,3,5(10)-triene-17-ones by irradiation technique producing compounds that are pharmacologically active.

3,502,699
NOVEL $\Delta^{4,9}$-3-KETOSTEROIDS AND METHOD FOR PREPARING SAME

Gordon Alan Hughes, King of Prussia, Pa.; Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; and David Hartley, King of Prussia, Pa.; said Hughes and said Hartley assignors to said Smith

No Drawing. Filed May 15, 1962, Ser. No. 194,972
Int. Cl. C07c *167/02, 169/20*
U.S. Cl. 260—397.45 **5 Claims**

Processes for preparing gona-4,9-dien-3-ones having anti-estrogenic, anabolic and progestational activity and for preparing intermediates therefor are described.

3,502,700

17-ESTERS OF 9α,21-DIHALO-11β,17α-DIHYDROXYPROGESTERONES

Gerald W. Krakower, Elizabeth, and Patrick A. Diassi, Westfield, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 19, 1967, Ser. No. 610,246

Int. Cl. C07c *169/30, 169/36;* A61k *17/06*

U.S. Cl. 260—397.45 5 Claims

This invention relates to new 17-esters of 9α,21-dihalo-11β,17α-dihydroxyprogesterone, which are physiologically active steroids that possess progestational activity. The new steroids are prepared by interacting at 21-alkanesulfonic acid ester of the corresponding 17-ester of 9α-halo-11β,17α,21-trihydroxyprogesterone with an alkali metal halide.

3,502,701

UNSYMMETRICAL DIACYL PEROXIDES

Roger N. Lewis, Pinole, and Donald W. Wood, San Pablo, Calif., assignors to Argus Chemical Corporation, a corporation of Delaware

No Drawing. Filed May 18, 1967, Ser. No. 639,314

Int. Cl. C07c *73/02*

U.S. Cl. 260—610 1 Claim

Low molecular weight acyclic (6–9 carbon atoms) unsymmetrical diacyl peroxides and unsymmetrical acyclic-cyclic diacyl peroxides in which one of the acyl groups has a secondary or tertiary carbon atom in the alpha or beta position useful as polymerization initiators.

3,502,702

PLICATENOL PRODUCT AND PROCESS

John Howard, Vancouver, British Columbia, Canada (% ITT Rayonier, Inc., Olympic Research Division, Shelton, Wash. 98584)

No Drawing. Filed May 27, 1968, Ser. No. 732,053

Int. Cl. C07c *39/12, 37/00*

U.S. Cl. 260—613 5 Claims

A new composition of matter comprising 1-(3',4'-dihydroxy-5'-methoxyphenyl)-2,7-dihydroxy - 3 - methyl-6-methoxynapthalene ("plicatenol") having utility as an anti-oxidant for fats and oils is disclosed. This compound is prepared by heating plicatin (a derivative of plicatic acid) to a temperature of about 200° C. in the absence of air for a sufficient period of time to produce a pyrolysis reaction product comprising plicatenol.

3,502,703

REACTION PRODUCTS OF CHLORIDES OF CERTAIN METALS WITH TRIMETHOXYBOROXINE

Robert C. Wade, Ipswich, Mass., assignor to Ventron Corporation, Beverly, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 670,419, Sept. 25, 1967. This application Apr. 9, 1969, Ser. No. 814,851

Int. Cl. C07f *7/00, 11/00, 5/00*

U.S. Cl. 260—429 4 Claims

The invention provides products of unknown complex chemical structure having a variety of useful properties as delustering agents for glass surfaces and polymerization catalysts. These products are produced by reacting substantially anhydrous trimethoxyboroxine with a substantially anhydrous chloride of a metal selected from the group consisting of Ti (IV), Zr (IV), Hf (IV), Al (III), Fe (III), Ga (III), In (III), Sb (V), Mo (V), Nb (V), Ta (V), W (VI) and mixtures thereof in a molar ratio of at least about 0.33 mole of trimethoxyboroxine for each mole of the chloride of the selected metal in an inert substantially anhydrous diluent, such as excess trimethoxyboroxine, methylenechloride, chloroform, or carbon tetrachloride, at a temperature between room temperature and about 200° C. until the reaction mixture ceases to give off organic chloride. By removing the volatile material from the reaction mixture by evaporation the product of complex chemical structure may be isolated. These complex compounds are soluble in water, methylenechloride, chloroform, carbon tetrachloride, acetone, and glycol ethers, such as monomethyl ethylene glycol and dimethyl ethylene glycol ethers. When a solution of these complex compounds is applied to glass surfaces, such as glass fabrics, and the solvent evaporated, delustering occurs and a marked water repellency develops.

3,502,704

POLYISOCYANATO SILANES AND SILOXANES

Robert L. McKellar, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 472,317, July 15, 1965. This application Feb. 13, 1969, Ser. No. 799,090

Int. Cl. C07f *7/04, 7/18*

U.S. Cl. 260—448.8 22 Claims

New polyisocyanato silanes and siloxanes are disclosed. These compounds are useful in the preparation of urethane rubbers, resins and varnishes. The silanes containing hydrolyzable groups are particularly useful as internal and external primers for promoting adhesion of urethane sealants and caulks to various surfaces.

3,502,705

N-CARBOXYACYL-N'-HYDROCARBYLTHIO UREAS

Melancthon S. Brown, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 26, 1967, Ser. No. 648,977

Int. Cl. C07c *1/16, 1/22*

U.S. Cl. 260—453 7 Claims

N-carboxyacyl-N'-hydrocarbylthio ureas in which the carboxyacyl group contains 1 to about 20 carbon atoms and the hydrocarbyl group is an aliphatic group of 1 to about 8 carbon atoms substituted with 1 to about 6 halogens and 0 to 1 nitro groups or monocyclic aryl which is substituted with 0 to 5 halogen atoms. These compounds may be prepared by reacting a sulfenyl halide with an alkali metal salt of a carboxyacyl cyanamide and hydrolyzing the resulting carbodiimide. Ureas of this class are fungicidal.

3,502,706

AMINO THIOCARBONATE ADDUCTS AND METHOD OF MAKING SAME

John E. Anderson and Clyde E. Parish, Houston, Tex., and George H. Ross, Phoenix, Ariz., assignors to Signal Oil and Gas Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 372,409, June 3, 1964. This application Nov. 8, 1966, Ser. No. 592,749

Int. Cl. C07c *153/07, 69/00*

U.S. Cl. 260—455 6 Claims

Carbonate adducts are prepared by reacting a tertiary amine, a lower alkanol and mixtures thereof, and carbonyl sulfide at a temperature below that at which decomposition of the adduct occurs.

3,502,707

β-(CYCLOHEXYL AND SUBSTITUTED PHENYL)-α-(4,5-DIMETHOXY-2-NITRO- OR AMINOPHENYL) ACRYLONITRILES

John T. Suh, Mequon, Wis., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 401,635, Oct. 5, 1964. This application Sept. 11, 1967, Ser. No. 666,921

Int. Cl. C07c *121/66*

U.S. Cl. 260—465 7 Claims

The compounds are of the type of β-(cyclohexyl and substituted phenyl)-α-(dimethoxy-2-nitrophenyl) acrylonitriles, and 2-aminophenyl derivatives thereof. The compounds are useful as ultraviolet absorbers.

3,502,708

PREPARATION OF BETA-MERCAPTOPROPIONITRILE

Jozef A. Thoma, Vaals, and Joseph A. M. J. Coonen, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed June 20, 1966, Ser. No. 558,572

Claims priority, application Netherlands, July 3, 1965, 6508595

Int. Cl. C07c *121/02, 121/14*

U.S. Cl. 260—465.1 4 Claims

A process is described for the preparation of beta-mercaptopropionitrile wherein acrylonitrile is reacted with a molar excess of liquid hydrogen sulfide in the presence of an organic nitrogen base at temperatures between about —10 to 50° C. whereby the desired product is obtained in high yields. The further step of neutralizing the specific catalyst at the conclusion of the reaction by the addition of an acid is also described.

3,502,709

METHOD FOR PRODUCING MALONONITRILE

Katsura Morita, Ikeda, and Naoto Hashimoto and Takahiro Sarale, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,222

Claims priority, application Japan, Sept. 6, 1966, 41/59,068

Int. Cl. C07c *121/22*

U.S. Cl. 260—465.8 1 Claim

Malononitrile is produced in high yield by reacting gaseous ammonia with chlorocyanoacetylene dissolved in an inert organic solvent.

3,502,710

WATER-SOLUBLE SULFONIUM DERIVATIVES OF DIPHENYL ETHER

Melvin J. Hatch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 322,057, Nov. 7, 1963. This application May 26, 1966, Ser. No. 553,046

Int. Cl. C07c *149/46, 55/14, 63/16*

U.S. Cl. 260—470 9 Claims

Water-soluble methylenesulfonium salts of diphenyl ether are prepared by reaction of a halomethyldiphenyl ether with an organic sulfied. These cationic salts are useful paper coating additives being substantive to paper and irreversibly convertible to a hydrophobic residue by brief heat treatment thus improving the water resistance of the paper coating.

3,502,711

PURIFICATION OF DIMETHYLTEREPHTHALATE

Billy E. Claybaugh, Baton Rouge, La., and Lloyd E. Compton and James K. Nickerson, Baytown, and Albert J. Shmidl, Crosby, Tex., assignors to Esso Research and Engineering Company

Filed Oct. 17, 1966, Ser. No. 587,028

Int. Cl. C07c *67/06, 69/82*

U.S. Cl. 260—475 9 Claims

Crude dimethylterepthalate is purified by crystallization from a solution in a specific admixture of methanol and paraxylene.

3,502,712

BIS(DIALKYLAMINOALKYL) 4,4'-CARBONYLPHTHALATE

Ralph E. DeBrunner, Kettering, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,179

Int. Cl. C07c *69/76*

U.S. Cl. 260—475 2 Claims

A bis(dialkylaminoalkyl) ester obtained by the reaction of one molecular equivalent of an aromatic tetracarboxylic acid or its anhydride with two molecular equivalents of a dialkylamino-alkanol; useful as a reactant for producing polyimide foams.

3,502,713

PRODUCTION OF NONIONIC LOW-FOAMING EMULSIFIERS

Keith Liddell Johnson, Matteson, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,134

Int. Cl. B01f *17/36;* C07c *69/78, 69/34*

U.S. Cl. 260—477 9 Claims

Surface active compositions and methods for preparing same comprising mixing together a dibasic acid, an aromatic carboxylic acid, and a di-acylatable reactant; and heating the resulting mixture so as to effect a condensation reaction between the di-acylatable reactant and the two dissimilar acylating reactants.

3,502,714

TELOMERIZATION PROCESS FOR THE PREPARATION OF ALLYL ALCOHOL-, ALLYL ACETATE- AND STYRENE-ALDEHYDE REACTION PRODUCTS

Kunio Nakagawa and Tadashi Nakata, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Fukushima-ku, Osaka, Japan

No Drawing. Original application Jan. 12, 1963, Ser. No. 252,554, now Patent No. 3,309,393, dated Mar. 14, 1967. Divided and this application Mar. 7, 1967, Ser. No. 621,141

Int. Cl. C07c *67/00, 49/18, 49/76*

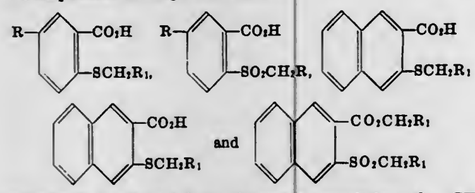
U.S. Cl. 260—491 7 Claims

A taxogen selected from the group consisting of allyl alcohol, allyl acetate and styrene is telomerized with a lower alkanal, as telogen by reacting the telogen with the taxogen in the presence of nickel peroxide at a temperature from ambient temperature to the decomposition temperature of one of the telogen, the taxogen and their addition product, the said nickel peroxide being the product of the treatment of a salt of nickel selected from the group consisting of nickel chloride, nickel bromide, nickel sulfate, nickel carbonate and nickel nitrate with an oxidizing agent selected from the group consisting of alkali hypohalite and alkali persulfate in aqueous alkaline medium at a temperature between 10° and 25° C., and containing about 0.3 to 0.4×10^{-2} gram-atom of active oxygen per gram.

3,502,715
METHOD FOR PRODUCING AND STABILIZING PERCARBOXYLIC ACID
Goro Inoue, Kyugo Tanaka, and Takashi Kobayashi, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Jan. 18, 1966, Ser. No. 521,434
Claims priority, application Japan, Feb. 1, 1965, 40/5,077
Int. Cl. C07c 73/12
U.S. Cl. 260—502 2 Claims
A method for producing percarboxylic acids from aldehydes by oxidizing same in the presence of a heavy metal salt catalyst with an oxygen-containing gas at a temperature of 0°–50° C. and adding to the reaction mixture 0.01–10% by weight of a heavy metal sulfate.

3,502,716
PROCESS FOR PREPARING ALKENE SULFONATES
George F. Kite, Springdale, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed June 22, 1967, Ser. No. 647,905
Int. Cl. C07c 143/16, 139/00
U.S. Cl. 260—513 12 Claims
A process for preparing alkene sulfonates which involves treating an anhydride of a hydroxy sulfonic acid with an alkali or alkaline earth metal carboxylate.

3,502,717
2-ARYLTHIO AND 2-ARYLSULFONYL BENZOIC ACID
Joseph G. Lombardino, Niantic, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 2, 1967, Ser. No. 635,406
Int. Cl. C07c 149/20
U.S. Cl. 260—516 3 Claims
Compounds having the formulae



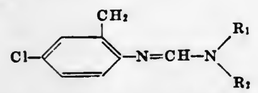
and

wherein R is selected from the group consisting of —CF_3 and NO_2, and R_1 is selected from the group consisting of phenyl, tolyl, methoxyphenyl, nitrophenyl, halophenyl, trifluoromethyl phenyl, trifluoromethyl-thiophenyl, trifluoromethyl-sulfinylphenyl, trifluoromethylsulfonlyphenyl and α- or β-naphthyl are prepared. These compounds of useful intermediates in the preparation of 2-arylbenzo(b)-thiophen - 3(2H)-one - 1,1-dioxides and 2-arylnaphtho(2,3-b) thiophen - 3(2H) - one - 1,1-dioxides which have utility as anti-inflammatory agents in the treatment of arthritic disorders.

3,502,718
PROCESS INVOLVING OXIDATION
Lester M. Welch, Seabrook, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,825
Int. Cl. C07c 63/02, 3/00, 63/04
U.S. Cl. 260—524 11 Claims
A process for the oxidation of mononuclear aromatic compounds having at least one methyl or aldehyde nuclear substituent in the presence of oxygen, cobaltous or cobaltic ions, and niobium ion, at 60° C. to 150° C., and at atmospheric pressure or greater.

3,502,719
PREPARATION OF METHACRYLAMIDE SULFATE
Gunter Schroder, Ober Ramstadt-Eiche, and Herbert Fink, Bickenbach, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,758
Claims priority, application Germany, Oct. 2, 1965, R 41,675
Int. Cl. C07c 103/12, 103/08, 103/00
U.S. Cl. 260—561 2 Claims
A process for producing methacrylamide sulfate is provided which comprises heating concentrated sulfuric acid and acetone cyanohydrin in a closed reaction zone at temperatures between 120° C. and 160° C. in the presence of carbon monoxide at a partial pressure between one and twenty-five atmospheres. The presence of carbon monoxide increases the yield of methacrylamide. Preferably the carbon monoxide partial pressure is from ten to twenty-five atmospheres.

3,502,720
N-(2-METHYL-4-CHLOROPHENYL)-FORMAMIDINES
Horst Arndt, Unna, and Walter Steinhausen, Grossburgwedel, Germany, assignors to A. G. Schering, Berlin, Germany
No Drawing. Original application Dec. 20, 1963, Ser. No. 332,255, now Patent No. 3,378,437, dated Apr. 16, 1968. Divided and this application Nov. 15, 1966, Ser. No. 594,361
Int. Cl. C07c 123/00
U.S. Cl. 260—564 8 Claims
N-(2-methyl-4-chlorophenyl)-formamidine derivatives of the formula

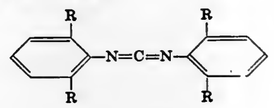


destroy mites in all stages of development when R_1 is hydrogen or alkyl having not more than four carbon atoms, and R_2 is such alkyl.

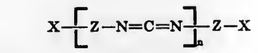
3,502,721
SELECTED POLYFLUORINATED HYDRAZONES AND HYDRAZINOHYDRAZONES
Carl G. Krespan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 18, 1966, Ser. No. 573,178
Int. Cl. C07c 109/12
U.S. Cl. 260—566 5 Claims
Described and claimed are selected polyfluorinated hydrazones, e.g., 1,1,1,4,4,4-hexafluoro-2-butanone hydrazone, and hydrazinohydrazones, e.g., 1,1,1,4,4,4-hexafluoro - 3 - hydrazino - 2 - butanone hydrazone. The compounds are prepared by reacting a hydrazine with a perhaloalkene or perhaloalkyne or tetrakis(trifluoromethyl) allene, and are useful polymerization inhibitors, or stabilizers, for polymerizable, ethylenic monomers.

3,502,722
CARBODIIMIDES
Wolfram Neumann, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 110,651, May 17, 1961. This application Jan. 8, 1968, Ser. No. 696,129
Claims priority, application Germany, May 24, 1960, F 31,297
Int. Cl. C07c 119/04
U.S. Cl. 260—566 9 Claims
Carbodiimides are prepared by heating aromatic isocyanates having in the ortho position to the NCO groups organic radicals containing from 2 to 18 carbon atoms

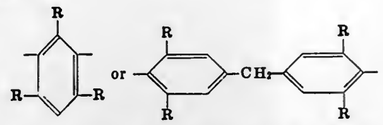
in the presence of catalysts that promote trimerization of organic isocyanates which are unhindered. The carbodiimide of the formula



or



wherein Z is



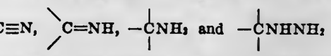
R is an alkyl radical or an alkoxy radical having 2 to 18, preferably 2 to 4 carbon atoms, X is —NCO or —N=C=N—R′ wherein R′ is the residue remaining after removal of an —NCO group from an organic monoisocyanate and n is an integer of 2 to 40 are particularly useful for stabilizing polyesters against hydrolysis.

3,502,723
ARYL ALIPHATIC SECONDARY AMINES
Eugene J. Miller, Jr., Wheaton, and Harlan E. Tiefenthal, Western Springs, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 500,203, Oct. 21, 1965. This application Oct. 11, 1966, Ser. No. 585,751
Int. Cl. C07c 87/28, 91/30
U.S. Cl. 260—570.8 12 Claims
Aryl-substituted aliphatic secondary amine compounds having substituted on a nitrogen atom two long chain alkyl groups having an aryl group attached to an internal carbon atom thereof, useful in the preparation of quaternary ammonium compounds and as surface active agents.

3,502,724
p-CHLORO-N-(CHLOROPROPYL)-α-METHYL-PHENETHYLAMINES AND THE SALTS THEREOF
Hans Bruderer, Riehen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 25, 1966, Ser. No. 596,788
Claims priority, application Switzerland, Dec. 15, 1965, 17,309/65
Int. Cl. C07c 87/28; A61k 27/00
U.S. Cl. 260—570.8 5 Claims
p-Chloro - N - (chloropropyl) - α - methyl - phenethylamines, prepared, inter alia, by halogenating the corresponding p-chloro-N-(hydroxypropyl)-α - methyl - phenethylamine, are described. The end products are useful as appetite inhibitors.

3,502,725
PROCESS OF PRODUCING N-(2,7-ALKADIENYL) AMINES
Kenneth C. Dewhirst, New Rochelle, N.Y., and Wilhelm Keim, Alameda, and Helmut E. Thyret, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,972
Int. Cl. C07c 87/18; P01j 11/12
U.S. Cl. 260—577 6 Claims
Production of aromatic 2,7-alkadienyl ethers and N-(2,7-alkadienyl)amines by reacting phenols or organic amines, wherein there is present at least one N-hydrogen substituent, with conjugated alkadienes in the presence of certain rhodium phenoxide complexes containing organic complexing ligand, e.g., tertiary phosphine.

3,502,726
HYDRAZINE DERIVATIVES OF OLIGOMERS OF TETRAFLUOROETHYLENE AND HEXAFLUOROPROPENE
Harold Crosbie Fielding, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 28, 1967, Ser. No. 656,682
Claims priority, application Great Britain, Aug. 17, 1966, 36,862/66
Int. Cl. C07c 109/02, 87/24
U.S. Cl. 260—583 4 Claims
Derivatives of tetrafluoroethylene tetramer C_8F_{16}, pentamer $C_{10}F_{20}$, and hexamers $C_{12}F_{24}$, and of hexafluoropropene trimers C_9F_{18}, containing one or more



groups attached to the oligomer residue. Derivatives containing the first three of these groups are made by contacing an oligomer with anhydrous gaseous ammonia at 10° C.–30° C. in a solvent reaction medium or by heating an oligomer with a concentrated aqueous solution of ammonia at 50° C.–100° C. Those containing $NHNH_2$ groups are made by reactions between oligomer and hydrazine. Examples include $C_8F_{14}NH$ and $C_8F_{12}(NH)_2$ from the tetramer C_8F_{16}; and $C_9F_{16}(NH_2)(CN)$ and $C_{10}F_{19}NHNH_2$ from the pentamer $C_{10}F_{20}$. The derivatives are useful intermediates, for example alkaline hydrolysis converts them into highly fluorinated nitriles which can be reduced to amines and the latter quaternised with alkyl halides to yield cationic surfactants.

3,502,727
AMINO-SUBSTITUTED MERCAPTO COMPOUNDS AND THEIR PREPARATION BY THE REACTION OF AMINOTHIOSULFURIC ACIDS AND AZIRIDINES AND SUBSEQUENT HYDROLYSIS
Raymond L. Cobb, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 13, 1966, Ser. No. 520,377
Int. Cl. C07c 149/24, 93/06, 91/02
U.S. Cl. 260—584 8 Claims
A method for producing polyfunctional amino-substituted mercapto compounds which comprises reacting an aminoalkanethiosulfuric acid with an aziridinyl compound in the presence of a polar solvent which causes the aziridine ring to break and the addition reaction to occur at the terminal amino group site on the aminoalkanethiosulfuric acid molecule. The resulting polyfunctional amino-substituted mercapto acid can then be hydrolyzed to form the corresponding thiol compound.

3,502,728
NITROGEN-CONTAINING DERIVATIVES OF OLIGOMERS OF TETRAFLUOROETHYLENE AND HEXAFLUOROPROPENE
Harold Crosbie Fielding, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 8, 1967, Ser. No. 636,675
Claims priority, application Great Britain May 23, 1966, 22,866/66
Int. Cl. C07c 143/14, 91/02, 87/22
U.S. Cl. 260—584 9 Claims
Preparation of nitrogen-containing derivatives of oligomers of tetrafluoroethylene $(C_2F_4)_n$, where n is 4 to 6, and of hexafluoropropene trimer, by reacting oligomer with a primary or secondary amine in an inert solvent, preferably methylene chloride or 1,1,2-trifluoro-1,2,2-trichloroethane. The derivatives having the empirical for-

mula QC–NT, were QC is the oligomer residue and NT the amine residue after elimination of hydrogen fluoride. Those derivatives in which T contains sulphonic acid or carboxyl groups and the corresponding salts and esters possess surface-active properties.

3,502,729

PROCESS FOR THE PREPARATION OF TRIORGANOBORON COMPOUNDS

Antonio Salvemini and Giovanni Cuneo, Milan, and Franco Smai, Novate Milanese, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation

No Drawing. Filed Feb. 2, 1967, Ser. No. 613,416
Claims priority, application Italy, Feb. 3, 1966, 2,296/66
Int. Cl. C07f *5/02*
U.S. Cl. 260—606.5 **5 Claims**

Process for the preparation of organoboron compounds of the general formula BR_3, wherein R is an alkyl, aryl, cycloalkyl or aralkyl radical, for using in catalysts for the polymerization of vinyl compounds in organic synthesis, etc., by reacting the components of a Grignard reagent of the general formula R.Mg.X, where R is the aforementioned radical and X is a halogen from the group of chlorine, bromine and iodine, with a polyborate boron derivative of the general formula $(R'O)_3B.nB_2O_3$ (where R' is an alkyl radical having a straight or branched chain containing from 2 to 6 carbon atoms, a phenyl, an alkyl substituted-phenyl or phenyl-substituted alkyl, and *n* is a number equal to or upwards of 1, but preferably less than 2). This Grignard reagent is prepared from a RX type compound and a suspension of magnesium in an inert organic hydrocarbon solvent containing only catalytic quantities of an ether such that the molar ratio of ethers to the RX compound ranges substantially from 0.01 to 0.5. The magnesium may be activated with small quantities of ethyl iodide prior to its incorporation in the suspension. The polyborate boron derivative is prepared according to a method which foresees the esterification of partially dehydrated polyboric acids in an inert organic hydrocarbon, according to our copending application Ser. No. 571,706. The reaction of formation of Grignard derivative and the reaction of this latter with the polyborate boron derivative take place simultaneously giving thus rise to the BR_3 boron compounds. The reaction is carried out at a temperature of from 80° to 180° C.

3,502,730

HETEROCYCLIC PHOSPHINE OXIDES

Ronald F. Mason, John L. Van Winkle, and Rupert C. Morris, Mill Valley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 468,573, June 30, 1965. This application Sept. 22, 1967, Ser. No. 669,710
Int. Cl. C07d *105/02*
U.S. Cl. 260—606.5 **10 Claims**

Polycyclic, heterocyclic, tertiary phosphine oxides, wherein the phosphorus atom is a non-bridgehead member of a cyclic ring system, such as 9-hydrocarbyl - 9 - oxo-9-phosphabicyclo(4.2.1 and 3.3.1)nonanes, useful as additives to lubricants and gasolines and as herbicides.

3,502,731

ALKYLTHIOMETHYLMETAL COMPOUNDS, PREPARATION THEREOF

Donald J. Peterson, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,419
Int. Cl. C07f *1/02, 1/04, 1/06*
U.S. Cl. 260—609 **7 Claims**

(1) Alkylthiomethylmetal compounds prepared by reacting alkyl methyl sulfides with potent metalating agents, e.g., a complex between alkyllithium compounds and alkylenediamines; alkyl- or phenylsodium; or alkyl- or phenylpotassium; (2) the reactions of the alkylthiomethylmetal compounds with organic halides, epoxides, aldehydes, trialkyl- and triarylphosphites, mono- and dihalo and trihalo and pseudohaloalkyl- and arylphosphines, mono-, di-, and thihalo and pseudohaloalkyl- and arylsilanes, carbon dioxide, and sulfur; and (3) new compounds produced thereby containing phosphorous and sulfur or silicon and sulfur.

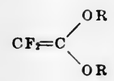
3,502,732

FLUORINATED KETENE ACETALS

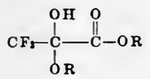
Stanley Selman, Wilmington, Del., and Edward N. Squire, Glen Mil's, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 17, 1965, Ser. No. 488,247. Divided and this application Mar. 12, 1968, Ser. No. 724,308
Int. Cl. C07c *43/00;* **C08f** *3/34, 15/00*
U.S. Cl. 260—615 **5 Claims**

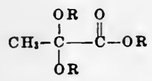
Difluoroketene dialkyl acetals of the formula



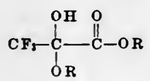
and compounds of the formulas



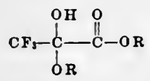
and



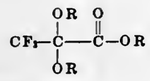
wherein R is alkyl containing up to 30 carbon atoms, can be prepared by reacting perfluoropyruvyl fluoride with a saturated hydrocarbon and a base to neutralize HF and isolating



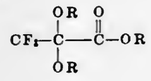
then reacting the



with an alkali metal alkoxide and a dialkyl sulfate containing up to 30 carbon atoms and isolating



and then reacting the



with an alkali metal hydroxide and subjecting the resulting salt to pyrolysis at a temperature of 160–450° C.

3,502,733

PRODUCTION OF CHLOROMETHANES

Bruce E. Kurtz, Syracuse, N.Y., and Walter E. Sommerman, Mountain Lakes, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 442,025, Mar. 23, 1965. This application Nov. 8, 1967, Ser. No. 685,234
Int. Cl. C07c *17/16*
U.S. Cl. 260—657 **7 Claims**

This application is directed to a process for preparing the chlorides of methane containing less than 500 parts per million dimethyl ether by reacting hydrogen chloride and methanol in the presence of an aqueous zinc chloride catalyst solution containing 52 to 80 weight percent zinc chloride, said catalyst dispersed in said hydrogen chloride and methanol and said reaction being conducted at a temperature from 60° to 135° C.

3,502,734

PROCESS FOR PARTIALLY CHLORINATING METHYL CHLORIDE AND/OR METHYLENE CHLORIDE

Robert M. Baird, Valparaiso, Ind., Peter K. Baumgarten, Wilmington, Del., and Joseph A. Gentilucci, Lewiston, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,185
Int. Cl. C07c *17/00*
U.S. Cl. 260—658 **10 Claims**

Process for partially chlorinating methyl chloride and/or methylene chloride in which (a) the pressure is maintained above the critical pressure of the reaction mixture; (b) the ingredients, in specified proportions, are preheated to a specified temperature range; and (c) the reaction is allowed to proceed adiabatically in such a way as to capitalize upon the high heat capacity of the reaction mixture at temperatures close to its critical temperature; whereby high yields of methylene chloride and/or chloroform are obtained in a safe manner and with minimum formation of by-product carbon tetrachloride.

3,502,735

PROCESS FOR ISOMERIZING DIHALOHYDROCARBONS

Harry B. Copelin, 9007 Jayne Place, Niagara Falls, N.Y. 14303

Continuation-in-part of application Ser. No. 320,627, Nov. 1, 1963. This application Aug. 19, 1966, Ser. No. 573,676
Int. Cl. C07c *17/00*
U.S. Cl. 260—658 **3 Claims**

1. The continuous, cyclic process for isomerizing an alpha-beta dihaloalkane of 5 to 8 carbon atoms selected from the group consisting of dichloro, dibromo and diiodoalkanes, said process comprising contacting said alpha-beta dihaloalkane with a Lewis acid in a reaction zone at a temperature of from −50° C. to +50° C., and thereafter removing the resulting isomerization products from the said reaction zone, separating at least a substantial proportion of the corresponding alpha-psi dihaloalkane isomer from the said isomerization products and returning all of the remaining isomerization products, including not only any unseparated amount of said alpha-psi isomer but also the remaining isomerization products and unconverted alpha-beta dihaloalkane, to the said reaction zone for further isomerization under essentially the same conditions.

3,502,736

OXIDATIVE DEHYDROGENATION OF NON-AROMATIC CYCLIC HYDROCARBON HAVING AT LEAST ONE UNSATURATED BOND IN SIDE CHAIN

Mikio Sato and Kinya Tawara, Chiba-shi, Japan, assignors to Maruzen Oil Company Limited, Osaka, Japan

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,970
Claims priority, application Japan, Sept. 12, 1966, 41/59,919
Int. Cl. C07c *5/18, 15/10*
U.S. Cl. 260—669 **9 Claims**

Method for the oxidative dehydrogenation of a non-aromatic cyclic hydrocarbon having at least one unsaturated bond in a side chain which comprises contacting the non-aromatic cyclic hydrocarbon in the presence of oxygen with a catalyst consisting essentially of palladium oxyhydrate to give the corresponding aromatic hydrocarbon retaining the said unsaturated bond.

3,502,737

ETHYLBENZENE DEHYDROGENATION

John R. Ghublikian, South Weymouth, Mass., assignor to The Badger Company, Inc., Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 586,339, Oct. 7, 1966. This application June 7, 1968, Ser. No. 735,368
Int. Cl. C07c *15/10, 5/18*
U.S. Cl. 260—669 **14 Claims**

A process of dehydrogenating ethylbenzene involving contacting ethylbenzene, steam and an oxygen-containing gas in the presence of an iron oxide catalyst, with the amount of oxygen-containing gas being carefully controlled to maintain a selected substantially isothermal condition in the reaction zone by preferential reaction with carbon, hydrocarbon-containing material and/or hydrogen to provide heat by combustion. The amount of steam used is materially less than would be required in the absence of oxygen.

3,502,738

PREPARATION OF 1,4-HEXADIENE FROM ETHYLENE AND BUTADIENE WITH SELECTED HYDROCARBON-RHODIUM CATALYSTS

Richard D. Cramer, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,794
Int. Cl. C07c *3/52, 3/60*
U.S. Cl. 260—680 **4 Claims**

Described is the process for producing 1,4-hexadiene from ethylene and butadiene with selected hydrocarbon-rhodium catalysts, e.g., μ-dichlorotetraethylenedirhodium-(I), 2,4-pentanedionatodiethylenerhodium(I) or

$$(\pi\text{-}C_4H_7)_2Rh_2Cl_4C_4H_6$$

3,502,739

PROCESS FOR DEHYDROGENATING PARAFFINS TO THE CORRESPONDING DIOLEFINS

John W. Begley and Harold J. Hepp, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 23, 1967, Ser. No. 648,227
Int. Cl. C07c *5/18*
U.S. Cl. 260—680 **7 Claims**

Steam-diluted paraffin hydrocarbons are catalytically dehydrogenated to the corresponding diolefins in alternate steps of paraffin dehydrogenation and hydrogen oxidation until essentially quantitative conversion to olefin has been effected, followed by essentially quantitative oxidative dehydrogenation of the olefin to the diolefin.

3,502,740

PRODUCTION OF ISOPRENE

John G. Zajacek, Strafford, Pa., and Ming Nan Sheng, Cherry Hill, N.J., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 25, 1968, Ser. No. 739,664

Int. Cl. C07c *73/00, 11/18;* B01j *1/10*

U.S. Cl. 260—681 9 Claims

Isoprene is produced by oxidizing 2-methylbutene-2 to the isomeric unsaturated hydroperoxides, reducing the unsaturated hydroperoxides to the corresponding unsaturated alcohols and dehydrating the alcohols to isoprene.

3,502,741

METHOD FOR REDUCTION OF POLYMER FORMATION IN A PROCESS FOR CONVERTING ETHYLENE TO ALPHA OLEFINS

Herbert B. Fernald and William Gall, Glenshaw, Pa., Bernard H. Gwynn, Leawood, Kans., and Elwood E. Nelson, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,214

Int. Cl. C07c *3/10*

U.S. Cl. 260—683.15 16 Claims

The process for the conversion of ethylene to alpha olefins in the presence of an organometallic catalyst is improved by utilizing a hydrocarbon oil derived from a natural crude which has been hydrogen treated to reduce the sulfur content to between about 1 and 4000 parts per million.

3,502,742

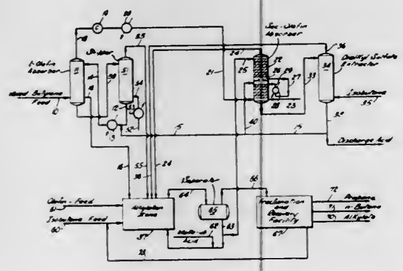
SELECTIVE ABSORPTION OF TERTIARY AND SECONDARY OLEFINS IN ALKYLATION

Arthur R. Goldsby, Chappaque, N.Y.
(135 E. 42nd St., New York, N.Y. 10017)

Continuation-in-part of application Ser. No. 516,448, Dec. 27, 1965, which is a continuation-in-part of application Ser. No. 386,486, July 28, 1964. This application Dec. 26, 1967, Ser. No. 693,333

Int. Cl. C07c *3/54*

U.S. Cl. 260—683.61 11 Claims



A process for making tertiary olefin feed stocks suitable for use in connection with sulfuric acid recovery in an alkylation process. Tertiary olefin is removed from olefin feed by absorption in 50–70% of H_2SO_4, the absorbed tertiary olefin is recovered from the acid by stripping with isobutane, and the isobutane-tertiary olefin mixture is passed to sulfuric acid isobutane-olefin alkylation. Secondary olefin effluent from the 50–70% H_2SO_4 absorption is absorbed in used sulfuric acid alkylation catalyst. Absorbed secondary olefins extracted as alkyl sulfates with isobutane are passed to alkylation.

3,502,743

SIZING FORMULATIONS FOR POLYMERIC MATERIALS

Harold W. Wolf and Stanley E. Ross, Clifton, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 28, 1967, Ser. No. 663,490

Int. Cl. D06m *15/12*

U.S. Cl. 260—851 11 Claims

This invention relates to heat and humidity resistant sizing formulations for polyolefin yarns, including polypropylene, comprising:

(a) A major amount of a resin component selected from

(1) hydantoin formaldehyde resin,

(2) a copolymer of vinyl pyrrolidone and water insoluble comonomer,

(3) a copolymer of vinyl acetate and water insoluble comonomer, admixed with:

(b) A minor amount of a polyvinyl containing moiety.

3,502,744

ANTISTATIC MOLDING COMPOSITIONS BASED ON THERMOPLASTIC GRAFT COPOLYMER MIXTURES

Hans Weltzel and Harold Ebneth, Leverkusen, Karl Dinges, Odenthal, and Karl-Heinz Ott, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 27, 1967, Ser. No. 612,084

Claims priority, application Germany, Mar. 5, 1966, F 48,594

Int. Cl. C08f *19/10*

U.S. Cl. 260—876 6 Claims

Antistatic moulding compositions comprising (A) a graft copolymer of a mixture of styrene and acrylonitrile or akyl derivatives thereof grafted onto a diolefin polymer (B) optionally a copolymer of styrene and acrylonitrile or alkyl derivatives thereof (C) graft polymers of a copolymer of a diene and an ester of an ethylenically unsaturated carboxylic acid as the graft base and a mixture of styrene and acrylonitrile or alkyl derivatives thereof as graft component and (D) polypropylene glycols whose terminal hydroxyl groups are optionally etherified or esterified.

3,502,745

ACRYLIC ELASTOMERIC MATERIALS AND PROCESS THEREFOR

Robert G. Minton, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 7, 1965, Ser. No. 493,922

Int. Cl. C08f *15/16, 15/40*

U.S. Cl. 260—878 17 Claims

Shaped polymer structures including fibers and films are produced by means of a sequential polymerization reaction wherein an elastomeric monomer mixture, such as a soft acrylic polymer, having a second order transition temperature of 0° C. or less is polymerized in a polymer latex of a highly crosslinked hard or reinforcing "loader" polymer having a second order transition temperature of at least about 20° C. and a fine particle size of about 1 micron or less. Fibers spun from a latex of the sequential copolymer are stretch cured and are characterized by substantially improved tensile strength, equilibrium modulus and return modulus.

3,502,746

PRODUCTION OF CONJUGATED DIENE POLYMERS AND BLOCK COPOLYMERS FROM DILUTE MONOMER FEED STREAMS

John M. Miles, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 9, 1965, Ser. No. 512,814

Int. Cl. C08d *1/20, 1/32*

U.S. Cl. 260—880 4 Claims

A method for polymerizing impure conjugated diene streams at relatively high temperatures and at relatively low solvent-to-monomer ratios is provided without reaching the upper cloud point of the polymerization reaction mixture.

The polymers are produced by charging the low concentration conjugated diene feed stream to the polymerization zone with a solvent and an organolithium initiator and thereafter allowing the polymerization to proceed under adiabatic conditions until substantially all of the conjugated diene has polymerized. At the conclusion of the polymerization of the conjugated diene, the polymerization zone is vented thereby allowing at least a portion of the other components in the feed stream to escape. This venting cools the reaction mixture in the polymerization zone. At the conclusion of the venting step, additional monomer is added to the polymerization zone and the reaction is allowed to continue until the additional monomer has polymerized. Because of the cooling effect of the venting step, the upper cloud point of the polymerization mixture is not reached in the second polymerization step.

3,502,747

POLYMERIC COMPOSITIONS

Erhardt Fischer and Eric G. Kent., Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Original application Apr. 22, 1966, Ser. No. 544,383. Divided and this application Apr. 3, 1968, Ser. No. 738,738

Claims priority, application Canada, May 15, 1965, 930,767

Int. Cl. C08f *29/12*

U.S. Cl. 260—894 10 Claims

The rate of hardening of a synthetic trans-1,4 polymer of isoprene is increased by incorporating therein not more than 0.7 part by weight per 100 parts by weight of isoprene polymer, of a high crystalline synthetic resin such as high trans-1,4 polybutadiene or a crystalline copolymer of butadiene with a small amount of piperylene.

3,502,748

MIXED ANHYDRIDES PRODUCED BY THE REACTION OF PHOSPHORUS ACIDS AND POLYAMINO POLYCARBOXYLIC ACID CHELATING AGENTS

Frederick C. Bersworth, East Orange, N.J., assignor to Weston Chemical Corporation, Morristown, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,861

Int. Cl. C07f *9/02, 9/08, 15/02*

U.S. Cl. 260—926 11 Claims

Anhydride products of phosphorus acids with synthetic polyamino polycarboxylic acid chelating agents to develop a chemical union between a phosphorus acid moiety and an acid moiety of the chelating agent so that a carbon-oxygen-phosphorus combined moiety is present in the molecule to form a polydentate chelating agent. The ratio should be at least one mole of $—CH_2COOH$ group and one mole of phosphorus acid ranging to an excess phosphorus acid sufficient to react with each of the

$—CH_2COOH$

groups on the chelating agent. Phosphorus acids are those derived from phosphorus oxides and water and range from phosphorus pentoxide with minimal water, i.e., excess P_2O_5, to all degrees of dehydration and polymerization of the phosphorus. Method of formation is direct: the phosphorus acid provides a good solvent for the chelating agent. Reaction temperatures not exceeding 150° C. are adequate for forming the compounds, whether it be with excess chelating acid or phosphorus acid.

3,502,749

PROCESS FOR PRODUCTION OF ORGANO-PHOSPHORUS COMPOUNDS FROM WHITE PHOSPHORUS AND MONO EPOXY CONTAINING COMPOUNDS

Sasson Goren, Kaf-Zayin St. 10, Kiriat Haim; Dagobert Kellerman, 88a Derekh Hayam; and Dahlia S. Greidinger, 98 Hatishbi St., all of Haifa, Israel

No Drawing. Filed June 15, 1966, Ser. No. 557,614

Claims priority, application Great Britain, June 16, 1965, 25,555/65

Int. Cl. C07f *9/28, 9/08;* C10l *1/26*

U.S. Cl. 260—971 1 Claim

Organo-phosphorus compounds having an average ratio of epoxide residue to phosphorus of 1.5 or more to 1 wherein some of the phosphorus atoms are linked directly to carbon and some provided by way of ester linkages are produced by a one-step reaction of an epoxy compound such as epichlorhydrin, styrene oxide or butylene oxide with white phosphorus and oxygen in a solvent such as ethyl acetate. These compounds are useful as surface active agents, emulsifiers, lubricants and motor fuel additives, and flame proofing agents for plastics.

3,502,750

PROCESS FOR THE PREPARATION OF DIALKYL PHOSPHOROCHLORIDOTHIOATES

Paul Anglaret, L'Hay-les-Roses, and Jean Francois Corbin, Montgeron, France, assignors to Rhone-Poulenc S.A.

No Drawing. Filed Oct. 7, 1966, Ser. No. 584,959

Claims priority, application France, Oct. 12, 1965, 34,718

Int. Cl. C07f *9/20*

U.S. Cl. 260—986 4 Claims

Lower alkyl esters of phosphorochloridothioic acid are produced by reaction of chlorine with a lower alkyl ester of dithiophosphoric acid and freeing the product of sulfur monochloride by reaction with hydrogen sulfide, preferably formed during the production of the dithiophosphoric acid ester by reaction of a lower alkanol with phosphorus pentasulfide. The O,O-dialkyl phosphorochloridothioates are intermediates in the preparation of insecticides.

3,502,751

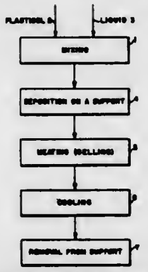
METHOD OF PRODUCING DECORATIVE PLASTICS

Pierre Emmanuel Joos, Villefranche, Rhone, France, assignor to Les Etablissements Marechal, Societe Anonyme, Paris, France

Filed Apr. 28, 1967, Ser. No. 634,641

Int. Cl. B29c *9/00;* B29b *3/00*

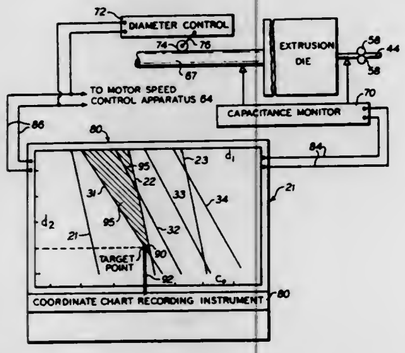
U.S. Cl. 264—25 14 Claims



A process for manufacturing plastic products having a speckled, or scintillating, appearance emanating from

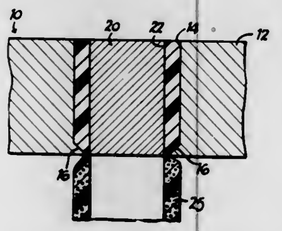
within by gelling a thin layer of a resin-containing plastisol mixed with a small percentage of a liquid which is immiscible with the resin.

3,502,752
CONTROL OF THE DIMENSIONS OF MULTIPLE LAYERS OF EXTRUDED INSULATION
Charles A. Brown, Newark, Del., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Feb. 13, 1967, Ser. No. 615,598
Int. Cl. B29f *3/10, 3/06;* **B29h** *9/08*
U.S. Cl. 264—40 **5 Claims**



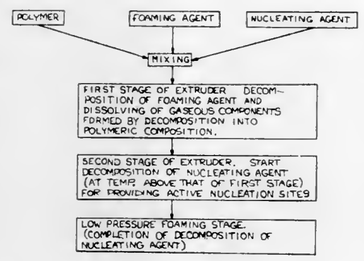
The dimensions of the inner and outer layers of plastic coatings, extruded over an electrical conductor, are controlled automatically in a system having a die that extrudes two layers from the same die. The control means include a monitor for the diameter of the combined coatings, and another monitor that determines the electrical capacitance per unit length of conductor. The layers are made of material having different capacitances, but when each layer is of the intended thickness, its capacitance and that of the combined layers have a known value so that, with the data from the monitors, graphs for existing conditions can be traced automatically adjacent to another graph of intended conditions to indicate any variations. The graph-producing instrument can also be used to control automatically the thickness of the layers and the overall diameter of the coated cable.

3,502,753
EXTRUDING FOAMED PLASTICS
Roger R. Rhoads, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Delaware
Filed May 13, 1966, Ser. No. 550,053
Int. Cl. B29d *23/04;* **B29h** *7/20;* **B29b** *3/04*
U.S. Cl. 264—51 **3 Claims**



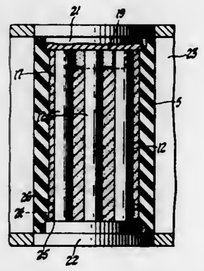
There is disclosed a process for preparing a foamed plastic article by flowing a foamable plastic material under pressure through an essentially infinitely short orifice at the exit end of an extrusion die.

3,502,754
PROCESS OF EXTRUDING A CELLULAR POLYMERIC COMPOSITION
Gregory M. Fehn, Toledo, Ohio, assignor to Owens-Illinois, Incorporated, a corporation of Ohio
Filed May 21, 1965, Ser. No. 457,834
Int. Cl. B29d *7/02, 27/00*
U.S. Cl. 264—54 **4 Claims**



There is disclosed the preparation of polymeric foam having a substantially uniform cell size which comprises the incorporation of foaming and nucleating agents into a polymeric composition, feeding the composition into the first stage of an extruder so as to decompose the foaming agent, feeding the composition into the second stage of the extruder so as to decompose the nucleating agent, and then feeding the composition into a lower pressure zone so as to foam the composition.

3,502,755
METHOD FOR FORMING INDENTATIONS IN ISOSTATICLY PRESSED ARTICLES
Ronald C. Murray, Golden, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado
Filed Mar. 18, 1968, Ser. No. 713,913
Int. Cl. B29c *1/14;* **B28b** *7/30*
U.S. Cl. 264—56 **4 Claims**

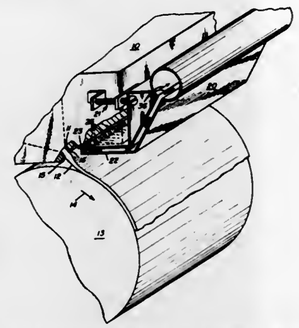


A method of isostaticly pressing ceramic shapes having an indentation in the end by using a thin walled rubber like member as an insert during filling of the mold and by fillling this insert with the same material as that used to fill the mold. During pressing the insert is compressed at essentially the same rate as the remaining material in the mold which allows arbors within the mold to move as the material is compressed around them. After molding the thin walled member and the material compressed within this member can be emoved from the pressed ceramic body either manually before firing or during firing by burning out the thin walled member.

3,502,756
PROCESS FOR DRY SPINNING POLYBENZIMIDAZOLES
Thomas C. Bohrer, Charlotte, N.C., and Arnold J. Rosenthal, Whippany, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 519,299, Jan. 7, 1966. This application Mar. 17, 1969, Ser. No. 807,927
Int. Cl. D01d *5/04;* **D01f** *7/00*
U.S. Cl. 264—85 **15 Claims**

An improved process is provided for the dry spinning of a filament forming polybenzimidazole. A solution of a polybenzimidazole dissolved in a solvent selected from the group consisting of dimethylacetamide, dimethyl sulfoxide, N,N-dimethylformamide, and N-methyl-2-pyrrolidone is dry spun into an evaporative medium of superheated steam to form a polybenzimidazole filament which may exhibit superior physical properties. The explosion hazard which is normally encountered when using these common polybenzimidazole dry spinning solvents at elevated temperatures is effectively eliminated.

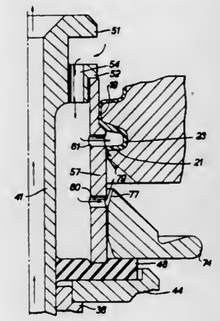
3,502,757
METHOD OF CONTROLLING CONTAMINANT BUILDUP ON EXTRUSION DIES USED IN CASTING THERMOPLASTIC SHEETING
Arthur W. Spencer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 20, 1967, Ser. No. 610,605
Int. Cl. B29f *3/03, 3/08;* **B29d** *7/00*
U.S. Cl. 264—89 **8 Claims**



A method of extruding a polymeric thermoplastic material which includes the step of accurately directing small quantities of clean gas wherein the said gas is selected from the group consisting of filtered air, carbon dioxide and nitrogen, against one or both sides of the extruded sheet in the vicinity of the extrusion die orifice to sweep any vaporous and low molecular constituents away from the metal surfaces of the die adjacent to the die orifice before they can condense or solidify thereon and build up to cause die lines in the extruded sheet.

3,502,758
PRODUCTION OF BLOW MOULDED ARTICLES
Henry James Plummer, Woodley, England, assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,269
Claims priority, application Great Britain, Nov. 9, 1965, 47,525/65
Int. Cl. B29d *23/03;* **B29h** *1/02*
U.S. Cl. 264—98 **3 Claims**

The present invention relates to the manufacturing of blow-moulded plastic articles having a body portion and a neck portion at one end of the body portion. A pressure deformable tube is positioned in an open, split mould with a neck insert in the lower end of the tube. The split mould is adapted, when closed, to close the upper end portion of the tube, define a cavity the shape of the body portion and press the tube against the insert which is provided with a body blowing orifice through which fluid under pressure can be blown to form the body portion. The split mould may include hollow, bead-forming cavities arranged so that upon closure of the mould a hollow cavity encircles the neck portion between portions pressed against the insert. Fluid under pressure may be blown through a bead-blowing port in the insert to expand the tube outwardly in the bead cavity and form the hollow



bead around the neck. Preferably the mould is provided with breather passages extending from the bead cavity so that air bleeds from the cavity when the bead is blown. In addition the tube may be larger in diameter than the insert and may be supported on a ring having a frusto-conical surface portion extending upwardly and inwardly inside the bottom end portion of the tube below the mould so that when the mould is closed, a lower portion of the tube is drawn inwardly against the frusto-conical portion to form an outwardly flared scrap portion below the mould. Cooling fluid is blown against the scrap portion so that the scrap portion can be readily broken away from the neck portion.

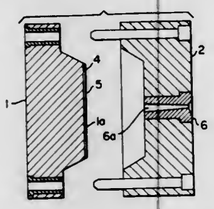
3,502,759
PROCESS FOR THE PREPARATION OF COMPRESSED GRAPHITE STRUCTURES
Franciszek Olstowski, Freeport, and Leonard M. Vaught, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,598
Int. Cl. C01b *31/04;* **B29j** *5/00*
U.S. Cl. 264—120 **4 Claims**

This invention relates to a process for the preparation of cohered monolithic graphite structures by the steps of compressing expanded vermicular graphite to form a first compact having a density between about 0.01 gm./cc. and about 1.4 gm./cc., contacting such first graphite compact with at least one other such compact or with particulate vermicular graphite, then subjecting all of such material to a pressure of at least 30 p.s.i. to thereby form the monolithic graphite structure.

3,502,760
METHOD OF MOLDING PATTERNED THERMOPLASTIC BODIES
Taiichi Ono, 4–88 Biwajima-Dori, Nishi-ku, Nagoya, Japan
Filed Mar. 6, 1967, Ser. No. 621,489
Int. Cl. B29d *9/00;* **B32b** *31/12*
U.S. Cl. 264—135 **2 Claims**

Method of molding patterned thermoplastic bodies in a separable mold wherein a contact or pressure-sensitive thermal release adhesive containing dimethylsiloxane is

applied at one or more points over only part of one surface of the mold an is heat-treated (by a flame) to render the adhesive viscous, a patterned sheet such as a printed cellulose acetate foil is applied initially with light (e.g. finger) pressure to this surface and is held by the adhesive, the thermoplastic material is injected in a hot state under pressure into the mold and initially retains the inset against the adhesive with the higher molding pressure and thereafter heats the adhesive through the foil to enable re-

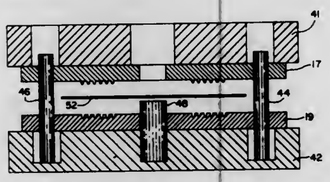


lease of the body, and after at least preliminary cooling the solid thermoplastic body is withdrawn from the mold. The foil may be composed of a material not readily bondable to the thermoplastic and is treated upon its surface remote from the mold face and preferably carrying the printed pattern with a heat-resistant rubber bonding layer (e.g. of chloroprene) to effect adhesion to the thermoplastic. The mold is formed with a pair of channels extending diametrically away from the sprue opening to the remote corners of the mold.

3,502,761
METHOD OF FORMING MAGNETIC RECORD DISCS

Panayotis C. Dimitracopoulos, P.O. Box 458, Outremont, Montreal 154, Quebec, Canada

Filed Sept. 25, 1967, Ser. No. 670,037
Int. Cl. B29d *17/00*; G11b *5/84*
U.S. Cl. 264—153 **9 Claims**



A method for forming pregrooved magnetic record discs, whereby a plastic sheet coated with or containing magnetic oxide is pressed between two enantiomorphic matching dies, these dies having been manufactured by electroplating a specially engraved plastic disc, for example a phonographic lacquer.

3,502,762
METHOD OF MAKING POLYIMIDE FILM

James R. Haller, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

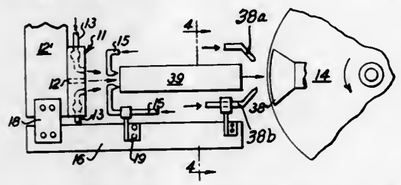
No Drawing. Filed Jan. 24, 1967, Ser. No. 611,261
Int. Cl. B29c *25/00*; D01f *7/04, 7/06*
U.S. Cl. 264—204 **6 Claims**

Polyimide films of improved strength and toughness are obtained by gelling a sheeted solution of polyamide-acid and permitting the resultant solvent-swollen polyimide film to shrink a controlled amount during solvent removal. The films have particular utility in electrical insulation, e.g., as the backings for normally tacky and pressure-sensitive adhesive tape.

3,502,763
PROCESS OF PRODUCING NON-WOVEN FABRIC FLEECE

Ludwig Hartmann, Lutzelsachsen, Germany, assignor to Carl Freudenberg Kommanditgesellschaft Auf Aktien, Weinheim Bergstrasse, Germany

Continuation-in-part of applications Ser. No. 254,601, Jan. 29, 1963, and Ser. No. 302,370, Aug. 15, 1963. This application Jan. 27, 1964, Ser. No. 341,489
Claims priority, application Germany, Feb. 3, 1962, F 35,926
Int. Cl. D04h *1/72*
U.S. Cl. 264—210 **8 Claims**



Process and apparatus for producing non-woven fibrous fleeces as well as the fleeces so produced. The apparatus includes at least one linearly aligned row of individual spinning orifices, each of which is adapted to have a synthetic fiber filament spun therefrom; means for impinging generally parallel air streams on both sides of the rank of filaments so spun; a multiplicity of channel means, each individually associated with a single filament, which filament passes through the channel and is drawn therein by the air stream; and fleece form means upon which the filaments are laid after they emerge from the channels and upon which the filaments form a non-woven fleece.

3,502,764
ORIENTED BLENDS OF ETHYLENE POLYMERS AND PETROLEUM WAXES AND PROCESS FOR PREPARING SAME

John P. Tordella, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

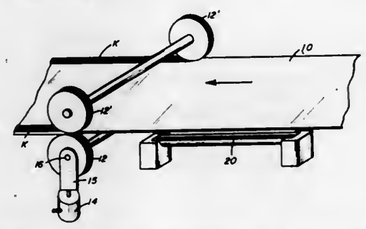
No Drawing. Filed May 31, 1966, Ser. No. 553,631
Int. Cl. D01f *7/02*; C08f *3/04*
U.S. Cl. 264—210 **6 Claims**

This invention relates to novel polymeric products and a process for preparing such products. More particularly, the invention relates to oriented, self-supporting polymeric structures comprising blends of ethylenic polymers and petroleum wax and a process for orienting such structures.

3,502,765
METHOD OF CONTROLLING EDGE FLATNESS OF MECHANICALLY EMBOSSED ORIENTED POLYMER SHEETING

Arthur W. Spencer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 24, 1967, Ser. No. 663,063
Int. Cl. B29c *17/00*
U.S. Cl. 264—230 **3 Claims**



In order to overcome objectionable deformations which appear in the edges of an oriented polymeric thermoplastic sheet material when its edges are mechanically embossed to increase the thickness thereof, the edge portions of the sheet are locally preheated just prior to the embossing operation.

3,502,766
PROCESS FOR THE IMPROVEMENT OF POLYAMIDE FILMS

Motohiro Tsuruta and Mutsuo Kuga, Kyoto-shi, and Takeshi Mashimo, Kyoto-fu, Japan, assignors to Nippon Rayon Kubushiki Kaisha, Kyoto-fu, Japan, a corporation of Japan

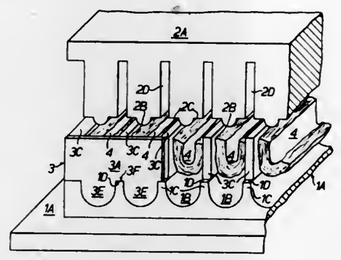
No Drawing. Continuation-in-part of application Ser. No. 536,481, Jan. 24, 1966. This application June 4, 1968, Ser. No. 734,212
Claims priority, application Japan, Jan. 28, 1965, 40/4,857
Int. Cl. B29d *7/24*; B29c *23/00*
U.S. Cl. 264—289 **11 Claims**

This invention relates to a process for improving polyamide films by means of a concurrent biaxial drawing and subsequent shrinking technique whereby very thin polyamide films having high purity and improved properties can be achieved.

3,502,767
METHOD OF MOLDING OF ARTICLES

Walter Morrison, Saint Helens, Henry Spencer, Maghull, and Allan Frank Mason, Orrell, near Wigan, England, assignors to Fibreglass Limited, Saint Helens, England, a British company

Filed Apr. 25, 1968, Ser. No. 723,988
Claims priority, application Great Britain, Apr. 25, 1967, 18,922/67
Int. Cl. B29g *5/00*
U.S. Cl. 264—297 **4 Claims**



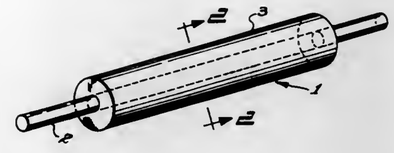
This invention provides a method of moulding articles, particularly elongated articles, from fibrous material impregnated with heat curable material. In carrying out the method a layer of the impregnated material is arranged on a supporting platform having a temperature below the curing temperature of the impregnating material, the platform is then inserted into a moulding press, and the layer of material is discharged into the mould cavity after which the press is operated to deform the layer into the required form and the article is then cured while still within the mould cavity.

3,502,768
METHOD OF MAKING A DAMPENING ROLLER

Edward D. Hill, 11212 Edgewater Drive, Cleveland, Ohio 44102

Filed Nov. 25, 1966, Ser. No. 596,959
Int. Cl. B29c *1/04*; B29h *9/10*
U.S. Cl. 264—331 **7 Claims**

A dampening roller having a smooth, substantially pore-free surface and a process of producing such roller. A roller mold is substantially completely filled with a solution of a parting agent and the solution is then removed from the mold to apply a uniform coating to its interior



surface. The mold is then filled with a plastic composition and the roller is formed therefrom.

3,502,769
HYDROGENATED TERPENE POLYMER STORAGE STABILIZED TOILET PREPARATION

Nobukazu Fukuhara, Tokyo, Japan, assignor to Shiseido Co., Ltd., Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 240,739, Nov. 28, 1962. This application June 30, 1966, Ser. No. 561,701
Claims priority, application Japan, Dec. 13, 1961, 36/44,820
Int. Cl. A61k *7/00, 7/06, 9/06*
U.S. Cl. 424—63 **6 Claims**

A toilet preparation containing a storage stabilizing amount of hydrocarbon which may be a mono-cyclic hydrogenated terpene polymer of the formula $(C_{10}H_{19})_n$ and/or a bi-cyclic hydrogenated terpene polymer of the formula $(C_{10}H_{17})_n$ where n is a whole number of from 2 to 4 and a cosmetic base, such as a cold cream or a cleansing cream base.

3,502,770
PREPARATION OF COMPOSITION FROM PODOPHYLLUM EXTRACTS

Jany Renz, Albert von Wartburg, and Emil Angliker, Basel, and Hans Emmenegger, Muttenz, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Continuation of application Ser. No. 282,574, May 23, 1963. This application Mar. 21, 1966, Ser. No. 538,468
Int. Cl. A01n *9/02, 9/08*; A61k *27/14*; A61l *13/00*
U.S. Cl. 424—195 **3 Claims**

The invention discloses preparation of compositions involving reaction of methanol-extracted podophyllum rhizomes with benzaldehyde.

3,502,771
S-CARBOETHOXYMETHYL-S,S-DIALKYLTRITHIOPHOSPHATES AS SOIL FUNGICIDES

Erik K. Regel, Mission, Kans., and Marion F. Botts, Independence, Mo., assignors to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Filed May 26, 1967, Ser. No. 641,453
Int. Cl. A01n *9/36*; C07f *9/02*
U.S. Cl. 424—212 **5 Claims**

Compounds of the formula

$$(RS)_2\overset{\overset{O}{\|}}{P}S(CH_2)_n\overset{\overset{O}{\|}}{C}OR'$$

where R and R' are alkyl and n is an integer from 1 to 3 are formed by reacting a compound having the formula

$$(RS)_2\overset{\overset{O}{\|}}{P}Cl$$

with a compound of the formula

$$HS(CH_2)_nCOOR'$$

under alkaline conditions. The S-carboalkoxyalkyl-S,S-dialkyl trithiophosphates thus produced have soil fungicidal activity. The compounds where R is 2 to 4 carbon atoms and R' is ethyl are particularly effective.

3,502,772

METHOD FOR STIMULATING ANOVULATORY CYCLES AND PHARMACEUTICAL PACKAGES

Gerrit Lourens Ijzerman, Herpen, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 16, 1967, Ser. No. 675,309
Claims priority, application Netherlands, Nov. 2, 1966, 6615481
Int. Cl. A61j 7/00; A61k 17/00
U.S. Cl. 424—239 3 Claims

The present invention relates to a novel method for stimulating anovulatory cycles comprising administering in two successive phases during the first phase covering 6 to 13 days an oestrogenic compound and during the second phase covering 14–16 days a combination of an oestrogenic and a progestational compound.

3,502,773

METHOD FOR CONTROLLING ECTOPARASITE TRICHOMONAL INFESTATION WITH 6-METHOXY-1-PHENAZINOL-5,10-DIOXIDE

Emanuel Grunberg, North Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 26, 1967, Ser. No. 641,461
Int. Cl. A61k 27/00
U.S. Cl. 424—250 1 Claim

Pharmaceutical compositions containing 6-methoxy-1-phenazinol 5,10-dioxide and methods for the treatment of ectoparasitic infestations.

3,502,774

ANTHELMINTIC METHOD USING 6-METHOXY-1-PHENAZINOL 5,10-DIOXIDE

Emanuel Grunberg, North Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 26, 1967, Ser. No. 641,463
Int. Cl. A01n 9/22, 9/00
U.S. Cl. 424—250 1 Claim

Pharmaceutical compositions containing 6-methoxy-1-phenazinol 5,10-dioxide and methods for the treatment of helminthiasis.

3,502,775

FUNGICIDAL COMPOSITIONS CONTAINING 3-PHENYLINDAZOLE

Laurent Lacroix, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,814
Claims priority, application France, Jan. 26, 1966, 47,330
Int. Cl. A01n 9/22
U.S. Cl. 424—273 4 Claims

Compositions comprising 3-phenylindazole are employed as fungicides in agriculture and in the treatment of materials, such as fabric, to destroy or inhibit the growth of moulds.

3,502,776

COMPOSITIONS AND METHODS FOR COMBATING TURKEY BLACKHEAD

Max Hoffer and Milan Mitrovic, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 541,968, Apr. 12, 1966. This application Apr. 17, 1969, Ser. No. 817,179
Int. Cl. A61k 27/00
U.S. Cl. 424—273 8 Claims

Feed and drinking water compositions containing from about 0.001 percent to about 0.05 percent of 1-methyl-2-isopropyl-5-nitroimidazole or the appropriate pharmaceutically acceptable water-soluble acid addition salt thereof as well as stable premix concentrates are disclosed. The compositions are effective for combating turkey blackhead and/or for stimulating growth in turkeys.

3,502,777

BIOCIDAL AGENTS BASED UPON HEAVY METAL PENTACHLOROPHENOLATES

Rudolf Burkhardt and Rudolf Junghaehnel, Witten (Ruhr), Germany, assignors to Chemische Werke Witten GmbH, Witten (Ruhr), Germany

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,875
Claims priority, application Germany, Jan. 26, 1963, C 29,006
Int. Cl. B27h 3/40
U.S. Cl. 424—289 14 Claims

A preservative composition comprising a colloidal suspension in water of a heavy metal pentachlorophenolate, preferably of copper or zinc. The suspension also contains a surface active compound. The preparation is especially useful for preserving cellulose-containing materials.

3,502,778

MITICIDES

Walter Steinhausen, Leupoldsdorf, and Albert Jager and Gerhard Boroschewski, Berlin, and Horst Peissker, Wolfenbuttel, Germany, assignors to Schering AG, Berlin, Germany

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,794
Claims priority, application Germany, Sept. 30, 1966, Sch 39,610
The portion of the term of the patent subsequent to Aug. 15, 1984, has been disclaimed
Int. Cl. A01n 9/20
U.S. Cl. 424—300 3 Claims

Miticidal agents containing a 3-dimethylamino-methyleneimino-phenyl-N-methyl carbamate, or their salts with inorganic or organic acids have an increased effect against phosphoric esterresistant mites and other insects.

3,502,779

PROCESS OF MUCOLYSIS

William E. Dye, Washington, D.C., and John K. Pollard, Jr., Pasadena, Calif., assignors to Calbiochem, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,197
Int. Cl. A61k 27/00
U.S. Cl. 424—335 4 Claims

Mucus is liquified by contacting it with 1,4-dimercapto-2,3-dihydroxybutane.

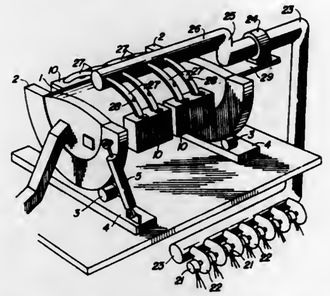
ELECTRICAL

3,502,780

COOLING SYSTEM FOR INDUCTORS IN LOW-FREQUENCY INDUCTION FURNACE

Hiroshi Ichikawa, Tsuchiura-shi, and Shinichiro Kiyomiya, Hitachi-shi, Japan, assignors to Hitachi Cable Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 15, 1967, Ser. No. 683,286
Claims priority, application Japan, Dec. 28, 1966, 42/448
Int. Cl. H05b 5/14
U.S. Cl. 13—29 1 Claim



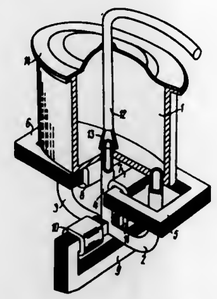
An inductor cooling system for low-frequency induction furnaces provided with at least one inductor, the system having a plurality of blowers which are installed at a place quite remote from the furnace for the suction of air at low temperatures free from the heat radiated from the furnace. These blowers discharge cool air into a common air supply conduit led to the inductor, and a universal pipe joint is provided in the air supply conduit to permit unobstructed supply of cooling air regardless of any inclination of the tiltable furnace.

3,502,781

CHANNEL-TYPE INDUCTION FURNACE

Vitaly Petrovich Polischuk, Ulitsa M. Gorkogo 170/172, kv. 36, and Mark Rakhmilievich Tsin, Ulitsa Bolshaya Podvalnaya, 19, kv. 57, both of Kiev, U.S.S.R.

Filed Dec. 27, 1968, Ser. No. 787,405
Int. Cl. H05b 5/00, 5/12
U.S. Cl. 13—29 1 Claim



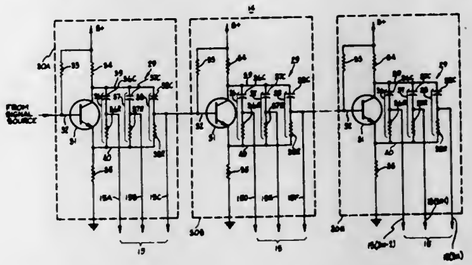
A channel-type induction furnace, in which the bath of molten metal communicates with at least three channels, intersecting each other, one channel having a removable conduit for molten metal discharge, the point of intersection of the channels being environed by an additional magnetic conductor with windings for inducing a magnetic field interacting with the current flowing through the intersection of the channels to move molten metal at a controllable speed.

3,502,782

ELECTRONIC MUSICAL EFFECT APPARATUS

Ray B. Schrecongost, Park Ridge, Ill., assignor to Hammond Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 9, 1967, Ser. No. 673,559
Int. Cl. G10h 1/02, 1/04
U.S. Cl. 84—1.24 3 Claims



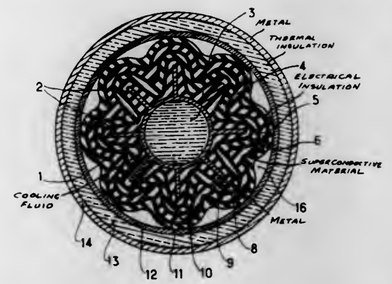
Disclosed is an electronic musical effect apparatus for producing celeste and/or vibrato effects. The apparatus includes an artificial delay line comprising a plurality of cascaded stages, each stage including a transistor which drives a resistive-capacitive network from which outputs for the succession stage and for a scanner are taken. The delay line is fed from a source of electrical tone signals and progressively alters the signals fed to the scanner. The scanner sequentially samples the outputs of the delay line in a selected predetermined manner to produce a composite signal having the desired musical effect.

3,502,783

ELECTRIC CABLE FOR POLYPHASE CURRENT

Marcel Aupoix, Paris, and François Moisson-Franckhauser, Athis-Mons, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed Nov. 30, 1967, Ser. No. 691,679
Claims priority, application France, Dec. 6, 1966, 86,719
Int. Cl. H01b 7/34
U.S. Cl. 174—15 16 Claims

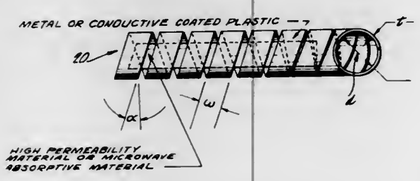


Electric cable for polyphase current transmission, comprising a metal core surrounded by a plurality of radial metal ribs extending parallel to the axis of the core, and a plurality of electric conductors in the form of shaped conductive members extending parallel to the axis of the core, the distance between two adjacent conductors being substantially equal to the distance between the said core and ribs and the closest conductor thereto.

3,502,784
GASKET

George M. Kunkel, Sunland, Calif., assignor to Scanbe Manufacturing Corporation, Monterey, Calif., a corporation of California

Filed Sept. 11, 1968, Ser. No. 759,167
Int. Cl. H05k 9/00; F16j 15/08
U.S. Cl. 174—35 5 Claims

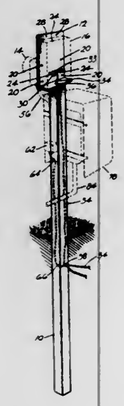


A pair of spaced apart conductive surfaces to be sealed having a gasket functioning as an electromagnetic interference seal extending between the conductive surfaces and providing a pressure contact along the surfaces for sealing same against electromagnetic radiation, the gasket being constructed of a thin, flat resilient conductive element formed into a spiral with the adjacent spirals thereof arranged edge to edge for defining conductive paths through the gasket.

3,502,785
MOUNTING PEDESTAL FOR UTILITIES

Anne D. Nickola, G–6255 N. Saginaw Road, Mount Morris, Mich. 48458

Filed Nov. 20, 1967, Ser. No. 684,199
Int. Cl. H02g 9/02
U.S. Cl. 174—38 3 Claims

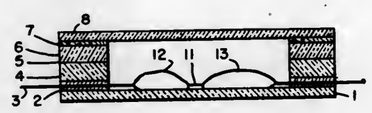


A mounting pedestal adapted to support an electrical power box, an electric meter, a telephone box, a television jack, and a gas meter operatively in a compact arrangement for providing utility services to a mobile home. A hollow, rectangular metal post is supported in an upright position in the ground, extending thereabove, and supports an L-shaped mounting bracket on the top thereof. The bracket provides the means for supporting the power box and the meter with the telephone box, television jack and gas meter carried by the post at positions below the bracket. A ground wire is disposed within the post to connect the box, the bracket and meter to an underground grounding means.

3,502,786
FLAT PACK SPACER OF LOW THERMAL DIFFUSIVITY

Milton Stoll, 14–19 212th St., Bayside, N.Y. 11360

Filed June 14, 1967, Ser. No. 654,024
Int. Cl. H05k 5/06
U.S. Cl. 174—52 4 Claims

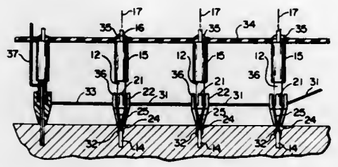


The present invention relates to new and novel methods of and means for sealing flat-packs and the like. The term "flat-pack" is applied to heat sealed packages of tiny electronic integrated circuits or the like. These integrated circuits, for example, comprise transistors, diodes and resistors etched or otherwise formed on a chip of silicon and hermetically heat sealed in a sandwich of ceramic and glass or metal. This sandwich is built up starting with a bottom plate on which are plated leads or are mounted an annulus carrying wire leads to connect the internally mounted integrated circuit to the outside of the package. The term "annulus" is used here since, although it suggests a round package and most of the packages are rectangular, it is descriptive of the part. On top of the plated lead base or lead carrying annulus is mounted and sealed thereto a spacer annulus, and on top of this spacer annulus a layer of solder or glass seals the top cover. In assembling this device the lead carrying bottom plate or lead seal annulus and spacer annulus are first prepared as by a heat bonding process. The integrated circuit is mounted inside the initial assembly, usually in contact with the bottom plate, for heat transfer purposes and the leads are attached. The final step is to apply and seal the cover. This is a heat sealing process and a number of problems arise. It is the usual practice to use high thermal conductivity material for the spacer as well as other parts. This high thermal conductivity material is also chosen to have high thermal diffusivity such as beryllia. This carries too much heat away from the cover and often causes damage to the circuit. It also prolongs the time required to seal the cover, requires a large amount of applied heat and an excessively high temperature.

3,502,787
ELECTRICAL COMPONENT LEADS

Roy W. Reach, Sudbury, David Shapiro, Lincoln, and William M. Kahn, Brighton, Mass., assignors to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts

Filed June 27, 1966, Ser. No. 560,596
Int. Cl. H02q 15/08
U.S. Cl. 174—84 17 Claims



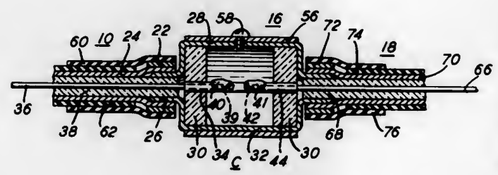
A novel bobbin is used for interconnecting electronic component leads. The bobbin is formed with a central opening at the insertion end having a diameter slightly greater than the maximum diameter of a component lead and an output end that is bifurcated into two opposed portions that are urged apart as the bobbin output end slides over the lead, this output end opening being elliptical and having minor and major diameters slightly less and greater respectively than the diameter of the lead to be surrounded. A number of lugs are circumferentially displaced about the bobbin axis intermediate the insertion end and output end for engaging the standing part of an interconnecting wire leading away from the component lead surrounded by the bobbin. The lugs are generally parallel to the bobbin axis and partially surround the insertion end structure.

The bobbin may be inserted over a free lead of a component, such as resistor, with the insertion end contiguous with the resistor body. The other lead of the component is inserted through an opening in a circuit board with the component body resting against the circuit board. A continuous filament of wire, preferably covered with decomposable insulation and fed through an opening in a wiring pen, is brought generally parallel to the circuit board around one of the lugs, then around the free component lead adjacent to the output end, then back around another lug and parallel to the component board where it may then go to another component. When all components attached to a circuit board have been wired in this manner, all the free ends of the component leads may be immersed in a hot solder or chemical bath that dissolves the thin insulation around the interconnecting wire portions in contact with the free component leads.

3,502,788
ELECTRICAL CONNECTORS FOR COAXIAL CABLES

William G. Albert, Tewksbury, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey

Filed July 11, 1968, Ser. No. 744,194
Int. Cl. H02g 15/08
U.S. Cl. 174—88 11 Claims



In a connector, a rigid cylindrical shell is secured to a coaxial cable's outer conductor. A conductive tube, centrally supported in the shell, receives the cable's center conductor. Radial openings in the shell and tube furnish access for soldering the center conductor in the tube. A removable shield embraces the shell.

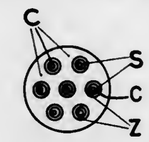
The connector serves as a cable termination when a resistor is soldered between the tube and shell. It may be converted to a splice by removing the resistance and soldering a second coaxial cable's conductors to the tube and shell.

3,502,789
SUPERCONDUCTOR CABLE

Anthony Clifford Barber, Lichfield, and Robert William Kelcher, Sutton, England, assignors to Imperial Metal Industries (Kynoch) Limited, Birmingham, England, a corporation of Great Britain

Filed Nov. 27, 1967, Ser. No. 685,844
Claims priority, application Great Britain, Dec. 2, 1966, 54,134/66
Int. Cl. H01b 7/34, 5/00
U.S. Cl. 174—128 10 Claims

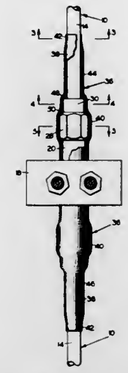
A composite superconductor comprising at least one filament of superconductor material, a first non-superconductor material of high electrical and thermal conductivities, and at least one filament of a second non-superconductor material of better specific mechanical strength than that of the first non-superconductor material.



3,502,790
WEATHER-INSULATING SHEATH FOR TV CABLE CONNECTORS

Ronald L. Cain, 8210 Steilacoom Blvd. SW., Tacoma, Wash. 98498, and Kenneth G. Jones, San Jose, Calif. (930 San Tomas Aquino Road, Campbell, Calif. 95008)

Filed Mar. 20, 1968, Ser. No. 714,639
Int. Cl. H01b 17/00
U.S. Cl. 174—138 2 Claims

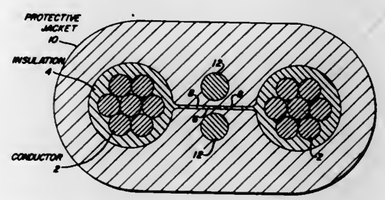


A weather-insulating sheath for TV cable connectors comprises a continuous, laminated tube having an inner layer of pliant, natural rubber and bonded thereto a restraining outer layer of neoprene.

3,502,791
POWER CABLE

Walter G. Dahlstrom, Worcester, Mass., assignor to United States Steel Corporation, a corporation of Delaware

Filed Dec. 12, 1968, Ser. No. 783,265
Int. Cl. H01b 7/04, 9/00
U.S. Cl. 174—115 9 Claims

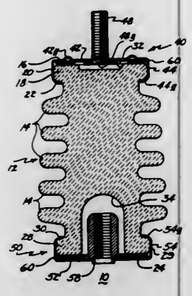


A multiple conductor electric power cable has the insulated conductors joined by a perforated web of the insulating material. A protective jacket surrounds the insulated conductors and penetrates the perforations to mechanically lock the conductors and jacket in fixed position with respect to each other.

3,502,792
HIGH VOLTAGE ELECTRICAL INSULATOR

Donald O. Misare, Riverside, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed July 5, 1968, Ser. No. 742,758
Int. Cl. H01b 17/40
U.S. Cl. 174—188 3 Claims

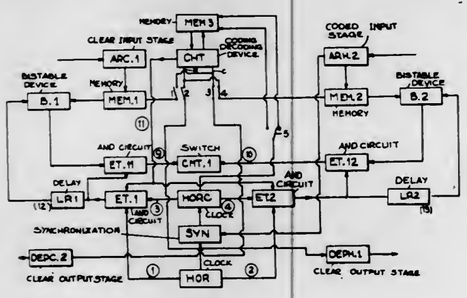


An electrical insulator comprising a body of insulating material having a circular end face and retaining surface spaced inwardly on the body from the end face. A terminal member of conducting material having a cuplike shape with an end wall facing the end face of the insulating body and a skirt portion outwardly of the body telescoped over the end portion of the body. The skirt includes an outer edge portion which is deformed in a spinning operation forcing the metal inwardly toward the center of the insulator body to bear tightly against the retaining surface thereof. An annular spring washer is disposed between and exerts pressure against the end face of the insulator body and the end wall of the terminal means holding the deformed edge portion of the skirt tightly against the retaining surface and preventing rotation of the terminal means on the body.

3,502,793
CRYPTOGRAPHIC DEVICE FOR A CODED BILATERAL COMMUNICATION LINK

Marc Dumaire, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Dec. 28, 1966, Ser. No. 605,330
Claims priority, application France, Dec. 30, 1965, 44,364
Int. Cl. H04l 9/00, 15/34
U.S. Cl. 178—4 4 Claims

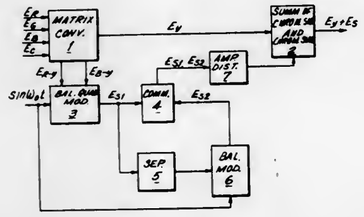


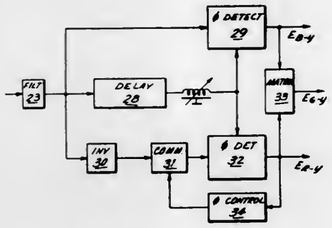
A cryptographic device allows, by means of a coding and decoding circuit including a single key-generator, (i) the coding of a message and the transmission of the corresponding clear message in a first synchronous communication channel and (ii) the decoding of a message received from a second synchronous communication channel and the transmission of the corresponding clear message. This result is achieved through the use of memories and of a switching system placing the device in condition for operation on the first or second message, and a logical circuit controlling this switching system for the ensuring that all the conditions required for a safe operation on of the messages are present.

3,502,794
COLOR TELEVISION SYSTEM UTILIZING PHASE-DIFFERENCE MODULATION

Vladimir Efimovich Tesler, Ulitsa Shukhova, 8, kv. 2, Moscow, U.S.S.R.

Filed July 6, 1966, Ser. No. 563,212
Claims priority, application Switzerland, July 27, 1965, 10,511/65
Int. Cl. H04n 1/46
U.S. Cl. 178—5.2 6 Claims





A compatible color television system relating to such color television systems in which information on color is transmitted by means of the balanced amplitude modulation of a subcarrier which shares the frequency band of the luminance signal.

A characteristic feature of the proposed system lies in that the phase-difference modulation of the sub-carrier is used for transmitting information on color hue.

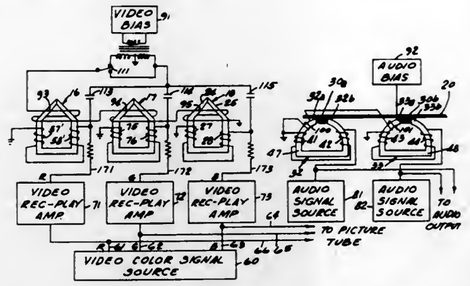
The employment of the phase-difference modulation of the subcarrier makes it possible to avoid color distortions in the picture when there appear phase distortions in the communication channel and to preserve, at the same time, the positive properties of the balanced modulation, i.e., adequate compatibility and high noise resistance of the chrominance signal.

3,502,795
TRANSDUCER SYSTEM AND METHOD

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, Chicago, Ill., a corporation of Illinois

Filed Mar. 12, 1965, Ser. No. 439,340
Int. Cl. H04n 5/16
U.S. Cl. 178—5.4 31 Claims

The illustrated embodiments relate to recording and playback of at least nine channels of color video and audio intelligence. The recorded channels are arranged so that the tracks to be successively reproduced by each head unit are in separate regions on the record medium,

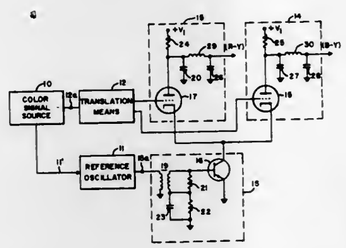


the head units thus being widely spaced. Novel video and audio head units are shown for minimizing interference between the recorded channels.

3,502,796
CHROMINANCE SIGNAL DEMODULATOR HAVING A COMMON DRIVE CIRCUIT

Allan R. Hambley, Schiller Park, Ill., assignor to Hazeltine Research Inc., a corporation of Illinois

Filed Aug. 12, 1966, Ser. No. 572,029
Int. Cl. H04n 5/48
U.S. Cl. 178—5.4 3 Claims



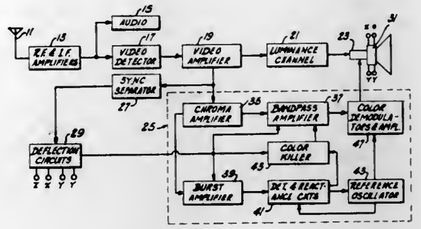
A chrominance signal demodulator having a pair of amplifier circuits responsive to the chrominance signal, the chrominance signal coupled to the first amplifier being 90° out of phase with respect to the chrominance signal coupled to the second amplifier. A transistor is switched between the cutoff and saturated states for a portion of each cycle of a reference signal having the same phase and frequency as the chrominance signal. The transistor switch causes the first and second amplifiers to be switched between the amplifying and nonconducting states for a portion of each cycle of the chrominance signal providing a different color information signal at the output of each of said amplifier circuits. Alternative arrangements are also covered.

3,502,797
SOLID STATE COLOR KILLER CIRCUIT FOR COLOR TELEVISION RECEIVERS

Robert R. Eckenbrecht, East Bethany, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 24, 1967, Ser. No. 618,418
Int. Cl. H04n 9/48
U.S. Cl. 178—5.4 9 Claims

Color killer circuitry utilizing solid state semiconductor devices for color television receivers which have sharper switching characteristics and increased sensitivity providing reliable color killer action for monochrome signals

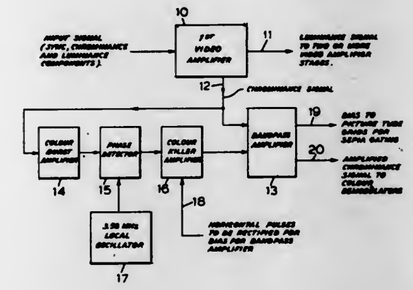


without adversely affecting receiver operation for weak color signals.

3,502,798
NETWORK FOR AUTOMATICALLY VARYING COLOUR TEMPERATURE BETWEEN MONOCHROME AND COLOUR RECEPTION IN A COLOUR TELEVISION RECEIVER

Paul V. Bates, Waterloo, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada

Filed Mar. 27, 1967, Ser. No. 626,201
Int. Cl. H04n 5/44
U.S. Cl. 178—5.4 10 Claims



Colour temperature is controlled automatically by a load resistor connected in the output circuit of the chrominance signal amplifier of a colour television receiver. This amplifier is turned on or off depending upon whether a colour or monochrome signal respectively is being received, so the voltage across the resistor varies with the type of signal being received. The resistor is connected to at least one of the electron guns of the picture tube to vary automatically the grid-cathode potential of this gun and hence colour temperature in response to changes in the voltage across the load resistor.

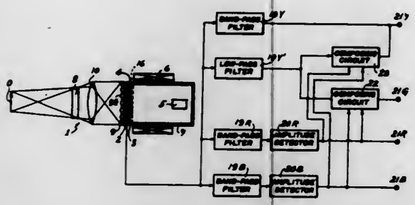
3,502,799
COLOR VIDEO SIGNAL GENERATING APPARATUS

Toshiro Watanabe, Zushi-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed July 31, 1967, Ser. No. 657,139
Claims priority, application Japan, Aug. 3, 1966, 41/50,928; Sept. 19, 1966, 41/61,843
Int. Cl. H04n 5/26, 5/30, 9/06
U.S. Cl. 178—5.4 16 Claims

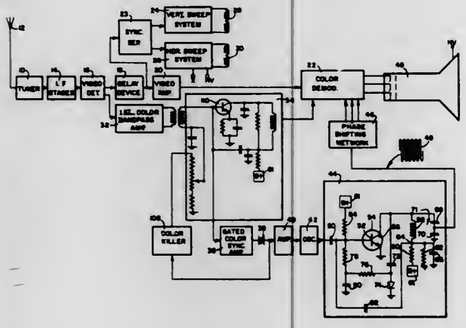
In a color video signal generating apparatus in which a filter having regions respectively selecting light of different wavelength ranges and a screen having separating lenses are optically interposed between an object to be televised and a single image pickup tube to cause such

separating lenses to coact with the filter in dividing an image of the object into color components projected onto the tube so that the electrical output of the tube is composed of successive signals corresponding to the intensities of the color components successively encountered in a line scanning direction, such screen has its separating



lenses spaced apart with non-separating portions therebetween through which a panchromatic image of the object is projected onto the pickup tube in overlapping relation to the divided color components, and high resolution color video signals are extracted from the resulting output of the image pickup tube.

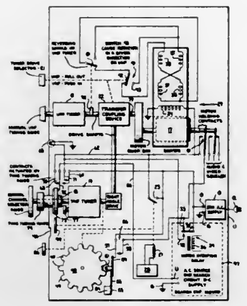
3,502,800
AUTOMATIC GAIN CONTROL CIRCUIT FOR CONTROLLING THE AMPLITUDE OF SUB-CARRIER OSCILLATOR SIGNALS
William H. Slavik, Oak Lawn, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 25, 1967, Ser. No. 677,913
Int. Cl. H04n *9/48*; H03b *3/02*; H03g *11/00*
U.S. Cl. 178—5.4 **11 Claims**



The circuit includes a semiconductor device and a detector circuit coupled between the input and output electrodes of the device to automatically control its bias in a manner such that the peaks of an input signal are maintained at a constant value which is below the saturation point of the transistor.

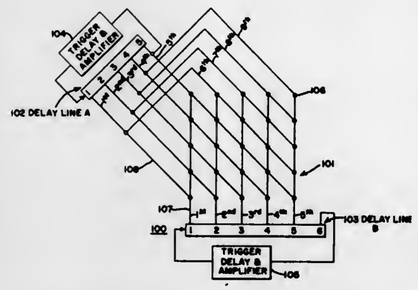
3,502,801
SEARCH TUNING APPARATUS FOR CONTINUOUS AND DETENT-TYPE TUNERS
Louis F. Mayle, Fort Wayne, Ind., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Jan. 13, 1966, Ser. No. 520,407
Int. Cl. H04n *5/44*
U.S. Cl. 178—5.8 **25 Claims**

A single reversible motor has a starting circuit with a switch closed in response to manual or electrical stimuli to initiate tuner drive. A motor hold circuit includes a switch opened in response to tuning a satisfactory channel to terminate tuner drive. A manual selector mechanically connects the motor to either a continuous-type UHF or a detented-type VHF tuner. An alternate embodiment



uses two motors, one for each tuner, with a manual selector switch enabling one or the other to function. A fine tuning control member and a fine tuning indicator lamp are provided.

3,502,802
SOLID STATE SCANNING SYSTEM
Daniel C. Osborn, North Syracuse, and Richard D. Stewart, Camillus, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 5, 1966, Ser. No. 599,267
Int. Cl. H04n *3/14*
U.S. Cl. 178—6 **14 Claims**

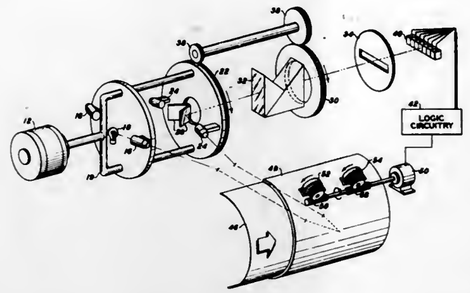


Scanning apparatus for providing a sequential line scan of a solid state matrix of passive or active elements. The apparatus comprises first and second delay means generating multiple outputs at successive points in time which outputs are connected to said matrix, said delay means each having a feedback connection which retrigger said delay means at times which are continuously varying with respect to one another.

3,502,803
FACSIMILE LINE SKIPPING APPARATUS
John J. Bigenwald, Rochester, Robert W. Rambo, Pittsford, and Gerald A. Buddendeck, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 12, 1967, Ser. No. 638,060
Int. Cl. H04n *5/76*
U.S. Cl. 178—6.6 **15 Claims**

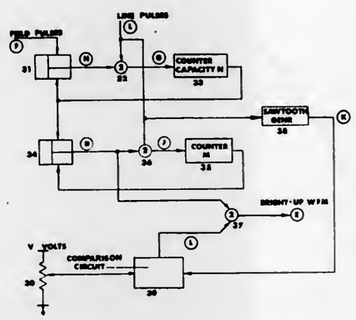
A facsimile graphic communication system wherein the white area on a document or the like is rapidly transported past the scanning station in accordance with the

lack of information thereon. White line skipping is provided wherein prescan apparatus and associated stepping



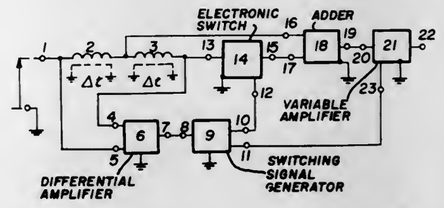
devices rapidly step the white or lack of information areas on a document or the like past the optical scanner.

3,502,804
VIDEO MONITOR INDICATING MEANS
John D. Barr, Oadby, England, assignor to The Rank Organisation Limited, London, England
Filed Nov. 8, 1966, Ser. No. 592,874
Claims priority, application Great Britain, Nov. 8, 1965, 47,341/65
Int. Cl. H04n *3/10*
U.S. Cl. 178—6.8 **9 Claims**



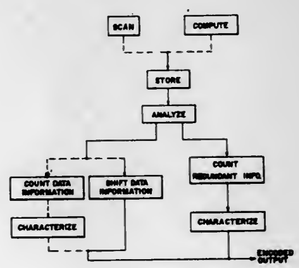
The invention is concerned with a television system having a camera and picture viewing means in which a display representative of a variable quantity is provided at the picture viewing means outside the area used for display. The variable quantity may be the setting of a control element at the television camera, for example, the zoom setting and the picture viewing means may be a picture monitor of conventional form. Means are provided for operating on a signal representative of the quantity to be indicated and producing, at the television picture viewing means, between fields, the display representative of the variable quantity and the said display may be produced during picture reception. The invention includes means for operating on said signal comprising field pulse responsive means, line pulse responsive means, timing means controlled by said field pulse responsive means and said line pulse responsive means to determine the positioning of the display representative of said quantity in relation to said area of picture display, means for producing a standard of comparison and a comparison circuit adapted to compare said signal with said standard of comparison and dependent on said signal to give an output controlled by said timing means and effective to produce said display representative of said quantity. The means for producing a standard of comparison may be a generator adapted to produce a voltage varying in periodic manner and having the same period as the line pulses and the display may represent the quantity by the length of a line or lines or by the position of a display consisting of at least one small area. The timing means may comprise gating signal generator means arranged to produce gating signals whereby the comparison circuit gives an output effective to produce said display representative of said quantity only at predetermined times.

3,502,805
METHOD AND APPARATUS FOR ENHANCING THE SUPPRESSED DOT STRUCTURE OF TELEVISION PICTURES
Wolfgang Schröder, Feldrennach, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 29, 1967, Ser. No. 626,876
Claims priority, application Germany, Apr. 23, 1966, St 25,276
Int. Cl. H04n *5/58*
U.S. Cl. 178—6.8 **6 Claims**



For a television picture having a suppressed dot structure, missing picture points are replaced in the case of equally shaded picture areas or surfaces, and not filled in where the neighboring picture points have insufficient information equality.

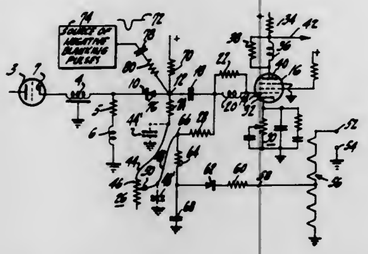
3,502,806
MODIFIED RUN LENGTH DATA REDUCTION SYSTEM
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 1, 1966, Ser. No. 569,314
Int. Cl. H04n *3/16*
U.S. Cl. 178—7.1 **6 Claims**



A selective encoding technique wherein a binary data waveform is investigated according to the expected informational content of a document or computer, or the like, output waveform and analyzed for the existence of

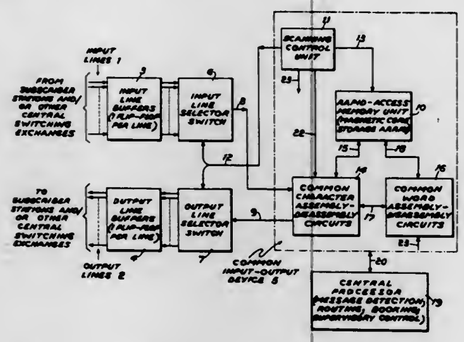
data information. The information waveform is then encoded to reduce the redundant information before transmission to a remote printing location. In the encoding technique, the count word indicative of the successive number of digits detected as the same binary level is converted to a binary code word representative of such count. Control digits are placed between the digits representing the code word in order that the receiving apparatus will be able to detect the difference between a data and redundant information signal.

3,502,807
BRIGHTNESS CONTROL CIRCUIT
George E. Anderson, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 621,538
Int. Cl. H04n *5/44*
U.S. Cl. 178—7.3 **2 Claims**



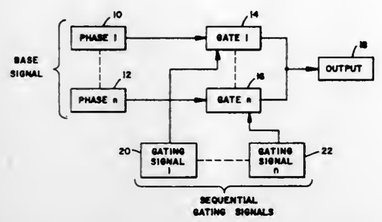
The video signal is coupled to a control electrode of a video amplifier via an A.C. path and a parallel D.C. path. Bias voltage is produced by rectifying the A.C. across a portion of a series string of filaments and applied to a potentiometer in the D.C. path.

3,502,808
DATA EXCHANGE COMPATIBLE WITH DIAL SWITCHING CENTERS
Thomas G. Brown, Jr., Ridgewood, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 527,404
Int. Cl. H04l *5/24*
U.S. Cl. 178—53.1 **5 Claims**



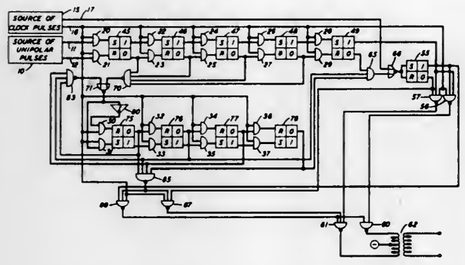
An apparatus for automatically signalling between a pulse signal data exchange and a device such as a circuit switched network, wherein for the assembly and disassembly of signals on a bit-at-a-time basis, dial and control pulses under program control interconnect a pulse signal exchange with a circuit switched network such as Telex.

3,502,809
METHOD AND APPARATUS FOR PHASE- OR FREQUENCY-MODULATING SIGNALS AT HIGH POWER LEVELS BY MEANS OF SATURABLE MAGNETIC CORES
Richard K. Dickey, San Luis Obispo, Calif., assignor to Technical Material Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Feb. 4, 1966, Ser. No. 525,078
Int. Cl. H04l *27/24*
U.S. Cl. 178—67 **33 Claims**



Transient-free phase or frequency modulation of alternator-generated radio signals in the megawatt range is accomplished by connecting each of the alternator phases to the antenna through a saturable reactor, and sequentially saturating the reactors at a modulating frequency preferably derived from a second alternator. Upper- or lower-sideband modulation, or transient-free transition from one phase to another, is achieved by using a second, keyable set of saturable reactors to switch the phases of the second alternator so as to control the sequence in which the first reactors are saturated. Means for using the saturable core concept for automatic frequency stabilization and audio modulation instead of keying are also disclosed.

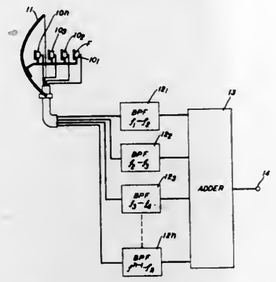
3,502,810
BIPOLAR PULSE TRANSMISSION SYSTEM WITH SELF-DERIVED TIMING AND DRIFT COMPENSATION
Marvin R. Aaron, Fair Haven, Virgil I. Johannes and John S. Mayo, Holmdel, Richard H. McCullough, Summit, and Jack M. Sipress, Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 15, 1966, Ser. No. 572,464
Int. Cl. H04l *15/00;* **H04b** *1/04*
U.S. Cl. 178—68 **7 Claims**



Apparatus for encoding binary pulse signals wherein each binary pulse is transmitted as a pulse opposite in polarity to the immediately preceding pulse and "0's" or spaces are encoded as "0's." When the message requires a number of consecutive "0's" exceeding a predetermined number to be encoded, they are not encoded as "0's" but are, rather, replaced by a predetermined bipolar word which results in a violation of the bipolar

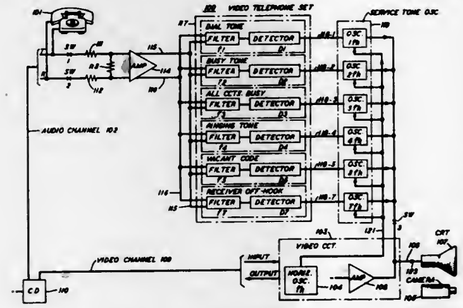
code. Because the replacement word is a violation (i.e., does not conform to the rules) of the conventional bipolar code, it is easily detected at the receiving terminal and is replaced in the reproduced signal by a train of "0's." The replacement bipolar pulse words are such that the transmitted signal has no direct current component thereby facilitating regeneration.

3,502,811
DIRECTIONAL MICROPHONE WITH FREQUENCY INDEPENDENT BEAMWIDTH
Manfred R. Schroeder, Gillette, and Robert L. Wallace, Jr., Warren, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 11, 1967, Ser. No. 689,373
Int. Cl. H04r *1/20, 1/34*
U.S. Cl. 179—1 **12 Claims**



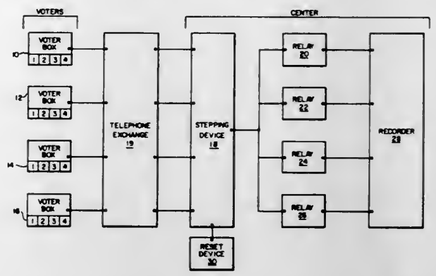
Fall-off of beamwidth with frequency in a directional microphone system employing a signal receptor located at or near the focus of a reflector is overcome by using, effectively, a number of transducers spaced along the axis of the reflector. The frequency range of the system is divided into a number of subbands and signals are developed individually for each. Since defocusing broadens the width of the acceptance beam, the individual points of reception are selectively spaced along the reflector axis to achieve sufficient defocusing to assure a constant beamwidth for all subbands. All subband signals are added together to produce an output signal.

3,502,812
VIDEOTELEPHONE SYSTEM FOR PROVIDING A VISUAL DISPLAY OF CALL PROGRESS SIGNALS
Barry Litofsky, Matawan, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 31, 1967, Ser. No. 664,849
Int. Cl. H04m *11/06*
U.S. Cl. 179—2 **7 Claims**



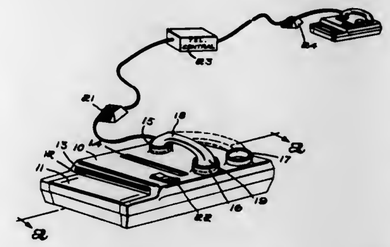
During the time a deaf subscriber is establishing a call connection in a video telephone system the video circuits are connected to the audio circuits so that the various call progress signals or service tones can be detected and the outputs of the detectors applied to cause distinctive video rasters for each such service tone.

3,502,813
ELECTRONIC VOTING SYSTEM
Harold R. Walker, Metuchen, N.J., assignor to Charger Electronic Systems, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 753,430, Aug. 19, 1968. This application May 1, 1969, Ser. No. 822,102
Int. Cl. H04m *11/10*
U.S. Cl. 179—2 **12 Claims**



An electronic voting system for transmitting the votes of a multiplicity of voters through voter boxes or push button telephones including stepping devices such as stepping relays for receiving the singals and a recorder, such as electronic counters responding to the actuation of the relays to record the votes.

3,502,814
FACSIMILE SCANNER-PRINTER
Roy G. Salaman, Bernard D. Lamach, and Robert J. Taylor, Boulder, Colo., assignors, by mesne assignments, to Phonocopy, Inc., Wilmington, Del., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,584
Int. Cl. H04m *11/06*
U.S. Cl. 179—4 **8 Claims**



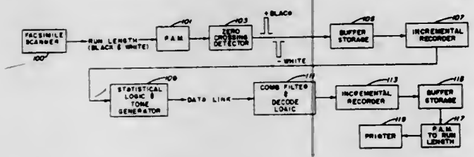
A unitary facsimile scanner-printer for transmission and reception of facsimile copy over a conventional telephone network has at least one unitary scanning and printing head which includes a photoresponsive element for scanning copy to be transmitted and a conductive stylus for printing copy received. The scanning heads are mounted on an endless belt and guided along a line scanning station for either reading an indicia bearing sheet of copy for transmission or printing with the conductive stylus urged into conductive contact with a metal foil so that when the stylus is energized, a localized portion of thermotransfer material placed on the side of the foil opposite the stylus is fused and

transfers from the foil to a sheet of paper to produce an image thereon. The stylus and photoresponsive element are electrically connected to a binary translation unit, which in turn is coupled to a telephone handset.

3,502,815
TONE SIGNALLING BANDWIDTH COMPRESSION SYSTEM

James E. Young, Pittsford, and Kent W. Hemphill, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Mar. 17, 1967, Ser. No. 624,003
Int. Cl. H04b *1/66*
U.S. Cl. 179—15.55 17 Claims

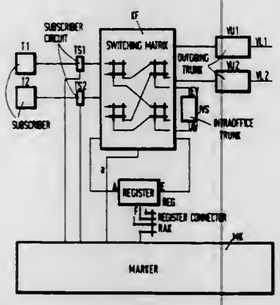


A bandwidth compression technique utilizing the statistical distribution of information on a document or other graphic display means for information transmission. Information is scanned and encoded, and by the use of an incremental tape recorder an eleven level frequency modulation tone signal can be transmitted and the desired bandwidth compression obtained.

3,502,816
CIRCUIT ARRANGEMENT PROVIDING CENTRAL CONTROL FOR TELEPHONE EXCHANGE INSTALLATIONS

Peter Gerke, Munich, Karl Rutkowski, Pullach, near Munich, and Hans Baur, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Mar. 28, 1966, Ser. No. 537,914
Claims priority, application Germany, Apr. 1, 1965, S 96,314
Int. Cl. H04m *3/42*
U.S. Cl. 179—18 4 Claims

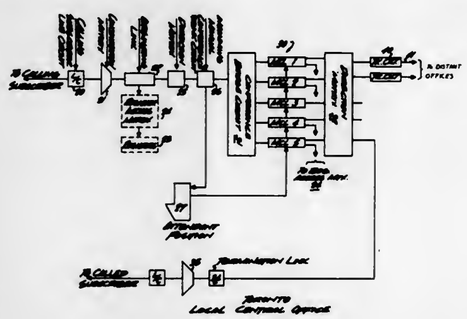


A telephone exchange system including a switching matrix or network which makes connections between calling and called subscribers through use of registers, which are then unnecessary during the continuation of the connection. Circuits such as intraoffice and outgoing trunks necessary both for completing and maintaining the connection are also connected to the subscribers over the switching matrix. So that the connection to the register may be maintained in the circuit only so long as necessary, it is first connected in series with the intraoffice or outgoing trunk and the calling subscriber, through two switch connections through the matrix. When the connection is completed, the register is released and the trunk is then connected between the subscribers over a single switch connection through the matrix.

3,502,817
MULTI-EXCHANGE CONFERENCE CIRCUIT WITH REMOTE ADD-ON

Charles T. Westerlund, Chicago, Ill., and John J. Albert, Kearny, and Michael Levine, West New York, N.J., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,591
Int. Cl. H04m *3/56*
U.S. Cl. 179—18 6 Claims

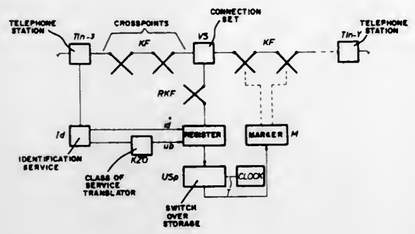


A conference circuit for use with crosspoint switching networks. The conference circuit provides a way of joining a large number of widely scattered subscribers in a conference call using paths for voice and data equipment without requiring more than one trunk between any two locations. An operator sends signals to effect add-on conference connections at remote offices.

3,502,818
CALL FORWARDING SYSTEM WITH TIMED CANCELLATION

Hoeckley Oden, Korntal, and Herbert Siegel, Munchingen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 9, 1966, Ser. No. 526,303
Claims priority, application Germany, Feb. 13, 1965, 1,240,946
Int. Cl. H04m *3/54*
U.S. Cl. 179—18 4 Claims



A system is provided which enables a party to reroute calls from his telephone to another telephone through an automatic dial system. The system also includes time comparison apparatus enabling the party to establish a time limit after which calls will be routed back through normal channels to this own instrument.

3,502,819
TELEPHONE CALL INDICATOR

Stuart D. Rogers, Tiburon, Calif., assignor to Hanna Land Company, Novato, Calif., a corporation of California

Filed Jan. 13, 1967, Ser. No. 609,180
Int. Cl. H04m *1/21*
U.S. Cl. 179—84 7 Claims

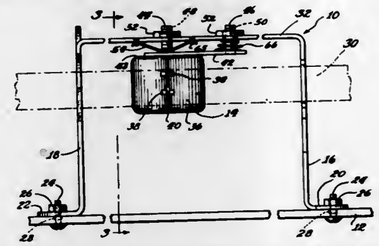


A device attachable to a telephone and containing a magnet which moves responsive to a magnetic field generated when the telephone rings. Motion dampening means prevent the magnet from moving before and after the telephone rings.

3,502,820
ADJUSTABLE MOUNTING ARRANGEMENT FOR MAGNETIC HEAD

Fred J. Zenz, Berrien Springs, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Mar. 15, 1967, Ser. No. 623,410
Int. Cl. G11b *5/48*
U.S. Cl. 179—100.2 11 Claims

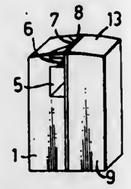


A mounting arrangement for a transducer head and the like which provides for vertical adjustment and azimuth alignment of the face of the transducer head relative to a tape disposed in sliding contacting relationship with the face of the transducer head.

3,502,821
MAGNETIC HEAD HAVING MAGNETICALLY NARROW GAP WITH WIDE GAP STRUCTURAL SUPPORT

Simon Duinker, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Original application Mar. 5, 1962, Ser. No. 177,654. Divided and this application July 9, 1965, Ser. No. 470,935
Claims priority, application Netherlands, Apr. 7, 1961, 263,324
Int. Cl. G11b *5/12*
U.S. Cl. 179—100.2 3 Claims

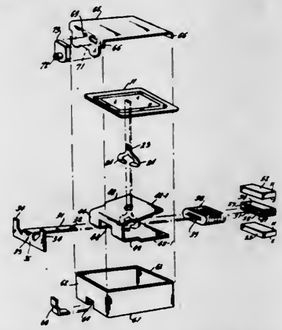


A magnetic head with grooves for narrowing one face of the gap forming faces, the grooves being glass filled as is the gap for structural support and fusion of the mating surfaces.

3,502,822
ELECTROMAGNETIC TRANSDUCER HAVING MEANS TO OPTIMALLY POSITION AN ACOUSTIC REED

Julius Sternfeld, Tarrytown, and Dimitri Sywyk and William F. Knauert, Yonkers, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Filed Mar. 23, 1967, Ser. No. 625,418
Int. Cl. H04r *13/02*
U.S. Cl. 179—114 6 Claims

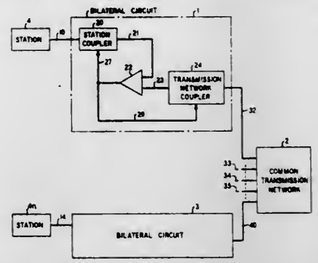


A permanent magnetic flux passes through an integrally formed U-shaped pole core having two parallel core legs with a transverse core junction at one end and an air gap at the opposite core end. A vibratory reed passes through a transducing coil and has a free reed end supported in the pole air gap by a transverse reed support sheet. This reed support sheet has two laterally spaced junctions to the exterior rear surface of the transverse core junction so that at least part of an intermediate support-sheet section is free to vibrate with the reed. An opening or recess in the nearby pole core section enables gripping deformation of the intermediate reed-support-sheet section and setting of the optimum reed transducing position in the air gap. The vibratory diaphragm is connected to the reed by a drive rod which passes through an opening of the nearby outwardly deformed core leg which is later returned to its parallel leg position.

3,502,823
HYBRIDLESS BILATERAL TRANSMISSION CIRCUIT

Wilmer B. Gaunt, Jr., Boxford, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

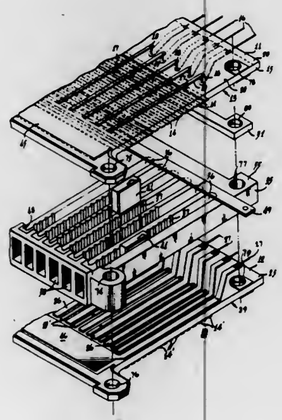
Filed Oct. 26, 1967, Ser. No. 678,352
Int. Cl. H04b *3/20*
U.S. Cl. 179—170 10 Claims



A signal transfer arrangement using hybridless bilateral transmission circuits is described which permits exchange

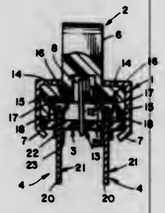
of signals between a station and the common interconnection network of a communication system. The bilateral transmission circuit includes a feedback arrangement and a plurality of attenuator networks to provide an accurate impedance match between the station and the common network. Compandor operation is realized through the selective use of nonlinear elements in the attenuator networks.

3,502,824
SLIDE SELECTOR CONTACT SWITCH WITH ORTHOGONAL U-SHAPED SPRING DETENT
Joseph Bonacquisti, Collingswood, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed May 24, 1967, Ser. No. 641,019
Int. Cl. H01h 15/02
U.S. Cl. 200—16 7 Claims



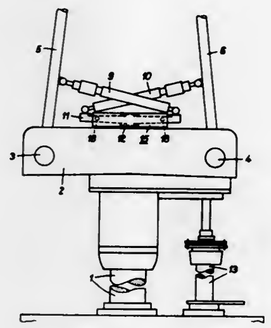
A completely captive switch is disclosed which has a positive, precise detent mechanism that can be positioned at various determined settings in a cross bar selector switch and which gives a continuous electrical impulse reading while undergoing severe shock and vibration conditions.

3,502,825
ELECTRICAL SLIDE SWITCH
James R. Bailey, Chicago, and Kurt Lutzenberger, Arlington Heights, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 4, 1968, Ser. No. 757,352
Int. Cl. H01h 15/00, 9/02
U.S. Cl. 200—16 5 Claims



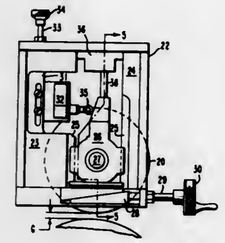
An electrical slide switch is provided in which elongated resilient means are mounted between actuator means and a base portion with a slidable conductor disposed to make electrical contact with electrical leads and being responsive for translational movement to said actuator means.

3,502,826
ICE DISRUPTING APPARATUS FOR AN ELECTRIC SCISSORS TYPE SWITCH
Harry Friebe, Winfried Oltersdorf, and Karl-Heinz Picard, Berlin, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Feb. 14, 1968, Ser. No. 705,348
Claims priority, application Germany, Feb. 24, 1967, S 108,486
Int. Cl. H01h 31/02
U.S. Cl. 200—48 8 Claims



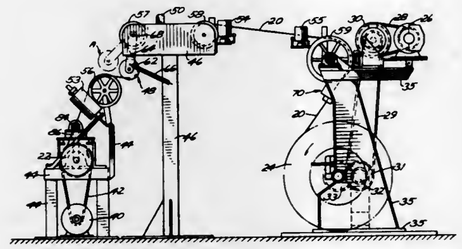
A hood of substantially U-shaped configuration covers one of a plurality of mutually coupled parts of an electric scissors type switch at a determined distance from such part. The parts of the switch are movable relative to each other. The hood is supported for limited movement relative to the part which it covers by a plurality of springs.

3,502,827
APPARATUS FOR DETECTING FOREIGN OBJECTS IN OR ON MOVING SHEETS
Franklyn C. Beebe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 2, 1968, Ser. No. 749,812
Int. Cl. B65h 25/14
U.S. Cl. 200—61.13 5 Claims



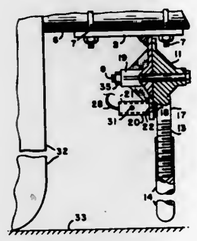
Apparatus for detecting foreign objects in or on wide moving sheets is disclosed. Two or more sheet-supporting rolls extend across the width of the sheet, a plurality of lightweight detecting rolls are positioned above the sheet-supporting rolls such that the nip between each detecting roll and its associated sheet-supporting roll is greater than the thickness of the sheet. A foreign object on the sheet will cause one or more of the detecting rolls to move upward and thereby actuate an electrical switch.

3,502,828
WIRE RESPOOLER
William G. Pestalozzi, Carlisle, Mass., assignor, by mesne assignments, to Camden Wire Company, Inc., Camden, N.Y., a corporation of New York
Filed Jan. 27, 1967, Ser. No. 612,135
Int. Cl. B65h 25/14
U.S. Cl. 200—61.18 4 Claims



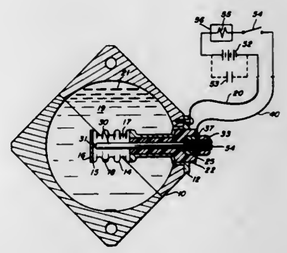
An automatic wire respooler to take twisted stranded copper wire from a pay off spool and wind it onto a take up spool. The respooler has a detecting finger which signals broken projecting strands to cause the respooler to stop so that an operator can twist in the projecting strand. A small fast response dancer arm assembly together with a motor connected to the pay off reel serve to maintain wire tension constant. The motor is connected to run as a generator when the pay off spool is rotated by the pull of the take up spool. Motor field strength is varied as a function of dancer arm position so that the amount of tension provided by the motor in combination with the wire slack take up provided by the dancer arm operate together to maintain wire tension constant. Other features include a sizing die that automatically snaps open as soon as a broken strand is detected.

3,502,829
SAFETY WARNING ALARM
Claude J. Reynolds, 620 Bundy Ave., San Jose, Calif. 95117
Filed Mar. 20, 1967, Ser. No. 624,534
Int. Cl. H01h 35/00
U.S. Cl. 200—61.24 1 Claim



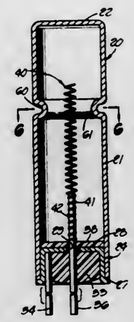
This device relates to alarm signals in general, and in particular to a warning device which communicates a signal in response to undue loss of pressure in the pneumatic tire of a vehicle. As such, it finds particular utility in trailer vehicles, where the occurrence of flat tires is not usually manifest to the driver in the towing vehicle. Not only is this situation ruinous to tires, rims and wheels, but is also a hazard to human life and body injury, and other property.

3,502,830
ACCELERATION RESPONSIVE SWITCH
Kenneth E. Pope, Litchfield Park, Ariz., assignor to UMC Industries, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 648,914, June 26, 1967. This application Jan. 27, 1969, Ser. No. 794,284
Int. Cl. H01h 35/02, 35/14
U.S. Cl. 200—61.45 6 Claims



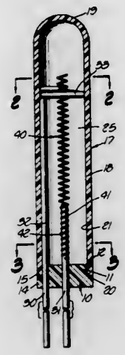
An acceleration resonsive switch utilizing a fluid-filled enclosure having a pressure sensing element supported at the center thereof. The pressure sensing element comprises a bellows that contracts upon the increase in pressure caused by the acceleration of the device; the linear displacement of one end of the bellows is translated into the closure of an electrical contact by providing an electrically conducting probe adjacent to the free end of the bellows.

3,502,831
FORCE RESPONSIVE SWITCH
Leonard H. McRoskey, 420 Loring Ave., Los Angeles, Calif. 90024
Filed Feb. 3, 1969, Ser. No. 796,041
Int. Cl. H01h 35/02, 35/14
U.S. Cl. 200—61.49 8 Claims



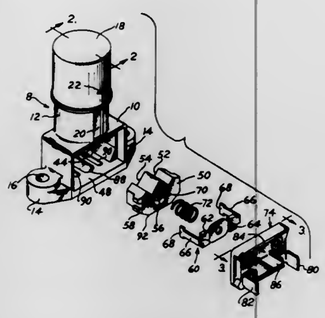
A switch which responds to the force of gravity, inertia, vibration or other forces having a ring contact and a pendulous contact consisting of a tightly wound helix and movable in response to such force or forces, into or out of engagement with said ring contact in order to complete or break an electric circuit.

3,502,832
FORCE RESPONSIVE SWITCH
Leonard H. McRoskey, 420 Loring Ave., Los Angeles, Calif. 90024
Filed Feb. 3, 1969, Ser. No. 796,042
Int. Cl. H01h *35/02, 35/14*
U.S. Cl. 200—61.49 **5 Claims**



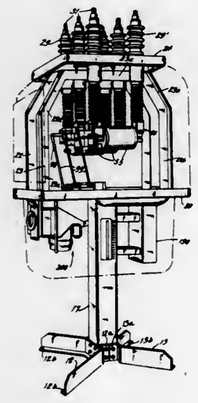
My invention consists of a force responsive switch having a dielectric envelope and a dielectric base providing an argon filled chamber, the chamber enclosing a ring contact engaging the envelope and having an electrode extending to the exterior of said chamber, and a resilient elongated pendulous contact extending through the ring and supported by the base, said pendulous contact having an electrode extending to the exterior of said chamber.

3,502,833
FOOT DIMMER SWITCH
Ralph Rossini, St. Clair Shores, and Dragan Bogovican, Detroit, Mich., assignors to Essex International, Inc., a corporation of Michigan
Filed Apr. 9, 1968, Ser. No. 719,987
Int. Cl. H01h *3/14*
U.S. Cl. 200—86.5 **11 Claims**



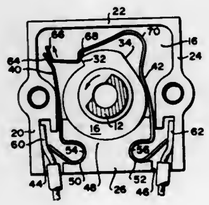
A foot dimmer switch includes a housing which carries a rocker mounted upon a pintle integrally formed in the housing. A contact member is carried upon the rocker and selectively engages different ones of a plurality of contacts when the rocker is pivoted into a first or a second position, respectively. The rocker includes a pair of notches which are adapted to be engaged by an actuating pin to move the rocker between the positions. The actuating pin is normally spring urged out of engagement with the notches, the spring being overcome by the foot of the operator. A pivot rib is disposed vertically beneath the pintle and also provides a fulcrum about which the rocker pivots, preventing the inoperability of the switch in the event of breakage of the pintle.

3,502,834
VACUUM RECLOSER HAVING LIGHTWEIGHT, RUGGED SKELETAL HOUSING
Everett J. Field, Jeannette, and Arthur S. Caswell and Eugene Gorin, Greensburg, Pa., assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,700
Int. Cl. H01h *9/30*
U.S. Cl. 200—144 **6 Claims**



A vacuum recloser device for multiphase systems including individual vacuum interrupters for each of the phases being protected and a skeletal housing for the device which is lightweight, yet sufficiently rugged to withstand all operating and environmental requirements.

3,502,835
MOMENTARY ELECTRIC SWITCH FOR GAS RANGE BURNER
Kent J. Batcheller, Westwood, Mass., assignor to Joseph Pollak Corporation, Dorchester, Mass., a corporation of Massachusetts
Filed Nov. 16, 1967, Ser. No. 683,588
Int. Cl. H01h *3/32, 3/42*
U.S. Cl. 200—154 **1 Claim**



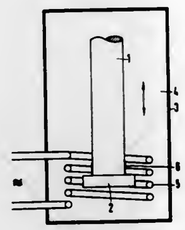
An electric switch is made with two resilient contact elements which are pressed together momentarily by a cam disk when the disk is turned in one direction but not when the disk is turned in the reverse direction. The disk is mounted on the shaft of a gas valve which opens when the shaft is turned part of a revolution in one direction, and is closed when the shaft is turned back in the other direction.

3,502,836
ELECTRICAL RIVET CONTACT
Lee A. Woolley, Kokomo, Ind., assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio
Original application Oct. 14, 1966, Ser. No. 586,846, now Patent No. 3,432,925, dated Mar. 18, 1969. Divided and this application Oct. 11, 1968, Ser. No. 766,914
Int. Cl. H01h *1/06*
U.S. Cl. 200—166 **1 Claim**



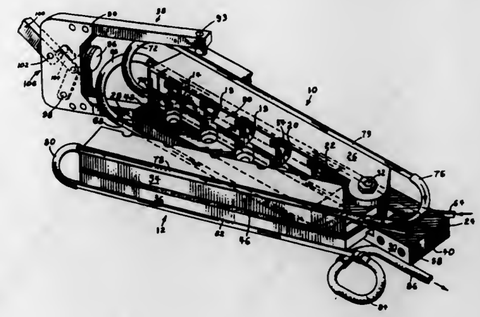
An electrical contact, formed as a tubular rivet, has its tubular end received in an anvil and supported therein so that on subsequent squashing, the central portion of the rivet shank is expanded to fill the aperture in the contact blade and surplus material is radially extruded between the element and the anvil, such radial cold flow being limited and restricted by such reception of the end of the rivet within a slightly larger opening in the anvil to form a shoulder that has a cylindrical surface slightly larger than the original shank diameter and having a length between .001 and .005 inch. Such length is established by arresting of a pilot rod that is movable into the anvil to provide a circular pocket between .001 and .005 deep at the anvil surface which receives the tubular shank.

3,502,837
METHOD OF PRODUCING A SOLDER-FREE GAS-TIGHT JOINT, AND JOINT PRODUCED THEREBY
Martin Peehs, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 16, 1967, Ser. No. 609,665
Claims priority, application Germany, Jan. 14, 1966, S 101,451
Int. Cl. B23k *13/00*
U.S. Cl. 219—9.5 **1 Claim**



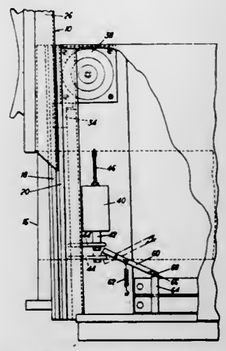
Method of joining metal and ceramic members which comprises pyrolytically coating the ceramic member with metal by heating the ceramic member in an atmosphere of a vaporous pyrolitically decomposable compound of the metal to a temperature at which the metal precipitates on the ceramic member, displacing the metal-coated ceramic member relative to an induction coil acting as the heat source so as to form eddy currents in the metal coating further heating the ceramic member and further spreading the metal coating thereon. The metal-coated ceramic member is then joined to other metal members by a diffusion-welding process.

3,502,838
MULTIPLE STATION BRAZING DEVICE
Masashi Hayase, Fountain Valley, and Norman F. Robinson, Manhattan Beach, Calif., assignors to McDonnell Douglas Corporation, a corporation of Maryland
Filed July 24, 1967, Ser. No. 655,500
Int. Cl. B23k *13/00*
U.S. Cl. 219—9.5 **9 Claims**



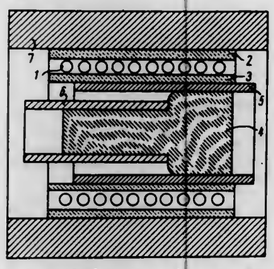
A multiple station brazing tool to facilitate the production of brazed tube connections, capable of brazing several connections at once. Inert gas shields, RF energy and chill blocks are used as in their co-pending application.

3,502,839
DIELECTRIC HEATING APPARATUS
Christopher Evan Mundell Tibbs, Wokingham, England, assignor to Dysona Industries Limited, Wokingham, Berkshire, England, a British company
Filed Apr. 12, 1968, Ser. No. 720,961
Claims priority, application Great Britain, Apr. 18, 1967, 17,817/67, 17,818/67; Apr. 24, 1967, 18,798/67; May 18, 1967, 23,090/67; July 24, 1967, 33,878/67, 33,880/67; Aug. 1, 1967, 35,245/67, 35,246/67; Oct. 11, 1967, 46,436/67
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.55 **14 Claims**



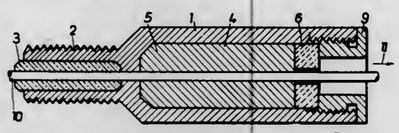
A microwave oven has a vertically sliding door and has door guides formed to wedge the door towards the oven face in the final portion of its closing movement to reduce the escape of R.F. energy. At the end of a heating cycle, a solenoid is energised to overcome the friction due to the wedging and any other forces holding the door closed but the solenoid lifts the door through only a small part of its upward travel after which a counterbalancing spring completes the door opening movement. The door has some freedom of movement in relation to the counterbalancing spring to ensure that the termination of its upward movement is not abrupt.

3,502,840
DEVICE FOR MAGNETIC-AND-PULSE WORKING OF METALS WITH PRESSURE
Konstantin Konstantinovich Khrenov, ul. Cheljuskintsev, 15, kv. 11; Vyacheslav Andreevich Chudakov, ul. Bolnichnaya, 14, kv. 2; and Valentin Ivanovich Balakin, ul. Vernadskogo, 61, kv. 6/1, all of Kiev, U.S.S.R.
Filed Oct. 28, 1968, Ser. No. 771,124
Int. Cl. H05b *9/02, 5/00*
U.S. Cl. 219—10.79 **3 Claims**



For welding two tubular parts in concentric relation, the parts are encircled by an insulated coil which is, in turn, encircled by a housing of electrically conductive material. The current generated in the housing functions to provide a reaction with the inductive field of the coil which opposes the reaction of said field with the current in said parts. This preserves the coil.

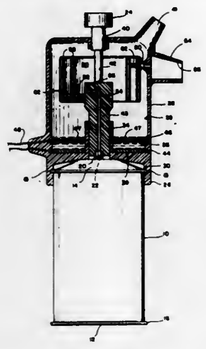
3,502,841
DEVICE FOR GUIDING AND SUPPLYING CURRENT TO A FUSIBLE FILLER WIRE IN A SHIELDING INERT GAS METAL ARC WELDING PROCESS
Jakob C. Heer, Ruti Zurich, Switzerland
Filed June 14, 1965, Ser. No. 463,716
Claims priority, application Switzerland, June 26, 1964, 8,372/64; Feb. 17, 1965, 2,137/65, 2,138/65
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 **5 Claims**



A device for guiding and supplying current to a fusible filler wire in arc welding process shielded by inert gas, comprising a guide nipple, a conducting insert in the guide nipple, an insulator insert and a receiving head which carries the guide nipple and insulator insert. The receiving head and guide nipple form a compact body and are formed from sintered material sintered around the inserts or alternatively, the insulator insert can be press-fit or deposited in the receiving head and the conducting insert can be mechanically located in the guide nipple. The mechanical means for securing the conducting insert could be a press-fit, an abutting cap with an insulator ring interposed between the cap and the insert, a screw connection, or a spring clamp.

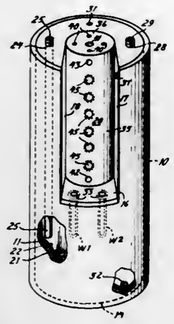
3,502,842
HEATER FOR AEROSOL FOAM DISPENSING CONTAINERS
John B. Day, Columbus, Ohio, assignor to Carter-Wallace, Inc., New York, N.Y., a corporation of Maryland
Filed Feb. 13, 1968, Ser. No. 705,171
Int. Cl. B67d *5/62;* **F24h** *1/20;* **H05b** *3/60*
U.S. Cl. 219—302 **4 Claims**

A device is provided for heating foam products as they are discharged from aerosol containers. The device rapidly heats foam products, such as foam shaving lather, by passing the foam in heat transfer relationship with a supply of steam. The device includes a reservoir for holding a supply of water and a pair of spaced electrical conductors carrying an electrical potential that are in



contact with the water. The resistance of the water to the flow of electrical energy through it heats the water and produces the steam which is used to raise the temperature of the foam substantially above room temperature as the foam is discharged from the container.

3,502,843
ELECTRIC WATER HEATING UNIT
Chester Lewis Stryer, Box 271, Emmaus, Pa. 18049
Filed Sept. 30, 1968, Ser. No. 763,529
Int. Cl. F24h *1/18;* **H05b** *1/00*
U.S. Cl. 219—312 **4 Claims**

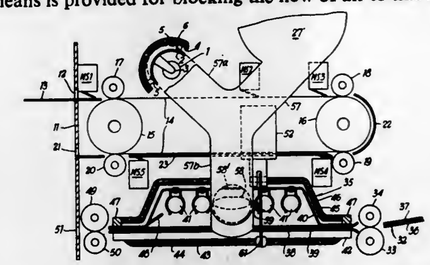


An electric water heating unit with two boilers, one nested within the other, and providing hot water for heating a space and domestic hot water for washing and other purposes. Electrical supply and control units provide complete automatic regulation of the water temperature.

3,502,844
HEAT SHIELD ARRANGEMENTS FOR REPROGRAPHIC APPARATUS
Louis Frederick William Lawes, Walton-on-Thames, and Nicholas Gilbert Shreeve and Nandor Mihalik, Weybridge, England, assignors to Arlside Limited, Maidenhead, Berkshire, England, a British company
Filed May 12, 1966, Ser. No. 549,606
Claims priority, application Great Britain, May 13, 1965, 20,247/65
Int. Cl. H05b *3/02*
U.S. Cl. 219—343 **4 Claims**

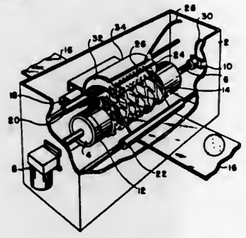
In a reprographic-apparatus image-fusing device comprising a radiant heat source and a support plate for supporting an image-carrying sheet during transport

thereof past said source to fuse and fix such image, a backing shield is provided behind the reflector and spaced therefrom and air blowing means is arranged to supply air to and through such space thereby to minimize transfer of heat to the backing shield. The air blowing means also supplies air to and through a space between the source and the support plate, and selectively actuated damper means is provided for blocking the flow of air to this latter



space while permitting air to flow through the space between the reflector and the backing shield. Preferably a further plate is provided, spaced from the support plate on the side thereof remote from the source, and this further plate and the backing shield are provided, on their sides remote from the support plate and the reflector respectively, with respective layers of thermally insulating material, which may be expanded polystyrene.

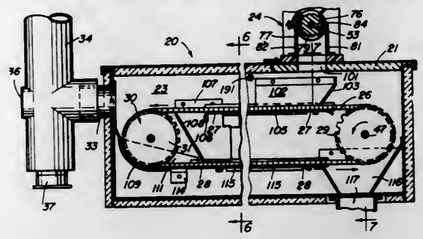
3,502,845
APPARATUS FOR PERFORATING FILM BY ELECTRICAL DISCHARGE
Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Application June 27, 1967, Ser. No. 662,229, now Patent No. 3,435,190, dated Mar. 25, 1969, which in turn was a division of application Ser. No. 392,168, Aug. 26, 1964. Divided and this application June 11, 1968, Ser. No. 766,339
Int. Cl. H05b *7/18*
U.S. Cl. 219—384 **2 Claims**



An apparatus for perforating a film of dielectric material which comprises a fixed charging electrode and a rotatable grounded electrode spaced apart each from the other, a source of current sufficient to produce a corona between said electrodes, and means for passing the film through the corona. A discontinuous dielectric material about the grounded electrode and means for rotating said grounded electrode.

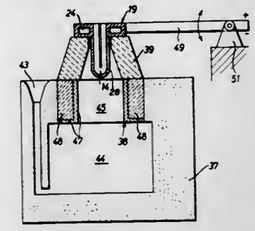
3,502,846
SMOKE GENERATOR
Samuel R. Porwancher, Chicago, Ill., assignor to Michigan Oven Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 9, 1965, Ser. No. 478,303
Int. Cl. F27b *9/02, 9/04, 9/06*
U.S. Cl. 219—388 **8 Claims**

A dry smoke generator for food processing applications in which sawdust is deposited into a multiple open cell conveyor at one end of a heated bed plate mounted within an enclosed smoke generation chamber. The conveyor drags the sawdust across the bed plate and the sawdust falls through the end portion of the conveyor onto another run of the same conveyor extending across



a second bed plate in the same enclosure. At the end of the second bed plate, the remaining waste product from the sawdust is discharged from the chamber. Inlet and outlet valves are used to maintain an oxygen-starved atmosphere, within the smoke generation chamber.

3,502,847
APPARATUS FOR HEATING THE HEADS OF INGOT MOULDS OR THE GATES OF CASTING MOULDS
Otto Helde, Hagener Strasse 132c, Ennepetal-Verneis, Germany
Filed Sept. 18, 1968, Ser. No. 760,525
Claims priority, application Germany, Sept. 19, 1967, 1,583,641
Int. Cl. F27b *14/06, 14/14*
U.S. Cl. 219—426 **20 Claims**

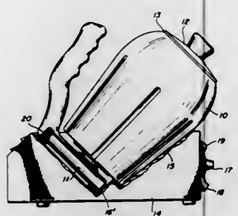


An apparatus for heating the heads of ingot moulds or the gates of casting moulds comprises a tubular feeding jacket for fixing in the head or gate, a ceramic or ceramic lined heating hood on top of the feeding jacket, and an electrical heating element which projects into the heating hood and which is supported by a contact ring for supplying electric current to the heating element. In use, metal is poured into the mould so that it fills the mould and the feeding jacket. The heat from the heating element maintains the metal in the feeding jacket liquid while the metal in the mould solidifies, so that, as the metal in the mould solidifies and shrinks, liquid metal from the feeding jacket flows down into the mould to compensate for the shrinkage.

3,502,848
SELF-STIRRING COOKER AND SERVER APPARATUS
William M. Fink, 1202 E. Orchid Lane, Phoenix, Ariz. 85020
Filed Nov. 15, 1968, Ser. No. 776,033
Int. Cl. F27d *11/02;* **B01f** *9/08*
U.S. Cl. 219—432 **1 Claim**

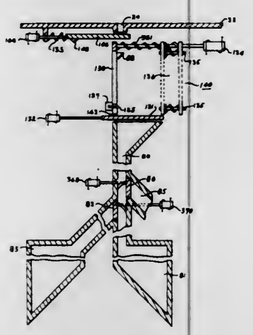
A combination cooking, stirring and serving apparatus for preparing gravies, soups, and the like, which includes a combination cooking and serving receptacle of

circular cross-section, a detachable handle assembly forming a stand for the receptacle during serving and forming a part of the stirring apparatus during cooking, and



a cooking-stirring stand which includes heating elements embedded in a concave surface upon which the receptacle rests during cooking, and a motor for rotating the receptacle to stir the contents thereof during cooking.

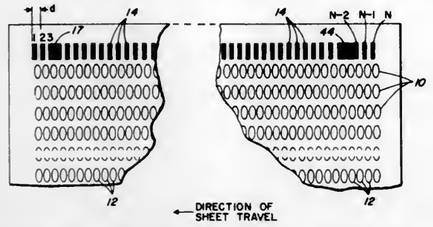
3,502,849
DEVICE FOR COUNTING VOTES
Leo F. Malloy, 1843 Fremont, Chicago, Ill. 60614
Continuation-in-part of application Ser. No. 175,444, Feb. 26, 1962. This application Apr. 13, 1965, Ser. No. 447,648
Int. Cl. G06k *17/00;* **G07c** *13/00*
U.S. Cl. 235—61.6 **3 Claims**



An electrical machine for counting votes utilizing punch card type ballots having an electrical input means, a multiposition switch, a write-in relay connected to one position of the multiposition switch. A party check circuit is included in the machine connected to a second position in the multiposition switch, and a counter and resistor are connected to the switch of the input means and a validity check circuit is connected to the resistor.

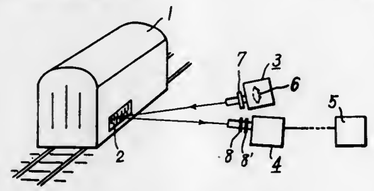
3,502,850
DATA SENSING SYSTEM FOR A DOCUMENT SCANNER
Everet F. Lindquist, 1012 Highwood Drive, and George E. Carsner, 411 Terrace Road, both of Iowa City, Iowa 52240
Filed May 25, 1967, Ser. No. 641,281
Int. Cl. G06k *7/10, 19/00;* **G01n** *21/30*
U.S. Cl. 235—61.11 **8 Claims**

An improved data sensing system for a document scanner, which system will generate timing pulses as substitutes for pulses that are normally generated by timing marks on the document but which are not generated



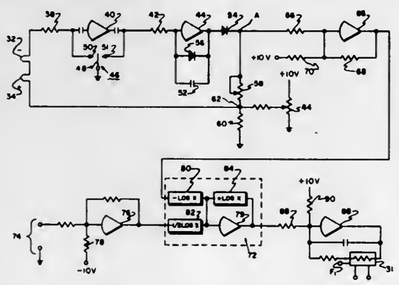
because the timing marks are bridged or otherwise fail to generate the proper timing pulses.

3,502,851
METHOD OF IDENTIFYING A ROLLING STOCK AND A DEVICE THEREFOR
Jiro Kakimoto, Tachikawa, Tokyo, and Kanehiko Murata, Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan
Filed May 26, 1965, Ser. No. 459,063
Claims priority, application Japan, June 1, 1964, 39/30,837; June 24, 1964, 39/49,697
Int. Cl. G06k *19/00, 21/00*
U.S. Cl. 235—61.12 **6 Claims**



A method for automatically identifying a moving object in which use is made of a code plate having a plurality of parallel coded fluorescent substance patterns located above and below the horizontal center line of the plate and extending partly into the opposite side of the plate defined by the horizontal center line.

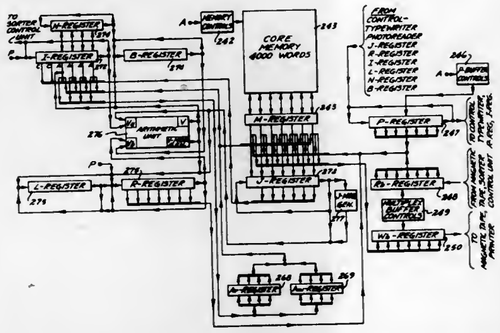
3,502,852
CONTROL COMPUTER FOR A FRACTIONATION COLUMN
Lloyd G. Lewis, La Grange, Ill., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 102,914, Mar. 16, 1961. This application Apr. 15, 1966, Ser. No. 549,105
Int. Cl. G06g *7/58, 7/32;* **B01d** *3/42*
U.S. Cl. 235—151.12 **7 Claims**



An improved control computer for a fractionation column is disclosed having provision for introducing a factor

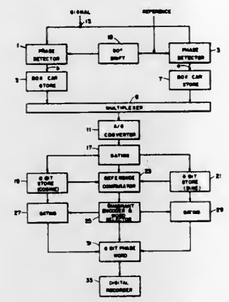
representing the difference between the dew point of the overhead vapor and the bubble point of the condensed overhead vapor.

3,502,853
DATA PROCESSING SYSTEM
Henry L. Herold, Palo Alto, Calif., and David W. Masters, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Original application Feb. 12, 1960, Ser. No. 8,392, now Patent No. 3,383,660, dated May 14, 1968. Divided and this application Aug. 5, 1966, Ser. No. 611,182
Int. Cl. H03k *13/32;* **G06f** *11/00*
U.S. Cl. 235—153 **9 Claims**



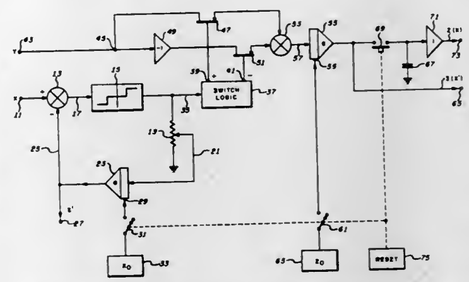
A data processing system for processing numeric and alphanumeric data, wherein when arithmetic operations are performed on numeric data the accuracy of the arithmetic result is verified, but wherein if an attempt is made to perform an arithmetic operation on alphanumeric data an alarm signal issues automatically to warn the system.

3,502,854
PHASE RECORDING SYSTEM
Bernard L. Harris and John W. Taylor, Jr., Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army
Continuation-in-part of application Ser. No. 405,306, Oct. 20, 1964. This application Mar. 14, 1969, Ser. No. 814,494
Int. Cl. H03k *13/02*
U.S. Cl. 235—154 **15 Claims**



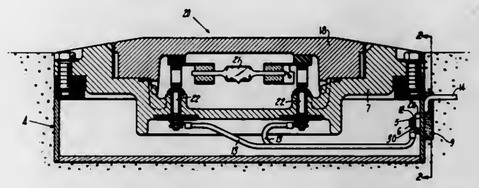
This invention relates to the recording of phase data of radar echoes or signals of a similar nature. The present invention uses two phase detector outputs which are compared to determine which is closest to a reference level. The data of that one is selected for recording, while the data from the other one furnishes information on quadrant and dictates the data processing required before recording.

3,502,855
DIFFERENTIAL ANALYZER WITH VARIABLE INTEGRATION LIMITS
Richard E. Andeen, Phoenix, and Sam P. Lidén, Tempe, Ariz., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed June 6, 1967, Ser. No. 643,988
Int. Cl. G06g *7/18*
U.S. Cl. 235—183 **10 Claims**



Analog integration of a variable represented by a first voltage, with respect to an independent variable represented by a second voltage, is achieved by applying the second voltage to a follow-up loop comprising a first time integrator, a threshold circuit, and a summing junction. The output of the loop constitutes a control voltage proportional to the rate-of-change of the independent variable. The control voltage is applied to a switching circuit which chops the first voltage into pulses having amplitudes proportional to the magnitude of the first voltage and durations proportional to the rate-of-change of the second voltage. These are summed in a second time integrator whose output represents the output of the integrator of the invention. A periodic reset means provides repeated computation of the output to eliminate errors and to allow multiplexing.

3,502,856
HERMETICALLY SEALED LIGHT FIXTURE INSET IN A ROADWAY
William C. Daley, Suffield, Conn., assignor, by mesne assignments, to Structural Electric Products Corp., a corporation of Connecticut
Filed July 27, 1967, Ser. No. 656,455
Int. Cl. B64f *1/20;* **H01b** *17/30*
U.S. Cl. 240—1.2 **4 Claims**

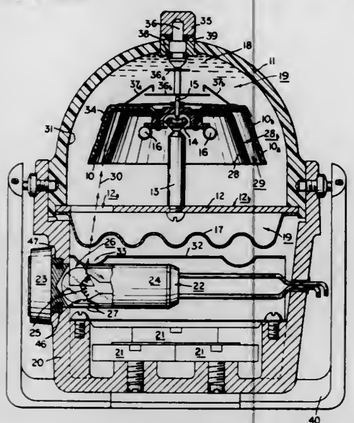


A hermetically sealed light fixture for recessed installation in a roadway, includes a casing and electrical leadthroughs therefor with each lead-through having a flanged or headed conductive core and an externally threaded sealing and insulating sheath molded over the core and flange. Each lead-through is threaded in a threaded aperture in the casing and compresses the sheath into sealing engagement with the casing. The core has inner and outer terminals to removably connect electrical leads thereto and the outer lead connection is potted-in-place to seal the same relative to the lead-through and to the casing.

3,502,857
MAGNETIC COMPASS

Donald S. Cleveland, 10 Museum Road, Beverly, Mass. 01915, and Victor J. Zalanskas, 311 Lynnfield St., Peabody, Mass. 01960

Filed Nov. 13, 1967, Ser. No. 682,272
Int. Cl. G01c *17/08;* G01d *11/28;* G09f *9/00*
U.S. Cl. 240—2.1 6 Claims

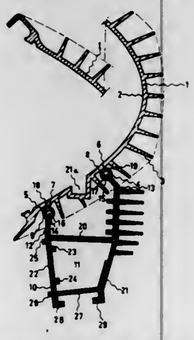


A magnetic compass comprising a housing having a transparent cover and a dial member made of transparent material with indicia thereon mounted within the housing. A light source mounted within the housing behind the dial member and a masking plate having a dull non-reflective surface on the side confronting the dial member positioned between the light source and the dial member. The masking plate has a small light-transmitting portion therethrough so light from the light source will illuminate the dial member. A light-transmitting diaphragm member is positioned between the masking plate and the dial member forming a liquid-tight enclosure for the transparent liquid surrounding the dial member. The light source is mounted within a removable opaque cylindrical cartridge having a knob at one end and at least one small light transmitting portion therein.

3,502,858
SPOTLIGHTS

Bertil Håbro, Lidingo, and Harry Tryssing, Alvsjo, Sweden, assignors to Aktiebolaget Deltaljus, Stockholm, Sweden, a corporation of Sweden

Filed May 18, 1966, Ser. No. 551,122
Claims priority, application Sweden, May 26, 1965, 6,981/65
Int. Cl. F21p *5/00;* F21v *29/00*
U.S. Cl. 240—3 3 Claims

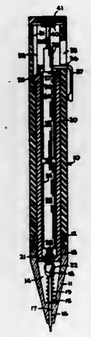


A spotlight housing with a longitudinally extruded reflector mantle, which can be made of one or more pieces, a longitudinally extruded junction box handle piece interlocked by extruded interlocking tongue and groove fittings to mating tongue and groove fittings on the mantle. Cooling fins extend longitudinally in the extruded direction on both the mantle piece and the junction handle. End gables are used to close the open ends of the extruded mantle and the extruded junction handle.

3,502,859
WRITING AND LIGHTING INSTRUMENT DEVICE

George Kochan, R.F.D. 2, Carbondale, Ill. 62901

Filed Jan. 18, 1968, Ser. No. 698,798
Int. Cl. B43k *29/10;* F21v *33/00*
U.S. Cl. 240—6.46 4 Claims

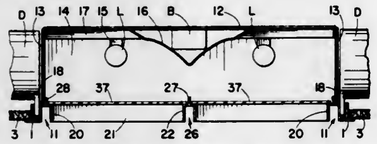


A retractable ball point pen having a self-contained light source comprising a clip switch movable both longitudinally and transversely of the pen length, a conductive battery casing slideably mounted inside the pen barrel, and a guideway in the pen barrel coacting with a flange on the battery casing to restrict movement of the casing to up and down motion. To use the pen the clip is moved downward, thereby exposing the ball point, and turned clockwise for daytime use or counterclockwise, completing the electrical connection with the battery casing and the batteries, for nighttime use.

3,502,860
LUMINAIRE

Gerard Edmund Mulvey, 36 Castle Frank Road, and George Elliott Boake, 6 Maple Ave., both of Toronto, Ontario, Canada

Filed Dec. 4, 1967, Ser. No. 687,698
Int. Cl. F21s *3/14, 3/08*
U.S. Cl. 240—9 8 Claims



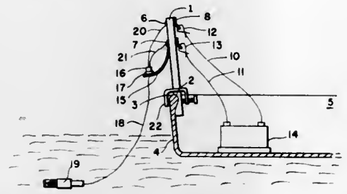
A luminaire of the type usually employed in false ceilings in which the lenses may be recessed with relation to the plane of the ceiling to provide an improved and more attractive appearance, and in which the depth of the troffer boxes is substantially reduced without impairing the efficiency of the operation of the fluorescent lamps inside. The lenses are of substantially greater area, and therefore a reduced brightness, may be employed without the development of unsightly dark patches in the lenses. The luminaires may be associated with air handling facilities or may be employed without any apparent change to

the naked eye. The luminaires essentially comprise a basic troffer box assembly of certain predetermined lengths, width and depth in relation to the length, and number, of the lamps themself. The troffer boxes are associated with separate supporting frames to which they are attached by a concealed flange. The frames are adapted to incorporate the air handling facilities in an advantageous manner.

3,502,861
FISHING LIGHT

William R. Evans, 1817 Overbrook, Tyler, Tex. 75701

Filed Jan. 30, 1967, Ser. No. 612,706
Int. Cl. F21v *21/00, 31/00*
U.S. Cl. 240—26 6 Claims

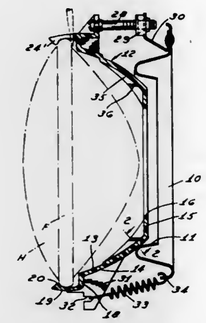


A post is mounted vertically upon the stern of a boat by a U-shaped mounting member having a shorter leg connected to the post and longer leg positioned against the inner surface of the stern. A flexible cable extends from the lower end of the post and has a water-tight sealed light on its end to trail freely in the water.

3,502,862
MOUNTING OF SEALED BEAM HEADLAMPS

Peter Hedgewick, Windsor, Ontario, Canada, and Jay E. White, Jr., Bloomfield Hills, Mich., assignors to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Ontario

Filed June 29, 1967, Ser. No. 649,914
Int. Cl. F21v *17/00, 7/00*
U.S. Cl. 240—41.5 31 Claims

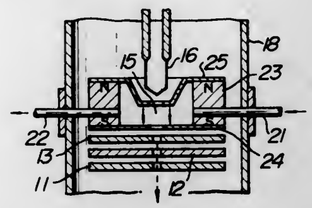


An automobile adjustable headlamp mounting having a one-piece plastic housing comprising a relatively thin annular spherical wall with a frusto-spherical inner surface and a frusto-spherical outer surface for engaging an opening in a mounting bracket. A peripheral rim on the annular wall has a radially inwardly extending bead for engaging the flange of a sealed beam headlamp. The housing has integral spring tabs on the wall radially inwardly of the rim for engaging the flange of the headlamp to hold the latter in the housing between the bead and the spring tabs. Circumferentially positioned integral mounting brackets are located on the annular wall.

3,502,863
ELECTRON BOMBARDMENT TYPE ION SOURCE WITH PERMANENT MAGNET FOCUSING MEANS THEREIN

Hitoshi Tsuyama, Kodaira-shi, Hiroshi Hirose, Katsutashi, and Hirokazu Kimura, Koganei-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Aug. 2, 1967, Ser. No. 657,972
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 4 Claims

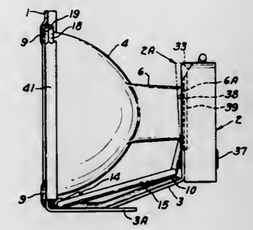


An ion source of electron bombardment type having permanent magnets fitted in one portion of the ionization chamber to increase the density of the electron beam, removing the large solenoid coil used in the prior art. The influence of the magnetic field on the orbit of ions is eliminated, increasing the ion yield without decreasing the resolving power. Various attachments such as a gas introducing pipe, a gas exhausting pipe and the direct introduction system can be attached to the circumference of the evacuated tube so that the pressure of a sample gas in the ionization chamber is raised making the ion intensity 10 to 100 times as large as that of the prior art.

3,502,864
RIM-REFERENCING LAMP-HOLDER AND PROJECTION LAMP WITH REFLECTOR

Donald M. Wagner, Warrensville Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Jan. 11, 1968, Ser. No. 697,200
Int. Cl. F21v *21/08*
U.S. Cl. 240—52 8 Claims



A rim-referencing lamp-holder is provided in combination with a compact incandescent lamp which is rigidly mounted within a concave light-concentrating reflector. The lamp-holder has a faceplate, socket, and a resilient portion connecting the two so that the lamp in its reflector can be firmly positioned in relation to the faceplate by means of pressure applied to the base of the reflector. A flange on the rim of the reflector fits into an annular recess in the faceplate. The socket portion of the lamp-holder is designed to permit the two contact pins of the lamp to slide transversely into a slot, one after the other, to provide positive electrical contact between the socket and the lamp and control the orientation of the lamp within the lamp-holder so that accurate mounting

of the lamp-holder will control the position of the lamp relative to the projection system in which it is to be used. The faceplate and slot lock onto the lamp to maintain a constant axial and angular alignment of the lamp and reflector in the lamp-holder.

Also provided for such lamp-holder and lamp system is a lamp ejector means such as a lever with two operating portions. As the lever is moved forward, its first operating portion disengages the reflector from the faceplate of the lamp-holder, and then the second operating portion of the lever contacts the base portion of the reflector and moves the lamp away from the electrical contacts in the socket so that it can be readily taken from there by hand.

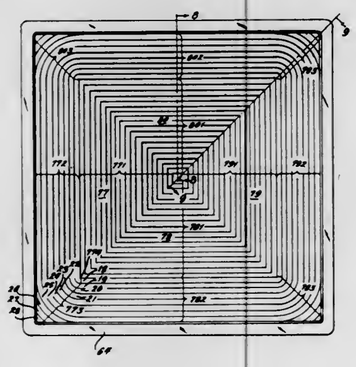
The combination of the present invention is particularly suited for use as a light source for projecting images such as motion pictures.

3,502,865

LUMINAIRE

Arthur W. Matteson, Webster Groves, Mo., assignor to The Edwin F. Guth Company, St. Louis, Mo., a corporation of Missouri

Filed July 13, 1967, Ser. No. 656,625
Int. Cl. F21s *1/06, 3/06;* **F21v** *13/04*
U.S. Cl. 240—78 **7 Claims**



A lens-reflector combination produces a square light pattern of uniform intensity from a conventional electric bulb. A pyramidal reflector has a substantially square base and is coordinated with the bulb and a prismatic lens so that light incident upon the pyramidal sides of the reflector adjacent its corners is reflected into the corner areas of the lens and refracted there into the corners of the square light pattern. The lens is composed of a plurality of prisms set at right angles to each other thereby forming a square.

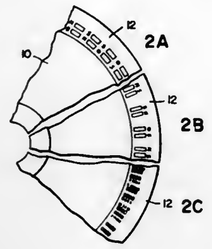
3,502,866

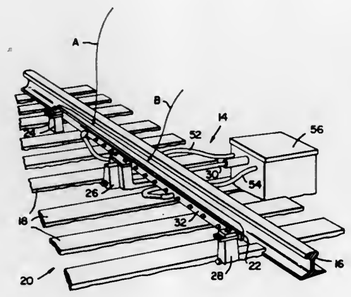
APPARATUS FOR MARKING RAILROAD WHEELS AND DETECTING SUCH MARKING

Benjamin F. Biaggini, 1170 Sacramento St., San Francisco, Calif. 94108

Filed July 24, 1967, Ser. No. 655,594
Int. Cl. B61l *27/00, 3/12*
U.S. Cl. 246—2 **1 Claim**

Apparatus for marking a magnetically permeable railroad wheel on a track and detecting that marking which includes a series of electromagnets placed at trackside adjacent the path of the travel of the wheel on the track, each electromagnet thereby impressing magnetism on a portion of the railroad wheel, each electromagnet being variable in polarity so that the resulting polarity of





each portion rendered magnetic can be chosen, and sensing means for detecting the presence and polarity of each magnetic portion of the railroad wheel.

ERRATUM

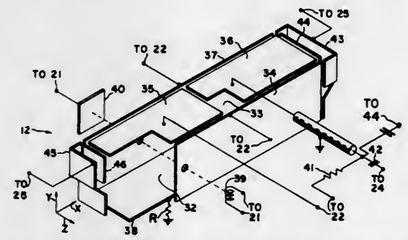
For Class 250—41.9 see:
Patent No. 3,502,863

3,502,867

METHOD AND APPARATUS FOR MEASURING ION INTERRELATIONSHIPS BY DOUBLE RESONANCE MASS SPECTROSCOPY

Jesse L. Beauchamp, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 1, 1966, Ser. No. 569,277
H01j *39/34*
U.S. Cl. 250—41.9 **10 Claims**



A double resonance mass spectroscopy method and apparatus wherein two radio frequency electric fields are simultaneously applied to a mixture of ionized particles passing through the apparatus so as to excite to resonance certain ones of said particles and enable the detection thereof. Additionally, one of said electric fields is modulated so that the ion-molecular coupling or other interrelationship between the resonant particles can be

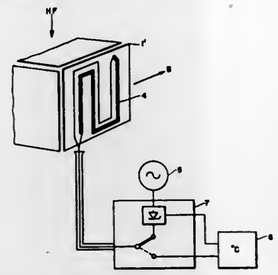
determined as a result of the effect produced in one type of particle by the modulation of the field which excites the other type of particle.

3,502,868

MASS SPECTROMETER METHOD AND TUBE FOR EQUALIZING CONTACT POTENTIALS OF TUBE ELECTRODES DURING OPERATION THEREOF BY DIRECT HEATING

Horst Gentsch, Hannover, Germany, assignor, by mesne assignments, to Leybold-Heraeus G.m.b.H. & Co. KG, Cologne-Bayenthal, Germany

Filed Sept. 27, 1967, Ser. No. 670,854
Claims priority, application Germany, Oct. 7, 1966, L 54,754
Int. Cl. B01d *59/46;* **H01j** *39/36*
U.S. Cl. 250—41.9 **13 Claims**



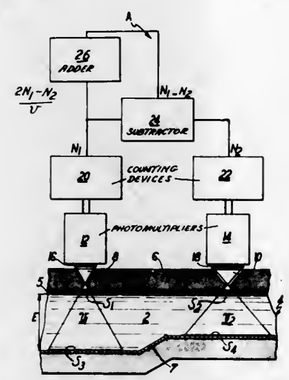
A mass spectrometer tube, which operates according to the omegatron principle, having apparatus for approximately uniformly heating all its electrodes. The apparatus is operative, for example, to bake out platinum-iridium electrodes prior to the process of measurement at about 600° C., and maintain the electrodes, during the process of measurement, at 150° C.

3,502,869

DEVICE FOR THE CONTINUOUS AND AUTOMATIC MEASUREMENT OF GAMMA-RAY EMISSION OF A SOLUTION

Pierre Patigny, Cherbourg, France, assignor to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 23, 1967, Ser. No. 625,348
Claims priority, application France, Apr. 5, 1966, 56,560
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **1 Claim**



A method of measurement of the gamma-ray emission of a radioactive solution which consists in placing outside a cell two photomultiplier units which see respectively two volumes v_1 and v_2 of liquid which are in a known ratio ρ_1 and contaminated surfaces having different areas s_1 and s_2 in a ratio ρ_2 which is also known and different from ρ_1, in measuring the activity of the liquid by means of the two photomultiplier units and in deducing therefrom the activity of the liquid per unit volume by applying the relation:

$$A_u = \left(\frac{1}{v_1}\right) \frac{N_1 - \rho_2 N_2}{\rho_1 - \rho_2}$$

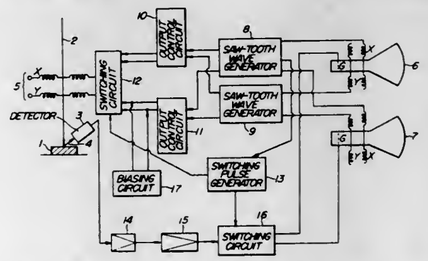
and a device for carrying out the method.

3,502,870

APPARATUS FOR SIMULTANEOUSLY DISPLAYING A PLURALITY OF IMAGES OF AN OBJECT BEING ANALYZED IN AN ELECTRON BEAM DEVICE

Tatsuo Fujiyasu, Koichi Hara, and Masahiro Gotou, Ibaraki, and Takashi Nagatani, Nagoya, Japan, assignors to Hitachi, Ltd., Chujody-ku, Tokyo, Japan, a corporation of Japan

Filed July 5, 1968, Ser. No. 742,894
Claims priority, application Japan, July 5, 1967, 42/42,790, 42/42,792
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **23 Claims**



A device for displaying a plurality of images of an object in which two regions of the specimen are alternately scanned by an electron beam so as to derive two informations from the specimen in synchronism with the alternate scanning, and these two informations are alternately introduced into two cathode-ray tubes as a brightness modulation signal so as to independently and simultaneously display two differently magnified images of the object on these two cathode-ray tubes.

3,502,871

PROCESS FOR MAKING A PROJECTION TRANSPARENCY BY EXPOSING A SUBLIMEABLE MATERIAL TO A PATTERN OF INFRARED RADIATION

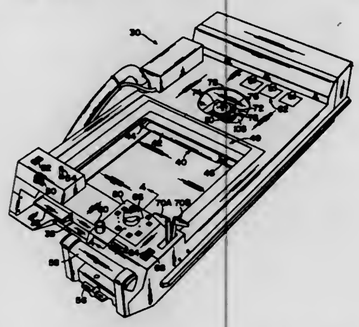
Walter S. Marx, Jr., and Charles P. Collier, Santa Barbara, Calif., assignors to Printing Arts Research Laboratories, Inc., Santa Barbara, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 403,323, Oct. 12, 1964. This application May 23, 1967, Ser. No. 640,511
Int. Cl. G01n *21/34*
U.S. Cl. 250—65 **39 Claims**

This patent relates to the graphic arts and has particular reference to a process for the production of projection transparencies and the like from a graphic subject having a surface containing infrared absorbent image areas and background areas having relatively non-infrared absorbent properties, the steps comprising applying a substantially uniform stratum of a sublimeable material onto said surface, placing a light-transmitting film in contact with said stratum-containing surface, exposing said film and surface to infrared radiation for a time sufficient to cause sublimation of quantities of said sublimeable material from said image areas onto said film without substantial melting of said material, whereby said sublimed material

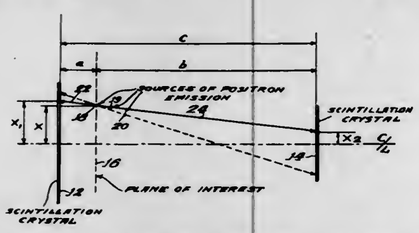
becomes an integral part of said film to duplicate said image areas thereon, and separating said film from said subject; articles produced thereby, and articles for use in such process.

3,502,872
AUTOMATIC SHUTTER CONTROL FOR AN X-RAY SPOT FILMER
Edwin A. Norgren, Cleveland Heights, Ohio, assignor to Picker Corporation, White Plains, N.Y., a corporation of New York
Filed Sept. 8, 1967, Ser. No. 666,283
Int. Cl. H05g *1/60;* **G03b** *41/16;* **G21f** *5/02*
U.S. Cl. 250—66 **24 Claims**



Shutter opening is controlled automatically through a servo circuit to obtain various shutter openings required to maintain various predetermined image field sizes as sequences of X-ray exposures are made, different sequences including radiographs of different image field sizes.

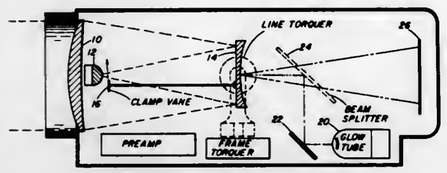
3,502,873
IMAGING DEVICE FOR RADIOACTIVITY DISTRIBUTION
Eric M. Woronowicz, Chicago, Ill., assignor to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,359
Int. Cl. G01t *1/20;* **H01j** *39/18*
U.S. Cl. 250—71.5 **6 Claims**



A positron camera with a simplified control circuit for selecting the depth in a subject at which the radioactivity distribution is most sharply imaged.

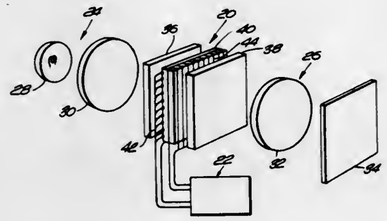
3,502,874
INFRARED THERMOGRAPH
Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed May 3, 1967, Ser. No. 635,865
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **11 Claims**

A thermograph is provided utilizing a converging objective lens and a plane folding mirror which reflects back incoming energy from the field of view toward the rear face of the objective lens, which has positioned thereat an infrared detector at the focal point of the reflected beam. The folded mirror is mounted on a double-gimballed suspension which provides vertical and horizontal scanning motions from torquer motors which drive the



gimbal. An ambient temperature reference is provided by a blackened vane which moves into the field of view of the detector after each scan line and the output of the detector is clamped to the reference level. The readout from the detector may be applied directly to an oscilloscope, or in photographic form.

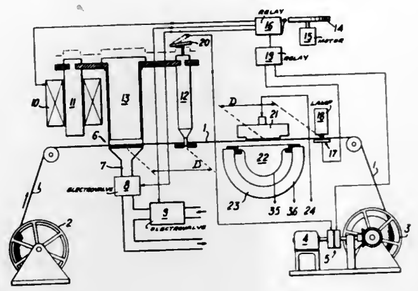
3,502,875
ELECTRO-OPTIC IMAGE CONVERTER UTILIZING AN ARRAY OF POINTS IN A POCKELS EFFECT PLATE TO ESTABLISH DIFFERENTIAL RETARDATION
Richard S. Ploss, Danvers, and Frank A. Torla, Methuen, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 6, 1967, Ser. No. 651,564
Int. Cl. G01t *1/16;* **H01j** *31/26*
U.S. Cl. 250—83.3 **1 Claim**



An optical image is presented in terms of visible light directed through a polarizer and an analyzer via a Pockels effect plate, different points of which are subjected to different potentials by a multiplicity of electrodes. The electrodes are energized as desired by an electronic circuit or a photoelectric stratum, containing the image information.

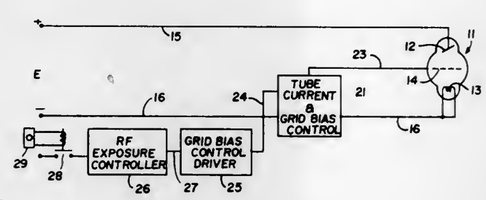
3,502,876
APPARATUS FOR CONTINUOUS AND SIMULTANEOUS MEASUREMENT OF CONCENTRATION IN THE ATMOSPHERE OF THE SHORT-LIVED SOLID DECAY PRODUCTS OF RADON
Claude Lasseur, Clamart, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Mar. 25, 1968, Ser. No. 715,920
Claims priority, application France, Apr. 13, 1967, 102,649
Int. Cl. G01t *1/18*
U.S. Cl. 250—83.6 **6 Claims**

The concentration in atmosphere of the short life daughter products of radon is measured by a detector having a large junction surface cooperating with a filtration diaphragm. This cooperation provides a satisfactory separation of the alpha emitters (RaA and RaC'). The concentrations of radon and RaC are deduced from those of RaA and RaC' respectively and then the amount of RaB is determined by electronically removing from the total



β activity computed portion due to the previously determined RaC content.

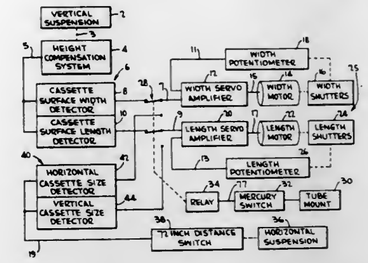
3,502,877
GRID-CONTROLLED X-RAY TUBE CONTROL SYSTEM
Walter E. Splain, North Olmsted, Ohio, assignor, by mesne assignments, to Picker Corporation, White Plains, N.Y., a corporation of New York
Filed July 7, 1967, Ser. No. 651,835
Int. Cl. H05g *1/08*
U.S. Cl. 250—93 **26 Claims**



An X-ray tube with a control grid is provided with circuitry for energizing and de-energizing the X-ray tube. The circuitry includes a radio frequency coupled exposure circuit, a grid bias control drive circuit and a tube current and grid bias control circuit which provides signals to the X-ray control grid to rapidly energize or de-energize the X-ray tube.

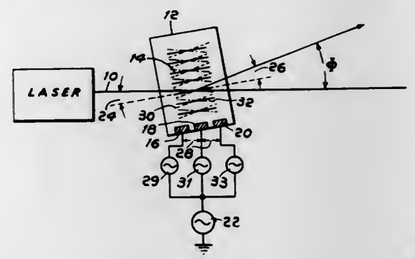
3,502,878
AUTOMATIC X-RAY APPARATUS FOR LIMITING THE FIELD SIZE OF A PROJECTED X-RAY BEAM IN RESPONSE TO FILM SIZE AND TO SOURCE-TO-FILM DISTANCE
Harold F. Stewart and Ray L. Walchle, Rockville, Md., assignors to the United States of America as represented by the Secretary, Department of Health, Education, and Welfare
Filed Sept. 22, 1967, Ser. No. 669,830
Int. Cl. H05g *1/26*
U.S. Cl. 250—105 **5 Claims**

An X-ray field size limiting system wherein the size of a projected beam or field from an X-ray source is automatically limited to the size of a recording film cassette. The automatic operation compensates for changes in source-to-film distance as well as changes in film cassette size. Servo-system techniques are employed to control the aperture of a field size limiting diaphragm or shutter means in response to signals produced by both a film or



cassette size sensing means and a source-to-film distance sensing means.

3,502,879
LIGHT SCANNING DEVICE
Lucio M. Vallese, Glen Ridge, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,032
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **6 Claims**

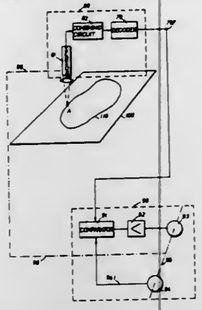


A beam of light is deflected and scanned by varying the sound wave pattern of an ultrasonic cell in the path of the beam. A plurality of transducers produce a parallel line wave front with a varying wavelength to vary the angle of reflection of the beam. The transducers are energized in a predetermined time variable phase relationship to cause an angular scan of the pattern in synchronism with the variable frequency and wavelength to maintain the angle of incidence equal to the angle of reflection.

3,502,880
AUTOMATIC CURVE SCANNING SYSTEM
Miloslav Martinek, Jaroslav Toifl, and Jan Hendrych, Prague, and Karel Pryl, Samechov, Czechoslovakia, assignors to Vyzkumny ustav Matematickych stroju, Prague, Czechoslovakia, a firm
Filed Mar. 1, 1967, Ser. No. 619,849
Int. Cl. G05b *1/01, 11/32, 13/02*
U.S. Cl. 250—202 **27 Claims**

A new closed-loop curve scanning system has been developed in which a scanning head having no relatively movable parts generates a pair of distinct non-coincident sequences of digital command pulses in response to opposite deviations of the curve with respect to the axis of the head in at least one selected coordinate. The command sequences respectively position an incremental digital servo-mechanism in a corresponding one of two opposite directions for each coordinate to move the head

along the curve. The command sequences may be developed in response to either simultaneous or sequential



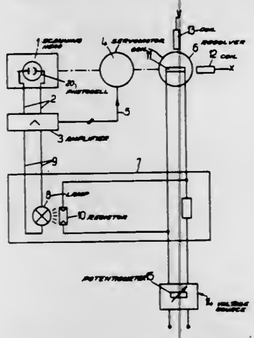
outputs from the curve-sensing elements in the scanning head.

3,502,881

TORCH CUTTING FOLLOWER CONTROL DEVICE

Gunter Hahn, Hausen, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed May 25, 1967, Ser. No. 641,288
Claims priority, application Germany, May 27, 1966, M 69,649
Int. Cl. G05b *1/00, 11/00*; H01j *39/12*
U.S. Cl. 250—202 **9 Claims**



A follower control device for torch cutting machines having a photoelectric device for scanning a drawing or pattern which emits signals for controlling the adjustment of the scanning device and the movable part of the operating machine, includes a correction device which changes the feed speed of the adjusting device by means of a regulating member such as a countervoltage source or a changeable series or parallel resistor switched in the operating or control current of the feed members for affecting their current supply in accordance with the output signals of the scanning device.

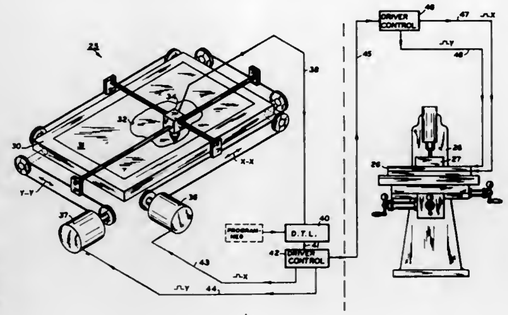
3,502,882

OPTO-GRAPHICAL MEMORY AND DIGITALIZED CONTROL SYSTEM FOR PRECISION MACHINING

Geza von Voros, 123 Radburn Road, Glen Rock, N.J. 07452

Filed Jan. 17, 1968, Ser. No. 698,648
Int. Cl. G05k *1/00*
U.S. Cl. 250—202 **29 Claims**

An opto-graphical memory and digitalized control system to guide a precision machining operation and/or produce a drawing in which any of one, two or three dimensional curves are converted stepwise into a corresponding linear or rectilinear equivalent. The curve or line of a drawing or master print is illuminated to obtain a brightness difference between the curve being followed and the adjacent area. An optical reading head having a plurality of optical fibers each having a miniature photosensitor attached thereto is adapted to receive an image of a portion of the line being read upon an optical decoding matrix disposed in the focal plane of the optical head. The head is driven by stepping actuators for each coordinate axis relative to the line being read. The elec-



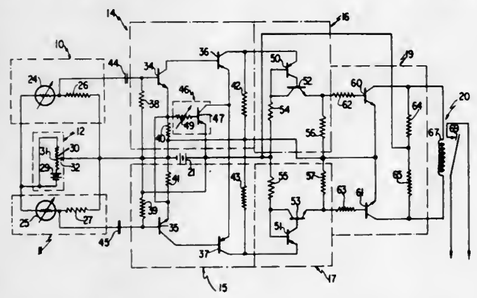
trical output from each photosensitor is fed to a logic system which determines subsequent commands. As the optical head is moved so also is a secondary positioning means moved in a precise relationship to the head. The secondary positioning means may be either a writing or printing mechanism or a machine tool. The geometry of the information being read or produced may be one, two or three dimensional with the machine tool when so operated producing a part in accordance to that information.

3,502,883

PHOTOELECTRIC MOTION DETECTOR WITH A PAIR OF PHOTOCELLS VIEWING DIFFERENT PARTS OF THE FIELD

Andrew M. Archer, New York, N.Y., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey

Continuation of application Ser. No. 448,682, Apr. 16, 1965. This application Sept. 11, 1968, Ser. No. 781,651
Int. Cl. H01j *39/12*
U.S. Cl. 250—210 **4 Claims**



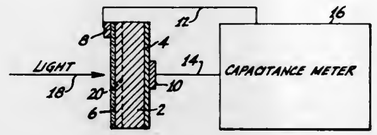
An ambient light photoelectric motion detector wherein a pair of photocells viewing different portions of a field of view each operate a switching circuit when the light in the portion viewed changes in a predetermined direction. The outputs of the switching circuits are connected into a bridge amplifier so that the amplifier produces an output when only one of the photocells experiences a change in light level in the predetermined direction and produces no output when both of the photocells experience light level changes in the predetermined direction of either equal or unequal magnitudes.

3,502,884

METHOD AND APPARATUS FOR DETECTING LIGHT BY CAPACITANCE CHANGE USING SEMICONDUCTOR MATERIAL WITH DEPLETION LAYER

Stuart S. Perlman and Bernard Goldstein, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 603,036
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **5 Claims**



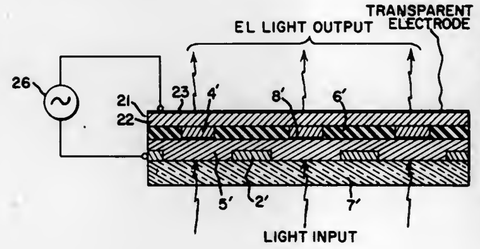
Method and apparatus for detecting variations in light intensity by a capacitance change in which the device comprises a semiconductor body composed of a high-resistivity, compensated material with deep-lying traps. Electrodes, one of which is a barrier layer electrode, on opposite faces of the body are connected to a capacitance meter. Visible light having energy approximately equal to or greater than the bandgap of the material, when directed upon the barrier layer electrode, causes an increase in capacitance due to narrowing of the space charge region. Infra-red light can also be detected by quenching photocapacitances when the cell is first biased with bandgap radiation.

3,502,885

NON-COPLANAR ELECTRODE PHOTOCONDUCTOR STRUCTURE AND ELECTROLUMINESCENT-PHOTOCONDUCTOR ARRAY

Richard D. Stewart, Camillus, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 21, 1967, Ser. No. 662,135
Int. Cl. H01j *31/50, 39/12*
U.S. Cl. 250—213 **8 Claims**



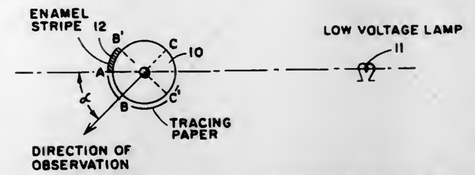
A photoconductor structure that is electrically compatible with electroluminescent panels and provides efficient detection of applied optical energy. The structure includes a pair of non-coplanar concentric electrodes with the photoconductor material extending therebetween, one electrode provided with an aperture through which said optical energy is admitted. In a further embodiment, the photoconductor structure is fabricated in array form integral with an electroluminescent array to provide optical amplification or conversion.

3,502,886

PHOTOELECTRIC SENSOR FOR MERCURY THERMOMETER COLUMN

Norman A. de Bruyne, 661 Brunswick Pike, Princeton, N.J. 08540

Filed Jan. 9, 1968, Ser. No. 696,561
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **2 Claims**



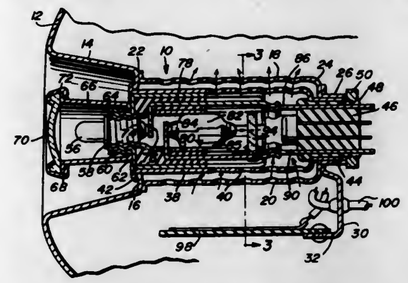
The invention relates to a combination of a photoelectric cell, a source of light and a measuring instrument of the type which includes a capillary tube containing a column of mercury or similar pressure or temperature sensitive liquid whereby the level of the sensitive liquid in the tube can be sensed by the photoelectric cell without any additional lens or focusing device, as well as to additional means for moving the photoelectric cell with respect to the column of liquid to be sensed.

3,502,887

CARBON MONOXIDE DETECTOR FOR AUTOMOTIVE VEHICLES

Paul N. Erickson, Detroit, and Richard J. Jordan, Roseville, Mich., assignors to General Marine, Inc., a corporation of Michigan

Filed Feb. 26, 1968, Ser. No. 708,042
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **5 Claims**



A detector for gaseous material, particularly carbon monoxide, incorporating structural components enabling effective installation in an automotive vehicle, such as an automobile or the like for providing a warning to occupants of the vehicle when the concentration of gaseous material reaches a predetermined level. The detector is in the configuration of a cigarette lighter including a pull-out unit to enable replacement of the sensing element which serves to occlude a photoelectric cell assembly when the elevel of gaseous material reaches a predetermined level.

3,502,888

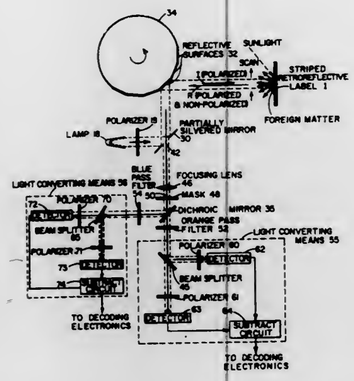
OPTICAL RETROREFLECTIVE LABEL READING SYSTEMS EMPLOYING POLARIZED ELECTROMAGNETIC RADIATION

Francis H. Stites, Wayland, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 19, 1967, Ser. No. 654,503
Int. Cl. G01n *21/30*; G02f *1/18*
U.S. Cl. 250—219 **13 Claims**

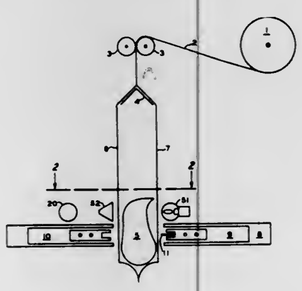
Optical label reading system for reading coded multiple-stripe retroreflective labels affixed to vehicles and for eliminating any adverse effects due to foreign matter which

may be present on the labels. A coded retroreflective label on which foreign matter is present is scanned with plane-polarized light. The light reflected by the exposed retroreflective portions of the label is also a plane-polarized nature. However, the light reflected by the foreign matter is non-polarized. As the stripes of the



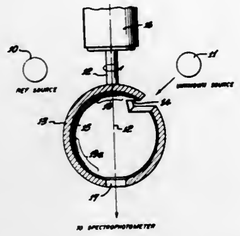
label are successively scanned, the plane-polarized light retroreflected by the exposed portions of the retroreflective label and the non-polarized light returned by the foreign mater is returned to a light converting means wherein the light received from each stripe of the label is converted into an electrical output representing only the plane-polarized light received from the stripe.

3,502,889
PACKAGING MEANS WITH PHOTOCELL INTERRUPTION
Elmer C. Beason, Cincinnati, Ohio, and George E. Mader, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,167
Int. Cl. H01j *39/12*
U.S. Cl. 250—222 **6 Claims**



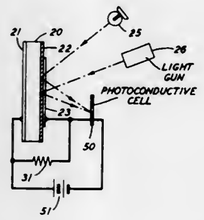
Passage of an irregularly shaped object is detected by means of a light source and a triangularly shaped transparent prism having a base perpendicular to, and directly aligned with, said light source, and having an apex opposite said base, said apex concentrating the light onto a photoelectric cell. In this way, interruption of the light anywhere along the path through which the article passes by any portion of the irregularly shaped article varies the amount of light which is converged on the single photoelectric cell, thus allowing control of manipulative operations in response to this signal.

3,502,890
ROTATING SPHERE RADIOMETER
Sidney Hedelman, Los Angeles, Calif., assignor, by mesne assignments, to Cary Instruments, Monrovia, Calif., a corporation of California
Filed June 10, 1965, Ser. No. 462,814
Int. Cl. G01j *1/00, 3/42, 3/46*
U.S. Cl. 250—228 **21 Claims**



The disclosed radiometer comprises a rotary hollow body having an inlet port through which radiation from a source or sources is received for diffusion within the body during cyclic relative rotation of the body and sources. The body has an outlet port through which radiation exits from the body interior, and means is provided to receive the exiting radiation and to generate signals corresponding to cyclically scanned source irradiance.

3,502,891
VARIABLE REFLECTANCE MEMORY DEVICE
Willard S. Boyle, Summit, and Jack A. Morton, South Branch, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Mar. 22, 1967, Ser. No. 625,064
Int. Cl. G01d *5/30;* **G02f** *1/28, 1/36*
U.S. Cl. 250—230 **1 Claim**

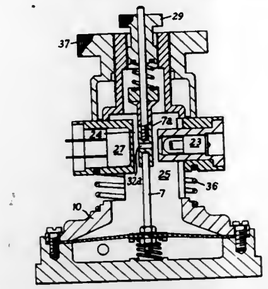


A memory module for use in logic or memory systems includes a variable reflectance device and a photosensitive member connected in a circuit, with the photosensitive member disposed to intercept light reflected from the reflectance device. The photosensitive member controls the reflective state of the reflectance device in response to ambient light and a scanning beam of energy.

3,502,892
PRESSURE-SENSITIVE OPTICAL SWITCH
Derek J. Brittain, Goring-by-Sea, England, assignor to Radon Industrial Electronics Company Limited, Worthing, Sussex, England
Filed Oct. 24, 1966, Ser. No. 588,925
Int. Cl. G01d *5/34*
U.S. Cl. 250—231 **4 Claims**

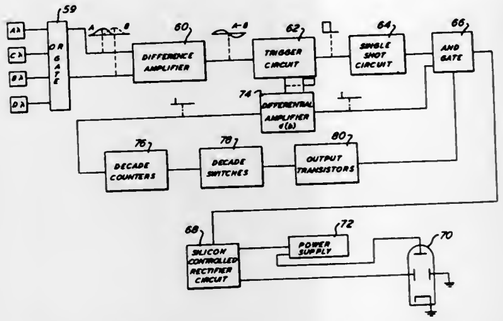
A switch wherein a passageway between a radiating member and a radiation sensitive member is selectively opened or blocked by a shutter member actuated by a diaphragm, a spring or bellows provided to dampen

movement of the diaphragm, the position of the shutter member relative to the passageway being resiliently adjustable and the head which contains the passageway, the



radiating member, and radiation sensitive member in a fixed relationship being selectively adjustable relative to the shutter member.

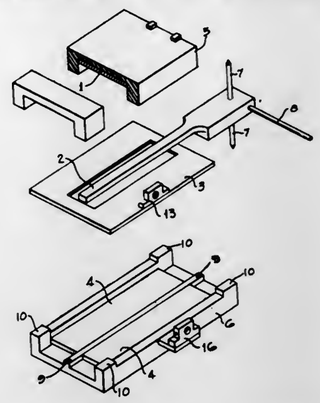
3,502,893
RADIATION SENSITIVE MEANS FOR DETERMINING THE POSITION OF AN OBJECT
Winner F. Delp, Fort Washington, Pa., assignor to The Jade Corporation, Bethayres, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 560,520, June 27, 1966. This application Oct. 27, 1967, Ser. No. 678,694
Int. Cl. G01d *5/34*
U.S. Cl. 250—231 **4 Claims**



Electro-optical position sensing apparatus for repetitively determining the position of a moving object on coordinate axes by photoelectrically sensing the passage of reflective lines and counting the number of such lines until a predetermined position is reached on each axis. The apparatus includes electronic circuitry for compensating for the play in mechanical drive apparatus. Circuit can be used to trigger additional machine functions when a preset position is reached.

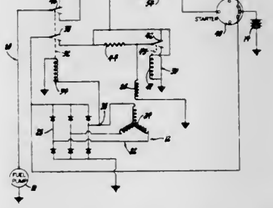
3,502,894
ANGLE MEASURING PHOTOELECTRIC TRANSDUCER WITH TWO PHOTOCELLS AND ELECTROLUMINESCENT SOURCE OF LIGHT
Henry J. Scherr, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of Agriculture
Filed May 16, 1968, Ser. No. 729,602
Int. Cl. G01b *11/26*
U.S. Cl. 250—231 **4 Claims**

A photoelectric transducer for measuring small angles and linear distances having two photocells connected in a current balancing circuit and a novel source of area illumination, an electroluminescent panel. The electrical output is a function of the differential illuminance of the



photocells resulting from occlusion of the extended area light source by a pivoted vane between the light source and the photocells.

3,502,895
ELECTRIC FUEL PUMP CONTROLS
Richard P. Ballou, Howell, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,735
Int. Cl. F02n *11/04;* **H02p** *9/04*
U.S. Cl. 290—36 **7 Claims**

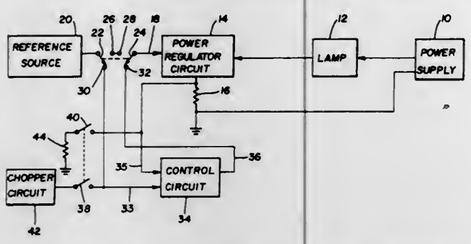


A vehicle electric fuel pump control that utilizes an AC generator's circuitry to connect the fuel pump either to the battery when the engine is being cranked or to the AC generator's output when the engine is operating. The control also utilizes the vehicle's transmission selector to permit selective operation of the pump without the engine operating or being cranked.

3,502,896
POWER SUPPLY CIRCUIT
Richard B. Langkamp, Webster, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Mar. 4, 1968, Ser. No. 710,286
Int. Cl. G05f *3/00*
U.S. Cl. 307—31 **9 Claims**

A power supply provides means for applying standby power to a plurality of loads, such as lamps, and allows

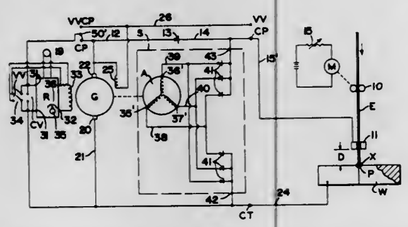
one of the loads to be highly regulated and/or modulated. A separate series regulator circuit is provided for each load. In "standby" operation, the regulator is controlled by applying a biasing potential directly to the regulator. In "continuous" operation, the regulator circuit is connected as a portion of a high gain feedback circuit to highly regulate the current flow through a load. In "modulated" operation, a periodically varying signal is introduced into the feed back circuit to accurately modulate the conduction of the regulator circuit.



3,502,897
METHOD OF AND POWER SUPPLY FOR ELECTRIC ARC WELDING

Jon D. McCollister, Mentor, and John E. Carroll, Lyndhurst, Ohio, assignors to The Lincoln Electric Company, Cleveland, Ohio, a corporation of Ohio

Filed July 10, 1967, Ser. No. 652,204
Int. Cl. H02j *7/34;* **H05b** *1/00;* **H02p** *9/10*
U.S. Cl. 307—52 **10 Claims**



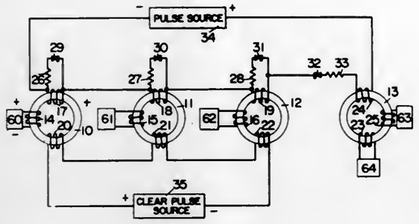
Electric arc power supply for automatic arc welding of the drop transfer type with a small diameter electrode comprising a principal and a supplementary DC power source in parallel wherein the principal power source has a short circuit rate of current rise less than 60,000 amperes per second and the supplementary power supply has a short circuit rate of current rise greater than 60,000 amperes per second. The principal source supplies current at all times. The supplementary source furnishes no current during arcing but when the drop contacts the weld pool and short circuits the power supply, the supplementary source supplies a brief pulse of current sufficient to very rapidly break the short circuit and reestablish the arc.

3,502,898
MAGNETIC SWITCHING CIRCUIT

John O. Paivinen, Palo Alto, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 454,949, Sept. 9, 1954. This application Feb. 4, 1959, Ser. No. 791,232
Int. Cl. H03k *19/22, 17/80*
U.S. Cl. 307—88 **30 Claims**

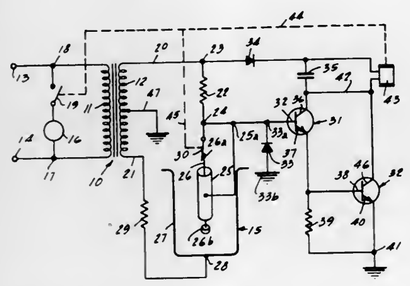
Two or more bistable magnetic cores each containing a sensing winding, such sensing windings being connected in series with each other and with a load impedance (preferably an input winding on another core). A constant voltage pulse is applied across the series circuit, and the current flow from this source is dependent upon the impedance presented by the sensing windings, which, in turn, is dependent upon the remanent states of the respective cores. The circuit may operate as a logical AND circuit if the threshold of the load impedance is such as to respond only to the current level produced when the input cores are all in a binary ONE remanent state.



3,502,899
LIQUID LEVEL AND ICE BANK CONTROL

William H. Jones, Villa Park, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Feb. 6, 1968, Ser. No. 703,466
Int. Cl. F25c *1/00*
U.S. Cl. 307—118 **1 Claim**



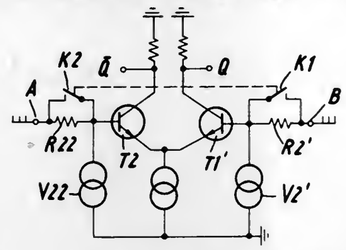
A liquid level and ice bank control circuit having an input transformer and a series combination of a constant resistance and a variable load resistance coupled across the output of the transformer. An amplifier has an input which is coupled to a point in the series combination of resistors which is normally at substantially zero voltage level. Changes in the level of liquid within a container or changes in the ice bank cause changes in resistance in the variable resistor for increasing the voltage level of the amplifier input, thereby turning "on" the amplifier and activating a refill mechanism or deactivating a cooling device.

3,502,900
SIGNAL CONTROL CIRCUIT

Dieter Straub, Constance, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Dec. 6, 1968, Ser. No. 781,771
Claims priority, application Germany, Dec. 6, 1967, 1,537,515
Int. Cl. H03k *19/08*
U.S. Cl. 307—203 **4 Claims**

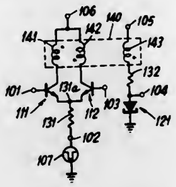
A logic circuit in which a signal of a first voltage value serves as an input to one side of the circuit, and a signal of a different voltage value serves as an input to the other side of the circuit. There are means for supplying a signal of the second voltage value to the first side of the circuit, and means for supplying a signal of the second voltage value to the second side of the circuit whereby the logic capability of the circuit can be expanded to include the logical alternatives of the functions of the unimproved circuit.



3,502,901
DIGITAL CIRCUIT HAVING INDUCTIVE COUPLING AND TUNNEL DIODE

Atsushi Tomozawa and Rikio Maruta, Tokyo-to, Japan, assignors to Nippon Electric Company, Limited, Tokyo-to, Japan, a corporation of Japan

Filed Sept. 12, 1967, Ser. No. 667,107
Claims priority, application Japan, Sept. 24, 1966, 41/62,878
Int. Cl. H03k *19/08*
U.S. Cl. 307—206 **10 Claims**

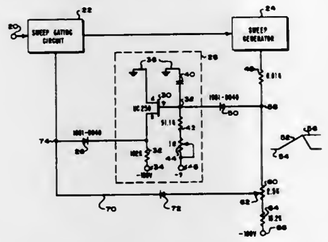


A digital circuit of the current switching type which employs transistors and a negative resistance element with an inductive coupling circuit therebetween, and wherein switching is achieved by means of pulses which cause the coupling circuit to trigger the element, thus providing pulses at the output of the element.

3,502,902
SWEEP CIRCUIT HAVING A VARIABLE HOLD-OFF TIME INTERVAL

William L. Grein, Colorado Springs, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Sept. 27, 1966, Ser. No. 582,362
Int. Cl. H03k *4/08*
U.S. Cl. 307—228 **6 Claims**

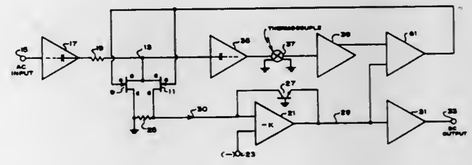


A sweep circuit is responsive to a trigger signal for producing a sweep signal only when an applied hold-off control signal reaches a set signal level. The time required for the control signal to reach this set signal level may be adjusted by a variable resistor in a hold-off control circuit to make the hold-off time interval as long as the sweep time interval.

3,502,903
SIGNAL - CONTROLLED ATTENUATOR WITH FIELD-EFFECT TRANSISTORS FOR MAINTAINING CONSTANT ALTERNATING SIGNAL

John Wade, Glendora, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 21, 1967, Ser. No. 661,879
Int. Cl. G06g *7/12*
U.S. Cl. 307—230 **6 Claims**

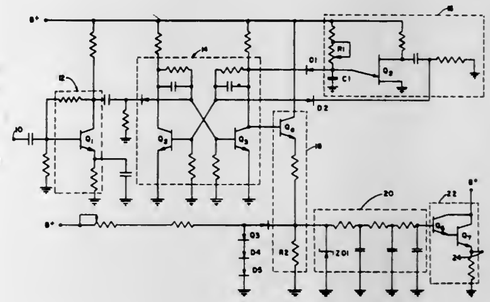


A signal circuit includes a signal-controlled attenuator which responds to the amplitude of applied alternating signal for providing a constant amplitude alternating signal output over a wide dynamic range of applied signal amplitude. The circuitry for controlling the attenuator also provides a D.C. current which is proportional to the amplitude of applied alternating signal.

3,502,904
PULSE-FREQUENCY TO DC CONVERTER

Michael P. Bordonaro, Middletown, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed June 12, 1967, Ser. No. 645,242
Int. Cl. H03k *5/20*
U.S. Cl. 307—233 **6 Claims**



Circuitry for converting a pulsating input signal to a D.C. voltage having an amplitude proportional to the pulse repetition rate. A bistable circuit is set in response to input pulses. Setting of the bistable circuit gates a pulse generating circuit which, after a preselected delay, resets the bistable circuit. Setting and resetting of the

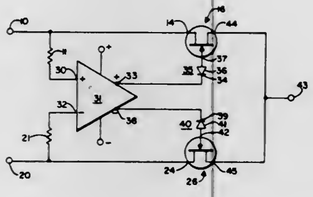
bistable circuit results in the generation of output pulses of a fixed amplitude and desired shape. These identical pulses, whose repetition rate varies with the input pulse frequency, are clamped and applied to a filter.

3,502,905

DIFFERENTIAL AMPLIFIER AND FIELD EFFECT TRANSISTOR GATES FOR APPLYING LARGEST OF TWO INPUTS TO OUTPUT

Robert E. Bicking, Brooklyn Center, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 17, 1967, Ser. No. 639,211
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **1 Claim**



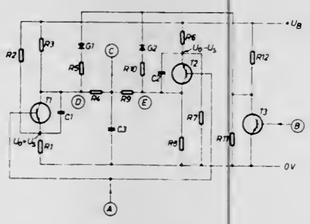
A most positive signal selector which compares two signals and selects the larger of the two signals as an output. A high gain differential amplifier is used to sense the difference between the two signals and to drive field effect transistors to conduct the larger of the two signals to the output and inhibit the smaller.

3,502,906

FREQUENCY ERROR CORRECTING CIRCUIT

Herbert Aulhorn and Frank Torsten Knabe, Leonberg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 31, 1968, Ser. No. 702,043
Claims priority, application Germany, Feb. 17, 1967, St 26,509
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **5 Claims**



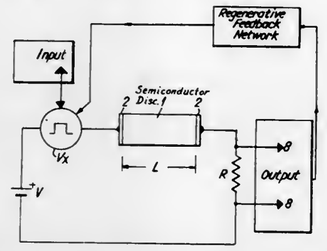
The invention provides a compensation for the pulse distortions which are due to frequency shifts in FM digital signal transmission systems. With the aid of two adjusting quantities, the demodulated signal is forced into a predetermined voltage range. In the case of a dynamic control, the regulation forces signals to uniformly exceed the two limiting values of a slicer. In the case of a static control, the signal is forced to reach of one of the two limiting values.

3,502,907

SEMICONDUCTIVE CIRCUIT

Carl P. Sandbank, Bishop's Stortford, and John S. Heeks, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 19, 1967, Ser. No. 647,155
Claims priority, application Great Britain, June 28, 1966, 28,874/66
Int. Cl. H03k *19/08*
U.S. Cl. 307—238 **5 Claims**



A semiconductive circuit arrangement employing a body of semiconductive material which exhibits high field instabilities. By overdriving the semiconductive circuit impact ionization of the semiconductive material occurs during propagation of the high field domain which is formed in the body. Impact ionization, which is due to the temporary ionization of additional deep impurity levels, causes the conductivity profile of the body, and thereby the output current of the semiconductive circuit to be modified in accordance with the degree of field variation. The conductivity profile decays as the levels relax to their un-ionized state, but the "memory" remains for a time which is dependant on the equilibrium free carrier concentration of the semiconductive material and the concentration of deep impurity levels which are temporarily ionized and which is typically of the order of 1 μs.

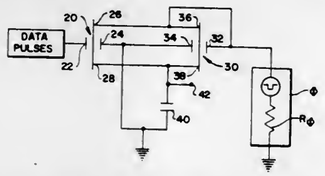
This arrangement therefore provides a short term memory device.

3,502,908

TRANSISTOR INVERTER CIRCUIT

Alton O. Christensen, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 761,450, Sept. 23, 1968. This application Dec. 26, 1968, Ser. No. 787,067

Int. Cl. H03k *17/60, 19/40*
U.S. Cl. 307—246 **6 Claims**



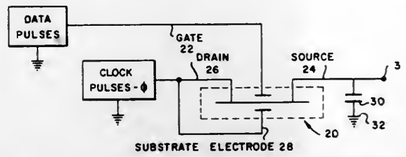
An inverter circuit for field-effect transistors comprising two transistors having common source and drain electrodes. The common drain and one of the gate electrodes are connected to a source of clock pulses while the other gate electrode is connected to a source of data pulses. The common source is connected to ground through a capacitor and the circuit output is taken at the common source electrode. The clock and data pulses are synchronized so that the trailing edge of the data pulse occurs subsequent to the trailing edge of the clock pulse by an amount of time, τ, sufficient for the capacitor to be discharged into the clock circuit.

3,502,909

PULSED SUBSTRATE TRANSISTOR INVERTER

Alton O. Christensen and Charles B. Vogel, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 10, 1968, Ser. No. 782,561
Int. Cl. H03k *17/00*
U.S. Cl. 307—251 **7 Claims**



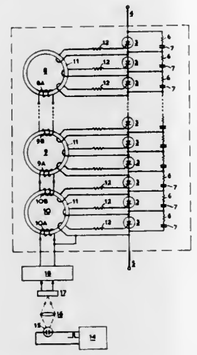
An inverter circuit for field-effect transistors consisting of at least one transistor with a capacitor connected between the source electrode and ground and a source of negative clock pulses tied to the drain electrode and substrate electrode.

3,502,910

THYRISTOR TRIGGER CIRCUITS

Michael John Johanson-Brown, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company

Filed May 5, 1967, Ser. No. 636,395
Claims priority, application Great Britain, May 6, 1966, 20,280/66
Int. Cl. H03k *17/00*
U.S. Cl. 307—252 **4 Claims**



This invention relates to a trigger circuit for firing a string of series-connected thyristors connected across a potential source. A number of pulse transformers are connected in cascade such that the secondary of one transformer is connected to the primary of another and each transformer is inductively coupled to the control electrodes of a group of the thyristors, control means being provided for applying a pulse to the primary winding of one of the transformers whereby to cause all the thyristors to be fired simultaneously with one another.

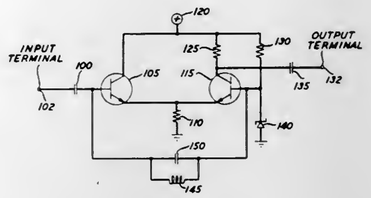
3,502,911

CIRCUIT FOR CONVERTING SINUSODIAL SIGNALS INTO SYMMETRICAL SQUARE WAVE SIGNALS

Harvey R. Lehman, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 3, 1966, Ser. No. 569,900
Int. Cl. H03k *5/00*
U.S. Cl. 307—261 **3 Claims**

A circuit is disclosed which converts sinusoidal signals into symmetrical square wave signals. The circuit includes a differential transistor pair arranged in the common emitter configuration and apparatus for maintaining the bases of the transistor pair at constant and equal voltage levels during quiescent operation. This apparatus comprises a Zener diode connecting the base of one of the transistors to ground and a capacitor and inductor arranged in parallel and interconnecting the bases of the transistors. This configuration insures a symmetrical output in spite of biasing source drift.

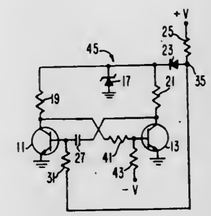


3,502,912

TEMPERATURE AND VOLTAGE COMPENSATED MULTIVIBRATOR

John A. McAvoy, Detroit, Mich., assignor to Burroughs Corporation, a corporation of Michigan

Filed Nov. 9, 1965, Ser. No. 506,951
Int. Cl. H03k *3/26, 3/28*
U.S. Cl. 307—273 **6 Claims**



A circuit compensating for variations in the triggering voltage levels of active elements, and more particularly compensating for temperature dependent variations in the triggering voltage level in a multivibrator. In addition, means for establishing a point of constant potential is used for maintaining constant current through the temperature compensation means, and the temperature compensation means and constant potential establishing means are connected in series to block negative spikes and positive spikes from the power supply thereby isolating the multivibrator.

3,502,913

PIEZOELECTRIC CERAMICS AND DEVICE FOR HIGH VOLTAGE GENERATION

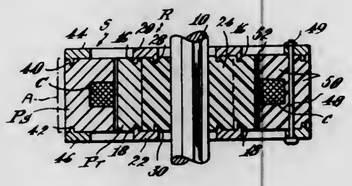
Mitsuo Osada, Nishinomiya, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan

Filed May 6, 1966, Ser. No. 548,168
Int. Cl. H01v *7/00;* **C04b** *35/00*
U.S. Cl. 310—8.7 **9 Claims**

A piezoelectric ceramic composition consisting essentially of lead titanate zirconate with partial substitution of the lead by strontium and containing 0.05 to 3.0% by weight of indium and at least one element selected from the group consisting of boron and vanadium

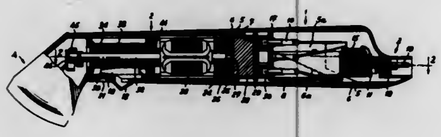
in an amount sufficient to decrease the electrical permittivity loss attributable to the inclusion of the indium. Said composition is utilized in ignition devices.

3,502,914
STEPPING MOTOR ROTOR AND STATOR WITH PLASTIC EMBEDDED LAMINATED POLE PIECES AND METHOD OF MAKING
Irvin W. Cox, East Acton, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Jan. 16, 1969, Ser. No. 791,730
Int. Cl. H02k *1/041, 37/00, 15/02*
U.S. Cl. 310—42 **14 Claims**



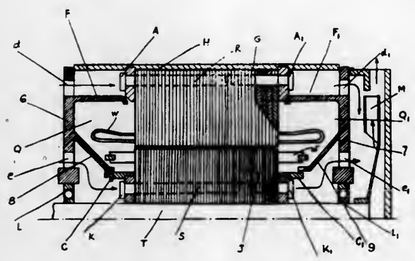
A rotary stepping motor (and method of making) in which rotor and stator have equal numbers of uniformly spaced laminated pole pieces brought into alignment by flux generated with a control current. The described motor has a multiplicity of pole pieces of uniform construction, both rotor and stator having laminated pole peices fixed in proper spatial position by means of assembly rings which hold the pieces as assembled with a rigid plastic material molded into the intersticial spaces to provide a unitary structure.

3,502,915
ELECTRIC DRY SHAVER WITH SLOPING LAP JOINT CONNECTING FRONT AND REAR CASING SECTIONS
Michel A. Moret and Claude R. Rosset, Geneva, Switzerland,, assignors to Etablissements AESUP, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Nov. 1, 1967, Ser. No. 679,873
Claims priority, application Switzerland, Nov. 2, 1966, 15,826/66
Int. Cl. H02k *7/14, 37/00, 11/00*
U.S. Cl. 310—47 **8 Claims**



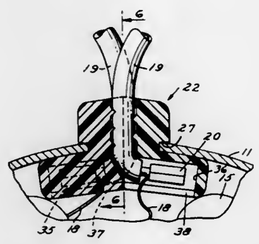
An electric dry shaver has a casing formed in two sections joined by a lap joint at a sloping angle to the length of the casing, say less than about 45°. An inner indented shoulder extends rearwardly from the front section and is overlapped by the rear section, and portions of the shoulder are enlarged to form a pair of ears. A tongue-and-groove connection is formed at the forward end of the sloping joint. Driving means is mounted in the front section and is retained in place by projections elastically engaging in openings in the ears. The rear section, after being placed in position, is secured to the driving means. Advantageously the driving means includes a motor unit and a separate cradle containing a rectifier unit, the cradle being plugged into the motor unit and retained in place by the ears.

3,502,916
COOLING SYSTEM FOR ENCLOSED ELECTRIC MACHINES
Leon Paul Stavrache, Calea Bucuresti, bloc E3, and Misu Ungureanu, Strada Infratirii 30, both of Craiova, Rumania
Filed Dec. 12, 1967, Ser. No. 689,930
Claims priority, application Rumania, Dec. 14, 1966, 52,727
Int. Cl. H02k *9/06*
U.S. Cl. 310—59 **10 Claims**



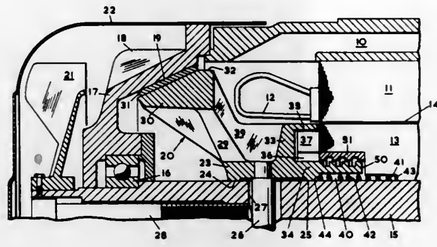
Air-cooling system for enclosed-type electrical machines (e.g. motors and generators), wherein air is circulated through axial ducts in stator and rotor cores, formed by stacking the stator or rotor lamellae with axially registering coextensive openings angularly spaced about the axis of rotation, by means of one or two ventilating fans fixed on the rotor shaft adjacent the bearings; the air-flow paths through the cores are maintained separate within the casing.

3,502,917
ELECTRIC MOTOR WITH STRAIN RELIEF CONNECTOR
Raymond D. Bizoe, Corunna, Mich., assignor, by mesne assignments, to Universal Electric Company, Owosso, Mich., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 687,045
Int. Cl. H02k *11/00*
U.S. Cl. 310—71 **14 Claims**



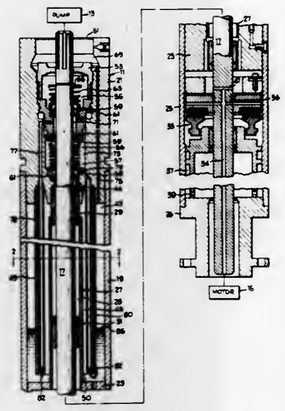
The electric motor disclosed herein comprises a sheet metal casing which supports a stator and a rotor. The sheet metal casing includes a cylinder that has an open ended slot in one end thereof. A strain relief connector made of plastic has spaced grooves engaging the sides of said slot. The sections of the strain relief connector have oppositely disposed abutting faces and cavities which receive the lead wires. The sections are formed with interengaging projections at the bases of the cavities for gripping the lead wires. The sections also have junction receiving cavities. One end of each lead wire is connected by a suitable junction such as a clip with a magnet wire extending from the stator. Each junction is received in a cavity in one of the body sections.

3,502,918
ELECTRIC MOTORS
Clifford Graham Done, Eric Ronald Casey, and Edward Pearson, Bradford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Feb. 16, 1968, Ser. No. 706,115
Int. Cl. H02k *7/102*
U.S. Cl. 310—77 **5 Claims**



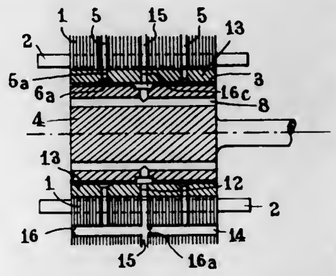
A squirrel cage induction motor has a brake mechanism which is biassed to the "on" position and is axially movable relative to the rotor to disengage the brake. The brake is initially disengaged by electromagnetic forces produced by current flowing in the rotor windings and in one of the end rings when the motor is first energized for operation. These forces decrease as the motor runs up to speed, and the brake mechanism is thereafter held disengaged by electromagnetic forces produced in the rotor.

3,502,919
SUBMERSIBLE MOTOR SEAL SECTION
Clinton A. Boyd, John A. Beavers, and Eldon L. Drake, Tulsa, Okla., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1969, Ser. No. 789,101
Int. Cl. H02k *5/10, 5/12*
U.S. Cl. 310—87 **3 Claims**



A seal section for a submersible pump motor filled with a lubricating and cooling fluid which seal section prevents ingress of ambient well fluid into the motor along an operating shaft and also accommodates expansion and contraction of the motor lubricating and cooling fluid volume due to on-and-off cycling of the motor. At least one rotary seal providing an essentially fluid-tight seal between the seal section housing and the shaft and a chamber having a radially inner portion and a radially outer portion in fluid communication adjacent the lower end of the chamber. The radially inner portion communicates with the motor adjacent the upper end of the chamber and the radially outer portion communicates with the ambient well fluid above the rotary seal adjacent the upper end of the chamber. An intermediate fluid is interposed between the ambient well fluid and the motor fluid filling at least a portion of the radially outer portion of the chamber and defining an interface with the ambient well fluid therein.

3,502,920
ELECTRICAL MACHINE INCORPORATING GAS BEARINGS
Jean Chaboseau, Boissy St. Leger, France, assignor to Compagnie Electro-Mecanique, Paris, France, a body corporate of France
Filed Mar. 9, 1967, Ser. No. 621,986
Int. Cl. H02k *5/16*
U.S. Cl. 310—90 **10 Claims**

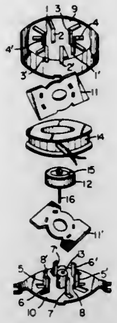


A dynamo-electric machine such as a motor or generator which comprises a stator member and a cylindrical rotor member arranged to rotate within a cylindrical bore provided within the stator member. The annular clearance gap between the periphery of the rotor and the surface of the stator is slight and is gas-pressurized throughout the length of the gap so as to establish a gas bearing sustaining the rotor for its rotation. A sleeve of uniform diameter and of non-magnetic material is used to line the bore in the stator to establish a more uniform cylindrical surface for the gas bearing. The pressurized gas used to supply the gas bearing extending throughout its length is also utilized to cool the rotor and stator as well as the rotor and stator conductors by means of cooling channels associated therewith and through which the pressurized gas is passed. A gas-pressurized thrust bearing is also incorporated in the structure at an intermediate point along the rotor for maintaining the rotor against undesired axial displacement.

3,502,921
SELF-STARTING SYNCHRONOUS MOTORS
Yasuo Suzuki and Yasuyoshi Kameyama, Kadoma-shi, Osaka, Japan, assignors to Matsushita Denko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Sept. 27, 1967, Ser. No. 670,850
Claims priority, application Japan, Sept. 29, 1966, 41/64,585
Int. Cl. H02k *17/10*
U.S. Cl. 310—172 **6 Claims**

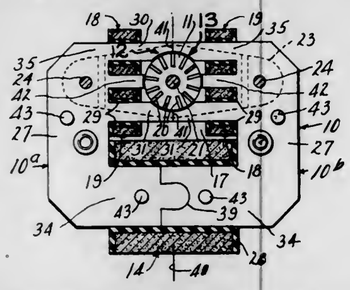
A synchronous motor having a permanent magnet rotor and a stator having as many magnetic pole teeth as rotor poles. The stator is formed in two parts with the pole teeth of one part meshing with the pole teeth of the other part, with an equal number of shaded and unshaded poles. The magnetic pole tooth in the foremost position in the direction of rotation of the rotor in the shaded pole group, and the magnetic pole tooth in the rearmost position in the unshaded pole, in the

border of the shaded and unshaded pole groups, are made shorter than the other magnetic pole teeth and



are butted close to each other so that magnetic fluxes of opposite polarities may be partly short-circuited.

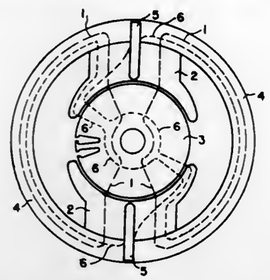
3,502,922
LAMINATED STATOR CORE STRUCTURE
Oscar L. Welker, Rockford, Ill., assignor to Barber-Coleman Company, Rockford, Ill., a corporation of Illinois
Filed Mar. 14, 1968, Ser. No. 713,102
Int. Cl. H02k *17/10*
U.S. Cl. 310—172 **15 Claims**



A reversible shaded-pole electric motor having a laminated stator core composed of a plurality of laminations of generally rectangular shape each formed by two U-shaped parts having leg sections fitted together in end-to-end relation, one set of leg sections being arcuately recessed to define a rotor recess and longitudinally slotted to receive two shading coils on each side of the rotor. The field coil is telescoped onto the leg formed by the other two leg sections and locked together by a tongue-and-groove joint centered in the field coil. The two types of parts are arranged and secured together in stacks that are identical except at the joint, and the stacks are moved together into the coils and pressed into interlocked relationship, the bridges around the rotor recess having effective air gaps on the plane of symmetry of the core formed by the abutting ends of the core-leg sections. Conventional end plates, bearings, a rotor and a shaft are mounted on the core.

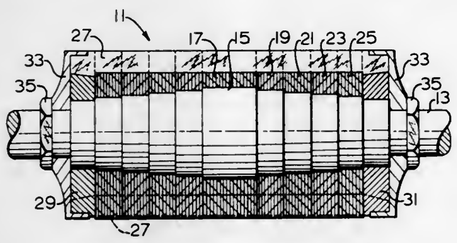
3,502,923
ELECTRIC MOTORS AND GENERATORS
Harlan A. Howell, 1926 Thoreau St., Los Angeles, Calif. 90047
Filed Feb. 23, 1967, Ser. No. 619,517
Int. Cl. H02k *23/42*
U.S. Cl. 310—187 **7 Claims**

An electric machine with an armature and a magnetic field structure is provided with a region of high reluctance extending radially through the lateral mid-portion of at least one pole-piece of the magnetic field structure. The high reluctance region prevents the passage of armature



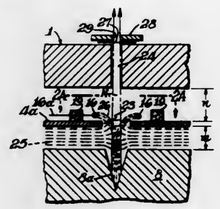
cross-magnetic field flux through the pole pieces while it has little effect on the main magnetic field.

3,502,924
HIGH SPEED ROTOR FOR DYNAMOELECTRIC MACHINE HAVING LAMINATIONS WELDED TO STEPPED SHAFT AND METHOD OF MAKING THE SAME
Paul J. Staebler, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 27, 1968, Ser. No. 740,697
Int. Cl. H02k *1/06, 1/28, 3/06*
U.S. Cl. 310—211 **6 Claims**



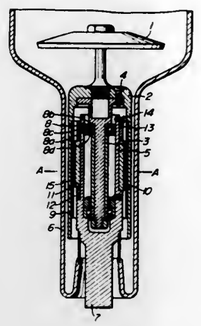
A high speed rotor for a dynamoelectric machine of stepped shaft construction to which correspondingly sized laminations are electron beam welded.

3,502,925
HIGH INTENSITY X-RAY SOURCE
Heribert K. Herglotz, Maplecrest, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 713,223
Int. Cl. H01j *35/14*
U.S. Cl. 313—55 **4 Claims**



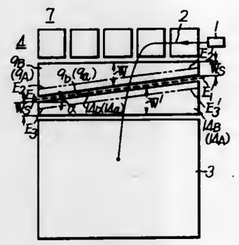
A high intensity X-ray source incorporating a conical target site, multiple aperture radiation collimation and electron focusing.

3,502,926
ROTATING ANODE X-RAY TUBE WITH MAGNETIC DAMPER
Shizuo Takano, Mobara-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 17, 1967, Ser. No. 653,824
Claims priority, application Japan, Mar. 29, 1967, 42/17,986
Int. Cl. H01j *35/10*
U.S. Cl. 313—60 **8 Claims**



This specification discloses a rotating anode X-ray tube for diagnosis, which is designed such that the coast rotation of the anode is damped promptly after the completion of radiography, thereby increasing the rotation life of such X-ray tube. For this purpose, a permanent magnet is provided internally of the anode so that the X-ray tube per se serves to dampen the coast rotation of the anode with the aid of the electromagnetic force produced by said permanent magnet. Furthermore, use is made of said permanent magnet having a larger outside diameter than that of a bearing and being substantially cylindrical in an integral or divisional form to further increase the rotation life. In this way, there can be easily produced a rotating anode X-ray tube of which the rotation life is increased through the use of extremely simplified dampening means.

3,502,927
FLAT PICTURE TUBE PROVIDED WITH ACCELERATION PLATES INCLINED TO THE DEFLECTION PLATES FOR OVERCOMING TRAPEZOIDAL DISTORTION OF THE RASTER
Hirofumi Suzuki, Hayao Kouzai, and Yoshiki Nozue, Kawasaki-shi, Japan, assignors to Nippon Columbia Kabushiki Kaisha (Nippon Columbia Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Mar. 7, 1968, Ser. No. 711,238
Int. Cl. H01j *29/74, 29/80, 29/70*
U.S. Cl. 313—78 **3 Claims**



A flat picture tube having an electron gun, a first deflection unit for deflecting the electron beam emitted from the electron gun in a first scanning direction of the phosphor screen, an acceleration unit for accelerating the electron beam deflected by the first deflection unit, and a second deflection unit for deflecting the electron beam accelerated by the acceleration unit in a second scanning direction crossing the first scanning direction of the phosphor screen at right angles thereto, the acceleration unit being formed to provide equipotential lines inclined at predetermined angles to the first scanning direction for leading the electron beam substantially along the second scanning direction.

3,502,928
IMAGE CONVERTER TUBE WITH A TARGET SCREEN ASSEMBLY CARRYING CATHODE-FORMING EVAPORATORS AND A FLUORESCENT TARGET SCREEN SPRING-BIASED AGAINST TUBE WINDOW
Lucien F. Guyot and Bertrand M. Driard, Paris, France, assignors to Compagnie Francaise Thomson-Houston-Hotchkiss Brandt, Paris, France
Filed Feb. 23, 1967, Ser. No. 617,922
Claims priority, application France, Mar. 11, 1966, 53,054
Int. Cl. H01j *29/08, 31/50*
U.S. Cl. 313—82 **13 Claims**

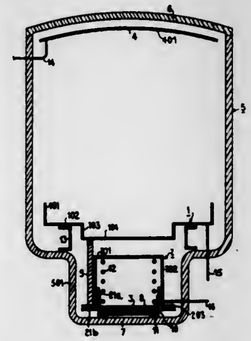
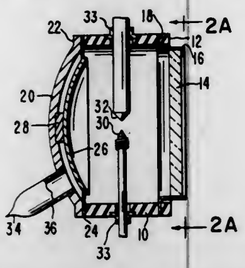


Image converter tube having its target screen slidably connected with the annular anode and spring-biased outwardly so as to be pressed against the output end wall of the envelope when mounted in operative position. The screen thus forms a unitary sub-assembly with the anode and preferably also with another annular electrode rigidly and insulatedly connected with the anode. Photocathode-forming evaporator devices are mounted as a flat annular array in the space between said other electrode and the envelope wall.

3,502,929
HIGH INTENSITY ARC LAMP
John F. Richter, San Francisco, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 14, 1967, Ser. No. 655,717
Int. Cl. H01j *5/16, 61/40*
U.S. Cl. 313—111 **17 Claims**

A novel structure is described for a gas discharge lamp adapted for operation in the short arc mode and capable of producing increased light flux density as well as increased total light at a given light flux density. The structure includes a compact ceramic envelope to provide high power handling capability in terms of current and voltage and to enable containment of ionizable gases

at high pressures. Improvements in efficiency through incorporation of a light reflector within the envelope and



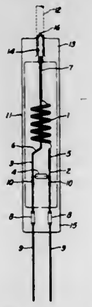
the use of sapphire and other special window materials, are described.

3,502,930
INCANDESCENT LAMP WITH A GLOWER MADE OF AN ALLOYED SEMICONDUCTOR MATERIAL
Mikhail Vladimirovich Fok, Ulitsa Gorkogo 8, kv. 103, Moscow, U.S.S.R.
Filed Feb. 17, 1967, Ser. No. 616,887
Int. Cl. H01j *17/04*
U.S. Cl. 313—218 **9 Claims**



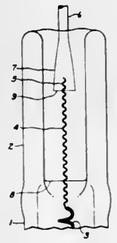
An incandescent lamp with a glower made of semiconductor material which provides high luminous efficiency, stable operation of the glower at high temperatures, and ignition of the lamp without employment of any additional heating devices. The semiconductor material is alloyed with donor or acceptor admixtures in a concentration of 10^{17} to 10^{20} cm.$^{-3}$ and providing in the semiconductor material energy levels not deeper than 0.5 electron volt.

3,502,931
ELECTRIC INCANDESCENT LAMP MOUNT STRUCTURE
Frederick A. Mosby, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 10, 1968, Ser. No. 720,107
Int. Cl. H01j *1/94, 19/48*
U.S. Cl. 313—278 **2 Claims**



A mount structure for a coiled-coil filament, single-ended lamp (especially of the halogen cycle type) wherein the coiled-coil is supported by a shorter lead wire connected securely to a coiled leg at the lower end of the coiled-coil, and to a longer lead wire which extends through the interior of the coiled-coil and is secured to a coiled leg at the upper end of the coiled-coil. The two lead wires are displaced longitudinally to slightly stretch the coiled-coil to avoid sagging of the turns during operation, and the relative positions of the lead wires are maintained by an insulating bridge interconnecting them.

3,502,932
INCANDESCENT LAMP AND METHOD OF MANUFACTURE
Ivan Berlec, Wickliffe, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 2, 1967, Ser. No. 672,276
Int. Cl. H01k *1/28*
U.S. Cl. 313—315 **2 Claims**

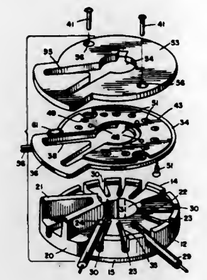


In the manufacture of quartz incandescent lamps having integral end portions of the tungsten filament hermetically sealed through the quartz envelope, refractory metal lead-in wires or pins are first secured to terminal end portions of the filament which is then inserted into the quartz envelope with an end portion of the filament confined within an open end portion of the envelope and the associated lead-in wire extending to the exterior, the said open end portion of the envelope is then heated above its softening point and the said end portion of the filament is also heated while maintaining an inert gas atmosphere around the filament to outgas the surface thereof, and said end of the envelope is then compressed to form a hermetic seal with the said end portion of the filament while simultaneously embedding, although not hermetically sealing, the inner end of the lead-in wire and the terminal portion of the filament which is connected thereto, thereby anchoring the lead-in wire in the seal and providing a nonincandescible current supply conductor which also serves as a heat sink for the said terminal portion of the filament which is not hermetically sealed.

3,502,933
KINESCOPE SOCKET WITH SPARK GAP
Bruno J. Leimontas, Morton Grove, and Edson M. Paradise, Highland Park, Ill., assignors to Connector Corporation, Chicago, Ill., a corporation of Illinois
Filed July 29, 1968, Ser. No. 748,433
Int. Cl. H01j *17/00, 21/00*
U.S. Cl. 313—325 **12 Claims**

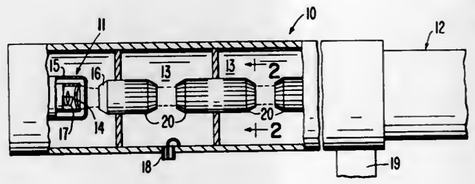
A spark gap picture tube socket wherein the spacing of the spark gap is maintained constant. The socket includes a socket body which is provided with a plurality of openings for receiving the terminal pins of a television picture tube. A generally L-shaped metal contact is positioned within the socket body in alignment with each of the pin-receiving openings, and a lead wire is connected to each metal contact and extends outwardly from the socket body. An insulating wafer covers the metal contacts, and a metal conducting plate is secured to the insulating wafer outwardly of the metal contacts.

Both the wafer and the conducting plate are provided with an opening in alignment with each of the metal contacts, and the diameter of each conducting plate opening is slightly larger than the diameter of the associated wafer opening. A conducting pin having an outside diameter approximately the same as the diameter of the wafer



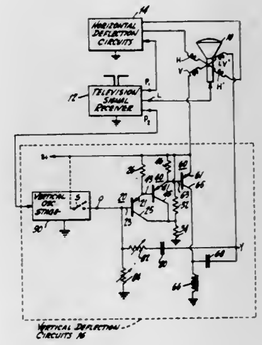
openings is snugly received in each wafer opening. One pin end extends from the wafer into electrical contact with one of the metal contacts, and the other pin end extends through one of the conducting plate openings and is spaced from the periphery of the conducting plate opening to provide a spark gap therebetween.

3,502,934
HIGH FREQUENCY ELECTRON DISCHARGE DEVICES HAVING IMPROVED MODE SUPPRESSION MEANS FOR CAVITIES WITH RE-ENTRANT DRIFT TUBES
Fred I. Friedlander, Sunnyvale, and Peter J. Spallas, Cupertino, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 15, 1967, Ser. No. 668,081
Int. Cl. H01j *25/10*
U.S. Cl. 315—5.39 **8 Claims**



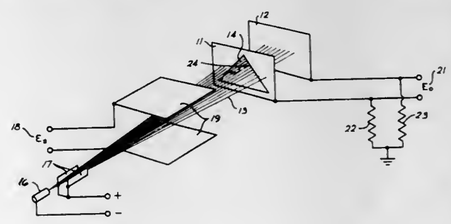
Undesired TE type modes in re-entrant cavity resonators of high frequency electron discharge devices which include klystron and coupled cavity slow-wave circuits incorporating re-entrant drift tube sections can be suppressed to a great extent by a combination of lossy loading material deposited on the surfaces of axially slotted drift tubes in the region of the slots. The axial slots provide a dual function of reducing the resonant frequency of TE type modes in re-entrant cavities thus permitting the tube designer to eliminate any correspondence between the resonant frequency of undesired TE type cavity modes and second harmonics of the operating mode by tuning the mode either above or below the 2nd harmonic as well as increasing the current path lengths of the undesired TE type modes to permit easy reduction of the unloaded Q (Q_o) of the mode without substantial perturbation of operating mode of the cavity and device. The utilization of lossy R.F. attenuating means in the slotted regions provides excellent stabilization by further reduction to Q_o for the undesired modes.

3,502,935
TRANSISTOR DEFLECTION CIRCUITS
Roland N. Rhodes and John B. Beck, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,736
Int. Cl. H01j *29/70*
U.S. Cl. 315—19 **6 Claims**



Transistorized vertical deflection circuits for a television receiver avoids the use of an electrolytic capacitor as the timing or sawtooth capacitor in the deflection wave generator through use of a "Miller integrator" approach. Sawtooth voltage waveform is developed across capacitor in negative feedback path looped around high gain transistor amplifier. Due to dynamic capacitance multiplying effect, stable yet inexpensive paper capacitor may serve as sawtooth capacitor, since effect of larger capacitor use is realized. Cascaded emitter followers are employed within loop to drive output transistor, and provide exceptionally high input impedance for amplifier, enhancing proper "Miller integrator" action.

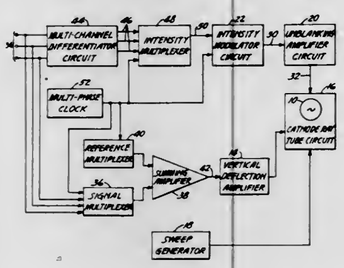
3,502,936
ELECTRON DISCHARGE DEVICES
Edward E. Buffington, Burlington, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 6, 1966, Ser. No. 563,205
Int. Cl. H01j *29/70*
U.S. Cl. 315—21 **7 Claims**



An electron discharge device modifies an input signal in accordance with a desired transform function. The input signal sweeps an electron beam over a first anode

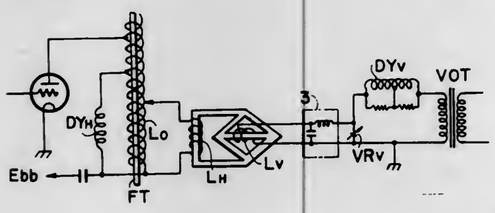
which has a shape conforming to the integral of the transform fuction. A portion of the electron beam, determined by the shape of the first anode, passes to a second anode to produce an output signal on the anodes. The output signal is the product of the input signal and the transform function.

3,502,937
ELECTRON BEAM IMAGE INTENSITY CONTROL
William F. Bader, Maplewood, and Arney Landy, Jr., Roseville, Minn., and Marvin J. Schmitz, North Hudson, Wis., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 676,860, Oct. 20, 1967. This application Nov. 12, 1968, Ser. No. 774,625
Int. Cl. H01j *29/74*
U.S. Cl. 315—22 **10 Claims**



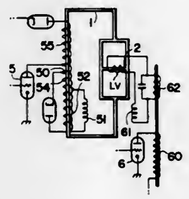
The intensity of an image produced by a pulsed electron beam being deflected in response to an input signal is controlled by varying the duration of the electron beam pulses in proportional response to the rate of change of the input signal amplitude. The electron beam pulse duration may be accordingly varied in order to provide an approximately uniform image intensity.

3,502,938
DISTORTION CORRECTING DEVICES FOR MAGNETIC DEFLECTING DEVICES
Hiroshi Ikeuchi, Tokyo, Japan, assignor to Denki Onkyo Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 3, 1969, Ser. No. 796,010
Claims priority, application Japan, Feb. 5, 1968, 43/7,014
Int. Cl. H01j *29/70*
U.S. Cl. 315—24 **4 Claims**



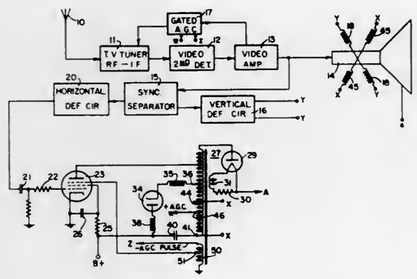
A distortion correcting device for magnetic deflecting devices comprises a magnetic core in the form of a cubic Wheatstone bridge, a pair of coils respectively wound upon diagonal magnetic members of the bridge, means to supply a horizontal deflection current components to one of the coils and means to supply a vertical deflection current component to the other.

3,502,939
DISTORTION CORRECTING DEVICES FOR MAGNETIC DEFLECTING DEVICES
Hiroshi Ikeuchi, Tokyo, Japan, assignor to Denki Onkyo Co., Ltd., Tokyo, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 796,010, Feb. 3, 1969. This application Feb. 4, 1969, Ser. No. 796,420
Claims priority, application Japan, Feb. 29, 1968, 43/13,099
Int. Cl. H01j *29/56, 29/72*
U.S. Cl. 315—24 **3 Claims**



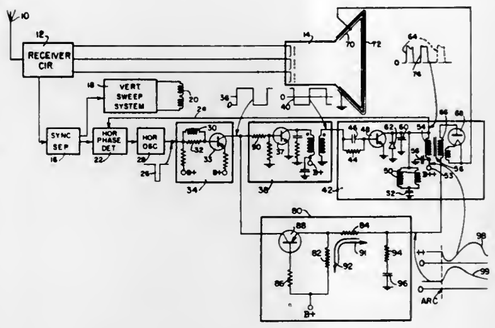
A distortion correcting device for a magnetic deflection device comprises a magnetic core in the form of a cubic Wheatstone bridge configuration, a pair of coils respectively wound upon diagonal magnetic members of the bridge, and means to connect said coils to an orthogonal magnetic field generating circuit, at least one of the coils being a deflection current generating coil.

3,502,940
DYNAMIC BARKHAUSEN OSCILLATION SUPPRESSION
Donald E. Griffey, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 28, 1968, Ser. No. 771,003
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **9 Claims**



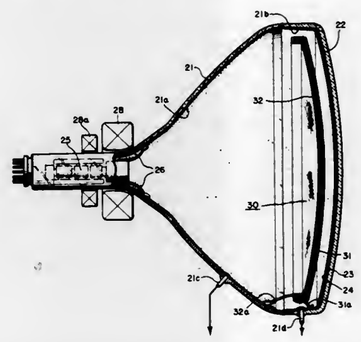
In a television deflection circuit utilizing a flyback transformer supplied with deflection signals from a pentode amplifier, Barkhausen oscillations are reduced or substantially attenuated by providing a tap on the negative AGC winding located on the flyback transformer and connecting the suppressor grid of the pentode directly to this tap. This causes a positive potential pulse to be applied to the suppressor grid of the pentode during the trace period; so that Barkhausen oscillations are eliminated or substantially reduced, even when the pentode is operating with high anode currents at a minimum or low anode potential relative to the potential present on the screen grid thereof.

3,502,941
HORIZONTAL SWEEP SYSTEM PROTECTION CIRCUIT
Mel E. Buechel, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 688,387, Dec. 6, 1967. This application Nov. 15, 1968, Ser. No. 776,281
Int. Cl. H01j *29/70, 29/76*
U.S. Cl. 315—27 **9 Claims**



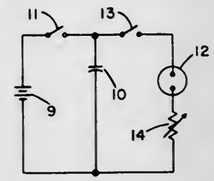
The semiconductor device in a horizontal sweep system is subject to become damaged when an arc occurs in the high voltage rectifier. A protection circuit senses the arc to render the semiconductor device temporarily inoperative.

3,502,942
POST-DEFLECTION-FOCUS CATHODE-RAY TUBE
Ghulam A. Kahn, Niles, and Sam H. Kaplan, Chicago, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware
Filed Oct. 24, 1968, Ser. No. 770,183
Int. Cl. H01j *29/56*
U.S. Cl. 315—31 **5 Claims**



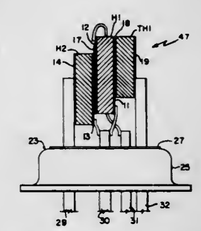
A unitary color-selection and focus-electrode assembly for a post-deflection-focus color cathode-ray tube utilizes the apertured shadow mask not only as the principal structural component of the assembly but also as a first lens electrode. The focusing system features two lens electrodes, the second electrode being formed of a mesh of electrical conductors, having interstitial dimensions that are small compared with the aperture dimensions of the shadow mask and spaced to the gun mount side of the shadow mask. Means, including an insulator, secure the conductors of the mesh to the side of the shadow mask, completing a focus-electrode assembly. Different operating potentials are applied to the lens electrodes to accomplish post-deflection-focusing.

3,502,943
TIMING CIRCUITRY FOR A FLASH CAMERA
Reuben Wechsler, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 1, 1968, Ser. No. 717,674
Int. Cl. H05b *37/02, 39/04, 41/14*
U.S. Cl. 315—238 **13 Claims**



Timing circuitry for a flash camera which includes a current limiting impedance connected in series with a flashtube. The circuitry controls the amount of impedance in series with the flashtube to thereby control the light output of the flashtube in accordance with the distance between the flash camera and subject.

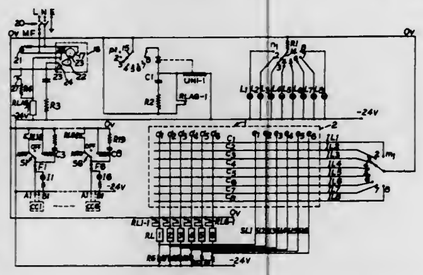
3,502,944
ELECTROTHERMAL INTEGRATOR
David J. Squiers, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,708
Int. Cl. H02h *5/04;* **H01c** *7/04*
U.S. Cl. 317—13 **10 Claims**



The apparatus disclosed is operative to protect an electrical load from overload conditions. The load current is sensed and a signal which varies as a function thereof is provided. The load is then deenergized whenever the signal exceeds a preselected level for longer than a predetermined interval. Further, the apparatus employs an electrothermal integrator as a counter which responds to the overload signals to reenergize the load a predetermined number of times after it has been deenergized by overloads and then to permanently deenergize the load if the overload conditions persist. The electrothermal integrator includes first and second heaters which are thermally coupled to one another to form a body having a predetermined thermal inertia. The overload signals are applied to a first heater to supply a substantially predetermined amount of heat to said body each time the load is energized. The second heater comprises a mass of semiconductive material the resistance of which varies substantially with temperature. Current is applied to the second heater to provide a regenerative heating thereof when the temperature of the body exceeds

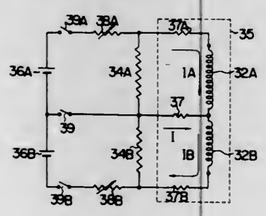
a predetermined threshold. Accordingly, the heat generated by the first heater in response to the overload signals is integrated by the thermal inertia of the body until its temperature reaches the threshold of the second heater whereupon regenerative heating of the semi-conductor mass causes the temperature of the body to rise abruptly. A sensing thermistor senses this abrupt rise in temperature and operates a control circuit to permanently de-energize the load.

3,502,945
SWITCHING CONTROL APPARATUS
Bernard Albert Bentley, Camberley, and Fredric Charles Lamb, London, England, assignors to Essoldomatic Limited, London, England
Filed Aug. 17, 1967, Ser. No. 661,352
Int. Cl. H01r *29/00*
U.S. Cl. 317—139 **14 Claims**



This invention provides a switching control apparatus for the operation, preferably in a predetermined sequence, of selected relays and for the selective de-energization of these relays in an independent predetermined sequence. Selection of relays to be energized is effected by the insertion of first diode plugs into a matrix to interconnect selected conductors of first and second conductor groups of the matrix to provide an energization circuit for the selected relay. De-energization of the selected relays is also effected through the matrix by way of further diode plugs interconnecting selected conductors of the first and a third group of matrix conductors. Successive conductors of the first group may be supplied with current sequentially.

3,502,946
SUPERCONDUCTING MAGNET
Hiroshi Kimura, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a corporation of Japan
Filed Jan. 16, 1967, Ser. No. 609,509
Claims priority, application Japan, Jan. 17, 1966, 41/2,229
Int. Cl. H01h *47/00*
U.S. Cl. 317—155.5 **2 Claims**

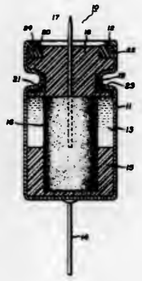


A superconducting magnet having a plurality of multilayer magnet coils of superconducting wire or cable connected in series, each coil being connected in a circuit comprising the coil, an individual D.C. power source connected across the coil, a variable resistor for current control connected in series with the coil, a protective resistor connected in parallel with the coil, and connecting switches respectively connected in series to the terminals of the power source.

3,502,947
ELECTROLYTIC CAPACITOR AND NOVEL ELECTROLYTE
John E. Hand, Sanford, N.C., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,790
Int. Cl. H01g *9/00*
U.S. Cl. 317—230 **9 Claims**

A substantially anhydrous electrolytic composition comprised of a heteropoly acid such as phosphotungstic acid dissolved in an organic solvent and neutralized to a pH of 7.7, the composition being useful as the impregnant for the spacer of an aluminum capacitor to impart stable characteristics and long operating and shelf life thereto.

3,502,948
DUAL O-RING SEAL FOR CAPACITORS
Marvin A. Crouch, Columbia, and Charlie E. Taylor, Gilbert, S.C., assignors to General Electric Company, a corporation of New York
Filed Dec. 4, 1967, Ser. No. 687,625
Int. Cl. H01g *9/00, 1/02*
U.S. Cl. 317—230 **9 Claims**



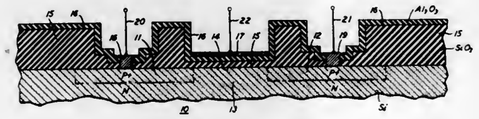
A plug type electrolytic capacitor seal having a pair of axially spaced concentric O-ring seals on a common plug and compressed by a common wall is disclosed.

3,502,949
THIN FILM SOLID ELECTROLYTE CAPACITOR
Yasuo Seki, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan
Filed Apr. 10, 1968, Ser. No. 720,158
Claims priority, application Japan, Apr. 15, 1967, 42/23,945
Int. Cl. H01g *9/00, 13/00*
U.S. Cl. 317—230 **9 Claims**



A thin film solid manganese dioxide electrolyte capacitor is provided characterized by a high working voltage and low dielectric loss, wherein the manganese dioxide electrolyte is formed as a decomposition product of manganese heptoxide. The method for producing the capacitor resides in passing a vapor of manganese heptoxide over the oxidized surface of the anode metal and causing the vapor to decompose and deposit a thin film of manganese dioxide on the oxidized anode metal surface.

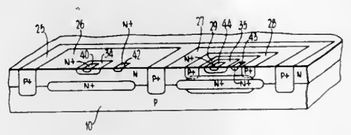
3,502,950
GATE STRUCTURE FOR INSULATED GATE FIELD EFFECT TRANSISTOR
Harold E. Nigh, Hokendauqua, Joseph Stach, Allentown, and Shiu K. Tung, Bethlehem, Pa., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 20, 1967, Ser. No. 647,555
Int. Cl. H01l *11/00, 11/14*
U.S. Cl. 317—235 **2 Claims**

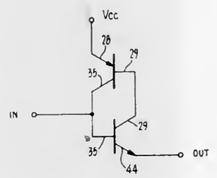


Field effect transistors (FET) of the metal-insulator-semiconductor (MIS), also called insulated gate (IGFET), type are fabricated using a gate dielectric film comprising two different materials, one over the other. A particular configuration employs a 1000 angstrom layer of aluminum oxide (Al_2O_3) over a 500 angstrom layer of silicon dioxide (SiO_2).

By varying the thickness of the silicon dioxide layer the threshold voltage of the device may be varied to the extent that operation in both the enhancement and depletion modes may be attained. Accordingly, devices of both types may be fabricated on a common substrate for an integrated circuit.

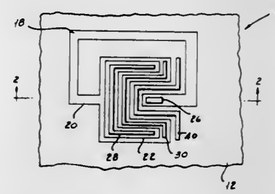
3,502,951
MONOLITHIC COMPLEMENTARY SEMICONDUCTOR DEVICE
Barney D. Hunts, Los Altos Hills, Calif., assignor to The Singer Company, a corporation of New Jersey
Filed Jan. 2, 1968, Ser. No. 695,217
Int. Cl. H01l *19/00*
U.S. Cl. 317—235 **3 Claims**





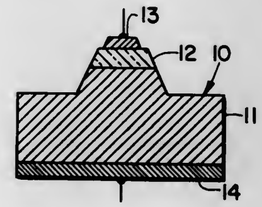
A unitary semiconductor structure containing a pair of electrically isolated complementary vertical semiconductor devices, in particular an NPN and a PNP transistor, and the method of forming same whereby the complementary devices are simultaneously formed under conditions allowing the substantial optimization of both devices. The structure and method of the invention also allows one of the devices to take the form of a four-layer controlled rectifier without requiring any additional processing steps.

3,502,952
PLANAR PNPN SWITCHING DEVICE
Frank J. Hierholzer, Jr., New Hartford, N.Y., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Continuation of application Ser. No. 496,798, Oct. 18, 1965. This application May 29, 1968, Ser. No. 734,174
Int. Cl. H01l *11/00, 7/00*
U.S. Cl. 317—235 **2 Claims**



A planar PNPN gated switching device in which of two closely spaced regions of material of one conductivity type in a substrate of the opposite conductivity type has a third region of the opposite conductivity type therein with all regions accessible at a surface of the substrate so that the device apparently comprises a diode and a transistor with the substrate constituting one of the diode elements and the transistor collector. Means establishes such a potential between the first and third regions as tends to produce forward conduction through the diode and second means applies a potential to the second region of such polarity as tends to render the transistor conductive to gate the device from a high resistance state to a low resistance state whereby the device has a characteristic analogous to that of a screen grid thyratron.

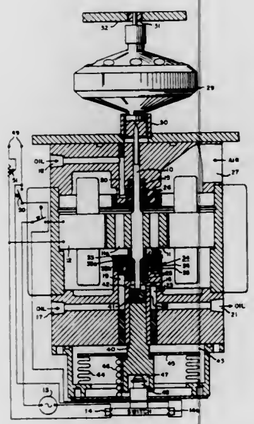
3,502,953
SOLID STATE CURRENT CONTROLLED DIODE WITH A NEGATIVE RESISTANCE CHARACTERISTIC
Bernard S. Aronson, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 3, 1968, Ser. No. 695,436
Int. Cl. H01l *5/00, 3/00*
U.S. Cl. 317—238 **7 Claims**



A semiconducting titanium dioxide-silicon junction exhibiting asymmetric current-controled negative resistance and rectification. The diode is constructed by depositing a layer of semi-insulating titanium dioxide on the surface

of a high resistivity semiconductor body, partially reducing the film to semiconducting titanium dioxide, applying a carrier-injecting electrode to the titanium dioxide layer and an ohmic contact to the semiconductor body.

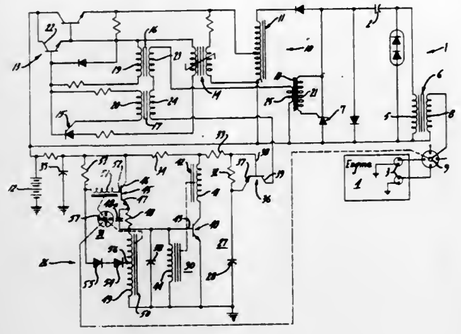
3,502,954
DIRECT DRIVING MECHANISM FOR AN ULTRACENTRIFUGE
Dan H. Moore, Leonia, N.J., and John U. White, Darien, Conn., assignors to Canal Industrial Corporation, a corporation of Maryland
Filed Aug. 17, 1965, Ser. No. 480,407
Int. Cl. G05b *5/00*
U.S. Cl. 318—481 **7 Claims**



A direct drive mechanism for an ultracentrifuge comprises a drive shaft having a integral dynamically balanced homogeneous cylindrical rotor of high coercivity magnetic material. An alternating-current stator surrounds the rotor and forms therewith a synchronous hysteresis motor which is energized from a high-frequency alternating-current source which is adjustable at any selected one of a number of accurately determined and accurately maintained frequencies, thereby to operate the ultracentrifuge at an accurately predetermined and maintained speed. The shaft and its rotor are supported by a compressed air thrust bearing and provided with a pair of alignment bearings above and below the rotor. Since the ultracentrifuge is designed to operate at speeds of 50,000 to 100,000 r.p.m., the drive mechanism includes certain safety features operative upon failure of air pressure to the thrust bearing: (a) an auxiliary normally inactive thrust bearing automatically brought into action; and (b) a pressure operated switch for automatically controlling the energization of the motor circuit.

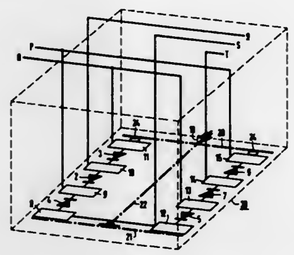
3,502,955
PULSE FORMING CIRCUIT AND CAPACITOR DISCHARGE IGNITION SYSTEMS THEREWITH
Floyd M. Minks, Campbellsport, Wis., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,835
Int. Cl. H05b *39/04;* **H02j** *3/02*
U.S. Cl. 320—1 **20 Claims**

A triggered oscillator operated in the current mode is interconnected to discharge a capacitor which is also connected in an output circuit with a transistor and a load. The triggered oscillator is actuated by a gated oscillator having a pair of windings coupled and decoupled by a rotating apertured vane. The gated oscillator includes a transistor having the windings connected to the input element and the output elements and having feedback diode means connected between the input winding and an inter-



mediate point of the output winding. The output circuit of the control oscillator is connected to the input circuit of the current mode oscillator which provides feedback power to maintain the operation of the control oscillator.

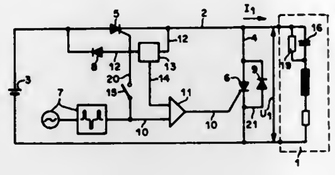
3,502,956
RECTIFIER DEVICE WITH SILICON SEMICONDUCTOR RECTIFYING ELEMENTS DISPOSED RESPECTIVELY IN DISC-SHAPED HOUSINGS ABUTTING STACKABLE COOLING MEMBERS
Paul Fries and Alfons Staudt, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Oct. 23, 1968, Ser. No. 769,865
Claims priority, application Germany, Oct. 26, 1967, S 112,577
Int. Cl. H02m *7/20*
U.S. Cl. 321—8 **12 Claims**



Rectifier device includes a plurality of rectifier disc cells, respectively having a disc-shaped housing and a semiconductor diode contained therein, and a plurality of cooling members, the rectifier disc cells and the cooling members being mounted in at least two stacks disposed substantially parallel to one another, each of the rectifier disc cells having a cooling member on opposite sides thereof in the respective stack, and a pair of tensioning yokes located respectively at each end of the parallel stacks and engaging the end cooling members at a respective end of both said stacks so as to clamp the stacks therebetween, the end cooling members at an end of the

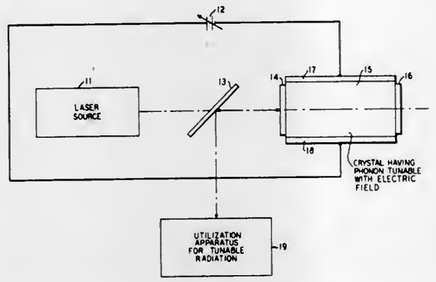
stack being electrically connected to one another so that they are at the same electric potential.

3,502,957
ANTI-SHORTING CIRCUIT FOR LOAD-GUIDED INVERTERS
Richard Fried, Fadenstrasse 35, Zug, Switzerland, and Rudolf Arthur Ausfeld, Santisstrasse 3, Pfaffenhausen, Zurich, Switzerland
Filed Mar. 20, 1967, Ser. No. 624,408
Int. Cl. H02m *1/18*
U.S. Cl. 321—11 **7 Claims**



An anti-shorting circuit for an inverter including a series and a shunt controlled rectifier connectable to a reactive load. The circuit prevents application of a triggering pulse to one controlled rectifier at least until a reversal of current flow is detected relative to the other controlled rectifier.

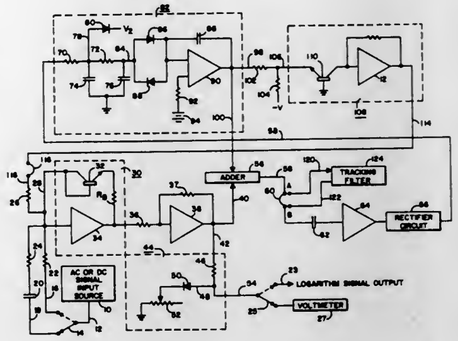
3,502,958
ELECTRIC FIELD TUNABLE COHERENT OPTICAL DEVICE
Paul A. Fleury V, Fair Haven, and John M. Worlock, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 25, 1967, Ser. No. 670,295
Int. Cl. H02m *5/06*
U.S. Cl. 321—69 **6 Claims**



Electric field tuning of coherent light over broad bands of frequencies is disclosed in an oscillator employing a paraelectric crystal, such as strontium titanate, having a phonon of frequency variable with temperature, commonly called the soft phonon mode, the frequency of which is now found to be responsive to the amplitude of the applied electric field.

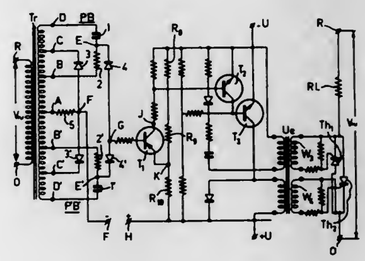
In addition, many other properties of solids, such as optical and mechanical properties, depend upon the phonons and can be employed in appropriate devices to produce a variable detectable coherent output dependent upon the applied electric field.

3,502,959
ELECTRONIC LOGARITHM CONVERTER
Norman F. Stellman, San Diego, Calif., assignor to Spectral Dynamics Corporation, San Diego, Calif., a corporation of California
Filed Jan. 29, 1968, Ser. No. 701,331
Int. Cl. H02m *7/00;* **G06g** *7/12, 7/24*
U.S. Cl. 321—8 **17 Claims**



An AC-DC logarithm converter having means for extending the DC operational range and in the AC mode employing a loop circuit that raises or lowers the amplitude of the AC input signal to a constant level, phase coherent signal in the loop and produces a DC signal in the loop having a magnitude on a logarithm scale that is proportional to the magnitude of the AC input signal.

3,502,960
IGNITION CONTROL CIRCUIT HAVING A PHASE SHIFT NETWORK FOR CONTROLLED RECTIFIERS CONNECTED IN INVERSE PARALLEL RELATIONSHIP
Hermann Roderer, Hamburg, Germany, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,715
Claims priority, application Germany, May 13, 1966, P 39,435
Int. Cl. G05f *3/08*
U.S. Cl. 323—24 **12 Claims**



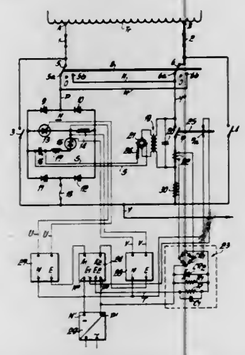
A circuit for controlling the ignition of a pair of controlled rectifiers comprises first and second phase shifting devices which produce first and second voltages in phase opposition, each of which leads the anode voltage of its respective controlled rectifier by 90°. First and second half-wave voltages are produced in the circuit and superimposed on the first and second phase shifted voltages. A source of variable direct voltage is combined therewith

to produce first and second control voltages that control a pulse generator, which in turn controls the ignition angle of the controlled rectifiers.

3,502,961
TAP-CHANGING THYRISTOR CIRCUITRY FOR REGULATING TRANSFORMERS

Manfred Matzl, Regensburg-Zeitlarn, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany

Filed Feb. 26, 1968, Ser. No. 708,085
Claims priority, application Germany, Mar. 3, 1967,
Int. Cl. H02m *5/10, 5/22*
U.S. Cl. 323—43.5 **12 Claims**

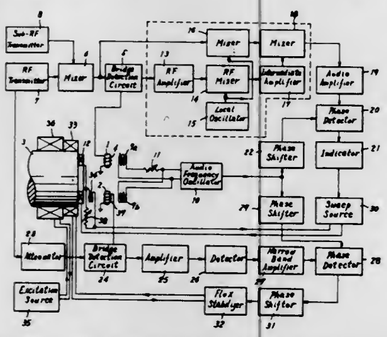


A tap-changing thyristor circuitry for regulating transformers which makes it possible to perform tap-changing operations without formation of electric arcs between relatively movable contacts. The circuitry includes at least one load thyristor shunted by an auxiliary thyristor and a commutating capacitor or turn-off capacitor, the auxiliary thyristor and the capacitor being connected in series. The particular circuitry requires a minimum of circuit-elements, is very compact, and its manufacture involves relatively low cost.

3,502,962
METHOD OF FIELD/FREQUENCY CONTROL IN GYROMAGNETIC RESONANCE

Makoto Takeuchi and Kazuo Nakagawa, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Mar. 27, 1967, Ser. No. 626,120
Claims priority, application Japan, Mar. 28, 1966, 41/19,114
Int. Cl. G01n *33/05*
U.S. Cl. 324—.5 **6 Claims**

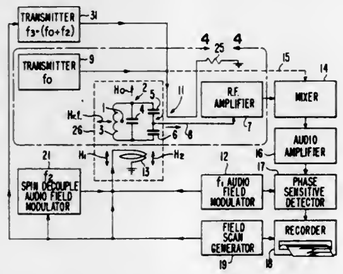


A method of field/frequency control in gyromagnetic resonance production and apparatus in which a control sample is utilized to keep the ratio between the intensity of the polarizing magnetic field and the radio frequency a constant. The control sample is shielded from sweep frequency which is applied to the magnetic field regions defined by the main and said band resonances of the control sample, thereby dividing the magnetic field into smaller sweep regions.

3,502,963
SINGLE COIL NUCLEAR RESONANCE SPECTROMETER HAVING THE RADIO FREQUENCY EXCITATION DIRECTIONALLY COUPLED INTO THE COIL

Lloyd F. Hlavka, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 12, 1967, Ser. No. 645,393
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **3 Claims**



A single-coil nuclear resonance spectrometer is disclosed. The spectrometer employs a single resonance circuit for simultaneous excitation and detection of nuclear resonance of a sample under analysis. A radio frequency transmitter transmitting a carrier frequency and a radio frequency receiver are both connected to the same resonant circuit. The polarizing magnetic field is modulated at a first audio frequency to produce a first sideband of the carrier for observing resonance of a first group of nuclei in the sample under analysis. The polarizing magnetic field is modulated at a second audio frequency to produce a second sideband of the carrier for producing saturated resonance of a second group of nuclei which are spin-coupled to the first group, to decouple the resonances of the two groups. The carrier amplitude is relatively strong in order to produce sufficient amplitude in the second sideband for saturating resonance of the second group. A directional coupler is connected in circuit between the resonant circuit and the receiver to permit a relatively strong carrier to be applied to the resonant circuit without coupling an excessive carrier component into the receiver, thereby preventing overloading of the radio frequency amplifiers in the receiver.

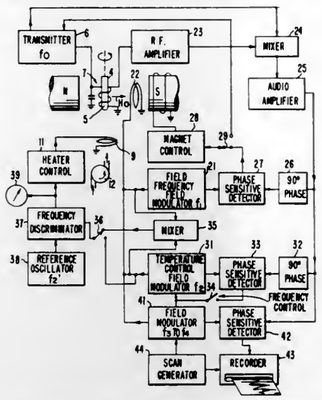
3,502,964
GYROMAGNETIC RESONANCE SPECTROMETER EMPLOYING A TEMPERATURE DEPENDENT RESONANCE LINE TO SENSE TEMPERATURE OF THE SAMPLE

Raymond Freeman, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 28, 1967, Ser. No. 656,711
Int. Cl. G01r *33/08*
U.S. Cl. 324—.5 **4 Claims**

A gyromagnetic resonance spectrometer is disclosed which employs a temperature dependent resonance line of a gyromagnetic resonance group disposed in heat ex-

changing relation with the sample under analysis for sensing the temperature of the sample to derive an indication

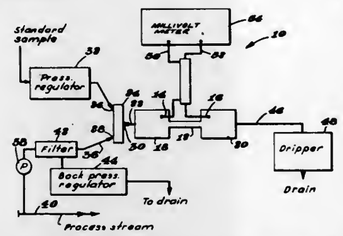


that may be utilized for controlling the temperature of the sample.

3,502,965
CONTROL APPARATUS AND SYSTEM

Walter F. Gerdes, Lake Jackson, and Hogan A. Randle, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 315,567, Oct. 11, 1963. This application Mar. 4, 1966, Ser. No. 536,542
Int. Cl. G01r *5/28;* **G01n** *27/00;* **G05d** *11/13*
U.S. Cl. 324—32 **8 Claims**



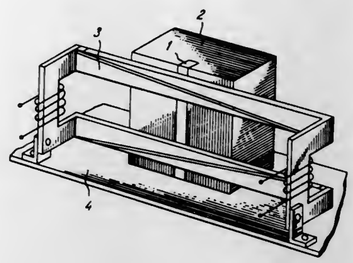
This invention relates to apparatus wherein a sample stream taken from a process stream or sample reservoir is passed through a capillary having electrically insulating walls, the capillary having reversible spaced apart electrodes, an electrode being at or near each of its ends, either continuously of for a predetermined time. As the sample stream passes through the capilliary (or capillary substitute) a measurement of the electrical signal developed across the electrode is made by means of a meter of suitable impedance which is coupled across said electrodes. The signal developed is a function of the charge condition in the sample stream.

3,502,966
TRANSDUCER DEVICE FOR MEASURING THE RELATIVE POSITION OF TWO RELATIVELY MOVABLE OBJECTS

Maxim Izrailevich Perets, Ulitsa Kirova 33, kv. 6, and Jury Vladimirovich Bulgakov, Ulitsa Sverdlova 10, kv. 7, Riga, U.S.S.R.; Sigurd Yanovich Skrastin, Ulitsa Tallinas 22, Yurmala, U.S.S.R.; and Jury Ilich Peisakhovich, Ulitsa Grivas 11, korpus 22, kv. 43, Riga, U.S.S.R.

Filed June 5, 1967, Ser. No. 643,598
Int. Cl. G01r *33/04*
U.S. Cl. 324—34 **6 Claims**

A transducer device is capable of measuring the relative speed and position of two relatively movable objects by connecting one object to a magnet and the other object to a magnetic yoke which carries windings adapted for being connected to a secondary measuring device. The yoke has a portion which interacts with the poles of the magnet and which is provided with a non-magnetic slot



of constant width which is inclined with respect to the direction of relative movement of the magnet and yoke so that the relative speed and position of the magnet and yoke is determinable by the relative areas of the sections of the yoke on either side of the slot which face the magnet.

3,502,967
SYSTEM FOR DETECTING TWIST AND BEND IN TURBINE BLADES

Jack E. Bridges, Park Ridge, Anton H. Hehn, Chicago, and Ronald R. Schwab, Evergreen Park, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Filed May 27, 1968, Ser. No. 732,263
Int. Cl. G01r *33/02*
U.S. Cl. 324—34 **9 Claims**



A system for the detection of unusual twisting or bending of blades in a turbomachine. In its preferred embodiment the system contains two transducer heads positioned above a row of turbine blade tips so that one transducer detects the passing of one point and one detects the passing of another point of a given blade. The transducers are connected to a comparison circuit which in turn is connected to some visual display device so that a reading of the twist and deflection of the blades can be made while the turbine is in operation.

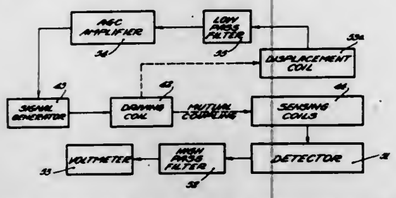
3,502,968
EDDY CURRENT INDUCTIVE FLATNESS MEASUREMENT DEVICE

Henry G. Tobin, Jr., Chicago, and James N. Van Scoyoc, Oak Park, Ill., assignors, by mesne assignments, to United Engineering & Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 4, 1966, Ser. No. 547,486
Int. Cl. G01r *33/14;* **G01b** *5/28*
U.S. Cl. 324—40 **10 Claims**

An eddy current inductive flatness measurement device which employs a driving coil having a high frequency

signal therein for developing eddy currents on the surface of a moving sheet of material and pick-up coils for sensing changes in the eddy current level in the sheet due to the closeness of the sheet to the driving coils.



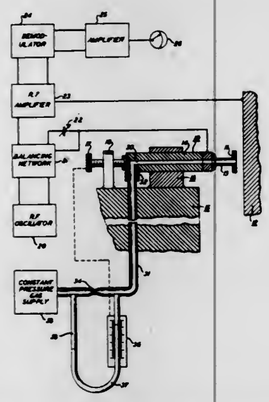
Detector means are provided for removing a high frequency carrier from the pick-up signal, and filter means are provided to separate signals indicative of the overall undulation in the sheet from ripple in the sheet which may be of a higher frequency.

3,502,969

ERROR CORRECTION IN CAPACITIVE GAGES

Jeofry S. Courtney-Pratt, Springfield, and Edward Eisner, Gillette, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 30, 1966, Ser. No. 606,240
Int. Cl. G01r 27/26
U.S. Cl. 324—61 1 Claim



The specification describes two techniques for calibrating capacitive gages. One of these provides a mechanical oscillation to the gage head giving rise to an electrical signal. Using this signal for zero calibration the normal capacitive measurement will be accurate irrespective of transient changes either in the spacing of the gage from the body being measured or in the electrical circuit. The second technique involves the continuous monitoring and adjusting of the physical spacing between the gage head and the test body using an air gage technique.

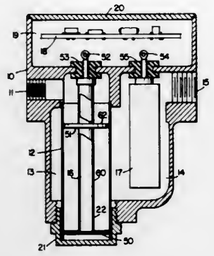
3,502,970

APPARATUS HAVING FILTER SCREEN FOR DETECTING PARTICLES IN A FLUID STREAM

Patrick T. Thayer, 209 Elizabeth Road, San Antonio, Tex. 78209

Filed Oct. 6, 1967, Ser. No. 673,351
Int. Cl. G01r 27/26; G01n 11/00
U.S. Cl. 324—61 11 Claims

This application discloses apparatus for detecting the presence of particles in a fluid stream such as the lubricating oil system of an aircraft engine. A capacitance probe detects accumulation of metal particles on one side of a filter screen while a dummy probe is provided on the downstream side of the filter to compensate for changes in the oil or other fluid. The capacitance probe and



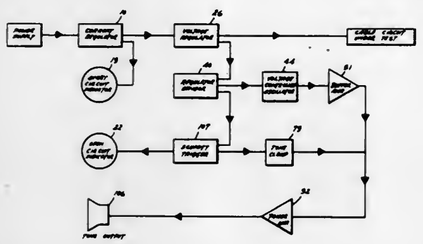
dummy probe are connected in an RF bridge, the output of which is indicated on a meter. Unbalance of the bridge causes a reading on the meter indicating particle accumulation.

3,502,971

TEST CIRCUIT INCLUDING OSCILLATOR MEANS, TRIGGER MEANS AND SWITCH MEANS FOR DETERMINING VOLTAGE DROP

John J. Glosek, Roselle, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 10, 1968, Ser. No. 696,769
Int. Cl. G01r 27/14
U.S. Cl. 324—64 5 Claims



A transistorized test circuit for detecting opens and shorts in conductor pairs of electrical cable. If the conductor pair under test is neither open or short, an audible tone is produced. However, if the conductor pair is either open or short, an appropriate indicator lamp is illuminated and the audible tone is not produced.

3,502,972

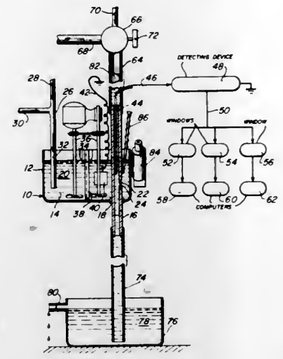
CONTINUOUS FLOW PARTICLE SIZE ANALYSER APPARATUS HAVING SUSPENSION LEVEL MAINTAINING MEANS

Robert H. Berg, 196 Clinton Ave., Elmhurst, Ill. 60126

Filed Mar. 8, 1965, Ser. No. 450,230
Int. Cl. G01n 27/00; F17d 1/00; E03b 11/00
U.S. Cl. 324—71 8 Claims

A continuous flow particle measuring apparatus which has a duct, and a flow-through chamber formed around a microscopic passageway in the wall of the duct and connected thereto. Electrodes positioned in the duct and in the chamber are electrically coupled to a detecting device which drives a counter or other apparatus for measuring, sizing, or tabulating the particles passing through the microscopic passageway. Vacuum means are

positioned at one end of the duct to maintain a suspension level in the duct sufficient to immerse the electrode therein and the passageway, yet insufficient for withdrawal of suspension from the duct. A conduit is coupled to the other end of the duct for withdrawal of the suspen-



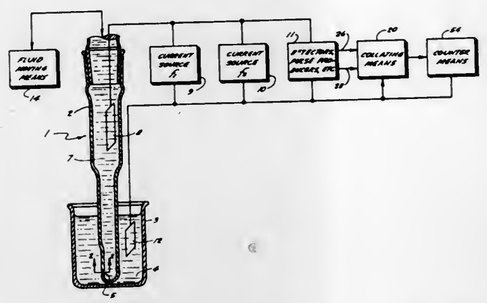
sion. The conduit communicates with a reservoir which has drain means. The pressure drop, by reason of the difference in heights between the passageway and the level of suspension at the reservoir drain, causes the flow of suspension through the passageway.

3,502,973

COLLATING APPARATUS FOR PAIRS OF ELECTRICAL PULSES PRODUCED BY PARTICLE ANALYZING APPARATUS

Wallace H. Coulter, Miami Springs, and Walter R. Hogg, Hialeah, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Continuation-in-part of application Ser. No. 552,232, May 23, 1966. This application Mar. 18, 1968, Ser. No. 713,968

Int. Cl. G06f 7/38; G01n 27/00
U.S. Cl. 324—71 10 Claims



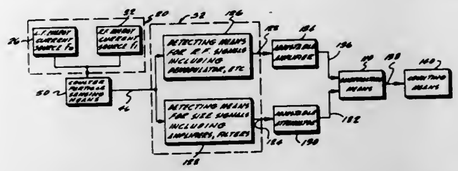
Apparatus in which there are two channels for receiving trains of pulses from a prior particle analyzing device of the Coulter type, each pulse normally having a companion pulse produced in the particle analyzing device by the same particle, and means are provided for achieving a signal which represents the relationship between pulses. In several embodiments, one pulse is attenuated in accordance with a particular factor and then compared with the other in a threshold circuit, so that only pulses of a certain range will produce output signals. In other embodiments, electronic windows are formed by means of pairs of thresholds, and one signal of each pair is treated by attenuation in two attenuators to provide two signals defining a given range. Only relationships which fall within the range result in output signals.

3,502,974

SIGNAL MODULATED APPARATUS FOR GENERATING AND DETECTING RESISTIVE AND REACTIVE CHANGES IN A MODULATED CURRENT PATH FOR PARTICLE CLASSIFICATION AND ANALYSIS

Wallace H. Coulter, Miami Springs, and Walter R. Hogo, Hialeah, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois

Filed May 23, 1966, Ser. No. 552,232
Int. Cl. G01n 27/00, 27/02
U.S. Cl. 324—71 66 Claims



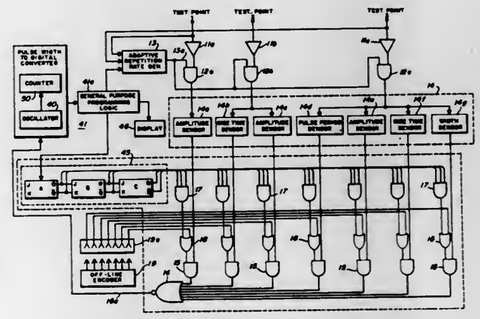
Particle analysis apparatus for responding to the passage of fluid suspended particles through a microscopic path by generating and detecting signals as a result of such passage. The signals are related to electric current changes caused in the path due to the passage of the particles, and these changes primarily comprise resistive and reactive current components which reflect physical characteristics of the particles. The current in the path is provided by current excitation means of at least radio frequency and preferably in combination with another different frequency; however, any two different frequencies are adequate so that he signals are separable from one another because of their location in the frequency spectrum and/or their phase relationship. At least two resulting signals are derived for each particle and are capable of being used to ascertain more than one physical characteristic of each particle, so that even particles of identical size but of different substance would be separately detectable.

3,502,975

TEST SYSTEM FOR ISOLATING AND MEASURING PART OF A CONTINUOUS SIGNAL

Richard L. Gowan, Coronado, and Lewis E. Adsit, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

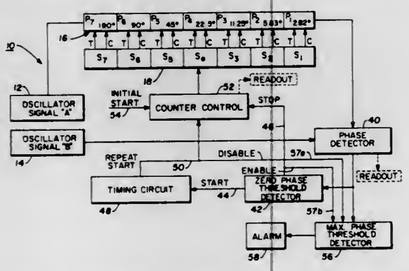
Filed June 22, 1967, Ser. No. 648,547
Int. Cl. G01r 15/12
U.S. Cl. 324—73 5 Claims



As prime equipment, such as radio, radar, sonar, computer and control equipment becomes more complex, the probability of failure increases. This disclosure is directed to a system for rapidly monitoring the quality of the signal at numerous test points throughout the equipment. In the interest of reliability, each signal parameter at

each test point is converted to a pulse the duration of which is a measure of the parameter. These pulses are each transmitted to a centrally located general purpose computer where each is measured by a high frequency oscillator, gate, and counter.

3,502,976
METHOD AND SYSTEM FOR MEASURING AND INDICATING THE FREQUENCY AND PHASE DIFFERENCES BETWEEN A PLURALITY OF PRECISION FREQUENCY SOURCES
Leo A. Chamberlin, Jr., Richardson, and Dale E. Edwards, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,176
Int. Cl. G01r *23/00, 23/12;* **H03b** *3/04*
U.S. Cl. 324—82 **14 Claims**



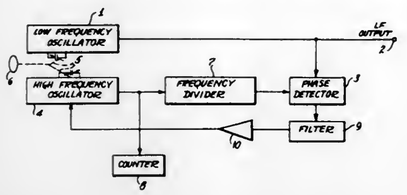
A pair of precision frequency signals having the same nominal frequency are compared by shifting the phase of the first until the two signals are momentarily in phase. Then after a measured time period, the phase difference is measured. The length of the measured period and the measured phase difference are an accurate measure of the difference in frequency of the two signals.

A system for continuously comparing a pair of signals having the same nominal frequency and indicating when the difference in the frequencies exceeds a predetermined minimum. This system features a binary phase shift network operated by a binary counter which successively delays the first signal. A phase detector stops operation of the binary counter when the phase between the signals is zero, and starts a timing circuit. After a predetermined delay period, the counter is restarted and the cycle repeated. A threshold circuit detects if the phase difference during the delay period exceeds a predetermined maximum representative of the maximum difference in the frequencies of the two signals permissible.

A system for determining the center frequency of a redundant set of three signals and for detecting a gross failure of any one of the signals including three of the systems just described for comparing a pair of signals. The phase detector also provides a signal indicating whether the phase shifted signal leads or lags the reference signal. The signals are compared $A-B$, $B-C$, and $C-A$, and logic circuitry used to identify a failed signal source and to select the source with the center frequency.

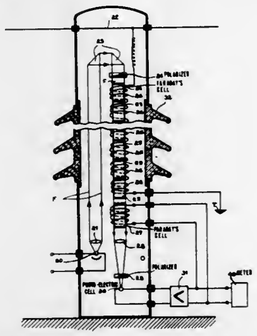
3,502,977
LOW FREQUENCY MEASURING APPARATUS WITH PHASE LOCKED LOOP
Peter L. Richman, Lexington, and James L. West, Concord, Mass., assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,573
Int. Cl. G01r *23/12*
U.S. Cl. 324—82 **9 Claims**

A high frequency oscillator is phase and frequency locked at a frequency N times that of a low frequency oscillator. The frequency of the high frequency oscillator is measured to yield a measure of the low frequency



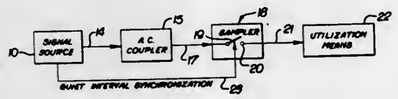
which is difficult to measure directly with high resolution in a reasonable time.

3,502,978
MAGNETO-OPTICAL VOLTAGE MEASURING DEVICE UTILIZING POLARIZED LIGHT
Georges Bernard, St. Egreve, and Yves Pelenc, La Tronche, France, assignors to Societe Anonyme dite: Merlin Gerin, Grenoble, France
Filed Mar. 10, 1967, Ser. No. 622,276
Claims priority, application France, Mar. 16, 1966, 4,898
Int. Cl. G01r *31/00*
U.S. Cl. 324—96 **8 Claims**



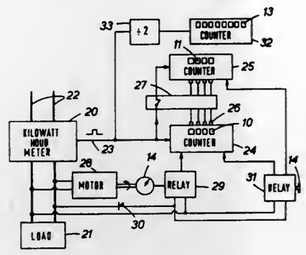
A voltage measuring device for the measurement of the voltage of an aerial high-voltage conductor. A polarized light beam traverses a magneto-optical device composed of a coil surrounding a medium capable of modifying the polarization of the light beam as a function of the magnetic field produced by the current flowing in the coil which is connected between the high-voltage conductor and earth. The modification of the polarization is measured.

3,502,979
QUIET INTERVAL PULSE SAMPLING
John A. Holly, Monrovia, Calif., assignor to Cary Instruments, Monrovia, Calif., a corporation of California
Filed Apr. 26, 1967, Ser. No. 633,826
Int. Cl. G01r *19/00, 19/04;* **H03k** *9/02*
U.S. Cl. 324—102 **11 Claims**



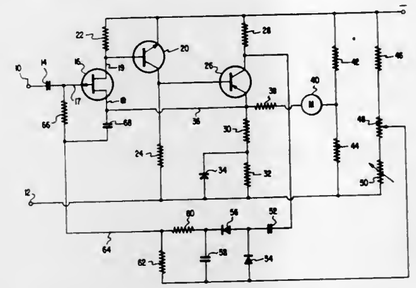
Disclosed pulse-train signal level measurement apparatus operates to produce an effective AC signal zero reference level, and to sample the quiet-interval signal level below the reference level, in order to overcome error due to pulse jitter and noise.

3,502,980
DIGITAL MAXIMUM DEMAND INDICATOR FOR ELECTRIC POWER CONSUMPTION
Albert Jefferies Baggott, Oxted, Surrey, England, assignor of one-half to London Electricity Board, London, England, a British corporation
Filed Nov. 21, 1966, Ser. No. 595,947
Claims priority, application Great Britain, Nov. 19, 1965, 49,330/65
Int. Cl. G01r *19/16*
U.S. Cl. 324—103 **12 Claims**



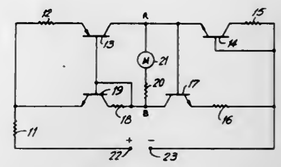
This specification discloses a maximum demand indicator for an electricity supply consumer where the tariff includes a charge in respect of the maximum consumption of power over a predetermined, possibly controllable, short period. In one embodiment, electric pulses, representing units of power consumed, are obtained from a kilowatt-hour meter and fed to a first counter. This counter is periodically re-set to zero either by a timer or from a central control, typically every half-hour. The first counter thus counts the total power supplied in each such integrating period. A second counter is arranged to continue counting pulses only when the first counter reaches the total in the second counter. The second counter thus records the maximum value reached by the first counter during any integrating period. At the end of an account period, e.g. at the end of each month, either manually or automatically on interrogation, and both counters are then simultaneously re-set to zero.

3,502,981
ALTERNATING CURRENT METER AMPLIFIER
Peter S. Teer, Johnson City, and Howard F. Barker, Endwell, N.Y., assignors to Amphenol Corporation, Oak Brook, Ill., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,774
Int. Cl. G01n *1/30*
U.S. Cl. 324—123 **6 Claims**



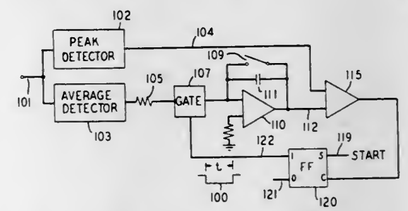
An alternating current meter amplifier in which the amplified output of a high input impedance field effect transistor is detected and a portion thereof is fed back to the input of the field effect transistor to increase the input impedance thereof.

3,502,982
EXPANDED SCALE ELECTRICAL INDICATING INSTRUMENT
Kurt Schneider, 53–56 65th Place, Maspeth, N.Y. 11378
Filed Nov. 13, 1967, Ser. No. 682,376
Int. Cl. G01r *1/02*
U.S. Cl. 324—131 **8 Claims**



A stable and high efficiency expanded scale voltmeter which employs a bridge circuit having a pair of amplifiers coupled to opposite branches of the bridge, and a pair of voltage reference sources coupled to the alternate opposite branches of the bridge, having their reference outputs coupled to the inputs of said amplifiers. When a potential is applied to a first pair of terminals, and after the voltage reference sources reach conduction, the amplifiers will unsaturate and amplify so that the bridge will become unbalanced and detect further applied potential over a limited range as indicated on a linear meter connected to a second pair of opposite terminals of the bridge.

3,502,983
SIGNAL PEAK-TO-AVERAGE RATIO DETECTOR
James F. Ingle, Fair Haven, and George E. McLaughlin, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 20, 1968, Ser. No. 777,332
Int. Cl. G01r *7/04*
U.S. Cl. 324—140 **8 Claims**

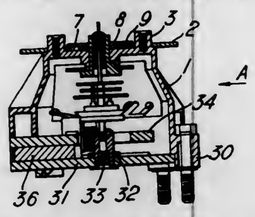


The fidelity of a transmission facility is determined automatically by apparatus to measure the peak-to-average ratio of a test signal transmitted through the transmission facility. The average value of the test signal is integrated and compared with the peak value of the test signal. The time duration necessary for the integrated value to accumulate to the peak value is representative of the peak-to-average ratio.

3,502,984
ELECTRONIC REVOLUTION COUNTER WITH IMPROVED FRAME
Antonio Mincuzzi, Milan, Italy, assignor to Soc. per Azioni Fratelli Borletti, Milan, Italy, an Italian company
Filed July 3, 1967, Ser. No. 650,997
Claims priority, application Italy, July 2, 1966, 19,778/66
Int. Cl. G01r *1/04;* **G01p** *1/02*
U.S. Cl. 324—157 **6 Claims**

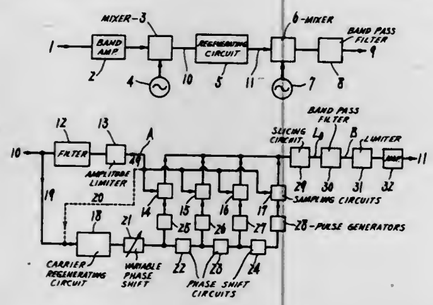
An improved construction for an electronic revolution counter, particularly applicable to Otto cycle engines of motor vehicles, having a housing for a galvanometer and

for a so-called "monostable multivibrator" electronic circuit controlling the galvanometer. In the improved construction said housing comprises a single, substantially frustoconical frame, with the bases of which there are associated bearing bushes supporting the spindle of the



moving system of the galvanometer, a printed-circuit plate carrying said electronic circuit and a sleeve housing, one of said bushes being fixable to the upper base of the frame by the action of a single ring with a bayonet connection.

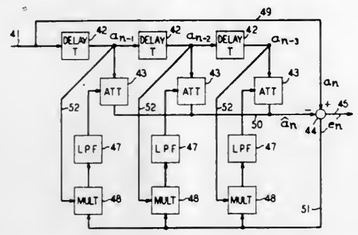
3,502,985
REGENERATIVE REPEATER AND PHASE REGENERATING CIRCUIT
Masayasu Hata, Tokyo, Japan, assignor to Oki Electric Industry Company Limited, Tokyo, Japan
Filed Dec. 13, 1966, Ser. No. 622,006
Claims priority, application Japan, Dec. 15, 1965, 40/76,650; Jan. 10, 1966, 41/923
Int. Cl. H04b *7/14*
U.S. Cl. 325—13 **7 Claims**



A regenerative repeater, in a system for transmitting codes by phase modulation of plural phases, uses a sampling technique and a slicing technique in the intermediate frequency band. A basic phase signal is derived from the intermediate frequency and is converted into pulses which are superposed on the phase modulated signals and applied to a circuit having a threshold value characteristic. The output of this circuit is filtered to regenerate the phase modulated signal. The regeneration of a phase, in the regenerative repetition of a phase-modulated signal, is formed in a simple manner by a negative resistance element and a resistance and this arrangement can be used for a direct regenerative repeater system.

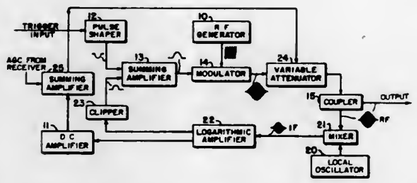
3,502,986
ADAPTIVE PREDICTION FOR REDUNDANCY REMOVAL IN DATA TRANSMISSION SYSTEMS
Robert W. Lucky, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 14, 1967, Ser. No. 690,585
Int. Cl. H03k *13/22;* **H04b** *1/66*
U.S. Cl. 325—38 **8 Claims**

The transversal delay line filter is employed in a linear, time-variant signal predictor for redundancy removal in digital data transmission systems. Tap attenuators on the delay line are continuously and adaptively adjusted in response to the difference between actual signal samples and predicted signals derived from a finite number of past signal samples. Only the difference signals are transmitted



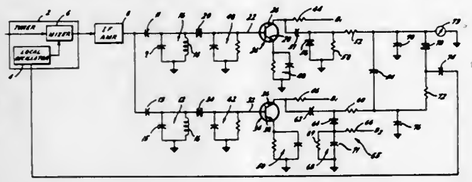
to reduce line signal power. A similar adaptive transversal filter at the receiver reconstructs the original data by reinsertion of the predicted components into samples of the received difference signals.

3,502,987
ANALOG FEEDBACK IMPLEMENTATION OF GAUSSIAN MODULATED SIGNALS
Arnold Newton, Forest Hills, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed June 6, 1967, Ser. No. 644,462
Int. Cl. H03c *1/06;* **H04b** *1/04*
U.S. Cl. 325—159 **1 Claim**



An RF transmitter including Gaussian generating circuitry for extending the normal dynamic range of operation. RF signals are amplified through a series of amplifiers, shaped and then level controlled through a logarithmic feedback network. A Gaussian output is achieved by comparing the logarithm of the transmitted pulse envelope with a locally generated parabolic envelope. The feedback loop is used to force the difference toward zero with the resulting output a good approximation to Gaussian.

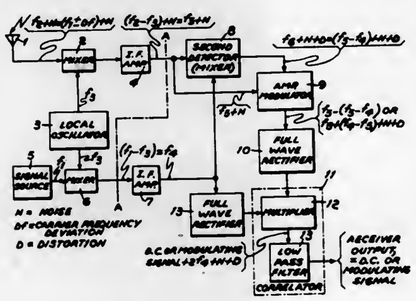
3,502,988
TUNING CIRCUIT INCLUDING A SIGNAL-CONTROLLED VARIABLE CAPACITANCE DEVICE
Rufus F. Shelby, Philadelphia, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 577,865
Int. Cl. H04b *1/16*
U.S. Cl. 325—420 **4 Claims**



A control circuit which, when supplied with two alternating input signals of adjacent frequencies by a mixer

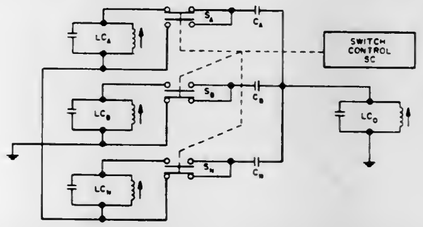
having a local oscillator coupled thereto, one such signal being amplitude-modulated and the other being amplitude-constant (e.g. frequency modulated), is responsive only to the amplitude-modulated input signal to develop a control signal the value of which is dependent on the frequency of the amplitude-modulated input signal. This control signal is supplied to a signal-responsive variable capacitor arranged to tune the local oscillator, and is effective to change the capacitance of that capacitor, and hence the frequency of the local-oscillator output signal, until the frequency of the amplitude-modulated input signal supplied by the mixer is substantially equal to a selected value. A voltage indicator coupled to the variable capacitor indicates the presence of any amplitude-modulated input signal having a frequency within the passband of the control circuit, but gives no indication in response to an amplitude-constant input signal. The control circuit is particularly useful in a television receiver employing an intercarrier sound system, to provide automatic frequency control of the local oscillator of the receiver selectively in response to the IF picture carrier.

3,502,989
RECEIVER EMPLOYING CORRELATION TECHNIQUES
Vladimir P. Honeiser, Lawrence Township, Mercer County, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 3, 1966, Ser. No. 547,276
Int. Cl. H04b *1/10*
U.S. Cl. 325—476 **10 Claims**



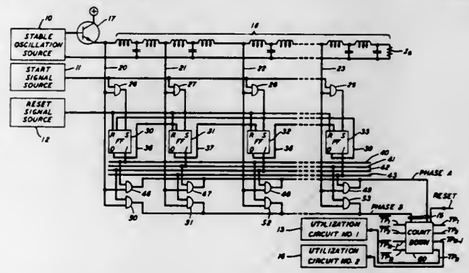
A receiver employing correlation techniques for detecting signals immersed in noise which may have experienced Doppler shift or other carrier frequency deviation. In a first embodiment, the received signal and local reference signal are applied to a mixer. The received signal and the output of the mixer are applied to an amplitude modulator. The resultant amplitude modulated signal and the reference signal are correlated after full wave rectification to produce the receiver output. In a second embodiment, the full wave rectification of the first embodiment is eliminated by providing phase synchronization between the reference carrier and received carrier. The receiver output is provided as in the first embodiment and the synchronization is provided by a voltage controlled phase shifter in the reference signal path which is controlled by the output of a second correlator responding to the amplitude modulated signal and the reference signal from the controlled phase shifter. The reference signal input to the first correlator, in the second embodiment, is the output of the controlled phase shifter shifted by a fixed 90°.

3,502,990
SUMMATION NETWORK
Richard W. Bradmiller, Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Baltimore, Md., a corporation of Maryland
Original application Nov. 29, 1963, Ser. No. 327,013, now Patent No. 3,329,774, dated July 4, 1967. Divided and this application Apr. 21, 1967, Ser. No. 632,670
Int. Cl. H03h *17/56*
U.S. Cl. 328—104 **10 Claims**



An electrical apparatus for substantially lossless summation, wherein the coupling element of a double tuned circuit for the switch-on condition becomes a portion of a single tuned circuit in the switch-off condition without detuning either of the tuned circuits. A single tuned output circuit has several coupling capacitors connected to the input thereof with the opposite side of each capacitor connected to a switch which switches each capacitor either to one of several crystal controlled oscillators or to ground. A switch control circuit allows one coupling capacitor to be connected to its associated oscillator at a time, while the remaining capacitors are connected to ground and provides additional capacitance in the tuned output circuit.

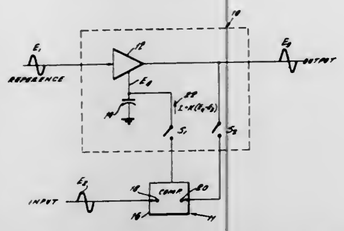
3,502,991
SIGNAL GENERATOR WITH ASYNCHRONOUS START
Sidney F. Sampson, Glen Ellyn, Ill., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 19, 1967, Ser. No. 647,031
Int. Cl. G01r *29/02*
U.S. Cl. 328—130 **3 Claims**



A tapped delay line receiving the output of a stable oscillator has its taps selectably gated through corresponding trigger circuits to an output connection. A trigger signal occurring asynchronously with respect to the oscillator output actuates a selected one of the trigger circuits as a function of the phase relationship between the oscillator output and the trigger signal to establish a circuit path from the oscillator through the selected tap to the output connections. A counting circuit divides down the frequency of signals at the output connections so that a long, asynchronously occurring, time interval

can be measured with designably sufficient precision to locate events accurately near either extremity of the interval.

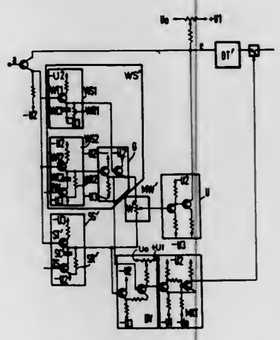
3,502,992
UNIVERSAL ANALOG STORAGE DEVICE
Bernard Cooperman, Syosset, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,297
Int. Cl. H03k *17/56*
U.S. Cl. 328—151 **7 Claims**



An electrical circuit especially useful in performing prescribed functions of maintaining the magnitude of an output signal continually equal to the magnitude of a recurring input signal, of performing signal multiplication and division, and of performing analog-to-digital conversion.

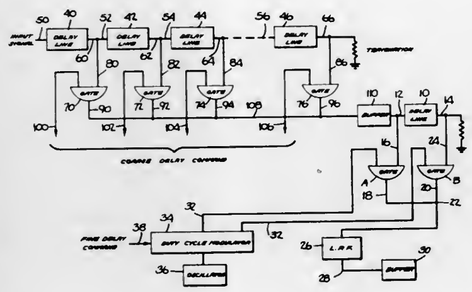
An amplifier is provided between the input and output circuits of the device, with means being also provided to vary the amplifier gain until the input and output signals are equal in magnitude. The gain control signal so developed is stored in an electronic device until the input signal next occurs, at which time it will cause the amplifier to produce an exact replica of the input signal.

3,502,993
DIGITIZER HAVING VARIABLE THRESHOLD CONTROLLED BY SIGNAL AND BACKGROUND SIGNAL COMPARISON
Norbert Schürzinger, Munich, and Wolfgang Mayer, Munich-Obermenzing, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed June 7, 1966, Ser. No. 555,851
Claims priority, application Germany, June 18, 1965, S 97,683
Int. Cl. H03k *17/30*
U.S. Cl. 328—151 **5 Claims**



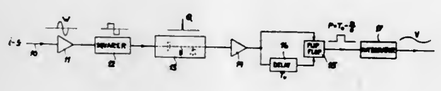
In a system for digitizing signals which are recorded on a record carrier and detected by scanning the carrier, changes in the background level and in the signal level not related to signal information are compensated for by detecting the signal level and the background level separately, and using the comparision therebetween to control the threshold of the digitizing circuit. Short term variations may also be compensated for by employing a storage circuit having approximately equal charge and discharge times, in one of the detecting means.

3,502,994
ELECTRICALLY VARIABLE DELAY LINE
Owen J. Ott, Brookfield, and Raymond A. Runyan, Ridgefield, Conn., assignors to Data Control Systems, Inc., Danbury, Conn., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,500
Int. Cl. H03k *5/18*
U.S. Cl. 328—155 **6 Claims**



An electrically variable time delay circuit in which precise time delay is provided in accordance with an adjustable control signal. Increments of coarse delay are provided by a multisection delay line selectively and sequentially gated by a first control signal, and fine delay provided by a single fixed delay line operative with sequentially activated gates such that the fine delay is proportional to the duty cycle of a second control signal.

3,502,995
PULSE-COUNTING-TYPE LINEAR FREQUENCY DISCRIMINATOR
Ezio Cottatellucci and Francesco Carena, Milan, Italy, assignors to Società Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy, a corporation of Italy
Filed Mar. 13, 1968, Ser. No. 714,400
Claims priority, application Italy, Mar. 29, 1967, 14,270/67
Int. Cl. H03d *3/04*
U.S. Cl. 329—126 **7 Claims**



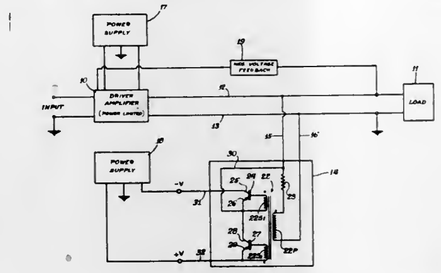
A frequency-modulated carrier wave is differentiated to yield a sharp counting pulse at the beginning of each cycle, this pulse being applied to a delay line to start a time interval T_0 satisfying the relationship

$$nT_{max} \leqq T_0 \leqq (n+1)T_{min}$$

where $T_{max}=1/f_{min}$ is the length of a cycle at the minimum frequency f_{min}, $T_{min}=1/f_{max}$ is the length of a cycle at the maximum frequency f_{max}, and n is an integer equal to or just below the value $1/(k-1)$, with $k=f_{max}/f_{min}$; a flip-flop responsive to the counting pulses and to countervailing pulses from the delay line generates

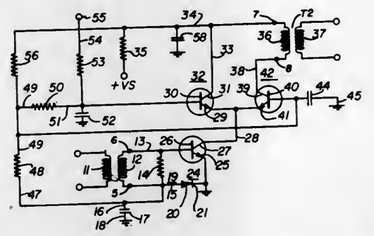
a train of rectangular pulses of a duration T_0-nT or $(n+1)T-T_0$, $T=1/f$ being the length of a cycle at the actual carrier frequency f, whereupon these rectangular pulses are integrated to yield a signal voltage proportional to positive or negative increments in carrier frequency within the range $\Delta f=f_{max}-f_{min}$.

3,502,996
AMPLIFYING SYSTEM EMBODYING A TWO-TERMINAL POWER AMPLIFIER
Madan M. Sharma, Los Angeles, Calif., assignor, by mesne assignments, to Howard S. Martin, Evanston, Ill.
Filed Feb. 12, 1964, Ser. No. 344,315
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 **3 Claims**



An unbiased, class B amplifier utilizing series connected transistors having the primary windings of a transformer connected to the input circuits of the transistors for producing compensation for cross-over distortion. Also no forward biasing is used and the signal input wire connections may also be utilized as the output circuit.

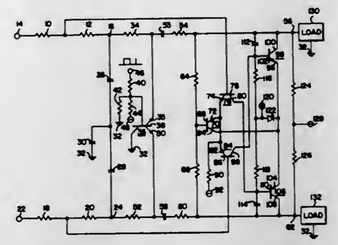
3,502,997
INTEGRATED SEMICONDUCTOR CASCODE AMPLIFIER
Jan A. Narud and James E. Solomon, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,497
Int. Cl. H03g *3/30*
U.S. Cl. 330—29 **12 Claims**



Disclosed is an AGC cascode amplifier adapted for fabrication as a monolithic integrated circuit and includes input and output transistors connected in cascode and with different common mode configurations. A control or AGC transistor is emitter coupled in parallel with the output transistor and is connected with the same common mode configuration as the output transistor.

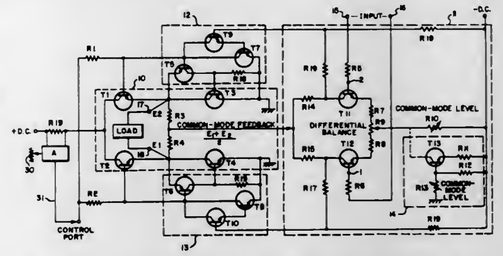
An AGC voltage may be applied to the control transistor to differentially vary the currents in the control and output transistors and thereby vary the gain of the amplifier. A diode is connected in parallel with the emitter-base junction of the input transistor and has electrical characteristics which are closely matched to the input transistor. The P and N type regions of the diode have approximately the same doping level as that of the emitter and base regions of the input transistor and this match insures that a substanially constant quiescent current flows in the input transistor.

3,502,998
TRANSFORMERLESS AC/DC REFLEX AMPLIFIER
Daniel J. Sikorra, Champlin, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,067
Int. Cl. H03f *3/68*
U.S. Cl. 330—30 **9 Claims**



A transformerless AC/DC reflex amplifier. An input AC signal is amplified using an AC amplifier stage and is demodulated and returned to the same stage where it is then amplified again.

3,502,999
DIFFERENTIAL POWER AMPLIFIER
Stanley Ronchinsky, West Newton, Mass., assignor, by mesne assignments, to Kollmorgen Corporation, Garden City, N.Y., a corporation of New York
Filed July 9, 1968, Ser. No. 743,570
Int. Cl. H03f *3/68, 1/32*
U.S. Cl. 330—30 **7 Claims**

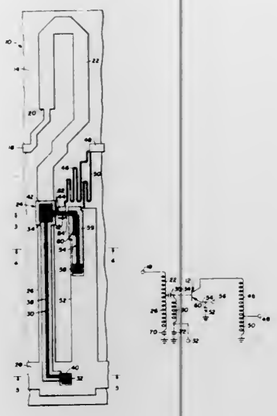


A direct coupled differential transistorized amplifier having common-mode feedback directly coupled from the output load to provide D-C operating voltage for a preceding differential amplifier, the common-mode voltage having an amplitude equal to the average value of the voltage developed across the terminals of the output load.

3,503,000
MEANS FOR D.C. BIASING A DEVICE FOR OPERATION AT HIGH FREQUENCY
Edward L. Ivey, Garland, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,806
Int. Cl. H03f *3/14*
U.S. Cl. 330—38 **5 Claims**

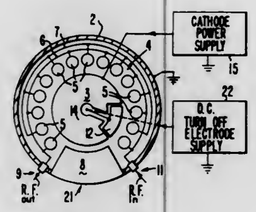
Disclosed is a microwave circuit having two sections, one having an input for A.C. signals and one having a

conductor for D.C. bias voltage. The conductor is A.C. coupled to the A.C. signal section from a point of low



impedance to the point where the bias A.C. signals are applied to a device.

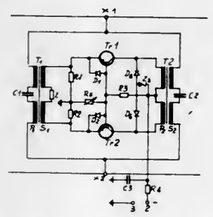
3,503,001
STATIC TURNOFF METHOD AND APPARATUS FOR CROSSED-FIELD SECONDARY-EMISSION COLD-CATHODE REENTRANT-SYSTEM R.F. PULSED AMPLIFIERS
George K. Farney, New Providence, N.J., assignor, by mesne assignments, to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 19, 1967, Ser. No. 668,784
Int. Cl. H03f *1/26*
U.S. Cl. 330—42 **12 Claims**



Cold-cathode, crossed-field, reentrant-stream, R.F. pulsed amplifier tubes are disclosed employing method and apparatus for automatically terminating the R.F. output of the tube upon the termination of the input R.F. pulse to be amplified. Various statically operating means are provided for locally reducing the secondary electron current drawn into the circulating hub of current in the magnetron-type interaction region. The reduction of cathode current is localized and reduced sufficiently such that the presence of a coherent R.F. input pulse on the slow wave circuit is necessary to sustain the hub of electron current such that upon termination of the input pulse the R.F. output automatically terminates. The various turnoff means are statically operated such that an expensive modulator is not necessary to obtain turnoff of the tube. The static turnoff devices rely for their operation upon the fact that the localized secondary emission from the cold cathode is less in the presence of noise signals on the slow wave circuit than it is for the case where a coherent R.F. signal is present on the circuit for amplification. Thus, the localized reduction in the cathode current is insufficient in the presence of a strong R.F. drive signal on the circuit to cause the hub current to go to zero. However, noise signals on the R.F. circuit produce insufficient replenishment of the cathode secondary electron current to overcome the localized reduction and the reentrant hub current goes to zero, thereby causing the R.F. output of the tube to cease upon termination of the R.F. input signal to be amplified.

In one embodiment, a turnoff control electrode is disposed in the surface of the cathode, preferably in a section opposite the upstream one-third of the R.F. circuit. A static D.C. potential is applied to the turnoff control electrode to cause a certain fraction of the hub current to be collected on the electrode, in one case, or to be deflected toward the anode and the electron trajectories perturbed to reduce back bombardment of the cathode emitter and thus replenishment of the hub current in the absence of a strong coherent R.F. signal. In another embodiment, the cathode is recessed in a localized region to cause the reentrant hub current to move away from the R.F. fields of the R.F. circuit, and to produce turbulent electron flow for destroying phase coherence to reduce back bombardment of the cathode emitter and, thus, the emission therefrom in the absence of a coherent R.F. signal on the circuit. In another embodiment, the cathode emitter includes a localized raised portion for pushing the circulating hub current away from the cathode and for producing turbulent electron flow and loss of phase lock with waves on the circuit thereby reducing back bombardment of the cathode and the secondary emission therefrom. In another embodiment, a magnetic shunt is provided in the cathode emitter for reducing the magnetic field adjacent to the cathode in a localized region to reduce the back bombardment of the cathode and thus the secondary emission resulting therefrom. In another embodiment, the cathode surface is serrated in a localized region to locally reduce the effective secondary emission of the cathode emitter by trapping the secondary electrons.

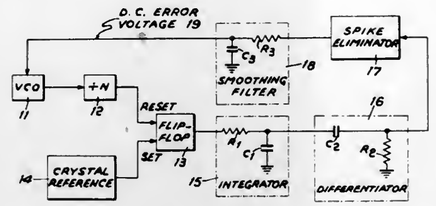
3,503,002
TRANSISTOR NEGATIVE IMPEDANCE AMPLIFIER, STABLE IN SHORT CIRCUIT, PARTICULARLY FOR TELEPHONE SYSTEMS
Cesare Valfré, % A.E.T., Via Gianfrancesco, Re 47, Turin, Italy
Filed June 6, 1966, Ser. No. 555,297
Claims priority, application Italy, July 5, 1965, 13,074/65
Int. Cl. H03f *15/00*
U.S. Cl. 330—61 **6 Claims**



A transistor amplifier including input and output transformers, a pair of transistors in push-pull relationship in which means are provided for stabilizing the characteristics of the amplifier by polarizing the voltage of the bases of the transistors with respect to their associated emitters, means to reduce the attenuation of the amplifier in the absence of an input voltage by being connected in circuit relationship with the collector circuits, means in said transformers to eliminate saturation phenomena, means connected in parallel with one of the transformer windings

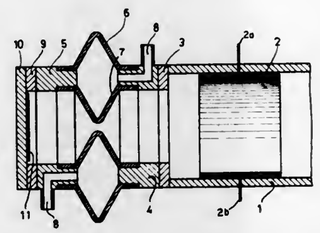
for eliminating low frequency oscillations, and diode means in the collector circuits for limiting the maximum voltages induced on the transistors.

3,503,003
DIGITAL AFC
Paul H. Grobert, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed June 4, 1968, Ser. No. 734,314
Int. Cl. H03b *3/04*
U.S. Cl. 331—17 **10 Claims**



An automatic frequency control circuit wherein the slope of a sawtooth wave is proportional to the frequency difference between a voltage controlled oscillator being controlled and a crystal reference oscillator. The sign of the slope of the wave indicates whether the controlled oscillator is higher or lower than the reference frequency.

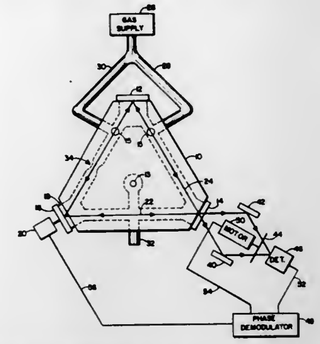
3,503,004
LASER CONSTRUCTION
Jan Haisma and Cornelis Leendert Alting, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,228
Claims priority, application Netherlands, Oct. 8, 1965, 6513043
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **5 Claims**



Construction of an infrared region laser having a fluid controllable bellows-like arrangement for varying the cavity length.

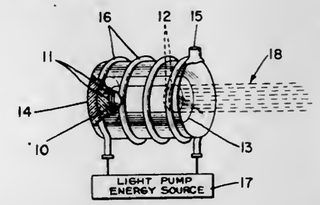
3,503,005
RING LASER WHICH IS BIASED TO PERMIT TWO EQUAL INTENSITY TRANSITION FREQUENCIES TO BE GENERATED IN OPPOSITE DIRECTIONS
Hans W. Mocker, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 17, 1967, Ser. No. 675,847
Int. Cl. H01s *3/00;* **G01b** *9/02*
U.S. Cl. 331—94.5 **4 Claims**

Apparatus to frequency stabilize a molecular gas ring laser. The laser is biased sufficiently to permit the generation of two different transition frequency beams in opposite directions about the ring laser cavity. Suitable monitors are used to adjust the cavity length so as to keep the



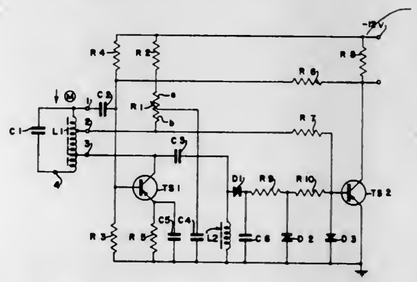
beams at equal intensities in which condition the two frequencies remain constant.

3,503,006
SOLID STATE LASER DEVICE INCLUDING LANTHANUM OXIDE AS THE HOST MATERIAL
Raymond H. Hoskins, San Pedro, and Bernard H. Soffer, Northridge, Calif., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 30, 1964, Ser. No. 363,901
Int. Cl. H01s *3/00;* **C09h** *1/04*
U.S. Cl. 331—94.5 **5 Claims**



A solid state laser device including a host crystal of lanthanum oxide doped with from .01 to 10 atom percent of neodymium to provide the lasering ions is provided.

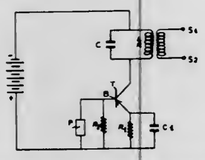
3,503,007
CONTROLLABLE OSCILLATOR
Ernst Kutschbach, Karl-Marx-Stadt, Germany, assignor to VEB Buchungsmachinenwerk Karl-Marx-Stadt, Karl-Marx-Stadt, Germany
Filed Sept. 20, 1967, Ser. No. 669,144
Int. Cl. H03b *5/24*
U.S. Cl. 331—117 **5 Claims**



An oscillator circuit for the use as a contactless proximity switch comprises a tapped tank circuit. A transistor

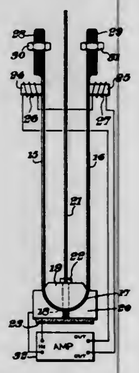
oscillator is connected to said tank circuit and an adjustable resistor is connected between a tap on the tank circuit and ground to arbitrarily preset the onset of the oscillations which is turned off by the approach of an external damping member. The oscillator amplifier is coupled with a second amplifier into a flip-flop circuit which insures stable turned-off and turned-on conditions of the oscillator circuit.

3,503,008
PHASE MODULATION OSCILLATOR
Robert Delignieres, Colombes, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, Hauts-de-Seine
Filed Apr. 25, 1968, Ser. No. 724,088
Claims priority, application France, May 2, 1967, 104,976
Int. Cl. H03b *5/02*
U.S. Cl. 331—117 **6 Claims**



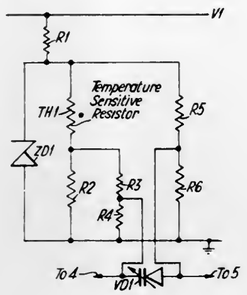
An oscillator including a transistor having an oscillating circuit connected with its collector electrode and a decoupling capacitance connected with its emitter electrode. A control voltage is applied to the base electrode of the transistor, this voltage having a first value corresponding to a conductive state of the transistor and a second value smaller than the first value, corresponding to a reduced intensity of the emitter current, this intensity being however different from zero. This second value is adapted to generate in the oscillating circuit oscillations which are sustained by a feedback coupling provided mainly by the internal base-collector capacitance of the transistor.

3,503,009
TUNING FORK FOR ELECTROMECHANICAL OSCILLATORS
Kenneth John Horstmann, 14 Park Lane, Lower Weston, Bath, Somerset; Colin Grahame Douglas, Stoneybroke, Watergates, Colerne, Wiltshire; and Alan Guiver Goodliff, 27 St. Peters Road, Midsomer Norton, Somerset, all of England
Filed June 17, 1968, Ser. No. 737,516
Int. Cl. H03b *5/30*
U.S. Cl. 331—155 **8 Claims**



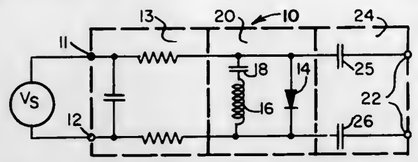
A constant frequency oscillator comprising a tuning fork with transducers on both sides connected electrically in opposition and a piezoelectric device on the clamp supporting the node.

3,503,010
TEMPERATURE COMPENSATING UNIT FOR CRYSTAL OSCILLATORS
Peter Bernard Page, Harlow, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 9, 1967, Ser. No. 681,624
Claims priority, application Great Britain, Nov. 18, 1966, 51,816/66
Int. Cl. H03b *3/12*
U.S. Cl. 331—176 **5 Claims**



The linear term of the temperature coefficient of an AT-cut crystal is temperature compensated for by altering linearly the bias voltage applied to a variable capacitance diode by means of a temperature sensitive resistor-resistor voltage divider network coupled in shunt relation with a voltage stabilized source.

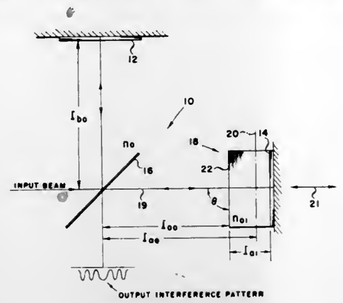
3,503,011
VOLTAGE CONTROLLED TUNING
Anthony F. Keller, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 26, 1966, Ser. No. 553,088
Int. Cl. H03b *3/16*
U.S. Cl. 331—177 **2 Claims**



A network for a precision crystal oscillator which allows precise linear variations in frequency with linear variations in voltage applied thereto. The network includes a variable capacitance diode in parallel with a capacitor and coil. Two small capacitors couple the network to the oscillator providing sufficient coupling to allow frequency variation and sufficient isolation to prevent loading of the oscillator, and to further prevent the non-linear characteristics of the variable capacitance diode from effecting the stability of the oscillator.

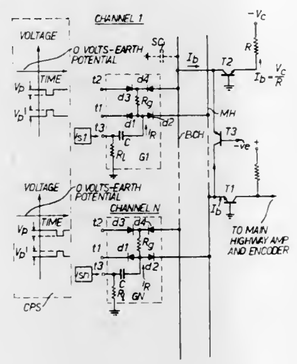
3,503,012
OPTICAL DIFFERENTIAL INTERFEROMETER DISCRIMINATOR FOR FM TO AM CONVERSION
Calvin W. Gillard, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 13, 1967, Ser. No. 681,984
Int. Cl. G02f *2/00;* **H01n** *3/10*
U.S. Cl. 332—1 **11 Claims**

An optical differential interferometer discriminator is provided for converting frequency modulated optical signals to amplitude modulated optical signals. An arrangement of optical mirrors is utilized in a modified version of a Michelson interferometer wherein a pair of reflectance mirrors are disposed along two paths of an optical beam splitter such that the distance (L) along both optical paths appear to be geometrically equal, whereas the physical and optical path may be unequal. An apparent geometrical equality results from the presence of a



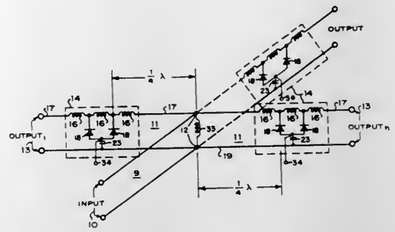
dielectric material disposed along the path of one or more of the mirrors which is farthest from the beam splitter. This actual space relationship between the mirrors results in the production of an amplitude modulated optical signal when the reflected optical signals of a frequency modulated beam time delayed by different amounts, is transmitted back through the beam splitter from the mirrors disposed at physically unequal distances therefrom.

3,503,013
BIASING ARRANGEMENT FOR PULSE CODE MODULATION SAMPLING CIRCUITS
Keith George Warren, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Feb. 23, 1967, Ser. No. 618,128
Claims priority, application Great Britain, Mar. 11, 1966, 10,828/66
Int. Cl. H03k *17/74, 3/31*
U.S. Cl. 332—11 **4 Claims**



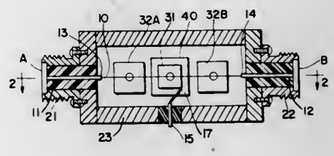
In a pulse code modulation system, a circuit arrangement in which each of a plurality of channel sampling gates arranged to be opened successively by means of channel pulses, is connected between a signal bus and a bias current bus, each gate when open allowing bias current to pass through it between the buses and including a circuit for superimposing on the bias current with an electrical waveform signal.

3,503,014
MULTIPLE THROW MICROWAVE SWITCH
Robert D. Hall, Los Altos, and William W. Nelson, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 7, 1966, Ser. No. 519,349
Int. Cl. H01p *5/12*
U.S. Cl. 333—7 **10 Claims**



At least two microwave transmission lines are connected between at least three microwave signal ports in a single or double pole multiple throw switching configuration. Each transmission line includes a low pass filter section having a pair of diodes connected in shunt with the transmission line. A control circuit is provided for reverse biasing these diodes to set the low pass filter section to a pass condition and for forward biasing them to set the low pass filter section to a stop condition. Thus, a microwave transmission path may be provided between any two of the microwave signal ports depending upon the bias condition of the diodes of each low pass filter section.

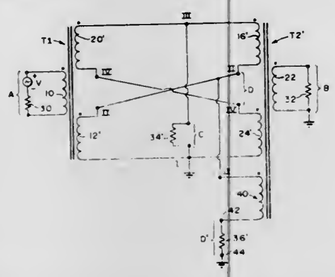
3,503,015
MICROWAVE BROADBAND SWITCHING ASSEMBLY
Salvatore G. Coraccio, Carlisle, Philip E. King, Acton, and Peter A. Rizzi, Dedham, Mass., assignors to Alpha Industries, Inc., Newton Upper Falls, Mass., a corporation of Delaware
Filed May 5, 1969, Ser. No. 821,651
Int. Cl. H01p *5/12*
U.S. Cl. 333—7 **12 Claims**



A broadband microwave switch includes a pair of coaxial terminals, an outer conductor defining a cavity and an inner conductor extending through the cavity and capacitively coupling the coaxial terminals to one another. Within the cavity, a plurality of diode chips have one terminal connected to this inner conductor. At least one of these diode chips is capactively insulated at the other terminal from the outer conductor. The remaining diode chips have their other terminals respectively connected to the outer conductor. A conducting wire extends through and is insulated from the outer conductor and into the cavity connecting with the terminal of the diode chip which is capacitively insulated from the outer conductor to allow a bias signal to be supplied to the diode chips. Portions of the inner conductor within the cavity coact with the outer conductor to define substantially inductive

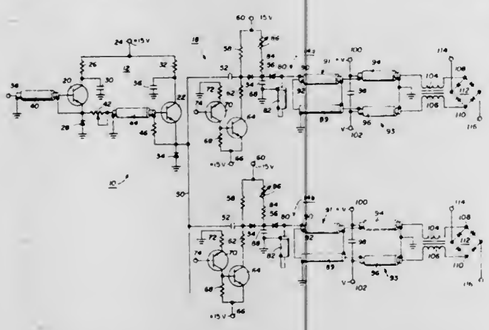
transmission line segments. The substantially inductive segments coact with the effective capacitance of the non-conducting diode chips to define a substantially reflectionless filter circuit.

3,503,016
LOW FREQUENCY HYBRID CIRCUIT HAVING UNBALANCED PARTS
Allen F. Podel, Cambridge, Mass., assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts
Filed Aug. 28, 1968, Ser. No. 755,958
Int. Cl. H03h *7/48*
U.S. Cl. 333—11 **2 Claims**



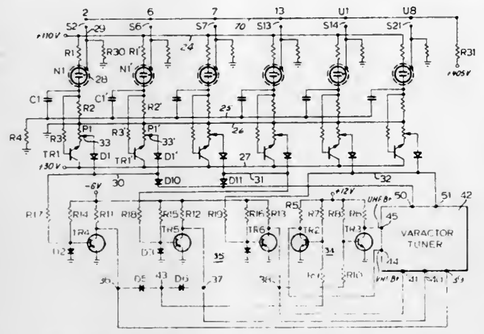
A bridge type, four port hybrid circuit comprising two transformers, each having a primary winding, one having two secondary windings, and one having three secondary windings, the windings being interconnected to form four ports, each of which is unbalanced with respect to ground.

3,503,017
STROBE PULSE GENERATOR
Leslie L. Jasper, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application July 1, 1966, Ser. No. 562,190, now Patent No. 3,459,969, dated Aug. 5, 1969. Divided and this application Feb. 6, 1969, Ser. No. 816,445
Int. Cl. H03h *7/00;* **H03k** *5/00*
U.S. Cl. 333—24 **3 Claims**



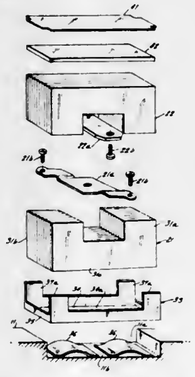
A system including a plurality of voltage sampling diode bridges each having separate D.C. inputs for normally reverse biasing the diodes of each of the bridges "off." A separate pulse generator is coupled to each bridge by a separate transformer. Equal and opposite pulses are applied to the respective D.C. inputs of the bridges to forward bias the diodes "on" whenever the respective pulse generator is enabled by a logic level. Another pulse generator is coupled to all of the logically controlled pulse generators to operate the pulse generator that is logically enabled in synchronism with a timing pulse.

3,503,018
TUNING OF RECEIVERS SUCH AS RADIO OR TELEVISION RECEIVERS USING TRIGGER DEVICES FOR SELECTION
Robert B. Cavanagh, New Hamburg, Ontario, Canada, assignor to Electrohome Limited, North Kitchener, Ontario, Canada
Filed Dec. 18, 1967, Ser. No. 691,611
Int. Cl. H03j *3/06*
U.S. Cl. 334—15 **8 Claims**



A receiver having a tuner of a type that is adapted to tune itself automatically to different signal frequencies in response to application to the tuner of input signals at different levels has selector means for deriving the input signals. The selector means include at least first and second circuits including first and second trigger devices respectively for changing the conductivity of the respective circuits from one condition to the opposite condition in response to selection of a circuit. Means responsive to the changes in conductivity of the respective circuits derive two such input signals at different levels, these input signals being supplied to the tuner. The two circuits are interconnected for rendering one circuit into one condition of conductivity when the other circuit is in the opposite conductivity condition.

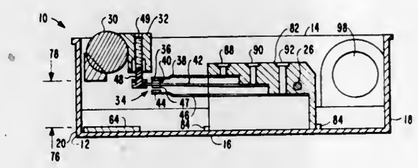
3,503,019
NOISE DAMPING MEANS FOR ELECTROMAGNET
Frank W. Kussy, Birmingham, Andrew J. Kralik, Detroit, and Robert Schuster, Fraser, Mich., assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,237
Int. Cl. H01h *3/60*
U.S. Cl. 335—193 **10 Claims**



An electromagnetic contactor having a stationary laminated yoke and a movable armature is provided with a relatively shallow nylon pan which surrounds a portion

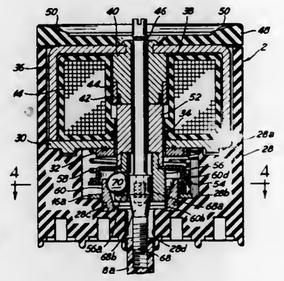
of the yoke and is closely fitted thereto to damp transmission of vibrations from the yoke laminations to the base of the magnet thereby reducing noise attributable to vibration of the magnet. In addition, a cross-piece holds the magnet yoke on a single pivot point against the forces of the contact springs to permit full seating of the armature-yoke mating surfaces. A pad constructed of closed cell silicone sponge rubber is interposed between the armature and a movable portion of the base to absorb impact forces and damp vibration of the armature.

3,503,020
MAGNETIC PROXIMITY SWITCH
Roy W. Blain, La Crescenta, Calif., assignor to Elevator Equipment Company, Los Angeles, Calif., a corporation of California
Filed Sept. 20, 1967, Ser. No. 669,194
Int. Cl. H01h *9/00, 3/16, 15/14*
U.S. Cl. 335—205 **11 Claims**



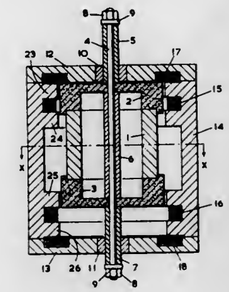
A magnetic proximity switch in which the movement of a bar magnet, affixed to one end of a pivotally mounted arm, responsive to the presence of magnetically attractive masses passing in its vicinity opens and closes electrical contacts.

3,503,021
DIRECT ACTION LATCHING DEVICE WITH ELECTRICAL AND MANUAL RELEASE MEANS
Willard H. De Bruin, Milwaukee, and Nobel H. Koertge, Elm Grove, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,679
Int. Cl. H01f *7/08*
U.S. Cl. 335—254 **6 Claims**



A latching device shaft having adjacent cylindrical and conical portions is coupled to a relay armature and passes axially through a conical bushing wherein a plurality of balls rest in a relieved portion thereof and contact the cylindrical shaft portion. Axial shaft movement to bring its conical portion into contact with the balls permits the balls to move from the relieved portion directly into the conical bushing portion to wedge between the conical surfaces, latching the shaft against reverse movement. Electromagnetic and manual means are provided to pull the balls from the latching position to release the shaft.

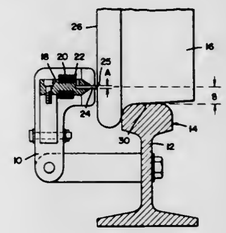
3,503,022
ELECTROMAGNETIC ACTUATORS
Edward Raymond Burdett, Stafford, England, assignor to The English Electric Company Limited, London, England, a British Company
Filed Sept. 25, 1967, Ser. No. 670,325
Claims priority, application Great Britain, Sept. 26, 1966, 42,841/66
Int. Cl. H01f *5/04, 7/04, 7/08*
U.S. Cl. 335—256 **14 Claims**



An electromagnetic actuator includes an armature having a permanent or electromagnet positioned between pole pieces of magnetic steel. The armature is slidably mounted in annular end pole pieces of a housing to limit the movement of the armature between two stable positions. Between the pole pieces of the housing is a tubular yoke supporting flux diverting coils spaced apart longitudinally of the housing. Further flux diverting coils are mounted in annular grooves in the pole pieces of the housing.

The armature is maintained in a selected stable position by the permanent or electromagnet, the armature being movable between its stable positions by appropriately energising the flux diverting coils.

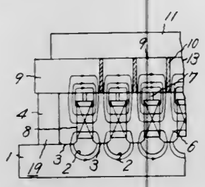
3,503,023
RAILROAD WHEEL MARKING APPARATUS
Benjamin F. Biaggini, 1170 Sacramento St., San Francisco, Calif. 94108
Filed Apr. 24, 1968, Ser. No. 723,748
Int. Cl. H01f *13/00, 7/20*
U.S. Cl. 335—284 **3 Claims**



A device for marking a railroad wheel as it rolls along a rail of a track, the device including an electromagnet held by a magnetically permeable support fixed to the rail, the electromagnet, support and rail defining a magnetic circuit. A portion of the wheel enters into the magnetic circuit as it rolls past the electromagnet, a pole face of the electromagnet being positioned to have a face of the wheel pass in close proximity thereto, whereby a portion of the wheel becomes magnetized. The pole face is positioned above the rail so that a sweeping effect of

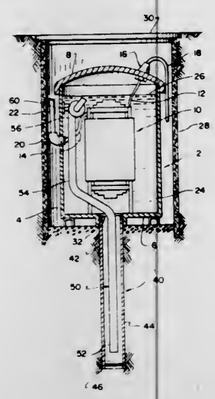
the pole face over the wheel face takes place, such sweep overlapping itself to an extent as that portion of the wheel is magnetized.

3,503,024
CHUCK OF PERMANENT MAGNETS
Hiroshi Iwasaki, Tokyo, Japan, assignor to Kabushiki Kaisha Yamato Dengyo Sha, Tokyo, Japan
Filed July 11, 1967, Ser. No. 652,536
Claims priority, application Japan, Aug. 27, 1966, 41/80,875
Int. Cl. H01f 7/20
U.S. Cl. 335—285 **4 Claims**



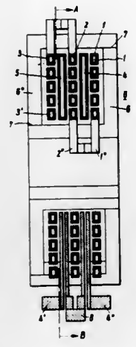
Improvements in a chuck of permanent magnets for use mainly in machining. The chuck is provided with a series of permanent magnets, of which the magnetic force is very easily and simply controlled for putting, displacing and removing a work on and from a table of the chuck. The chuck is characterized by such a construction that the permanent magnets are displaced into and out of a position as a whole where they are in contact with a shorting member so that the magnetic flux is confined inside the table.

3,503,025
COOLING MEANS FOR UNDERGROUND TRANSFORMER
William J. Weinfurt, Elm Grove, Wis., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Dec. 6, 1968, Ser. No. 781,808
Int. Cl. H01f 27/10
U.S. Cl. 336—57 **9 Claims**



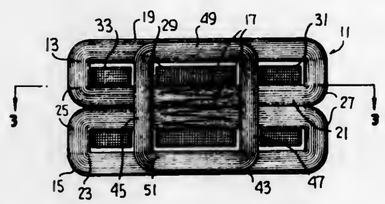
A transformer for mounting below ground level and utilizing an insulating fluid as a coolant. The casing of the transformer has a tube extending into the ground and a circulating pipe is positioned within the tube and extending into the casing. A pump circulates insulating fluid which has been heated due to operation of the transformer through the pipe and the tube where the heated fluid is cooled by radiation of its heat through the tube wall into the ground.

3,503,026
DISC-SHAPED TRANSFORMER
Herbert Geisel and Hermann Kuhlbars, Remscheld-Lüttringhausen, Germany, assignors to AEG-Elotherm GmbH., Remscheld-Hasten, Germany
Filed May 4, 1967, Ser. No. 636,189
Claims priority, application Germany, May 7, 1966, A 52,403
Int. Cl. H01f 27/08, 27/28
U.S. Cl. 336—62 **2 Claims**



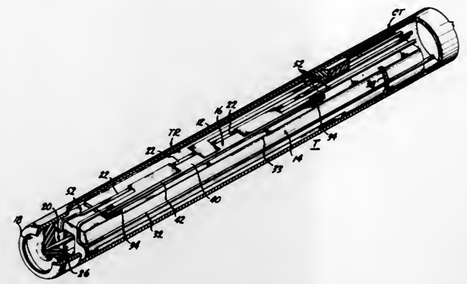
A transformer constructed in the general shape of a disc suitable for use with inductors for inductively heating crankshafts, comprising spirally-wound primary coils axially juxtaposed with secondary coils, and frame-like ferrite cores for coupling the windings each embracing the said primary and secondary coils, and radially disposed round the coils in the form of a star.

3,503,027
REACTIVE TRANSFORMER
Willy Olsen, Mount Vernon, Ill., assignor to Olsen Magnetic, Inc., Mount Vernon, Ill., a corporation of Illinois
Filed Aug. 29, 1968, Ser. No. 756,131
Int. Cl. H01f 21/08
U.S. Cl. 336—165 **15 Claims**



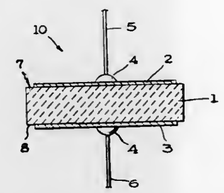
A reactive transformer has a main magnetic circuit comprising a main core of grain-oriented magnetic material having a plurality of closed-loop laminations and having a primary and two secondary coils wound about one leg thereof. Magnetic flux shunt paths are provided across the main core between the primary coil and the secondary coils, the shunt paths each comprising a wound shunt core enveloping a respective portion of the primary coil which extends from a respective side of the main core. The shunt cores are of grain-oriented material and are disposed adjacent said respective sides of the main core such that the layers of the main core and each of the shunt cores are disposed in edge-to-edge relation, thereby providing lamination-to-lamination coupling which is compatible with the direction of grain orientation of the main and shunt cores.

3,503,028
MINIATURIZED PRESSURE TRANSDUCER
Cecil K. Stedman, Enumclaw, Wash., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 29, 1967, Ser. No. 694,520
Int. Cl. G01l 9/04; H01c 9/06
U.S. Cl. 338—4 **14 Claims**



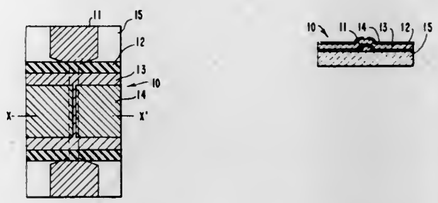
Pressure transducers of the cylindrical type for intracardiac and like applications, employing a fully end-clamped beam positioned lengthwise in a generally cylindrical housing and having a central lever arm interposed between flexural portions. A planar strain gage mounting surface is provided on one face of the beam and electroconductive bridge film elements are vapor deposited or otherwise formed on the flexural portions of said mounting surface. Loading is applied to the beam through the lever arm by an elongate linkage wire extending generally lengthwise of the beam and terminating at its outer end in a flexible rubber diaphragm that is deformable in response to pressure changes at the tip of the housing. Linkage wire flexure allows the lever arm to pivot as well as to transmit the deflections of the diaphragm to thus create a loading moment on the beam. The rubber diaphragm is molded in place within one end of the housing or, in the alternative, may be bonded thereto. The strain sensitive bridge arms are preferably formed as simultaneously deposited films and are advantageously composed of pure chromium in order to obtain a high parallel gage factor (g.p.). The bridge arms are connected to leads arranged within slots in the transducer frame, which leads extend to positions outwardly of the housing where they are connected to form a conventional Wheatstone bridge circuit.

3,503,029
NON-LINEAR RESISTOR
Michio Matsuoka, Hirakata-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Apr. 19, 1968, Ser. No. 722,634
Int. Cl. H01c 7/10; H01b 1/08
U.S. Cl. 338—20 **12 Claims**



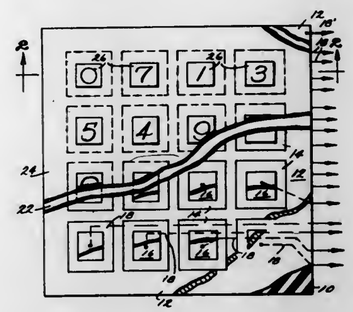
A non-linear resistor comprising a sintered wafer of zinc oxide having opposite surfaces one of which has an electrical resistance higher than that of another surface and two electrodes applied to said opposite surfaces, at least one of said two electrodes being in a non-ohmic contact with said one surface having a higher electrical resistance.

3,503,030
INDIRECTLY-HEATED THERMISTOR
Taro Matsumoto and Takeshi Shintani, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Nov. 6, 1967, Ser. No. 680,722
Claims priority, application Japan, Nov. 11, 1966, 41/74,130
Int. Cl. H01c 7/04, 7/10, 7/00
U.S. Cl. 338—23 **4 Claims**



Described is an indirectly-heated thermistor consisting essentially of a thermistor element, a heater for indirect heating and an insulating substrate. The thermistor is characterized in that the said thermistor element and the heater for indirect heating are composed of films formed by vacuum evaporation of an elemental semiconductor. The substrate temperature is maintained below the crystallization point of the element during the thermistor element formation, and above the crystallization point during the heater formation. When using germanium as the elemental semiconductor, the substrate is maintained at a temperature below 350° C. during the formation of the thermistor element and above 360° C. during the formation of the heater element.

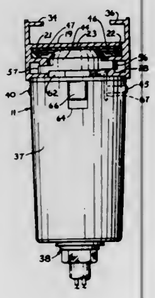
3,503,031
PRINTED CIRCUIT KEYBOARD
Keith A. Nyhus, Minneapolis, and Richard M. Sedro, St. Paul, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Delaware
Filed Feb. 11, 1969, Ser. No. 798,424
Int. Cl. H01c 9/06
U.S. Cl. 338—99 **16 Claims**



A keyboard of extremely compact size and thickness wherein a common bus of the keyboard is normally electrically isolated from each of a plurality of individual circuits by means of a pressure-sensitive material characterized by a resistivity which varies inversely with the application of pressure thereto. An electrical circuit may

be completed between the bus and any one of the individual circuits by the application of pressure by the keyboard operator to a selected area of the keyboard. The keyboard is also adapted to be directly plugged into associated connectors and circuitry.

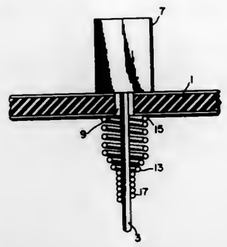
3,503,032
ADAPTOR FOR ELECTRICAL POWER DISTRIBUTION TRACK
Larry L. Routh, Castro Valley, and James Contratto, Livermore, Calif., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,597
Int. Cl. H01r *3/04, 9/12, 13/54*
U.S. Cl. 339—14 **15 Claims**



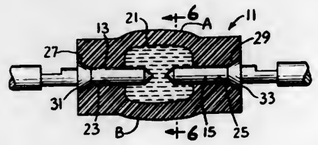
An adaptor is described for electrically and mechanically securing an electrical fixture to an elongated electrical power distribution track which has an open mouthed channel running for its length. The adaptor has a cylindrical body which at one end is adapted for securance to the desired electrical fixture and at its opposite end has a connecting head for securing the adaptor to the track. The connecting head is provided with opposed, outwardly extending ears which are offset relative to one another longitudinally of the connecting head. Upon insertion of the connecting head within the channel and rotation of it through 90°, these ears engage within corresponding offset slots in the sides of the track channel to provide mechanical support of the adaptor by the track. The head also includes contact fingers which engage electrical conductors within the channel upon the 90° rotation of the adaptor, and a quick release locking mechanism provides securance of the adaptor to the track. A grounding contact mounted on the head grounds the adaptor to the track so that the effects of any electrical shorts are minimized.

3,503,033
COIL SPRING CONNECTOR
Hugh W. Kennedy, Jr., Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Dec. 12, 1967, Ser. No. 689,990
Int. Cl. H05k *1/04, 3/32*
U.S. Cl. 339—17 **11 Claims**

An electrical connector is provided to effect both electrical contact and mechanical stability between a terminal post or component lead and a conductive portion of an electrical circuit board. The electrical connector comprises a helically-wound coil spring which is conically shaped along at least a portion of its length. The spring connector engages the terminal post which extends through an aperture in the board. The end of the spring with the larger opening is inserted over the terminal post and is pushed down until the smaller end encompasses and grippingly engages the post, and until the spring is partially compressed so that the larger end thereof firmly abuts the conductive portion of the board.

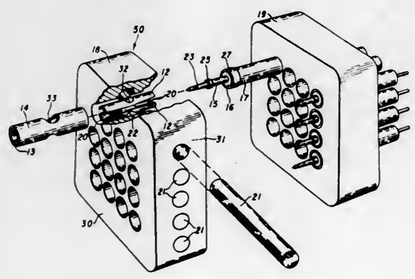


3,503,034
CONTACT BRIDGING CONNECTOR UTILIZING ELECTRICALLY CONDUCTIVE FLUID
Arthur I. Appleton, Northbrook, Ill., assignor to Appleton Electric Company, Chicago, Ill., a corporation of Illinois
Filed June 7, 1967, Ser. No. 644,147
Int. Cl. H01k *11/02*
U.S. Cl. 339—61 **8 Claims**



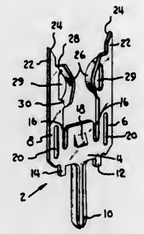
A bridging connector comprising an elastomeric body having one or more cavities, each partially filled with mercury. A pair of small openings lead to opposite ends of each cavity for receiving a pair of male contacts. When the contacts are inserted into a cavity through its openings, an electric path is established between them through the mercury. There is also disclosed a multi-contact electrical connector incorporating a bridging connector of the type described.

3,503,035
SOCKET WITH PIVOTAL CONTACTS
Janos J. Lazar, Dallas, and Russel O. Bailey, Euless, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,916
Int. Cl. H01r *7/00, 23/36, 33/76, 23/00*
U.S. Cl. 339—177 **6 Claims**



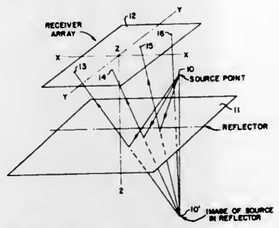
Disclosed is a coaxial socket having a pair of pivoting contacts which are activated when a device lead is inserted into one end of the socket and a locking pin is inserted into the other end of the socket, such that the contacts pivot to clamp the device lead in position and make electrical connection thereto and to the locking pin if desired.

3,503,036
CONTACT TERMINALS AND MANUFACTURING METHOD
Thomas Dean Desso, Middletown, and Homer Ernst Henschen, Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 27, 1968, Ser. No. 716,491
Int. Cl. H01r *11/22*
U.S. Cl. 339—258 **6 Claims**



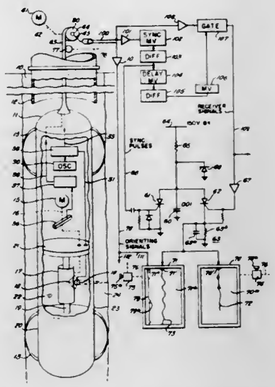
Electrical contact terminal for printed circuit board or the like is of stamped and formed construction and has contact surfaces disposed in a plane extending normally of the plane of the terminal. Contact surfaces are provided by punching elongated opening in the terminal and then forcing semi-circular punch through the opening. During movement of the punch through the opening, the stock material on one side of the opening is deformed in a manner such that surface portions of the terminal face laterally of the plane of the terminal after deformation. Connecting straps which connect to the contact surface portions to the body of the terminal are deformed to provide compound connecting straps extending in several planes. These straps are extremely stiff and do not flex substantially when the terminal is forced against the printed circuit board.

3,503,037
HOLOGRAPHIC SEISMIC EXPLORATION
Noyes D. Smith, Jr., Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 8, 1967, Ser. No. 659,084
Int. Cl. G01v *1/34*
U.S. Cl. 340—15.5 **1 Claim**



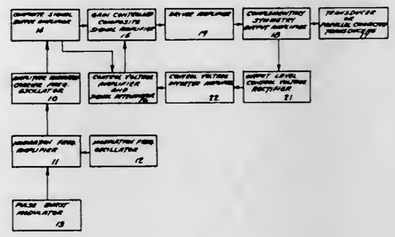
A three-dimensional image of a subterranean acoustically reflective and diffractive structure is produced by illuminating the structure with coherent acoustic waves and producing an optical hologram related to the acoustic image. Electrical signals related to the energy that is returned to areally dispersed locations are mixed with electrical signals related to the coherent acoustic waves. Corresponding portions of the intensity of the mixed signals are displayed in scaled locations to form an optical hologram from which the three-dimensional image is produced.

3,503,038
LOGGING SYSTEM AND METHOD
Willett F. Baldwin, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 6, 1968, Ser. No. 757,971
Int. Cl. G01v *1/26, 1/30, 1/40*
U.S. Cl. 340—15.5 **4 Claims**



The specification discloses a logging system including a borehole tool having a rotating acoustic transducer periodically operated to transmit acoustic pulses to the borehole wall for detection of reflected energy. A charging capacitor coupled between first and second switches, the latter of which is coupled to an integrating circuit, is provided to measure the time, and hence distance, between transmission and reception of reflected acoustic energy. The charge formed across the capacitor during each period is integrated and recorded as a continuous trace in correlation with depth. In one embodiment, orientation signals produced during each rotational cycle of the transducer are recorded to give additional information about borehole configuration or tool offset relative to the hole.

3,503,039
DEVICE FOR CHASING RATS
Sebastian Aniskovicz, Forked River, N.J., assignor, by mesne assignments, to Sonictron Corporation, East Rutherford, N.J., a corporation of Delaware
Filed Feb. 17, 1969, Ser. No. 799,770
Int. Cl. A01m *29/00;* **G10k** *10/00*
U.S. Cl. 340—15 **10 Claims**

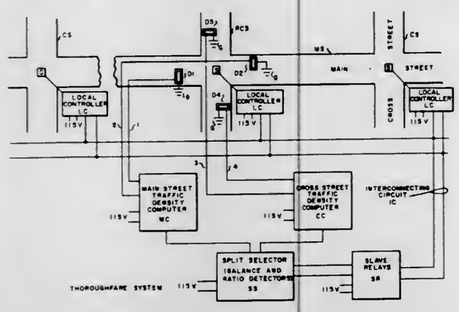


An electronic sound generator and amplifier having an electrical signal with waveform and modulation characteristics which signal when reproduced into sound at a low intensity is effective in causing rats to flee from the area of said reproduced signal. The waveform and modulation characteristics of the signal simulate the ultrasonic sounds made by an agitated rat. A feedback path is provided in the amplifier to maintain the sound level independent of the load imposed by different numbers of transducers.

3,503,040
TRAFFIC CYCLE SPLIT SELECTORS

George Donald Hendricks, Campbell's Island, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Division of application Ser. No. 534,603, Feb. 10, 1966, which is a continuation of application Ser. No. 343,182, Feb. 3, 1964, which, in turn, is a continuation of application Ser. No. 742,160, June 16, 1958. Divided and this application Oct. 5, 1966, Ser. No. 619,080
Int. Cl. G08g 1/08
U.S. Cl. 340—35 4 Claims

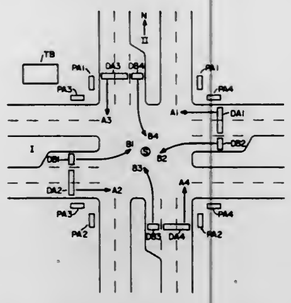


There is disclosed herein apparatus and method of traffic control for controlling traffic in at least two directions of traffic flow. Traffic in the two directions is detected and electrical signals are developed representative of a characteristic of the traffic flow in each direction. These signals are reduced to a ratio relationship which is compared with a reference ratio relationship. The operation of traffic signals are changed in accordance with whether the ratio relationship differs from the reference ratio relationship.

3,503,041
TRAFFIC ACTUATED CONTROL SYSTEM

Charles L. DuVivier, Darien, Conn., assignor to LFE Corporation, Waltham, Mass., a corporation of Delaware.

Filed June 2, 1967, Ser. No. 643,112
Int. Cl. G08g 1/00
U.S. Cl. 340—37 11 Claims

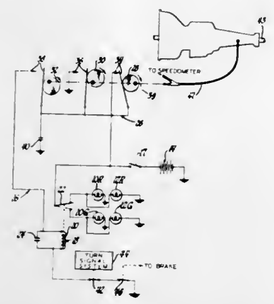


A solid-state traffic actuated multi-phase intersection right-of-way control system capable of providing right-of-way to up to two of a plurality of non-conflicting traffic phases selected from a larger plurality of traffic phases at an intersection. Gating and control circuitry selects the traffic phases to which right-of-way is to be assigned, insuring that right-of-way is not simultaneously assigned to conflicting traffic phases. Timing and counter circuitry steps each right-of-way period through its appropriate intervals. The right-of-way assignment can be changed from first and second non-conflicting traffic phases to third and fourth non-conflicting traffic phases, and one of the third and fourth phases may be the same as one of the first and second phases.

3,503,042
VEHICLE SIGNALING SYSTEMS

Kenneth R. Skinner, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 14, 1967, Ser. No. 646,058
Int. Cl. B60q 1/38, 1/22, 1/44
U.S. Cl. 340—67 5 Claims

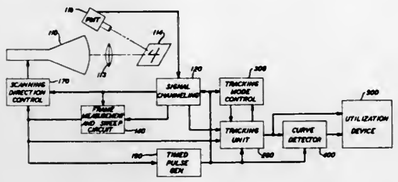


A vehicle signaling system for illuminating red signal lamps when the vehicle is stopped and green signal lamps when the vehicle is moving forwardly. A motion switch incorporating switch contacts that are sequentially actuated by speedometer-driven cams, charge and discharge a supply capacitor. This supply capacitor then charges a control capacitor, which is arranged in parallel with a relay, and when charged energizes the relay. The relay when energized turns off the red signal lamps and turns on the green signal lamps.

3,503,043
APPARATUS FOR INTERROGATING ALPHA-NUMERIC CHARACTERS

Robert L. Brass, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 17, 1960, Ser. No. 69,971
Int. Cl. G06k 9/00
U.S. Cl. 340—146.3 23 Claims



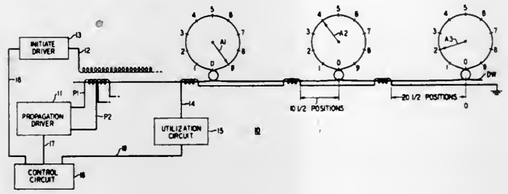
1. Apparatus for interrogating graphic material comprising, means for scanning a field containing graphic material, each complete scan of said field comprising a frame of a pre-established number of successive line frame of a pre-established number of successive line sweeps that are each displaced one from another, means for deriving signals representative of the distances between a reference axis and matter appearing in said field, means for discriminating between said derived signals that pertain to matter not forming a part of said graphic material

and said derived signals that pertains to matter forming a part of said graphic material, means active during a first portion of said complete scan of said graphic material for registering only said derived signals pertaining to the segment of said graphic material lying closest to said reference axis, means active during a second portion of said complete scan for registering only said derived signals pertaining to the continuation of said segment of said graphic material noted in said first portion, and means for translating said registered signals into signals representative of the basic curve segments forming said graphic material.

3,503,044
MAGNETIC DOMAIN SHIFT REGISTER METER READER

Peter I. Bonyhard, Newark, Harold Seidel, Fanwood, and Herbert M. Shapiro, Somerville, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Dec. 6, 1966, Ser. No. 599,487
Int. Cl. H04q 1/00
U.S. Cl. 340—150 9 Claims

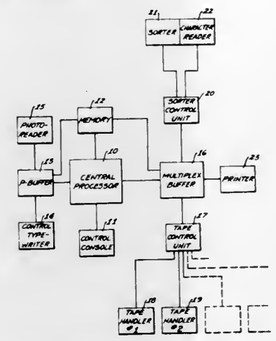


A multibit, magnetic domain shift register is applied to a face of a meter such that bit positions in the register conform to the digit positions on the meter face. A magnet attached to the meter indicator provides a domain at a position corresponding to the indicator position when interrogated. The domain is moved in the register in a manner to provide an indication of the meter reading.

3,503,045
APPARATUS FOR PROVIDING INFORMATION TRANSFER BETWEEN A DATA PROCESSING SYSTEM AND AN EXTERNAL MEDIUM OPERATING AT A DIFFERENT RATE

Robert Byron Wright, Saratoga, Calif., assignor to General Electric Company, a corporation of New York

Filed Feb. 15, 1960, Ser. No. 8,879
Int. Cl. G06f 1/00, 7/00, 15/00
U.S. Cl. 340—172.5 16 Claims

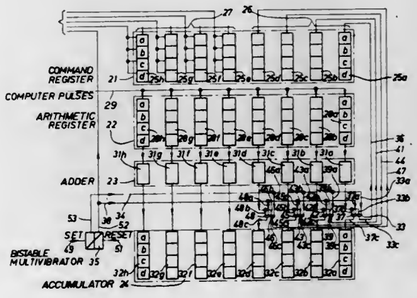


Temporary storage registers are disclosed for receiving data items for transfer in both directions between a magnetic tape unit and a memory. The first register receives the data entities from the tape and, when loaded, transfers the information to the second register and thence to the memory. The first register continues to receive the data entities of the next stored data item from the magnetic tape. The third register receives a complete data item from memory. The information is transferred to a fourth storage register which then transfers the data items by data entities to the tape. The use of separate temporary storage registers for receiving data and sending data allows the simultaneous reading and writing of the magnetic tape to and from memory.

3,503,046
COMMAND MODIFYING CIRCUIT OF A DATA PROCESSING SYSTEM

Ernst Geissler, Bielefeld, Germany, assignor to Anker-Werke AG, Bielefeld, Germany, a corporation of Germany

Filed Apr. 28, 1967, Ser. No. 634,513
Claims priority, application Germany, Apr. 30, 1966, A 52,326
Int. Cl. G06f 1/00; G11b 13/00
U.S. Cl. 340—172.5 7 Claims



A plurality of AND gates are connected between the outputs of logic circuitry and the inputs of a memory and a command register of a data processing system. The AND gates selectively control the transfer of data from the logic circuitry to the memory and to the command register under the control of a bistable multivibrator in accordance with a proposed modification of a command.

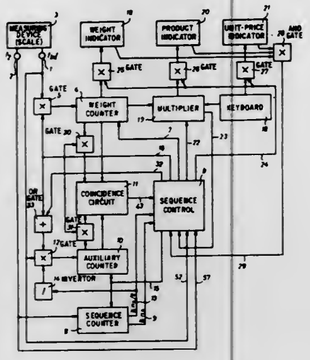
3,503,047
EVALUATION UNIT USED IN CONJUNCTION WITH A MEASURING DEVICE

Ellert Schaepman, Zurich, Switzerland, assignor to Wirth Gallo & Co., Zurich, Switzerland

Filed Nov. 21, 1966, Ser. No. 595,930
Claims priority, application Sweden, Nov. 24, 1965, 16,428/65
Int. Cl. G06f 1/00, 7/00
U.S. Cl. 340—172.5 27 Claims

An evaluation apparatus for a measurement device, from the electrical output signals of which measurement values can be determined by integration or counting, characterized in that the apparatus during control periods automatically checks whether the measurement value determined during a measurement period coincides with a comparison value determined from the output signals. The apparatus initiates a new measurement period in case of noncoincidence of the measurement value with the comparison value. The apparatus comprises a first means including a first storage means for storing during the control

period a measurement value determined during a measurement period. A second means including a second storage means is provided for determining one comparison value during each control period by integration or counting of

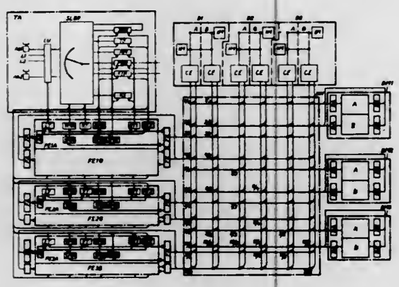


the output signals. A coincidence circuit compares the measurement value with the comparison value, and control means initiate the control period in the case of coincidence and a new measurement period in the case of noncoincidence.

3,503,048
ARRANGEMENT IN COMPUTERS FOR CONTROLLING A PLANT CONSISTING OF A PLURALITY OF COOPERATING MEANS

Oleg Avsan, Huddinge, Goran Anders Henrik Hemdal, Tyreso, Torbjorn Konrad Johnson, Alvsjo, Lars-Olof Noren, Huddinge, and Åke Bertil Fredrik Svensson, Hagersten, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Feb. 23, 1967, Ser. No. 618,193
Claims priority, application Sweden, Mar. 25, 1966, 3,972/66
Int. Cl. G02b *27/14*
U.S. Cl. 340—172.5 **3 Claims**

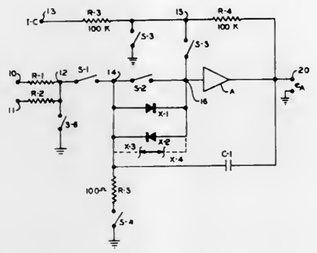


A telephone system is controlled by a system of redundant pairs of computers. Each computer comprises a central processing unit, an instruction memory unit, a working memory unit and a transfer unit for interfacing with the telephone system. The units are only temporarily assigned to cooperate with each other to form the computers and can be arbitrarily switched to different configurations under a supervisory program. Each pair of computers can perform the entire program sequence of control but each pair is assigned a different section of the program sequence. If faults are detected when one pair of computers is performing its section, another pair is automatically assigned to take over.

3,503,049
FAST-RESET INTEGRATOR CIRCUIT

Edward O. Gilbert and Elmer G. Gilbert, Ann Arbor, Mich., assignors to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Mar. 30, 1967, Ser. No. 627,181
Int. Cl. G11b *1/00*
U.S. Cl. 340—173 **20 Claims**

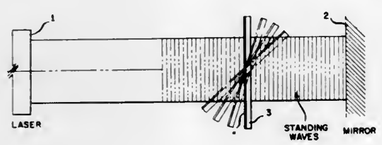


A mode-switchable integrator or track-hold circuit including a negative feedback circuit for limiting amplifier output current to a desired value during charging of the integrating or holding capacitor of such a unit by the amplifier without requiring an increase in the aperture or reset time of such a circuit. During the reset interval, the limiting circuit includes an impedance element which develops a voltage control signal representative of the charging current through the capacitor and a pair of parallel, oppositely-poled, unidirectionally-conducting devices responding as switches sensitive to the developed control signal.

3,503,050
WAVE ENERGY RECORDING IN RADIATION SENSITIVE MEDIUM

Rodman S. Schools, Poughkeepsie, and Glenn T. Sincerbox, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 30, 1965, Ser. No. 517,571
Int. Cl. G11b *7/00;* **G03c** *7/00*
U.S. Cl. 340—173 **12 Claims**

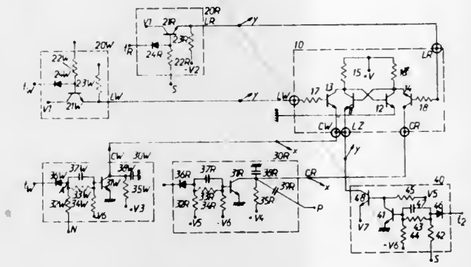


Interfering waves of coherent light sensitize a layer of a photosensitive emulsion at antinodes of the standing waves throughout the thickness of the emulsion to form a periodic structure of reflecting surfaces. A plurality of such structures may be formed at any one point at different angles and are read out by the angle of reflected light. The interfering waves may be formed by an incident ray reflected back through the emulsion by a reflecting surface. Information may be recorded in successive regions by light beams at different angles in each region.

3,503,051
WORD ORGANIZED MEMORY COMPRISING FLIP-FLOPS WITH RESET MEANS ASSOCIATED WITH EACH FLIP-FLOP IN THE FORM OF A CLEARING LINE GENERATOR COUPLED TO THE EMITTER OF ONE OF THE TRANSISTORS OF THE FLIP-FLOP

Antoine Jean Louis Chambet-Falquet, Romainville, and Alain Pierre Le Gall and Raphael Guy Yelloz, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 12, 1966, Ser. No. 564,687
Claims priority, application France, July 13, 1965, 24,412
Int. Cl. G11b *9/00*
U.S. Cl. 340—173 **1 Claim**

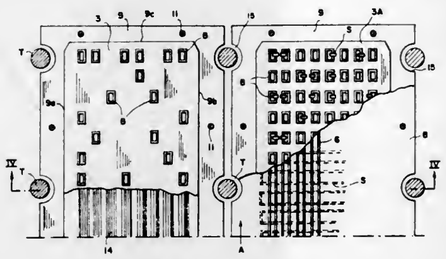


A unit storage cell comprises a transistor bistable and two associated transistors which control respectively the write and read operations in a word-organized memory. The coincidence voltage writing is made by saturating one of these associated transistors. The linear selection for the readout and the resetting to zero are made respectively by saturating the other transistor, and by opening the emitter-to-ground connection in one of the transistors of the bistable.

3,503,052
SEMIPERMANENT MEMORY WITH ELECTRICALLY SCANNABLE INDEX CARDS

Jean A. R. Miroux, Paris, France, assignor to Association des Ouvriers en Instruments de Precision, Paris, France, a company of France

Filed Dec. 21, 1966, Ser. No. 603,586
Claims priority, application France, Dec. 29, 1965, 44,233
Int. Cl. G11b *5/00*
U.S. Cl. 340—173 **8 Claims**

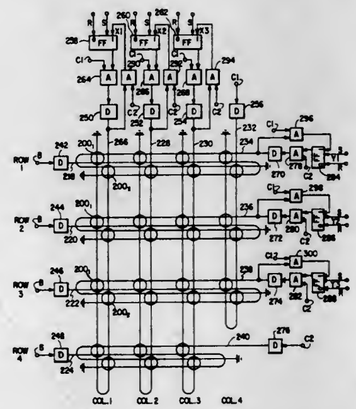


The invention relates to a memory in which a multiplicity of storage levels are provided in the form of card holders arrayed on a set of mounting bolts or the like, each holder comprising two mutually orthogonal arrays of conductors supported (preferably in the form of printed circuits) on confronting faces of two parallel carrier plates, or on opposite faces of a single carrier plate, for juxtaposition with a data card having formations (such as loops, tabs or magnetic shields) for establishing, intensifying or preventing a mutual coupling between respective conductors of the two arrays at selected intersections. In order to insure accurate alignment between these intersections and the coupling formations of the associated card, abutments are rigidly secured to the carrier plate or plates for engagement with the edges of the card; if the two arrays are carried on separate plates, the latter are made rigid with an intervening spacer forming the abutment means. The spacer is preferably U-shaped to engage the card on three sides.

3,503,053
THIN FILM PERMUTATION MATRIX

Richard M. Sanders, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 30, 1963, Ser. No. 320,202
Int. Cl. G11c *11/14, 15/00, 5/02*
U.S. Cl. 340—174 **35 Claims**



A thin film permutation matrix for selectively shifting and/or rearranging the bits of a word as the bits are transferred through the matrix. In one embodiment the matrix comprises an arrangement of bicore thin film elements. One element is called the memory element and the other is designated the readout element. Horizontal and vertical drive lines are inductively coupled to the memory core, there being one bicore element at the intersection of each horizontal and vertical drive line. A readout winding is inductively coupled with each readout element. Each bicore element selectively acts as a "connection point" between the vertical drive line and the readout line coupled to it. A bicore element acts as a connecting point if its memory element is set to a predetermined state before the data word is applied to the matrix. This is accomplished by applying a large bias signal to a horizontal drive line concurrently with the application of a signal to a vertical drive line. Subsequently, the data bits to be transferred are selectively applied to the vertical drive lines and if a memory core is set to the predetermined state the signal applied to the vertical drive line coupled to the bicore element will induce a signal in the readout winding coupled to the same element.

Provision is made for selectively masking one or more bits at the same time the bits are transferred. The masking

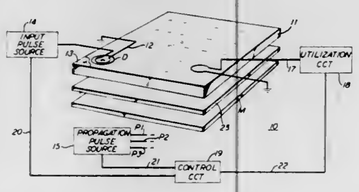
by binary one is accomplished by an additional column of bicore elements each of which has its memory element set to the aforementioned predetermined state if the corresponding output bit is to be a binary one. Masking by binary zero is accomplished by setting all cores in a row in the matrix to the state opposite said predetermined state prior to the application of the data bits to the matrix.

Further embodiments provide for the selective permutation and masking of words as they are transferred through the matrix in either of two directions.

3,503,054
DOMAIN WALL PROPAGATION IN MAGNETIC SHEETS

Andrew H. Bobeck, Chatham, William J. Tabor, New Providence, and Alfred A. Thiele, East Orange, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Oct. 12, 1967, Ser. No. 674,832
Int. Cl. G11c *11/14, 19/00*
U.S. Cl. 340—174 **10 Claims**

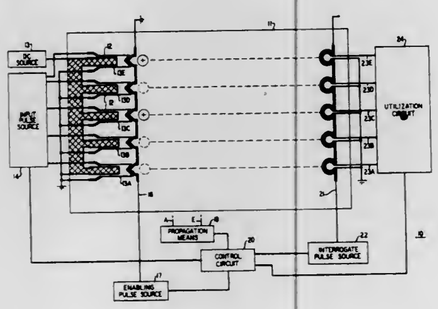


Signal wall domains are moved from position to position in a sheet of magnetic material in response to consecutively offset propagation fields. A spatially varying bias field in the sheet enhances the propagation operation by providing preferred positions for the domains so moved. Various techniques for providing the varying bias are described.

3,503,055
INPUT SOURCE FOR DOMAIN PROPAGATION DEVICE

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Apr. 29, 1968, Ser. No. 725,008
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **4 Claims**

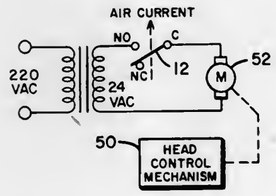


A planar input circuit for single wall domains is described. The circuit makes use of the fact that a domain wall encompassing a first single wall domain cannot follow an indentation in a first conductor which generates a field for expanding the domain when pulsed. The wall of the domain protrudes beyond the indentation and a second conductor having a mating indentation may be operated to sever a second single wall domain from the first without overlapping the first conductor.

3,503,056
AERODYNAMICALLY OPERATED SWITCH FOR CONTROLLING THE RAISING AND LOWERING OF MAGNETIC TRANSDUCERS IN A DYNAMIC RECORDING SYSTEM

Leroy A. Vos, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 597,001
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **1 Claim**

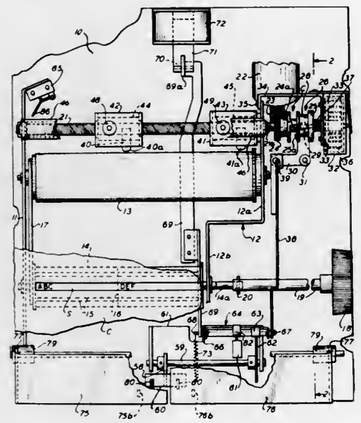


The present disclosure relates to an aerodynamically operated electrical switch for controlling the raising and lowering of magnetic transducers with respect to an inductively coupled but relatively moving magnetizable recording surface.

3,503,057
TWO COLUMN MAGNETIC TRANSDUCER

William W. Logan, Glen Ridge, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Feb. 10, 1967, Ser. No. 615,202
Int. Cl. G11b *21/04, 21/08, 3/88*
U.S. Cl. 340—174.1 **7 Claims**

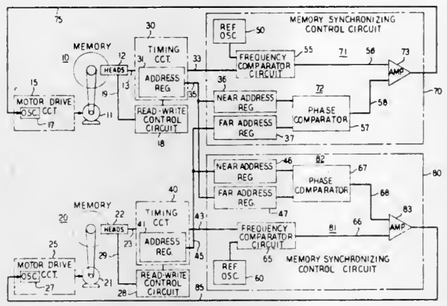


A magnetic drum with two transducers is utilized to record data. Each transducer cooperates with a portion of drum so that the drum is effectively divided into two columns. The transducers move in a direction parallel to the axis of rotation of the drum.

3,503,058
MULTIPLE MEMORY SYNCHRONIZING ARRANGEMENT

Cyrus F. Ault, Wheaton, Ill., and David Friedman, Binghamton, N.Y., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Mar. 6, 1967, Ser. No. 620,715
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **20 Claims**

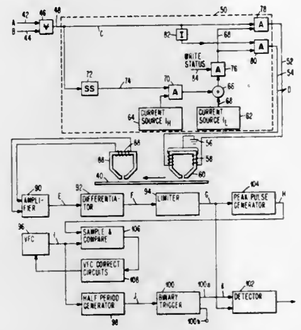


Two independently driven rotating memory units are synchronized by using existing memory timing signals to vary the frequency of each of the two driving sources. The frequency of each driving source is controlled by a signal generated from a digital phase comparison between the two memory units and from an analog frequency comparison with a respective reference oscillator located at each memory unit. The phase comparison sampling rate is varied through several steps according to the magnitude of the phase error between the two memory units.

3,503,059
PULSE CROWDING COMPENSATION FOR MAGNETIC RECORDING

Louis E. Ambrico, Hyde Park, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 22, 1967, Ser. No. 625,088
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **18 Claims**

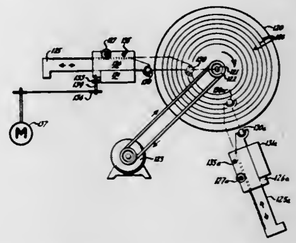


Controlled recording means and method for eliminating adverse effects of pulse crowding in magnetic recording systems. The controlled recording produces a recording waveform to a writing transducer adjacent the recording medium which waveform has major transitions from one level or state to the other to represent data in a selected code, and has minor transitions of opposite polarity or direction following each major transition to compensate for and effectively eliminate peak shift.

3,503,060
DIRECT ACCESS MAGNETIC DISC STORAGE DEVICE

William A. Goddard, 16133 Hillvale, Monte Sereno, Calif. 95030, and John J. Lynott, 38 Kimble, Los Gatos, Calif. 95030

Continuation of application Ser. No. 242,339, Nov. 1, 1962, which is a division of application Ser. No. 477,468, Dec. 24, 1954, now Patent No. 3,134,097. This application Sept. 16, 1968, Ser. No. 788,666
Int. Cl. G11b *5/58, 21/08, 21/20*
U.S. Cl. 340—174.1 **25 Claims**

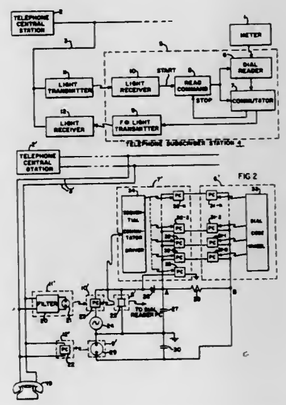


A magnetic disc drive for positioning a magnetic transducer in cooperative relationship with a selected one of a plurality of concentric circular recording tracks of a magnetic surface of a disc in response to an externally supplied track address signal. A motor rotates the disc about an axis at a constant speed. A loading means resiliently urges the transducer into transducing relationship with said surface. A positioner responds to the track address signal for selectively positioning the transducer at the track designated by the track address signal by movement along a line extending radially of the axis and parallel to the magnetic surface of the disc.

3,503,061
TELEMETERING SYSTEM WITH OPTOELECTRONIC COUPLING BETWEEN TRANSMISSION LINE AND METER

Thomas E. Bray, Clay, N.Y., Robert E. Schultz, Bonaire, Netherlands Antilles, and Barry J. Stern, Hammond, Ind., assignors to General Electric Company, a corporation of New York

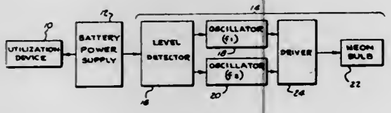
Filed July 20, 1966, Ser. No. 566,678
Int. Cl. G08c *9/06, 19/22, 19/36*
U.S. Cl. 340—180 **14 Claims**



Telemetering system for reading utility meters and the like by means of existing telephone lines so as to obtain accurate meter readings and not interfere with normal

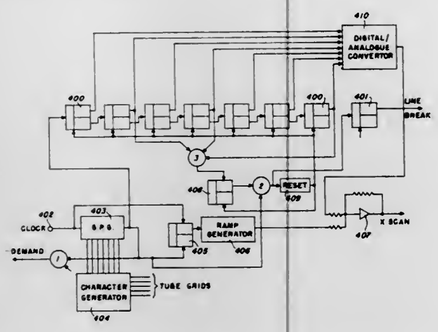
telephone communication. An adaptive mechanism is supplied at each meter location for signal encoding and processing of the meter dial position, employing a first optoelectronic coupling between the meter and adaptive mechanism for encoding the meter count in electrical form, and a second optoelectronic coupling between the adaptive mechanism and telephone line for transmitting the encoded reading as a modulated optical signal.

3,503,062
DIRECT CURRENT POWER SUPPLY VOLTAGE LEVEL INDICATOR
Frederick W. Witzke, Ann Arbor, Mich., and Thomas W. Johannsen, Seven Hills, Ohio, assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,338
Int. Cl. G08b *21/00, 5/00;* **H05b** *41/00*
U.S. Cl. 340—249 **11 Claims**



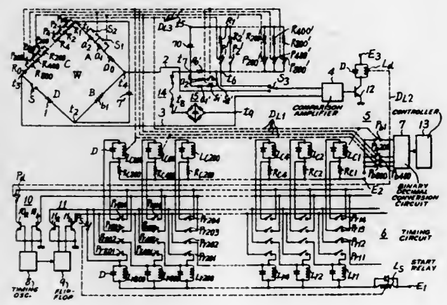
An apparatus for indicating the voltage level of a direct current source having first circuit means, including a first oscillator, connected to unitary indicating means to provide a first indication when the voltage level is satisfactory and second circuit means, including a second oscillator, connected to said indicating means to provide a second indication when the voltage level is unsatisfactory.

3,503,063
ELECTRIC DISCHARGE TUBES
Arthur Tisso Starr, New Barnet, England, assignor to Rank Precision Industries Limited, London, England, a corporation of Great Britain
Filed May 6, 1965, Ser. No. 453,757
Claims priority, application Great Britain, May 7, 1964, 19,111/64
Int. Cl. H01j *29/50, 31/00*
U.S. Cl. 340—324 **6 Claims**



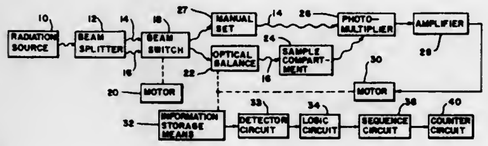
An electric discharge tube for forming character symbols on the fluorescent material on the face thereof. A first aspect of the invention includes selection means for selecting a predetermined pattern corresponding to a symbol representing data, timing means for governing the timing of said predetermined intervals of time, and circuit means each having a set of interconnections determining said pattern. In a second embodiment there is included a first plurality of elemental electron beams arrays in a column, and additional electron beam production means for providing a second plurality of electron beams, also disposed in a column, and spaced apart from said first plurality of elemental beams so as to fill the spaces between the bright spots made by said first plurality of elemental electron beams on the face of the tube.

3,503,064
A–D CONVERSION SYSTEM
Takeki Takarabe and Shoji Chikaraishi, Tokyo, Japan, assignors to Kabushikikaisha Tokyo Keiki Seizosho (Tokyo Keiki Seizosho Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Dec. 21, 1964, Ser. No. 420,037
Claims priority, application Japan, Sept. 4, 1964, 39/50,852
Int. Cl. H03k *13/04*
U.S. Cl. 340—347 **1 Claim**



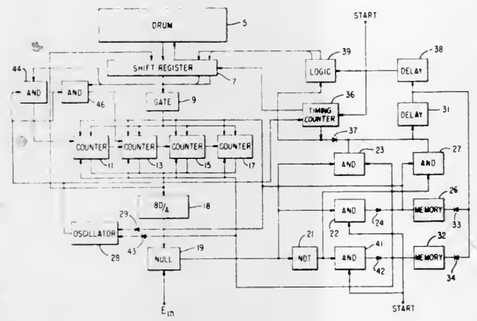
An analog-to-digital conversion system which allows for the compensation of a non-linear detecting element so as to produce an accurate system.

3,503,065
APPARATUS FOR AUTOMATICALLY AND REMOTELY MONITORING A CONTROLLED ELEMENT
Robert E. Gerace, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 24, 1966, Ser. No. 529,748
Int. Cl. H03k *13/00*
U.S. Cl. 340—347 **2 Claims**



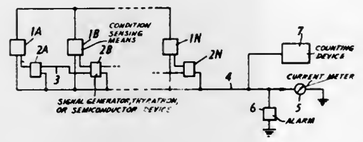
Apparatus selectively generates electrical signals in response to and representative of the movement of a controlled element. The apparatus has the further ability to distinguish irregular or erroneous movements of the controlled element from its regular or expected movements and will not generate any signals in response to the detected irregular or erroneous movements.

3,503,066
HIGH-SPEED SCANNING SYSTEM
William D. Kelly, Eastlake, and John V. Werme, Painesville, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,107
Int. Cl. G08c *7/00*
U.S. Cl. 340—347 **12 Claims**



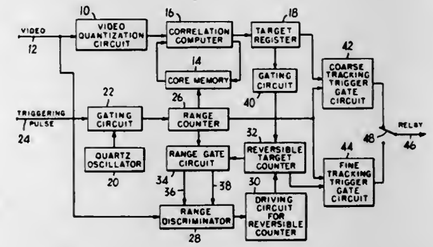
A system for the high-speed scanning of a multitude of analog input signals and their conversion to digital representations. The time required for the digital conversion of each variable being minimized by algebraically adding to the digital representation of each variable at the time of the last scan a count which is proportional to the change in the variable during the increment of time from the last to the next succeeding scan.

3,503,067
REMOTE IDENTIFICATION SYSTEM
Abel B. Amiragoff, Bruxelles, Belgium, assignor to Etablissement pour Applications Electroniques, Vaduz, Liechtenstein, a body-corporate of Leichtenstein
Continuation-in-part of application Ser. No. 406,388, Oct. 26, 1964. This application Nov. 13, 1967, Ser. No. 682,107
Claims priority, application Belgium, Nov. 17, 1966, 689,837
Int. Cl. G08b *19/00;* **H04q** *3/00*
U.S. Cl. 340—412 **6 Claims**



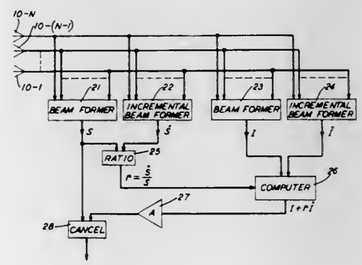
A remote identification system comprises a plurality of electronic relay circuits each capable upon actuation of causing the flow of a similar increment of current. The relay circuits are coupled each to the next in a series such that actuation of any one of the relay circuits causes the actuation of the next following relay circuit of the series. There are also a plurality of detectors each associated with and coupled electrically to a respective one of the relay circuits for actuation thereof when the associated detector operates, a common conductor connected to all of the relay circuits. There is a current-amplitude responsive device connected to the common conductor for indicating the sum total of the increments of current caused to flow in the common conductor as a result of actuation of any one relay circuit by its associated detector with resultant actuation of the other following relay circuits of the series.

3,503,068
RANGE TRACKING SYSTEM
Nobuharu Yamauchi, Amagasaki, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Jan. 25, 1968, Ser. No. 700,567
Int. Cl. G01s *9/02*
U.S. Cl. 343—7.3 **4 Claims**



Video signals received by a radar apparatus are quantized in range, and a memory stores the quantized signals originating from the respective quantized ranges and throughout a predetermined width of a pulse repetition period of radar pulses involved. The stored signals are utilized to determine the presence or absence of a target. The presence of the target immediately produces a range trigger to effect an angle tracking. On the other hand, a range feedback system produces a range to the target of the radar apparatus identical to the actual range to it which is, in turn, utilized to effect a fine angle tracking.

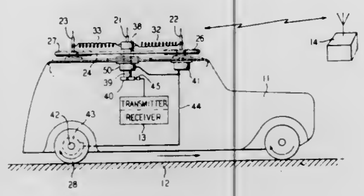
3,503,069
SYSTEM FOR NULLING ARRAY SENSITIVITY PATTERNS
Stuart P. Lloyd, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Feb. 27, 1968, Ser. No. 708,597
Int. Cl. H01q *3/26*
U.S. Cl. 343—100 **7 Claims**



Both the sensitivity pattern of an array of signal receiving elements and a prescribed number of derivatives

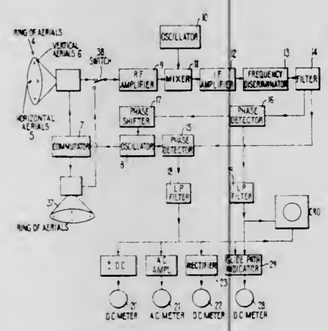
of this pattern are nulled in the same selected direction by appropriately processing the signals received by the elements in the array.

3,503,070
ANTI-DOPPLER SHIFT ANTENNA FOR MOBILE RADIO
Rudolf Kompfner, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 1, 1969, Ser. No. 812,083
Int. Cl. H04b *1/10;* **H04q** *1/32*
U.S. Cl. 343—100 **14 Claims**



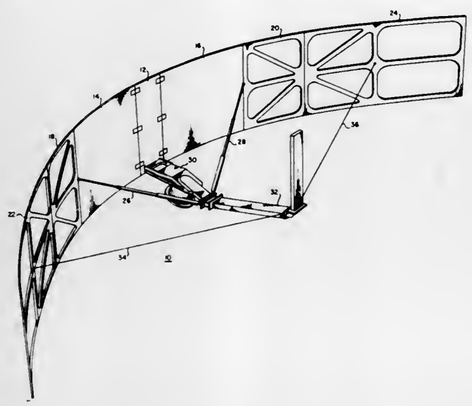
A number of individual antenna probes are affixed to a continuous track which is movably mounted on a car. The track is driven at the same speed as the car and consequently the portion of the track aligned with the line of the car's motion but moving in the opposite direction will remain stationary with respect to the ground for a finite time period. Switching is provided so that the antenna attached to the temporarily stationary portion of the track is always connected to the car's mobile radio equipment. The stationary antenna is unaffected by Doppler shift.

3,503,071
RADIO NAVIGATION SYSTEM
Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 769,803
Claims priority, application Great Britain, Nov. 16, 1967, 52,142/67
Int. Cl. G01s *3/16, 5/08*
U.S. Cl. 343—112 **6 Claims**



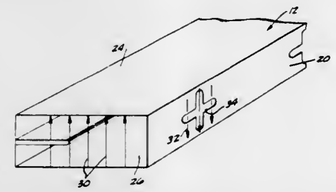
A radio navigation system wherein a transmitter is cyclically coupled to three antennas, arranged at the corners of an equilateral triangle, to radiate a position modulated signal which is detected by direction finding aerials and processed by an FM type receiver. The outputs of said receiver are coupled to an oscilloscope and to separate meters to provide left-right homing, reciprocal of distance to fly, approach track guidance and glide path information.

3,503,072
UNFOLDING PARABOLIC ANTENNA
Horace G. Thompson, Accokeek, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1967, Ser. No. 650,160
Int. Cl. H01q *19/12*
U.S. Cl. 343—705 **8 Claims**



An unfolding antenna for radar scanning and especially suited for use aboard satellites and other space vehicles. The antenna is structurally formed of panels which are unfolded from stowed to extended position by energy from compressed gas.

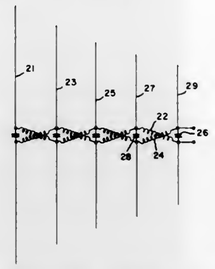
3,503,073
TWO-MODE WAVEGUIDE SLOT ARRAY
James S. Ajioka, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 9, 1968, Ser. No. 704,439
Int. Cl. H01q *13/10, 3/26*
U.S. Cl. 343—771 **11 Claims**



A waveguide slot array antenna has a rectangular outline configuration with one of the rectangular sides having radiating slots therein. Both longitudinal and transverse slots are provided. An interior septum is mounted on one of the walls, either the slotted wall or the opposite wall, and extends out into the interior of the waveguide structure. Opposite sides of this septum are excited in the odd mode and the even mode to cause excitation of the transverse slots by the odd mode and the longitudinal slots by the even mode. Thus polarization of the antenna is controlled by controlling the phase and/or amplitude relationship between the two excitations. In view of the arbitrary height of the slotted wall,

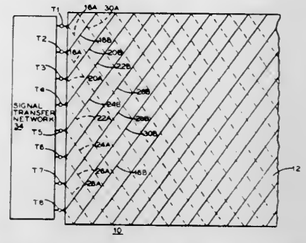
stacked arrays with a capability of being scanned by phase shift in that plane are possible, without the formation of grating lobes.

3,503,074
LOG-PERIODIC ANTENNA ARRAY HAVING CLOSELY SPACED LINEAR ELEMENTS
Duncan L. Carter, P.O. Box 653, Denham Springs, La. 70726
Continuation-in-part of application Ser. No. 563,892, July 8, 1966. This application Dec. 5, 1968, Ser. No. 784,535
Int. Cl. H01q *11/10*
U.S. Cl. 343—792.5 **10 Claims**



A frequency independent antenna having a plurality of closely spaced elements of unequal but predetermined related lengths, and coupling means for connecting these elements in a manner so as to provide phase reversal of current in alternate elements. The spacing may be as close as physical limitations will permit so long as the elements do not contact each other.

3,503,075
HELIX ANTENNA WITH POLARIZATION CONTROL
Carl W. Gerst, North Syracuse, N.Y., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,263
Int. Cl. H01q *3/26*
U.S. Cl. 343—854 **13 Claims**

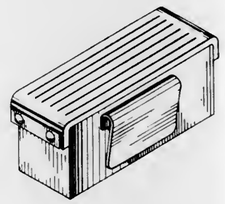


A broadband high gain antenna comprises a plurality of filament conductors wherein each conductor is a pair of counterwound helical windings connected at one end. The connected ends of the helical windings are fed with differently phased signals to achieve different types of polarization.

216,939
PANTY GIRDLE
Mack Spetalnik, Weehawken, N.J., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Sept. 16, 1968, Ser. No. 13,542
Term of patent 7 years
Int. Cl. D2—*02*
U.S. Cl. D2—4



216,940
BAIT CONTAINER OR SIMILAR ARTICLE
Alfred E. Stonedahl, 3633 Chinden Blvd., Boise, Idaho 83704
Filed Sept. 30, 1968, Ser. No. 13,793
Term of patent 14 years
Int. Cl. D2—*08*
U.S. Cl. D2—400



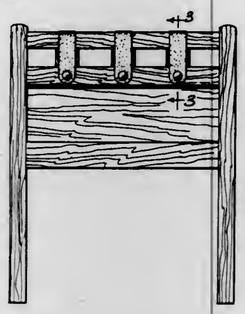
216,941
OVERSHOE
Sam Schwartz, Lake Mahopac, N.Y., assignor to Torch Rubber Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 30, 1969, Ser. No. 16,949
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—272



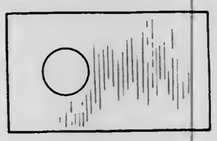
216,942
TOE CLEANING BRUSH HANDLE
Harold Safalow, 2515 Webster Ave., Bronx, N.Y. 10458
Filed May 5, 1969, Ser. No. 17,035
Term of patent 14 years
Int. Cl. D4—*99*
U.S. Cl. D4—99

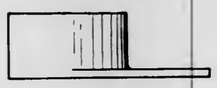


216,943
HEADBOARD FOR A BED
Orville B. Solie, Rockford, Ill., assignor to Kroehler Mfg. Co., Naperville, Ill., a corporation of Delaware
Filed Oct. 17, 1968, Ser. No. 14,034
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D5—4



216,944
DOOR HANDLE
Desmond Edward Webster, 1 Sweetmount Park, Dundrum Heights, Dublin, Ireland
Filed July 11, 1968, Ser. No. 12,707
Claims priority, application Great Britain Feb. 9, 1968
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—150





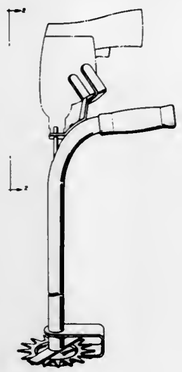
216,945
PORTABLE ELECTRIC HEAT GUN
Wilbert M. Gilman, Wellesley Hills, Mass., assignor to Electronized Chemicals Corporation, a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 15,249
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—30



216,946
O-RING EXTRACTOR TOOL
John H. Khan, Santa Clara, Calif.
(44 N. Jackson St., San Jose, Calif. 95116)
Filed Feb. 25, 1969, Ser. No. 15,906
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—14



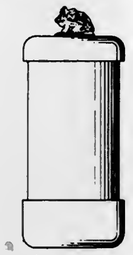
216,947
GRASS SHEAR
Thomas J. Caves, 6952 Town Lane, Dearborn Heights, Mich. 48127
Filed Mar. 5, 1969, Ser. No. 16,071
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D8—8



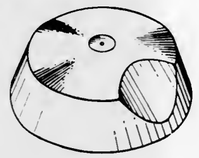
216,948
HOSE CLAMP
George L. Turner, Hickory Corners, Mich., assignor to American Stamping Co., Battle Creek, Mich., a corporation of Michigan
Filed May 21, 1969, Ser. No. 17,256
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—229



216,949
COMBINATION CONTAINER FOR PILLS AND WATER
Florabel Maben, Visalia, Calif.
(3632 Park Blvd., Apt. E, San Diego, Calif. 92103)
Filed Mar. 26, 1969, Ser. No. 16,466
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—185



216,950
COMBINED VALVE ACTUATOR AND DISPENSING HEAD FOR AN AEROSOL CONTAINER
Theodore Andrew Beck, Andover, Mass., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Apr. 9, 1969, Ser. No. 16,639
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—258



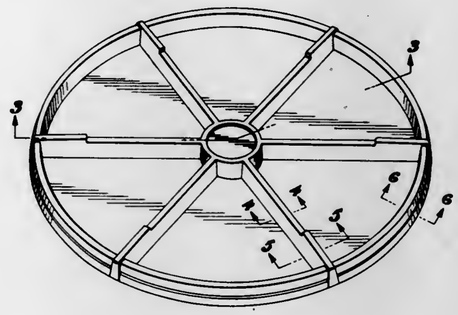
216,951
DISPENSING CONTAINER
Henry H. Saenz, Pittsburgh, Pa., assignor to H. J. Heinz Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1969, Ser. No. 16,685
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—160



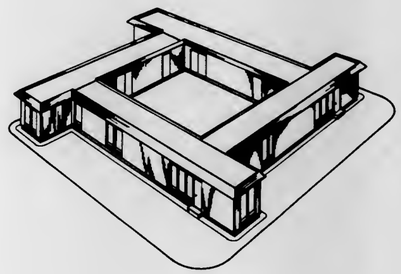
216,952
DISPENSING CAP FOR A PRESSURIZED CAN
Garrison G. Trupp, 4600 York Road, Baltimore, Md. 21212, and Marc A. Trupp, 23 Stonehenge Circle, Pikesville, Md. 21208
Filed Apr. 15, 1969, Ser. No. 16,755
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—278



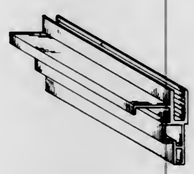
216,953
CLOSURE
Richard William Schuff, Phoenix, Ariz., assignor to Dart Industries Inc., a corporation of Delaware
Filed Apr. 25, 1969, Ser. No. 16,891
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—267



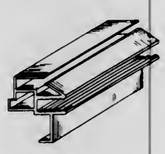
216,954
MULTIPLE UNIT HOUSING STRUCTURE
Louis J. Jenn, 4917 Laurel Circle, Indianapolis, Ind. 46226
Filed July 15, 1968, Ser. No. 12,739
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



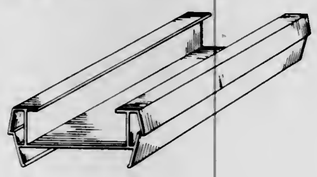
216,955
EXTRUDING SLIDING WINDOW MEMBER
Raymond M. Dallaire, P.O. Box 220,
Levis, Quebec, Canada
Filed Jan. 15, 1969, Ser. No. 15,353
Claims priority, application Canada July 19, 1968
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



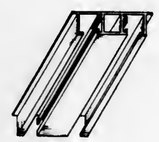
216,956
EXTRUDED PLASTIC WINDOW LIFT RAIL
Raymond M. Dallaire, P.O. Box 220,
Levis, Quebec, Canada
Filed Jan. 15, 1969, Ser. No. 15,356
Claims priority, application Canada July 19, 1968
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



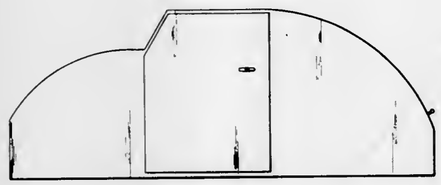
216,957
EXTRUDED FRAME FOR A DOOR MOUNTED WINDOW
Raymond M. Dallaire, P.O. Box 220,
Levis, Quebec, Canada
Filed Jan. 15, 1969, Ser. No. 15,357
Claims priority, application Canada July 18, 1968
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



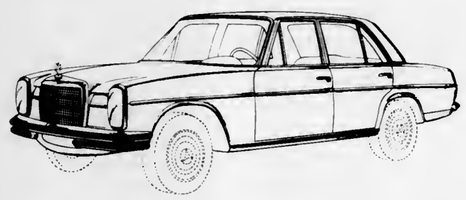
216,958
EXTRUDED PLASTIC WINDOW MEMBER
Raymond M. Dallaire, P.O. Box 220,
Levis, Quebec, Canada
Filed Jan. 15, 1969, Ser. No. 15,358
Claims priority, application Canada July 18, 1968
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



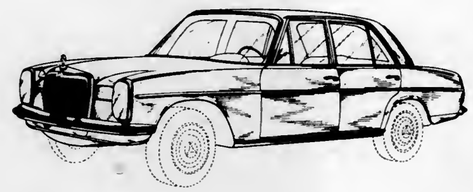
216,959
SHELTER
Kenneth R. Heiser, Rte. 2, Box 17,
Pendleton, Ind. 46064
Filed July 18, 1969, Ser. No. 18,268
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



216,960
AUTOMOBILE BODY
Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Mar. 5, 1968, Ser. No. 10,855
Claims priority, application Germany Sept. 6, 1967
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



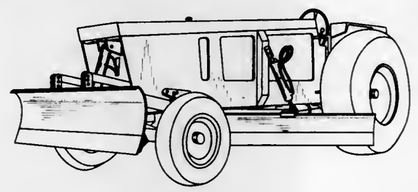
216,961
AUTOMOBILE BODY
Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Mar. 25, 1968, Ser. No. 11,127
Claims priority, application Germany Nov. 24, 1967
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



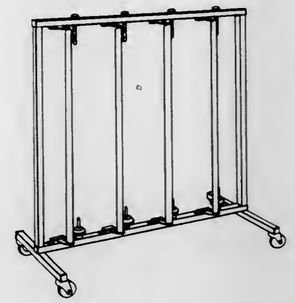
216,962
BUMPER GUARD
Sidney Yakerson, New York, N.Y., assignor to Metalcrafters Specialties, Inc., a corporation of New York
Filed Oct. 9, 1968, Ser. No. 13,903
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



216,963
TRACTOR MACHINE
Jack L. Highfill, Raleigh, N.C., assignor to Athey Products Corporation, Raleigh, N.C., a corporation of Illinois
Filed Dec. 2, 1968, Ser. No. 14,731
Term of patent 14 years
Int. Cl. D12—*09*
U.S. Cl. D14—3



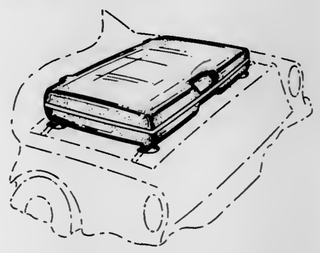
216,964
SHEET MATERIAL DISPENSER FOR VERTICAL ROLLS
Edward Waltz, Grand Rapids, Mich., assignor to The E.O. Manufacturing Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 11, 1969, Ser. No. 15,739
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



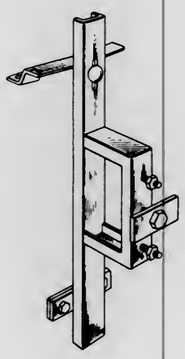
216,965
DECORATIVE DEVICE FOR AUTOMOBILE HOOD
Leonard M. Snyder, 745 Linda Vista Ave.,
Pasadena, Calif. 91103
Filed Mar. 14, 1969, Ser. No. 16,254
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—18



216,966
CAR CARRIER CASE
Paul Belokin, Jr., 6919 W. 43rd St.,
Berwyn, Ill. 60402
Filed Mar. 24, 1969, Ser. No. 16,400
Term of patent 14 years
Int. Cl. D12—*14;* D3—*01*
U.S. Cl. D14—27



216,967
COMBINATION SPARE TIRE AND WHEEL CARRIER
Birt Raymond Harden, R.R. 1, Box 471, Three Rivers, Mich. 49093
Filed May 6, 1969, Ser. No. 17,023
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



216,968
LADDER STABILIZER
Richard L. Werner, Sharon, Pa., assignor to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1969, Ser. No. 15,978
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—8



216,969
VEHICLE SEAT
Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Apr. 8, 1969, Ser. No. 16,620
Term of patent 14 years
Int. Cl. D6—*03*
U.S. Cl. D15—8

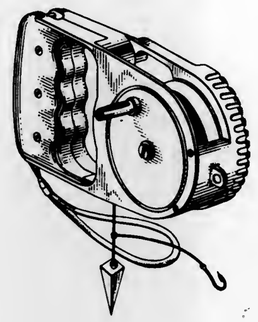


216,970
ANALYZER OF ORGANIC MATERIAL CONTENT IN SEWAGE WATER OR THE LIKE
Kurt H. Nelson, Thousand Oaks, and Lawrence H. Groeper, Woodland Hills, Calif., assignors to North American Rockwell Corporation
Filed Dec. 30, 1968, Ser. No. 15,187
Term of patent 14 years
Int. Cl. D10—*11*; D24—*02*
U.S. Cl. D16—2





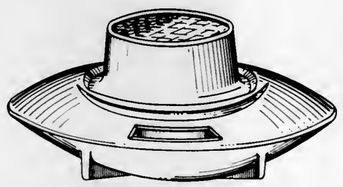
216,971
SPORT FISHING REEL
Richard K. Sutz, 5800 Arlington Ave., Riverdale, N.Y. 10471
Filed Feb. 7, 1969, Ser. No. 15,684
Term of patent 14 years
Int. Cl. D22—*06*
U.S. Cl. D22—25



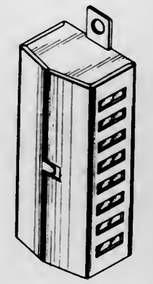
216,972
HAIR RINSING AND WASHING SPRAY
Lester O. Jacobs, Monterey, Calif. (761 Pershing Ave., San Jose, Calif. 95126)
Filed Sept. 5, 1968, Ser. No. 13,403
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—6



216,973
HUMIDIFIER OR THE LIKE
Lawrence Katzman, New York, Edward Briggin, New York County, and Monte L. Levin, Kings County, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 21, 1969, Ser. No. 15,434
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—146



216,974
AIR-FRESHENER DISPENSER
Norman E. Wilson, University City, Mo., assignor to The Puro Co., Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 24, 1969, Ser. No. 16,393
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—150



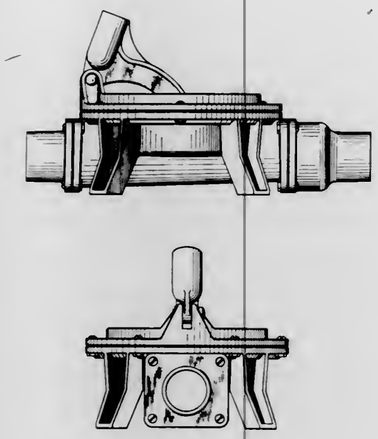
216,975
SPRAY GUN
Norman William Stevenson, Brunswick Hill, Macclesfield, England, assignor to Burgess Products Company Limited, Hinckley, England
Filed Mar. 24, 1969, Ser. No. 16,403
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—18



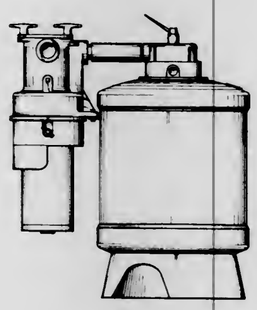
216,976
LIQUID SPRAY GUN
Aaron Lee, Miami Beach, Fla., assignor to Chemair Corporation of America, Hialeah, Fla., a corporation of Florida
Filed Apr. 1, 1969, Ser. No. 16,547
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—17



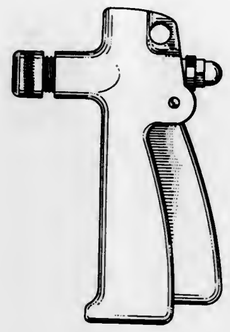
216,977
PUMP
John H. Collamore, Jr., West Barrington, R.I., assignor to Dart Union Company, a corporation of Rhode Island
Filed Apr. 25, 1969, Ser. No. 16,903
Term of patent 14 years
Int. Cl. D23—*01;* D15—*02*
U.S. Cl. D23—14



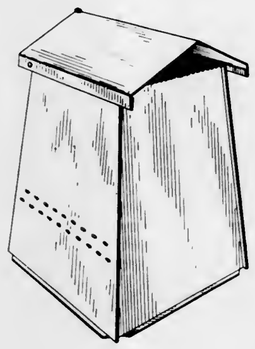
216,978
COMBINED FILTER AND PUMP
David Greene, 20 Ferris Drive, West Orange, N.J. 07032
Filed May 1, 1969, Ser. No. 16,976
Term of patent 14 years
Int. Cl. D23—*01;* D15—*02*
U.S. Cl. D23—4



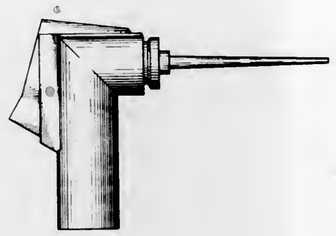
216,979
SPRAY GUN
Theodore C. Leisenring, 1253 S. High St., Denver, Colo. 80210
Filed May 8, 1969, Ser. No. 17,077
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—17



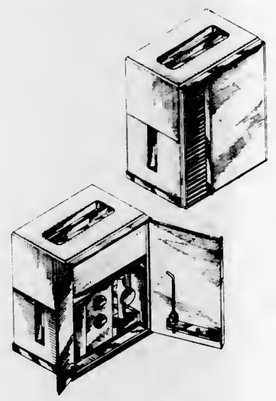
216,980
INCINERATOR
Dan C. Cusenbary, Cunningham, Kans., assignor to Kingman Manufacturing Company, Inc., Cunningham, Kans., a corporation of Kansas
Filed June 3, 1969, Ser. No. 17,487
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—85



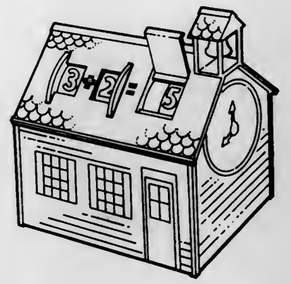
216,981
INTERDENTAL PROPHYLACTIC MOUTHWASH DISPENSER
Garrison G. Trupp, 4600 York Road, Baltimore, Md. 21212, and Marc A. Trupp, 22 Stonehenge Circle, Pikesville, Md. 21208
Filed Apr. 15, 1969, Ser. No. 16,754
Term of patent 14 years
Int. Cl. D24—*03;* D23—*99*
U.S. Cl. D24—1



216,982
ORAL HYGIENE DEVICE
Hermann R. Schaefer, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 7, 1969, Ser. No. 18,066
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D24—1



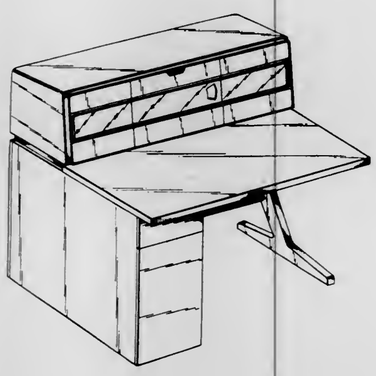
216,983
ARITHMETIC LEARNING TOY
Kevin McKibben O'Brien, 296 Main St., Westport, Conn. 06880
Filed Jan. 7, 1969, Ser. No. 15,240
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



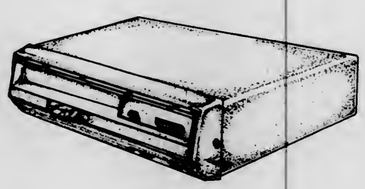
216,984
ELECTRICAL METER HAVING CALIBRATION MATRIX
Melvin E. Stanford, Saratoga County, and Albert J. Morford, Albany County, N.Y., assignors to Systomation, Inc., Schenectady, N.Y.
Filed Mar. 15, 1968, Ser. No. 10,987
Term of patent 14 years
Int. Cl. D10—*10*
U.S. Cl. D26—1



216,985
DATA TRANSCRIBER
Eugene W. Yeager, Lansdale, Pa., assignor to Digital Information Devices, Inc., Norristown, Pa., a corporation of Delaware
Filed Feb. 4, 1969, Ser. No. 15,619
216,985
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5

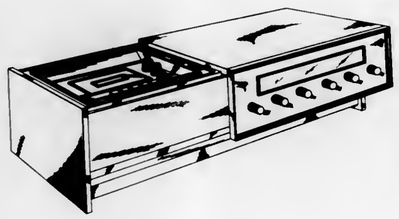


216,986
TAPE PLAYER FOR AUTOMOBILE
Yoshihiko Ohyama, Tokyo, Japan, assignor to Hitachi, Ltd., Manufacturers, Tokyo, Japan, a corporation of Japan
Filed May 15, 1969, Ser. No. 17,170
Claims priority, application Japan Nov. 22, 1968
Term of patent 7 years
Int. Cl. D14—*01*
U.S. Cl. D26—14





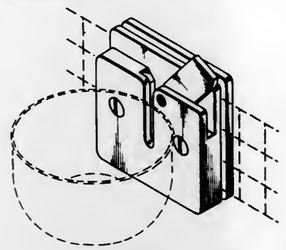
216,987
COMBINATION TUNER AND TAPE CASSETTE UNIT
Sidney Rhodes, Glen Cove, N.Y., assignor to Lear Siegler, Inc., New York, N.Y., a corporation of Delaware
Filed July 18, 1969, Ser. No. 18,262
Term of patent 14 years
Int. Cl. D14—*01, 03*
U.S. Cl. D26—14



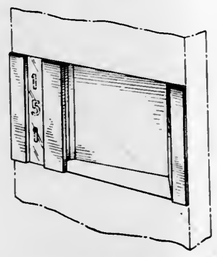
216,988
FOOTBALL TROPHY OR THE LIKE
Joseph Louis Je Rue, Ventura, Calif., assignor of fifty percent to John P. Lynch and Barbara J. Lynch, both of Ventura, Calif.
Filed Mar. 3, 1969, Ser. No. 15,992
Term of patent 14 years
Int. Cl. D11—*02*
U.S. Cl. D29—28



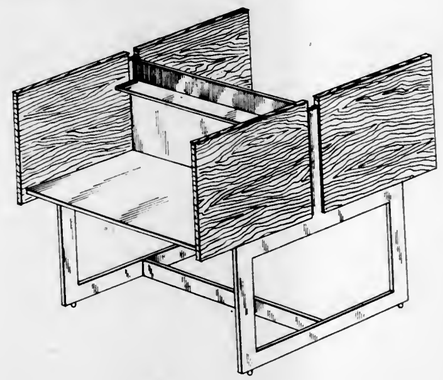
216,989
HOLDER FOR FOOD BOWL FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Oct. 4, 1968, Ser. No. 13,836
Term of patent 14 years
Int. Cl. D30—*02*
U.S. Cl. D30—13



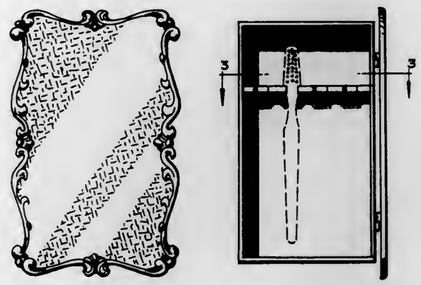
216,990
LOCKER DOOR HANDLE
Joop M. Van Ryn, Whitby, Ontario, Canada, assignor to The Pedlar People Limited, Oshawa, Ontario, Canada, a corporation of Canada
Filed May 28, 1968, Ser. No. 12,107
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—19



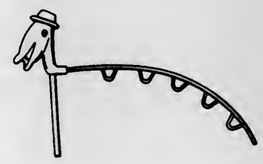
216,991
DOUBLE STUDY CARRELL UNIT
John L. Gianfagna, Marietta, Ohio, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of design application Ser. No. 9,036, Oct. 18, 1967. This application June 4, 1968, Ser. No. 12,554
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—11



216,992
TOOTHBRUSH HOLDER
Ralph La Rue Du Bois, 4242 E. 111th St., Tulsa, Okla. 74135
Filed Mar. 12, 1969, Ser. No. 16,213
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—28



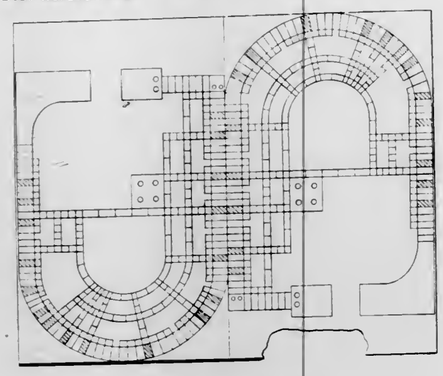
216,993
PLAYGROUND CLIMBER REPRESENTING A SEA SERPENT
Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Dec. 30, 1968, Ser. No. 15,139
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



216,994
BALL SHOES OR SIMILAR ARTICLE
Elmer W. Swanberg, 1420 E. 58th Ave., Spokane, Wash. 99203
Filed Feb. 10, 1969, Ser. No. 15,699
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—14



216,995
EDUCATIONAL GAME BOARD
Angelo F. Nucci, 1667 Crestwood Road, Toledo, Ohio 43612
Filed Feb. 13, 1969, Ser. No. 15,768
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



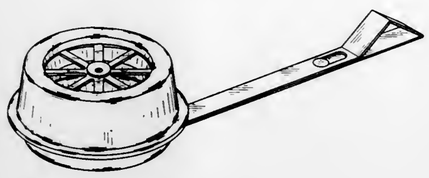
216,996
COMBINED DOLL'S HEAD AND BASE
Joseph Paganello, Fairlawn, N.J.
(152—156 Wooster St., New York, N.Y. 10012)
Filed Mar. 4, 1969, Ser. No. 16,022
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—4



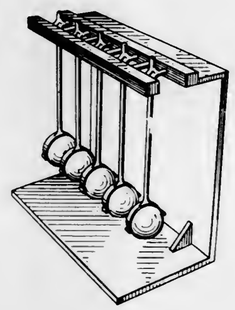
216,997
EGG-SHAPED TOY
Reuben B. Klamer, 245 S. Barrington Ave., Los Angeles, Calif. 90049
Continuation-in-part of design application Ser. No. 8,097, Aug. 2, 1967. This application Aug. 15, 1968, Ser. No. 16,075
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—2



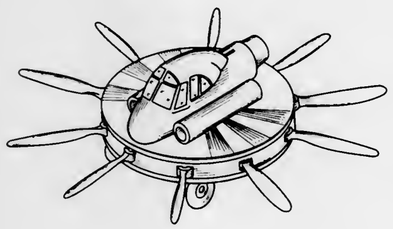
216,998
BATTING TRAINER
Norman J. Van Skyhawk, Salt Lake City, Utah, assignor to Harman Killebrew Enterprises, Inc., Salt Lake City, Utah
Filed June 9, 1969, Ser. No. 17,604
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



216,999
MULTIPLE PENDULUM TOY
Maurice S. Kanbar, 4 E. 77th St., New York, N.Y. 10021
Filed June 17, 1969, Ser. No. 17,749
Term of patent 14 years
Int. Cl. D21—*04*
U.S. Cl. D34—15



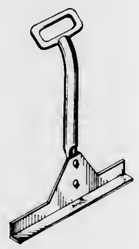
217,000
FLYING SAUCER TOY
Edward H. Getz, R.D. 2, Tyrone, Pa. 16686
Filed July 24, 1969, Ser. No. 18,376
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



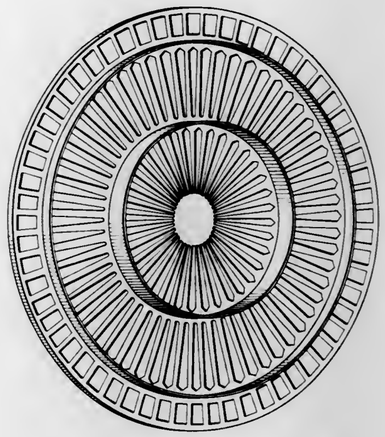
217,001
CHAMPAGNE GLASS
Stanford C. Stone, South St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed Feb. 14, 1969, Ser. No. 15,773
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8



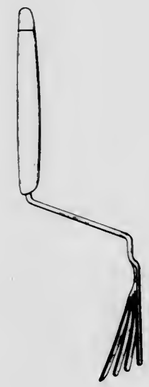
217,002
CONSTRUCTION SHEET CARRIER OR SIMILAR ARTICLE
Fred C. Wagner, 905 N. 4th Ave., Yakima, Wash. 98902
Filed June 25, 1969, Ser. No. 17,875
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D41—1



217,003
CLOCK FACE
Robert W. Windebank, Fairfield, and Reinhardt F. Luthmann, Wilton, Conn., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 14,950
Term of patent 14 years
Int. Cl. D10—*06*
U.S. Cl. D42—7



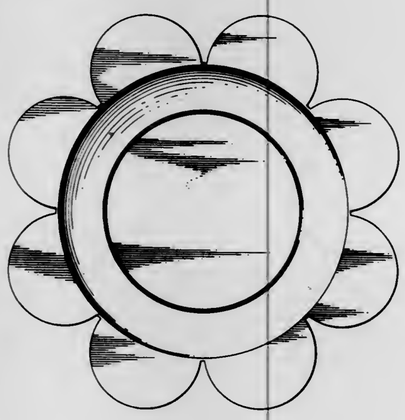
217,004
MIXING FORK OR THE LIKE
Virginia B. Gay, 34 E. 48th St., Savannah, Ga. 31405
Filed Jan. 6, 1969, Ser. No. 15,262
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D44—29



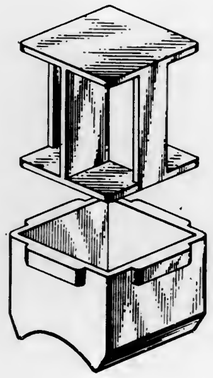
217,005
MULTIPLE COMPARTMENT INSULATED FOOD CONTAINER
Florabel Maben, Visalia, Calif. (3632 Park Blvd., Apt. E, San Diego, Calif. 92103)
Filed Mar. 26, 1969, Ser. No. 16,450
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—1



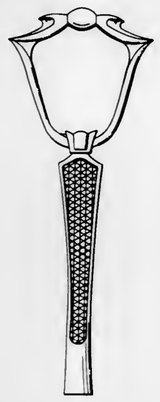
217,006
PLATE HOLDER
Margaret E. Michalek, 430 Monte Vista Road, Arcadia, Calif. 91006
Filed Apr. 14, 1969, Ser. No. 16,710
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



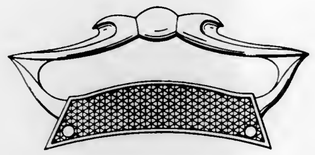
217,007
BUTTER APPLICATOR
George H. Smith, 3360–D Norton Ave., Lynwood, Calif. 90262
Filed Apr. 29, 1969, Ser. No. 16,932
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



217,008
HANDLE FOR A HOSTESS TRAY OR THE LIKE
Manuel S. Ziskin, Mayfield Heights, and Harold O. Wagner, Sheffield Lake, Ohio, assignors to American Trading and Production Corporation, Baltimore, Md., a corporation of Maryland
Filed May 19, 1969, Ser. No. 17,210
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



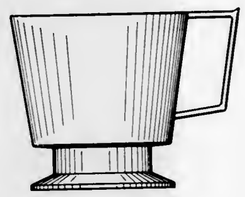
217,009
HANDLE FOR A TRAY OR THE LIKE
Manuel S. Ziskin, Mayfield Heights, and Harold O. Wagner, Sheffield Lake, Ohio, assignors to American Trading and Production Corporation, Baltimore, Md., a corporation of Maryland
Filed May 19, 1969, Ser. No. 17,223
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



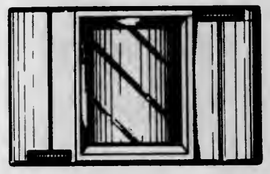
217,010
HANDLE FOR A CASSEROLE OR THE LIKE
Manuel S. Ziskin, Mayfield Heights, and Harold O. Wagner, Sheffield Lake, Ohio, assignors to American Trading and Production Corporation, Baltimore, Md., a corporation of Maryland
Filed May 19, 1969, Ser. No. 17,225
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



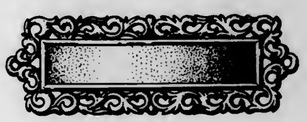
217,011
HOLDER FOR DISPOSABLE DRINKING CUP
Reginald O. Hardie, Cranston, R.I., assignor to Nyman Mfg. Co., Providence, R.I., a corporation of Rhode Island
Filed Aug. 4, 1969, Ser. No. 18,527
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



217,012
LINK FOR A WATCH BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed June 17, 1969, Ser. No. 17,747
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



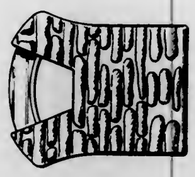
217,013
LINK FOR AN IDENTIFICATION BRACELET OR SIMILAR ARTICLE
Albert C. Engelmann, Esmond, R.I., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed June 30, 1969, Ser. No. 17,955
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



217,014
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed July 16, 1969, Ser. No. 18,226
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



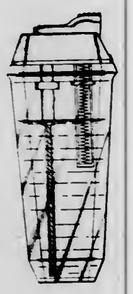
217,015
END LINK FOR A BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed July 16, 1969, Ser. No. 18,227
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



217,016
END LINK FOR A BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed July 18, 1969, Ser. No. 18,265
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



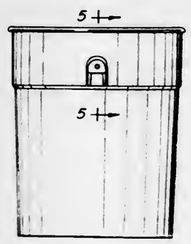
217,017
TAPERED DISPOSABLE LIGHTER
Willem Beijering, Zweelo, Netherlands, assignor to Gebrs. Van Poppel N.V., Assen, Netherlands, a corporation of the Netherlands
Filed Mar. 6, 1969, Ser. No. 16,096
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



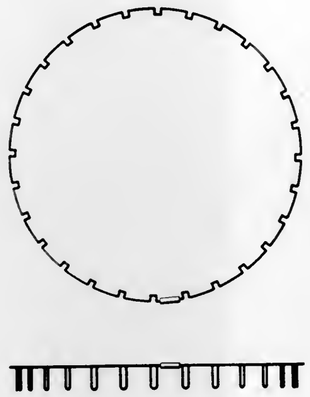
217,018
LIGHT FIXTURE
Eldon L. Anderson, Jr., Fletcher, N.C., assignor to General Electric Company, a corporation of New York
Filed May 16, 1969, Ser. No. 17,188
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—23



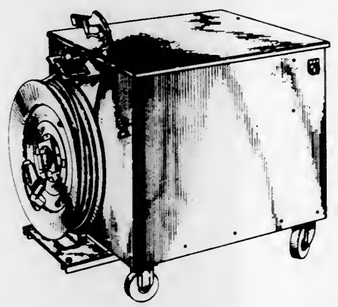
217,019
PAIL OR SIMILAR ARTICLE
Roy G. Churan, Oak Lawn, Ill., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware
Continuation-in-part of design application Ser. No. 7,537, June 21, 1967. This application Feb. 28, 1968, Ser. No. 10,775
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—29

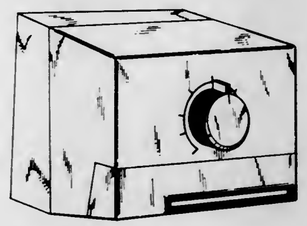


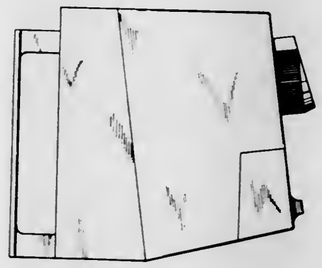
217,020
DEVICE FOR HOLDING A FLEXIBLE LINER IN RECEPTACLES
Charles T. Heitz, 315 NE. 28th Ave., Portland, Oreg. 97232
Filed Nov. 25, 1968, Ser. No. 14,643
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D49—30



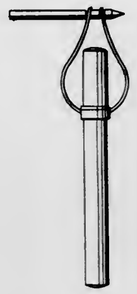
217,021
PRESSURE WASHER
Joseph Henry Chapman, 109 Pope St., Menlo Park, Calif. 94025
Filed Feb. 13, 1969, Ser. No. 15,764
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—11





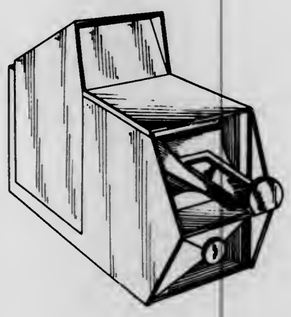


217,022
REVOLVING CASE FOR CLINIC THERMOMETERS FOR ZERO SETTING THE SCALE THEREOF
Piero Catelli, Como, Italy (% Dr. Ing. Misitano A.G., Via Padova 217, 20127 Milan, Italy)
Filed Nov. 13, 1968, Ser. No. 14,494
Term of patent 14 years
Int. Cl. D10—*09*
U.S. Cl. D52—7



217,023
GAS RATIO CONTROLLER
Douglas James Warner and Arnold Wolf, Berkeley, Calif., assignors to Veriflo Corporation, Richmond, Calif., a corporation of California
Filed Jan. 21, 1969, Ser. No. 15,415
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6

217,024
METER BOX OR THE LIKE
Robert K. Unter, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., Peoria, Ill., a corporation of Delaware
Filed Mar. 10, 1969, Ser. No. 16,168
Term of patent 14 years
Int. Cl. D20—*01*
U.S. Cl. D52—3



217,025
SPOON OR SIMILAR ARTICLE
Robert S. Conland, Vernon, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 26, 1969, Ser. No. 15,918
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



217,026
SPOON OR SIMILAR ARTICLE
Robert S. Conland, Vernon, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 26, 1969, Ser. No. 15,922
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



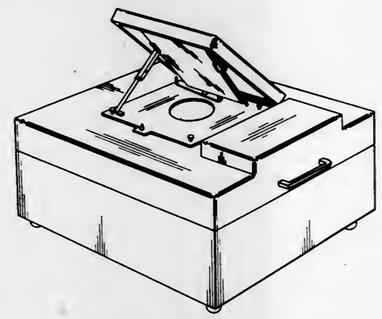
217,027
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed May 27, 1969, Ser. No. 17,372
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



217,028
SPECTACLE FRAME
Harry Weissman, 4 Imperial Court, Great Neck, N.Y. 11023
Filed July 22, 1969, Ser. No. 18,331
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



217,029
PROJECTOR
Fred H. Meyer, Huntington, N.Y., assignor to Picker Corporation, White Plains, N.Y., a corporation of New York
Filed Dec. 13, 1968, Ser. No. 14,956
Term of patent 14 years
Int. Cl. D16—*03, 04*
U.S. Cl. D61—1



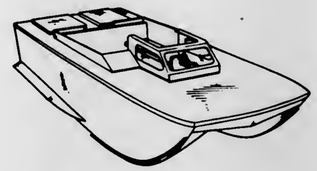
217,030
FONT OF PRINTING TYPE
Sam Hayman, 13697 Wales, Oak Park, Mich. 48237
Filed Feb. 24, 1969, Ser. No. 15,863
Term of patent 14 years
Int. Cl. D18—*04*
U.S. Cl. D64—12



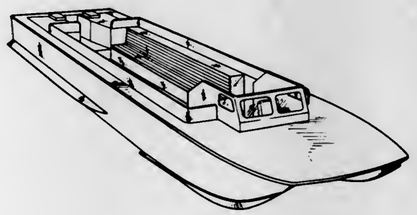
217,031
DOUBLE DECK RAILROAD STOCK CAR BODY
Henry E. Keniston, Cincinnati, Ohio, assignor to Ortner Freight Car Company, Cincinnati, Ohio, a corporation of Kentucky
Filed Sept. 16, 1968, Ser. No. 13,554
Term of patent 14 years
Int. Cl. D12—*03*
U.S. Cl. D66—1



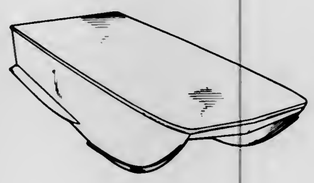
217,032
BOAT
Dennis T. Batham and Theodore E. Sladek, Orange County, George L. Diry, Los Angeles County, and Ronald W. Spencer, Orange County, Calif., assignors to The Susquehanna Corporation, Fairfax County, Va., a corporation of Delaware
Filed Dec. 31, 1968, Ser. No. 15,160
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



217,033
BOAT
Dennis T. Batham and Theodore E. Sladek, Orange County, George L. Diry, Los Angeles County, and Ronald W. Spencer, Orange County, Calif., assignors to The Susquehanna Corporation, Fairfax County, Va., a corporation of Delaware
Filed Dec. 31, 1968, Ser. No. 15,161
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1

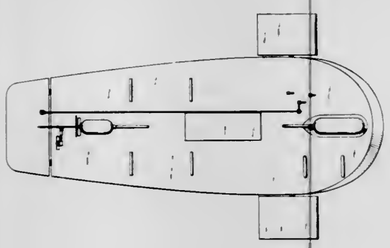


217,034
BOAT HULL
Dennis T. Batham and Theodore E. Sladek, Orange County, George L. Diry, Los Angeles County, and Ronald W. Spencer, Orange County, Calif., assignors to The Susquehanna Corporation, Fairfax County, Va., a corporation of Delaware
Filed Dec. 31, 1968, Ser. No. 15,165
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1

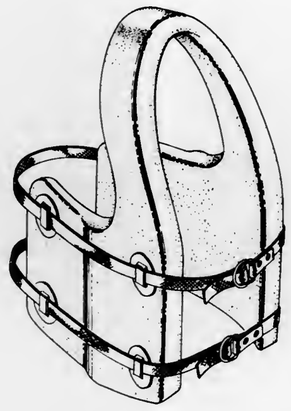


217,035
SCUBA DIVING DEVICE
Myron A. Kenney, 415 Marquette St., Bay City, Mich. 48706
Filed Mar. 28, 1969, Ser. No. 16,515
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D71—1

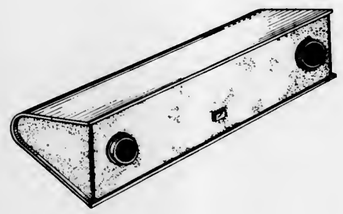




217,036
BUOYANT LIFE PRESERVER
Clarence Maxey, Bedford, Va., assignor to Groendyk Manufacturing Company, Inc., Buchanan, Va., a corporation of Delaware
Filed Apr. 1, 1969, Ser. No. 16,545
Term of patent 14 years
Int. Cl. D29—*02*
U.S. Cl. D71—1



217,037
ULTRASONIC MOTION DETECTOR ALARM
Michael S. Weinstock, 3453 Green Vista Drive, Encino, Calif. 91316
Filed Jan. 10, 1969, Ser. No. 15,303
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



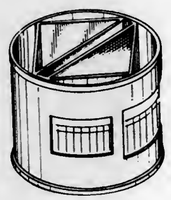
217,038
IDENTIFICATION MARKER FOR AUTOMOBILES OR THE LIKE
John H. Cleave, 1357 W. Morris, Fresno, Calif. 93705
Filed Feb. 3, 1969, Ser. No. 15,605
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



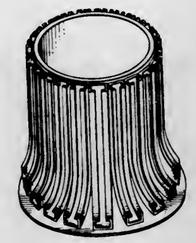
217,039
MAILBOX
Gregory O. Corkery, St. Louis, Mo., assignors to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Original design application July 17, 1968, Ser. No. 12,801, now Patent No. 215,510, dated Sept. 30, 1969. Divided and this application Feb. 10, 1969, Ser. No. 15,893
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D74—9



217,040
DESK ORGANIZER
Irving Smith, Flushing, N.Y. (% Arrow Art Finishers, 1201 Evergreen Ave., Bronx, N.Y. 10472)
Filed Apr. 16, 1969, Ser. No. 16,787
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



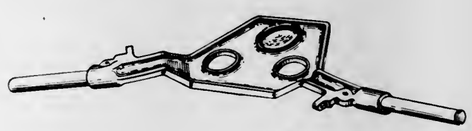
217,041
COMBINED CONTAINER AND DISPENSER FOR HAIR ROLLERS
Raymond H. Board, 725 N. Pass Ave., Burbank, Calif. 91505
Filed June 19, 1969, Ser. No. 17,777
Term of patent 14 years
Int. Cl. D3—*03*
U.S. Cl. D86—10



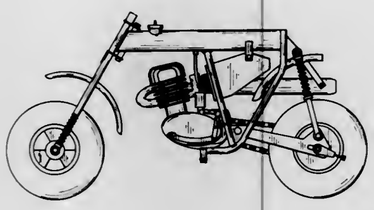
217,042
HANDLE FOR FLAT UMBRELLA
Heinz Weber, Hilden, Germany, assignor to Bremshey & Co., Solingen-Ohligs, Germany
Filed Apr. 10, 1968, Ser. No. 11,387
Term of patent 14 years
Int. Cl. D3—*03*
U.S. Cl. D88—3



217,043
STEERING DEVICE FOR SNOWMOBILE, MOTORCYCLE OR THE LIKE
Guy-Noel Chaumont, Princeville, Quebec, Canada (34 Rue La France, Victoriaville, Quebec, Canada)
Filed Nov. 12, 1968, Ser. No. 14,379
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—11



217,044
MOTOR BIKE FRAME
Glen R. Shaw, 504 East 29th South, Ogden, Utah 84403
Filed Mar. 12, 1969, Ser. No. 16,219
Term of patent 14 years
Int. Cl. D12—*11*
U.S. Cl. D90—8



217,045
TOWEL OR SIMILAR ARTICLE
Nancy A. Scherer, Plainfield, N.J., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,445
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



217,046
TOWEL OR SIMILAR ARTICLE
Nancy Ann Scherer, Plainfield, N.J., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,446
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



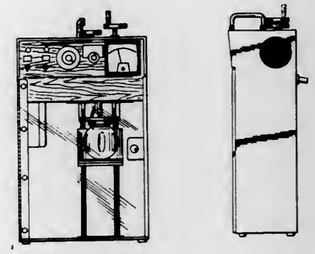
217,047
TOWEL OR SIMILAR ARTICLE
Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,449
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



217,048
TOWEL OR SIMILAR ARTICLE
Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed June 2, 1969, Ser. No. 17,452
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



217,049
HOMOGENIZER
Robert P. Adams, Walden, and Douglas S. Fraser, New Paltz, N.Y., assignors to The Virtis Company, Inc., Gardiner, N.Y., a corporation of New York
Filed Aug. 29, 1968, Ser. No. 13,313
Term of patent 14 years
Int. Cl. D15—*03*; D30—*99*
U.S. Cl. D98—1



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF MARCH, 1970

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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A/S Horten Verft: *See—*
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Aaron, Marvin R., Johannes, Virgil I., Mayo, John S., McCullough, Richard H., and Sipress, Jack M., to Bell Telephone Laboratories, Incorporated. Bipolar pulse transmission system with self-derived timing and drift compensation. 3,502,810, Cl. 178-068.
Abarotin, Eugene V., and Chang, Yi-Chung, to United States Steel Corporation. Dip-sampler for use in steel-making vessel. 3,501,962, Cl. 073-425.4
Abbott Laboratories: *See—*
Burns, Donald A., 3,502,412.
Cowley, John James, 3,502,075.
Cox, Alvon R., 3,502,338.
Abbott Machine Co., Inc.: *See—*
Abbott, Samuel L., 3,501,820.
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Abel, Stewart. Wall construction. 3,501,885, Cl. 052-410.
Ackerman, Herbert I.: *See—*
Ackerman, Lorraine R., and Ackerman, Herbert I. 3,502,291.
Ackerman, Lorraine R., and Ackerman, Herbert I., to L & H Designs, Inc. Collapsible frame. 3,502,291, Cl. 248-097.
Acushnet Process Company: *See—*
Saether, Tore V., 3,502,316.
Adamoli, Francesco. Method for manufacturing plastic knickers and a machine for carrying out the method, as well as baby pants thus obtained. 3,502,522, Cl. 156-070.
Adams, Charles L., and McFalls, Richard J., to Clupak, Inc., mesne. Method of producing a finished reinforced edge on flexible webs or sheets. 3,502,530, Cl. 156-183.
Adams, Clarence R.: *See—*
Hager, Mark H., and Adams, Clarence R. 3,502,132.
Adams, George D. Vacuum deposition apparatus. 3,502,051, Cl. 118-011.
Adams, John Reginald: *See—*
Reason, Richard Edmund, and Adams, John Reginald 3,501,949.
Adams, John Reginald, to Rank Organisation Limited, The. Surface-testing apparatus. 3,501,841, Cl. 033-174.
Adams-Russell Co., Inc.: *See—*
Podell, Allen F., 3,503,016.
Addressograph-Multigraph Corporation: *See—*
Granzow, Daniel B., and Ellis, James B., 3,502,407.
Adinoff, Bernard, to Rockwell-Standard Company, mesne. Bearing structure. 3,502,380, Cl. 308-238.
Adrolic Engineering Company Limited: *See—*
Pearson, Stephen Haswell, 3,502,350.
Adsit, Lewis E.: *See—*
Gowan, Richard L., and Adsit, Lewis E. 3,502,975.
AEG-Elotherm GmbH: *See—*
Geisel, Herbert, and Kuhlbars, Hermann, 3,503,026.
Aero-Vac Corporation: *See—*
Santeler, Donald J., 3,502,259.
Agency of Industrial Science and Technology: *See—*
Yamaga, Joji, and Shibata, Shuji, 3,501,956.
Agfa-Gevaert Aktiengesellschaft: *See—*
Kennel, Bertram, 3,502,010.
Agliata, Thomas P., and Clark, Harold E., to Xerox Corporation. Pantographic implemented overhead projector. 3,501,838, Cl. 033-025.
Ahrens, Gerhard W. Synergistic antioxidant composition for natural oleaginous materials. 3,502,594, Cl. 252-404.
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Aisin Seiki Kabushiki Kaisha: *See—*
Aiki, Shigeo, and Torii, Tatsumi, 3,502,180.
Akamatsu, Akiyuki, to Toyo Kako Co., Ltd. Printing resins with penetrating ink. 3,502,495, Cl. 117-038.
Akerblom, Eva B., to Pharmacia AB. Certain (5-nitro-2-furyl) triazoles. 3,502,691, Cl. 260-308.
Aktiebolaget Deltaljus: *See—*
Habro, Bertil, and Tryssing, Harry, 3,502,858.
Aktiebolaget Karlstads Mekaniska Werkstad: *See—*
Gregersen, Alv, and Larsson, Karl-Olof Sellden, 3,501,823.
Aktiebolaget Svenska Flaktfabriken: *See—*
Lindholm, Bengt, and Mildh, Gosta, 3,501,898.
Akuta, Tomohiko, and Seya, Atsumi, to Yawata Iron & Steel Co., Ltd., and Mitsubishi Seiko Kabushiki Kaisha. Load variation measuring apparatus. 3,502,164, Cl. 177-164.
Albert, John J.: *See—*
Westerlund, Charles T., Albert, John J., and Levine, Michael 3,502,817.
Albert William C., to Singer-General Precision, Inc. Face type liquid metal seal and method of making the same. 3,502,342, Cl. 277-017.
Albert, William G., to Bell Telephone Laboratories, Incorporated. Electrical connectors for coaxial cables. 3,502,788, Cl. 174-088.
Alda Instruments Limited: *See—*
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Aldrich Chemical Company, Inc.: *See—*
Biel, John H., 3,502,687.
Alexander, Bruce A., and Nagy, Sandor, to International Telephone and Telegraph Corporation. Transfer fixture. 3,501,825, Cl. 029-203.
Alexander, David L.: *See—*
Muenger, James R., and Alexander, David L. 3,501,921.
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Alexander, Leon Rollin. Flocked protective coverings. 3,502,207, Cl. 206-059.
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Alkaline Batteries Limited: *See—*
White, Charles Arthur John, 3,502,504.
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Allen-Harper, Inc.: *See—*
Allen, Kenneth M., and Harper, Chester H., 3,502,196.
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Allen, Lou D., to United States of America, National Aeronautics and Space Administration. Method of improving heat transfer characteristics in a nucleate boiling process. 3,502,141, Cl. 165-133.
Allied Chemical Corporation: *See—*
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Aluminum Company of America: *See—*
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Demler, Henry William, Sr., and Watts, William Sewell, 3,502,355.
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Teer, Peter S., and Barker, Howard F., 3,502,981.
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Anchor Hocking Glass Corporation: *See—*
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Anderson, Burton C., to Du Pont de Nemours, E. I., and Company. Polymers of cyclic internal olefins. 3,502,631, Cl. 260-093.1
Anderson, Eugene A., and Peppers, Leonard G., to Southern Saw Service. Blade orienting attachment for grinding wheels. 3,501,871, Cl. 051-238.
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Andersson, Ingvar John Rune. Road marker. 3,502,007, Cl. 094-001.5
Andor, Matyko: *See—*
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Asher, William J., to Esso Research and Engineering Company. Hydrocarbon fuel powered vehicle employing emulsified fuel. 3,501,914, Cl. 060-039.46
Ashley, Carlyle M., to Carrier Corporation. Water wash of ice formed in vacuum freezing. 3,501,924, Cl. 062-123.
Assalit, Louis. Aerosol filling apparatus. 3,502,118, Cl. 141-020.
Associated Electrical Industries Limited: *See—*
Warren, Keith George, 3,503,013.
Association des Ouvriers en Instruments de Precision: *See—*
Miroux, Jean A. R., 3,503,052.
Astheimer, Robert W., to Barnes Engineering Company. Infrared thermograph. 3,502,874, Cl. 250-083.3
Atake, Takeshi, Sekida, Minoru, and Tenkumo, Shohei, to Minolta Camera Kabushiki Kaisha. Camera capable of carrying an interchangeable lens assembly. 3,502,014, Cl. 095-053.
Atlantic Richfield Company: *See—*
Dunlap, Henry F., 3,502,150.
Zajacek, John G., and Sheng, Ming Nan, 3,502,740.
Atlas Copco Aktiebolag: *See—*
Hansson, Carl Anders, 3,502,178.
Atwood, David P.: *See—*
Anderson, Victor F., and Atwood, David P. 3,501,814.
Auckenthaler, Robert, to Schweizerische Industrie-Gesellschaft. Device for adjusting the level of a container's contents to a predetermined height and for creasing the container's sides along the eventual folding lines. 3,501,891, Cl. 053-124.
Aufill, Charles B.: *See—*
Hightower, Russell E., and Aufill, Charles B. 3,501,960.
Aulhorn, Herbert, and Knabe, Frank Torsten, to International Standard Electric Corporation. Frequency error correcting circuit. 3,502,906, Cl. 307-237.
Ault, Cyrus F., and Friedman, David, to Bell Telephone Laboratories, Incorporated. Multiple memory synchronizing arrangement. 3,503,058, Cl. 340-174.1
Aupoix, Marcel, and Moisson-Franckhauser, Francois, to Compagnie Generale d'Electricite. Electric cable for polyphase current. 3,502,783, Cl. 174-015.
Ausfeld, Rudolf Arthur: *See—*
Fried, Richard, and Ausfeld, Rudolf Arthur 3,502,957.
Austin, Ethel L. Covered figure toy with eyes projecting through the cover. 3,501,862, Cl. 046-158.
Automobiles Peugeot: *See—*
Brille, Maurice G., 3,501,913.
Avco Corporation: *See—*
Avery, Paul A., 3,502,027.
Hohenberg, Rudolph, 3,501,950.
Pustelnik, Werner, 3,502,343.
Avery, Paul A., to Avco Corporation. Fuel control system for gas turbine engines. 3,502,027, Cl. 103-042.
Avsan, Oleg, Hemdal, Goran Anders Henrik, Johnson, Torbjorn Konrad, Noren, Lars-Olof, and Svensson, Ake Bertil Fredrik, to Telefonaktiebolaget L.M. Ericsson. Arrangement in computers for controlling a plant consisting of a plurality of co-operating means. 3,503,048, Cl. 340-172.5
Ayers, Maurice D., to Metal Innovations, Inc. Production of powder, strip and other metal products from refined molten metal. 3,502,446, Cl. 029-182.5
Aziende Colori Nazionali Affini Acna S.p.A.: *See—*
Canonica, Luigi, Crotti, Argento, and Pieri, Giampiero, 3,502,646.
B.P. Chemicals (U.K.) Limited: *See—*
Matthews, Richard John Strachan, 3,502,629.
Badalich, Frank C., to Bell & Howell Company. Slide projector with slide editing capability. 3,502,405, Cl. 353-021.
Bader, William F., Landy, Arney, Jr., and Schmitz, Marvin J., to Minnesota Mining and Manufacturing Company. Electron beam image intensity control. 3,502,937, Cl. 315-022.
Badger Company, Inc., The: *See—*
Ghublikian, John R., 3,502,737.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Becke, Friedrich, and Hagen, Helmuth, 3,502,676.
Loewenberg, Gustav, and Diebold, Adolf, 3,502,284.
Petersen, Harro, Bille, Heinz, and Ruemens, Wilhelm, 3,502,672.
Rasche, Wilhelm, Wygasch, Ewald, and Csizi, Gotthard, 3,502,561.
Baggott, Albert Jefferies, 1/2 to London Electricity Board. Digital maximum demand indicator for electric power consumption. 3,502,980, Cl. 324-103.
Bahnsen, Erwin B.: *See—*
Steiner, Robert L., and Bahnsen, Erwin B. 3,502,383.
Baier, Hans, Mayer, Rolf, Braun, Helmut, Preiss, Harry, and Ilg, Walter, to Bosch, Robert, Hausgeraete G.m.b.H. Comminuting machine with adjustable rotary member. 3,502,277, Cl. 241-259.
Bailey, Bruce S.: *See—*
Moore, Fred W., and Bailey, Bruce S. 3,502,451.
Bailey, James R., and Lutzenberger, Kurt, to Switchcraft, Inc. Electrical slide switch. 3,502,825, Cl. 200-016.
Bailey, Richard T., Hazeltine, James E., Jr., and Straub, Donald H., to Armstrong Cork Company. Inspection head. 3,501,945, Cl. 073-040.
Bailey, Russel O.: *See—*
Lazar, Janos J., and Bailey, Russel O. 3,503,035.
Baillie, Lloyd A., to Sinclair Research, Inc. Apparatus and method for converting hydrocarbons. 3,502,574, Cl. 208-148.
Baillie, Robert A., to Great Canadian Oil Sands Limited. Effluent discharge bitumen recovery by settling. 3,502,565, Cl. 208-011.

Baird-Atomic, Inc.: *See—*
Ploss, Richard S., and Torla, Frank A., 3,502,875.
Baird, Robert M., Baumgarten, Peter K., and Gentilucci, Joseph A., to Du Pont de Nemours, E. I., and Company. Process for partially chlorinating methyl chloride and/or methylene chloride. 3,502,734, Cl. 260-658.
Baker, Jonathan, Jr.: *See—*
Bentzen, Donald W., and Baker, Jonathan, Jr. 3,502,048.
Balakin, Valentin Ivanovich: *See—*
Khrenov, Konstantin Konstantinovich, Chudakov, Vyacheslav Andreevich, and Balakin, Valentin Ivanovich 3,502,840.
Baldwin Electronics, Inc.: *See—*
Mountjoy, Garrad, 3,502,024.
Baldwin, Willett F., to Mobil Oil Corporation. Logging system and method. 3,503,038, Cl. 340-015.5
Balint, Andrew, and Engel, Willi G., to Bell & Howell Company. Malfunction detection system for automatic film printers. 3,502,409, Cl. 355-036.
Ball Brothers Company Incorporated: *See—*
Oplinger, Howard L., and Nicol, Alan, 3,501,804.
Ballard, John H., and Hines, John E., Jr., to Union Oil Company of California. Apparatus for mixing fluids in concurrent downflow relationship. 3,502,445, Cl. 023-288.
Ballou, Richard P., to General Motors Corporation. Electric fuel pump controls. 3,502,895, Cl. 290-036.
Bambenek, Joseph B., Malotke, George E., Sadowski, Stephan E., and Stokke, Arthur E., to Peerless Chain Company. Safety snap for clevis hooks. 3,501,817, Cl. 024-233.
Bancescu, Radu, and Andor, Matyko, to Ministerul Industriei Constructiilor de Masini. Vernier caliper with double scale. 3,501,839, Cl. 033-143.
Bandimere, John C. Feeler gauge assembly. 3,501,843, Cl. 033-181.
Bandy, Leon D. Cord twist spinning toy. 3,501,860, Cl. 046-062.
Banholzer, Rolf, Heusner, Alex, Korndorfer, Otto, Schulz, Werner, Walther, Gerhard, and Zeile, Karl, to Ingelheim, Boehringer, G.m.b.H. Certain N-substituted noratropine and nortropidine tropic acid esters and derivatives thereof. 3,502,683, Cl. 260-292.
Baran, John. Blanking thin gauge material. 3,501,985, Cl. 083-088.
Baratto, Eugene L., to Minnesota Mining and Manufacturing Company. Abrasive article containing hollow spherules filled with lubricant. 3,502,453, Cl. 051-295.
Barber, Anthony Clifford, and Kelcher, Robert William, to Imperial Metal Industries (Kynoch) Limited. Superconductor cable. 3,502,789, Cl. 174-128.
Barber-Coleman Company: *See—*
Welker, Oscar L., 3,502,922.
Bard, Martin. Shelf-supporting standard with removable head. 3,502,293, Cl. 248-243.
Baric, Walter P., Jr., and Franke, Norman W., to Gulf Research & Development Company. Epoxy resin-biphenyl anhydride adhesive compositions. 3,502,609, Cl. 260-037.
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Teer, Peter S., and Barker, Howard F. 3,502,981.
Barmag Barmer Maschinenfabrik Aktiengesellschaft: *See—*
Kaczorowski, Felix, 3,502,033.
Barmer Maschinenfabrik Aktiengesellschaft: *See—*
Schrader, Hansgeorg, 3,501,806.
Barnes, Albert J., Jr., to Lilly, Eli, and Company. Crystalline cephalosporin, method for its manufacture. 3,502,663, Cl. 260-243.
Barnes Engineering Company: *See—*
Astheimer, Robert W., 3,502,874.
Barnett, William T., to Burlington Industries, Inc. Loom with inspection station and independently operable take-up mechanism. 3,502,115, Cl. 139-001.
Barney, Arthur Livingston, and Honsberg, Wolfgang, to Du Pont de Nemours, E. I., and Company. Vulcanization accelerators for fluorinated polymers and compositions thereof. 3,502,628, Cl. 260-087.7
Baroni, Alessandro: *See—*
Marullo, Gerlando, Baroni, Alessandro, Maffezzoni, Umberto, Susa, Ermanno, and Longiave, Carlo 3,502,637.
Barr, John D., to Rank Organisation Limited, The. Video monitor indicating means. 3,502,804, Cl. 178-006.8
Barriquand, Andre, to Etablissements Barriquand Freres. Apparatus for the liquid treatment of a circulating band of material in a bath. 3,501,931, Cl. 068-177.
Barry, Walter J.: *See—*
Warner, John L., Barry, Walter J., and Wilmot, George E., Jr. 3,501,900.
Barter Laboratories, Inc.: *See—*
Irvin, Joe E., 3,502,244.
Bartley, Thomas S.: *See—*
Lee, Charles Allen, Furbeck, Warren R., Bartley, Thomas S., and Beaty, Jeremy G. 3,501,813.
Bartlo, Louis J., Bertea, Octavian, and Plock, Layne F., to Reactive Metals, Inc. Descaling of titanium and alloys thereof. 3,502,503, Cl. 134-002.
Batcheller, Kent J., to Pollak, Joseph, Corporation. Momentary electric switch for gas range burner. 3,502,835, Cl. 200-154.
Bates, Paul V., to Electrohome Limited. Network for automatically varying colour temperature between monochrome and colour reception in a colour television receiver. 3,502,798, Cl. 178-005.4
Batsch, Guy. Process and machine for the texturization of thermoplastic yarn, and the yarn thus obtained. 3,501,904, Cl. 057-034.
Bauer, Albert W., and Phillips, Howard E., to Du Pont de Nemours, E. I., and Company. Process of regenerating fluorocarbon emulsions. 3,502,586, Cl. 252-153.
Baughman Manufacturing Company: *See—*
Hoffstetter, George O., 3,502,245.
Baumgarten, Peter K.: *See—*
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Bausch & Lomb Incorporated: *See—*
Kreckel, Kurt H., Loewen, Erwin G., and Meltzer, Robert J., 3,502,414.
Langkamp, Richard B., 3,502,896.
Letter, Eugene C., 3,502,386.
Baxter, Donald J., Dangler, Robert L., and Hanrahan, William E., to Marquette Metal Products Company. Governing system for engines and automotive vehicles. 3,502,167, Cl. 180-107.
Baxter Laboratories, Inc.: *See—*
Hultberg, Wayne M., and Irvin, Joe E., 3,502,206.
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Bayshore Concrete Products Corporation: *See—*
Van Buren, Myers, 3,501,881.
Beal, Philip F., III, and Jackson, Robert W., to Upjohn Company, The. 14α, 15α-Ketonides of alkyl 3-oxygenated-14α, 15α-dihydroxy-4,17(20)-cis-pregnadien-21-oates, derivatives thereof, and intermediates and processes therefor. 3,502,659, Cl. 260-239.55
Bear, Fred B., to Victor Comptometer Corporation. Takedown bow. 3,502,063, Cl. 124-023.
Beardsley, Glenn L. Cement mixing apparatus. 3,502,306, Cl. 259-161.
Beasley, George A., to Univis, Inc. Method and apparatus for blocking multifocal lens blanks. 3,501,842, Cl. 033-180.
Beason, Elmer C., and Mader, George E., Jr., to Phillips Petroleum Company. Packaging means with photocell interruption. 3,502,889, Cl. 250-222.
Beaty, Jeremy G.: *See—*
Lee, Charles Allen, Furbeck, Warren R., Bartley, Thomas S., and Beaty, Jeremy G. 3,501,813.
Beauchamp, Jesse L., to Varian Associates. Method and apparatus for measuring ion interrelationships by double resonance mass spectroscopy. 3,502,867, Cl. 250-041.9
Beavers, John A.: *See—*
Boyd, Clinton A., Beavers, John A., and Drake, Eldon L. 3,502,919.
Beck, John B.: *See—*
Rhodes, Roland N., and Beck, John B. 3,502,935.
Becke, Friedrich, and Hagen, Helmuth, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of aromatic thioamides. 3,502,676, Cl. 260-267.
Becker, Richard W.: *See—*
Bush, Walter M., Chapman, Derek D., and Becker, Richard W. 3,502,469.
Becker, Richard W., to Eastman Kodak Company. High temperature processing in dye-developer diffusion transfer systems. 3,502,467, Cl. 096-003.
Becking, Paul E., Bungard, James D., and McCormick, Donald J., to Intercontinental Systems, Inc., mesne. Writing system. 3,502,187, Cl. 197-020.
Beebe, Franklyn C., to Du Pont de Nemours, E. I., and Company. Apparatus for detecting foreign objects in or on moving sheets. 3,502,827, Cl. 200-061.13
Beecham Group Limited: *See—*
Neal, David Patrick John, and Stove, Edward Raymond, 3,502,656.
Beeker, Theodorus Willem, den Hertog, Adriaan, During, Johannes, and van Miltenburg, Theodorus Cornelis Maria, to Nederlandse Organisatie voor Toegepast-Natuurweten- Schappelijk Onderzoek Ten Behoeve Van de Volksgezond Heid. Electropneumatic converter for operating an artificial limb. 3,501,776, Cl. 003-001.1
Beesch, Otto. Combined sparkplug and fuel-injection device. 3,502,055, Cl. 123-032.
Begley, John W., and Hepp, Harold J., to Phillips Petroleum Company. Process for dehydrogenating paraffins to the corresponding diolefins. 3,502,739, Cl. 260-680.
Bell Aerospace Corporation: *See—*
Maltby, Lewis J., 3,502,102.
Bell & Howell Company: *See—*
Badalich, Frank C., 3,502,405.
Balint, Andrew, and Engel, Willi G., 3,502,409.
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Bell Telephone Laboratories, Incorporated: *See—*
Aaron, Marvin R., Johannes, Virgil I., Mayo, John S., McCullough, Richard H., and Sipress, Jack M., 3,502,810.
Albert, William G., 3,502,788.
Ault, Cyrus F., and Friedman, David, 3,503,058.
Bobeck, Andrew H., Tabor, William J., and Thiele, Alfred A., 3,503,054.
Bobeck, Andrew H., 3,503,055.
Bonyhard, Peter I., Seidel, Harold, and Shapiro, Herbert M., 3,503,044.
Boyle, Willard S., and Morton, Jack A., 3,502,891.
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Courtney-Pratt, Jeofry S., and Eisner, Edward, 3,502,969.
Fleury, Paul A. V., and Worlock, John M., 3,502,958.
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Ingle, James F., and McLaughlin, George E., 3,502,983.
Kaminow, Ivan P., 3,502,391.
Lehman, Harvey R., 3,502,911.
Litofsky, Barry, 3,502,812.
Lucky, Robert W., 3,502,986.
Nigh, Harold E., Stach, Joseph, and Tung, Shiu K., 3,502,950.
Sampson, Sidney F., 3,502,991.
Schroeder, Manfred R., and Wallace, Robert L., Jr., 3,502,811.

Bellamy, Gale, and Wyant, Harold, to Hil-Air Corporation. Suspension system for auxiliary axle unit. 3,502,348, Cl. 280-124.

Beltran, Ernesto G.: *See—*
Singer, Norman S., and Beltran, Ernesto G. 3,502,479.

Bendix Corporation, The: *See—*
Gardner, William L., 3,502,455.

Benner, William R. Conveying and transfer mechanism. 3,502,195, Cl. 198-033.

Bentley, Bernard Albert, and Lamb, Fredric Charles, to Essoldomatic limited. Switching control apparatus. 3,502,945, Cl. 317-139.

Bentzen, Donald W., and Baker, Jonathan, Jr., to Holley Carburetor Company. Differential pressure indicator. 3,502,048, Cl. 116-070.

Berg, Edward T. Arrangement for installing fascies, gravel stops and gutters along the edges of roofs. 3,501,873, Cl. 052-011.

Berg Mfg., & Sales Co.: *See—*
Dobrikin, Harold L., and Klimek, Boleslaw, 3,502,003.

Berg, Robert H. Continuous floc particle size analyser apparatus having suspension level maintaining means. 3,502,972, Cl. 324-071.

Berger, Leo, and Corraz, Alfred John, to Hoffmann-La Roche Inc. 5-(4-Pyridylethyl)-pyridoindole derivatives. 3,502,688, Cl. 260-295.

Berger, Richard S., to Shell Oil Company. Light and heat stabilized polypropylene compositions. 3,502,613, Cl. 260-045.8

Berlec, Ivan, to General Electric Company. Incandescent lamp and method of manufacture. 3,502,932, Cl. 313-315.

Bernard, Georges, and Pelenc, Yves, to Societe Anonyme. Magneto-optical voltage measuring device utilizing polarized light. 3,502,978, Cl. 324-096.

Bersworth, Frederick C., to Weston Chemical Corporation. Mixed anhydrides produced by the reaction of phosphorus acids and polyamino polycarboxylic acid chelating agents. 3,502,748, Cl. 260-926.

Bertea, Octavian: *See—*
Bartlo, Louis J., Bertea, Octavian, and Plock, Layne F. 3,502,503.

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Pavlin, Cyrille Francois, and Oudin, Francois Charles, 3,502,288.

Bertolini, Adriano. Electrode for treatment of teeth. 3,502,076, Cl. 128-172.1

Bey, Ahmet K., to Budreck, Frances. Magnetic pen holder. 3,502,223, Cl. 211-069.6

Biaggini, Benjamin F. Apparatus for marking railroad wheels and detecting such marking. 3,502,866, Cl. 246-002.

Biaggini, Benjamin F. Railroad wheel marking apparatus. 3,503,023, Cl. 335-284.

Bicking, Robert E., to Honeywell Inc. Differential amplifier and field effect transistor gates for applying largest of two inputs to output. 3,502,905, Cl. 307-235.

Biel, John H., to Aldrich Chemical Company, Inc. Dioxinopiperidines. 3,502,687, Cl. 260-293.4

Biermann, Kurt, and Hummel, Walter, to Hilti Aktiengesellschaft. Anchoring element having oblique gripping indentations. 3,501,994, Cl. 085-021.

Bigenwald, John J., Rambo, Robert W., and Buddendeck, Gerald A., to Xerox Corporation. Facsimile line skipping apparatus. 3,502,803, Cl. 178-006.6

Bigos, Joseph, and Perfetti, Bruno M., to United States Steel Corporation. Method of applying non-permanent decorative coating to high-strength, low alloy steel. 3,502,512, Cl. 148-006.35

Biletch, Harry A., Nyilas, Emery, and Pinter, Imre James L. Metal bis-diarylpyrazolines. 3,502,689, Cl. 260-299.

Bille, Heinz: *See—*
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Billeter, Henry R., to Sloan Valve Company. Brake cylinder release valve. 3,502,374, Cl. 303-069.

Billhofer, Konrad, to Maschinenfabrik Richard Billhofer. Gripper device for sheet-processing roll coating machines. 3,502,324, Cl. 271-082.

Birkenmeyer, Robert D., and Kagan, Fred, to Upjohn Company, The. 7-Halo-7-deoxythiolincosaminides and process for preparing the same. 3,502,648, Cl. 260-210.

Birnbaum, Hermann. Emulsifier for use in baking and method of preparing the same. 3,502,482, Cl. 099-118.

Birum, Herbert L., Jr. Method and apparatus for mounting wallboard. 3,501,883, Cl. 052-241.

Bishop, Charles Edward. Fencing. 3,502,303, Cl. 256-048.

Bishop, Winford R. Window lock. 3,501,932, Cl. 070-090.

Bitney, Elwin S.: *See—*
Hable, William L., and Bitney, Elwin S. 3,501,961.

Bitter, Johan G.A.: *See—*
Maas, Rudolf J., and Bitter, Johan G.A. 3,502,568.

Bizoe, Raymond D., to Universal Electric Company, mesne. Electric motor with strain relief connector. 3,502,917, Cl. 310-071.

Bjorksten, Johan. Tubular article and method of manufacture. 3,502,113, Cl. 138-129.

Black, James A. Slitting and scoring apparatus. 3,501,986, Cl. 083-094.

Blaha, Miroslav, and Keprda, Jaroslav, to Zavody Jana Svermy, narodni podnik. Controls for machines such as typewriters. 3,502,188, Cl. 197-098.

Blain, Roy W., to Elevator Equipment Company. Magnetic proximity switch. 3,503,020, Cl. 335-205.

Blanchard, Roger H., and Cisco, Richard L., to Parker-Hannifin Corporation. Manifold valve assembly. 3,502,106, Cl. 137-612.1

Bliss, E. W., Company: *See—*
Fredell, Gary D., 3,501,968.
Hendricks, George Donald, 3,503,040.
Kelly, Terence C., and Thompson, Charles S., 3,502,289.

Bliss, Robert J. Skin marker for use in biopsy excisions. 3,502,070, Cl. 128-002.

Boake, George Elliott: *See—*
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Bobeck, Andrew H., to Bell Telephone Laboratories, Incorporated. Input source for domain propagation device. 3,503,055, Cl. 340-174.

Bobeck, Andrew H., Tabor, William J., and Thiele, Alfred A., to Bell Telephone Laboratories, Incorporated. Domain wall progation in magnetic sheets. 3,503,054, Cl. 340-174.

Boehringer, C. H., Sohn: *See—*
Schroder, Ludwig, Thomas, Klaus, Schring, Richard, and Jerchel, Dietrich, 3,502,690.

Boehringer Mannheim G.m.b.H.: *See—*
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Boeing Company: *See—*
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Bohrer, Thomas C., and Rosenthal, Arnold J., to Celanese Corporation. Process for dry spinning polybenzimidazoles. 3,502,756, Cl. 264-085.

Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Butter, Karl, and Dederra, Carl Helmut, 3,501,916.

Bonacquisti, Joseph, to RCA Corporation. Slide selector contact switch with orthogonal U-shaped spring detent. 3,502,824, Cl. 200-016.

Bondina (B.D.A.) Limited: *See—*
Youngman, Derek Henry, and Davies, Robert William, 3,502,537.

Bongers, Hendrikus Johannes, and Moitzfeld, Winfried, to Siempelkamp, G., & Co. Apparatus for tensioning reinforcing strands for belts and the like. 3,502,535, Cl. 156-494.

Bonvicini, Alberto: *See—*
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Bonyhard, Peter I., Seidel, Harold, and Shapiro, Herbert M., to Bell Telephone Laboratories, Incorporated. Magnetic domain shift register meter reader. 3,503,044, Cl. 340-150.

Borden, Clarence W., to Goodall Rubber Company. Method of making a helically grooved reinforced hose. 3,502,527, Cl. 156-143.

Bordonaro, Michael P., to Combustion Engineering, Inc. Pulse-frequency to D.C. converter. 3,502,904, Cl. 307-233.

Borg-Warner Corporation: *See—*
Boyd, Clinton A., Beavers, John A., and Drake, Eldon L., 3,502,919.
Moore, Chester C., 3,501,940.
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Borgnolo, Gian Pietro, and Spangaro, Giovanni. Method of making resin impregnated filamented wound structures. 3,502,529, Cl. 156-172.

Boroschewski, Gerhard: *See—*
Steinhausen, Walter, Jager, Albert, Boroschewski, Gerhard, and Peissker, Horst 3,502,778.

Borseth, Knut E., to A/S Horten Verft. Apparatus for displaying moments shearing forces etc. on board ships. 3,502,264, Cl. 235-069.

Borsini, Giancarlo, and Nicora, Carlo, to Montecatini Edison S.p.A. Process for the production of polyvinyl chlorides with high stereoregularity. 3,502,630, Cl. 260-092.8

Bosch, Lawrence R. Captive-column structure. 3,501,880, Cl. 052-222.

Bosch, Robert, Elektronik und Photokino G.m.b.H.: *See—*
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Bosch, Robert, Elektronik und Photokono G.m.b.H.: *See—*
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Boschetti, Eugene: *See—*
Molho, Darius, Boschetti, Eugene, and Fontaine, Louis 3,502,695.

Bosi, Angiolino, to Marabese, Dorino. Water-closet flush tank assembly. 3,501,780, Cl. 004-041.

Bostitch Division of Textron, Inc.: *See—*
Boulay, Henri A., and Silva, Joseph, 3,502,256.

Bottomley, Herbert G., to Landis Lund Limited. Machine and conveyor assembly. 3,501,870, Cl. 051-215.

Botts, Marion F.: *See—*
Regel, Erik K., and Botts, Marion F. 3,502,771.

Boulay, Henri A., and Silva, Joseph, to Bostitch Division of Textron, Inc. Apparatus for closing and stapling cartons varying in size. 3,502,256, Cl. 227-007.

Bowles Engineering Corporation: *See—*
Metzger, Eric E., 3,502,092.

Bowman, Clyde L., and Rottschafer, Dick O., Jr. Serving tray-receptacle combination. 3,502,042, Cl. 108-046.

Bowser, Inc.: *See—*
Mills, James M., and Coomer, Floyd E., 3,502,214.

Boyd, Clinton A., Beavers, John A., and Drake, Eldon L., to Borg-Warner Corporation. Submersible motor seal section. 3,502,919, Cl. 310-087.

Boyle, George J.: *See—*
Reece, Donald, Creaser, Leonard F., and Boyle, George J. 3,502,439.

Boyle, Willard S., and Morton, Jack A., to Bell Telephone Laboratories, Incorporated. Variable reflectance memory device. 3,502,891, Cl. 250-230.

BP Chemicals (U.K.) Limited: *See—*
Coupland, Keith, 3,502,580.

Bradmiller, Richard W., to Martin-Marietta Corporation. Summation network. 3,502,990, Cl. 328-104.

Bradshaw, Jere T., and Ketchum, Ardell. Soil tilling apparatus. 3,502,153, Cl. 172-071.

Braginetz, Paul A., to Philip Morris Incorporated. Blade holder and dispenser. 3,502,203, Cl. 206-016.

Bramley, Orin B., to May-Fran Manufacturing Corporation. Conveyor assembly. 3,502,199, Cl. 198-173.

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Brass, Robert L., to Bell Telephone Laboratories, Incorporated. Apparatus for interrogating alpha-numeric characters. 3,503,043, Cl. 340-146.3

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Brazier, Newton F. Exercising bar with removable weight disc. 3,502,329, Cl. 272-081.

Brennan, James H., and Burtis, Winfield R., to Emhart Corporation. Refrigerated equipment. 3,501,925, Cl. 062-256.

Bressickello, Tony J. Food display and warming device. 3,502,020, Cl. 099-443.

Brettner, Donald M.: *See—*
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Brewis, Derek McHardy: *See—*
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Bridgeford, Ronald E., to Phillips Petroleum Company. Separation and recovery of liquid fractions. 3,502,547, Cl. 203-071.

Bridges, Jack E., Hehn, Anton H., and Schwab, Ronald R., to IIT Research Institute. System for detecting twist and bend in turbine blades. 3,502,967, Cl. 324-034.

Bridgford, Hugh H. Combined frozen dough package and baking container. 3,502,488, Cl. 099-172.

Brille, Maurice G., to Regie Nationale des Usines Renault Automobiles Peugeot. Two-stroke gas turbines. 3,501,913, Cl. 060-039.15

British Hovercraft Corporation: *See—*
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Brittain, Derek J., to Radon Industrial Electronics Company Limited. Pressure-sensitive optical switch. 3,502,892, Cl. 250-231.

Britton, Stanley, to Schermuly Limited. Parachute-borne pyrotechnic device. 3,502,023, Cl. 102-035.6

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Broadbent, Thomas, & Sons Limited: *See—*
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Broadman, Ira S., to Capitol Holding Corporation. Swimming pool cover. 3,501,783, Cl. 004-172.14

Brodie, Ivor, to Varian Associates. Electrophotography employing a film having a thin charge retentive coating on a conductive web. 3,502,408, Cl. 355-016.

Brown, Charles A., to General Cable Corporation. Control of the dimensions of multiple layers of extruded insulation. 3,502,752, Cl. 264-040.

Brown, Melancthon S., to Chevron Research Company. N-carboxyacyl-N'-hydro-carbylthio ureas. 3,502,705, Cl. 260-453.

Brown, Philip, and James, Peter Henry. Apparatus for operating tools in accordance with a predetermined programme. 3,502,044, Cl. 112-079.

Brown, Thomas G., Jr., to International Telephone and Telegraph Corporation. Data exchange compatible with dial switching centers. 3,502,808, Cl. 178-053.1

Broyde, Barret, to Esso Research and Engineering Company. Electrochemical cell with tungsten bronze catalyst on anode. 3,502,506, Cl. 136-086.

Bruckner, Klaus, Halpaap, Herbert, and Rossler, Hubert, to Merck, E., A.G. Abrasion-resistant chromatoplates. 3,502,217, Cl. 210-198.

Bruderer, Hans, to Hoffmann-La Roche Inc.p-Chloro-N-(chloropropyl)-α-methyl- phenethylamines and the salts thereof. 3,502,724, Cl. 260-570.8

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Bryzinski, Thaddeus F., and Launt, Larry L., to Stromberg-Carlson Corporation. Methods of making a filamentary magnetic memory flexible sheet material. 3,501,830, Cl. 029-604.

Brzoska, Henry G., to Cutting Room Appliances Corporation. Five pocket pool table with counters. 3,502,320, Cl. 270-031.

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Bublitz, Arthur T., and Mouly, Raymond J., to Corning Glass Works. Automatic system for controlling the width of a glass ribbon. 3,502,457, Cl. 065-161.

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Buechel, Mel E., to Motorola, Inc. Horizontal sweep system protection circuit. 3,502,941, Cl. 315-027.

Buecheler, Paul, to Sandoz Ltd., a/k/a Sandoz A.G. Chlorinated or brominated diamino-dihydroxy- anthraquinones and mixtures thereof. 3,502,423, Cl. 008-025.

Buffington, Edward E., to Western Electric Company, Incorporated. Electron discharge devices. 3,502,936, Cl. 315-021.

Buhler, Otto, to Riva film- und lichttechnische Betriebe GmbH. Method and apparatus for cutting and splicing picture synchronized sound recordings. 3,502,397, Cl. 352-005.

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Bulgakov, Jury Vladimirovich: *See—*
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Bullard, Hubbard. Grass plow. 3,502,151, Cl. 172-033.

Bullock, Robert E., to Croft Metal Products, Inc. Cammed compression locking device for extension ladders. 3,502,175, Cl. 182-211.

Bundschuh, John J., and Witkowski, Victor J., to Eastman Kodak Company. Spindle for selectively accommodating reels having different size openings. 3,502,279, Cl. 242-068.3

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Burczyk, Leonhard, Credo, Renate, Faulhaber, Ernst, and Muhlsteph, Willibald, to VEB Fotochemische Werke. Process for preparing auxiliary layers for photographic materials prepared from synthetic polymers. 3,502,501, Cl. 117-034.

Burdett, Edward Raymond, to English Electric Company Limited, The. Electromagnetic actuators. 3,503,022, Cl. 335-256.

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Burkhardt, Rudolf, and Junghachnel, Rudolf, to Chemische Werke Witten GmbH. Biocidal agents based upon heavy metal pentachlorophenolates. 3,502,777, Cl. 424-289.

Burlington Industries, Inc.: *See—*
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Burns, Donald A., to Abbott Laboratories. Method and apparatus for measuring osmotic fragility of red blood cells by constantly reducing the concentration of the saline solution suspending the cells. 3,502,412, Cl. 356-040.

Burns, Erwin, 1/2 to Carr, Audrey S. Releasing collar. 3,502,353, Cl. 285-002.

Buro Patent AG: *See—*
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Burroughs, Corporation: *See—*
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Burtis, Winfield R.: *See—*
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Burwell, Neil W., Callaghan, John D., and Di Meo, Franklin R., to RCA Corporation. Stepper drive device. 3,501,969, Cl. 074-143.

Bush, Edward A., to Corhart Refractories Company, mesne. Method of improving the electrical conductivity of sintered tin oxide electrodes. 3,502,597, Cl. 252-518.

Bush, Walter M., Chapman, Derek D., and Becker, Richard W., to Eastman Kodak Company. Dye developer diffusion transfer system and yellow dye developer therefor. 3,502,469, Cl. 096-029.

Busignies, Henri G., to International Telephone and Telegraph Corporation. Apparatus for vehicle suspension control. 3,502,347, Cl. 280-124.

Busse, Oswald Anton, and Klesper, Erwin Hugo, to Passavant-Werke of Michelbacher Hutte. Filtering process and system for carrying the process into effect. 3,502,210, Cl. 210-065.

Butkus, Peter J. Game device having a resiliently tethered ball. 3,502,337, Cl. 273-200.

Butler, Kenneth, Conover, Lloyd H., and Woodward, Robert B., to Pfizer, Chas., & Co., Inc.2-/(5'-(3' and/or 4'-Substituted) isoxazoyl) methylidene/-3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracenes. 3,502,660, Cl. 260-240.

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Butter, Karl, and Dederra, Carl Helmut, to Bolkow Gesellschaft mit beschrankter Haftung. Tubular components for forming a rocket engine combustion chamber. 3,501,916, Cl. 060-267.

Butterfield, Ted Lee, to Spraying Systems Co. Filter unit for sprayers. 3,502,221, Cl. 210-444.

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Bye, Karl T.: *See—*
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Byrd, James T. Food preserving package and method of closure. 3,502,487, Cl. 099-171.
Cadiou, Jean G., to Societe Anonyme Automobiles Citroen. Vehicle steering column support. 3,502,346, Cl. 280-087.
Cahan, Nissen N., to Robo-Wash, Inc. Water reclamation apparatus. 3,502,215, Cl. 210-167.
Cain, Ronald L., and Jones, Kenneth G. Weather-insulating sheath for TV cable connectors. 3,502,790, Cl. 174-138.
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Callaghan, John D.: *See—*
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Camp, Frederick W.: *See—*
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Campbell, Albert B., to Royal Products Company. Lather producing machine. 3,502,247, Cl. 222-190.
Campbell, Donald S., and Tessier, Raymond A., to Union Tank Car Company. Salt platform and seal arrangement. 3,502,442, Cl. 023-272.6
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Canadian International Paper Company: *See—*
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Canal Industrial Corporation: *See—*
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Cancel, Luis E., Romero, Rafael Vazquez, and Negron, Elba Diaz, to Commonwealth of Puerto Rico, The. Method for candying citron and other fruits. 3,502,480, Cl. 099-102
Cannaday, Sheridan S., to Physical Sciences Corporation, mesne. Wire coating apparatus. 3,502,050, Cl. 118-006.
Cannon, James W. Sawhorse or trestle. 3,502,174, Cl. 182-155.
Canonica, Luigi, Crotti, Argento, and Pieri, Giampiero, to Aziende Colori Nazionali Affini Acna S.p.A. Reactive mono- and disazo dyestuffs suitable for dyeing modified polypropylene. 3,502,646, Cl. 260-186.
Canonico, Domenic A.: *See—*
McCoy, Herbert E., and Canonico, Domenic A. 3,502,450.
Cantatore, Giuseppe, and Bonvicini, Alberto, to Montecatini Edison S.p.A. Process for preparing 1,4-diaza-cycloheptenes. 3,502,653, Cl. 260-239.
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Carlsson, Rolf, to Oy Wartsila AB. Attachment means for a lock cylinder. 3,501,933, Cl. 070-371.
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Cary Instruments: *See—*
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Holly, John A., 3,502,979.
Casale, Ernest R. Gear timing means. 3,501,973, Cl. 074-395.
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Case, Leslie C., and Case, Laura K. Novel polyurethanes and processes of preparing the same. 3,502,601, Cl. 260-002.5
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Cashman, Robert W., and Wasco, Anthony, Jr., to Saginaw Machine and Tool Company. Shaft mounting assembly for wheel dresser or the like. 3,502,064, Cl. 125-011.
Cassidy, Patrick J., and Quammen, Milton L., to United States of America, Army, Method and apparatus for module alignment of ocular systems. 3,501,983, Cl. 082-001.
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Chamberlin, Leo A., Jr., and Edwards, Dale E., to Texas Instruments, Incorporated. Method and system for measuring and indicating the frequency and phase differences between plurality of precision frequency sources. 3,502,976, Cl. 324-082.
Chambet-Falquet, Antoine Jean Louis, Le Gall, Alain Pierre, and Yelloz, Raphael Guy, to International Standard Electric Corporation. Word organized memory comprising flip-flops with reset means associated with each flip-flop in the form of a clearing line generator coupled to the emitter of one of the transistors of the flip-flop. 3,503,051, Cl. 340-173.
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Chatfield, Helen E. Curette with disposable band loop blade. 3,502,082, Cl. 128-304.
Cheftel, Cyrille. Rebound device for physical exercises and games having a deformable frame. 3,502,330, Cl. 273-001.
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Christensen, Alton O., and Vogel, Charles B., to Shell Oil Company. Pulsed substrate transistor inverter. 3,502,909, Cl. 307-251.
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Cobb, Raymond L., to Phillips Petroleum Company. Amino-substituted mercapto compounds and their preparation by the reaction of aminothiosulfuric acids and aziridines and subsequent hydolysis. 3,502,727, Cl. 260-584.
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Ikeuchi, Hiroshi, to Denki Onkyo Co., Ltd. Distortion correcting devices for magnetic deflecting devices. 3,502,938, Cl. 315-024.

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Kazamaki, Tomokazu, and Matsumoto, Tohru, to Asahi Kogaku Kogyo Kabushiki Kaisha. Lens system with large telephoto ratio. 3,502,393, Cl. 350-216.

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Gilman, Wilbert M., to Electronized Chemicals Corp. Portable electric heat gun. 216,945, 3–24–70, Cl. D8—30.

Greene, David. Combined filter and pump. 216,978, 3–24–70, Cl. D23—4.

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Groeper, Lawrence H.: *See*—
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Harden, Birt R. Combination spare tire and wheel carrier. 216,967, 3–24–70, Cl. D14—6.

Hardie, Reginald O., to Nyman Mfg. Co. Holder for disposable drinking cup. 217,011, 3–24–70, Cl. D44—10.

Killebrew, Harmon, Enterprises: *See*—
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Hayman, Sam. Font of printing type. 217,030, 3–24–70, Cl. D64—12.

Heinz, H. J., Co.: *See*—
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Heiser, Kenneth R. Shelter. 216,959, 3–24–70, Cl. D13—1.

Heitz, Charles T. Device for holding a flexible liner in receptacles. 217,020, 3–24–70, Cl. D49—30.

Highfill, Jack L., to Athey Products Corp. Tractor machine. 216,963, 3–24–70, Cl. D14—3.

Hitachi, Ltd.: *See*—
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Jenn, Louis J. Multiple unit housing structure. 216,954, 3–24–70, Cl. D13—1.

Je Rue, Joseph L., 50% to J. P. and B. J. Lynch. Football trophy or the like. 216,988, 3–24–70, Cl. D29—28.

Kanbar, Maurice S. Multiple pendulum toy. 216,999, 3–24–70, Cl. D34—15.

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Kaz Mfg. Co., Inc.: *See*—
Katzman, Lawrence, Briggin, and Levin. 216,973.

Keniston, Henry E., to Ortner Freight Car Co. Double deck railroad stock car body. 217,031, 3–24–70, Cl. D66—1.

Kenney, Myron A. Scuba diving device. 217,035, 3–24–70, Cl. D71—1.

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Lee, Aaron, to Chemair Corp. of America. Liquid spray gun. 216,976, 3–24–70, Cl. D23—17.

Klamer, Reuben B. Egg-shaped toy. 216,997, 3–24–70, Cl. D34—2.

Leisenring, Theodore C. Spray gun. 216,979, 3–24–70, Cl. D23—17.

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Katzman, Lawrence, Briggin, and Levin. 216,973.

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Spetalnik, Mack. 216,939.

Maxey, Clarence, to Groendyk Mfg. Co., Inc. Buoyant life preserver. 217,036, 3–24–70, Cl. D71—1.

Metalcrafters Specialties Inc.: *See*—
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Michalek, Margaret E. Plate holder. 217,006, 3–24–70, Cl. D44—10.

Morford, Albert J.: *See*—
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Nelson, Kurt H., and L. H. Groeper, to North American Rockwell Corp. Analyzer of organic material content in sewage water or the like. 216,970, 3–24–70, Cl. D16—2.

North American Rockwell Corp.: *See*—
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Nucci, Angelo F. Educational game board. 216,995, 3–24–70, Cl. D34—5.

Nyman Mfg. Co.: *See*—
Hardie, Reginald O. 217,011.

O'Brien, Kevin M. Arithmetic learning toy. 216,983, 3–24–70, Cl. D25—1.

Ohyama, Yoshihiko, to Hitachi, Ltd. Tape player for automobile. 216,986, 3–24–70, Cl. D26—14.

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Perry, Frank R. 217,027.

Ortner Freight Car Co.: *See*—
Keniston, Henry E. 217,031.

Pagnaello, Joseph. Combined doll's head and base. 216,996, 3–24–70, Cl. D34—4.

Pedlar People Ltd., The: *See*—
Van Ryn, Joop M. 216,990.

Perry, Frank R., to Oneida Ltd. Spoon or similar article. 217,027, 3–24–70, Cl. D54—12.

Picker Corp.: *See*—
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Plastics, Inc.: *See*—
Stone, Stanford C. 217,001.

Puro Co., Inc., The: *See*—
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Rhodes, Sidney, to Lear Siegler, Inc. Combination tuner and tape cassette unit. 216,987, 3–24–70, Cl. D26—14.

Robert, Tony. Holder for food bowl for pets. 216,989, 3–24–70, Cl. D30—13.

Saenz, Henry H., to H. J. Heinz Co. Dispensing container. 216,951, 3–24–70, Cl. D9—160.

Safalow, Harold. Toe cleaning brush handle. 216,942, 3–24–70, Cl. D4—99.

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Scherer, Nancy A., to Cannon Mills Co. Towel or similar article. 217,046, 3–24–70, Cl. D92—26.

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Scovill Mfg. Co.: *See*—
Beck, Theodore A. 216,950.

Shaw, Glen R. Motor bike frame. 217,044, 3–24–70, Cl. D90—8.

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Smith, George H. Butter applicator. 217,007, 3–24–70, Cl. D44—29.

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Solie, Orville B., to Kroehler Mfg. Co. Headboard for a bed. 216,943, 3–24–70, Cl. D5—4.

Spencer, Ronald W.: *See*—
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Stanford, Melvin E., and A. J. Morford, to Systomation, Inc. Electrical meter having calibration matrix. 216,984, 3–24–70, Cl. D26—1.

Stevenson, Norman W., to Burgess Products Co. Ltd. Spray gun. 216,975, 3–24–70, Cl. D23—18.

Stone, Stanford C., to Plastics, Inc. Champagne glass. 217,001, 3–24–70, Cl. D36—8.

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Snyder, Leonard M. Decorative device for automobile hood. 216,965, 3–24–70, Cl. D14—18.

Susquehanna Corp., The: *See*—
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Sutz, Richard K. Sport fishing reel. 216,971, 3–24–70, Cl. D22—25.

Swanberg, Elmer W. Ball shoes or similar article. 216,994, 3–24–70, Cl. D34—14.

Systomation, Inc.: *See*—
Stanford, Melvin E., and Morford. 216,984.

Textron Inc.: *See*—
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Trupp, Garrison G. Interdental prophylactic mouthwash dispenser. 216,981, 3–24–70, Cl. D24—1.

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Trupp, Marc A.: *See*—
Trupp, Garrison G. and M. A. 216,952.

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Van Skyhawk, Norman J., to Harmon Killebrew Enterprises, Inc. Batting trainer. 216,998, 3–24–70, Cl. D34—5.

Verifio Corp.: *See*—
Warner, Douglas J., and Wolf. 217,023.

Virtis Co., Inc., The: *See*—
Adams, Robert P., and Fraser. 217,049.

Wagner, Fred C. Construction sheet carrier or similar article. 217,002, 3–24–70, Cl. D41—1.

Wagner, Harold O.: *See*—
Ziskin, Manuel S., and Wagner. 217,008.
Ziskin, Manuel S., and Wagner. 217,009.
Ziskin, Manuel S., and Wagner. 217,010.

Waltz, Edward, to The E.O. Mfg. Co., Inc. Sheet material dispenser for vertical rolls. 216,964, 3–24–70, Cl. D14—3.

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Weber, Heinz, to Bremshey & Co. Handle for flat umbrella. 217,042, 3–24–70, Cl. D88—3.

Webster, Desmond E. Door handle. 216,944, 3–24–70, Cl. D8—150.

Weinstock, Michael S. Ultrasonic motion detector alarm. 217,037, 3–24–70, Cl. D72—1.

Weissman, Harry. Spectacle frame. 217,028, 3–24–70, Cl. D57—1.

Werner, Richard L., to R.D. Co., Inc. Ladder stabilizer. 216,968, 3–24–70, Cl. D15—8.

Wilfert, Karl, to Daimler-Benz Aktiengesellschaft. Automobile body. 216,960, 3–24–70, Cl. D14—3.

Wilfert, Karl, to Daimler-Benz Aktiengesellschaft. Automobile body. 216,961, 3–24–70, Cl. D14—3.

Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 217,048, 3–24–70, Cl. D92—26.

Wilson, Norman E., to The Puro Co., Inc. Air-freshener dispenser. 216,974, 3–24–70, Cl. D23—150.

Windebank, Robert W., and R. F. Luthmann, to General Time Corp. Clock face. 217,003, 3–24–70, Cl. D42—7.

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Yakerson, Sidney, to Metalcrafters Specialties Inc. Bumper guard. 216,962, 3–24–70, Cl. D14—6.

Yeager, Eugene W., to Digital Information Devices, Inc. Data transcriber. 216,985, 3–24–70, Cl. D26—5.

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Ziskin, Manuel S., and H. O. Wagner, to American Trading and Production Corp. Handle for trays and the like. 217,009, 3–24–70, Cl. D44—29.

Ziskin, Manuel S., and H. O. Wagner, to American Trading and Production Corp. Handle for a casserole or the like. 217,010, 3–24–70, Cl. D44—29.

CLASSIFICATION OF PATENTS

ISSUED MARCH 24, 1970

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,501,772	29–604	3,501,830	61– 1	3,501,917	85– 1	3,501,993	117– 75	3,502,498	146– 78	3,502,127
159	3,501,773	625	3,501,831	17	3,501,918	21	3,501,994	101	3,502,499	231	3,502,128
321	3,501,774	626	3,501,832	46.5	3,501,919	32	3,501,995	123	3,502,500	148– 6.15	3,502,511
	3,501,775	627	3,501,833	56	3,501,920	89– 34	3,501,996	201	3,502,502	.35	3,502,512
3– 1.1	3,501,776	30– 43.92	3,501,835	62– 13	3,501,921	44	3,501,997	118– 6	3,502,050	12.1	3,502,513
15	3,501,777		3,501,836	17	3,501,922	156	3,501,998	11	3,502,051	.4	3,502,514
4– 10	3,501,778	318	3,501,834	18	3,501,923	90– 12	3,501,999	57	3,502,052	175	3,502,515
13	3,501,779	32– 17	3,501,837	123	3,501,924	91– 47	3,502,000	119– 56	3,502,053		3,502,516
41	3,501,780	33– 25	3,501,838	256	3,501,925	49	3,502,001	123– 13	3,502,054		3,502,517
141	3,501,781	143	3,501,839	263	3,501,926	178	3,502,002	32	3,502,055	186	3,502,518
172	3,501,782	169	3,501,840	320	3,501,927	92– 63	3,502,003	41.11	3,502,056	151– 14	3,502,129
.14	3,501,783	174	3,501,841	64– 17	3,501,928	129	3,502,004	90	3,502,057	69	3,502,130
217	3,501,784	180	3,501,842	27	3,501,929	93– 37	3,502,005		3,502,058	156– 6	3,502,520
5– 13	3,501,785	181	3,501,843	65– 30	3,502,454	93	3,502,006		3,502,059	11	3,502,519
207	3,501,786	226	3,501,844	31	3,502,455	94– 1.5	3,502,007	148	3,502,060	69	3,502,521
334	3,501,787	34– 33	3,501,845	32	3,502,456		3,502,008	124– 13	3,502,061	70	3,502,522
8– 4	3,502,421	103	3,501,846	161	3,502,457	95– 1.1	3,502,009	23	3,502,062	73	3,502,523
	3,502,422		3,501,847	66–169	3,501,930	10	3,502,010		3,502,063	84	3,502,524
25	3,502,423	138	3,501,848	68–177	3,501,931		3,502,011	125– 11	3,502,064	111	3,502,525
45	3,502,424	35– 6	3,501,849	70– 90	3,501,932	11.5	3,502,012	126– 20	3,502,065	132	3,502,526
	3,502,425		3,501,850	371	3,501,933	31	3,502,013	59.5	3,502,066	143	3,502,527
116	3,502,426	9	3,501,851	71– 64	3,502,458	53	3,502,014	120	3,502,067	164	3,502,528
158	3,501,788	28.3	3,501,852	93	3,502,459	54	3,502,015	262	3,502,068	172	3,502,529
9–319	3,501,789		3,501,853	72– 62	3,501,934	96– 3	3,502,467	128– 2	3,502,069	183	3,502,530
10– 27	3,501,790	31	3,501,854	207	3,501,935	29	3,502,468		3,502,070	293	3,502,531
12– 67	3,501,791	36– 2.5	3,501,855	243	3,501,936		3,502,469	25	3,502,071	309	3,502,532
115.6	3,501,792	37–126	3,501,856	250	3,501,937	35.1	3,502,470	66	3,502,072	315	3,502,533
136	3,501,793	38–144	3,501,857	305	3,501,938	45.2	3,502,471	134	3,502,073	344	3,502,534
13– 29	3,502,780	42– 16	3,501,858	343	3,501,939	66.3	3,502,472	142.5	3,502,074	494	3,502,535
	3,502,781	43– 22	3,501,859	412	3,501,940	67	3,502,473	145.8	3,502,075	519	3,502,536
15– 21	3,501,794	44– 58	3,502,451	705	3,501,941	84	3,502,474	172.1	3,502,076	157– 13	3,502,131
77	3,501,795	69	3,502,452	73– 15.4	3,501,942	87	3,502,475		3,502,077	160–331	3,502,132
118	3,501,796	46– 62	3,501,860	.6	3,501,952	90	3,502,476	232	3,502,078	161– 87	3,502,537
215	3,501,797	129	3,501,861	37.5	3,501,943	109	3,502,477	253	3,502,079	150	3,502,538
320	3,501,798	158	3,501,862	38	3,501,944	98– 1	3,502,016	303.1	3,502,080	160	3,502,539
16–129	3,501,799	243	3,501,863	40	3,501,945	99– 2	3,502,478		3,502,081	165	3,502,540
150	3,501,800	49–215	3,501,864	71.5	3,501,947	100	3,502,479	304	3,502,082	186	3,502,541
17– 29	3,501,801	358	3,501,865	101	3,501,948	102	3,502,480	516	3,502,083	216	3,502,542
18– 2.5	3,501,802	380	3,501,866	105	3,501,949	116	3,502,481	131– 10.1	3,502,084	164– 4	3,502,133
5	3,501,803	421	3,501,867	136	3,501,950	118	3,502,482	135	3,502,085	66	3,502,134
6	3,501,804	477	3,501,868	141	3,501,951	131	3,502,483	205	3,502,086	253	3,502,135
8	3,501,805	51– 54	3,501,869	170	3,501,953	143	3,502,484	261	3,502,087	282	3,502,136
	3,501,806	215	3,501,870	179	3,501,954	154	3,502,485	132– 73	3,502,088	165– 1	3,502,137
12	3,501,807	238	3,501,871	304	3,501,955	171	3,502,486	82	3,502,089	32	3,502,138
19	3,501,808	241	3,501,872	339	3,501,956		3,502,487	134– 2	3,502,503	88	3,502,139
20	3,501,809	295	3,502,453	359	3,501,957	172	3,502,488	111	3,502,090	117	3,502,140
30	3,501,810	52– 11	3,501,873	382	3,501,958	295	3,502,017	135– 4	3,502,091	133	3,502,141
19– 65	3,501,811	20	3,501,874	395	3,501,959	355	3,502,018	136– 6	3,502,504	170	3,502,142
145.7	3,501,812	69	3,501,875	398	3,501,960	421	3,502,019	27	3,502,505	166– .5	3,502,143
156.3	3,501,813	86	3,501,876	421.5	3,501,961	443	3,502,020	86	3,502,506	216	3,502,144
23– 2	3,502,427	127	3,501,877	425.4	3,501,962	100–121	3,502,021	89	3,502,507	227	3,502,145
	3,502,428	144	3,501,878		3,501,963	101–129	3,502,022	100	3,502,508	270	3,502,146
4	3,502,429	198	3,501,879	.6	3,501,964	102– 35.6	3,502,023	120	3,502,509	274	3,502,147
85	3,502,430	222	3,501,880	462	3,501,965	70.2	3,502,024	227	3,502,510	292	3,502,148
154	3,502,431	223	3,501,881	515	3,501,946	92	3,502,025	137– 81.5	3,502,092	295	3,502,149
	3,502,432	228	3,501,882	74– 5.6	3,501,966	103– 37	3,502,026		3,502,093	315	3,502,150
162	3,502,433	241	3,501,883		3,501,967	42	3,502,027		3,502,094	172– 33	3,502,151
184	3,502,434	397	3,501,884	128	3,501,968	46	3,502,028	205	3,502,095	40	3,502,152
230	3,502,435	410	3,501,885	143	3,501,969	57	3,502,029	270	3,502,096	71	3,502,153
253	3,502,436	53– 22	3,501,886	230.17	3,501,970	87	3,502,030	318	3,502,097	311	3,502,154
	3,502,437	28	3,501,887	231	3,501,971	123	3,502,031	382	3,502,098	570	3,502,155
	3,502,438	86	3,501,888	243	3,501,972	125	3,502,032	495	3,502,099	660	3,502,156
254	3,502,439	116	3,501,889	395	3,501,973	126	3,502,033		3,502,100	741	3,502,157
258.5	3,502,440	124	3,501,890	436	3,501,974	149	3,502,034		3,502,101	173– 12	3,502,158
259.1	3,502,441		3,501,891	501	3,501,975	178	3,502,035	498	3,502,102	43	3,502,159
272.6	3,502,442	180	3,501,892	567	3,501,976	218	3,502,036	556	Re.26,838	49	3,502,160
282	3,502,443	190	3,501,893		3,501,977	219	3,502,037	567	3,502,103	174– 15	3,502,783
285	3,502,444	281	3,501,894	640	3,501,978	104– 88	3,502,038	596.14	3,502,104	35	3,502,784
288	3,502,445	287	3,501,895	753	3,501,979	172	3,502,039	599	3,502,105	38	3,502,785
24– 16	3,501,814	329	3,501,896	781	3,501,980	247	3,502,040	612.1	3,502,106	52	3,502,786
153.1	3,501,815	55– 73	3,501,897	75– 1	3,502,460	106– 1	3,502,489		3,502,107	84	3,502,787
205.1	3,501,816	147	3,501,898	10	3,502,461	15	3,502,490	625.11	3,502,110	88	3,502,788
233	3,501,817	210	3,501,899	128	3,502,462	107– 7	3,502,041	.6	3,502,108	115	3,502,791
26– 55	3,501,818	313	3,501,900	153	3,502,465	108– 46	3,502,042	.64	3,502,109	128	3,502,789
28– 1.3	3,501,819	56– 6	3,501,901	171	3,502,463	112– 21	3,502,043	138– 46	3,502,111	138	3,502,790
64	3,501,820	25.4	3,501,902		3,502,464	79	3,502,044	99	3,502,112	188	3,502,792
29– 80	3,501,821	44	3,501,903	208	3,502,466	220	Re.26,836	129	3,502,113	175– 4.57	3,502,161
96	3,501,822	57– 34	3,501,904	77– 24	3,501,982	225	3,502,045		3,502,114	24	3,502,543
132	3,501,823	58.89	3,501,905	81– 1	Re.26,834	114– .5	3,502,046	139– 1	3,502,115	177– 50	3,502,162
182.5	3,502,446	59	3,501,906	82– 1	3,501,983	212	3,502,047	425	3,502,116	126	3,502,163
	3,502,447	140	3,501,907	5	3,501,984	116– 70	3,502,048	141– 7	3,502,117	164	3,502,164
183.5	3,502,448	157	3,501,908	83– 88	3,501,985	135	3,502,049	20	3,502,118	178– 4	3,502,793
195	3,502,449	58– 22.9	3,501,909	94	3,501,986	117– 5.5	3,502,491	68	3,502,119	5.2	3,502,794
198	3,502,450	23	3,501,910	125	3,501,987	17	3,502,492	165	3,502,120	.4	3,502,795
203	3,501,824	144	3,501,911	171	3,501,988	22	3,502,493	207	3,502,121		3,502,796
	3,501,825	59– 78	3,501,912	504	3,501,989	34	3,502,494	143– 32	3,502,122		3,502,797
211	3,501,826	60– 39.15	3,501,913	84– 1.24	3,502,782		3,502,501	157	3,502,123		3,502,798
225	3,501,827	.46	3,501,914	337	3,501,990	38	3,502,495	144–113	3,502,124		3,502,799
421	3,501,828	54.5	3,501,915	380	3,501,991	45	3,502,496	146– 78	3,502,125		3,502,800
577	3,501,829	267	3,501,916	454	3,501,992	68.5	3,502,497		3,502,126	.8	3,502,801

178– 6	3,502,802	208–111	3,502,572	242–107.3	3,502,280	260– 86.1	3,502,627	260–657	3,502,733	307– 31	3,502,896
.6	3,502,803	138	3,502,573	137.1	3,502,281	87.7	3,502,628	658	3,502,734	52	3,502,897
.8	3,502,804	148	3,502,574	157	3,502,282	92.3	3,502,629		3,502,735	88	3,502,898
	3,502,805	209– 73	3,502,208	197	3,502,283	.8	3,502,630	669	3,502,736	118	3,502,899
7.1	3,502,806	110.5	3,502,209	199	3,502,284	93.1	3,502,631		3,502,737	203	3,502,900
.3	3,502,807	210– 42	3,502,575	244– 3.22	3,502,285	.7	3,502,633	680	3,502,738	206	3,502,901
53.1	3,502,808	59	3,502,577	17.17	3,502,286		3,502,634		3,502,739	228	3,502,902
67	3,502,809	63	3,502,576	54	3,502,287	94.3	3,502,635	681	3,502,740	230	3,502,903
68	3,502,810	65	3,502,210	73	3,502,288		3,502,636	683.15	3,502,741	233	3,502,904
179– 1	3,502,811	79	3,502,211	110	3,502,289		3,502,637	.61	3,502,742	235	3,502,905
2	3,502,812	98	3,502,212	246– 2	3,502,866	.9	3,502,638	851	3,502,743	237	3,502,906
	3,502,813	108	3,502,213	248– 15	3,502,290		3,502,639	876	3,502,744	238	3,502,907
4	3,502,814	136	3,502,214	97	3,502,291		3,502,640	878	3,502,745	246	3,502,908
15.55	3,502,815	167	3,502,215	158	3,502,292		3,502,641	880	3,502,746	251	3,502,909
18	3,502,816	179	3,502,216	243	3,502,293	96.5	3,502,632	894	3,502,747	252	3,502,910
	3,502,817	198	3,502,217	311	3,502,294	146	3,502,642	926	3,502,748	261	3,502,911
	3,502,818	305	3,502,218	459	3,502,295	152	3,502,643	971	3,502,749	273	3,502,912
84	3,502,819	380	3,502,219	249– 27	3,502,296	154	3,502,644	986	3,502,750	308– 36.1	3,502,375
100.2	3,502,820	416	3,502,220	250– 41.9	3,502,863	158	3,502,645	261– 52	3,502,307	193	3,502,376
	3,502,821	444	3,502,221		3,502,867	186	3,502,646	64	3,502,308	212	3,502,377
114	3,502,822	211– 40	3,502,222		3,502,868	209	3,502,647	130	3,502,309	213	3,502,378
170	3,502,823	69.6	3,502,223	43.5	3,502,869	210	3,502,648	263– 6	3,502,310	224	3,502,379
180– 23	3,502,165	.8	3,502,224	49.5	3,502,870	211.5	3,502,649	32	3,502,311	238	3,502,380
55	3,502,166	133	3,502,225	65	3,502,871		3,502,650	264– 25	3,502,751	310– 8.7	3,502,913
107	3,502,167	163	3,502,226	66	3,502,872	234	3,502,651	40	3,502,752	42	3,502,914
127	3,502,168	177	3,502,227	71.5	3,502,873	239	3,502,652	51	3,502,753	47	3,502,915
181– .5	3,502,169	212– 39	3,502,228	83.3	3,502,874		3,502,653	54	3,502,754	59	3,502,916
	3,502,170	214– 6	3,502,229		3,502,875		3,502,654	56	3,502,755	71	3,502,917
33	3,502,171		3,502,230	.6	3,502,876	.1	3,502,655	85	3,502,756	77	3,502,918
182– 16	3,502,172		3,502,231	93	3,502,877		3,502,656	89	3,502,757	87	3,502,919
46	3,502,173	16.4	3,502,232	105	3,502,878	.5	3,502,657	98	3,502,758	90	3,502,920
155	3,502,174	18	3,502,233	199	3,502,879		3,502,658	120	3,502,759	172	3,502,921
211	3,502,175	26	3,502,234	202	3,502,880	.55	3,502,659	135	3,502,760		3,502,922
184– 6	3,502,176	131	3,502,235		3,502,881	240	3,502,660	153	3,502,761	187	3,502,923
11	3,502,177	309	3,502,236		3,502,882		3,502,661	204	3,502,762	211	3,502,924
55	3,502,178	219– 9.5	3,502,837	210	3,502,883		3,502,662	210	3,502,763	312– 31	3,502,381
103	3,502,186		3,502,838	211	3,502,884	243	3,502,663		3,502,764	38	3,502,383
188– 59	3,502,179	10.55	3,502,839	213	3,502,885		3,502,665	230	3,502,765	42	3,502,382
79.5	3,502,180	.79	3,502,840	218	3,502,886		3,502,666	289	3,502,766	228	3,502,384
152	3,502,181	130	3,502,841		3,502,887	247.1	3,502,664	297	3,502,767	319	3,502,385
196	3,502,182	302	3,502,842	219	3,502,888	.2	3,502,667	331	3,502,768	313– 55	3,502,925
250	3,502,183	312	3,502,843	222	3,502,889	.5	3,502,668	266– 5	3,502,312	60	3,502,926
192– 48.91	3,502,184	343	3,502,844	228	3,502,890		3,502,669	13	3,502,313	78	3,502,927
194– 4	3,502,185	384	3,502,845	230	3,502,891	248	3,502,670	36	3,502,314	82	3,502,928
195– 29	3,502,544	388	3,502,846	231	3,502,892	251	3,502,671	41	3,502,315	111	3,502,929
66	3,502,545	426	3,502,847		3,502,893		3,502,672	267–110	3,502,316	218	3,502,930
96	3,502,546	432	3,502,848		3,502,894		3,502,673	269– 43	3,502,317	278	3,502,931
197– 20	3,502,187	220– 4	3,502,237	251– 25	3,502,297	256.5	3,502,674	276	3,502,318	315	3,502,932
98	3,502,188	9	3,502,239	149.9	3,502,298	260	3,502,675	280	3,502,319	325	3,502,933
113	3,502,189	22	3,502,240	306	3,502,299	267	3,502,676	270– 31	RE.26,839	315– 5.39	3,502,934
133	3,502,190	23.6	3,502,241	331	3,502,300	268	3,502,677		3,502,320	19	3,502,935
198– 25	3,502,191	63	3,502,238	252– 8.55	3,502,578	281	3,502,678	58	3,502,321	21	3,502,936
33	3,502,192		3,502,242	12	3,502,579	286	3,502,679	69	3,502,322	22	3,502,937
	3,502,193	75	3,502,243	42.1	3,502,580	287	3,502,680	271– 3	3,502,323	24	3,502,938
	3,502,194	221– 63	3,502,244	51.5	3,502,581		3,502,681	36	3,502,325		3,502,939
	3,502,195	222–146	3,502,245	62.1	3,502,582		3,502,682	82	3,502,324	27	3,502,940
107	3,502,196	153	3,502,246	.52	3,502,583	292	3,502,683	272– 62	3,502,326		3,502,941
127	3,502,197	190	3,502,247	.55	3,502,584	293	3,502,684	66	3,502,327	31	3,502,942
153	3,502,198	534	3,502,248	.9	3,502,598	.4	3,502,687	80	3,502,328	50	RE.26,835
173	3,502,199	544	3,502,249	89	3,502,585	294	3,502,685	81	3,502,329	238	3,502,943
213	3,502,200	223– 73	3,502,250	153	3,502,586	.7	3,502,686	273– 1	3,502,330	317– 13	3,502,944
220	3,502,201	96	3,502,251	180	3,502,587	295	3,502,688	73	3,502,331	101	RE.26,837
199– 47	3,502,202	225– 33	3,502,252	188.3	3,502,588	299	3,502,689	86	3,502,332	139	3,502,945
200– 16	3,502,824	226– 97	3,502,253	301.3	3,502,589		3,502,690	101.1	3,502,333	155.5	3,502,946
	3,502,825	196	3,502,254	.4	3,502,590	308	3,502,691	102.2	3,502,334	230	3,502,947
48	3,502,826	227– 3	3,502,255		3,502,591	326.16	3,502,693	106	3,502,335		3,502,948
61.13	3,502,827	7	3,502,256		3,502,592	.3	3,502,692	152.43	3,502,336		3,502,949
.18	3,502,828	229– 51	3,502,257	313	3,502,593	333	3,502,694	200	3,502,337	235	3,502,950
.24	3,502,829	54	3,502,258	404	3,502,594	340.3	3,502,695	218	3,502,338		3,502,951
.45	3,502,830	230– 69	3,502,259	437	3,502,595	351	3,502,696	274– 4	3,502,340		3,502,952
.49	3,502,831	114	3,502,260	477	3,502,596		3,502,697	23	3,502,339	238	3,502,953
	3,502,832	232– 33	3,502,261	518	3,502,597	397.4	3,502,698		3,502,341	318–481	3,502,954
86.5	3,502,833	234– 35	3,502,262	254–173	3,502,301	.45	3,502,699	277– 17	3,502,342	320– 1	3,502,955
144	3,502,834	235– 51	3,502,263	185	3,502,302		3,502,700	25	3,502,343	321– 8	3,502,956
154	3,502,835	61.11	3,502,850	256– 48	3,502,303	429	3,502,703	280– 11.35	3,502,344		3,502,959
166	3,502,836	.12	3,502,851	259– 3	3,502,304	448.8	3,502,704	81	3,502,345	11	3,502,957
203– 71	3,502,547	.6	3,502,849	8	3,502,305	453	3,502,705	87	3,502,346	69	3,502,958
204– 32	3,502,548	69	3,502,264	161	3,502,306	455	3,502,706	124	3,502,347	323– 24	3,502,960
37	3,502,549	96	3,502,265	260– 2.1	3,502,599	465	3,502,707		3,502,348	43.5	3,502,961
49	3,502,550	101	3,502,266	.5	3,502,600	.1	3,502,708	261	3,502,349	324– .5	3,502,962
52	3,502,551	151.12	3,502,852		3,502,601	.8	3,502,709	432	3,502,350		3,502,963
56	3,502,552	153	3,502,853	22	3,502,602	470	3,502,710	446	3,502,351		3,502,964
67	3,502,553	154	3,502,854	29.3	3,502,603	475	3,502,711	282– 22	3,502,352	32	3,502,965
130	3,502,554	183	3,502,855	.6	3,502,604		3,502,712	285– 2	3,502,353	34	3,502,966
143	3,502,555	201	3,502,267	.7	3,502,605	477	3,502,713	24	3,502,354		3,502,967
180	3,502,556	237– 12.3	3,502,268	32.6	3,502,606	491	3,502,714	110	3,502,355	40	3,502,968
181	3,502,557	239– 66	3,502,269		3,502,607	502	3,502,715	230	3,502,356	61	3,502,969
	3,502,558	458	3,502,270	33.6	3,502,608	513	3,502,716	287– 54	3,502,357		3,502,970
195	3,502,559	240– 1.2	3,502,856	37	3,502,609	516	3,502,717	58	3,502,358	64	3,502,971
	3,502,560	2.1	3,502,857	38	3,502,610	524	3,502,718	127	3,502,359	71	3,502,972
219	3,502,561	3	3,502,858	41	3,502,611	561	3,502,719	290– 36	3,502,895		3,502,973
298	3,502,562	6.46	3,502,859	45.75	3,502,616	564	3,502,720	292–224	3,502,360		3,502,974
299	3,502,563	9	3,502,860	.8	3,502,612	566	3,502,721	251.5	3,502,361	73	3,502,975
206– 16	3,502,203	26	3,502,861		3,502,613		3,502,722	293– 19	3,502,362	82	3,502,976
45.34	3,502,204	41.5	3,502,862	.9	3,502,614	570.8	3,502,723	294– 67	3,502,363		3,502,977
46	3,502,205	52	3,502,864		3,502,615		3,502,724		3,502,364	96	3,502,978
47	3,502,206	78	3,502,865	47	3,502,617	577	3,502,725	81	3,502,365	102	3,502,979
59	3,502,207	241– 20	3,502,271		3,502,618	583	3,502,726	296– 8	3,502,366	103	3,502,980
208– 9	3,502,564	25	3,502,272	63	3,502,619	584	3,502,727	50	3,502,367	123	3,502,981
11	3,502,565	36	3,502,273	75	3,502,620		3,502,728	102	3,502,368	131	3,502,982
	3,502,566	46.11	3,502,274		3,502,621	606.5	3,502,729	146	3,502,369	140	3,502,983
14	3,502,567	84	3,502,275		3,502,622		3,502,730	297–285	3,502,370	157	3,502,984
25	3,502,568	111	3,502,276	76	3,502,623	609	3,502,731	298– 1	3,502,371	325– 13	3,502,985
49	3,502,569	259	3,502,277	78	3,502,624	610	3,502,701	299– 5	3,502,372	38	3,502,986
65	3,502,570	242– 7.13	3,502,278		3,502,625	613	3,502,702	302– 17	3,502,373	159	3,502,987
108	3,502,571	68.3	3,502,279	80.78	3,502,626	615	3,502,732	303– 69	3,502,374	420	3,502,988

325–476	3,502,989	332– 1	3,503,012	339–177	3,503,035	340–174.1	3,503,058	350–133	3,502,390	356– 40	3,502,412
328–104	3,502,990	11	3,503,013	258	3,503,036		3,503,059	161	3,502,391	84	3,502,413
130	3,502,991	333– 7	3,503,014	340– 15	3,503,039		3,503,060	184	3,502,392	152	3,502,414
151	3,502,992		3,503,015	.5	3,503,037	180	3,503,061	216	3,502,393	167	3,502,415
	3,502,993	11	3,503,016		3,503,038	249	3,503,062		3,502,394	251	3,502,416
155	3,502,994	24	3,503,017	35	3,503,040	324	3,503,063	351–156	3,502,395	401–202	3,502,417
329–126	3,502,995	334– 15	3,503,018	37	3,503,041	347	3,503,064	157	3,502,396	215	3,502,418
330– 15	3,502,996	335–193	3,503,019	67	3,503,042		3,503,065	352– 5	3,502,397	424– 63	3,502,769
29	3,502,997	205	3,503,020	146.3	3,503,043		3,503,066	37	3,502,398	195	3,502,770
30	3,502,998	254	3,503,021	150	3,503,044	412	3,503,067		3,502,399	212	3,502,771
	3,502,999	256	3,503,022	172.5	3,503,045	343– 7.3	3,503,068	40	3,502,400	239	3,502,772
38	3,503,000	284	3,503,023		3,503,046	100	3,503,069	69	3,502,401	250	3,502,773
42	3,503,001	285	3,503,024		3,503,047		3,503,070		3,502,402		3,502,774
61	3,503,002	336– 57	3,503,025		3,503,048	112	3,503,071	194	3,502,403	251	RE.26,833
331– 17	3,503,003	62	3,503,026	173	3,503,049	705	3,503,072	239	3,502,404	273	3,502,775
94.5	3,503,004	165	3,503,027		3,503,050	771	3,503,073	353– 21	3,502,405		3,502,776
	3,503,005	338– 4	3,503,028		3,503,051	792.5	3,503,074	74	3,502,406	289	3,502,777
	3,503,006	20	3,503,029		3,503,052	854	3,503,075	355– 3	3,502,407	300	3,502,778
117	3,503,007	23	3,503,030	174	3,503,053	350– 1	3,502,386	16	3,502,408	335	3,502,779
	3,503,008	99	3,503,031		3,503,054	55	3,502,387	36	3,502,409	431– 66	3,502,419
155	3,503,009	339– 14	3,503,032		3,503,055	96	3,502,388	38	3,502,410	254	3,502,420
176	3,503,010	17	3,503,033	.1	3,503,056	129	3,502,389	54	3,502,411	77 – 3	3,501,981
177	3,503,011	61	3,503,034		3,503,057						

CLASSIFICATION OF DESIGNS

D 2– 4	216,939	D13– 6	216,957	D23– 18	216,975	D34– 5	216,995	D45– 4	217,014	D71– 1	217,032
272	216,941		216,958	85	216,980		216,998		217,015		217,033
400	216,940	D14– 3	216,960	146	216,973	14	216,994		217,016		217,034
D 4– 99	216,942		216,961	150	216,974	15	216,999	D48– 23	217,018		217,035
D 5– 4	216,943		216,963	D24– 1	216,981		217,000	27	217,017		217,036
D 8– 8	216,947		216,964		216,982	D36– 8	217,001	D49– 11	217,021	D72– 1	217,037
14	216,946	6	216,962	D25– 1	216,983	D41– 1	217,002	29	217,019		217,038
30	216,945		216,967	D26– 1	216,984	D42– 7	217,003	30	217,020	D74– 5	217,040
150	216,944	18	216,965	5	216,985	D44– 1	217,005	D52– 3	217,024	9	217,039
229	216,948	27	216,966	14	216,986	10	217,006	6	217,023	D86– 10	217,041
D 9–160	216,951	D15– 8	216,968		216,987		217,011	7	217,022	D88– 3	217,042
185	216,949		216,969	D29– 28	216,988	29	217,004	D54– 12	217,025	D90– 8	217,044
258	216,950	D16– 2	216,970	D30– 13	216,989		217,007		217,026	11	217,043
267	216,953	D22– 25	216,971	D33– 11	216,991		217,008		217,027	D92– 26	217,045
278	216,952	D23– 4	216,978	19	216,990		217,009	D57– 1	217,028		217,046
D13– 1	216,954	6	216,972	28	216,992		217,010	D61– 1	217,029		217,047
	216,959	14	216,977	D34– 2	216,997	D45– 4	217,012	D64– 12	217,030		217,048
6	216,955	17	216,976	4	216,996		217,013	D66– 1	217,031	D98– 1	217,049
	216,956		216,979	5	216,993						

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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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Defensive Publications Applications

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10	T872,006	42	T872,005	47	T872,007	47	T872,008

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Official Gazette of the United States Patent Office

March 24, 1970 Volume 872 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; **Reg. No. 47,189,** same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145,** same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146,** same; **Reg. No. 415,755** (COKE), same, Non-alcoholic Maltless beverages and the syrups for making such beverages, **filed** Jan. 8, 1970, D.C., W.D. Wash. (Tacoma), Doc. 4025, *The Coca-Cola Company* v. *George W. Brouwer, doing business as Tyee Grill and Lemon Lunch.* **Same, filed** Jan. 16, 1970, D.C., E.D. Wash. (Yakima), Doc. C–2592, *The Coca-Cola Company* v. *Yakima Pizza Corporation, doing business as Shakey's Pizza Parlor and Shakey's Lounge.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 581,664 (LITTLE LADY), Helene Pessl, Inc., Comb, mirror, and brush sets, and comb and hand mirrors sets; **Reg. No. 620,061** (LITTLE LADY AND DESIGN), same, Fitted cases, such as travel kits, vacation kits and handi-kits, each of which includes a handbag containing miscellaneous articles, such as cosmetics, including hand lotion, shampoo, dusting powder, toilet water, lipstick pomade and bubble bath, soaps, tooth brush, tooth paste, nail polish, nail polish remover, comb, mirror and sewing kit; **Reg. No. 791,158** (LITTLE LADY), same, Toilet water, cologne, hand lotion, liquid bubble bath, bubble bath powder, dusting powder, face powder, body powder, bath powder, lipstick pomade, nail polish and nail polish remover (Class 51); Toilet soaps and hair shampoo (Class 52), **filed** Nov. 24, 1969, Doc. 69–5190, *Helene Pessl Inc.* v. *Standard Pyrozoloid Corp.*

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk, GmbH, Vehicles—namely, automobiles and trucks, aircraft, boats; and parts of and accessories for automobiles, namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes and baggage racks; **Reg. No. 631,649** (VW IN CIRCLE), same; **Reg. No. 653,695** (VW), same; **Reg. No. 808,381** (VOLKSWAGEN), same, Vehicles—namely, automobiles and trucks, aircraft, and boats; and parts and accessories for automobiles and trucks, aircraft and boats, namely, radiators, direction indicators, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 790,621,** same; **Reg. No. 791,311** (VW), same; **Reg. No. 790,959** (VW AND DESIGN), same, **filed** Jan. 5, 1970, D.C., S.D. Fla. (Miami), Doc. 70–10–C–CF, *Volkswagenwerk Aktiengesellschaft* v. *International Motors Corp. et al.*

Reg. No. 620,061. (See Reg. No. 581,664.)

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	20,085
Date of oldest new application	March 25, 1969
Date of oldest amended application (filing date)	April 28, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5–13–69	9–8–66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	6–6–69	10–20–66
(III) C. R. FOWLER, Classes 19, 21, 23, 26, 31, 34, 35, 36	8–21–69	4–28–66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3–25–69	6–15–67
Renewals (All Classes)	1–12–70	----------
Sec. 12(c) Publications (All Classes)	1–12–70	----------

Applications filed during the month of February 1970—2,618

Registrations Issued ---------- 396—No. 888,100 to No. 888,495
Renewals Issued ---------- 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 629,228 (EL CHICO MEXICAN FOOD AND DESIGN), El Chico Cafe, Enchilada sauce and hot sauce; **Reg. No. 629,229** (EL CHICO), same, Canned goods—namely, tamales, chili con carne, menudo (beef tripe), enchiladas; **Reg. No. 796,138**, same, Canned chili con carne, frozen and canned tamales, canned beans, frozen and canned enchiladas, canned enchilada sauce, canned hot sauce, canned taco filler (with meat), canned menudo (beef tripe), packaged tortillas, frozen tacos, frozen Mexican style dinner composed of tamales, enchilada, beans, and Mexican style rice, and frozen enchilada dinner composed of enchiladas, chili, beans, and Mexican style rice, **filed** Aug. 15, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1707, *El Chico Corporation* v. *M. & G. Provision Company, Inc. doing business as Chico Chili Company, Chico Chili Company, Inc. and Oscar Ginsberg*. Consent judgment, permanent injunction, Dec. 16, 1969.

Reg. No. 629,229. (See Reg. No. 629,228.)

Reg. No. 631,649. (See Reg. No. 617,131.)

Reg. No. 647,877 (THE AMERICAN MALE), Chief Apparel, Inc., Outerwear blouse jackets and sport coats, **filed** Dec. 3, 1969, D.C., S.D.N.Y., Doc. 69–5349, *Chief Apparel Inc.* v. *The Fashion Male Inc. et al.*

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 790,483. (See Reg. No. 819,638.)

Reg. No. 790,621. (See Reg. No. 617,131.)

Reg. No. 790,959. (See Reg. No. 617,131.)

Reg. No. 791,158. (See Reg. No. 581,664.)

Reg. No. 791,311. (See Reg. No. 617,131.)

Reg. No. 796,138. (See Reg. No. 629,228.)

Reg. No. 806,381. (See Reg. No. 617,131.)

Reg. No. 819,638 (AMERICAN HERITAGE LIFE), American Heritage Life Insurance Company, Underwriting life and disability insurance; **Reg. No. 790,483** (HERITAGE), same, Planning and underwriting life insurance; **Reg. No. 838,060** (AMERICAN HERITAGE LIFE INSURANCE COMPANY AND DESIGN), same, **filed** Dec. 9, 1969, D.C. Colo. (Denver), Doc. C–1918, *American Heritage Life Investment Corp et al.* v. *American Heritage Bank and Trust Co.*

Reg. No. 838,060. (See Reg. No. 819,638.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 262,796. Kabushiki Kaisha Kinuta-Dobutsuen, Setagaya-ku, Tokyo, Japan. Filed Jan. 18, 1967.

ビタシュリンプ.

The meaning of the Japanese letters is "bitashurimp," which is an arbitrary word. Owner of Japanese Reg. No. 713,600, dated July 16, 1966.

Class 1—Raw or Partly Prepared Materials

For Natural Plants and Tropical Fish (Int. Cl. 31).

Class 46—Foods and Ingredients of Foods

For Flour and Fish Food (Int. Cls. 30 and 31).

SN 281,688. Saxons Sandwich Shoppes, Inc., Kansas City, Mo., by change of name from Saxons Incorporated, Kansas City, Mo. Filed Oct. 2, 1967.

Saxons

Class 2—Receptacles

For Paper Cups (Int. Cl. 21).

Class 37—Paper and Stationery

For Food Wrappers (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Novelty Paper Hats (Int. Cl. 25).

First use May 15, 1967.

SN 285,838. Jacoby & Company, Detroit, Mich. Filed Nov. 29, 1967.

FLAME KISSED

Owner of Reg. No. 860,321.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Tobacco Lighters (Int. Cl. 34).

Class 22—Games, Toys, and Sporting Goods

For Golf Balls (Int. Cl. 28).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Pot Holders.

First use on or about May 15, 1966.

SN 288,421. Asahi Glass Company, Limited, Chiyoda-ku, Tokyo, Japan. Filed Jan. 9, 1968.



Owner of Japanese Reg. No. 636,291, dated Feb. 6, 1964.

Class 6—Chemicals and Chemical Compositions

For Sodium Carbonate, Caustic Soda, Sodium Bicarbonate, Sodium Sesquicarbonate, Potassium Carbonate, Potassium Hydroxide, Ammonium Chloride, Calcium Chloride, Hydrochloride Acid, Silica Gel, Sodium Bichromate, Sodium Chromate, Chromic Acid, Sodium Tripolyphosphate, Magnesium Hydroxide, Magnesium Chloride, Chloride, Epichlorohydrin, Propyleneglycol, Carbon Tetrachloride, Trichloroethylene, Perchloroethylene, Methylene Chloride, and Fluorinated Hydrocarbons Used as Refrigerants, Propellants, Blowing Agents, Fire Extinguishing Agents, and Solvents (Int. Cl. 1).

Class 31—Filters and Refrigerators

For Ion-Permselective Membranes (Int. Cl. 11).

SN 293,358. Coalport China Limited, Stoke-on-Trent, England. Filed Mar. 15, 1968.

COALPORT

Class 30—Crockery, Earthenware, and Porcelain

For Bone China Tableware, Bone China Dinnerware, Bone China Ornamental Vases, Bowls, Dishes and Urns, Earthenware Tableware and Ornamental Porcelain Floral Pieces (Int. Cl. 21).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candlesticks (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Porcelain Artware (Int. Cl. 21).

First use at least as early as 1875; in commerce at least as early as 1875.

SN 295,275. Chicago Candle Corporation, Chicago, Ill. Filed Apr. 10, 1968.

THE SWEET SMELL OF SUCCESS

Applicant disclaims the words "Sweet Smell" apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Incense in Liquid, Powdered and Solid Form (Int. Cl. 3).
First use on or about June 22, 1959.

Class 15—Oils and Greases

For Candles, Including Candles in Glass (Int. Cl. 4).
First use on or about Aug. 13, 1959.

SN 300,310. Cirillo Bros. Petroleum Co., Inc., Bronx, N.Y. Filed S.R. June 13, 1968; Am. P.R. Nov. 29, 1968.

CIRILLO BROS.
C B

Class 6—Chemicals and Chemical Compositions

For Radiator Anti-Freeze (Int. Cl. 1).

Class 15—Oils and Greases

For Petroleum Products—Namely, Fuel Oils, Lubricating Oils, Motor Oils, Lubricating Greases, Fuel Oil Additives, and Gasoline (Int. Cls. 1 and 4).

First use November 1960.

SN 303,654. Allied Chemical Corporation, New York, N.Y. Filed July 26, 1968.

FROSTI

Class 1—Raw or Partly Prepared Materials

For Continuous Filament and Staple Fiber (Int. Cl. 22).

Class 43—Thread and Yarn

For Yarn (Int. Cl. 23).

First use May 24, 1968.

SN 306,555. Firma Dr. Babor & Co., Bad Aachen, Germany. Filed Sept. 4, 1968.

BLACK ROSE



Priority claimed under Sec. 44(d) on German application filed Mar. 6, 1968; Reg. No. 849,410, dated Sept. 2, 1968. The drawing is lined for the color gold. The term "Kosmetik" is disclaimed apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Essential Oils (Int. Cl. 3).

Class 18—Medicines and Pharmaceutical Preparations

For Disinfecting Preparations for Pimples and Acne, Dental Jelly for Treatment of Tartar, Paradentosis and Loose Teeth, Dental Tincture for Treatment of Gum Inflammation, Dentine Ache and Sensitivity to Heat and Cold, and Gargle (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Facial and Skin Creams, Oils, Lotions and Powders, Foundation Make-Up, Cosmetic Facial Masks, Nail Polish Removers, Cuticle Removers, and Hair Oils and Hair Lotions (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toiletry Soaps (Int. Cl. 3).

SN 311,429. May & Baker Limited, Dagenham, Essex, England. Filed Nov. 6, 1968.

DECCOX

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions for Use in the Manufacture of Veterinary Preparations (Int. Cl. 1).

Class 18—Medicines and Pharmaceutical Preparations

For Veterinary Preparations for Use in the Prevention of Coccidiosis (Int. Cl. 5).

First use Feb. 1, 1968; in commerce June 3, 1968.

SN 314,841. Chase Bag Company, New York, N.Y. Filed Dec. 19, 1968.

CHASELINE

Class 2—Receptacles

For Premium and Sales Promotion Items—Namely, Plastic or Wood Food Containers and Bowls, Laundry Bags, Laundry Chute Catchers, and Hand Log Carriers (Int. Cl. 21).

Class 21—Electrical Apparatus, Machines, and Supplies

For Coffee Makers, Food Mixers, Blenders, and Rotisseries for Household Use (Int. Cls. 7 and 11).

Class 22—Games, Toys, and Sporting Goods

For Rag Style Dolls, Toy Plastic Coloring Tablecloths, and Toy Card Table Playhouses (Int. Cl. 28).

Class 29—Brooms, Brushes, and Dusters

For Scratchless Scrubbers, Polishing Mitts, and Polishing Sponges (Int. Cl. 21).

Class 31—Filters and Refrigerators

For Filter Bags for Lawnmower Motors (Int. Cl. 11).

Class 39—Clothing

For Aprons, Vests, Chefs' Hats, and Shower Caps (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Oven Mitts, Potholders, and Pothandle Holders Arrangeable on Handles of Pots and Pans (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Covers for Toasters, and Rolling Pin Covers (Int. Cl. 21).

First use Dec. 1, 1954.

SN 321,363. Bristol-Myers Company, New York, N.Y., assignee of Clairol Incorporated, New York, N.Y. Filed Mar. 11, 1969.

CARMEN

Owner of Reg. Nos. 826,450 and 847,927.

Class 51—Cosmetics and Toilet Preparations

For Hair Conditioner, Creme Rinse, Spray-On Brilliantine, Hair Spray, Pressed Powder, and Lipstick (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use Aug. 24, 1962.

SN 330,440. G. C. Murphy Company, McKeesport, Pa. Filed June 18, 1969.

TRIPLE CHECK

Owner of Reg. Nos. 386,707, 795,844, and others.

Class 39—Clothing

For Infants' Wear—Namely, Bibs, Training Pants, T-Shirts, Briefs, Sleepers, and Polo Shirts (Int. Cl. 25).
First use Feb. 20, 1967.

Class 43—Thread and Yarn

For Crochet and Knitting Thread, Wintuk Yarn, Worsted Yarn, and Rug Yarn (Int. Cl. 23).
First use Aug. 31, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 316,516. J. P. Bemberg Aktiengesellschaft, Wuppertal-Barmen, Germany. Filed Jan. 14, 1969.

CUPROPHAN

Owner of German Reg. No. 44,890, dated Jan. 21, 1932.
For Transparent Plastic Composition, Sold in Sheet Form, for General Use in the Industrial Arts (Int. Cl. 17).

SN 320,135. FMC Corporation, Philadelphia, Pa. Filed Feb. 26, 1969.

SUPER-CELL

Owner of Reg. Nos. 651,514 and 651,515.
For Transparent Films and Sheets of Plastic or Regenerated Cellulose (Int. Cl. 17).
First use Feb. 14, 1969.

SN 320,261. Gulf Oil Corporation, Pittsburgh, Pa. Filed Feb. 27, 1969.

Gulf

The drawing is lined for the colors orange and blue. Owner of Reg. Nos. 621,650, 710,758, and others.
For Plastic Resins for Use in Molding, Extrusion, or Coating (Int. Cl. 1).
First use at least as early as Sept. 20, 1968.

SN 321,844. Union Carbide Corporation, New York, N.Y. Filed Mar. 14, 1969.

UCARDEL

Owner of Reg. Nos. 696,264 and 789,256.
For Thermoplastic Resins (Int. Cl. 1).
First use on or about Feb. 27, 1969.

SN 322,985. Hinton & Co., Inc., Brooklyn, N.Y. Filed Mar. 27, 1969.

SOD-PAK

For Grass Seed (Int. Cl. 31).
First use Dec. 16, 1968.

SN 326,645. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed May 7, 1969.

PEARL FROST

For Sheared Process Lamb Skins (Int. Cl. 18).
First use July 15, 1968.

SN 326,673. George M. Morris, Dallas, Tex. Filed May 7, 1969.

KANDLE-KOB

For Fire Starter (Int. Cl. 4).
First use Mar. 12, 1969.

SN 327,493. Hitachi Chemical Company Ltd., Chiyoda-ku, Tokyo, Japan. Filed May 16, 1969.

HITANOL

For Synthetic Resins (Int. Cl. 1).
First use 1959; in commerce April 1968.

SN 327,756. Free-Flow Packaging Corporation, Redwood City, Calif. Filed May 20, 1969.

FLO-PAK

Owner of Reg. No. 754,821.
For Loose Fill Cushioning and Packing Materials (Int. Cl. 17).
First use Mar. 17, 1969.

SN 334,544. Beamort Plants Inc., Lawrence, N.Y. Filed Aug. 6, 1969.

CHREASTER

For Potted Plants (Int. Cl. 31).
First use June 28, 1969.

SN 337,166. The Gilman Brothers Company, Gilman, Conn. Filed Sept. 5, 1969.

GILCO STYLAFOAM

Owner of Reg. Nos. 646,947 and 786,665.
For Expanded Plastic in Roll and Sheet Form for Vacuum and/or Pressure Forming Into Packing Materials, Displays, Toys, Surfacings, and Luggage Reinforcements (Int. Cl. 17).
First use Aug. 14, 1964.

SN 340,476. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 13, 1969.

TEFZEL

Owner of Reg. Nos. 418,698, 835,374, and others.
For Synthetic Resinous Fluorine-Containing Polymers in the Form of Molding and Extruding Compositions (Int. Cl. 1).
First use Sept. 25, 1969.

Class 2—Receptacles

SN 317,731. David Douglas Co., Inc., Manitowoc, Wis. Filed Jan. 28, 1969.

Gem

For Plastic Tableware (Int. Cl. 21).
First use Dec. 30, 1968.

SN 321,535. Protex Products Corp., Cincinnati, Ohio. Filed Mar. 12, 1969.

THE SHOE-SPIN

For Plastic Closet Bags for Shoes (Int. Cl. 21).
First use Feb. 5, 1962.

SN 330,179. Neirad Industries, Inc., Saugatuck, Conn. Filed June 16, 1969.

SLICKSTOW

For Oil Boom Storage Boxes (Int. Cl. 6).
First use May 12, 1969.

SN 330,362. Cyclops Corporation, Pittsburgh, Pa. Filed June 18, 1969.

UNCLE SAM

For Containers—Namely, Cans, Pails, Tubs, and Hods (Int. Cl. 21).
First use June 1958.

SN 332,086. Container Corporation of America, Chicago, Ill. Filed July 9, 1969.

DELDRUM

For Plastic Containers Such as Carboys and Drums, With and Without Overpacks (Int. Cl. 20).
First use on or before Apr. 1, 1963.

SN 332,087. Container Corporation of America, Chicago, Ill. Filed July 9, 1969.

DELBOY

For Plastic Containers Such as Carboys and Drums, With and Without Overpacks (Int. Cl. 20).
First use on or before Jan. 1, 1965.

SN 333,006. Tower Products, Inc., Wheeling, Ill., by change of name from Tower Packaging Company, Wheeling, Ill. Filed July 18, 1969.

TOWER-WELD

Owner of Reg. No. 803,679.
For Sealed Plastic Bags (Int. Cl. 20).
First use Dec. 15, 1965.

SN 333,769. Supreme Foods, Inc., Los Angeles, Calif. Filed July 28, 1969.

EGGMASTER

Owner of Reg. No. 733,403.
For Egg Baskets for Conveying Eggs in Cartons (Int. Cl. 6).
First use May 5, 1958.

SN 333,975. Bethlehem Steel Corporation, Bethlehem, Pa. Filed July 30, 1969.

BUFFHIDE

For Steel Tanks (Int. Cl. 6).
First use Mar. 14, 1969.

SN 334,451. Arch-Bilt Container Corporation, Masbeth, N.Y. Filed Aug. 5, 1969.

ARCH-CORE

Owner of Reg. No. 693,653.
For Corrugated Fiberboard Boxes and Sheets Foldable Into Boxes (Int. Cl. 16).
First use May 1, 1969.

SN 334,774. Lincoln Metal Products Corporation, Brooklyn, N.Y. Filed Aug. 8, 1969.

FREE 'N FANCY

For Housewares—Namely, Canister Sets (Int. Cl. 21).
First use Aug. 4, 1969.

SN 340,480. Kimberly-Clark Corporation, Neenah, Wis. Filed Oct. 13, 1969.

BOUTIQUE

Owner of Reg. No. 873,822.
For Paper Cups and Paper Plates (Int. Cl. 21).
First use Oct. 6, 1969.

SN 341,488. Gulf Oil Corporation, Pittsburgh, Pa. Filed Oct. 23, 1969.

Gulf

The drawing is lined for the colors orange and blue. Owner of Reg. No. 621,650 and others.
For Plastic Bags (Int. Cl. 20).
First use on or about July 22, 1969.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 332,093. Darworth Incorporated, Simsbury, Conn. Filed July 9, 1969.

TRACELARM

For Messenger Bag and, More Particularly, a Messenger Bag for Carrying Valuables (Int. Cl. 18).
First use Apr. 27, 1937.

Class 4—Abrasives and Polishing Materials

SN 325,775. Pelletronics, Inc., Trenton, N.J. Filed Apr. 28, 1969.

PELLETRONICS

For Abrasive Media and Compounds for Metal Cleaning, Deburring, Finishing, and Peening (Int. Cl. 3).
First use Mar. 31, 1969.

SN 335,460. The Motloid Company, Incorporated, Chicago, Ill. Filed Aug. 15, 1969.

QUICK LUSTRE

Applicant disclaims the word "Lustre" apart from the mark as shown. Owner of Reg. No. 792,426.
For Household Polish (Int. Cl. 3).
First use July 25, 1969.

Class 5—Adhesives

SN 333,563. The W. W. Henry Company, Huntington Park, Calif. Filed July 25, 1969.

THE STRIPPER

For Carpet Adhesives (Int. Cl. 1).
First use July 1969.

SN 335,971. General Gummed Products, Inc., Linden, N.J. Filed Aug. 22, 1969.

WOLCO

Owner of Reg. No. 442,155.
For Gummed Paper Tape and Gummed Cloth Tape for General Use (Int. Cl. 17).
First use 1947.

SN 340,660. Electro-Seal Corporation, Maywood, N.J. Filed Oct. 14, 1969.

FLEXSEAL

For Thermoplastic Adhesives Carried by Coated Carrier Strips Subsequently Released by Heat and Pressure to Various Cloth and Other Surfaces (Int. Cl. 1).
First use June 15, 1967.

SN 341,074. Armour Industrial Products Company, Chicago, Ill. Filed Oct. 16, 1969.

FLEXGLU

For Plasticized Animal Glue Adhesive Products (Int. Cl. 1).
First use in or prior to November 1948.

SN 341,247. Kentile Floors Inc., Brooklyn, N.Y. Filed Oct. 21, 1969.

ADHESIVE NO. 711

Applicant makes no claim to the word "Adhesive" apart from the mark as shown.
For Vinyl Asbestos Tile Adhesive (Int. Cl. 1).
First use Sept. 20, 1965.

Class 6—Chemicals and Chemical Compositions

SN 300,178. The Drackett Company, Cincinnati, Ohio. Filed June 11, 1968.

WHISTLE

Owner of Reg. Nos. 688,844, 857,636, and others.
For Room Deodorant Spray (Int. Cl. 5).
First use May 9, 1968.

SN 307,796. Globus-Werke Fritz Schulz Jun., Neuburg (Danube), Germany. Filed Aug. 14, 1968.

globo

For Rust and Corrosion Inhibitors (Int. Cl. 2).
First use July 16, 1968; in commerce July 16, 1968.

SN 308,384. L'Industrie Biologique Francaise S.A., Gennevilliers, Hauts-de-Seine, France. Filed Sept. 27, 1968.

INDUBIOSE

Priority claimed under Sec. 44(d) on French Reg. No. 742,418, dated June 20, 1968.
For Particular Kind of Agarose Which Is a Laboratory Reactant Extracted From Agar (Int. Cl. 1).

SN 311,316. Union Carbide Corporation, New York, N.Y. Filed Nov. 4, 1968.

SEVITHION

For Insecticide (Int. Cl. 5).
First use on or about Oct. 14, 1968.

SN 320,899. American Home Products Corporation, New York, N.Y. Filed Mar. 6, 1969.

SUDDEN SOFTNESS

For Fabric Finish for Use During Ironing To Give Body Without Stiffness (Int. Cl. 3).
First use Feb. 7, 1969.

SN 321,710. Paul F. Werler, d.b.a. Chemstar Products Company, Minneapolis, Minn. Filed Mar. 13, 1969.

STARFLOC

For Flocculating Agent or Coagulant Used in Treating Water To Facilitate the Separation of Solids Therefrom in the Mineral Processing Industry (Int. Cl. 1).
First use Aug. 9, 1965.

SN 323,237. The British Petroleum Company, Limited, London, England. Filed Apr. 1, 1969.

BOP

Owner of British Reg. No. 776,432, dated Apr. 14, 1958.
For Insecticides (Int. Cl. 5).

SN 323,403. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Apr. 1, 1969.

PANTEK

For Cresylic Acid Disinfectant (Int. Cl. 5).
First use on or about Oct. 17, 1968.

SN 327,735. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed May 20, 1969.

COTTESTRENE

For Dyestuffs (Int. Cl. 2).
First use Jan. 31, 1962; in commerce Jan. 25, 1969.

SN 328,146. American Hospital Supply Corporation, Evanston, Ill. Filed May 23, 1969.

DADE

Owner of Reg. Nos. 643,431 and 721,954.
For Preparations for Use by Blood Banks and Clinical Laboratories—Namely, Blood Grouping Serums; Blood Typing Serums; Immunological, Hematological and Serological Reagents; Blood Coagulation Test Reagents; Diagnostic Reagents and Control Reagents for Clinical Laboratory Tests (Int. Cl. 1).
First use Jan. 1, 1955.

SN 328,165. Dresser Industries, Inc., Dallas, Tex. Filed May 23, 1969.

DV-22

For Additive for Controlling Fluid Loss in a Well (Int. Cl. 1).
First use Mar. 10, 1969.

SN 328,594. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed May 28, 1969.

SEXAUER
PRODUCTS

No Claim is made to the word "Products" apart from the mark as shown, without waiving of any common law rights. Owner of Reg. Nos. 375,977, 861,261, and others.
For Chemical Compositions—Namely, Boiler Compound, Scale, Rust and Corrosion Inhibitors, and Sealing Compound for Boilers (Int. Cls. 1 and 17).
First use during 1966; 1921 as to "Sexauer."

SN 331,110. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 27, 1969.

BIROX

For Thick Film Resistor Compositions for Use in the Manufacture of Microcircuits, Resistors, and Other Electrical Components (Int. Cl. 1).
First use June 10, 1969.

Class 7 — Cordage

SN 330,216. Thomas & Betts Corporation, Elizabeth, N.J. Filed June 16, 1969.

STOP-LIFTER

For Loop-Type Straps Employed as a Pilferage Deterrent for Articles Upon Which Such Straps Are Placed (Int. Cl. 22).
First use on or about May 9, 1969.

SN 339,364. St. Clair Mfg. Corp., Bellwood, Ill. Filed Sept. 30, 1969.

LADY CLAIR

For Gift Wrapping Ribbon (Int. Cl. 22).
First use Feb. 27, 1962.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 341,489. Holex Incorporated, Hollister, Calif. Filed Oct. 23, 1969.

SSI

For Electro Explosive Initiators (Int. Cl. 13).
First use July 1, 1969.

Class 10 — Fertilizers

SN 298,424. Chevron Chemical Company, San Francisco, Calif. Filed May 17, 1968.

DELMO-Z

Owner of Reg. No. 306,967.
For Deficiency Corrective Spray for Use in Dormant and Foliage Sprays (Int. Cl. 1).
First use at least as early as Sept. 1, 1947.

Class 12 — Construction Materials

SN 296,742. Cuckler Steel Span Company, Monticello, Iowa. Filed Apr. 29, 1968.

CUCKLER

Owner of Reg. No. 657,898.
For Prefabricated and Precut Commercial, Agriculture, and Institutional Buildings (Int. Cl. 6).
First use Dec. 1, 1959.

SN 309,547. Crosby Wood Preserving Co., Picayune, Miss. Filed Oct. 14, 1968.



For Treated Wood Poles and Pilings (Int. Cl. 19).
First use May 15, 1967.

SN 310,904. W. R. Meadows, Inc., Elgin, Ill. Filed Oct. 30, 1968.

VIBRAFLEX

For Laminated Sheets of Asphalt and Asphalt Saturated Felts for Protective Course Used With Waterproof Membranes for Bridges and Similar Structures (Int. Cl. 19).
First use May 22, 1968.

SN 312,995. Hi-Lume Corporation, Huntington, N.Y. Filed Nov. 25, 1968.

Hi-Lume

Applicant disclaims all rights in and to the representation of a ceiling in the mark.
For Suspended Luminous Accoustical and Decorative Ceilings (Int. Cl. 19).
First use Sept. 15, 1963.

SN 325,918. Allied Construction Supplies Corp., Dallas, Tex. Filed Apr. 30, 1969.

ALCRETE

For All Purpose Patching Concrete (Int. Cl. 19).
First use July 19, 1968.

SN 328,595. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed May 28, 1969.

SEXAUER
PRODUCTS

No claim is made to the word "Products" apart from the Mark as shown, without waiving of any common law rights. Owner of Reg. Nos. 375,977, 861,261, and others.
For Pipe Joint Sealing Compound in Tape Form (Int. Cl. 17).
First use during 1966; 1921 as to "Sexauer."

SN 332,612. Epic Metals Corporation, Pittsburgh, Pa. Filed 7-15-69.

EPICORE

Owner of Reg. No. 872,425.
For Metal Floor Deck, Metal Floor Deck for Composite Flooring, and Ribbed Galvanized Steel Floor Deck for Metal-Concrete Flooring (Int. Cl. 6).
First use at least as early as July 3, 1969.

SN 333,670. Burlington Industries, Inc., New York, N.Y. Filed July 28, 1969.

B U R L G L A S

For Glass Fiber Thermal and Acoustical Insulation (Int. Cl. 17).
First use July 9, 1699.

SN 333,742. Pacific Wood Products Company, Los Angeles, Calif. Filed July 28, 1969.

CORONADO

For Plywood Panels (Int. Cl. 19).
First use May 1969.

SN 333,784. Weyerhaeuser Company, Tacoma, Wash. Filed July 28, 1969.

WOODGLO

For Wood Paneling (Int. Cl. 19).
First use Jan. 25, 1969.

SN 333,889. Allied Compositions Corporation, Maspeth, N.Y. Filed July 30, 1969.

NAVYDEK

For Built-Up Floor Surfacing Material Applied by Trowel, Consisting of Bond Coat, Wearcoat, and Sealer (Int. Cl. 19).
First use October 1957.

SN 334,476. Johns-Manville Corporation, New York, N.Y. Filed Aug. 5, 1969.

PYRO PLUS

For Fiber Glass Panels (Int. Cl. 19).
First use at least on or about Feb. 11, 1969.

SN 340,620. Sylvan Pools, Inc., Doylestown, Pa. Filed Oct. 13, 1969.

SYLVAN SUBURBAN

Owner of Reg. No. 622,461.
For Swimming Pools (Int. Cl. 19).
First use on or about Aug. 27, 1969.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 333,724. Leigh Products, Inc., Coopersville, Mich. Filed July 28, 1969.

POWR-CLOSER

For Rotary Hydraulic Door Closers (Int. Cl. 6).
First use about November 1966.

SN 333,725. Leigh Products, Inc., Coopersville, Mich. Filed July 28, 1969.

ROTA-CLOSER

For Rotary Hydraulic Door Closers (Int. Cl. 6).
First use about October 1964.

SN 334,033. Amerock Corporation, Rockford, Ill. Filed July 31, 1969.

#7700

For Furniture Hinges (Int. Cl. 6).
First use May 1969.

SN 334,316. Fisher Governor Company, Marshalltown, Iowa. Filed Aug. 4, 1969.

FISHTAIL

For Butterfly Valves and Parts Thereof—Namely, Valve Discs (Int. Cl. 6).
First use November 1967.

SN 334,354. Mechanical Services and Supply Corporation, Washington, D.C. Filed Aug. 4, 1969.

JOHNI-BOLT

For Self-Retaining Closet Bolts (Int. Cl. 6).
First use June 20, 1969.

SN 334,495. Textron Inc., Providence, R.I. Filed Aug. 5, 1969.

TALON 42

For Slide Fasteners (Int. Cl. 6).
First use Mar. 3, 1964.

SN 337,605. Wolverine Brass Works, Grand Rapids, Mich. Filed Sept. 10, 1969.

hose-saver

For Washing Machine Valves (Int. Cl. 7).
First use Aug. 25, 1969.

Class 14 — Metals and Metal Castings and Forgings

SN 302,771. Societe Lorraine de Laminage Continu (Sollac), Paris, France, Filed July 15, 1968.

SOLLAC

Priority claimed under Sec. 44(d) on French Reg. No. 737,013, dated Mar. 26, 1968.
For Coated and Non-Coated Sheet Iron (Int. Cl. 6).

SN 319,337. Metals Engineering Company, Leesport, Pa. Filed Feb. 17, 1969.

CONTOURMIL

For Metal Strip With Continuously Milled Profiles Comprised Variously of Brass, Phosphor Bronze, Nickel-Silver Alloys, and Beryllium-Copper Alloys (Int. Cl. 6).
First use Oct. 10, 1968.

SN 326,562. The Torrington Company, Torrington, Conn. Filed May 6, 1969.

AUSWAGED PRODUCTS

The word "Products" is disclaimed apart from the mark as shown.
For Thermo-Mechanical Treated High-Strength Steel Rods (Int. Cl. 6).
First use Sept. 25, 1968.

Class 15 — Oils and Greases

SN 304,600. Fuel Activator Chemical Corporation, New York, N.Y. Filed Aug. 7, 1968.

FUEL ACTIVATOR

Owner of Reg. No. 743,272.
For Gasoline Additive (Int. Cl. 1).
First use May 31, 1960.

SN 316,707. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING 44

Owner of Reg. Nos. 571,013 and 576,946.
For Silicone Lubricant (Int. Cl. 4).
First use Mar. 1, 1946.

SN 316,711. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING 710

Owner of Reg. Nos. 571,013 and 576,946.
For Silicone Fluid Lubricant (Int. Cl. 4).
First use Apr. 1, 1946.

SN 335,745. Colonial Candle Co. of Cape Cod, Inc., Barnstable, Mass. Filed Aug. 20, 1969.

FLORACANDLE

Owner of Reg. No. 515,167.
For Candles (Int. Cl. 4).
First use in or about June 1969.

SN 339,502. Conklin Company, Inc., Minneapolis, Minn. Filed Oct. 2, 1969.

RUST BOMB

For Super Penetrating Oil (Int. Cl. 4).
First use on or about Aug. 31, 1955.

SN 340,969. Golden Eagle Refining Company, Inc., Los Angeles, Calif. Filed Oct. 27, 1969.

GOLDEN EAGLE

Owner of Reg. No. 371,623.
For Gasoline and Diesel Fuel (Int. Cl. 4).
First use on or about Aug. 1, 1938.

Class 16 — Protective and Decorative Coatings

SN 313,958. MacDermid Incorporated, Waterbury, Conn. Filed Dec. 9, 1968.

PHOSCOLOR

For Protective and Decorative Coatings for Use in Connection With Phosphate Coatings To Enhance Their Corrosion Resistance and To Provide Color Identification (Int. Cl. 2).
First use on or about Nov. 8, 1968.

SN 318,189. H. A. Henderson Company, Los Angeles, Calif. Filed Feb. 3, 1969.

HENCO-PHOS

Owner of Reg. No. 776,524.
For Organic Phosphate Coating for Ferrous Metals (Int. Cl. 2).
First use Sept. 14, 1966.

SN 328,142. Inmont Corporation, New York, N.Y. Filed May 23, 1969.

INMONT

For Lacquers, Varnishes, Paints, Enamels and Stains; Coating Preparations in the Nature of Paints, Including Primers, Undercoats and Topcoats; Topcoats in the Nature of Lacquers or Varnishes; Coloring Material for Use in Lacquers, Varnishes, Paints, Enamels and Stains; Coatings To Prevent Permeation of Oils, Gases and Volatile Substances Through Plastic Containers; Pigmented Ground or Primer Coatings and Graining Inks in the Nature of Paint or Enamel (for Producing Wood Grains); Wood-Finishing Material in the Nature of a Pigmented Stain; Asphaltic Roof Coatings; Pigmented, Powdered Industrial Coatings Used To Form a Protective Film Against Abrasion, Corrosion and Mechanical Damage; Oils, Thinners, Solvents and Resinous Materials for General Use in the Paint Trade; Masking Compounds; Synthetic Lacquer, Varnish, Enamel and Acrylic Tinting Bases; Paint Products Pigmented With Aluminum; Lacquer, Enamel and Acrylic Colors Containing Solid Metallic Particles Which Produce an Iridescent Finish; Sealers for Wood Surfaces; Protective and Decorative Coatings for Vinyl Film Sheeting and Coated Fabrics (Int. Cls. 2 and 19).
First use Apr. 7, 1969.

Class 18 — Medicines and Pharmaceutical Preparations

SN 307,679. Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France, Longjumeau, France, Filed Sept. 18, 1968.

PRIMPERAN

Owner of French Reg. No. 518,094, dated Dec. 19, 1963 (Paris); Natl. Inst. No. 216,576.
For Composition for Treatement of Gastro-Intestinal Disorders (Int. Cl. 5).

SN 318,531. Dagra N.V., Diemen, Netherlands. Filed Feb. 6, 1969.

CHOLEBRINE

Owner of Dutch Reg. No. 159,137, dated May 3, 1966.
For Pharmaceutical Products—Namely, Roentgen Containing Substances (Int. Cl. 5).

SN 321,965. Moorman Manufacturing Company, Quincy, Ill. Filed Mar. 17, 1969.

BEEF CATTLE BOOST

Owner of Reg. No. 640,925.
For Medicated Cattle Feed Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use Feb. 24, 1969.

SN 323,384. Ralph N. Takaki, d.b.a. Takaki Sanyo-Do, Honolulu, Hawaii. Filed Apr. 1, 1969.

Akadama

The term "Akadama" may be translated as "crimson gem" or "jewel." Owner of Reg. No. 508,427.
For Medicine for Diarrhea (Int. Cl. 5).
First use May 27, 1951; July 25, 1940, in a different form.

SN 326,460. The Upjohn Company, Kalamazoo, Mich. Filed May 5, 1969.

IOPSAN

For Ophthalmic Preparation (Int. Cl. 5).
First use Oct. 18, 1968.

SN 327,076. USV Pharmaceutical Corporation, New York, N.Y. Filed May 12, 1969.

SPASOSPAN

Owner of Reg. Nos. 832,842, 859,606, and others.
For Gastrointestinal Antispasmodic for Use as an Adjunct in the Management of Piptic Ulcer (Int. Cl. 5).
First use April 1954.

SN 332,896. Seeco, Inc., Willmar, Minn. Filed July 18, 1969.

SEECO

For Food Supplements for Swine Containing Vitamins and Minerals (Int. Cl. 5).
First use October 1960.

SN 339,961. Reid-Provident Laboratories Inc., Atlanta, Ga. Filed Oct. 7, 1969.

SUPEN

For Antibiotic (Int. Cl. 5).
First use Sept. 24, 1969.

Class 19—Vehicles

SN 328,544. Fairchild Hiller Corporation, Germantown, Md. Filed May 28, 1969.

FH1100

Owner of Reg. Nos. 759,119, 865,648, and others.
For Aircraft and Parts Therefor (Int. Cl. 12).
First use September 1967.

SN 332,613. European Motor Products, Inc., d.b.a. Engineered Motor Products, Inc., Riverside, Calif. Filed July 15, 1969.



For Automobile Wheels (Int. Cl. 12).
First use July 1968.

SN 335,131. General Appliance Manufacturing Co., Omaha, Nebr. Filed Aug. 12, 1969.



For Gasoline-Powered Mini-Bikes (Int. Cl. 12).
First use at least as early as Feb. 27, 1969.

SN 336,862. Roadhouse Motor Homes, Inc., Redding, Calif. Filed Sept. 2, 1969.

ROADHOUSE

For Motor Homes, Trailers and Campers (Int. Cl. 12).
First use June 11, 1969.

SN 339,679. PPG Industries, Inc., Pittsburgh, Pa. Filed Oct. 3, 1969.

VERTIGLAS

For Shaped and Sheet Vehicular Glass Panels (Int. Cl. 19).
First use at least as early as Sept. 15, 1969.

SN 339,825. Urethane Fabricators, Inc., Camden, N.J. Filed Oct. 6, 1969.

SPORT-SAILOR

For Sailboats (Int. Cl. 12).
First use on or about Sept. 4, 1969.

SN 341,173. Mid-America Housing, Inc., Birmingham, Ala. Filed Oct. 20, 1969.



For Mobile Homes (Int. Cl. 12).
First use Oct. 3, 1969.

SN 341,285. Sea Craft, Incorporated, Miami, Fla. Filed Oct. 21, 1969.

SEAFARI

For Power Boats (Int. Cl. 12).
First use July 18, 1969.

SN 341,405. Motor Wheel Corporation, Lansing, Mich. Filed Oct. 22, 1969.

POLYCAST

For Wheels for Automotive Vehicles (Int. Cl. 12).
First use Sept. 22, 1969.

SN 341,671. Lund Metalcraft, Inc., New York Mills, Minn. Filed Oct. 24, 1969.

Shell Lake

For Fishing Boats, Row Boats, Outboard Boats, Powered Boats, and Sailboats (Int. Cl. 12).
First use 1904.

Class 20—Linoleum and Oiled Cloth

SN 334,961. Armstrong Cork Company, Lancaster, Pa. Filed Aug. 11, 1969.

APRINA

For Resilient, Hard Surface Type Covering for Floors, Walls, and Other Surfaces (Int. Cl. 27).
First use July 11, 1968.

SN 335,312. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Aug. 14, 1969.

ZIP-STIK

For Vinyl Asbestos Flooring (Int. Cl. 27).
First use July 18, 1969.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 263,078. Koehler Manufacturing Company, Marlboro, Mass. Filed Jan. 23, 1967.

KOEHLER

For Electrical Equipment and Lighting Apparatus—Namely, Safety Cap Lamps, Batteries, Battery Charging Means Therefor, Spotlights, and Miners' Belt Lights (Int. Cls. 9 and 11).
First use January 1920.

SN 281,298. Matsuo Electric Company Limited, Toyonaka, Japan. Filed Sept. 27, 1967.

SUPERWRAP

Priority Claimed under Sec. 44(d) on Japanese application filed Apr. 10, 1967; Reg. No. 814,009, dated Apr. 16, 1969.
For Electric Condenser or Capacitor (Int. Cl. 9).

SN 281,299. Matsuo Electric Company Limited, Toyonaka, Japan. Filed Sept. 27, 1967.

WELDWRAP

Priority Claimed under Sec. 44(d) on Japanese application filed Apr. 10, 1967; Reg. No. 821,105, dated June 11, 1969.
For Electric Condenser or Capacitor (Int. Cl. 9).

SN 285,937. Nova-Tech, Inc., Redondo Beach, Calif. Filed Nov. 30, 1967.

NOVA

Owner of Reg. Nos. 785,972 and 827,149.
For Radio Receivers and Radio Direction Finders (Int. Cl. 9).
First use Feb. 12, 1960.

SN 296,518. Compagnie Generale d'Electricite, Paris, France. Filed Apr. 25, 1968.

NORMADIS

Owner of French Reg. No. 531,430, dated May 17, 1965 (Seine); Natl. Inst. No. 248,962.
For Public Distribution and High Voltage Users' Supbstations as Well as Parts Therefor (Int. Cl. 9).

SN 314,089. Austin W. La Marche, Des Plaines, Ill. Filed Dec. 10, 1968.

INVERTAVOLT

For Electrical Current Inverters for Converting Direct Current to Alternating Current (Int. Cl. 9).
First use Prior to 1955.

SN 318,373. Republic Controls Corp., Syracuse, N.Y. Filed Feb. 5, 1969.

LITEtronic

For Electronic Pilot Relight Ignition System (Int. Cl. 9).
First use on or before July 31, 1968.

SN 320,877. Tri-Data, Mountain View, Calif. Filed Mar. 5, 1969.

TRI-DATA

For Electronic, Mechanical and Electromechanical Equipment Used in Automatic Data Processing—Namely, Magnetic Tape Writers and Readers (Int. Cl. 9).
First use Dec. 27, 1968.

SN 324,147. A. C. Weber Co., Inc., Chicago, Ill. Filed Apr. 10, 1969.

PHOENIX

For Radios, Both FM and AM, All Monaural and Stereo, and Parts Thereof (Int. Cl. 9).
First use Mar. 6, 1969.

SN 324,904. Fibron Wolfgang Mellert KG, Bretten, Germany. Filed Apr. 18, 1969.

FLUOLITE

For Electrical Lighting Fixture Components (Int. Cl. 9).
First use June 27, 1968; in commerce June 27, 1968.

SN 330,642. Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany. Filed June 20, 1969.

HERKON

Owner of German Reg. No. 719,041, dated Sept. 24, 1957.
For Electrical Contacts (Int. Cl. 9).

SN 332,434. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed July 14, 1969.

STATEX

For Voltage Regulators and Exciters for Field Windings of Rotating Electrical Machines (Int. Cl. 9).
First use on or about July 1, 1966.

SN 333,130. Hi-Tek Corporation, Santa Ana, Calif. Filed July 22, 1969.

HI-TEX

For Electrical Switches; Phase Sequence Relays and Indicators; Flashers; Voltage and Current Sensors; and Power Monitors (Int. Cl. 9).
First use Apr. 21, 1967.

SN 334,487. The Okonite Company, Passaic, N.J. Filed Aug. 5, 1969.

ALULOX

For Aluminum Flexible Shield/Covering for Power Cable (Int. Cl. 9).
First use June 21, 1968.

SN 334,579. Gould Inc., St. Paul, Minn. Filed Aug. 6, 1969.

POWER BREED

For Storage Batteries (Int. Cl. 9).
First use Nov. 26, 1968.

SN 334,859. Multi-Flex Seals, Inc., New York, N.Y. Filed Aug. 8, 1969.

RUBROHM

For Electrically Conductive Seals for Providing Shielding or Grounding (Int. Cl. 9).
First use July 22, 1968.

SN 335,140. Hayakawa Electric Co., Ltd., Abeno, Osaka, Japan. Filed Aug. 12, 1969.

SHARP

Owner of U.S. Reg. Nos. 707,148, 737,474, and others.
For Solid State AM/FM/FM Stereo Modular Systems and Tuner Amplifiers and Matched Speakers, Bass and Treble Tone Control Thereof, Balance, Volume, AFC and Six-Position Function Controls Thereof, Jacks for Stereo Tape Recorders, Head Phones Thereof, and Transistor 2-Channel Transceivers (Int. Cl. 9).
First use June 1, 1968; in commerce June 1, 1968.

SN 341,581. Electro Products Laboratories, Inc., Chicago, Ill. Filed Oct. 24, 1969.

MINI-PROX

Owner of Reg. No. 872,925.
For Solid State Switches (Int. Cl. 9).
First use Sept. 19, 1969.

Class 22—Games, Toys, and Sporting Goods

SN 312,709. Volkman Manufacturing Company, Chicago, Ill. Filed Nov. 20, 1968.

CUSTOM CRAFT

For Golf Equipment—Namely, Golf Clubs, Consisting of Woods, Irons, and Putters; and Golf Balls (Int. Cl. 28).
First use on or about Jan. 30, 1962.

SN 318,569. Operation Bootstrap, Inc., Los Angeles, Calif. Filed Feb. 6, 1969.



For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Sept. 1, 1968.

SN 320,232. Atlas Athletic Equipment Company, St. Louis, Mo. Filed Feb. 27, 1969.



For Gymnasium Mats; Wrestling Mats; Wall Pads, and Post Pads; Gymnasium Equipment—Namely, Parallel Bars, Uneven Parallel Bars, Horizontal Bars, Horses, Balance Beams, Trampolines, Vaulting Stands and Boxes, Athletic Standards, Chinning Bars, Boundary Markers, Climbers, Climbing Ropes, Obstacle Courses, Peg Boards Having Pegs Used for Muscular Development, Tumbling Belts, Volleyball Standards and Nets; Baseball Equipment—Namely, Ball Carriers, Bases, Bat Bags, Batting Cages, Home Plates, Pitcher's Box Plates; Basketball Equipment—Namely, Backboards, Outdoor Backstops, Goals, Netgoals, Rebounders; Bean Bags; Boxing Equipment—Namely, Striking Bag Platforms, Boxers' Training Bags; Mat Covers; Home Mats; Line Marking Equipment; Exercise Scooters for Use by Children; Tennis Posts and Nets and Accessories; and Tug-O-War Ropes (Int. Cls. 27 and 28).
First use July 1, 1966.

SN 320,839. Midwest Technology Incorporated, St. Louis, Mo. Filed Mar. 5, 1969.

POK-O-GOLF

For Apparatus Sold as a Unit for Playing a Golf-Type Game (Int. Cl. 28).
First use at least as early as Oct. 31, 1968.

SN 321,680. Milton Bradley Company, Springfield, Mass. Filed Mar. 13, 1969.



For Modeling Clay for Use by Teachers, Artists, and Children (Int. Cl. 16).
First use Nov. 15, 1967.

SN 323,686. Dunham Brothers Company, Brattleboro, Vt. Filed Apr. 4, 1969.

MONTEVERDE

For Footwear—Namely, Ski Boots (Int. Cl. 25).
First use Apr. 12, 1964.

SN 324,397. Milton Bradley Company, Springfield, Mass. Filed Apr. 14, 1969.

LIMBO LEGS

For Equipment Comprising a Rotating Stick Apparatus for Playing an Action Game Involving the Jumping Over of the Stick (Int. Cl. 28).
First use Mar. 1, 1969.

SN 328,516. Topper Corporation, Elizabeth, N.J. Filed May 28, 1969.

I.M. 500 Track

No claim of exclusive right is made to "Track," apart from the mark as shown.
For Toy Car Racing Set (Int. Cl. 28).
First use May 6, 1969.

SN 330,784. James W. Strader, Fort Lauderdale, Fla. Filed June 23, 1969.

DIAMOND EYE

For Artificial Fishing Lures (Int. Cl. 28).
First use June 1968.

SN 330,909. Curl-Master Brooms Inc., Champlain, N.Y. Filed June 26, 1969.



For Curling Brooms (Int. Cl. 28).
First use October 1967.

SN 331,140. American Steel Box Corp., Chicago, Ill. Filed June 27, 1969.

RUTLEDGE

For Golf Clubs, and Golf Club Carts (Int. Cl. 28).
First use at least as early as 1926.

SN 334,942. Mattel, Inc., Hawthorne, Calif. Filed Aug. 11, 1969.

SLIP DISC

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use July 8, 1969.

SN 336,374. Mattel, Inc., Hawthorne, Calif. Filed Aug. 27, 1969.

BABY SO-HIGH

No claim of exclusive right is made for the word "Baby" apart from the mark.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use June 16, 1969.

SN 336,375. Mattel, Inc., Hawthorne, Calif. Filed Aug. 27, 1969.

BABY VELVET

No claim of exclusive right is made for the word "Baby" apart from the mark.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use June 18, 1969.

SN 336,376. Mattel, Inc., Hawthorne, Calif. Filed Aug. 27, 1969.

BOOMY BOOMER

For Toy Drum (Int. Cl. 28).
First use July 8, 1969.

SN 336,378. Mattel, Inc., Hawthorne, Calif. Filed Aug. 27, 1969.

BRAD

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use July 8, 1969.

SN 336,379. Mattel, Inc., Hawthorne, Calif. Filed Aug. 27, 1969.

GLENDA

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use July 8, 1969.

SN 336,521. Mattel, Inc., Hawthorne, Calif. Filed Aug. 28, 1969.

MOTHER WHAT NOW

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use June 16, 1969.

SN 338,726. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

SEA JET

For Toy Vehicle (Int. Cl. 28).
First use Aug. 5, 1969.

SN 339,510. Mattel, Inc., Hawthorne, Calif. Filed Oct. 2, 1969.

I WISH I WERE

For Educational Toy Comprising a Phonograph and Pictures With Indexing Means To Cause Sound Reproduction Relevant to a Picture Indexed (Int. Cl. 28).
First use Aug. 5, 1969.

SN 339,511. Mattel, Inc., Hawthorne, Calif. Filed Oct. 2, 1969.

NITTY GRITTY KITTY

For Toy Automobile (Int. Cl. 28).
First use Aug. 5, 1969.

SN 339,807. Mattel, Inc., Hawthorne, Calif. Filed Oct. 6, 1969.

PUFF

For Toy Stuffed Dog (Int. Cl. 28).
First use Aug. 14, 1969.

SN 340,223. Parker Brothers, Inc., Salem, Mass. Filed Oct. 9, 1969.

ROLL-ETTE

For Equipment for Playing a Ball and Top Game (Int. Cl. 28).
First use June 17, 1969.

SN 340,316. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

DOUBLE THREAT

For Toy Automobile (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,317. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

BERTHA

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,321. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

STOP DOT

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Sept. 5, 1969.

SN 340,721. Mattel, Inc., Hawthorne, Calif. Filed Oct. 15, 1969.

THE DEMON

For Toy Automobile (Int. Cl. 28).
First use July 8, 1969.

SN 340,885. Mattel, Inc., Hawthorne, Calif. Filed Oct. 16, 1969.

MYSTIQUE

For Toy Astrology, Fortune Telling, Handwriting, and Palmistry Kit (Int. Cl. 28).
First use Aug. 8, 1969.

SN 341,982. George Ihnat, Jr., d.b.a. Big I Headgear, Worth, Ill. Filed Oct. 29, 1969.

BIG I

For Wrestling Headgear (Int. Cl. 28).
First use on or about May 23, 1969.

SN 341,989. Mattel, Inc., Hawthorne, Calif. Filed Oct. 29, 1969.

SUE 'N LOU

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 8, 1969.

SN 341,990. Mattel, Inc., Hawthorne, Calif. Filed Oct. 29, 1969.

GOLLY WOBBLE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 8, 1969.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 302,515. The Reece Corporation, Waltham, Mass. Filed July 11, 1968.

Air·O·Sensor

For Industrial Control Means for Sewing Machines—Namely, Mechanisms Which Automatically Start and Stop the Machine and Trim Binding and Thread at the Beginning and End of Work Pieces (Int. Cl. 7).
First use Nov. 21, 1967.

SN 302,517. The Reece Corporation, Waltham, Mass. Filed July 11, 1968.

Air·O·Shear

For Air and Electrically Operated Means for Trimming Excess Binding Material on Footwear-Manufacturing Sewing Machines (Int. Cl. 7).
First use Nov. 21, 1967.

SN 311,921. Pneumafil Corporation, Charlotte, N.C. Filed Nov. 12, 1968.

PNEUMABLO

Owner of Reg. Nos. 527,089, 645,082, and others.
For Apparatus for Cleaning Textile Mill Equipment Employing Both Suction and Blown Air Streams (Int. Cl. 7).
First use in or before July 1968.

SN 315,797. U.N. Alloy Steel Corporation, d.b.a. U.S. Knife Company, Boston, Mass. Filed Jan. 3, 1969.



The industrial knife is disclaimed apart from the mark as shown.
For Industrial Knives (Int. Cl. 8).
First use Sept. 11, 1967.

SN 316,212. Kabushiki-Kaisha Skikishima Tipton, d.b.a. Shikisima Tipton Mfg. Co., Ltd., Minamiku, Nagoya, Japan. Filed Jan. 9, 1969.

TIPTON Vibro-Compact

For Metal Surface Finishing Machines—Namely, Tumbling Barrels (Int. Cl. 7).
First use at least as early as May 1968; in commerce at least as early as May 1968.

SN 319,375. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.



Owner of Reg. Nos. 861,347, 878,585, and others.
For Fluid Actuated Power Steering Boosters, Fluid Actuated Starters for Engines, and Parts Therefor (Int. Cl. 7).
First use Aug. 16, 1967.

SN 319,754. Kennametal, Inc., Latrobe, Pa. Filed Dec. 17, 1968.

C06

Owner of Reg. Nos. 528,690, 528,695, 776,137, and others.
For Wear Resisting Pieces Consisting of Hard Ceramic Material in the Form of Cutting Tool Inserts—Namely, Inserts for Use in Dies and Tools for Cutting, Shaping, or Forming Materials (Int. Cl. 7).
First use Apr. 1, 1968.

SN 320,124. Central Engineering Co., Inc., Milwaukee, Wis. Filed Feb. 26, 1969.

HYDRO-SPREADER

For Vehicle Mounted Granular Material Spreaders (Int. Cl. 7).
First use Oct. 15, 1950.

SN 320,961. Meca-Meccanotecnica Cassanese S.n.c., Cassano Magnago (Varese), Italy. Filed Mar. 6, 1969.

MECA

Priority claimed under Sec. 44(d) on Italian application Filed Nov. 15, 1968; Reg. No. 240,360, dated Oct. 7, 1969.
For Automatic Quilting Machines (Int. Cl. 7).

SN 321,195. René de la Coussaye, Paris, France. Filed Mar. 10, 1969.

PACKTABLE

For Carton Sealing Machines (Int. Cl. 7).
First use Apr. 9, 1962; in commerce Apr. 9, 1962.

SN 326,424. Poly-Matic Fountain, Inc., Siler City, N.C. Filed May 5, 1969.

POLY-MATIC

For Automatic Drinkers for Watering Poultry (Int. Cl. 21).
First use Jan. 22, 1969.

SN 328,317. Louis Marx & Co., Inc., New York, N.Y. Filed May 26, 1969.

STUDENTWRITER

For Typewriters (Int. Cl. 16).
First use May 14, 1969.

SN 334,957. David O. Allen, d.b.a. Claymore Co., San Diego, Calif. Filed Aug. 11, 1969.

BLU-TOPPER

For Hand-Operated Hammer (Int. Cl. 8).
First use Feb. 28, 1969.

SN 335,222. Gemco Electric Company, Clawson, Mich. Filed Aug. 13, 1969.

DRIVE-CHEK

For Sub-Base for Chain or Belt Driven Mechanism (Int. Cl. 7).
First use on or about Mar. 20, 1969.

SN 335,225. Hyco, Inc., Ashland, Ohio, assignee of Hyco Incorporated, Ashland, Ohio. Filed Aug. 13, 1969.

HYCO

For Hydraulic Cylinders (Int. Cl. 7).
First use September 1949.

SN 335,859. Fishburne Equipment Company, Inc., Arden, N.C. Filed Aug. 21, 1969.

FISHBURNE

For Hydraulically Operated Tobacco Presses, Hydraulically Operated Baling Presses, and Hydraulic Pump Units (Int. Cl. 7).
First use at least as early as Jan. 1, 1960.

SN 341,747. Hilmor Limited, Stevenage, England. Filed Oct. 27, 1969.

HILMOR

Owner of British Reg. No. 433,610, dated Jan. 25, 1923.
For Pipe and Tube Bending Machines (Int. Cl. 7).
First use January 1923; in commerce March 1969.

SN 341,750. Littleford Bros., Inc., Cincinnati, Ohio. Filed Oct. 27, 1969.

LODIGE

For Industrial Mixing Machinery (Int. Cl. 7).
First use May 1961.

Class 24 — Laundry Appliances and Machines

SN 331,011. Bishop Freeman Company, Evanston, Ill. Filed June 26, 1969.

BISHOpad

Owner of Reg. No. 589,298 and others.
For Pads for the Pressing Surface of a Garment Pressing Machine (Int. Cl. 7).
First use on or about Jan. 8, 1969.

SN 333,954. U.S. Industries, Inc., New York, N.Y. Filed July 30, 1969.

WEBCOR

Owner of Reg. Nos. 547,309, 762,349, and others.
For Automatic Clothes Washers and Electric Dryers (Int. Cl. 7).
First use Aug. 9, 1968.

Class 25—Locks and Safes

SN 334,606. Norris Industries, Inc., Los Angeles, Calif. Filed Aug. 6, 1969.

WAKE

For Dood Locks and Parts Thereof (Int. Cl. 6).
First use June 18, 1969.

Class 26—Measuring and Scientific Appliances

SN 295,221. Dero Research and Development Corporation, Huntington, N.Y. Filed Apr. 9, 1968.

Sage II

For Electronic Calculators (Int. Cl. 9).
First use Feb. 14, 1968.

SN 295,775. Spectrolite Optics, Inc., New York, N.Y. Filed Apr. 16, 1968.

SPECTROLITE

For Ophthalmic Lens (Int. Cl. 9).
First use at least as early as June 6, 1966.

SN 308,287. General Nucleonics Inc., Columbus, Ohio. Filed Sept. 26, 1968.



For Machinery Sold as a Unit To Prevent Pilferage—Namely, a Control Box, a Magnetizer or Demagnetizer Machine, a Pair of Posts With an Electronic Charge Running Between Them for Detecting Magnetized Plates; and Separate Demagnetizer for Plates; and Detection Plates Used With the Above (Int. Cl. 9).
First use May 1962.

SN 310,848. Cadillac Optical Corp., New York, N.Y. Filed Oct. 30, 1968.

MICROPERE

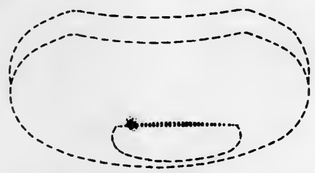
For Microscopes (Int. Cl. 9).
First use December 1960.

SN 313,408. Firma G. Reicherter, Beteiligungs- und Verwaltungsgesellschaft mit beschrankter Haftung, Esslingen am Neckar, Germany. Filed Dec. 2, 1968.

BRIVISOR

For Hardness Testing and Measuring Machines (Int. Cl. 9).
First use 1938; in commerce 1938.

SN 314,768. Univis Inc., Fort Lauderdale, Fla. Filed Dec. 18, 1968.



The mark comprises a plurality of lines extending generally transversely on the surface separating the upper portion of the segment and the body of the lens. Said lines comprise the mark and are not for the purpose of indicating color.
For Multifocal Ophthalmic Lenses and Lens Blanks (Int. Cl. 9).
First use Oct. 11, 1968.

SN 315,468. Brooks Research and Manufacturing, Inc., Kansas City, Mo. Filed Dec. 31, 1968.



For Electrical and Electronic Test Equipment—Namely, Electric Circuit Analyzers, Electrical Wiring System Analyzers, and Parts Therefor (Int. Cl. 9).
First use in or before March 1966.

SN 316,029. Prescott L. Spaulding, d.b.a. Bio-Medical Electronics, San Diego, Calif. Filed Jan. 7, 1969.

CONSTANT CARE

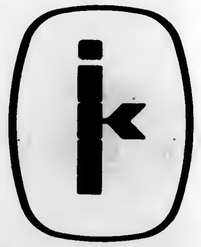
For Electronic Medical Testing Equipment and System That Presents on a Common Cathode Ray Tube Display and/or a Speaker at a Remote Location, a Patient's Vital System, Such as EKG, Temperature and Photocardiogram Information (Int. Cl. 10).
First use Dec. 9, 1968.

SN 316,401. Astro Tool Co., Inc., Hawthorne, Calif. Filed Jan. 13, 1969.



For Testing and Measuring Tools—Namely, Contact Retension Test Tools and Dial Indicators Useful for Targeting Tools of Numerical Control Machines (Int. Cl. 9).
First use May 1964.

SN 317,569. IKL Incorporated, Newport Beach, Calif. Filed Jan. 27, 1969.



For Bidirectional Digital Counters, Digital Micrometers, Incremental Encoders, Display Control Units, Programmable Punch Control Units, and Electronic Consoles for Displaying Electrically Signalled Position Coordinates and for Controlling a Tape Punch or Digital Printer for Recording Same (Int. Cl. 9).
First use in or before October 1966.

SN 318,938. Donald L. Adams, d.b.a. DA Mfg. Co., Tulia, Tex. Filed Feb. 12, 1969.

ZEROING MANIFOLD

Applicant disclaims the word "Manifold" apart from the mark as a whole.
For Valves To Be Used for Calibrating Flowmeters and Calibrating Differential Pressure Transmitters (Int. Cl. 9).
First use June 28, 1967.

SN 319,920. Leeds & Northrup Company, North Wales, Pa. Filed Feb. 24, 1969.

AEROSCAN

For Gas-Analyzing Monitor for Measuring Gaseous Constituents in the Air (Int. Cl. 9).
First use Oct. 29, 1968.

SN 323,292. Gulf Aerospace Corporation, Houston, Tex. Filed Apr. 1, 1969.

gac

For Radiation Detecting Equipment, Electronic Telemetering Devices, Data Processing and Acquisition Equipment; and Electronic Test Equipment—Namely, Analog and Digital Check-Out Devices (Int. Cl. 9).
First use September 1967.

SN 330,827. Exact Electronics, Inc., Hillsboro, Oreg. Filed June 24, 1969.



For Electronic Test Equipment—Namely, Wave Form Generators, Digital Meters and Recorders (Int. Cl. 9).
First use March 1946.

SN 332,201. Computer Control Systems, Incorporated, Dallas, Tex. Filed July 10, 1969.

TELESWITCHER

For Computer Controlled Information Switching Systems, Specifically Such Systems Used in Conjunction With Communication Networks for Routing Teletypewriter Messages or Other Data Over Said Communication Networks (Int. Cl. 9).
First use at least as early as May 27, 1969.

SN 332,621. Lava-Simplex Internationale, Inc., Chicago, Ill. Filed July 15, 1969.

SIMPLI-MATIC

For Photographic Still Cameras (Int. Cl. 9).
First use June 11, 1969.

SN 333,582. Lumitron Corp., Los Angeles, Calif. Filed July 25, 1969.

SPRAYLITE

For Fiber Optic Lamps (Int. Cl. 11).
First use June 20, 1969.

SN 333,605. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed July 25, 1969.

MULTICON

For Graphic Arts Cameras, and Parts Thereof (Int. Cl. 9).
First use July 10, 1969.

SN 334,531. Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. Filed Aug. 6, 1969.

AGFAMATIC

Owner of German Reg. No. 782,366, dated Apr. 12, 1962; and U.S. Reg. Nos. 215,536 and 244,454.
For Photographic Cameras and Parts Thereof (Int. Cl. 9).

SN 335,066. Scientific Research Instruments Corporation, Baltimore, Md. Filed Aug. 11, 1969.

MEDSPECT

For Mass Spectrometers (Int. Cl. 9).
First use at least as early as July 3, 1969.

SN 335,369. The Ohio Thermometer/Sign Company, Springfield, Ohio. Filed Aug. 14, 1969.



For Thermometers, Barometers, Rain Gages and Hygrometers (Int. Cl. 9).
First use May 1, 1969.

SN 344,303. Textron Inc., Providence, R.I. Filed Nov. 24, 1969.

STRAIGHT-DATE

For Rulers (Int. Cl. 16).
First use June 3, 1969.

Class 27 — Horological Instruments

SN 336,673. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 29, 1969.

ARCTIC KING

Owner of Reg. No. 634,372 and others.
For Watches and Parts Thereof (Int. Cl. 14).
First use May 9, 1969.

Class 28 — Jewelry and Precious-Metal Ware

SN 331,445. Textron Inc., Providence, R.I. Filed June 30, 1969.

DECATHLON

For Bracelets, Including Watch Bracelets (Int. Cl. 14).
First use June 18, 1969.

SN 333,314. TNT, Inc., Acton, Mass. Filed July 23, 1969.

THING RING

The word "Ring" is disclaimed apart from the mark as shown.
For Rings (Int. Cl. 14).
First use July 3, 1969.

SN 333,525. Bowles Watch Band Co., Denver, Colo. Filed July 25, 1969.

SHANON

For Watch Bands (Int. Cl. 14).
First use May 23, 1968.

SN 335,261. Rink's Department Stores, Inc., Cleveland, Ohio. Filed Aug. 13, 1969.

HI CODE

For Watch Bands, Costume Jewelry, and Men's Cufflinks and Tie Bar Sets (Int. Cl. 14).
First use Apr. 1, 1969.

SN 342,920. Zale Corporation, Dallas, Tex. Filed Nov. 6, 1969.

THE LIGHT OF PEACE

For Diamonds and Diamond Rings (Int. Cl. 14).
First use Oct. 28, 1969.

Class 31 — Filters and Refrigerators

SN 334,595. S. S. Kresge Company, Detroit, Mich. Filed Aug. 6, 1969.

Kmart

For Oil Filters, Air Filters, and Gas Filters (Int. Cl. 11).
First use on or before Mar. 10, 1969.

SN 335,558. Duluth Filter Company, Duluth, Minn. Filed Aug. 18, 1969.

RUILGARD

For Oil Filters (Int. Cl. 11).
First use Aug. 15, 1968.

Class 32 — Furniture and Upholstery

SN 323,792. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 7, 1969.

CAMELOT

For Window Shades (Int. Cl. 20).
First use January 1969.

SN 323,793. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 7, 1969.

TO-NITE

For Window Shades (Int. Cl. 20).
First use January 1969.

SN 338,151. Howard Parlor Furniture Co., Chicago, Ill. Filed Sept. 17, 1969.

REGENCY HOUSE

For Upholstered Living Room Furniture (Int. Cl. 20).
First use Oct. 18, 1965.

SN 340,279. Penthouse Furniture, Ltd., Springfield, Mo. Filed Oct. 9, 1969.

PENTHOUSE

For Living Room Furniture and Bed and Sofa Combinations (Int. Cl. 20).
First use June 15, 1969.

SN 341,111. Jasco Fiberglass Designs, Inc., Liverpool, N.Y. Filed Oct. 20, 1969.

MELON

For Chairs (Int. Cl. 20).
First use Sept. 30, 1969.

Class 33 — Glassware

SN 312,759. David Douglas & Co., Inc., Manitowoc, Wis. Filed Nov. 21, 1968.

DAVID DOUGLAS

"David Douglas" is the name of the president of applicant corporation.
For Beverage Servers and Tumblers (Int. Cl. 21).
First use Jan. 25, 1955.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 331,489. Aqua-Chem, Inc., Milwaukee, Wis. Filed July 1, 1969.

SPRAYMASTER

For Deaerator for Boiler Feed Water (Int. Cl. 11).
First use Oct. 24, 1968.

SN 335,017. Hearth Craft, Inc., Portland, Oreg. Filed Aug. 11, 1969.

HEARTH-A-FIRE

For Wall-Hung Prefabricated Metal Fireplace (Int. Cl. 11).
First use Mar. 27, 1969.

SN 335,018. Hearth Craft, Inc., Portland, Oreg. Filed Aug. 11, 1969.

POW-WOW

For Portable Outdoor Fireplace and Barbecue (Int. Cl. 11).
First use Dec. 2, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 324,684. J. N. Ceazan Company, Los Angeles, Calif. Filed Apr. 16, 1969.

HILLCREST

For Tires (Int. Cl. 12).
First use Dec. 11, 1968.

SN 337,791. Doral Tire & Rubber Co., Inc., Stowe, Ohio. Filed Sept. 12, 1969.

STRATA-BELT

For Pneumatic Tires (Int. Cl. 12).
First use July 28, 1969.

SN 340,829. W. S. Shamban & Co., Los Angeles, Calif. Filed Oct. 15, 1969.

DUROTEC

For Seals for Hydraulic and Pneumatic Actuators (Int. Cl. 17).
First use Aug. 25, 1969.

SN 341,837. McLeod Leather & Belting Company, Inc., Greensboro, N.C. Filed Oct. 27, 1969.

GREY HOUND

For Leather Belting Used for Power Transmission (Int. Cl. 7).
First use during March 1921.

SN 341,929. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Oct. 28, 1969.

ASTROSTUD

Owner of Reg. Nos. 837,952 and 872,496.
For Tires (Int. Cl. 12).
First use Sept. 30, 1969.

SN 341,930. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Oct. 28, 1969.

ROADMARK

For Tires (Int. Cl. 12).
First use Sept. 3, 1969.

SN 342,061. Portec, Inc., Oak Brook, Ill. Filed Oct. 29, 1969.

PORTEC

For Power Transmission, Conveying, and Elevating Belting (Int. Cl. 7).
First use Jan. 13, 1969.

SN 342,184. Sultan Enterprises, Inc., Asheville, N.C. Filed Oct. 30, 1969.

SULTAN

For Vehicle Tires (Int. Cl. 12).
First use January 1959.

Class 36 — Musical Instruments and Supplies

SN 338,388. General Electric Company, Schenectady, N.Y. Filed Sept. 19, 1969.

GE

For Phonographs, Combination Phonograph and Film Strip Viewer; Phonograph Records and Associated Film Strips With Accompanying Jackets; Tape Recorders, Tape Players and Accessories Therefor; Magnetic Tape and Pre-Recorded Magnetic Tape; Electric Guitars, and Electric Chord Organs (Int. Cl. 9).
First use at least as early as 1930 on phonographs.

SN 340,412. Motorola Automotive Products, Inc., Franklin Park, Ill. Filed Oct. 10, 1969.

STRATOLINE

For Automobile Stereo Tape Players (Int. Cl. 9).
First use Oct. 1, 1969.

Class 37—Paper and Stationery

SN 317,776. Tuckersharpe Pen Company, Inc., Richmond, Va. Filed Jan. 28, 1969.

PROMOTER

For Writing Instruments—Namely, Ball Point Pens (Int. Cl. 16).
First use at least as early as about April 1962.

SN 321,137. National Industries for the Blind, New York, N.Y. Filed Mar. 6, 1969.

SKI-CRAFT

For Ball Point Pens and Refills for Ball Point Pens (Int. Cl. 16).
First use Oct. 8, 1968.

SN 321,685. Irving Rubin, d.b.a. Irv Rubin Enterprises, Van Nuys, Calif. Filed Mar. 13, 1969.



Applicant disclaims the words "Magnetic" and "Album."
For Self-Adhering, Expandable Photographic Picture Albums (Int. Cl. 16).
First use Jan. 10, 1967.

SN 325,469. The Crystal Tissue Company, Middletown, Ohio. Filed Apr. 24, 1969.

DIPPITY DYE

For Art and Printing Paper (Int. Cl. 16).
First use Dec. 16, 1968.

SN 326,199. Chemolene Industries, Inc., Bordentown, N.J. Filed May 2, 1969.

DEBONAIR

For Writing Instruments—Namely, Felt-Tip Marking Pens and Markers (Int. Cl. 16).
First use Apr. 18, 1969.

SN 326,200. Chemolene Industries, Inc., Bordentown, N.J. Filed May 2, 1969.



Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claims to the notation "Pak" apart from the mark as shown.
For Writing Instruments—Namely, Felt-Tip Marking Pens and Markers (Int. Cl. 16).
First use Apr. 18, 1969.

SN 329,135. Robert K. Spiro, M.D., Bloomfield, N.J. Filed June 4, 1969.

MEDI-DATE



Applicant disclaims the representation of the caduceus apart from the mark as shown.
For Desk Calendar (Int. Cl. 16).
First use June 2, 1969.

SN 334,284. S. E. Rykoff & Co., Los Angeles, Calif. Filed Aug. 4, 1969.

SERCOFOLD

Owner of Reg. Nos. 770,093 and 798,347.
For Paper Napkins (Int. Cl. 16).
First use Apr. 22, 1969.

SN 334,286. S. E. Rykoff & Co., Los Angeles, Calif. Filed Aug. 4, 1969.

SERCO CUSTOM

Owner of Reg. Nos. 770,093 and 798,347.
For Paper Napkins (Int. Cl. 16).
First use Apr. 22, 1969.

Class 38—Prints and Publications

SN 282,806. Clinton A. Kemp, New York, N.Y. Filed Oct. 18, 1967.



For Pamphlet Dedicated to a Scientific Analysis of Numbers (Int. Cl. 16).
First use June 8, 1967.

SN 283,349. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Oct. 25, 1967.



For Comic Magazine and Stories in Illustrated Form (Int. Cl. 16).
First use on or about Sept. 14, 1967.

SN 303,300. The Franzen Corporation, New York, N.Y. Filed July 22, 1968.

IMA

For Teaching and Instructional Materials—Namely, Books and Booklets (Int. Cl. 16).
First use Mar. 2, 1967.

SN 310,154. Visual Education Association, Inc., Dayton, Ohio. Filed Oct. 21, 1968.

THINK SPANISH

For the purpose of this application only and without waiver of common law rights, applicant makes no claim to the word "Spanish" used apart from the mark as shown.
For Study-Aids for Self-Teaching Language, Comprising Visual Textual Cards and Accompanying Phono-Records (Int. Cl. 16).
First use Aug. 30, 1968.

SN 329,306. Abigail Brown, New York, N.Y. Filed June 6, 1969.

HEAD SHEET

For Periodic Publication Presently in the Form of a Trade Report (Int. Cl. 16).
First use May 14, 1969.

SN 332,411. Cord Communications Corporation, New York, N.Y. Filed July 14, 1969.

CORD

For Magazines Directed to Recreational Activities (Int. Cl. 16).
First use Mar. 10, 1969.

SN 332,565. Sternco Industries, Inc., New York, N.Y. Filed June 16, 1969.

Sternco

For Pet Books (Int. Cl. 16).
First use Apr. 25, 1969.

SN 333,383. Curriculum Innovations, Inc., Chicago, Ill. Filed July 24, 1969.

ci

For Magazine Published Every Other Week (Int. Cl. 16).
First use Apr. 23, 1969.

SN 334,291. American Numismatic Association, d.b.a. The American Numismatic Association, Colorado Springs, Colo. Filed Aug. 4, 1969.



For Monthly Booklet Relating to Mediums of Exchange, Including Coins and Paper Money and Medals (Int. Cl. 16).
First use in or about April 1892.

SN 341,846. Peoria Journal Star, Inc., Peoria, Ill. Filed Oct. 27, 1969.



For Magazine (Int. Cl. 16).
First use January 1967.

Class 39—Clothing

SN 287,022. Lees Manufacturing Co., Cannon Falls, Minn. Filed Dec. 15, 1967.

KID DUDS

Without waiver of common law rights, applicant disclaims any exclusive rights in the word "Duds" apart from the mark as shown. Owner of Reg. No. 548,878.
For Children's Sleep, Lounge and Sportswear—Namely, Pajamas, Nightgowns, Robes, Peignoirs, Shorts Sets, and Shifts (Int. Cl. 25).
First use about October 1954.

SN 320,600. Hayes Garment Company, Nashville, Tenn. Filed Mar. 3, 1969.

CONTUR CASUALS

The word "Casuals" is disclaimed apart from the mark as a whole.
For Men's and Boys' Clothing—Namely, Pants (Int. Cl. 25).
First use Apr. 14, 1967.

SN 326,148. Treasure Cove Sportswear, Inc., New York, N.Y. Filed May 1, 1969.

Treasure Cove

For Ladies' Dresses, Shifts, Coats, Raincoats, Slacks, Skirts, Culottes, Shorts, Jumpsuits, Blouses, Shirts, Shells, Sweaters, Knit Tops and Jackets (Int. Cl. 25).
First use on or about Mar. 26, 1969.

SN 329,023. Worley Sewell Company, Bremen, Ga. Filed June 3, 1969.

YEARMEN

For Men's, Boys', Ladies' and Girls' Coats and Jackets (Int. Cl. 25).
First use Jan. 20, 1969.

SN 329,473. Holiday Sportswear Manufacturing Company, Toronto, Ontario, Canada. Filed June 9, 1969.



The drawing is lined for the color red.
For Coats, Suits, Skirts, Jackets, Jumpers, Slacks, Raincoats, Vests, Jerkins, Shirts, Blouses, Stockings, Hats, Caps, Dresses, and Sweaters (Int. Cl. 25).
First use at least 1958; in commerce at least 1958.

SN 330,599. Harex-Lorna Industries, Inc., East Providence, R.I. Filed June 20, 1969.

MISS SUSAN

For Women's Hosiery (Int. Cl. 25).
First use June 24, 1949.

SN 330,643. Stringbean, Inc., New York, N.Y. Filed June 20, 1969.

stringbeans

For Women's, Teens', and Girls' Sportswear—Namely, Slacks, Shorts, Pants, Pants-Tops, Dresses, Skirts, Suits and Vests, Blouses and Shirts (Int. Cl. 25).
First use May 27, 1968.

SN 330,837. Jeffrey Herbert Schwarz, d.b.a. J & S Fashions, Asheboro, N.C. Filed June 24, 1969.

Willow Tree

For Ladies' Ready-To-Wear—Namely, Dresses (Int. Cl. 25).
First use May 7, 1969.

SN 330,843. The Moyer Co., New York, N.Y. Filed June 24, 1969.

NO-POP POCKET

For Men's Slacks (Int. Cl. 25).
First use May 23, 1969.

SN 331,808. Aris Gloves, Inc., New York, N.Y. Filed July 7, 1969.

HAND JOY GLOVES

The word "Gloves" is disclaimed apart from its use in the mark.
For Ladies' Stretch Fabric Gloves (Int. Cl. 25).
First use May 4, 1969.

SN 333,585. Manhattan Industries, Inc., New York, N.Y. Filed July 25, 1969.

BEACH GLASS

For Dress Shirts and Sport Shirts (Int. Cl. 25).
First use June 25, 1969.

SN 333,756. Seminole Manufacturing Company, Columbus, Miss. Filed July 28, 1969.

"8-PLUS"

For Men's and Boys' Slacks (Int. Cl. 25).
First use Feb. 17, 1969.

SN 333,897. Ashear Bros., Inc., New York, N.Y. Filed July 30, 1969.

BACHELORS DOZEN

For Handkerchiefs and Kerchiefs (Int. Cl. 24).
First use June 17, 1969.

SN 334,093. Kayser-Roth Corporation, New York, N.Y. Filed July 31, 1969.

RAFFLES

For Men's and Boys' Swimsuits, Cabana Sets, Suburban Coats, Car Coats, Raincoats, Belts, Shorts, Underwear, Undershirts, T-Shirts, Suits, Sport Coats, Jackets, Slacks, Shirts, Sport Shirts, Ties, Shoes, Slippers, Sweaters, Pajamas, Hosiery, and Robes; Ladies' and Girls' Swimsuits, Shorts, Slacks, Blouses, Sweaters, Hosiery, Panty Hose, Tights, Shoes, and Slippers (Int. Cl. 25).
First use June 13, 1969.
Subj. to Intf. wies SN 332,784 and SN 337,757.

SN 334,657. Wembley, Inc., New Orleans, La. Filed Aug. 6, 1969.

WESTLOR SUPREME

For Men's Neckwear (Int. Cl. 25).
First use May 1, 1969.

SN 337,189. Norlyn Oy, Tornio, Finland. Filed Sept. 5, 1969.

NORLYN

For Panty Hose and Hosiery (Int. Cl. 25).
First use no later than Feb. 14, 1969; in commerce Feb. 14, 1969.

SN 338,502. White Stag Manufacturing Co., Portland, Oreg. Filed Sept. 22, 1969.

Ski-Burban
White Stag

Owner of Reg. Nos. 369,881, 868,238, and others.
For Ski Coat (Int. Cl. 25).
First use Feb. 25, 1964.

SN 339,963. I. Shalom & Co., Inc., New York, N.Y. Filed Oct. 7, 1969.



Owner of Reg. Nos. 513,697, 515,912, and 540,024.
For Handkerchiefs (Int. Cl. 24).
First use 1913.

SN 341,103. Computerized Knitwear Incorporated, Brooklyn, N.Y. Filed Oct. 20, 1969.

COMPUKNIT

For Men's and Boys' Shirts (Int. Cl. 25).
First use Oct. 14, 1969.

SN 341,104. Computerized Knitwear Incorporated, Brooklyn, N.Y. Filed Oct. 20, 1969.

CKI

For Men's and Boys' Shirts (Int. Cl. 25).
First use Oct. 14, 1969.

SN 341,976. Emle Mills, Inc., New York, N.Y. Filed Oct. 29, 1969.

EMLE PART II

Owner of Reg. Nos. 781,808 and 806,004.
For Panty Hose and Stockings (Int. Cl. 25).
First use Sept. 27, 1969.

SN 341,991. Munsingwear, Inc., Minneapolis, Minn. Filed Oct. 29, 1969.

MOONSHINER'S

For Men's Sleep Shirts (Int. Cl. 25).
First use Oct. 21, 1969.

SN 342,124. Pembrooke Lingerie Co., Inc., New York, N.Y. Filed Oct. 30, 1969.

BODY HUG

For Intimate Apparel—Namely, Slips and Sleepwear, Half-Slips, Bras, Foundations, and Leisurewear (Int. Cl. 25).
First use December 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 325,603. Hair Fair, Inc., Miami Beach, Fla. Filed Apr. 25, 1969.



For False Eye Lashes (Int. Cl. 3).
First use on or before Apr. 1, 1969.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 325,060. Melco Textile Corporation, Carlstadt, N.J. Filed Apr. 21, 1969.



For Textile Fabrics Used for Making Into Slacks, Coats, Suits, Blouses, and Pants (Int. Cl. 22).
First use Apr. 9, 1969.

SN 329,602. Burlington Industries, Inc., New York, N.Y. Filed June 10, 1969.

P O R T F O L I O

Owner of Reg. No. 696,118.
For Textile Fabrics in the Piece Suitable for Use in Men's and Boys' Suits, Coats and Slacks (Int. Cl. 24).
First use Feb. 2, 1959.

SN 337,757. Raffles Franchising, Inc., New York, N.Y. Filed Sept. 12, 1969.

RAFFLES

For Upholstery Fabrics, Curtain Fabrics, and Fabrics for Use in Making Men's Clothing (Int. Cl. 24).
First use July 14, 1969.
Subj. to Intf. with SN 334,093.

SN 338,710. Deering Milliken, Inc., New York, N.Y. Filed Sept. 24, 1969.

MILLIWOOL

For Textile Fabrics of Wool and Combinations of Wool and Synthetic Fibers (Int. Cl. 24).
First use Sept. 17, 1969.

SN 340,082. Deering Milliken, Inc., New York, N.Y. Filed Oct. 8, 1969.

TELSAX

For Carpeting (Int. Cl. 27).
First use Sept. 24, 1969.

SN 340,475. Deering Milliken, Inc., New York, N.Y. Filed Oct. 13, 1969.

RUB-RAP

For Industrial Fabrics Made of Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).
First use Sept. 17, 1969.

SN 341,318. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

CHATTERTWIST

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as August 1941.

SN 341,319. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

PAGODA

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as July 1907.

SN 341,320. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

TWILLTOUR

Owner of Reg. No. 507,027.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Feb. 27, 1942.

SN 341,321. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

CONSIGN

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Sept. 1, 1968.

SN 341,326. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

MIMOSA

Owner of Reg. No. 507,255.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Apr. 1, 1924.

SN 341,328. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 22, 1969.

SINCERITY

Owner of Reg. No. 507,955.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as July 18, 1940.

SN 341,687. Norwood Knitting Mills, Inc., Norwood, N.J. Filed Oct. 24, 1969.

CRO-SHEL

For Knitted Fabrics for Use in Men's and Women's Sportswear and Outerwear (Int. Cl. 24).
First use Oct. 1, 1969.

SN 342,208. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

MIRAGE

For Dress Goods in the Piece, Composed of Man-Made Fibers, and Dress Goods in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as February 1963.

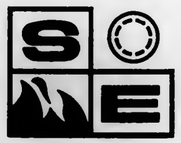
Class 43 — Thread and Yarn

SN 330,011. S. E. Polymers, Inc., Clare, Mich. Filed June 13, 1969.

SEQUAN

For Synthetic Plastic Fibres for Use in Drapery and Like Material (Int. Cl. 22).
First use Apr. 24, 1969.

SN 330,012. S. E. Polymers, Inc., Clare, Mich. Filed June 13, 1969.



For Synthetic Plastic Fibres for Use in Drapery and Like Material (Int. Cl. 22).
First use Apr. 24, 1969.

SN 330,106. Consolidated Foods Corporation, New York, N.Y. Filed June 16, 1969.

LIFE SAVER PACK

Owner of Reg. Nos. 351,582, 646,333, and 656,865.
For Sewing Thread on Bobbins for Use in Sewing Machines (Int. Cl. 23).
First use Jan. 17, 1969.

Class 44 — Dental, Medical, and Surgical Appliances

SN 313,395. Kenyon L. Baugher, d.b.a. Denpro Company, Denver, Colo. Filed Dec. 2, 1968.



Applicant disclaims the words "Quality Dental Products" apart from the mark as shown. The drawing is lined for the color brown, but no claim is made for color.
For Dental Instruments—Namely, Carbide Burs, Diamond Instruments, and Hand Pieces (Int. Cl. 10).
First use Nov. 14, 1968.

SN 315,919. Gilbert Hyde Chick Company, Oakland, Calif. Filed Jan. 6, 1969.



For Hospital Orthopedic and Fracture Equipment, Including, Particularly, Patient Transfer Devices, Orthopedic Turning Frames, Orthopedic Tables, Fracture Tables, and Infants' Cast Tables (Int. Cl. 10).
First use Oct. 15, 1968.

SN 315,920. Gilbert Hyde Chick Company, Oakland, Calif. Filed Jan. 6, 1969.

CHICK

For Hospital Orthopedic and Fracture Equipment, Including, Particularly, Patient Transfer Devices, Orthopedic Turning Frames, Orthopedic Tables, Fracture Tables, and Infants' Cast Tables (Int. Cl. 10).
First use Oct. 15, 1968.

SN 315,921. Gilbert Hyde Chick Company, Oakland, Calif. Filed Jan. 6, 1969.

CHICK

For Hospital Orthopedic and Fracture Equipment, Including, Particularly, Patient Transfer Devices, Orthopedic Turning Frames, Orthopedic Tables, Fracture Tables, and Infants' Cast Tables (Int. Cl. 10).
First use Oct. 15, 1968.

Class 45 — Soft Drinks and Carbonated Waters

SN 292,430. Meryl L. Stoddard, Scottsdale, Ariz. Filed Mar. 4, 1968.

DESERT SPICE DRINK

Applicant disclaims the words "Spice Drink" apart from the mark as shown.
For Flavored Soft Drink (Int. Cl. 32).
First use Feb. 28, 1968.

SN 318,270. The Kings Beverage Co. Inc., Brooklyn, N.Y. Filed Feb. 4, 1969.

Party King

For Carbonated Soft Drinks (Int. Cl. 32).
First use June 30, 1963.

Class 46 — Foods and Ingredients of Foods

SN 278,587. Fujiya Confectionery Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Aug. 18, 1967.

FUJIYA

For Candies, Especially Chocolate (Int. Cl. 30).
First use Nov. 16, 1910; in commerce Sept. 20, 1965.

SN 286,988. American Home Products Corporation, New York, N.Y. Filed Dec. 15, 1967.

PIZZAGETTI

For Canned Prepared Spaghetti With Sauce and Beef (Int. Cl. 30).
First use Dec. 6, 1967.

SN 293,948. Tony Reyes, d.b.a. El Sol Spanish Food Products, Los Angeles, Calif. Filed Mar. 22, 1968.



No claim to the exclusive right to the use of the word "Tortilla" is made apart from the composite mark as shown.
For Tortillas (Int. Cl. 30).
First use about Feb. 1, 1964.

SN 317,473. Strohmeyer & Arpe Company, d.b.a. United Pure Food Company, New York, N.Y. Filed S.R. Jan. 24, 1969; Am. P.R. Mar. 26, 1969.

MARIE ELISABETH

Owner of Reg. Nos. 586,259 and 736,592.
For Canned Sardines (Int. Cl. 29).
First use 1891.

SN 317,634. Smith's Pride Foods, Inc., Birmingham, Ala. Filed Jan. 27, 1969.



For Fresh and Frozen Poultry (Int. Cl. 29).
First use 1949.

SN 317,783. Victor F. Weaver, Inc., New Holland, Pa. Filed Jan. 28, 1969.

Weaver

Owner of Reg. No. 610,484.
For Chicken Breast Roll; Sliced Chicken Breast Roll; Batter Dipped Chicken Breasts; Batter Dipped Chicken Thighs and Drumsticks; Batter Dipped Party Pak (Wing Sections); Rendered Chicken Fat; Batter Dipped Fried Chicken Liver; and Cubed Pressed Chicken (Int. Cl. 29).
First use Sept. 29, 1967, on rendered chicken fat; Dec. 31, 1948, in a different form.

SN 319,769. G. P. Gundlach & Company, Cincinnati, Ohio. Filed Feb. 24, 1969.

TWIRL

For Prepared Flavored Confection Syrups for Ice Cream and Sherbet, Prepared Fruited Syrups for Ice Cream and Sherbet, and Marshmallow (Int. Cl. 30).
First use Jan. 2, 1937.

SN 323,497. Pennwalt Corporation, Philadelphia, Pa., by merger and change of name from Wallace & Tiernan Inc., East Orange, N.J. Filed Apr. 2, 1969.

XALT

For Dough-Flavoring Additive of a Salt Character (Int. Cl. 30).
First use Dec. 27, 1968.

SN 325,905. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Apr. 29, 1969.

FLAVORMATES

For Chewing Gum (Int. Cl. 30).
First use at least as early as 1963.

SN 326,472. American Home Products Corporation, New York, N.Y. Filed May 6, 1969.



The portrait on the drawing is the likeness of "Hector Boiardi," whose consent is of record. Owner of Reg. Nos. 436,809, 796,864, and 807,854.
For Food Products—Namely, Prepared or Partially Prepared and Cartoned, Canned and Frozen Combinations of Meats, Poultry, Fish and Cheese With Vegetables, Sauces, Flavorings and Alimentary Pastes; Alimentary Pastes; Cheeses; Sauces and Sauce Mixes; Gravies; Seasonings Consisting of Spices, Herbs, Salts, Fruits and Vegetables in Powder, Paste and Liquid Forms, Sold Alone or in Combination With Each Other; Canned Soups; Cartoned Frozen Pizza; and Cartoned Pizza Mixes (Int. Cls. 29 and 30).
First use on or about Apr. 15, 1965.

SN 326,724. National Frosted Food Company, Inc., Oneida, N.Y. Filed May 8, 1969.

TOWN FAIR

For Frozen Cooked Dinners, Consisting of Meat With Gravy and/or Vegetables (Int. Cl. 29).
First use Apr. 2, 1969.

SN 327,129. Dansk Andelsost Vela Export a.m.b.a., Hjallese, Denmark. Filed May 13, 1969.

CONGRESS

For Cheese (Int. Cl. 29).
First use Oct. 8, 1968; in commerce Mar. 31, 1969.

SN 328,304. Interstate Bakeries Corporation, Kansas City, Mo. Filed May 26, 1969.

SNOOPY

For Dog Food (Int. Cl. 31).
First use during December 1968.

SN 329,751. Peavey Company, Minneapolis, Minn. Filed June 11, 1969.

MILLIONAIRE

For Prepared Doughnut Mix (Int. Cl. 30).
First use May 31, 1968.

SN 330,129. General Foods Corporation, White Plains, N.Y. Filed June 16, 1969.

SNACK-UPS

For Snack Food Product, Dough-Like in Nature With Various Snack Fillings, Such as, Meat, Cheese, and Pizza (Int. Cl. 30).
First use Mar. 11, 1969.

SN 330,398. Midwest Biscuit Company, Burlington, Iowa. Filed June 18, 1969.

MORNING COFFEE

For Cookies and Crackers (Int. Cl. 30).
First use May 1, 1969.

SN 330,613. National Starch and Chemical Corporation, New York, N.Y. Filed June 20, 1969.

PURE-FLO

For Modified Starch, Sold in Dry Form, for Use as a Stabilizer and Thickener in the Preparation of Food Products (Int. Cl. 30).
First use May 15, 1969.

SN 330,807. The Quaker Oats Company, Chicago, Ill. Filed June 24, 1969.

TOM MIX

"Tom Mix" is not the name of any particular living individual.
For Cat Food (Int. Cl. 31).
First use June 3, 1969.

SN 331,004. Agway, Inc., De Witt, N.Y. Filed June 26, 1969.

RESPOND

For Horse Feed (Int. Cl. 31).
First use Apr. 2, 1969.

SN 331,301. Agway, Inc., De Witt, N.Y. Filed June 30, 1969.

PASTUREPELS

For Dairy Feed (Int. Cl. 31).
First use Apr. 25, 1969.

SN 331,748. Haynes Milling Co., Inc., Portland, Ind. Filed July 3, 1969.

PEPPY CHASE

For Dog Food (Int. Cl. 31).
First use Mar. 31, 1969.

SN 332,138. Price & Lucas Co., Inc., Louisville, Ky. Filed July 9, 1969.

KENTUCKY BELLE

For Vinegar (Int. Cl. 30).
First use 1892.

SN 335,925. John Morrell & Co., Chicago, Ill. Filed Aug. 22, 1969.

FRONTIER

Owner of Reg. No. 75,232.
For Bacon and Sausage (Int. Cl. 29).
First use Feb. 20, 1904.

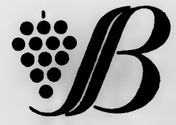
SN 339,277. Fantasy Flavors, Inc., Wheaton, Ill. Filed Sept. 30, 1969.

FANTASY

Owner of Reg. Nos. 712,573 and 726,316.
For Candy, Candy Toppings, and Candy Ingredients for Ice Cream (Int. Cl. 30).
First use Mar. 9, 1960.

Class 47 — Wines

SN 303,393. John Bardenheier Wine & Liquor Company, d.b.a. Bardenheier's Wine Cellars, St. Louis, Mo. Filed July 23, 1968.



For Wine (Int. Cl. 33).
First use July 5, 1968.

SN 309,286. D. Nicolaou Sons Co., Athens, Greece. Filed Oct. 9, 1968.

Mont Ambelos

For Wines (Int. Cl. 33).
First use December 1938, in commerce April 1952.

SN 312,868. Baron Philippe de Rothschild, Pauillac (Gironde), France. Filed Nov. 22, 1968.

Château Mouton Rothschild

The English translation of the term "Mouton" is "sheep."
For Wines (Int. Cl. 33).
First use 1853; in commerce 1853.

SN 329,507. Pedro Domecq, S.A., Cadiz, Spain. Filed June 9, 1969.

(RIO VIEJO)

The Spanish term "Rio Viejo" is translated as "old river."
For Wine (Int. Cl. 33).
First use July 6, 1934; in commerce on or about June 3, 1964.

Class 48 — Malt Beverages and Liquors

SN 311,571. Carlton and United Breweries Limited, Carlton, Victoria, Australia. Filed Nov. 7, 1968.



No claim is made to the word "Lager," separately and apart from the mark. Owner of U.S. Reg. No. 682,343.
For Beer (Int. Cl. 32).
First use Jan. 6, 1958; in comm e Oct. 4, 1963.

Class 50—Merchandise Not Otherwise Classified

SN 315,202. R. D. Bussard & Son, Inc., Albany, Oreg. Filed Dec. 26, 1968.

Bussard VICON-10

The numeral shown in the drawing forms no part of the mark and merely indicates the weight of the material used in the goods.

For Liners, Covers, and Miscellaneous Items Made of Vinyl-Coated Nylon Fabric, Including Basket Liners, Cover Caps, Extractor Covers, Linen Cart Covers, General Size Boat Covers and Car Top Carrier Covers, Bin Covers, Tarpaulins, Box Covers and Pool Covers (Int. Cls. 20 and 22).

First use at least as early as Sept. 1, 1965.

SN 319,149. Jane A. Ellis, Los Angeles, Calif. Filed Feb. 14, 1969.

GOURMET GALERIE

For Ornamental Placques (Int. Cl. 20).
First use Sept. 29, 1966.

SN 320,485. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

WONDERS OF AMERICA

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,488. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

AMERICAN LANDMARKS

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,497. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

HISTORY OF FLIGHT

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,503. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

ROAD TO THE FUTURE

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,509. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

SPACE AGE

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,541. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

CHAMPIONS OF LIBERTY

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,550. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

SPORTSARAMA

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,553. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

MAN OF THE YEAR

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,556. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

HEROES OF THE WEST

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,559. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

GREAT STARS

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,562. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

HISTORY MAKERS

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,570. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

LAND OF LIBERTY

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,572. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

SONS OF LIBERTY

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 320,575. The Franklin Mint, Inc., Yeadon. Pa. Filed Mar. 3, 1969.

REVOLUTIONARY HEROES

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Feb. 27, 1969.

SN 327,497. Hydrometals, Inc., Dallas, Tex. Filed May 16, 1969.

MAGNA-KOTE

For Lithographic Printing Plates (Int. Cl. 7).
First use Mar. 7, 1969.

SN 327,641. The Lewis Monument Co., Inc., Brooklyn, N.Y. Filed May 19, 1969.

Hall Mark MONUMENTS

Applicant disclaims the word "Monuments" apart from the mark as shown.

For Cemetery Monuments (Int. Cl. 19).
First use Oct. 1, 1968.

SN 335,820. Harry M. Brown, Jr., Vancouver, Wash. Filed Aug. 14, 1969.

Tuitti Fruitti

For Bird Feeders (Int. Cl. 21).
First use June 25, 1968.

SN 340,984. Curiel Products Corporation, Scottsdale, Ariz. Filed Oct. 17, 1969.

DRINKY MOUSE

For Plastic Drinking Straws in Odd or Fanciful Shapes, Including a Removable Animal Head (Int. Cl. 20).
First use Sept. 25, 1969.

Class 51—Cosmetics and Toilet Preparations

SN 301,913. Caravan de France, S.A.R.L., Paris, France. Filed S.R. July 3, 1968; Am. P.R. Sept. 10, 1969.

AUBUSSON

Owner of French Reg. No. 718,469, dated July 12, 1966.
For Perfumes and Colognes (Int. Cl. 3).

SN 304,608. Laboratoire Lachartre S.A., Paris, France. Filed Aug. 7, 1968.



Owner of French Reg. No. 535,016, dated July 9, 1965 (Seine); Natl. Inst. No. 256,265.

For Suntan Oil and Lotions, Skin Moisturizers, Hand Creams and Lotions, Facial Masques, After Shave Lotions, Cold Creams, Cosmetic Facial Skin Cleansers, Bath Oil, Body Lotions, Face Astringents and Fresheners, Skin Blemish Cover Preparation, Dry Skin Face Creams, All-Purpose Face Creams, Make-Up Removing Creams, Hair Conditioners, Hair Straighteners, Hair Spray, Hair Dressing, Wave Set, Scalp Creams, Cold Permanent Wave Lotions and Neutralizers, Hair Tinting and Coloring Preparations, Hair Pomades, Hair Brighteners, Hair Oil, and Hair Creme Rinses (Int. Cl. 3).

SN 307,847. Laboratoire Lachartre S.A., Paris, France. Filed Sept. 20, 1968.

MANUCREME

Owner of French Reg. No. 529,938, dated Apr. 5, 1965 (Seine); Natl. Inst. No. 245,333.

For Hand Lotion, Hand Cream, Cuticle Cream, Nail Polish, Nail Polish Remover, and Nail Buffer Cream (Int. Cl. 3).

SN 317,505. Helena Rubenstein, Inc., New York, N.Y. Filed Jan. 27, 1969.

VALENTINO

For Eau de Cologne (Int. Cl. 3).
First use Oct. 10, 1968.

SN 330,602. Koscott Interplanetary, Inc., Orlando, Fla. Filed June 20, 1969.

Lady Koscot

Owner of Reg. No. 865,908.

For Face Powder, Rouge, Eye Liner, Eye Make-Up Pencil, Mascara, Eyeshadow, Bath Powder, Personal Deodorant, Hair Spray, Hair Conditioning Oil, Eye and Throat Conditioning Oil, Liquid Facial Make-Up, Shaving Cream, After-Shave, Suntan Oil, Lipstick, Nail Enamel, Cuticle Softener and Remover, Nail Polish Remover, Cleansing Cream, Moisturizer, Night Cream, Facial Mask, and Bath Oil (Int. Cls. 3 and 5).

First use at least as early as Aug. 22, 1967.

SN 334,242. The Mennen Company, Morristown, N.J. Filed Aug. 1, 1969.

SAM

For After Shave Lotion (Int. Cl. 3).
First use July 1, 1969.

SN 334,244. The Mennen Company, Morristown, N.J. Filed Aug. 1, 1969.

SAM'S

For After Shave Lotion (Int. Cl. 3).
First use July 1, 1969.

Class 52 — Detergents and Soaps

SN 282,530. Early California Industries Inc., Los Angeles, Calif., assignee of Arizona Agrochemical Corporation, Phoenix Ariz. Filed Oct. 16, 1967.



For All-Purpose Liquid Detergents and Cleaner-Disinfectants (Int. Cls. 3 and 5).
First use Nov. 1, 1957.

SN 311,458. Armour-Dial, Inc., Chicago, Ill. Filed Nov. 6, 1968.

DIAL CREME WHIP

Owner of Reg. Nos. 549,768, 569,974, and 572,002.
For Hair Shampoo (Int. Cl. 3).
First use on or prior to June 11, 1968.

SN 324,328. Stratford, Inc., Minneapolis, Minn. Filed Apr. 14, 1969.

STRATFORD

Owner of Reg. No. 831,124.
For Wig and Hairpiece Cleaner (Int. Cl. 3).
First use Jan. 14, 1969.

SN 332,796. John H. Breck, Inc., Wayne, N.J. Filed July 17, 1969.

BEAUTIFUL ONE

For Hair Shampoo (Int. Cl. 3).
First use June 30, 1969.

SN 332,797. John H. Breck, Inc., Wayne, N.J. Filed July 17, 1969.

ONE & ONLY

For Hair Shampoo (Int. Cl. 3).
First use June 30, 1969.

SN 334,059. Frances Denney, Inc., Philadelphia, Pa. Filed July 31, 1969.

INTERLUDE

Owner of Reg. No. 771,248.
For Toilet Soaps (Int. Cl. 3).
First use January 1965.

SN 334,243. The Mennen Company, Morristown, N.J. Filed Aug. 1, 1969.

SAM

For Hair Shampoo (Int. Cl. 3).
First use July 1, 1969.

SN 334,245. The Mennen Company, Morristown, N.J. Filed Aug. 1, 1969.

SAM'S

For Hair Shampoo (Int. Cl. 3).
First use July 1, 1969.

SN 336,519. Lever Brothers Company, New York, N.Y. Filed Aug. 28, 1969.

DEMO

For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Aug. 13, 1969.

SN 336,520. Lever Brothers Company, New York, N.Y. Filed Aug. 28, 1969.

QUEST

For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Aug. 13, 1969.

SN 337,856. Lever Brothers Company, New York, N.Y. Filed Sept. 15, 1969.

HEROINE

Owner of Reg. Nos. 535,288 and 852,051.
For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Aug. 29, 1969.

SN 341,891. Baron Blakeslee, Inc., Chicago, Ill. Filed Oct. 28, 1969.

BLACO-CLENE

Owner of Reg. Nos. 848,498, 871,461, and others.
For Chemical Cleaning Solvents (Int. Cl. 3).
First use on or about June 24, 1968.

SN 342,733. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Nov. 5, 1969.

DACROCLEAN

Owner of Reg. Nos. 826,725 and 826,753.
For Metal Cleaner for Industrial Use (Int. Cl. 3).
First use Sept. 30, 1969.

SN 343,200. Gem, Incorporated, Byhalia, Miss. Filed Nov. 10, 1969.

VIEW

For Glass Cleaner (Int. Cl. 3).
First use Nov. 7, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 292,429. Warren A. Spencer, Baytown, Tex. Filed Mar. 4, 1968.

BONUSBURGER

For Restaurant Services (Int. Cl. 42).
First use June 22, 1967.
Subj. to Intf. with SN 303,731.

SN 305,193. American Society for Industrial Security, Washington, D.C. Filed Aug. 15, 1968.



For Association Services—Namely, Promoting the Interests of the Industrial Security Profession by Publication of Magazines, Newsletters, Membership Directories, and Various Other Society Literature, and in Divers Other Ways (Int. Cl. 42).
First use Oct. 27, 1955.

SN 311,180. The Sears-Roebuck Foundation, Skokie, Ill. Filed Nov. 1, 1968.

OFFICER FRIENDLY

For Foundation Services—Namely, the Establishing and Promoting of Good Relations Between Children and Uniformed Law Officers Within the School, Community, and City (Int. Cl. 42).
First use on or about July 1, 1966.

SN 317,755. Morrison Incorporated, Mobile, Ala. Filed Jan. 28, 1969.

OOGLEBLOOK

For Restaurant Services (Int. Cl. 42).
First use Jan. 10, 1969.

SN 330,660. Big Tex Sirloin Houses, Inc., Austin, Tex. Filed June 23, 1969.

BIG TEX

For Restaurant Services (Int. Cl. 42).
First use at least as early as January 1966.
Subj. to Intf. with SN 339,689.

SN 330,661. Big Tex Sirloin Houses, Inc., Austin, Tex. Filed June 23, 1969.



For Restaurant Services (Int. Cl. 42).
First use at least as early as January 1966.
Subj. to Intf. with SN 339,689.

SN 339,689. The Texan International, Inc., Saginaw, Mich. Filed Oct. 3, 1969.

BIG TEX

For Restaurant Services (Int. Cl. 42).
First use July 1, 1968.
Subj. to Intf. with SN 330,660 and SN 330,661.

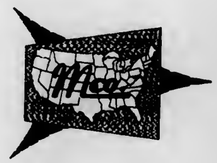
SN 345,460. Clyde R. Gibb, Oakland, Calif. Filed Dec. 5, 1969.

THUNDERBIRD LODGE

The word "Lodge" is disclaimed apart from the mark as shown.
For Motel Services (Int. Cl. 42).
First use March 1959.
Subj. to Intf. with SN 234,657, SN 293,756, SN 295,195, SN 310,191, and SN 310,192.

Class 101 — Advertising and Business

SN 268,884. Merrill & Company, Battle Creek, Mich. Filed Apr. 11, 1967.



The drawing is lined for gray.
For Printing Services and the Preparation of Advertising for Others (Int. Cl. 35).
First use Feb. 5, 1963.

SN 301,515. Courtney Business Assistance, Inc., Kansas City, Mo. Filed June 27, 1968.

WHAT'S HAPPENING

For Conducting Advertising Campaigns for Others by Means of Mailings (Int. Cl. 35).
First use Apr. 8, 1968.

SN 303,996. Jerrico, Inc., Lexington, Ky. Filed July 31, 1968.

LOTTS

For Rendering Technical Assistance in the Establishment and Operations of Restaurants (Int. Cl. 35).
First use May 20, 1968.

SN 314,695. The Barnum Festival Society, Incorporated, Bridgeport, Conn. Filed Dec. 17, 1968.

BARNUM FESTIVAL JENNY LIND

Applicant disclaims the word "Festival" apart from the mark as shown. "Jenny Lind" is the name of a deceased person.
For Conceiving, Organizing and Operating an Educational, Cultural and Entertainment Event—Namely, a Talent Contest for Female Singers and Presenting Concerts and Other Performances by the Contest Winner at an Annual Civic Festival Sponsored by Applicant (Int. Cl. 35).
First use 1949.

SN 315,750. The First National Bank of Atlanta, Atlanta, Ga. Filed Jan. 3, 1969.

dyna bank db

The drawing is lined for the color blue which forms a part of the mark. Applicant disclaims the word "Bank" apart from the mark as shown.
For Providing a Library of Programs Consisting of Statistical, Mathematical, Engineering, Management Science and Financial Programs for Use by Subscribers to a Computer Time-Sharing System Administered and Designed by Applicant (Int. Cl. 35).
First use Nov. 6, 1968.

SN 317,876. Schneider, Hill and Spangler, Inc., Philadelphia, Pa. Filed Jan. 29, 1969.

S-H-S INTERNATIONAL

For Personnel Placement Services (Int. Cl. 35).
First use March 1967.

SN 322,974. Crest Personnel, Inc., Memphis, Tenn. Filed Mar. 27, 1969.

CREST

For Employment Agency Services (Int. Cl. 35).
First use November 1968.

Class 105 — Transportation and Storage

SN 292,435. Wright Airlines, Inc., Cleveland, Ohio, assignee of Tyme Airlines, Inc., Luckey, Ohio. Filed Mar. 4, 1968.

TYME

For Air Transportation of Passengers and Cargo (Int. Cl. 39).
First use on or before Oct. 1, 1967.

SN 332,415. Hookers of the Golden West, Inc., Honolulu, Hawaii. Filed July 14, 1969.

HOOKERS OF THE GOLDEN WEST

For Arranging and Conducting Fishing Tours (Int. Cl. 39).
First use Feb. 18, 1969.

SN 337,410. Ozark Air Lines, Inc., St. Louis, Mo. Filed Sept. 9, 1969.

THRIFT TRIPS

For Air Transportation Services (Int. Cl. 39).
First use at least as early as Dec. 1, 1965; at least as early as Aug. 7, 1961, as to "Thrift Trip."

Class 107 — Education and Entertainment

SN 309,708. Thomas R. Whiteleather, d.b.a. Whiteleather Aviation, Hollywood, Fla. Filed Oct. 15, 1968.



The representation of the instrument dials is disclaimed apart from the mark as shown.
For Providing Instructional Services in the Form of Instrument Flight Training (Int. Cl. 41).
First use Apr. 24, 1968.

SN 314,693. The Barnum Festival Society, Incorporated, Bridgeport, Conn. Filed Dec. 17, 1968.

JENNY LIND

"Jenny Lind" is the name of a deceased person.
For Services in Connection With Conceiving, Organizing and and Operating an Educational, Cultural and Entertainment Event—Namely, a Talent Contest for Female Singers and Presenting Concerts and Other Performances by the Contest Winner at an Annual Civic Festival (Int. Cl. 41).
First use 1949.

SN 328,773. Medical Communications, Inc., New York, N.Y. Filed June 2, 1969.

MEDCOM LEARNING SYSTEMS

Applicant disclaims the words "Learning Systems" apart from the mark as shown, but reserves all common-law and statutory trademark rights to which it may otherwise be entitled.
For Educational Services—Namely, the Dissemination and Teaching of Health and Medical Information to Students, Nurses, Doctors, Para-Medical Personnel and Health-Oriented Industries by Means of Videotapes, Film and Printed Matter (Int. Cl. 41).
First use at least as early as November 1968.

SN 328,779. Lee Rogers, d.b.a. American Holiday Association, Los Angeles, Calif. Filed June 2, 1969.

AMERICAN HOLIDAY ASSOCIATION

For Entertainment Services—Namely, Conducting Puzzle Contests (Int. Cl. 41).
First use Jan. 31, 1969.

SN 338,328. San Francisco-Oakland Hockey Club, Inc., Oakland, Calif. Filed Sept. 19, 1969.



For Entertainment Services in the Form of Professional Ice Hockey Contests (Int. Cl. 41).
First use not later than June 1967.

SN 341,499. Westchester Children's Remedial Center, Inc., Yonkers, N.Y. Filed Oct. 23, 1969.

OPTIREAD

For Educational Services—Namely, Inschool Instruction for Reading Improvement (Int. Cl. 41).
First use on or about Sept. 5, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 306,068. North American Family Campers Association, Inc., Newburyport, Mass. Filed Aug. 27, 1968.

NORTH AMERICAN FAMILY CAMPERS ASSN

For Indicating Membership in Applicant.
First use Nov. 1, 1967.

SN 318,791. Legion Lex., Los Angeles, Calif. Filed Feb. 10, 1969.

LEGION LEX

For Indicating Membership in Applicant.
First use June 1956.

SN 318,920. QSAD Centurion, Los Angeles, Calif. Filed Feb. 11, 1969.

QSAD CENTURION

For Indicating Membership in Applicant.
First use during December 1957.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

888,100. ALCO. C. L. Alger & Co., Inc. SN 298,092. Pub. 1–6–70. Filed 5–14–68.

888,101. AGSORB. Oil-Dri Corporation of America. SN 314,982. Pub. 1–6–70. Filed 12–20–68.

888,102. AQUA GEMS. Sternco Industries, Inc. SN 321,546. Pub. 1–6–70. Filed 3–12–69.

Class 2 — Receptacles

888,103. GLAMORGLAS. Shelley Manufacturing Company, assignee of Glamorglas, Inc. MULTIPLE CLASS (Classes 2 and 19). SN 305,787. Pub. 1–6–70. Filed 8–23–68.

888,104. K MART AND DESIGN. S. S. Kresge Company. SN 312,207. Pub. 1–6–70. Filed 11–14–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

888,105. SITZ PAK AND DESIGN. Eddie Bauer, Inc. SN 305,910. Pub. 1–6–70. Filed 8–26–68.

888,106. CROSBY AND CO., LTD. Miller Harness Company Inc., d.b.a. Crosby and Co., Ltd. SN 313,129. Pub. 1–6–70. Filed 11–26–68.

Class 4 — Abrasives and Polishing Materials

888,107. WHITE COLORAMA AND DESIGN. White Stores, Inc. SN 304,273. Pub. 1–6–70. Filed 8–2–68.

888,108. SYSTEMATIZED-SANITATION. Texize Chemicals, Inc. MULTIPLE CLASS (Classes 4, 16, and 52). SN 311,974. Pub. 1–6–70. Filed 10–9–68.

888,109. STAR BRITE. Conrad Ward Company Inc. SN 319,830. Pub. 1–6–70. Filed 2–24–69.

888,110. MEADOW BRITE. Meadows Chemicals, Inc. SN 330,605. Pub. 1–6–70. Filed 6–20–69.

Class 5 — Adhesives

888,111. LEFFINGWELL. Leffingwell Chemical Company. MULTIPLE CLASS (Classes 5, 6, and 10). SN 305,868. Pub. 1–6–70. Filed 8–26–68.

888,112. THERMOSCREEN. Imperial Adhesives and Chemicals, Inc. SN 334,433. Pub. 1–6–70. Filed 8–5–69.

Class 6 — Chemicals and Chemical Compositions

888,111. (See Class 5 for this trademark.)

888,113. HARRIS. Harris Paint Company, d.b.a. Harris Standard Paint Company. MULTIPLE CLASS (Classes 6, 12, and 16). SN 281,844. Pub. 1–6–70. Filed 10–5–67.

888,114. LIFESPAN. Lifespan Products Co., Inc. MULTIPLE CLASS (Classes 6, 18, 46, and 52). SN 285,084. Pub. 1–6–70. Filed 11–17–67.

888,115. FISOTEL. Fisons Limited, assignee of Fisons Pest Control Limited. SN 290,381. Pub. 1–6–70. Filed 2–6–68.

888,116. FISOZOL. Fisons Limited, assignee of Fisons Pest Control Limited. SN 290,382. Pub. 1–6–70. Filed 2–6–68.

888,117. FRAGRASCENTS. Neumann-Buslee & Wolfe, Inc. SN 305,851. Pub. 1–6–70. Filed 8–23–68.

888,118. CHEM/SERV. Chem/Serv, Inc. MULTIPLE CLASS (Classes 6 and 16). SN 315,512. Pub. 1–6–70. Filed 1–2–69.

888,119. LITO. Walgreen Co. SN 332,210. Pub. 1–6–70. Filed 7–10–69.

Class 10 — Fertilizers

888,111. (See Class 5 for this trademark.)

888,120. U-NEED-US. Hotchkiss Mining Corporation, d.b.a. U-Need-Us Fertilizer Company. SN 328,853. Pub. 1–6–70. Filed 6–2–69.

Class 11 — Inks and Inking Materials

888,121. PRIDEMARK. Columbia Ribbon and Carbon Manufacturing Co., Inc. SN 304,673. Pub. 1–6–70. Filed 8–8–68.

888,122. GLO-RITE. Roberts & Porter, Inc. SN 328,343. Pub. 1–6–70. Filed 5–26–69.

Class 12 — Construction Materials

888,113. (See Class 6 for this trademark.)

888,123. PERMATITE. Mrs. William H. Conant, d.b.a. W. H. Conant & Co. SN 320,438. Pub. 1–6–70. Filed 3–3–69.

888,124. SAN JUAN. San Juan Products, Inc. SN 320,648. Pub. 1–6–70. Filed 3–3–69.

888,125. SAN JUAN AND DESIGN. San Juan Products, Inc. SN 320,649. Pub. 1–6–70. Filed 3–3–69.

888,126. CHEVRON AND DESIGN. Standard Oil Company of California. SN 329,771. Pub. 1–6–70. Filed 6–11–69.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

888,127. RODSTAY. Nautical Development Company, Inc. SN 307,222. Pub. 1–6–70. Filed 9–12–68.

888,128. RODLUFF. Nautical Development Company, Inc. SN 307,223. Pub. 1–6–70. Filed 9–12–68.

888,129. BALL CHAIN AND DESIGN. Ball Chain Manufacturing Co., Inc. SN 308,355. Pub. 1–6–70. Filed 9–27–68.

888,130. THERMO BAKER. Thermo Pin Corporation of America. SN 311,188. Pub. 1–6–70. Filed 11–1–68.

888,131. HEADMASTER. Alco Controls Corporation. SN 312,972. Pub. 1–6–70. Filed 11–25–68.

888,132. WINPROOF. W. E. Martin Co. SN 314,243. Pub. 1–6–70. Filed 12–11–68.

888,133. FW (DESIGN). Flex-Weld, Inc. SN 315,903. Pub. 1–6–70. Filed 1–6–69.

888,134. MASTER AND DESIGN. Master Fence Fittings, Inc. SN 316,107. Pub. 1–6–70. Filed 1–8–69.

888,135. HIDE-A-WAY. The Astrup Company. SN 317,811. Pub. 1–6–70. Filed 1–29–69.

888,136. INTERNATIONAL. International Hardware Corporation. SN 320,822. Pub. 1–6–70. Filed 3–5–69.

888,137. CA. Campbell Chain Company. SN 323,676. Pub. 1–6–70. Filed 4–4–69.

888,138. EST. International Telephone and Telegraph Corporation. SN 324,134. Pub. 1–6–70. Filed 4–10–69.

888,139. CTV. International Telephone and Telegraph Corporation. SN 324,136. Pub. 1–6–70. Filed 4–10–69.

888,140. KENOL. Societe d'Etudes et de Developpement des Industries Modernes (S.E.D.I.M.). SN 328,907. Pub. 1–6–70. Filed 6–2–69.

888,141. KO AND DESIGN. Kolleen, Inc. MULTIPLE CLASS (Classes 13 and 28). SN 330,231. Pub. 1–6–70. Filed 6–17–69.

Class 14 — Metals and Metal Castings and Forgings

888,142. TOM'S ROMAN. Bonder & Carnase Studio Inc. SN 303,263. Pub. 1–6–70. Filed 7–22–68.

888,143. REVERE ETC. AND DESIGN. Revere Copper and Brass Incorporated. SN 327,053. Pub. 1–6–70. Filed 5–12–69.

Class 15 — Oils and Greases

888,144. CHEVRON AND DESIGN. Standard Oil Company of California. SN 329,528. Pub. 1–6–70. Filed 6–9–69.

Class 16 — Protective and Decorative Coatings

888,108. (See Class 4 for this trademark.)

888,113. (See Class 6 for this trademark.)

888,118. (See Class 6 for this trademark.)

888,145. FINALE. Masury-Columbia Co. SN 300,527. Pub. 1–6–70. Filed 6–17–68.

888,146. BIRCHWOOD. Fuller Laboratories, Inc. SN 310,081. Pub. 1–6–70. Filed 10–21–68.

888,147. DEW DROPS. Star Chemical Co., Inc., d.b.a. Carnival Arts & Crafts. SN 322,917. Pub. 1–6–70. Filed 3–26–69.

Class 17 — Tobacco Products

888,148. JOCKEY TIP AND DESIGN. Svenska Tobaks Aktiebolaget. SN 276,712. Pub. 2–6–68. Filed 7–24–67.

888,149. RIVERBOAT. Wally Frank, Ltd. SN 313,692. Pub. 1–6–70. Filed 12–5–68.

888,150. G.T.O. Bayuk Cigars Incorporated. SN 326,497. Pub. 1–6–70. Filed 5–6–69.

Class 18 — Medicines and Pharmaceutical Preparations

888,114. (See Class 6 for this trademark.)

888,151. ANGININ. Banyu Pharmaceutical Co., Ltd. SN 261,357. Pub. 1–30–68. Filed 12–23–66.

888,152. CONTROLD. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 282,135. Pub. 1–6–70. Filed 10–9–67.

888,153. BRISTOMYCIN. Bristol-Myers Company. SN 303,502. Pub. 1–6–70. Filed 7–24–68.

888,154. SENTRY. Bristol-Myers Company. SN 306,386. Pub. 1–6–70. Filed 8–30–68.

888,155. ALTIMINE. Laboratorios Miquel, S.A. SN 313,126. Pub. 1–6–70. Filed 11–26–68.

888,156. ESSENTIAL-8. Medics Pharmaceutical Corporation. SN 315,848. Pub. 1–6–70. Filed 1–6–69.

888,157. DENT-ZEL-ITE. Zelite Corporation. SN 316,919. Pub. 1–6–70. Filed 1–17–69.

888,158. NP DESIGN. The Norwich Pharmacal Company (Delaware corporation), assignee of The Norwich Pharmacal Company (New York corporation). SN 318,091. Pub. 1–6–70. Filed 1–31–69.

888,159. BAX. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 319,854. Pub. 1–6–70. Filed 2–24–69.

888,160. SPANTRAN. Palmedico, Inc. SN 321,263. Pub. 1–6–70. Filed 3–10–69.

888,161. LULLAMIN. Reed & Carnrick. SN 321,403. Pub. 1–6–70. Filed 3–11–69.

888,162. LOBALM. Physicians and Hospitals Supply Company, d.b.a. The Ulmer Pharmacal Company. SN 323,515. Pub. 1–6–70. Filed 4–3–69.

888,163. LOLANA. Physicians and Hospitals Supply Company, d.b.a. The Ulmer Pharmacal Company. SN 323,516. Pub. 1–6–70. Filed 4–3–69.

888,164. KOTEX. Kimberly-Clark Corporation. SN 326,383. Pub. 1–6–70. Filed 5–5–69.

888,165. CARBURIL. Pharmacia Laboratories, Inc. SN 328,629. Pub. 1–6–70. Filed 5–29–69.

888,166. BOL EZE. Smith Kline & French Laboratories. SN 328,938. Pub. 1–6–70. Filed 6–3–69.

888,167. SHHH. Carter-Wallace, Inc. SN 329,033. Pub. 1–6–70. Filed 6–4–69.

888,168. SCHEDULE. Warner-Lambert Pharmaceutical Company. SN 329,944. Pub. 1–6–70. Filed 6–13–69.

888,169. KOTEX. Kimberly-Clark Corporation. SN 330,560. Pub. 1–6–70. Filed 6–20–69.

888,170. VICTORS. Richardson-Merrell Inc. SN 330,885. Pub. 1–6–70. Filed 6–25–69.

888,171. PEXID. Richardson-Merrell Inc. SN 330,886. Pub. 1–6–70. Filed 6–25–69.

888,172. TENLAP. The Dow Chemical Company. SN 331,817. Pub. 1–6–70. Filed 7–7–69.

Class 19 — Vehicles

888,103. (See Class 2 for this trademark.)

888,173. T DESIGN. Detomaso Automobili S.p.A. SN 315,474. Pub. 1–6–70. Filed 12–31–68.

888,174. AQUA VILLA. Chris-Craft Industries, Inc. SN 321,190. Pub. 1–6–70. Filed 3–10–69.

888,175. LITTLE BUTCH. Fimco, Inc. SN 329,708. Pub. 1–6–70. Filed 6–11–69.

888,176. K MART AND DESIGN. S. S. Kresge Company. SN 329,869. Pub. 1–6–70. Filed 6–12–69.

888,177. SSK AND DESIGN S. S. Kresge Company. SN 329,870. Pub. 1–6–70. Filed 6–12–69.

888,178. HINCKLEY. Henry R. Hinckley & Company. SN 330,504. Pub. 1–6–70. Filed 6–19–69.

888,179. F AND DESIGN. The Firestone Tire & Rubber Company. SN 330,729. Pub. 1–6–70. Filed 6–23–69.

888,180. CK AND STICKMAN DESIGN. Oklahoma City Tractor Co., Inc. SN 332,514. Pub. 1–6–70. Filed 7–14–69.

888,181. PONY. Ford Motor Company. SN 334,704. Pub. 1–6–70. Filed 8–7–69.

Class 21 — Electrical Apparatus, Machines, and Supplies

888,182. KILO DIAL. Robert L. Gach, d.b.a. Kilo Engineering Co. SN 292,688. Pub. 1–6–69. Filed 3–7–68.

888,183. G AND DESIGN. Gardner Cryogenics Corporation. SN 294,384. Pub. 12–2–69. Filed 3–28–68.

888,184. STEAM-MAID. Jovan, Inc. SN 307,580. Pub. 1–6–70. Filed 9–17–68.

888,185. MISCELLANEOUS DESIGN. Connectronics Corporation. SN 307,629. Pub. 1–6–70. Filed 9–18–68.

888,186. KEVEX. Kevex Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 307,745. Pub. 1–6–70. Filed 9–19–68.

888,187. H AND DESIGN. Hotchkiss Instruments, Inc. MULTIPLE CLASS (Classes 21 and 44). SN 308,836. Pub. 1–6–70. Filed 10–4–68.

888,188. ACME ELECTRIC. Acme Electric Corporation. SN 318,728. Pub. 1–6–70. Filed 2–10–69.

888,189. CHEVRON DESIGN. Standard Oil Company of California. SN 321,691. Pub. 1–6–70. Filed 3–13–69.

888,190. BRIGHT STAR AND DESIGN. Bright Star Industries, Inc. SN 322,958. Pub. 1–6–70. Filed 3–27–69.

888,191. LITE-A-LITE. Ebert Electronics Corporation. SN 324,581. Pub. 1–6–70. Filed 4–15–69.

888,192. FLASHMASTER AND DESIGN. Ebert Electronics Corporation SN 324,582. Pub. 1–6–70. Filed 4–15–69.

888,193. MINIGLOW. General Electric Company. SN 325,031. Pub. 1–6–70. Filed 4–21–69.

888,194. TORR. Torr Laboratories, Inc. SN 325,672. Pub. 1–6–70. Filed 4–28–69.

888,195. ASH FLASH AND DESIGN. The H. J. Ashe Company, Inc. SN 326,332. Pub. 1–6–70. Filed 5–5–69.

888,196. MISCELLANEOUS DESIGN. Dimension Systems Corp. SN 327,136. Pub. 1–6–70. Filed 5–13–69.

888,197. PERMA GAP. Brunswick Corporation. SN 327,587. Pub. 1–6–70. Filed 5–19–69.

888,198. K MART AND DESIGN. S. S. Kresge Company. SN 327,920. Pub. 1–6–70. Filed 5–21–69.

888,199. AEROSOUND. Instrument Systems Corporation. SN 328,183. Pub. 1–6–70. Filed 5–23–69.

888,200. HOOKER. National Service Industries, Inc., assignee of Lithonia Lighting, Inc. SN 328,185. Pub. 1–6–70. Filed 5–23–69.

Class 22 — Games, Toys, and Sporting Goods

888,201. BABY BUMPKINS. Uneeda Doll Co., Inc. SN 301,651. Pub. 1–6–70. Filed 6–28–68.

888,202. BLACK WIDOW AND DESIGN. Axaline, Inc. SN 303,977. Pub. 1–6–70. Filed 7–31–68.

888,203. JOKARI. Chikitoys. SN 304,053. Pub. 1–6–70. Filed 8–1–68.

888,204. ANXIETY. The Game Company. SN 308,695. Pub. 1–6–70. Filed 10–2–68.

888,205. ELITE. Dunlop Tire and Rubber Corporation. SN 315,544. Pub. 1–6–70. Filed 1–2–69.

888,206. SPINO-MATIC AND DESIGN. Denys Fisher Group Limited. SN 316,092. Pub. 1–6–70. Filed 1–8–69.

888,207. 220 AND DESIGN. Robert G. Bryant. SN 316,982. Pub. 1–6–70. Filed 1–21–69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

888,208. B AND DESIGN. L. R. Oliver and Co., Inc. SN 295,942. Pub. 1–6–70. Filed 4–18–68.

888,209. WINSLOW ROYAL SPRAY SYSTEM AND DESIGN. Watsco, Inc. SN 301,989. Pub. 1–6–70. Filed 7–3–68.

888,210. DUO-PHASE. Schaub Engineering Compnay, assignee of Syncrofio Inc. SN 307,893. Pub. 1–6–70. Filed 8–19–68.

888,211. SPI AND DESIGN. Swiss Precision Instruments, Inc. SN 310,003. Pub. 1–6–70. Filed 10–18–68.

888,212. ANGLE LINK. Dana Corporation. SN 311,357. Pub. 1–6–70. Filed 11–5–68.

888,213. CA AND DESIGN. The Cornwell Quality Tools Co. SN 313,078. Pub. 1–6–70. Filed 11–26–68.

888,214. IMPERIAL TAIWAN STAINLESS. Imperial Knife Associated Companies, Inc. SN 316,438. Pub. 1–6–70. Filed 1–13–69.

888,215. SHOPMATE PREFERRED. G. W. Murphy Industries, Inc. SN 321,128. Pub. 1–6–70. Filed 3–10–69.

888,216. PALAVATOR. Frank P. Alduk, d.b.a. Newcastle Company. SN 322,539. Pub. 1–6–70. Filed 3–24–69.

888,217. ATENUTROL. Knight Industries, Inc. SN 331,516. Pub. 1–6–70. Filed 7–1–69.

888,218. WASHMOBILE. Washmobile Corporation of New Jersey. SN 331,957. Pub. 1–6–70. Filed 7–7–69.

888,219. POWER-PEAK. TRW Inc. SN 332,055. Pub. 1–6–70. Filed 7–8–69.

888,220. ECON-O-MIST. Hart-Carter Company. SN 332,479. Pub. 1–6–70. Filed 7–14–69.

888,221. FAB-RO-MOLD AND DESIGN. Fabricators, Inc. SN 332,562. Pub. 1–6–70. Filed 6–16–69.

888,222. TRANSCOLORIZER. David Gessner Company. SN 332,607. Pub. 1–6–70. Filed 7–15–69.

888,223. CHICO. Servis Equipment Company, Inc. SN 333,757. Pub. 1–6–70. Filed 7–28–69.

888,224. BIG DIPPER. Woolsey Marine Industries, Inc. SN 335,522. Pub. 1–6–70. Filed 8–18–69.

Class 24 — Laundry Appliances and Machines

888,225. BEAR-PEG AND DESIGN. Maison Welck. SN 324,267. Pub. 1–6–70. Filed 4–11–69.

888,226. HACO MAID. Hagemeyer Trading Co. U.S.A., Inc. SN 327,018. Pub. 1–6–70. Filed 5–12–69.

888,227. LADY ASCOT. Ascot Sales Ltd. SN 332,282. Pub. 1–6–70. Filed 7–11–69.

Class 26 — Measuring and Scientific Appliances

888,186. (See Class 21 for this trademark.)

888,228. NOLLER. Noller Control Systems, Inc. SN 267,350. Pub. 1–6–70. Filed 3–22–67.

888,229. SUNPAK. Sunpak Corporation. SN 302,456. Pub. 1–6–70. Filed 7–10–68.

888,230. MINI-MONITOR. Bird Electronic Corporation. SN 303,980. Pub. 1–6–70. Filed 7–31–68.

888,231. CAMBRIDGE SYSTEMS. EG & G, Inc., assignee of Cambridge Systems, Inc. SN 305,630. Pub. 1–6–70. Filed 8–21–68.

888,232. ASTRALUX 66/35 AND DESIGN. Luminos Photo Corporation. SN 305,659. Pub. 1–6–70. Filed 8–21–68.

888,233. MAKO AND DESIGN. Underwater, Inc. SN 306,286. Pub. 1–6–70. Filed 8–29–68.

888,234. TC/I. Honeywell Inc. SN 307,477. Pub. 1–6–70. Filed 9–16–68.

888,235. PORTASPEC. Pitchford Scientific Instruments Corp. SN 308,395. Pub. 1–6–70. Filed 9–27–68.

888,236. ECOM. Standard Memories, Inc. SN 308,539. Pub. 1–6–70. Filed 9–30–68.

888,237. BOYER. Suzanne Sarah Bloch, Paulette Andrée Epelboin, Robert Edouard Levy, and Claude Guy Levy (joint owners), d.b.a. Optique Boyer. SN 309,231. Pub. 1–6–70. Filed 10–9–68.

888,238. FOCUS-MATIC. Bell & Howell Company. SN 309,831. Pub. 1–6–70. Filed 10–17–68.

888,239. COMPUTERMINAL. Wyle Laboratories. SN 310,513. Pub. 1–6–70. Filed 10–24–68.

888,240. SILENCER. Litton Business Systems, Inc. SN 311,611. Pub. 1–6–70. Filed 11–7–68.

888,241. BRIVISKOP. Firma G. Reicherter, Beteiligungs- und Verwaltungsgesellschaft mit beschrankter Haftung. SN 313,410. Pub. 1–6–70. Filed 12–2–68.

888,242. DYNALENS. Dynasciences Corporation. SN 316,087. Pub. 1–6–70. Filed 1–8–69.

888,243. P AND DESIGN. Parker Instrument Corporation. SN 318,223. Pub. 1–6–70. Filed 2–3–69.

888,244. SPERRY RAND (PLAIN). Sperry Rand Corporation. SN 319,364. Pub. 1–6–70. Filed 2–17–69.

888,245. AMIGO. Textron Inc. SN 319,397. Pub. 1–6–70. Filed 2–17–69.

888,246. NULADY. Textron Inc. SN 319,399. Pub. 1–6–70. Filed 2–17–69.

888,247. SPOONETTE. Unette Corporation. SN 321,300. Pub. 1–6–70. Filed 3–10–69.

888,248. BLUE EYES. Christian Dior Eyewear, Inc. SN 325,839. Pub. 1–6–70. Filed 4–29–69.

888,249. MEC-O-METER. Mec-O-Matic, Inc. SN 326,243. Pub. 1–6–70. Filed 5–2–69.

888,250. DIGIMATIC. Advanced Instruments, Inc. SN 327,806. Pub. 1–6–70. Filed 5–21–69.

888,251. IMP-33 AND KNIGHT DESIGN. Electro-Nite Co. SN 329,451. Pub. 1–6–70. Filed 6–9–69.

888,252. SPIRAS. IRA Systems, Inc. SN 329,579. Pub. 1–6–70. Filed 6–10–69.

888,253. ATHLITE. Athlone Industries, Inc. SN 335,306. Pub. 1–6–70. Filed 8–14–69.

Class 27 — Horological Instruments

888,254. SWIM-O-MATIC. Omega Louis Brandt et Frere S.A. SN 298,144. Pub. 1–6–70. Filed 5–14–68.

888,255. INT. AND DESIGN. Ebauches S.A. SN 299,660. Pub. 1–6–70. Filed 6–4–68.

888,256. CRONEL. Stroun Freres Borea Watch Co., S.A. SN 315,272. Pub. 1–6–70. Filed 12–26–68.

888,257. ALL-GUARD. Wyler Watch Corporation. SN 326,813. Pub. 1–6–70. Filed 5–8–69.

888,258. ANSONIA. Dale Nofziger, d.b.a. The New Ansonia Clock Co. SN 330,531. Pub. 1–6–70. Filed 6–19–69.

Class 28 — Jewelry and Precious-Metal Ware

888,141. (See Class 13 for this trademark.)

888,259. OXFORD OF PHILADELPHIA AND DESIGN. Oxford Jewelry Corporation. SN 303,382. Pub. 1–6–70. Filed 7–23–68.

888,260. CARRIAGE COLLECTION. Brite Industries Inc. SN 315,041. Pub. 1–6–70. Filed 12–23–68.

888,261. K FLEX. S. S. Kresge Company. SN 320,061. Pub. 1–6–70. Filed 2–25–69.

888,262. GROWN BY KASHAN. Kashan Laboratories, Incorporated, assignee of Ardon Associates, Inc. SN 322,808. Pub. 1–6–70. Filed 3–26–69.

888,263. ELECTROCITIES. Arnold Blumberg and Doris Blumberg (joint owners), d.b.a. Electrocities Company. SN 329,055. Pub. 1–6–70. Filed 6–4–69.

888,264. TRILOGY. Textron Inc. SN 330,308. Pub. 1–6–70. Filed 6–17–69.

Class 29 — Brooms, Brushes, and Dusters

888,265. KOLOR KOTER AND DESIGN. Kolor Koter Corp. SN 328,311. Pub. 1–6–70. Filed 5–26–69.

Class 31 — Filters and Refrigerators

888,266. HIPERFORM. Paul Mueller Company. SN 306,161. Pub. 1–6–70. Filed 8–28–68.

888,267. PERMOIL AND DESIGN. Eagle Empire Corporation. SN 308,476. Pub. 1–6–70. Filed 9–30–68.

888,268. YALE. Eaton Yale & Towne Inc. SN 309,558. Pub. 1–6–70. Filed 10–14–68.

Class 32 — Furniture and Upholstery

888,269. EASI-LOUNGER AND DESIGN. The U.S. Pillow Corporation. SN 313,036. Pub. 1–6–70. Filed 11–25–68.

888,270. GO-GLOW. Premium Corporation of America, Inc. SN 314,881. Pub. 1–6–70. Filed 12–19–68.

888,271. SAFETY MEMORY. Royalmetal Corporation. SN 324,756. Pub. 1–6–70. Filed 4–16–69.

888,272. D & B KITCHENS AND DESIGN. D & B Construction Company. SN 330,480. Pub. 1–6–70. Filed 6–19–69.

Class 33 — Glassware

888,273. LADY PIFFANY. Congressional Distributors, Inc. SN 315,211. Pub. 1–6–70. Filed 12–26–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

888,274. TL AND DESIGN. Midwood Industries, Inc., assignee of Tube-Line Manufacturing Corp. SN 200,510. Pub. 3–1–66. Filed 8–24–64.

888,275. TASTEE-BROILER. Tastee Freez Industries, Inc. SN 310,455. Pub. 1–6–70. Filed 10–24–68.

888,276. H AND FALCON DESIGN. Hunter Manufacturing Company. SN 312,198. Pub. 1–6–70. Filed 11–14–68.

888,277. BASCO FIN AND DESIGN. American Precision Industries Inc. SN 315,026. Pub. 1–6–70. Filed 12–23–68.

888,278. CHAR-VUE. Southern Precision Industries, Inc. SN 317,156. Pub. 1–6–70. Filed 1–21–69.

888,279. RAMTROL. Ram Domestic Products Company. SN 325,267. Pub. 1–6–70. Filed 2–21–69.

888,280. INFRAWAVE. Maxon Premix Burner Company, Inc. SN 327,771. Pub. 1–6–70. Filed 5–20–69.

888,281. LUMITRONIC. Incinerator Engineering Company. SN 329,243. Pub. 1–6–70. Filed 6–5–69.

888,282. MAGNUM. Hamilton Humidity, Inc. SN 335,295. Pub. 1–6–70. Filed 8–14–69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

888,283. RAWFLEX. Durkee-Atwood Company. SN 327,872. Pub. 1–6–70. Filed 5–21–69.

888,284. CRAZY HORSE. The Kelly-Springfield Tire Company. SN 328,863. Pub. 1–6–70. Filed 6–2–69.

888,285. ZIRCON. J. C. Penney Company, Inc. SN 329,179. Pub. 1–6–70. Filed 6–3–69.

888,286. MACHETE. J. C. Penney Company, Inc. SN 329,182. Pub. 1–6–70. Filed 6–3–69.

888,287. GAUCHO. J. C. Penney Company, Inc. SN 329,183. Pub. 1–6–70. Filed 6–3–69.

888,288. TIRE MAN DESIGN. Michelin Tire Corporation. SN 329,255. Pub. 1–6–70. Filed 6–5–69.

Class 36 — Musical Instruments and Supplies

888,289. PIONEER. Pioneer Kabushiki Kaisha, d.b.a. Pioneer Electronic Corporation. SN 307,132. Pub. 1–6–70. Filed 9–11–68.

888,290. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 314,805. Pub. 1–6–70. Filed 12–18–68.

888,291. CHAPELAIN. J. M. Sahlein Music Co., Inc. SN 323,023. Pub. 1–6–70. Filed 3–27–69.

888,292. SKOONUM HORN. Julius E. Brooks. SN 324,794. Pub. 1–6–70. Filed 4–17–69.

888,293. TUFFBEAT. The Ohio Art Company. SN 331,065. Pub. 1–6–70. Filed 6–26–69.

888,294. CART-A-SONIC. Belle Wood, Inc. SN 334,024. Pub. 1–6–70. Filed 7–31–69.

888,295. STEREOSONIC. Arthur Fulmer, d.b.a. Arthur Fulmer of Memphis. SN 334,072. Pub. 1–6–70. Filed 7–31–69.

Class 37 — Paper and Stationery

888,296. TOPSIDE TAB. N. L. & E. W. Kruysman, Incorporated. SN 319,934. Pub. 1–6–70. Filed 2–24–69.

888,297. FLIP-ACTION. K & D Specialties. SN 322,071. Pub. 1–6–70. Filed 3–18–69.

888,298. BROCADE. Safeway Stores, Incorporated. SN 328,347. Pub. 1–6–70. Filed 5–26–69.

888,299. LAUGH-IN. George Schlatter-Ed Friendly Productions and Romart, Inc. (joint venture). MULTIPLE CLASS (Classes 37 and 38). SN 329,403. Pub. 1–6–70. Filed 6–9–69.

888,300. ARROW, ROLLED PAPER ETC. (DESIGNS). Packaging Corporation of America. SN 334,671. Pub. 1–6–70. Filed 8–7–69.

Class 38 — Prints and Publications

888,299. (See Class 37 for this trademark.)

888,301. U.S. MEDICINE AND DESIGN. U.S. Medicine, Inc. SN 301,597. Pub. 1–6–70. Filed 6–28–68.

888,302. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,264. Pub. 1–6–70. Filed 11–4–68.

888,303. GPC AND DESIGN. Genuine Parts Company. SN 313,372. Pub. 1–6–70. Filed 12–2–68.

888,304. WU WESTERN UNION TECHNICAL REVIEW AND DESIGN. The Western Union Telegraph Company. SN 315,677. Pub. 1–6–70. Filed 12–18–68.

888,305. ES '70 ETC. AND DESIGN. ES '70. SN 322,786. Pub. 1–6–70. Filed 3–26–69.

888,306. COLORTEX. Colortex Studios, Inc. SN 326,856. Pub. 1–6–70. Filed 5–9–69.

888,307. SHIPPING WEEK. Technidata Publications, Inc. SN 327,786. Pub. 1–6–70. Filed 5–20–69.

888,308. PLAY-ALONG WITH THE RECORD W7 AND DESIGN. Warner Bros.-Seven Arts, Inc. SN 327,988. Pub. 1–6–70. Filed 5–21–69.

887,309. D/R AND DESIGN. Carol Linn Dow, d.b.a. Dow Research. SN 334,466. Pub. 1–6–70. Filed 8–5–69.

888,310. CALIFORNIA BUILDER. Fellom Publishing Company. SN 334,571. Pub. 1–6–70. Filed 8–6–69.

Class 39 — Clothing

888,311. WIND AND SEA. Jones Knitting Corporation. SN 255,328. Pub. 1–6–70. Filed 9–28–66.

888,312. LENINA. Molnlycke Aktiebolag. SN 288,445. Pub. 1–6–70. Filed 1–9–68.

888,313. DANDY-LION AND DESIGN. Short Stuff, Incorporated. SN 296,721. Pub. 1–6–70. Filed 4–26–68.

888,314. A BLUE BONNET PRODUCT AND DESIGN. Bernice Jernigan Griffis. SN 298,594. Pub. 1–6–70. Filed 5–20–68.

888,315. LADY HICKOK. Hickok Manufacturing Co. Inc. SN 304,466. Pub. 1–6–70. Filed 8–6–68.

888,316. SONY. Sony Corporation. SN 304,832. Pub. 1–6–70. Filed 8–9–68.

888,317. MEDOS. Medos Custom Tailors. SN 311,689. Pub. 1–6–70. Filed 11–8–68.

888,318. FJORD LOOK. Tekstilfabrikkenes Konsulent- og Opplysningskontor. MULTIPLE CLASS (Classes 39 and 42). SN 313,538. Pub. 1–6–70. Filed 12–4–68.

888,319. SLAKNIT. Stadium Manufacturing Co., Inc. SN 313,841. Pub. 1–6–70. Filed 12–6–68.

888,320. MARIE-HELENE. Linder Brothers, Inc. SN 321,953. Pub. 1–6–70. Filed 3–17–69.

888,321. MAGIC CLING. International Playtex Corporation. SN 322,068. Pub. 1–6–70. Filed 3–18–69.

888,322. SPORTIVO MODA. Broadway-Hale Stores, Inc. SN 323,786. Pub. 1–6–70. Filed 4–7–69.

888,323. X-TRA. Melville Shoe Corporation. SN 324,478. Pub. 1–6–70. Filed 4–14–69.

888,324. IRONCLAD. Lafayette Hosiery Mills, Inc. SN 327,281. Pub. 1–6–70. Filed 5–14–69.

888,325. LOVABLE PANTY HOSE PLUS. The Lovable Company. SN 329,201. Pub. 1–6–70. Filed 6–5–69.

888,326. FIORENTINA AND CREST DESIGN. Fiorentina Shoes, Inc. SN 329,408. Pub. 1–6–70. Filed 6–9–69.

888,327. ONE BRA BRA. Maidenform, Inc. SN 329,656. Pub. 1–6–70. Filed 6–11–69.

888,328. STRAITS. Haggar Company. SN 331,747. Pub. 1–6–70. Filed 7–3–69.

888,329. MISCELLANEOUS DESIGN. C. F. Hathaway Company. SN 332,018. Pub. 1–6–70. Filed 7–8–69.

888,330. PROFILE AND DESIGN. Carter & Churchill Company, Inc. SN 332,220. Pub. 1–6–70. Filed 7–10–69.

888,331. A-WASH. Huntington Industries, Inc. SN 332,239. Pub. 1–6–70. Filed 7–10–69.

888,332. ROSE PETAL. The Harwood Companies, Inc. SN 334,517. Pub. 1–6–70. Filed 8–6–69.

888,333. SMOCKETTE. Duti-Duds, Inc. SN 335,404. Pub. 1–6–70. Filed 8–15–69.

Class 40 — Fancy Goods, Furnishings, and Notions

888,334. LOVELASH AND DESIGN. Modish Imports, Inc. SN 332,422. Pub. 1–6–70. Filed 7–14–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

888,318. (See Class 39 for this trademark.)

888,335. CRF AND DESIGN. Cannon Mills Company. SN 314,182. Pub. 1–6–70. Filed 12–11–68.

888,336. SEA TREASURES. Klopman Mills, Inc. SN 319,915. Pub. 1–6–70. Filed 2–24–69.

888,337. CUBALENO. Klopman Mills, Inc. SN 320,616. Pub. 1–6–70. Filed 3–3–69.

888,338. MONTMARTRE. Klopman Mills, Inc. SN 320,618. Pub. 1–6–70. Filed 3–3–69.

888,339. NEPTUNE. Klopman Mills, Inc. SN 320,620. Pub. 1–6–70. Filed 3–3–69.

888,340. FANTA-WEAVE. The Orr Felt & Blanket Company. SN 328,328. Pub. 1–6–70. Filed 5–26–69.

888,341. COLOR ARRAY. E. T. Barwick Industries, Inc. SN 334,005. Pub. 1–6–70. Filed 7–31–69.

888,342. COLOR DYNAMICS. E. T. Barwick Industries, Inc. SN 334,006. Pub. 1–6–70. Filed 7–31–69.

888,343. CRAFT-AIRE. E. T. Barwick Industries, Inc. SN 334,007. Pub. 1–6–70. Filed 7–31–69.

Class 44 — Dental, Medical, and Surgical Appliances

888,187. (See Class 21 for this trademark.)

888,344. WILRO. Will Ross, Inc. SN 324,026. Pub. 1–6–70. Filed 4–9–69.

888,345. INFAMIL NURSETTE. Mead Johnson & Company. SN 324,733. Pub. 1–6–70. Filed 4–16–69.

888,346. VELVALLOY. Pennwalt Corporation. SN 324,744. Pub. 1–6–70. Filed 4–16–69.

888,347. ELDORADO. Samuel Bonat & Bro., Inc. SN 325,001. Pub. 1–6–70. Filed 4–21–69.

888,348. BEAM METAL SPECIALTIES. Beam-Matic Hospital Supply, Inc. SN 326,284. Pub. 1–6–70. Filed 5–5–69.

Class 45 — Soft Drinks and Carbonated Waters

888,349. MISCELLANEOUS DESIGN. Icy Drink of Florida, Inc. SN 306,248. Pub. 1–6–70. Filed 8–29–68.

888,350. SMARTY. The Cotton Club Bottling Company. SN 309,242. Pub. 1–6–70. Filed 10–9–68.

888,351. NAPA SPRINGS GEYSER WATER AND DESIGN. California Beverage Industries, Inc., d.b.a. Napa Springs Bottling Co. SN 325,284. Pub. 1–6–70. Filed 4–23–69.

888,352. GATORADE. Stokely-Van Camp, Inc. SN 328,635. Pub. 1–6–70. Filed 5–29–69.

Class 46 — Foods and Ingredients of Foods

888,114. (See Class 6 for this trademark.)

888,853. FISHNAK. American Dairy Queen Corporation. SN 256,708. Pub. 1–6–70. Filed 10–19–66.

888,354. NUTTY INITIAL STICKERS. Topps Chewing Gum, Incorporated. SN 280,110. Pub. 1–6–70. Filed 9–11–67.

888,355. DON THE BEACHCOMBER AND DESIGN. Don the Beachcomber. SN 299,442. Pub. 1–6–70. Filed 5–31–68.

888,356. TART N TINYS. Sunline, Inc., assignee of Breaker Confections, Inc. SN 300,801. Pub. 1–6–70. Filed 6–19–68.

888,357. AWARD CUP (DESIGN). Allen Food Products, Inc. SN 302,580. Pub. 1–6–70. Filed 7–12–68.

888,358. BOY DESIGN. Pizza Hut, Inc., assignee of Taco, Inc. SN 304,991. Pub. 1–6–70. Filed 8–12–68.

888,359. TACO KID. Pizza Hut, Inc., assignee of Taco, Inc. SN 304,992. Pub. 1–6–70. Filed 8–12–68.

888,360. DUNKIN' DONUTS AND DESIGN. Dunkin' Donuts of America, Inc., d.b.a. Dunkin' Donuts. SN 306,900. Pub. 1–6–70. Filed 9–9–68.

888,361. TACO KID. Pizza Hut, Inc., assignee of Taco, Inc. SN 313,995. Pub. 1–6–70. Filed 12–9–68.

888,362. SOBOCA. Soboca S.A. SN 317,637. Pub. 1–6–70. Filed 1–27–69.

888,363. USBACO AND MAP DESIGN. United States Baking Company, Inc. SN 318,601. Pub. 1–6–70. Filed 2–6–69.

888,364. SLOPPY TONY. Libby, McNeill & Libby. SN 319,613. Pub. 1–6–70. Filed 2–19–69.

888,365. SLOPPY TEX. Libby, McNeill & Libby. SN 319,614. Pub. 1–6–70. Filed 2–19–69.

888,366. DELL'S. Dell Products Corp. SN 319,698. Pub. 1–6–70. Filed 2–20–69.

888,367. SLOPPY LOUIE. Libby, McNeill & Libby. SN 321,671. Pub. 1–6–70. Filed 3–13–69.

888,368. SLOPPY MAC. Libby, McNeill & Libby. SN 321,672. Pub. 1–6–70. Filed 3–13–69.

888,369. SWISS AND DESIGN. Swiss Products. SN 322,007. Pub. 1–6–70. Filed 3–17–69.

888,370. TS AND DESIGN. Carter-Wallace, Inc. SN 324,123. Pub. 1–6–70. Filed 4–10–69.

888,371. CAPTAIN VITALMAN. The Quaker Oats Company. SN 327,325. Pub. 1–6–70. Filed 5–15–69.

888,372. SIMPHOS. J. R. Simplot Company. SN 328,937. Pub. 1–6–70. Filed 6–3–69.

888,373. MDP. General Mills, Inc. SN 332,887. Pub. 1–6–70. Filed 7–18–69.

888,374. MARBITS. General Mills, Inc. SN 332,888. Pub. 1–6–70. Filed 7–18–69.

888,375. GINGEROOS. General Mills, Inc. SN 332,889. Pub. 1–6–70. Filed 7–18–69.

Class 47 — Wines

888,376. LA BELLE EPOQUE. Excelsior Wine & Spirits Corporation. SN 321,054. Pub. 1–6–70. Filed 3–7–69.

Class 49 — Distilled Alcoholic Liquors

888,377. BALVENIE. Archibald Wallace & Co. Limited. SN 323,527. Pub. 1–6–70. Filed 4–3–69.

888,378. BONJOUR. Canadian Schenley Distilleries Ltd. SN 327,124. Pub. 1–6–70. Filed 5–13–69.

Class 50 — Merchandise Not Otherwise Classified

888,379. EASY DAYS. Tenex Corporation. SN 331,251. Pub. 1–6–70. Filed 6–27–69.

888,380. PULLOVRETTE. Alexander S. Weisz. SN 332,272. Pub. 1–6–70. Filed 7–10–69.

888,381. FLAIR. Monsanto Company. SN 332,505. Pub. 1–6–70. Filed 7–14–69.

Class 51 — Cosmetics and Toilet Preparations

888,382. AGUA BRAVA. Antonio Puig, S.A. MULTIPLE CLASS (Classes 51 and 52). SN 287,949. Pub. 1–6–70. Filed 1–2–68.

888,383. TPW THE PERFECT WAVE. Clairol Incorporated. SN 288,780. Pub. 1–6–70. Filed 1–15–68.

888,384. 'TIL THEN. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 306,714. Pub. 1–6–70. Filed 9–6–68.

888,385. EMANUEL UNGARO. Emmanuel Ungaro, S.A.R.L. SN 307,564. Pub. 1-6-70. Filed 9-17-68.

888,386. ESSENCE-NINE. William Stamm, d.b.a. Adrian Creations. SN 308,044. Pub. 1-6-70. Filed 9-23-68.

888,387. GEORGY GIRL AND DESIGN. Georgy Girl Cosmetics, Ltd. SN 308,486. Pub. 1-6-70. Filed 9-30-68.

888,388. BEGUILING. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 310,167. Pub. 1-6-70. Filed 10-22-68.

888,389. FIELD FLOWERS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 310,172. Pub. 1-6-70. Filed 10-22-68.

888,390. RETROSPECT. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 310,176. Pub. 1-6-70. Filed 10-22-68.

888,391. CALANDRE. Paco Rabanne Parfums. SN 316,238. Pub. 1-6-70. Filed 1-9-69.

888,392. MINISPA. The J. B. Williams Company, Inc. SN 320,102. Pub. 1-6-70. Filed 2-25-69.

888,393. JO-GEN. Genovese Drug Stores, Inc. SN 320,589. Pub. 1-6-70. Filed 3-3-69.

888,394. A MAN LIKES A WOMAN TO BE ELUSIVE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,568. Pub. 1-6-70. Filed 6-10-69.

888,395. BEST FACE. Avon Products, Inc. SN 329,593. Pub. 1-6-70. Filed 6-10-69.

888,396. SUCCESS BY DAY. Chas. Pfizer & Co., Inc. SN 329,667. Pub. 1-6-70. Filed 6-11-69.

888,397. POINT OF VIEW. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,651. Pub. 1-6-70. Filed 7-16-69.

888,398. FEELING BEAUTIFUL. John H. Breck, Inc. SN 332,794. Pub. 1-6-70. Filed 7-17-69.

888,399. FEELIN' BEAUTIFUL. John H. Breck, Inc. SN 332,795. Pub. 1-6-70. Filed 7-17-69.

888,400. CONTRAST. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,027. Pub. 1-6-70. Filed 7-22-69.

888,401. IMPRESSARIO. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,028. Pub. 1-6-70. Filed 7-22-69.

888,402. INCIDENTALLY. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,029. Pub. 1-6-70. Filed 7-22-69.

888,403. INIMITABLE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,031. Pub. 1-6-70. Filed 7-22-69.

888,404. PARENTHESES. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,033. Pub. 1-6-70. Filed 7-22-69.

888,405. PRIVATE NUMBER. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,035. Pub. 1-6-70. Filed 7-22-69.

888,406. TREETOPS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,036. Pub. 1-6-70. Filed 7-22-69.

888,407. DAYFLOWER. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,481. Pub. 1-6-70. Filed 7-25-69.

888,408. DOWNING SQUARE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,482. Pub. 1-6-70. Filed 7-25-69.

888,409. ISLE OF TROON. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,484. Pub. 1-6-70. Filed 7-25-69.

888,410. KALAHARI. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,485. Pub. 1-6-70. Filed 7-25-69.

Class 52 — Detergents and Soaps

888,108. (See Class 4 for this trademark.)

888,114. (See Class 6 for this trademark.)

888,382. (See Class 51 for this trademark.)

888,384. (See Class 51 for this trademark.)

888,388. (See Class 51 for this trademark.)

888,389. (See Class 51 for this trademark.)

888,390. (See Class 51 for this trademark.)

888,394. (See Class 51 for this trademark.)

888,397. (See Class 51 for this trademark.)

888,400. (See Class 51 for this trademark.)

888,401. (See Class 51 for this trademark.)

888,402. (See Class 51 for this trademark.)

888,403. (See Class 51 for this trademark.)

888,404. (See Class 51 for this trademark.)

888,405. (See Class 51 for this trademark.)

888,406. (See Class 51 for this trademark.)

888,407. (See Class 51 for this trademark.)

888,408. (See Class 51 for this trademark.)

888,409. (See Class 51 for this trademark.)

888,410. (See Class 51 for this trademark.)

888,411. S.O.S. Miles Laboratories, Inc., assignee of General Foods Corporation. SN 308,170. Pub. 1-6-70. Filed 9-25-68.

888,412. DEOCOLOGNE. Ferdinand Mülhens, d.b.a. Eau de Cologne & Parfümerie-Fabrik Glockengasse No. 4711, Gegenüber der Pferdpost von Ferd. Mülhens. SN 317,253. Pub. 1-6-70. Filed 1-22-69.

Service Marks

Class 100 — Miscellaneous

888,413. DECK. Gen. Co. SN 268,179. Pub. 1-6-70. Filed 4-3-67.

888,414. DESIGN OF GEOMETRIC FIGURE. The Superior Oil Company. SN 286,205. Pub. 1-6-70. Filed 12-4-67.

888,415. GARDRAY. Technical Operations, Incorporated. SN 288,886. Pub. 1-6-70. Filed 1-15-68.

888,416. MISCELLANEOUS DESIGN. Zinc Institute Incorporated. SN 306,085. Pub. 1-6-70. Filed 8-27-68.

888,417. CRANDALL HOUSE. United Fruit Company. SN 312,246. Pub. 1-6-70. Filed 11-14-68.

888,418. FLIGHT FRESH. World Cuisine, Inc. SN 313,463. Pub. 1-6-70. Filed 12-2-68.

888,419. MISCELLANEOUS DESIGN. Kay and Associates, Incorporated. SN 315,569. Pub. 1-6-70. Filed 1-2-69.

888,420. DEEPSEA. Deepsea Ventures, Inc. SN 316,000. Pub. 1-6-70. Filed 1-7-69.

888,421. DEEPSEA AND DESIGN. Deepsea Ventures, Inc. SN 316,001. Pub. 1-6-70. Filed 1-7-69.

888,422. DW AND SHIELD DESIGN. Der Wienerschnitzel International, Inc. SN 316,155. Pub. 1-6-70. Filed 1-8-69.

888,423. CHATEAU CHAPARRAL. S & H Travel, Inc. SN 317,113. Pub. 1-6-70. Filed 1-21-69.

888,424. GEM. James B. Huff, d.b.a. Gem Rent-A-Car & Leasing Co. SN 317,563. Pub. 1-6-70. Filed 1-27-69.

888,425. HYSEN. General Electric Company. SN 318,043. Pub. 1-6-70. Filed 1-31-69.

888,426. MISCELLANEOUS DESIGN. Up Towner Inn, Inc. SN 318,113. Pub. 1-6-70. Filed 1-31-69.

888,427. DPA. DPA, Inc. SN 318,295. Pub. 1-6-70. Filed 2-4-69.

888,428. THE CLOCK ETC. AND DESIGN. The Clock Restaurant, Inc. SN 318,530. Pub. 1-13-70. Filed 2-6-69.

888,429. COOK'S CHICK 'N BEEF AND DESIGN. James W. Cook and June H. Cook (joint owners). SN 318,759. Pub. 1-6-70. Filed 2-10-69.

888,430. AAA (DESIGN). AAA Engineering & Drafting, Inc. SN 318,848. Pub. 1-6-70. Filed 2-7-69.

888,431. MACK'S FISH CAMP. Mack's Fish Camp of America, Inc. SN 319,017. Pub. 1-6-70. Filed 2-13-69.

888,432. ROBERT CLEMENTS AND ASSOCIATES. Robert Clements and Associates. SN 320,998. Pub. 1-6-70. Filed 3-7-69.

888,433. CHRIS MC GUIRE'S MUG CLUB. Chris McGuire, Inc. SN 323,421. Pub. 1-6-70. Filed 4-2-69.

888,434. CHICK AHOY. Capital Western Investment Corporation. SN 324,401. Pub. 1-6-70. Filed 4-14-69.

888,435. MISCELLANEOUS DESIGN. Pole Control, Inc. SN 324,655. Pub. 1-6-70. Filed 4-16-69.

888,436. CROPS & B. Crops & B Franchises, Inc. SN 324,698. Pub. 1-6-70. Filed 4-16-69.

888,437. I·H·P·A AND DESIGN. Imported Hardwood Products Association, Inc. SN 325,931. Pub. 1-6-70. Filed 4-30-69.

888,438. LAUREL & HARDY. Laurel & Hardy Restaurants, Inc. SN 325,933. Pub. 1-6-70. Filed 4-30-69.

888,439. BROTHERS TWO BT ETC. AND DESIGN. Brothers Two International, Inc. SN 329,575. Pub. 1-6-70. Filed 6-10-69.

Class 101 — Advertising and Business

888,440. LITTLE BOY FIGURES. Office-Aide, Inc. SN 304,110. Pub. 1-6-70. Filed 8-1-68.

888,441. WE SIT BETTER AND DESIGN. We Sit Better, Inc. SN 311,538. Pub. 1-6-70. Filed 11-6-68.

888,442. CHILD DESIGN. We Sit Better, Inc. SN 311,539. Pub. 1-6-70. Filed 11-6-68.

888,443. QUICK-SAVE. Gateway Promotions, Inc. SN 311,860. Pub. 1-6-70. Filed 11-12-68.

888,444. ROCHESTER MICHIGAN CENTENNIAL ETC. AND DESIGN. The City of Rochester, Michigan. SN 312,278. Pub. 1-6-70. Filed 11-15-68.

888,445. SC AND DESIGN. Consolidated Fine Arts, Ltd. SN 313,807. Pub. 1-6-70. Filed 12-6-68.

888,446. ALLIED PERSONNEL ETC. AND DESIGN. Allied Personnel, Inc. SN 315,825. Pub. 1-6-70. Filed 12-23-68.

888,447. SOUTHERN LIVING SHOW. Southeastern Shows, Inc. SN 316,689. Pub. 1-6-70. Filed 1-15-69.

888,448. VSC AND DESIGN. VSC, Inc. SN 316,850. Pub. 1-6-70. Filed 1-16-69.

888,449. D.C. DIRECT. Bowne & Co., Inc. SN 316,862. Pub. 1-6-70. Filed 1-17-69.

888,450. MAN WITH A BRIEFCASE (DESIGN). Sales Consultants, Inc. SN 316,952. Pub. 1-6-70. Filed 1-23-69.

888,451. DAVY JONES AND SAILOR DESIGN. Wash-A-Car, Inc. SN 318,117. Pub. 1-6-70. Filed 1-31-69.

888,452. HOT COPY ETC. AND FLAME DESIGN. David L. Arrington, d.b.a. Virginia-Craft Printing Company. SN 318,148. Pub. 1-6-70. Filed 2-3-69.

888,453. H (DESIGN). Hardee's Food Systems, Inc. SN 318,306. Pub. 1-6-70. Filed 2-4-69.

888,454. RANDCOMP. Rand McNally & Company. SN 319,332. Pub. 1-6-70. Filed 2-17-69.

888,455. CAPTAIN'S KITCHEN AND DESIGN. Captain's Kitchen, Inc. SN 319,765. Pub. 1-6-70. Filed 2-24-69.

888,456. MICRO-GRAPHIX AND DESIGN. National Business Services, Inc. SN 320,916. Pub. 1-6-70. Filed 3-6-69.

888,457. EXPO BOSTON 76. 1975 World Freedom Fair, Incorporated, d.b.a. United States Bicentennial World Exposition Boston 1976. SN 320,919. Pub. 1-6-70. Filed 3-6-69.

888,458. SIZZLER (LOGO) STEAK HOUSES. Sizzler Family Steak Houses. SN 325,146. Pub. 1-6-70. Filed 4-22-69.

888,459. CHECK AND BALANCE. Check and Balance, Inc. SN 332,198. Pub. 1-6-70. Filed 7-10-69.

888,460. CHECK AND BALANCE AND DESIGN. Check and Balance, Inc. SN 332,199. Pub. 1-6-70. Filed 7-10-69.

Class 102 — Insurance and Financial

888,461. FINANCE-IN-ADVANCE. First National City Bank. SN 303,515. Pub. 1-6-70. Filed 7-24-68.

888,462. CLUB CONTINENTAL. American Express Company. MULTIPLE CLASS (Classes 102,105, and 107). SN 312,847. Pub. 1-6-70. Filed 11-22-68.

888,463. GROUP TWO AND DESIGN. The Union Central Life Insurance Company. SN 313,622. Pub. 1-6-70. Filed 12-4-68.

888,464. ROYAL GUARD. Royal Insurance Company, Limited. SN 314,115. Pub. 1-6-70. Filed 12-10-68.

888,465. PROFIT/TECH. Arthur A. Anderson. SN 320,228. Pub. 1-6-70. Filed 2-27-69.

888,466. BA AND DESIGN. Bank of America National Trust & Savings Association. SN 323,776. Pub. 1-6-70. Filed 4-7-69.

888,467. BA BANK OF AMERICA AND DESIGN. Bank of America National Trust & Savings Association. SN 323,777. Pub. 1-6-70. Filed 4-7-69.

888,468. OVERLAPPING DIAMONDS (DESIGN). Standard & Poor's/Intercapital, Inc. SN 325,629. Pub. 1-6-70. Filed 4-25-69.

888,469. MISCELLANEOUS DESIGN. General United Group, Incorporated. SN 325,744. Pub. 1-6-70. Filed 4-28-69.

Class 103 — Construction and Repair

888,470. MISCELLANEOUS DESIGN. Mercury Aviation Corp. SN 302,855. Pub. 1-6-70. Filed 7-16-68.

888,471. THE MIDAS TOUCH. Midas, Inc. SN 306,389. Pub. 1-6-70. Filed 8-30-68.

888,472. B BREWSTER CONECO AND DESIGN. Brewster Construction & Equipment Company. SN 310,845. Pub. 1-6-70. Filed 10-30-68.

Class 104 — Communication

888,473. UTS AND DESIGN. United Utilities, Incorporated, d.b.a. The United Telephone System. SN 300,389. Pub. 1-6-70. Filed 6-13-68.

Class 105 — Transportation and Storage

888,462. (See Class 102 for this trademark.)

Class 106 — Material Treatment

888,474. ELECTROMATE. Air Pollution Control Corp. SN 316,957. Pub. 1-6-70. Filed 1-21-69.

888,475. MINICROC. Jersey Dyeing Co., Inc. SN 317,960. Pub. 1-6-70. Filed 1-30-69.

Class 107 — Education and Entertainment

888,462. (See Class 102 for this trademark.)

888,476. REPRESENTATION OF A FISH AND DESIGN. New England Aquarium Corporation. SN 279,320. Pub. 1-6-70. Filed 8-29-67.

888,477. HUMANETICS. Stanford Green. SN 319,878. Pub. 1-6-70. Filed 2-24-69.

888,478. VIDEOMAGINATION. WGN Continental Productions Company. SN 327,568. Pub. 1-6-70. Filed 5-19-69.

Collective Membership Mark

Class 200

888,479. INTERNATIONAL ASSOCIATION OF FIRE CHIEFS AND DESIGN. International Association of Fire Chiefs, Inc. SN 306,061. Pub. 1-6-70. Filed 8-27-68.

Certification Mark

Class A — Goods

888,480. ICGB AND DESIGN. International Cargo Gear Bureau, Inc. SN 263,669. Pub. 1-6-70. Filed 1-31-67.

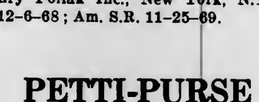
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

888,484. Topp Import & Export, Inc., Miami, Fla. SN 301,978. Filed P.R. 7-3-68; Am. S.R. 11-24-69.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Television Receivers, Transceivers, and Batteries (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders and Phonographs (Int. Cl. 9).

First use on or about Mar. 1, 1968.

SECTION 2

Class 2 — Receptacles

888,481. Dart Industries Inc., d.b.a. Tupperware, Los Angeles, Calif., by change of name from Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. SN 293,302. Filed P.R. 3-14-68; Am. S.R. 10-13-69.

PAK-N-STOR

For Plastic Household Containers and Cover Therefor (Int. Cl. 21).
First use Mar. 4, 1968.

888,482. Continental Packaging Corporation, Kenilworth, N.J. SN 320,940. Filed P.R. 3-6-69; Am. S.R. 10-13-69.

AUTO-SEAL

For Mailing and Shipping Envelopes (Int. Cl. 16).
First use Sept. 30, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

888,483. Henry Pollak Inc., New York, N.Y. SN 313,835. Filed P.R. 12-6-68; Am. S.R. 11-25-69.

PETTI-PURSE

For Ladies' Hand Bags (Int. Cl. 18).
First use Nov. 15, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

888,484. See Section 1 (Combined Certificate).

888,485. Illinois Tool Works Inc., Chicago, Ill. SN 306,566. Filed P.R. 9-4-68; Am. S.R. 10-29-69.

QUENCHARC

For Capacitor-Resistor Assemblies (Int. Cl. 9).
First use as early as June 25, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

888,486. Zeisel Machinery Co., Inc., New York, N.Y. SN 329,320. Filed P.R. 6-6-69; Am. S.R. 11-6-69.

DAVIDSON

For Milling Machines (Int. Cl. 7).
First use April 1968.

Class 36 — Musical Instruments and Supplies

888,484. See Section 1 (Combined Certificate).

Class 39 — Clothing

888,487. Comando S.A., Leon, Gto., Mexico. SN 309,752. Filed P.R. 10-16-68; Am. S.R. 12-11-69.

BALDWIN

Owner of Mexican Reg. No. 69,779, dated Dec. 15, 1951.
For Shoes (Int. Cl. 25).
First use 1950; in commerce Aug. 16, 1968.

888,488. Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. SN 314,812. Filed P.R. 12-18-68; Am. S.R. 11-26-69.

PANTILACE

For Women's Briefs (Int. Cl. 25).
First use Apr. 1, 1963.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

888,489. Burlington Industries, Inc., New York, N.Y. SN 275,915. Filed P.R. 7-13-67; Am. S.R. 7-24-69.

COME CLEAN

For Fabrics in the Piece Composed of Cotton and Synthetic Fibers and Blends Thereof (Int. Cl. 24).
First use at least as early as Apr. 7, 1967.

Class 46 — Foods and Ingredients of Foods

888,490. Shepparton Preserving Company Limited, Shepparton, Victoria, Australia. SN 277,717. Filed P.R. 8-7-67; Am. S.R. 12-23-69.

AUSTRAL

Owner of Australian Reg. No. 57,494, dated Feb. 4, 1931.
For Canned and Dried Fruits and Jams and Canned Tomatoes and Tomato Sauce (Int. Cls. 29 and 30).

888,491. Valley Aloe Vera, Inc., Weslaco, Tex. SN 309,636. Filed P.R. 10-14-68; Am. S.R. 11-5-69.

Dr. Bovik's FRESH Aloe Vera Gel



For Vegetable Gel for Human Consumption as a Juice or Food Supplement (Int. Cl. 32).
First use November 1967.

Class 50 — Merchandise Not Otherwise Classified

888,492. Head-To-Toe Products, Rahway, N.J., assignee of David Jaffe, d.b.a. Head-To-Toe Products, Scotch Plains, N.J. SN 282,704. Filed P.R. 10-17-67; Am. S.R. 9-16-68.

INSTANT GROOMING

For Kit Containing Breath Freshener Sprays and Drops, Hair Dressing, Hair Spray, Shaving Cream, Suntan Lotion, Laundry Detergent, Hair Shampoo, Hand and Face Cosmetic Cream, Personal Deodorant Cream, Toilet Soap, Colognes, Pad Impregnated With Shoe Polish, Pad Impregnated With Spot Removing Preparation, Pads Impregnated With a Personal Deodorant, Pad Impregnated With an Insect Repellent, Pad Impregnated With a Pre-Electric Shave Preparation, Tooth Brush, Dental Floss, Mirror, Styptic Pencil, Safety Razor, Paper Cup, Hair Brush and Comb (Int. Cl. 3).
First use Sept. 8, 1967.

Class 52 — Detergents and Soaps

888,493. Redken Laboratories, Inc., Van Nuys, Calif. SN 306,860. Filed P.R. 9-9-68; Am. S.R. 9-24-69.

AMINO CREME

For Hair Shampoo (Int. Cl. 3).
First use July 9, 1968.

888,494. The House of Vision, Inc., Chicago, Ill. SN 314,792. Filed P.R. 12-18-68; Am. S.R. 12-11-69.



For Anti-Static, Anti-Fogging Eyeglass Cleaning Fluid (Int. Cl. 3).
First use on or before Mar. 3, 1968.

888,495. Gamson Bros. Inc., New York, N.Y. SN 317,226. Filed P.R. 12-2-68; Am. S.R. 12-15-69.

SUPER-PICKLE

For Dry Acid Compound for Pickling Gold, Silver and Other Non-Ferrous Metals (Int. Cl. 1).
First use Oct. 7, 1968.

TRADEMARK REGISTRATIONS RENEWED

75,549. "LIQUORE STREGA" ETC AND DESIGN. Cl. 40 (Int. Cl. 33). 10-19-09.
75,622. MOTHER'S. Cl. 46 (Int. Cl. 30). 10-26-09.
75,777. "IDEAL." Cl. 34 (Int. Cl. 11). 11-16-09.
76,582. SNOW DRIFT. Cl. 12 (Int. Cl. 19). 2-1-10.
77,596. "CHAMOISETTE" AND DESIGN. Cl. 39 (Int. Cl. 25). 4-19-10.
77,664. REPRESENTATION OF HORSE. Cl. 50 (Int. Cl. 24). 4-26-10.
78,472. "CONGOLEUM" AND HEAVY UNDERLINE. Cl. 20 (Int. Cl. 27). 6-14-10.
260,457. GREEN RIVER. Cl. 1 (Int. Cl. 4). 8-27-29.
262,332. TANGAL. Cl. 26 (Int. Cl. 9). 10-8-29.
265,489. NARCO. Cl. 1 (Int. Cl. 19). 12-31-29.
265,930. AEROPEL. Cl. 21 (Int. Cl. 11). 1-7-30.
266,321. CYCLONE. Cl. 21 (Int. Cls. 7 and 9). 1-14-30.
266,376. RIGAN. Cl. 6 (Int. Cl. 2). 1-14-30.
266,649. "KLEEN-EX" AND DESIGN. Cl. 52 (Int. Cl. 3). 1-28-30.
266,996. KINGAN'S. Cl. 46 (Int. Cl. 29). 2-11-30.
267,710. GYPSUMIST. Cl. 38 (Int. Cl. 16). 2-25-30.
268,994. SLEEPER. Cl. 32 (Int. Cl. 20). 3-25-30.
269,948. MAESTRO. Cl. 28 (Int. Cl. 14). 4-22-30.
270,480. HKP. Cl. 23 (Int. Cl. 8). 5-6-30.
271,212. PERTUSSIN. Cl. 18 (Int. Cl. 5). 5-27-30.
271,566. PILOTSTAT. Cl. 21 (Int. Cl. 9). 6-10-30.

272,174. RICH ART. Cl. 16 (Int. Cl. 2). 7-1-30.
443,126. GOLDENTONE. Cl. 44 (Int. Cl. 10). 7-19-49.
443,604. FLYING HORSE (DESIGN). Cl. 16 (Int. Cl. 3). 12-6-49.
443,668. DISCALOY. Cl. 14 (Int. Cl. 6). 1-10-50.
443,673. SHERWIN-WILLIAMS. Cl. 1 (Int. Cls. 1, 2, and 6). 1-10-50.
443,706. LET'S GO WITH DESCO. Cl. 39 (Int. Cl. 25). 1-24-50.
443,743. GIFT O' GOLD. Cl. 46 (Int. Cl. 31). 2-7-50.
444,036. CHIMES. Cl. 46 (Int. Cl. 29). 6-13-50.
508,572. VELCHRUM. Cl. 16 (Int. Cl. 2). 4-12-49.
512,732. HT AND STAR. Cl. 33 (Int. Cl. 21). 7-26-49.
515,984. TEVIOT. Cl. 39 (Int. Cl. 25). 10-4-49.
516,364. LITENTUF. Cl. 39 (Int. Cl. 25). 10-18-49.
516,804. WHITE ROSE. Cl. 46 (Int. Cl. 29). 10-25-49.
516,961. SC AND DESIGN. Cl. 6 (Int. Cl. 1). 10-25-49.
517,507. RAILWEAR. Cl. 14 (Int. Cl. 9). 11-8-49.
517,795. LARIAT TWIST. Cl. 39 (Int. Cl. 25). 11-22-49.
517,954. COTY. Cl. 51 (Int. Cl. 3). 11-22-49.
518,774. MICRONIC. Cl. 31 (Int. Cl. 7). 12-13-49.
518,825. SC AND DESIGN. Cl. 14 (Int. Cls. 6 and 14). 12-13-49.
519,585. DABS. Cl. 18 (Int. Cl. 5). 1-10-50.
519,717. CREPE ONDOR. Cl. 42 (Int. Cl. 24). 1-10-50.
519,814. SEBAGO AND DESIGN. Cl. 22 (Int. Cl. 28). 1-10-50.
519,869. HOLLY AND DESIGN. Cl. 46 (Int. Cl. 30). 1-17-50.
520,061. DYNAMICS OF SELLING. Cl. 38 (Int. Cl. 16). 1-17-50.
520,092. PREP-PIK-L. Cl. 52 (Int. Cl. 3). 1-17-50.
520,239. RIDDELL. Cl. 13 (Int. Cl. 6). 1-24-50.
520,283. DUO. Cl. 5 (Int. Cl. 5). 1-24-50.
520,290. MULCO. Cl. 27 (Int. Cl. 14). 1-24-50.
520,442. ZIP O TIK. Cl. 42 (Int. Cl. 24). 1-31-50.
520,477. TERYLENE. Cl. 43 (Int. Cl. 23). 1-31-50.
520,576. GASWELD. Cl. 34 (Int. Cl. 11). 2-7-50.
520,577. GASWELD AND DESIGN. Cl. 34 (Int. Cl. 11). 2-7-50.
521,018. ORACET. Cl. 6 (Int. Cl. 2). 2-14-50.
521,019. ORASOL. Cl. 6 (Int. Cl. 2). 2-14-50.
521,020. SAPAMINE. Cl. 6 (Int. Cl. 1). 2-14-50.
521,031. TWO DOTTY DIMPLE DISH CLOTH AND DESIGN. Cl. 42 (Int. Cl. 24). 2-14-50.
521,084. AIRFLOAT. Cl. 23 (Int. Cl. 7). 2-21-50.
521,200. DITTO MARKS IN CIRCLE DECIGN. Cl. 52 (Int. Cl. 3). 2-21-50.
521,227. FAIRPRENE. Cl. 50 (Int. Cl. 17). 2-21-50.
521,251. WHITELEY'S. Cl. 49 (Int. Cl. 33). 2-21-50.
521,499. 3 IN ONE. Cl. 10 (Int. Cl. 1). 2-28-50.
521,580. BIG BOY. Cl. 22 (Int. Cl. 9). 2-28-50.
521,586. FAIRPRENE. Cl. 5 (Int. Cl. 1). 2-28-50.
521,610. ATLAS. Cl. 21 (Int. Cl. 7). 2-28-50.
521,775. BATTERUP. Cl. 46 (Int. Cl. 30). 3-7-50.
521,861. DITTO. Cl. 52 (Int. Cl. 3). 3-7-50.
521,907. TERMEND. Cl. 21 (Int. Cl. 9). 3-7-50.
521,999. SEALKING. Cl. 2 (Int. Cl. 16). 3-7-50.
522,034. CHAMPION DE ARMENT (WITH ANVIL). Cl. 23 (Int. Cl. 8). 3-7-50.
522,215. AIR CONDITIONED. Cl. 37 (Int. Cl. 16). 3-14-50.
522,523. ABARRY AND DESIGN. Cl. 14 (Int. Cl. 6). 3-21-50.
522,701. KASLOW. Cl. 44 (Int. Cl. 10). 3-21-50.
523,092. AIR-MAZE. Cl. 31 (Int. Cls. 7 and 11). 3-28-50.
523,114. MULTIMAZE. Cl. 31 (Int. Cl. 7). 3-28-50.
523,225. NORTH WESTERN. Cl. 105 (Int. Cl. 39). 3-28-50.
523,420. PURINA. Cls. 18 and 46 (Int. Cls. 5, 29, and 31). 4-4-50.
523,475. GARBYCROFT. Cl. 39 (Int. Cl. 25). 4-4-50.
523,531. HI-NOTE. Cl. 46 (Int. Cl. 29). 4-4-50.
524,232. EVERLASTING. Cl. 13 (Int. Cl. 6). 4-18-50.
524,392. WEED. Cl. 13 (Int. Cl. 12). 4-25-50.
524,506. FEOSOL PLUS. Cl. 18 (Int. Cl. 5). 4-25-50.
524,577. OIL. Cl. 38 (Int. Cl. 16). 5-2-50.
524,968. PAGE. Cl. 35 (Int. Cl. 17). 5-9-50.
525,135. OCCIDENTAL LIFE INSURANCE CO. OF CALIFORNIA. Cl. 102 (Int. Cl. 17). 5-9-50.
525,174. JETPULSION. Cl. 23 (Int. Cl. 7). 5-16-50.
525,263. HAMMOND. Cl. 23 (Int. Cl. 7). 5-16-50.
525,342. METEX AND DESIGN. Cl. 52 (Int. Cl. 1). 5-16-50.
525,353. VULCAN AND DESIGN. Cl. 9 (Int. Cl. 34). 5-16-50.
525,436. ACE UNIFLOW. Cl. 34 (Int. Cl. 11). 5-23-50.
525,437. ACE UNIFLOW AND DESIGN. Cl. 34 (Int. Cl. 11). 5-23-50.
525,487. SEALPAX AND DESIGN. Cl. 39 (Int. Cl. 25). 5-23-50.
525,605. GENERAL RADIO CO. Cls. 21 and 26 (Int. Cl. 9). 5-30-50.
525,673. PENNZOIL KONTAX SYSTEM. Cl. 23 (Int. Cl. 16). 5-30-50.
525,751. H. F. BYRD AND DESIGN. Cl. 46 (Int. Cl. 31). 5-30-50.
525,774. LOCH LOMOND. Cl. 46 (Int. Cl. 31). 5-30-50.
525,775. BLUESTONE. Cl. 38 (Int. Cl. 16). 5-30-50.
525,839. SP AND DESIGN. Cl. 23 (Int. Cl. 7). 6-6-50.
525,934. SEA GULL. Cl. 21 (Int. Cl. 11). 6-6-50.
526,046. SETTER. Cl. 46 (Int. Cl. 31). 6-6-50.
526,059. CLUE. Cl. 22 (Int. Cl. 28). 6-6-50.
526,114. ARTMASTER AND DESIGN. Cl. 37 (Int. Cl. 16). 6-6-50.
526,276. BRIARCLIFF. Cl. 49 (Int. Cl. 33). 6-13-50.
526,303. NYOLA. Cl. 39 (Int. Cl. 25). 6-13-50.
526,356. THE CRIME CLUB. Cl. 38 (Int. Cl. 16). 6-13-50.
526,393. MORE PEACE OF MIND PER PREMIUM DOLLAR. Cl. 102 (Int. Cl. 36). 6-13-50.
526,398. BRADFAST BDA. Cl. 106 (Int. Cl. 40). 6-13-50.
526,523. STAY COAT. Cl. 15 (Int. Cl. 4). 6-20-50.
526,556. RONDEL. Cl. 28 (Int. Cl. 14). 6-20-50.
526,600. NORTH STAR. Cl. 50 (Int. Cl. 28). 6-20-50.
526,667. HENSON. Cl. 39 (Int. Cl. 25). 6-20-50.
526,743. AMBASSADOR. Cl. 39 (Int. Cl. 25). 6-27-50.
526,908. EXCELLO. Cl. 39 (Int. Cl. 25). 6-27-50.
526,909. JAYSON. Cl. 39 (Int. Cl. 25). 6-27-50.
526,910. JAY-CRAFT. Cl. 39 (Int. Cl. 25). 6-27-50.
526,924. EZ-IT. Cl. 18 (Int. Cl. 5). 6-27-50.
526,979. GOLD ROOM. Cl. 39 (Int. Cl. 25). 6-27-50.
526,997. MANROL. Cl. 39 (Int. Cl. 25). 6-27-50.
527,023. REINDEER (DESIGN). Cl. 102 (Int. Cl. 36). 6-27-50.
527,333. BACKGROUND OF FASHION. Cl. 42 (Int. Cl. 24). 7-4-50.

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Section 8

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177,216. COMANDANTE. Cl. 46. 10-11-23.
382,386. YAMI. Cl. 46. 10-29-40.
404,406. CLERICAL. Cl. 37. 11-23-43.
433,406. COTTON CLUB. Cl. 39. 10-14-47.

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764,100. CELLULUX B. Cl. 1.
764,105. PLYSEAL. Cl. 1.
764,108. MIRAVUE. Cl. 2.
764,109. LADY WOODPECKER AND DESIGN. Cl. 2.
764,113. PAK SAK. Cl. 3.
764,118. AEROFOAM. Cl. 6.
764,120. SIERRA. Cl. 6.
764,126. VANZAK-112. Cl. 6.
764,129. SURE NOXEM. Cl. 6.
764,132. CARGILL AND DESIGN. Cl. 6.
764,140. THERMUL. Cl. 6.
764,141. TERACRON. Cl. 6.
764,143. FLOWER-OMA. Cl. 6.
764,148. OR-GA-NICK AND DESIGN. Cl. 10.
764,157. EVER LAST AND DESIGN. Cl. 12.
764,161. WOODMANSE. Cl. 13.
764,173. MAGIC DECORATOR. Cl. 16.

764,174. TCI 960. Cl. 16.
764,176. SEA-TAR. Cl. 16.
764,178. SWIS SKI. Cl. 16.
764,183. PENNCRAFT. Cl. 16.
764,185. ATRIVYL. Cl. 18.
764,189. TRANS-IRON. Cl. 18.
764,191. DICASAN. Cl. 18.
764,192. DOUBLE SHOT. Cl. 18.
764,193. WEX. Cl. 18.
764,203. ALDURIL. Cl. 18.
764,207. KA-VASER. Cl. 18.
764,222. LOKSTRIPE. Cl. 21.
764,226. POLYOHM. Cl. 21.
764,227. BRITE-EYE. Cl. 21.
764,228. CAMP'OTEL ETC. AND DESIGN. Cl. 22.
764,230. "A-OK" SPACE-RACE. Cl. 22.
764,231. THE POLAR SLEEPING BAG AND DESIGN. Cl. 22.
764,233. FLEX-A-HOLD. Cl. 22.
764,235. PAR-TRAINER. Cl. 22.
764,236. BATSONE. Cl. 22.
764,243. NOSEY BAND. Cl. 22.
764,245. LITE-WAY. Cl. 22.
764,246. ZING-A-RING. Cl. 22.
764,247. MYST-A VISION. Cl. 22.
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764,253. GRIPPERS. Cl. 23.
764,261. EASYWAY. Cl. 23.
764,264. OX (DESIGN). Cl. 23.
764,265. D ENCLOSING M AND C (DESIGN). Cl. 23.
764,267. ARTESIAN SUB-TILLER AND DESIGN. Cl. 23.
764,270. ARLO. Cl. 23.
764,274. SPEED-VAC. Cl. 24.
764,276. CU (DESIGN). Cl. 28.
764,282. PARASOL AND DESIGN. Cl. 28.
764,283. FORBIDDEN FRUIT. Cl. 28.
764,285. BETTINA. Cl. 28.
764,286. DAN CUPID AND DESIGN. Cl. 28.
764,294. EASTMAN. Cl. 36.
764,296. ASTRYLIUM. Cl. 36.
764,297. SILHOUETTE. Cl. 36.
764,298. NA-R-CO. Cl. 36.
764,299. BOX DESIGN. Cl. 37.
764,305. PENLINE AND DESIGN. Cl. 37.
764,309. DURIBAK. Cl. 37.
764,311. THE PLUS + PERFECT COVER. Cl. 37.
764,315. GIFTICATE. Cl. 37.
764,319. VC AND DESIGN. Cl. 37.
764,321. GATOR-PAK. Cl. 37.
764,322. CROWN AND MASK DESIGN. Cl. 37.
764,324. MOPKIN. Cl. 37.
764,331. SHOW. Cl. 38.
764,335. THE NEW YORK STANRARD. Cl. 38.
764,336. INVESTORS' CLINIC. Cl. 38.
764,342. THERMAL SNUGGLER. Cl. 39.
764,350. SHOW BUSINESS. Cl. 39.
764,364. FESTIVAL. Cl. 46.
764,368. HEAVENLY KITCHEN ETC. AND CHINESE CHARACTERS. Cl. 46.
764,369. AC CITE. Cl. 46.
764,372. JARDAL. Cl. 46.
764,373. VREY. Cl. 46.
764,375. SUNSEAL. Cl. 46.
764,376. SENIOR CLUB. Cl. 46.
764,379. SUN-BURST AND DESIGN. Cl. 46.
764,382. TUPY. Cl. 46.
764,388. SANDPIPER. Cl. 46.
764,389. URBAN SQUARE. Cl. 46.
764,390. BRAND X X-CELENT AND DESIGN. Cl. 46.
764,391. HI-VIGOR. Cl. 46.
764,393. OLDE FIELD INN. Cl. 46.
764,395. APPL-LUNY'S. Cl. 46.
764,404. PACIFIC GARDENS. Cl. 46.
764,405. DESIGN OF A CHILD. Cl. 46.
764,410. SCOTCH PACK. Cl. 48.
764,414. WEE DOCH. Cl. 49.
764,415. ZIP. Cl. 49.
764,425. CONSTANTLY. Cl. 51.
764,429. CHEZLE'BEN. Cl. 51.
764,432. LASH-ON. Cl. 51.
764,434. BERNAT DREAMSUDS. Cl. 52.
764,447. SURVANALYSIS AND DESIGN. Cl. 100.
764,448. SHERWYN. Cl. 100.
764,451. FPRA AND FEATHER DESIGN. Cl. 101.
764,452. YANKEE PEDLARS. Cl. 101.
764,454. FILMBOARD. Cl. 101.
764,457. HI-JET. Cl. 103.
764,459. TIARA. Cl. 105.
764,463. AMERICAN GALLOWAY BREEDERS' ASSN. AND DESIGN. Cl. 107.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

51,444. HUNTLEY & PALMERS. Cl. 46. 4-17-06. Huntley & Palmers, Ltd. Associated Biscuits Limited, Reading, England. Amended: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 2, after "Ltd." , *now owned by Associated Biscuits Limited, also trading as Huntley & Palmers and W. & R. Jacob & Co. (Liverpool) and as Peek, Frean & Co. (company of Great Britain and Northern Ireland), 119, King's Road, Reading, England* is inserted.

266,051. PEEK FREAN & CO. LIMITED. Cl. 46. 1-14-30. Peek Frean & Co. Ltd. Associated Biscuits Limited, Reading, England. Amended: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, after "Ltd." , *now owned by Associated Biscuits Limited, also trading as Huntley & Palmers, and W. & R. Jacob & Co. (Liverpool) and as Peek, Frean & Co. (company of Great Britain and Northern Ireland), 119, King's Road, Reading, England* is inserted, and the drawing is amended to appear:

PEEK FREAN & CO.

513,069. FRUIT AND DESIGN. Cl. 6. 8-2-49. Stauffer Chemical Company, New York, N.Y. Amended: In the statement, column 1, line 7, "agricultural sulfur" is deleted and *sulfur used for agricultural purposes* is inserted, lines 17 and 18 are deleted, and the drawing is amended to appear:

FRUIT

806,581. ATLAS PLYWOOD CORP. AND DESIGN. Cl. 12. 4-5-66. Consolidated Electronics Industries Corp., by merger from Atlas General Industries, Inc. North American Philips Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Corp." , *now by change of name North American Philips Corporation* is inserted.

840,981. MOONLIT BLONDE. Cl. 51. 12-19-67. Clairol Incorporated, New York, N.Y. Corrected: In the statement, column 2, line 3, "1996" should be deleted and *1966* should be inserted.

881,344. LOWNEY'S AND DESIGN. Cl. 46. 11-25-69. Walter M. Lowney Company Limited, Sherbrooke, Quebec, Canada. Corrected: In the statement, column 1, line 1, after "Lowney" *Company* should be inserted.

883,869. JOLLY GREEN GIANT. Cl. 46. 1-6-70. Green Giant Company, Le Sueur, Minn. Corrected: In the statement, column 2, line 4, "1940" should be deleted and *1949* should be inserted.

883,990. MISCELLANEOUS DESIGN. Cl. 6. 1-13-70. Illinois Bronze Powder & Paint Co., Lake Zurich, Ill. Corrected: In the statement, column 1, line 1, "Bronz" should be deleted and *Bronze* should be inserted.

884,089. BELL DESIGN. Cl. 23. 1-13-70. Captain International Industries Ltd., Vancouver, British Columbia, Canada. Corrected: In the statement, column 2, line 1, "keg" should be deleted and *key* should be inserted.

884,409. FMC AND DESIGN. Cls. 1, 6, 7, 13, 42, and 43. 1–20–70. FMC Corporation, San Jose, Calif. Corrected: In the heading, *Ser. No. 391,104, filed Mar. 10, 1969* should be inserted.

885,176. SSK AND DESIGN. Cl. 51. 1–27–70. S. S. Kresge Company, Detroit, Mich. Corrected: In the statement, column 2, line 1, "conditioning" should be deleted and *conditioners* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

203,180. MASTER BUILDERS. Cl. 12. The Master Builders Company. 9–15–25. New Cert. Sec. 7(c) to Martin Marietta Corporation, New York, N.Y.

750,448. ORBIT AND DESIGN. Cl. 21. Orbit Industries, Inc. 6–4–63. New Cert. Sec. 7(c) to Harvey Hubbell, Incorporated, Bridgeport, Conn.

761,250. FERROBOND. Cl. 21. Electro-Sonic Systems, Inc. 12–10–63. New Cert. Sec. 7(c) to Aerojet-General Corporation, El Monte, Calif.

761,479. PRONTO. Cl. 52. Maxine Wilson Sanders, doing business as Wilson Chemical Company. 12–10–63. New Cert. Sec. 7(c) to S. C. Johnson & Son, Inc., Racine, Wis.

762,248. FARM-COM. Cl. 21. Orbit Industries, Inc. 12–31–63. New Cert. Sec. 7(c) to Harvey Hubbell, Incorporated, Bridgeport, Conn.

792,627. TRUEPENNY. Cl. 42. Crompton Company. 7–13–65. New Cert. Sec. 7(c) to J. C. Penney Company, Inc., New York, N.Y.

823,211. DURA-LAN. Cls. 4, 5, 12. Lancaster Chemical Corporation. 1–31–67. New Cert. Sec. 7(c) to Terrafino Company, Inc., White Plains, N.Y.

856,597. PENNETTE. Cl. 39. Cotton Club Frocks, Inc. 9–10–68. New Cert. Sec. 7(c) to J. C. Penney Company, Inc., New York, N.Y.

873,884. SHELL-TARP. Cl. 42. Shellbuilder Company. 7–29–69. New Cert. Sec. 7(c) to Shell-Tarp Company, Inc., Houston, Tex.

875,089. GMG. Cl. 23. Hollymatic Corporation. 8–19–69. New Cert. Sec. 7(c) to Hollymatic Corporation, Park Forest, Ill.

INDEX OF REGISTRANTS

MARCH 24, 1970

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AAA Engineering & Drafting, Inc., Salt Lake City, Utah. 888,430, pub. 1–6–70. Cl. 100.
Abarry Steel Co., Perth Amboy, N.J. 522,523, ren. 3–24–70. Cl. 14.
Ace Engineering Co., Chicago, Ill. 525,436–7, ren. 3–24–70. Cl. 34.
Acme Electric Corp., Cuba, N.Y. 888,188, pub. 1–6–70. Cl. 21.
Acme Quality Paints, Inc., Detroit, Mich. 764,129, canc. Cl. 6.
Advanced Instruments, Inc., Newton Highland, Mass. 888,250, pub. 1–6–70. Cl. 26.
Air Pollution Control Corp., Matteson, Ill. 888,474, pub. 1–6–70. Cl. 106.
Air-Maze Corp., Cleveland, Ohio, to North American Rockwell Corp., Pittsburgh, Pa. 523,092, ren. 3–24–70. Cl. 31.
Air-Maze Corp., Cleveland, Ohio, to North American Rockwell Corp., Pittsburgh, Pa. 523,114, ren. 3–24–70. Cl. 31.
Aktiebolaget Jonkoping-Vulcan: *See*—
Jonkopings Och Vulcans Tandsticksfabriksaktiebolag.
Alberti Giuseppe, to S.p.A. Strega Alberti Benevento, Benevento, Italy. 75,549, ren. 3–24–70. Cl. 49.
Alco Controls Corp., St. Louis, Mo. 888,131, pub. 1–6–70. Cl. Cl. 13.
Alduk, Frank P., d.b.a. Newcastle Co., New Castle, Pa. 888,216, pub. 1–6–70. Cl. 23.
Alger, C. L. & Co., Inc., Abington, Mass. 888,100, pub. 1–6–70. Cl. 1.
Allen Food Products, Inc., Tipp City, Ohio. 888,357, pub. 1–6–70. Cl. 46.
Allied Personnel, Inc., Jacksonville, Fla. 888,446, pub. 1–6–70. Cl. 101.
Amchem Products, Inc.: *See*—
Nellson Chemical Co.
American Blower Corp., Detroit, Mich., to American Standard Inc., New York, N.Y. 265,980, ren. 3–24–70. Cl. 21.
American Can Co., New York, N.Y. 764,108, canc. Cl. 2.
American Chain & Cable Co., Inc., Bridgeport, Conn. 524,392, ren. 3–24–70. Cl. 13.
American Cyanamid Co., Wayne, N.J. 764,117, canc. Cl. 6.
American Dairy Queen Corp., Minneapolis, Minn. 888,353, pub. 1–6–70. Cl. 46.
American Distilling Co., The, New York, N.Y. 526,276, ren. 3–24–70. Cl. 49.
American Express Co., New York, N.Y. 888,462, pub. 1–6–70. Multiple Class (Classes 102, 105, and 107).
American Galloway Breeders' Association Denver, Colo. 764,463, canc. Cl. 107.
American Home Products Corp.: *See*—
Boyle-Midway Inc.
American Hospital Supply Corp.: *See*—
Baxter, Don Inc.
American Precision Industries Inc., Buffalo, N.Y. 888,277, pub. 1–6–70. Cl. 34.
American Radiator Co., East Orange, N.J., to American Standard Inc., New York, N.Y. 75,777, ren. 3–24–70. Cl. 34.
American Standard Inc.: *See*—
American Blower Corp.
American Radiator Co.
Anderson, Arthur A., New York, N.Y. 888,465, pub. 1–6–70. Cl. 102.
Anglo Fabrics Co., Inc., New York, N.Y. 527,333, ren. 3–24–70. Cl. 42.
Ardon Associates, Inc.: *See*—
Kashan Laboratories, Inc.
Arlo Industries, Inc., Mount Vernon, N.Y. 764,270, canc. Cl. 23.
Armour & Co., to Armour Pharmaceutical Co., Chicago, Ill. 519,585, ren. 3–24–70. Cl. 18.
Armour Pharmaceutical Co.: *See*—
Armour & Co.
Arrington, David L., d.b.a. Virginia-Craft Printing Co., Manassas, Va. 888,452, pub. 1–6–70. Cl. 101.
Arrow Liqueurs Corp., d.b.a. McMaster Import Co., Detroit, Mich. 764,414, canc. Cl. 49.
Ascot Sales Ltd., Hastings-On-Hudson, N.Y. 888,227, pub. 1–6–70. Cl. 24.
Ashe, H. J., Co., Inc., The, South Norwalk, Conn. 888,195, pub. 1–6–70. Cl. 21.
Astrup Co., The, Cleveland, Ohio. 888,135, pub. 1–6–70. Cl. 13.
Athlone Industries, Inc., New York, N.Y. 888,253, pub. 1–6–70. Cl. 26.
Atlas Supply Co., Springfield, N.J. 521,610, ren. 3–24–70. Cl. 21.
Augsburg Haus, Ltd., Boulder, Colo. 764,178, canc. Cl. 16.
Automatic Gold Chain Co., to Textron Inc., Providence, R.I. 269,948, ren. 3–24–70. Cl. 28.
Avon Products, Inc., New York, N.Y. 888,384, pub. 1–6–70. Multiple Class (Classes 51 and 52).
Avon Products, Inc., New York, N.Y. 888,388–90, pub. 1–6–70. Multiple Class (Classes 51 and 52).
Avon Products, Inc., New York, N.Y. 888,394–5, pub. 1–6–70. Multiple Class (Classes 51 and 52).
Avon Products, Inc., New York, N.Y. 888,397, pub. 1–6–70. Multiple Class (Classes 51 and 52).
Avon Products, Inc., New York, N.Y. 888,400–10, pub. 1–6–70. Multiple Class (Multiple Classes 51 and 52).
Axaline, Inc., Inglewood, Calif. 888,202, pub. 1–6–70. Cl. 22.
B.V.D. Corp., The, to Rubin-Meltzer Corp., New York, N.Y. 525,487, ren. 3–24–70. Cl. 39.
Bailey, Girard & Cotton Co. Inc., Brookline, Mass. 764,120, canc. Cl. 6.
Ball Chain Mfg., Co., Inc., Mount Vernon, N.Y. 888,129, pub. 1–6–70. Cl. 13.
Bank of America National Trust & Savings Association, San Francisco, Calif. 888,466–7, pub. 1–6–70. Cl. 102.
Banyu Pharmaceutical Co., Ltd., Tokyo, Japan. 888,151, pub. 1–30–68. Cl. 18.
Barwick, E. T. Industries, Inc., Chamblee, Ga. 888,341–3, pub. 1–6–70. Cl. 42.
Batlin, L., & Son, Inc., New York, N.Y. 764,236, canc. Cl. 22.
Bauer, Eddie, Inc., Seattle, Wash. 888,105, pub. 1–6–70. Cl. 3.
Baxter, Don, Inc., Glendale, Calif., to American Hospital Supply Corp., Evanston, Ill. 522,701, ren. 3–24–70. Cl. 44.
Bayuk Cigars Inc., Philadelphia, Pa. 888,150, pub. 1–6–70. Cl. 17.
Beam-Matic Hospital Supply, Inc., Long Island City, N.Y. 888,348, pub. 1–6–70. Cl. 44.
Bell & Howell Co.: *See*—
Ditto, Inc.
Bell & Howell Co., Chicago, Ill. 888,238, pub. 1–6–70. Cl. 26.
Belle Wood, Inc., Bellwood, Ill. 888,294, pub. 1–6–70. Cl. 36.
Bernat, Emile, & Sons Co., Jamaica Plain, Mass. 764,434, canc. Cl. 52.
Bettina Jewels, Inc., New York, N.Y. 764,285, canc. Cl. 28.
Bird Electronic Corp., Cleveland, Ohio. 888,230, pub. 1–6–70. Cl. 26.
Black, Thomas, & Sons (Greenock) Ltd., Port Glasgow, Scotland. 764,231, canc. Cl. 22.
Bloch, Suzanne Sarah, Paulette Andrée Epelboin, Robert Edouard Levy, and Claude Guy Levy, d.b.a. Optique Boyer, Paris, France. 309,237, pub. 1–6–70. Cl. 26.
Blue Star Knitting, Inc., Milwaukee, Wis. 764,342, canc. Cl. 39.
Blumberg, Arnold, and Doris Blumberg, d.b.a. Electrocities Co., Rego Park, N.Y. 888,263, pub. 1–6–70. Cl. 28.
Bodge, M. P., d.b.a. M. P. Bodge Products, Portsmouth, N.H., to Stuart Sport Specialties, Inc., d.b.a. Al's Goldfish Lure Co., Springfield, Mass. 519,814, ren. 3–24–70. Cl. 22.
Bon Clare, Decatur, Ill. 764,315, canc. Cl. 37.
Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 888,347, pub. 1–6–70. Cl. 44.
Bonder & Carnase Studio Inc., New York, N.Y. 888,142, pub. 1–6–70. Cl. 14.
Bowne & Co., Inc., New York, N.Y. 888,449, pub. 1–6–70. Cl. 101.
Boyle-Midway Inc., Jersey City, N.J., to American Home Products Corp., New York, N.Y. 521,499, ren. 3–24–70. Cl. 10.
Bradford Dyeing Association (U.S.A), to Bradford Dyeing Association (U.S.A.) Inc., Westerly, R.I. 526,398, ren. 3–24–70. Cl. 106.
Breaker Confections, Inc.: *See*—
Sunline, Inc.
Breck, John H., Inc., Wayne, N.J. 888,398–9, pub. 1–6–70. Cl. 51.
Breuer Electric Mfg. Co.: *See*—
Hansen, Georg H.
Brewster Construction & Equipment Co., Hackensack, N.J. 888,472, pub. 1–6–70. Cl. 103.
Bright Star Industries, Inc., Clifton, N.J. 888,190, pub. 1–6–70. Cl. 21.
Bristol-Myers Co., New York, N.Y. 888,153–4, pub. 1–6–70. Cl. 18.
Brite Industries Inc., Providence, R.I. 888,260, pub. 1–6–70. Cl. 28.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 888,322, pub. 1–6–70. Cl. 39.
Brooks, Julius E., Los Angeles, Calif. 888,292, pub. 1–6–70. Cl. 34.
Brothers Two International, Inc., Hialeah, Fla. 888,439, pub. 1–6–70. Cl. 100.
Brunswick Corp., Chicago, Ill. 888,197, pub. 1–6–70. Cl. 21.
Bryant, Robert G., Canora, Saskatchewan, Canada. 888,207, pub. 1–6–70. Cl. 22.
Buchanan Electrical Products Corp., Union, N.J. 521,907, ren. 3–24–70. Cl. 21.
Burlington Industries, Inc., New York, N.Y. 888,489. Cl. 42.
Burn-Strauss, Inc., d.b.a. Woodpecker Woodware, Los Angeles, Calif. 764,109, canc. Cl. 2.
Bury & Masco (Holdings) Ltd.: *See*—
Mitchells, Ashworth, Stanfield & Co., Ltd.
Byrd, H. F., Inc., Winchester, Va. 525,751, ren. 3–24–70. Cl. 46.
California Beverage Industries, Inc., Oakland, Calif. 888,351, pub. 1–6–70. Cl. 45.
Cambridge Systems, Inc.: *See*—
EG & G, Inc.
Campbell Chain Co., York, Pa. 888,137, pub. 1–6–70. Cl. 13.
Camp'otel Corp., Fort Worth, Tex. 764,228, canc. Cl. 22.
Canadian Schenley Distilleries Ltd., Montreal, Quebec, Canada. 888,378, pub. 1–6–70. Cl. 49.
Cannon Mills Co., Kannapolis, N.C. 888,335, pub. 1–6–70. Cl. 42.
Capital Western Investment Corp., Dallas, Tex. 888,434, pub. 1–6–70. Cl. 100.

Captain International Industries Ltd., Vancouver, British Columbia, Canada. 884,089, cor. Cl. 28.
Captain's Kitchen, Inc., Columbia, S.C. 888,455, pub. 1–6–70. Cl. 101.
Cargill, Inc., Minneapolis, Minn. 764,132, canc. Cl. 6.
Carl-Zeiss Stiftung: *See*—
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Carter & Churchill Co., Inc., West Lebanon, N.H. 888,330, pub. 1–6–70. Cl. 39.
Carter Overton, Inc., Auburndale, Mass. 764,305, canc. Cl. 37.
Carter-Wallace, Inc., New York, N.Y. 888,167, pub. 1–6–70. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 888,370, pub. 1–6–70. Cl. 46.
Champion Dearment Tool Co., Meadville, to Channellock, Inc., Crawford, Pa. 522,034, ren. 3–24–70. Cl. 23.
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Champion Dearment Tool Co.
Charlton, F. M., Co., Inc., New York, N.Y. 764,311, canc. Cl. 37.
Check & Balance, Inc., Largo, Fla. 888,459–60, pub. 1–6–70. Cl. 101.
Chemetron Corp.: *See*—
National Cylinder Gas Co.
Chem/Serv, Inc., Minneapolis, Minn. 888,118, pub. 1–6–70. Multiple Class (Classes 6 and 16).
Chesebrough-Pond's Inc.: *See*—
Seeck & Kade, Inc.
Chicago Pharmacal Co., Chicago, Ill. 764,191, canc. Cl. 18.
Chicago & North Western Railway Co., Chicago, Ill. 523,225, ren. 3–24–70. Cl. 105.
Chikitoys, Bayonne, France. 888,203, pub. 1–6–70. Cl. 22.
Chris-Craft Industries, Inc., Pompano Beach, Fla. 888,174, pub. 1–6–70. Cl. 19.
Ciba Corp., New York, N.Y. 764,141, canc. Cl. 6.
Ciba Ltd.: *See*—
Society of Chemical Industry in Basle
Ciba Ltd., Basle, Switzerland. 521,018–20, ren. 3–24–70. Cl. 6.
City of Rochester, The, Rochester, Mich. 888,444, pub. 1–6–70. Cl. 101.
Clairol Inc., New York, N.Y. 840,981, cor. Cl. 51.
Clairol Inc., New York, N.Y. 888,383, pub. 1–6–70. Cl. 51.
Clements, Robert & Associates, Los Angeles, Calif. 888,432, pub. 1–6–70. Cl. 100.
Clock Restaurant, Inc., The, Lathrup Village, Mich. 888,428, pub. 1–13–70. Cl. 100.
Cochran, Jacqueline Inc., Newark, N.Y. 764,432, canc. Cl. 51.
Cohn, Sigmund Corp., Mount Vernon, N.Y. 516,961, ren. 3–24–70. Cl. 6.
Cohn, Sigmund Corp., Mount Vernon, N.Y. 518,825, ren. 3–24–70. Cl. 14.
Colortex Studios, Inc., Goldsboro, N.C. 888,306, pub. 1–6–70. Cl. 38.
Columbia Ribbon & Carbon Mfg., Co., Inc. Glen Cove, N.Y. 888,121, pub. 1–6–70. Cl. 11.
Comando, S. A. Leon, Mexico. 888,487. Cl. 39.
Commander Mill Co., Minneapolis, Minn. 177,216, canc. Cl. 46.
Conant, Mrs. William H., d.b.a. W. H. Conant & Co., Hartsdale, N.Y. 888,123, pub. 1–6–70. Cl. 12.
Congoleum Industries, Inc.: *See*—
United Roofing & Mfg. Co.
Congressional Distributors, Inc., Washington, D.C. 888,273, pub. 1–6–70. Cl. 33.
Connectronics Corp., New York, N.Y. 888,185, pub. 1–6–70. Cl. 21.
Consolidate Electronics Industries Corp., by merger from Atlas General Industries, Inc., to North American Philips Corp., New York N.Y. 806,581. Am. 7(d). Cl. 12.
Consolidate Fine Arts, Ltd., New York, N.Y. 888,445, pub. 1–6–70. Cl. 101.
Container Corp. of America, Chicago, Ill. 764,299, canc. Cl. 37.
Continental Coatings Corp., New York, N.Y. 764,176, canc. Cl. 16.
Continental Packaging Corp., Kenilworth, N.J. 888,482. Cl. 2.
Cook, James W. & June H. Cook, Sarasota, Fla. 888,429, pub. 1–6–70. Cl. 100.
Coro, Inc., New York, N.Y. 764,282–3, canc. Cl. 28.
Cornwell Quality Tools Co., The, Mogadore, Ohio. 888,213, pub. 1–6–70. Cl. 23.
Cost-Plus, Inc., San Francisco, Calif. 764,388, canc. Cl. 46.
Cotton Club Bottling Co., The, Cleveland, Ohio. 888,350, pub. 1–6–70. Cl. 45.
Cotton Club Frocks Inc., New York, N.Y. 433,406, canc. Cl. 39.
Cotton Club Frocks, Inc., to J. C. Penney Co., Inc., New York, N.Y. 856,597, new cert. Cl. 39.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 517,954, ren. 3–24–70. Cl. 51.
Crompton Co., to J. C. Penney C., Inc., New York, N.Y. 792,627, new cert. Cl. 42.
Crops & B Franchises, Inc., Atlanta, Ga. 888,436, pub. 1–6–70. Cl. 100.
Crystal, David Inc., to David Crystal, Inc., New York, N.Y. 526,303, ren. 3–24–70. Cl. 39.
D & B Construction Co., Pottstown, Pa. 888,272, pub. 1–6–70. Cl. 32.
DPA, Inc., Dallas, Tex. 888,427, pub. 1–6–70. Cl. 100.
Dana Corp., Toledo, Ohio. 888,212, pub. 1–6–70. Cl. 23.
Darrimon, E. M. & Co., Los Angeles, to Westgate-California Foods, Inc., San Diego, Calif. 523,531, ren. 3–24–70. Cl. 46.
Dart Industries Inc., from Rexall Drug & Chemical Co., Los Angeles, Calif. 888,152, pub. 1–6–70. Cl. 18.
Dart Industries Inc., d.b.a. Tupperware, from Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 888,481. Cl. 2.
Deepsea Ventures, Inc., Newport News, Va. 888,420–1, pub. 1–6–70. Cl. 100.
Dell Products Corp., Hillside, N.J. 888,366, pub. 1–6–70. Cl. 46.
Dennison Mfg. Co., to Dennison Mfg. Co., Framingham, Mass. 522,215, ren. 3–24–70. Cl. 37.
Denys Fisher Group Ltd., Yorkshire, England. 888,206, pub. 1–6–70. Cl. 22.
Der Wienerschnitzel International, Inc., Torrance, Calif. 888,422, pub. 1–6–70. Cl. 100.
Desco Shoe Corp. New York, N.Y. 443,706, ren. 3–24–70. Cl. 39.
Detomaso-Automobili S.p.A., Modena, Italy. 888,173, pub. 1–6–70. Cl. 19.
Dimension Systems Corp., Long Island City, N.Y. 888,196, pub. 1–6–70. Cl. 21.
Dior, Christian Eyewear, Inc., Great Neck, N.Y. 888,248, pub. 1–6–70. Cl. 26.
Dittlinger Lime Co., New Braunfels, Tex., to United States Gypsum Co., Chicago, Ill. 76,582, ren. 3–24–70. Cl. 12.
Ditto, Inc., to Bell & Howell Co., Chicago, Ill. 521,200, ren. 3–24–70. Cl. 52.
Ditto, Inc., to Bell & Howell Co., Chicago, Ill. 521,861, ren. 3–24–70. Cl. 52.
Dold Packing Corp., Buffalo, N.Y., to Hygrade Food Products Corp., Detroit, Mich. 516,804, ren. 3–24–70. Cl. 46.
Don The Beachcomber, Hollywood, Calif. 888,355, pub. 1–6–70. Cl. 46.
Doubleday & Co., Inc., New York, N.Y. 526,356, ren. 3–24–70. Cl. 38.
Dow, Carol L., d.b.a. Dow Research, Kansas City, Mo. 888,309, pub. 1–6–70. Cl. 38.
Dow Chemical Co., The, Midland, Mich. 888,172, pub. 1–6–70. Cl. 18.
Duffy-Mott Co., Inc.: *See*—
Pratt-Low Preserving Co.
Dunkin' Donuts of America, Inc., d.b.a. Dunkin' Donuts, Quincy, Mass. 888,360, pub. 1–6–70. Cl. 46.
Dunlop Tire & Rubber Corp., Buffalo, N.Y. 888,205, pub. 1–6–70. Cl. 22.
Dunn, Cornelius E., d.b.a. Ka-Vaser Products Co., Portland, Oreg. 764,207, canc. Cl. 18.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 521,227, ren. 3–24–70. Cl. 50.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 521,586, ren. 3–24–70. Cl. 5.
Durkee-Atwood Co., Minneapolis, Minn. 888,283, pub. 1–6–70. Cl. 35.
Duti-Duds, Inc., Lynchburg, Va. 888,333, pub. 1–6–70. Cl. 39.
Dynasciences Corp., Blue Bell, Pa. 888,242, pub. 1–6–70. Cl. 26.
EG & G, Inc., Bedford, from Cambridge Systems, Inc., Newton, Mass. 888,231, pub. 1–6–70. Cl. 26.
ES '70, Washington, D.C. 888,305, pub. 1–6–70. Cl. 38.
Eagle Empire Corp., White Plains, N.Y. 888,267, pub. 1–6–70. Cl. 31.
Eastman Kodak Co., Rochester, N.Y. 764,294, canc. Cl. 86.
Eaton Yale & Towne Inc., Cleveland, Ohio. 888,268, pub. 1–6–70. Cl. 31.
Ebauches S.A., Neuchatel, Switzerland. 888,255, pub. 1–6–70. Cl. 27.
Ebert Electronics Corp., Floral Park, N.Y. 888,191–2, pub. 1–6–70. Cl. 21.
Electro-Nite Co., Philadelphia, Pa. 888,251, pub. 1–6–70. Cl. 26.
Electro-Sonic Systems, Inc., to Aerojet-General Corp., El Monte, Calif. 761,250, new cert. Cl. 21.
Eltra Corp.: *See*—
North American Refractories Co.
Everlasting Valve Co., Cranford, N.J. 524,232, ren. 3–24–70. Cl. 13.
Excello Shirts, Inc., to Kayser-Roth Corp., New York, N.Y. 526,908, ren. 3–24–70. Cl. 39.
Excelsior Wine & Spirits Corp., New York, N.Y. 888,376, pub. 1–6–70. Cl. 47.
Exeter Fruit Association, Exeter, Calif. 526,046, ren. 3–24–70. Cl. 46.
Exquisite Form Industries, Inc., New York, N.Y. 764,850, canc. Cl. 39.
FMC Corp., San Jose, Calif. 884,409, cor. Multiple Class (Classes 1, 6, 7, 13, 42, and 43).
F.P.I., Inc., Providence, R.I. 764,230, canc. Cl. 22.
Fabricators, Inc., Ravenna, Ohio. 888,221, pub. 1–6–70. Cl. 23.
Farmers Exchange, Inc., Franklinton, La. 764,192, canc. Cl. 18.
Fellom Publishing Co., San Francisco, Calif. 888,310, pub. 1–6–70. Cl. 38.
Fimco, Inc., Sioux City, Iowa. 888,175, pub. 1–6–70. Cl. 19.
Financial Public Relations Association, Chicago, Ill. 764,451, canc. Cl. 101.
Fiorentina Shoes, Inc., New York, N.Y. 888,326, pub. 1–6–70. Cl. 39.
Firestone Tire & Rubber Co., The, Akron, Ohio. 888,179, pub. 1–6–70. Cl. 19.
First National City Bank, New York, N.Y. 888,461, pub. 1–6–70. Cl. 102.
Fisons Ltd., Felixstowe, from Fisons Pest Control Ltd., Harston, England. 888,115–16, pub. 1–6–70. Cl. 6.
Fisons Pest Control Ltd.: *See*—
Fisons Ltd.
Flex-Weld, Inc., Bartlett, Ill. 888,133, pub. 1–6–70. Cl. 13.
Ford Motor Co., Dearborn, Mich. 888,181, pub. 1–6–70. Cl. 19.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 888,159, pub. 1–6–70. Cl. 18.
Frank, Wally Ltd., New York, N.Y. 888,149, pub. 1–6–70. Cl. 17.
Friedman, Frank, to Magnolia Diamonds, Inc., Birmingham, Ala. 526,556, ren. 3–24–70. Cl. 28.

Fuller Laboratories, Inc., Eden Prairie, Minn. 888,146, pub. 1–6–70. Cl. 16.
Fulmer, Arthur, d.b.a. Arthur Fulmer of Memphis, Memphis, Tenn. 888,295, pub. 1–6–70. Cl. 36.
Gach, Robert L., d.b.a. Kilo Engineering Co., La Verne, Calif. 888,182, pub. 1–6–70. Cl. 21.
Gaddy, Robert L., d.b.a. R. L. Gaddy, Pharmacist, Tallahassee, Fla. 526,924, ren. 3–24–70. Cl. 18.
Game Co., The, New York, N.Y. 888,204, pub. 1–6–70. Cl. 22.
Gamson Bros. Inc., New York, N.Y. 888,495. Cl. 52.
Garay & Co., Inc., New York, N.Y. 764,113, canc. Cl. 3.
Garber's Travel Service, Inc., Brookline, Mass. 764,459, canc. Cl. 105.
Gardner Cryogenics Corp., Bethlehem, Pa. 888,183, pub. 12–2–69. Cl. 21.
Gateway Promotions, Inc., St. Louis, Mo. 888,443, pub. 1–6–70. Cl. 101.
Gen. Co., Geneseo, Ill. 888,413, pub. 1–6–70. Cl. 100.
General Electric Co., Hendersonville, N.C. 888,193, pub. 1–6–70. Cl. 21.
General Electric Co., San Jose, Calif. 888,425, pub. 1–6–70. Cl. 100.
General Foods Corp.: *See*—
Miles Laboratories, Inc.
General Mills, Inc., Minneapolis, Minn. 888,373–5, pub. 1–6–70. Cl. 46.
General Radio Co., West Concord, Mass. 525,605, ren. 3–24–70. Multiple Class (Classes 21 and 26).
General United Group, Inc., Des Moines, Iowa. 888,469, pub. 1–6–70. Cl. 102.
Genovese Drug Stores, Inc., Long Island City, N.Y. 888,393, pub. 1–6–70. Cl. 51.
Genuine Parts Co., Atlanta, Ga. 888,303, pub. 1–6–70. Cl. 38.
George, Ben B., Jr., d.b.a. Cal-Glo Co., Saugus, Calif. 764,227, canc. Cl. 21.
Georgy Girl Cosmetics, Ltd., Brooklyn, N.Y. 888,387, pub. 1–6–70. Cl. 51.
Gessner, David Co., Worcester, Mass. 888,222, pub. 1–6–70. Cl. 23.
Glamorglas, Inc: *See*—
Shelley Mfg. Co.
Globe Wire Co., Sharpsburg, Pa. 173,215, canc. Cl. 14.
Godchaux Sugar Refining Co., New Orleans, La. 764,405, canc. Cl. 46.
Goldentone Electronics Inc.: *See*—
Johnston, William E.
Goodrich, B. F. Co., The, New York, N.Y. 516,364, ren. 3–24–70. Cl. 39.
Granite Looms, Inc., Fall River, Mass. 521,031, ren. 3–24–70. Cl. 42.
Great Western Cereal Co., The, Jersey City, N.J., to The Quaker Oats Co., Chicago, Ill. 75,622, ren. 3–24–70. Cl. 46.
Green Giant Co., Le Sueur, Minn. 883,869, cor. Cl. 46.
Green River Fuel Co., Inc., Mogg, to Green River Carrollton, Ky. 260,457, ren. 3–24–70. Cl. 1.
Green River Mine Trust: *See*—
Green River Fuel Co., Inc.
Greyhound Corp., The, Chicago, Ill. 888,802, pub. 1–6–70. Cl. 38.
Griffis, Bernice Jernigan, Irving Tex. 888,314, pub. 1–6–70. Cl. 39.
Guier, William d.b.a. Guier Products Mfg. Co., Tulsa, Okla. 764,235, canc. Cl. 22.
Hagemeyer Trading Co., U.S.A., Inc., Ridgefield, N.J. 888,226, pub. 1–6–70. Cl. 24.
Haggar Co., Dallas, Tex. 888,328, pub. 1–6–70. Cl. 39.
Haggerty, James A. Lumber & Millwork, Inc., White Plains, N.Y. 764,157, canc. Cl. 12.
Hamilton Humidity, Inc., Chicago, Ill. 888,282, pub. 1–6–70. Cl. 34.
Hansen, Georg H., Philadelphia, Pa., to Breuer Electric Mfg. Co., Chicago, Ill. 266,321, ren. 3–24–70. Cl. 21.
Hardee's Food Systems, Inc., Rocky Mount, N.C. 888,453, pub. 1–6–70. Cl. 101.
Harding, H. C. Inc., Philadelphia, Pa. 526,523, ren. 3–24–70. Cl. 15.
Harris, Arthur O, Buffalo, N.Y. 520,061, ren. 3–24–70. Cl. 38.
Harris Paint Co., d.b.a. Harris Standard Paint Co., Tampa, Fla. 888,113, pub. 1–6–70. Multiple Class (Classes 6, 12, and 16).
Hart Schaffner & Marx, Chicago, Ill. 515,984, ren. 3–24–70. Cl. 39.
Hart-Carter Co., Minneapolis, Minn. 888,220, pub. 1–6–70. Cl. 23.
Hartford Fire Insurance Co., Hartford, Conn. 527,023, ren. 3–24–70. Cl. 102.
Hartford Publications, Inc., New York, N.Y. 764,331, canc. Cl. 38.
Harwood Companies, Inc., The, New York, N.Y. 888,332, pub. 1–6–70. Cl. 39.
Hatcher, Carlos M., d.b.a. Accessory Sales Co., Neptune, N.J. 764,233, canc. Cl. 22.
Hathaway, C. F. Co., Waterville, Maine. 888,329, pub. 1–6–70. Cl. 39.
Head-To-Toe Products, Rahway, N.J., from David Jaffe, d.b.a. Head-to-Toe Products, Scotch Plains, N.J. 888,492. Cl. 50.
Heberlein & Co., A. G., Wattwil, Switzerland. 519,717, ren. 3–24–70. Cl. 42.
Henson, Jno. W., & Sons, to Henson-Kickernick, Inc., Greenville, Tex. 526,667, ren. 3–24–70. Cl. 39.
Henson-Kickernick, Inc.: *See*—
Henson, Jno. W., & Sons
Hickok Mfg. Co. Inc., Rochester, N.Y. 888,315, pub. 1–6–70. Cl. 39.
Higley, Rolland C., Artesia, N. Mex. 764,267, canc. Cl. 23.
Hinckley, Henry R. & Co., Southwest Harbor, Maine. 888,178, pub. 1–6–70. Cl. 19.
Hirsch Shirt Corp., Chicago, Ill., to Manhattan Industries, Inc., New York. N.Y. 526,743, ren. 3–24–70. Cl. 39.
Hirschman, J. C. Co., The, Indianapolis, Ind., to Serta Associates, Inc., Chicago, Ill. 268,994, ren. 3–24–70. Cl. 32.
Hollander, Solomon d.b.a. Solomon J. Hollander, New York, N.Y. 764,336, canc. Cl. 38.
Holly Sugar Corp., Colorado Springs, Colo. 519,869, ren. 3–24–70. Cl. 46.
Hollymatic Corp., to Hollymatic Corp., Park Forest, Ill. 875,089, new cert. Cl. 23.
Honeywell Inc.: *See*—
Minneapolis-Honeywell Regulator Co.
Honeywell Inc., Minneapolis, Minn. 888,234, pub. 1–6–70. Cl. 26.
Hotchkiss Instruments, Inc., San Francisco, Calif. 888,187, pub. 1–6–70. Cl. 21.
Hotchkiss Mining Corp., d.b.a. U-Need-Us Fertilizer Co., Austin, Colo. 888,120, pub. 1–6–70. Cl. 10.
House of Vision, Inc., The, Chicago, Ill. 888,494. Cl. 52.
Hudepohl Brewing Co., The, Cincinnati, Ohio, 764,410, canc. Cl. 48.
Huff, James B., d.b.a. Gem Rent-A-Car & Leasing Co., Fort Worth, Tex. 888,424, pub. 1–6–70. Cl. 100.
Hunter Mfg. Co., Cleveland, Ohio. 888,276, pub. 1–6–70. Cl. 34.
Huntington Industries, Inc., Chicago, Ill. 888,331, pub. 1–6–70. Cl. 39.
Huntley & Palmers, Ltd., to Associated Biscuits Ltd., Reading, England. Am. 7(d) Cl. 46.
Hygrade Food Products Corp.: *See*—
Dold Packing Corp.
Kingan & Co., Inc.
IRA Systems, Inc., Waltham, Mass. 888,252, pub. 1–6–70. Cl. 26.
Icy Drink of Florida, Inc., Fort Lauderdale, Fla. 888,349, pub. 1–6–70. Cl. 45.
Illinois Bronze Powder & Paint Co., Lake Zurich, Ill. 883,990, cor. Cl. 6.
Illinois Tool Works Inc., Chicago, Ill. 888,485. Cl. 21.
Imperial Adhesives & Chemicals, Inc., Cincinnati, Ohio. 888,112, pub. 1–6–70. Cl. 5.
Imperial Chemical Industries Ltd., London, England. 520,477, ren. 3–24–70. Cl. 43.
Imperial Knife Associated Companies, Inc., Providence, R.I. 888,214, pub. 1–6–70. Cl. 28.
Imported Hardwood Products Association, Inc., San Francisco, Calif. 888,487, pub. 1–6–70. Cl. 100.
Incinerator Engineering Co., Philadelphia, Pa. 888,281, pub. 1–6–70. Cl. 34.
Inmont Corp.: *See*—
Rinshed-Mason Co.
Instrument Systems Corp., Huntington, N.Y. 888,199, pub. 1–6–70. Cl. 21.
International Association of Fire Chiefs, Inc., New York, N.Y. 888,479, pub. 1–6–70. Cl. 200.
International Cargo Gear Bureau, Inc., New York, N.Y. 888,480, pub. 1–6–70. Cl. A.
International Hardware Corp., Anaheim, Calif. 888,136, pub. 1–6–70. Cl. 13.
International Minerals & Chemical Corp., Skokie, Ill. 764,369, canc. Cl. 46.
International Paper Co., New York, N.Y. 764,321, canc. Cl. 37.
International Playtex Corp., Dover, Del. 888,321, pub. 1–6–70. Cl. 39.
International Telephone & Telegraph Corp., New York, N.Y. 888,138–9, pub. 1–6–70. Cl. 13.
Jacobson, F., & Sons, Inc., to Kayser-Roth Corp., New York, N.Y. 526,909–10, ren. 3–24–70. Cl. 39.
Jac-Win Productions, Inc., Brooklyn, N.Y. 764,243, canc. Cl. 22.
Jaffe, David: *See*—
Head-To-Toe Products.
Jersey Dyeing Co., Inc., Paterson, N.J. 888,475, pub. 1–6–70. Cl. 106.
Johnson & Johnson, New Brunswick, N.J., to Thayer-Knomark, Inc., Springfield Gardens, N.Y. 520,283, ren. 3–24–70. Cl. 5.
Johnston, William E., d.b.a. Aladdin Hearing Aid Mfg. Co., to Goldentone Electronics Inc., Minneapolis, Minn. 443,126, ren. 3–24–70. Cl. 44.
Jones Knitting Corp., New York, N.Y. 888,311, pub. 1–6–70. Cl. 39.
Jonkopings Och Vulcans Tandsticksfabriksaktiebolag, to Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 525,353, ren. 3–24–70. Cl. 9.
Jovan, Inc., Chicago, Ill. 888,184, pub. 1–6–70. Cl. 21.
K & D Specialties, Riegelsville, Pa. 888,297, pub. 1–6–70. Cl. 37.
Kashan Laboratories, Inc., from Ardon Associates, Inc., Dallas, Tex. 888,262, pub. 1–6–70. Cl. 28.
Kay & Associates, Inc., Chicago, Ill. 888,419, pub. 1–6–70. Cl. 100.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 77,596, ren. 3–24–70. Cl. 39.
Kayser-Roth Corp.: *See*—
Excello Shirts, Inc.
Jacobson, F., & Sons, Inc.
Kayser, Julius, & Co.
Kelly-Springfield Tire Co., The, Cumberland, Md. 888,284, pub. 1–6–70. Cl. 35.
Kevex Corp., Burlingame, Calif. 888,186, pub. 1–6–70. Multiple Class (Classes 21 and 26).
Kimberly-Clark Corp.: *See*—
San-I-Sal Laboratories, Inc.
Kimberly-Clark Corp., Neenah, Wis. 888,164, pub. 1–6–70. Cl. 18.
Kimberly-Clark Corp., Neenah, Wis. 888,169, pub. 1–6–70. Cl. 18.

Kingan & Co., Inc., Indianapolis, Ind., to Hygrade Food Products Corp., Detroit, Mich. 266,996, ren. 3–24–70. Cl. 46.
Kingsbacher-Murphy Co., Los Angeles, Calif. 764,309, canc. Cl. 37.
Smith Kline & French Laboratories, Philadelphia, Pa. 888,166, pub. 1–6–70. Cl. 18.
Klopman Mills, Inc., Rockleigh, N.J. 888,336–9, pub. 1–6–70. Cl. 42.
Knight Industries, Inc., Broken Arrow, Okla. 888,217, pub. 1–6–70. Cl. 23.
Kolleen, Inc., Providence, R.I. 888,141, pub. 1–6–70. Multiple Class (Classes 13 and 28).
Kolor Koter Corp., Amsterdam, N.Y. 888,265, pub. 1–6–70. Cl. 29.
Kresge, S. S., Co., Detroit, Mich. 885,176, cor. Cl. 51.
Kresge, S. S., Co., Detroit, Mich. 888,104, pub. 1–6–70. Cl. 2.
Kresge, S. S., Co., Detroit, Mich. 888,176–7, pub. 1–6–70. Cl. 19.
Kresge, S. S., Co., Detroit, Mich. 888,198, pub. 1–6–70. Cl. 21.
Kresge, S. S., Co., Detroit, Mich. 888,261, pub. 1–6–70. Cl. 28.
Kruysman, N. L. & E. W., Inc., New York, N.Y. 888,290, pub. 1–6–70. Cl. 37.
Kurlash Co., Inc., The, d.b.a. Westool Industries, Rochester, N.Y. 764,253, canc. Cl. 23.
Laboratorios Miquel, S.A., Barcelona, Spain. 888,155, pub. 1–6–70. Cl. 18.
La Crosse Farm Service Co., Inc., La Crosse, Wis. 764,391, canc. Cl. 46.
Lafayette Hosiery Mills, Inc., Lafayette, Ga. 888,324, pub. 1–6–70. Cl. 39.
Lamb-Grays Harbor Co., Inc., Hoquiam, Wash. 521,084, ren. 3–24–70. Cl. 23.
Lancaster Chemical Corp., to Terrafino Co., Inc., White Plains, N.Y. 823,211, new cert. Multiple Class (Classes 4, 5, and 12).
Langstein, Edward J., and Donald H. Langstein, d.b.a. Langstein Pharmacy, New York, N.Y. 764,429, canc. Cl. 51.
Laurel & Hardy Restaurants, Inc., Fort Wayne, Ind. 888,438, pub. 1–6–70. Cl. 100.
Lefingwell Chemical Co., Brea, Calif. 888,111, pub. 1–6–70. Multiple Class (Classes 5, 6, and 10).
Levinsohn Textile Co., to Levinsohn Textile Co., Inc., New York, N.Y. 520,442, ren. 3–24–70. Cl. 42.
Libby, McNeill & Libby, Chicago, Ill. 888,364–5, pub. 1–6–70. Cl. 46.
Libby, McNeill & Libby, Chicago, Ill. 888,367–8, pub. 1–6–70. Cl. 46.
Licoreria Roses, Inc., d.b.a. Compania De Bebidas Del Oriente, Cabo Rojo, Puerto Rico. 764,415, canc. Cl. 49.
Lifespan Products Co., Inc., Hicksville, N.Y. 888,114, pub. 1–6–70. Multiple Class (Classes 6, 18, 46, and 52).
Linder Brothers, Inc., Scranton, Pa. 888,320, pub. 1–6–70. Cl. 39.
Lindner, Edmund F., New York, N.Y. 764,454, canc. Cl. 101.
Liquid Carbonic Corp., The, to Liquid Carbonic Corp., Chicago, Ill. 520,576–7, ren. 3–24–70. Cl. 34.
Lithonia Lighting, Inc.: *See*—
National Service Industries, Inc.
Litton Business Systems, Inc., Orange, N.J. 888,240, pub. 1–6–70. Cl. 26.
Lovable Co., The, Atlanta, Ga. 888,325, pub. 1–6–70. Cl. 39.
Love, Alice Products Co., Portland, Oreg. 764,404, canc. Cl. 46.
Lowney, Walter M., Co. Ltd., Sherbrooke, Quebec, Canada. 881,344, cor. Cl. 46.
Luminos Photo Corp., Yonkers, N.Y. 888,232, pub. 1–6–70. Cl. 26.
Lunsford, Joseph C., d.b.a. X-L Doughnut Co., Portland, Oreg. 764,395, canc. Cl. 46.
MacDermid Inc., Waterbury, Conn. 525,342, ren. 3–24–70. Cl. 52.
Mack's Fish Camp of America, Inc., Hattiesburg, Miss. 888,431, pub. 1–6–70. Cl. 100.
Magic Decorator Co., St. Louis, Mo. 764,173, canc. Cl. 16.
Magnolia Diamonds, Inc.: *See*—
Friedman, Frank.
Maidenform, Inc., New York, N.Y. 888,327, pub. 1–6–70. Cl. 39.
Maison Weick, Geneva, Switzerland. 888,225, pub. 1–6–70. Cl. 24.
Manhattan Industries, Inc.: *See*—
Hirsch Shirt Corp.
Manhattan Shirt Co., The.
Manhattan Shirt Co., The, to Manhattan Industries, Inc., New York, N.Y. 526,997, ren. 3–24–70. Cl. 39.
Martin, W. E. Co., Kewanee, Ill. 888,132, pub. 1–6–70. Cl. 13.
Masking Corp. of America, Chicago Heights, Ill. 764,322, canc. Cl. 37.
Master Builders Co., The, to Martin Marietta Corp., New York, N.Y. 203,180, new cert. Cl. 12.
Master Fence Fittings, Inc., La Habra, Calif. 888,134, pub. 1–6–70. Cl. 13.
Masury-Columbia Co., Melrose Park, Ill. 888,145, pub. 1–6–70. Cl. 16.
Mavest Inc., to Mavest, Inc., New York, N.Y. 523,475, ren. 3–24–70. Cl. 39.
Maxon Premix Burner Co., Inc., Muncie, Ind. 888,280, pub. 1–6–70. Cl. 34.
May & Baker Ltd., Dagenhsm, England. 764,185, canc. Cl. 18.
McCulloch Corp., Los Angeles, Calif. 764,264, canc. Cl. 23.
McDonough Power Equipment, Inc., McDonough, Ga. 764,265, canc. Cl. 23.
McGuire, Chris Inc., Fort Lauderdale, Fla. 888,433, pub. 1–6–70. Cl. 100.
McNally, Rand, & Co., Skokie, Ill. 888,454, pub. 1–6–70. Cl. 101.
Mead Johnson & Co., Evansville, Ind. 888,345, pub. 1–6–70. Cl. 44.
Meadows Chemicals, Inc., New Hyde Park, N.Y. 888,110, pub. 1–6–70. Cl. 4.
Mec-O-Matic, Inc., Miami, Fla. 888,249, pub. 1–6–70. Cl. 26.
Medics Pharmaceutical Corp., Decatur, Ga. 888,156, pub. 1–6–70. Cl. 18.
Medos Custom Tailors, Kowloon, Hong Kong. 888,317, pub. 1–6–70. Cl. 39.
Melch & Co., Mission, Tex. 443,743, ren. 3–24–70. Cl. 46.
Melville Shoe Corp., New York, N.Y. 888,323, pub. 1–6–70. Cl. 39.
Merck & Co. Inc., Rahway, N.J. 764,203, canc. Cl. 18.
Mercury Aviation Corp., Cleveland, Ohio. 888,470, pub. 1–6–70. Cl. 103.
Michelin Tire Corp., Lake Success, N.Y. 888,288, pub. 1–6–70. Cl. 35.
Midas, Inc., Chicago, Ill. 888,471, pub. 1–6–70. Cl. 103.
Midwood Industries, Inc., from Tube-Line Mfg. Corp., New York, N.Y. 888,274, pub. 3–1–66. Cl. 34.
Milco Mfg. Corp., Providence, R.I. 764,286, canc. Cl. 28.
Miles Laboratories, Inc. Elkhart, Ind., from General Foods Corp., White Plains, N.Y. 888,411, pub. 1–6–70. Cl. 52.
Miller Harness Co. Inc., d.b.a. Crosby and Co., Ltd., New York, N.Y. 888,106, pub. 1–6–70. Cl. 3.
Millie Products Corp., New York, N.Y. 764,368, canc. Cl. 46.
Milwhite Mud Sales Co., Houston, Tex. 764,140, canc. Cl. 6.
Minnesopolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 271,566, ren. 3–24–70. Cl. 21.
Mitchells, Ashworth, Stanfield & Co., Ltd., to Bury & Masco Holdings) Ltd., Waterfoot, England. 77,664, ren. 3–24–70. Cl. 50.
Mobile Oil Corp.: *See*—
Socony-Vacuum Oil Co., Inc.
Modern Water Equipment Co., Freeport, Ill. 764,161, canc. Cl. 13.
Modish Imports, Inc., Brooklyn, N.Y. 888,334, pub. 1–6–70. Cl. 40.
Molnlycke Aktiebolag, Goteborg, Sweden. 888,312, pub. 1–6–70. Cl. 39.
Monsanto Co., St. Louis, Mo. 888 381, pub. 1–6–70. Cl. 50.
Moulthrop Co., Inc., Salt Lake City, Utah. 764,274, canc. Cl. 24.
Mueller, Paul, Co., Springfield, Mo. 888,266, pub. 1–6–70. Cl. 31.
Mulco, S.A., La Chaux-de-Fonds, Switzerland. 520,290, ren. 3–24–70. Cl. 27.
Mulhens, Ferdinand, d.b.a. Eau de Cologne & Parfumerie-Fabrik Glockengasse No. 4711, Rhine, Germany. 888,412, pub. 1–6–70. Cl. 52.
Murphy, G. W., Industries, Inc., Houston, Tex. 888,215, pub. 1–6–70. Cl. 23.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 888,290, pub. 1–6–70. Cl. 36.
National Business Services, Inc., Trevose, Pa. 888,456, pub. 1–6–70. Cl. 101.
National Cylinder Gas Co., to Chemetron Corp., Chicago, Ill. 517,507, ren. 3–24–70. Cl. 14.
National Recording Corp., Atlanta, Ga. 764,298, canc. Cl. 36.
National Service Industries, Inc., Atlanta, from Lithonia Lighting, Inc., Conyers, Ga. 888,200, pub. 1–6–70. Cl. 21.
Nautical Development Co., Inc., Port Washington, N.Y. 888,127–9, pub. 1–6–70. Cl. 13.
Neilson Chemical Co., Detroit, Mich., to Amchem Products, Inc., Ambler, Pa. 520,092, ren. 3–24–70. Cl. 52.
Neumann-Buslee & Wolfe, Inc., Des Plaines, Ill. 888,117, pub. 1–6–70. Cl. 6.
New England Aquarium Corp., Boston, Mass. 888,476, pub. 1–6–70. Cl. 107.
1975 World Freedom Fair, Inc., d.b.a. United States Bicentennial World Exposition Boston 1976, Boston, Mass. 888,457, pub. 1–6–70. Cl. 101.
Nofziger, Dale, d.b.a. The New Ansonia Clock Co., Lynnwood, Wash. 888,258, pub. 1–6–70. Cl. 27.
Noller Control Systems, Inc., Richmond, Calif. 888,228, pub. 1–6–70. Cl. 26.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 764,425, canc. Cl. 51.
North American Refractories Co., Cleveland, Ohio, to Eltra Corp., New York, N.Y. 265,489, ren. 3–24–70. Cl. 1.
North American Rockwell Corp.: *See*—
Air-Maze Corp.
Norwich Pharmacal Co., The, from The Norwich Pharmacal Co., Norwich, N.Y. 888,158, pub. 1–6–70. Cl. 18.
Occidental Life Insurance Co. of California, Los Angeles, Calif. 525,135, ren. 3–24–70. Cl. 102.
Occidental Life Insurance Co. of California, Los Angeles, Calif. 526,393, ren. 3–24–70. Cl. 102.
Office-Aide, Inc., Los Angeles, Calif. 888,440, pub. 1–6–70. Cl. 101.
Ohio Art Co., The, Bryan, Ohio. 888,293, pub. 1–6–70. Cl. 36.
Oil Trade Journal Publishing Corp., New Orleans, La. 524,577, ren. 3–24–70. Cl. 38.
Oil-Dri Corp. of America, Chicago, Ill. 888,101, pub. 1–6–70. Cl. 1.
Oklahoma City Tractor Co., Inc., Oklahoma City, Okla. 888,180, pub. 1–6–70. Cl. 19.
Olde Field Food Products, Inc., Cambridge, Mass. 764,393, canc. Cl. 46.
Oliver, L. R., & Co., Inc., Algonac, Mich. 888,208, pub. 1–6–70. Cl. 23.
Omega Louis Brandt et Frere S.A., Bienne, Switzerland. 888,254, pub. 1–6–70. Cl. 27.
Orbit Industries, Inc., to Harvey Hubbell, Inc., Bridgeport, Conn. 750,448, new cert. Cl. 21.
Orbit Industries, Inc., to Harvey Hubbell, Inc., Bridgeport, Conn. 762,248, new cert. Cl. 21.

Orr Felt & Blanket Co., The, Piqua, Ohio. 888,340, pub. 1–6–70. Cl. 42.
Oswego Falls Corp., d.b.a. Sealright Co., Inc., Fulton, N.Y., to Phillips Petroleum Co., Bartlesville, Okla. 521,999, ren. 3–24–70. Cl. 2.
Oulevay S.A., Morges, Vaud, Switzerland. 764,364, canc. Cl. 46.
Owens-Illinois Glass Co., to Owens-Illinois, Inc., Toledo, Ohio. 512,732, ren. 3–24–70. Cl. 33.
Owens-Illinois, Inc.: *See*—
Owens-Illinois Glass Co.
Oxford Jewelry Corp., Philadelphia, Pa. 888,259, pub. 1–6–70. Cl. 28.
PRD Electronics, Inc., Brooklyn, N.Y. 764,226, canc. Cl. 21.
Packaging Corp. of America, Evenston, Ill. 888,300, pub. 1–6–70. Cl. 37.
Paco Rabanne Parfums, Paris, France. 888,391, pub. 1–6–70. Cl. 51.
Page Belting Co., Concord, N.H. 524,968, ren. 3–24–70. Cl. 35.
Palmedico, Inc., Columbia, S.C. 888,160, pub. 1–6–70. Cl. 18.
Parker Bros. Inc., to Parker Bros., Inc., Salem, Mass. 526,059, ren. 3–24–70. Cl. 22.
Parker Instrument Corp., Stamford, Conn. 888,243, pub. 1–6–70. Cl. 26.
Partake, Inc., Oak Brook, Ill. 764,447, canc. Cl. 100.
Patent Cereals Co., The, Geneva, N.Y. 764,375, canc. Cl. 46.
Peek Frean & Co. Ltd. Associated Biscuits Ltd., Reading, England. 266,051, Am. 7(d). Cl. 46.
Pelzman, Richard L., New York, N.Y. 764,376, canc. Cl. 46.
Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. 888,488. Cl. 39.
Penney, J. C., Co., New York, N.Y. 764,183, canc. Cl. 16.
Penney, J. C., Co., Inc., New York, N.Y. 888,285–7, pub. 1–6–70. Cl. 35.
Pennwalt Corp., Philadelphia, Pa. 888,346, pub. 1–6–70. Cl. 44.
Pennzoil Co., The, to Pennzoil United Inc., Oil City, Pa. 525,673, ren. 3–24–70. Cl. 23.
Pennzoil United Inc.: *See*—
Pennzoil Co., The.
Pfizer, Chas., & Co., Inc.: *See*—
Coty, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 888,396, pub. 1–6–70. Cl. 51.
Pharmacia Laboratories, Inc., Piscataway, N.J. 888,165, pub. 1–6–70. Cl. 18.
Philadelphia Insulated Wire Co., Moorestown, N.J. 764,222, canc. Cl. 21.
Phillips Petroleum Co.: *See*—
Oswego Falls Corp.
Physicians & Hospitals Supply Co., d.b.a. The Ulmer Pharmacal Co., Minneapolis Minn. 888,162–3, pub. 1–6–70. Cl. 18.
Pioneer Kabushiki Kaisha, d.b.a. Pioneer Electronic Corp., Tokyo-to, Japan. 888,289, pub. 1–6–70. Cl. 36.
Pitchford Scientific Instruments Corp., Bridgeville, Pa. 888,235, pub. 1–6–70. Cl. 26.
Pizza Hut, Inc., from Taco, Inc., Wichita, Kans. 888,358–9, pub. 1–6–70. Cl. 46.
Pizza Hut, Inc., from Taco, Inc., Wichita, Kans. 888,361, pub. 1–6–70. Cl. 46.
Pole Control, Inc., Minneapolis, Minn. 888,435, pub. 1–6–70. Cl. 100.
Pollak, Henry Inc., New York, N.Y. 888,483. Cl. 3.
Porter, H. K. Inc., Middlesex, Mass. 270,480, ren. 3–24–70. Cl. 23.
Pratt-Low Preserving Co., Santa Clara, Calif., to Duffy-Mott Co., Inc., New York, N.Y. 444,036, ren. 3–24–70. Cl. 46.
Premium Corp., Minneapolis, Minn. 888,270, pub. 1–6–70. Cl. 32.
Prudential Paper Products Co., Inc., Ridgewood, L.I., N.Y. 526,114, ren. 3–24–70. Cl. 37.
Puig, Antonio, S.A. Barcelona, Spain. 888,382, pub. 1–6–70. Multiple Class (Classes 51 and 52).
Purdue Frederick, The, New York, N.Y. 764,193, canc. Cl. 18.
Purolator, Inc.: *See*—
Purolator Products, Inc.
Purolator Products, Inc., Newark, N.J., to Purolator, Inc., Rahway, N.J. 518,774, ren. 3–24–70. Cl. 31.
Push Button Container Corp., Albuquerque, N. Mex. 764,246, canc. Cl. 22.
Quaker Oats Co., The: *See*—
Great Western Cereal Co., The.
Quaker Oats Co., The, Chicago, Ill. 888,371, pub. 1–6–70. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 523,420, ren. 3–24–70. Multiple Class (Classes 18 and 46).
Ram Domestic Products Co., Northvale, N.J. 888,279, pub. 1–6–70. Cl. 34.
Red Owl Stores, Inc., Hopkins, Minn. 764,389, canc. Cl. 46.
Redken Laboratories, Inc., Van Nuys, Calif. 888,493. Cl. 52.
Reed & Carnrick, Kenilworth, N.J. 888,161, pub. 1–6–70. Cl. 18.
Reicherter, G. Beteiligungs- und Verwaltungesellschaft mit beschrankter Haftung, Firma, Neckar, Germany. 888,241, pub. 1–6–70. Cl. 26.
Revere Copper & Brass Inc., New York, N.Y. 888,143, pub. 1–6–70. Cl. 14.
Rexall Drug & Chemical Co.: *See*—
Dart Industries Inc.
Rich Art Color Co., Inc New York, N.Y. 272,174, ren. 3–24–70. Cl. 16.
Richards Musical Instruments, Inc., Elkhart, Ind. 764,296–7, canc. Cl. 36.
Richardson-Merrell Inc., New York, N.Y. 888,170–1, pub. 1–6–70. Cl. 18.
Riddell, John T. Inc., Chicago, to Riddell, Inc., Des Plaines, Ill. 520,239, ren. 3–24–70. Cl. 13.
Rinshed-Mason Co., Detroit, Mich., to Inmont Corp., New York, N.Y. 508,572, ren. 3–24–70. Cl. 16.
Roberts & Porter, Inc., Chicago, Ill. 888,122, pub. 1–6–70. Cl. 11.
Rogers Corp., Rogers, Conn. 764,105, canc. Cl. 1.
Ross, Will Inc., Milwaukee, Wis. 888,344, pub. 1–6–70. Cl. 44.
Royal Insurance Co., Ltd., New York, N.Y. 888,464, pub. 1–6–70. Cl. 102.
Royalmetal Corp., New York, N.Y. 888,271, pub. 1–6–70. Cl. 32.
Rubin-Meltzer Corp.: *See*—
B.V.D. Corp., The.
S-B Mfg. Co., Milwaukee, Wis. 526,600, ren. 3–24–70. Cl. 50.
SCOA Industries Inc.: *See*—
Shoe Corp. of America.
S & H Travel, Inc., Nathrop, Colo. 888,423, pub. 1–6–70. Cl. 100.
S-P Mfg. Corp., The, Cleveland, Ohio. 525,839, ren. 3–24–70. Cl. 23.
S.p.A. Strega Alberti Benevento: *See*—
Giuseppe Alberti.
Safeway Stores, Inc., Oakland, Calif. 888,298, pub. 1–6–70. Cl. 37.
Sahlein, J. M. Music Co., Inc., San Francisco, Calif. 888,291, pub. 1–6–70. Cl. 36.
Sales Consultants, Inc., Cleveland, Ohio. 888,450, pub. 1–6–70. Cl. 101.
Saltarelli, Samuel, South Norwalk, Conn. 764,148, canc. Cl. 10.
San Juan Products, Inc., Seattle, Wash. 888,124–5, pub. 1–6–70. Cl. 12.
Sanders, Maxine Wilson, d.b.a. Wilson Chemical Co., to S. C. Johnson & Son, Inc., Racine, Wis. 761,479, new cert. Cl. 52.
San-I-Sal Laboratories, Inc., Washington, D.C., to Kimberly-Clark Corp., Neenah, Wis. 266,649, ren. 3–24–70. Cl. 52.
Schaffner, Hart & Marx, Chicago, Ill. 517,795, ren. 3–24–70. Cl. 39.
Schaub Engineering Co., from Syncrofio Inc., Downers Grove, Ill. 888,210, pub. 1–6–70. Cl. 23.
Schlatter-Ed, George Friendly Productions & Romart, Inc., Burbank, Calif. 888,299, pub. 1–6–70. Multiple Class (Classes 37 and 38).
Screw Conveyor Corp., Hammond, Ind. 525,263, ren. 3–24–70. Cl. 23.
Sea Gull Lighting Products, Inc., Philadelphia, Pa. 525,934, ren. 3–24–70. Cl. 21.
Seeck & Kade, Inc., to Chesebrough-Pond's Inc., New York, N.Y. 271,212, ren. 3–24–70. Cl. 18.
Serta Associates, Inc.: *See*—
Hirschman, J. C. Co., The.
Servis Equipment Co., Inc., Dallas, Tex. 888,223, pub. 1–6–70. Cl. 23.
Shangri-La Mfg., Co., Inc., Bronx, N.Y. 764,143, canc. Cl. 6.
Shellbuilder Co., to Shell-Tarp Co., Inc., Houston, Tex. 873,884, new cert. Cl. 42.
Shelley Mfg. Co., Miami, Fla., from Glamorglas, Inc., Long Island City, N.Y. 888,103, pub. 1–6–70. Multiple Class (Classes 2 and 19).
Shepparton Preserving Co. Ltd., Shepparton, Victoria, Australia. 888,490. Cl. 46.
Sheraton Corp. of America, Boston, Mass. 764,448, canc. Cl. 100.
Sherwin-Williams Co., The, Cleveland, Ohio. 443,673, ren. 3–24–70. Cl. 1.
Shoe Corp. of America, to SCOA Industries Inc., Columbus, Ohio. 526,979, ren. 3–24–70. Cl. 39.
Short Stuff, Inc., Covina, Calif. 888,313, pub. 1–6–70. Cl. 39.
Simplot, J. R., Co., Reno, Nev. 888,372, pub. 1–6–70. Cl. 46.
Sizzler Family Steak Houses, Culver City, Calif. 888,458, pub. 1–6–70. Cl. 101.
Smith Kline & French Laboratories, Philadelphia, Pa. 524,506, ren. 3–24–70. Cl. 18.
Soboca S.A., Plombieres-les-Dijon, France. 888,362, pub. 1–6–70. Cl. 46.
Societe d'Approvisionnement et de Vente France-Uniconserves, Paris, France. 764,372–3, canc. Cl. 46.
Societe d'Etudes et de Developpement des Industries Modernes (S.E.D.I.M.), Hauts de Seine, France. 888,140, pub. 1–6–70. Cl. 13.
Society of Chemical Industry in Basle, to Ciba Ltd., Basel, Switzerland. 266,376, ren. 3–24–70. Cl. 6.
Socony-Vacuum Oil Co., Inc., to Mobil Oil Corp., New York, N.Y. 443,604, ren. 3–24–70. Cl. 16.
Sokol & Co., Chicago, Ill. 382,386, canc. Cl. 46.
Sony Corp., Tokyo, Japan. 888,316, pub. 1–6–70. Cl. 39.
Southeastern Shows, Inc., Charlotte, N.C. 888,447, pub. 1–6–70. Cl. 101.
Southern Precision Industries, Inc., Harrison, Ark. 888,278, pub. 1–6–70. Cl. 34.
Spartans Industries, Inc., New York, N.Y. 764,248, canc. Cl. 22.
Spalding Bakeries Inc., Binghamton, N.Y. 764,390, canc. Cl. 46.
Sperry Rand Corp., New York, N.Y. 888,244, pub. 1–6–70. Cl. 26.
Stadium Mfg. Co., Inc., New York, N.Y. 888,319, pub. 1–6–70. Cl. 39.
Stamm, William, d.b.a. Adrian Creations, Chicago, Ill. 888,386, pub. 1–6–70. Cl. 51.
Standard Memories, Inc., Sherman Oaks, Calif. 888,236, pub. 1–6–70. Cl. 26.
Standard Newspapers, Inc., Forest Hills, N.Y. 764,335, canc. Cl. 38.
Standard Oil Co. of California, San Francisco, Calif. 888,126, pub. 1–6–70. Cl. 12.
Standard Oil Co. of California, San Francisco, Calif. 888,144, pub. 1–6–70. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 888,189, pub. 1–6–70. Cl. 21.

Standard & Poor's/Intercapital, Inc., New York, N.Y. 888,468, pub. 1–6–70. Cl. 102.
Stanford Green, Beverly Hills, Calif. 888,477, pub. 1–6–70. Cl. 107.
Stanley Engineering Inc., Plainfield, N.J. 764,457, canc. Cl. 103.
Star Chemical Co., Inc., d.b.a. Carnival Arts & Crafts, Westchester, Ill. 888,147, pub. 1–6–70. Cl. 10.
Stauffer Chemical Co., New York, N.Y. 513,069. Am. 7(d). Cl. 6.
Sternco Industries, Inc., Harrison, N.J. 888,102, pub. 1–6–70. Cl. 1.
Stokely-Van Camp, Inc., Indianapolis, Ind. 888,352, pub. 1–6–70. Cl. 45.
Strathmore Packing House Co., Strathmore, Calif. 525,774, ren. 3–24–70. Cl. 46.
Stroun Freres Borea Watch Co., S.A., Tessin, Switzerland. 888,256, pub. 1–6–70. Cl. 27.
Stuart-Sport Specialties, Inc.: *See*—
Bodge, M. P.
Sunline, Inc., St. Louis, Mo., from Breaker Confections, Inc., Elk Grove Village, Ill. 888,356, pub. 1–6–70. Cl. 46.
Sunpak Corp., Tokyo, Japan. 888,229, pub. 1–6–70. Cl. 26.
Superior Oil Co., The, Houston, Tex. 888,414, pub. 1–6–70. Cl. 100.
Svenska Tobaks Aktiebolaget, Stockholm, Sweden. 888,148, pub. 2–6–68. Cl. 17.
Swiss Precision Instruments, Inc., Los Angeles, Calif. 888,211, pub. 1–6–70. Cl. 23.
Swiss Products, Chicago, Ill. 888,369, pub. 1–6–70. Cl. 46.
Syncrofio Inc.: *See*—
Schaub Engineering Co.
TRW Inc., Cleveland, Ohio. 888,219, pub. 1–6–70. Cl. 23.
Taco, Inc.: *See*—
Pizza Hut, Inc.
Tastee Freez Industries, Inc., Chicago, Ill. 888,275, pub. 1–6–70. Cl. 34.
Technical Operations, Inc., Burlington, Mass. 888,415, pub. 1–6–70. Cl. 100.
Technidata Publications, Inc., New York, N.Y. 888,307, pub. 1–6–70. Cl. 38.
Teich, Curt, & Co., Chicago, Ill. 525,775, ren. 3–24–70. Cl. 38.
Tekstilfabrikkenes Konsulent- og Opplysning Skontor, Oslo, Norway. 888,318, pub. 1–6–70. Multiple Class (Classes 39 and 42).
Tenex Corp., Elk Grove, Ill. 888,379, pub. 1–6–70. Cl. 50.
Texize Chemicals, Inc., Greenville, S.C. 888,108, pub. 1–6–70. Multiple Class (Classes 4, 16, and 52).
Textron Inc.: *See*—
Automatic Gold Chain Co.
Textron Inc., Rochester, N.Y. 888,245–6, pub. 1–6–70. Cl. 26.
Textron Inc., Providence, R.I. 888,264, pub. 1–6–70. Cl. 28.
Thayer-Knomark, Inc.: *See*—
Johnson & Johnson.
Thermo Pin Corp. of America, Williston Park, N.Y. 888,130, pub. 1–6–70. Cl. 13.
Todd Chemicals, Inc., Seattle, Wash. 764,174, canc. Cl. 16.
Topp Import & Export, Inc., Miami, Fla. 888,484. Multiple Class (Classes 21 and 36).
Topps Chewing Gum, Inc., Brooklyn, N.Y. 888,354, pub. 1–6–70. Cl. 46.
Torr Laboratories, Inc., Los Angeles, Calif. 888,194, pub. 1–6–70. Cl. 21.
Transogram Co., Inc., New York, N.Y. 764,245, canc. Cl. 22.
Tube-Line Mfg. Corp.: *See*—
Midwood Industries, Inc.
Tupy Export Ltd., San Jose, Costa Rica. 764,382, canc. Cl. 46.
Underwater, Inc., Miami, Fla. 888,233, pub. 1–6–70. Cl. 26.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 888,201, pub. 1–6–70. Cl. 22.
Unette Corp., Livingston, N.J. 888,247, pub. 1–6–70. Cl. 26.
Ungaro Emmanuel, S.A.R.L., Paris, France. 888,385, pub. 1–6–70. Cl. 51.
Union Central Life Insurance Co., The, Cincinnati, Ohio. 888,463, pub. 1–6–70. Cl. 102.
United Conveyor Corp., Chicago, Ill. 525,174, ren. 3–24–70. Cl. 23.
United Fruit Co., Boston, Mass. 888,417, pub. 1–6–70. Cl. 100.
United States Baking Co., Inc., White Plains, N.Y. 888,363, pub. 1–6–70. Cl. 46.
U.S. Gypsum Co.: *See*—
Dittlinger Lime Co.
United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 267,710, ren. 3–24–70. Cl. 38.
U.S. Medicine, Inc., Washington, D.C. 888,301, pub. 1–6–70. Cl. 38.
U.S. Pillow Corp., The, New York, N.Y. 888,269, pub. 1–6–70. Cl. 32.
United Roofing & Mfg. Co., Philadelphia, Pa., to Congoleum Industries, Inc., Kearny, N.J. 78,472, ren. 3–24–70. Cl. 20.
United Utilities, Inc., d.b.a. The United Telephone System, Kansas City, Mo. 888,473, pub. 1–6–70. Cl. 104.
Up Towner Inn, Inc., Huntington, W.Va. 888,426, pub. 1–6–70. Cl. 100.
Urmetz, Charles L., d.b.a. Urmetz Jewelers, Cincinnati, Ohio. 764,276, canc. Cl. 28.
VSC, Inc., Clara City, Minn. 888,448, pub. 1–6–70. Cl. 101.
Valley Aloe Vera, Inc., Weslaco, Tex. 888,491. Cl. 46.
Vanderbilt, R. T. Co., Inc., New York, N.Y. 521,775, ren. 3–24–70. Cl. 46.
Vanderbilt, R. T. Co., Inc., New York, N.Y. 764,126, canc. Cl. 6.
Vaughan Co., Inc., Montesano, Wash. 764,261, canc. Cl. 23.
Veitch, David S. Jr., d.b.a. Windsor Hill Co., Shawnee Mission, Kans. 764,324, canc. Cl. 37.
Victor Comptometer, Corp., Chicago, Ill. 764,319, canc. Cl. 37.
Vogue Dolls, Inc., Malden, Mass. 764,247, canc. Cl. 22.
WGN Continental Productions Co., Chicago, Ill. 888,478, pub. 1–6–70. Cl. 107.
Walgreen Co., Chicago, Ill. 888,119, pub. 1–6–70. Cl. 6.
Wallace Archibald & Co. Ltd., Dufftown, Scotland. pub. 1–6–70. Cl. 49.
Walnut Grove Products Co., Inc., Atlantic, Iowa. 764,189, canc. Cl. 18.
Ward, Conrad Co. Inc., Kenner, La. 888,109. pub. 1–6–70. Cl. 4.
Warner Bros.-Seven Arts, Inc., New York, N.Y. 888,308, pub. 1–6–70. Cl. 38.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 888,168, pub. 1–6–70. Cl. 18.
Wash-A-Car, Inc., Columbus, Ohio. 888,451, pub. 1–6–70. Cl. 101.
Washmobile Corp. of New Jersey, Union, N.J. 888,218, pub. 1–6–70. Cl. 23.
Watsco, Inc., Hialeah, Fla. 888,209, pub. 1–6–70. Cl. 23.
We Sit Better, Inc., Chicago, Ill. 888,441–2. pub. 1–6–70. Cl. 101.
Weisz, Alexander S., Philadelphia, Pa. 888,380, pub. 1–6–70. Cl. 50.
Western Popcorn Co., Atlantic, Iowa. 764,379, canc. Cl. 46.
Western Union Telegraph Co., New York, N.Y. 888,304, pub. 1–6–70. Cl. 38.
Westgate-California Foods, Inc.: *See*—
Darrimon, E. M. & Co.
Westinghouse Electric Corp., Pittsburgh, Pa. 443,668, ren. 3–24–70. Cl. 14.
Westlake Plastics Co., Lenni Mills, Pa. 764,099–100, canc. Cl. 1.
White Stores, Inc., Wichita Falls, Tex. 888,107, pub. 1–6–70. Cl. 4.
Whiteley, William & Co., Inc., Dover, Del. 521,251, ren. 3–24–70. Cl. 49.
Whiting Paper Co., Holyoke, Mass. 174,237, canc. Cl. 37.
Whiting Paper Co., Holyoke, Mass. 404,406, pub. 3–24–70. Cl. 37.
Williams, J. B. Co., Inc., The, New York, N.Y. 888,392, pub. 1–6–70. Cl. 51.
Wilson Sporting Goods Co., Chicago, to Wilson Sporting Goods Co., River Grove, Ill. 521,580, ren. 3–24–70. Cl. 22.
Woolsey Marine Industries, Inc., New York, N.Y. 888,224, pub. 1–6–70. Cl. 23.
World Cuisine, Inc., Washington, D.C. 888,418, pub. 1–6–70. Cl. 100.
Wyle Laboratories, El Segundo, Calif. 888,239, pub. 1–6–70. Cl. 26.
Wyler Watch Corp., New York, N.Y. 888,257, pub. 1–6–70. Cl. 27.
Yankee Pedlars, Ltd., Wilmington, Del. 764,452, canc. Cl. 101.
Zeisel Machinery Co., Inc., New York, N.Y. 888,486. Cl. 23.
Zelite Corp., New York, N.Y. 888,157, pub. 1–6–70. Cl. 18.
Zinc Institute Inc., New York, N.Y. 888,416, pub. 1–6–70. Cl. 100.
Zeiss, Carl, Jena, Germany, to Carl-Zeiss Stiftung, d.b.a. Carl Zeiss, Wuerttemberg, Germany. 262,832, ren. 3–24–70. Cl. 26.

U.S. GOVERNMENT PRINTING OFFICE: 0—1970

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U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

March 31, 1970 Volume 872 Number 5

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of February 1970

Examiner affirmed	188
Examiner affirmed in part	14
Examiner reversed	28
Total	230

Emergency Situation in the U.S. Postal Service

In view of the present emergency situation in U.S. postal service, the U.S. Patent Office is taking the following actions.

In regard to pending applications, the time for taking any action or paying any fee expiring during the period beginning March 16 and ending April 15, 1970, both dates inclusive, is hereby extended for ONE MONTH. However, no extension shall exceed a maximum period for response provided for in the Statutes.

U.S. Department of Commerce Field Offices have been designated, on an emergency basis, as receiving stations for the U.S. Patent Office. All papers should be enclosed in a sealed envelope and deposited in a Field Office. Such papers will be considered as received in the U.S. Patent Office on the day of deposit. The Field Office will date stamp each envelope so deposited, and applicants or their representatives should assure the legibility of the date stamp. Field Offices will place a corresponding date stamp on receipt cards provided by the depositor, which must completely identify the papers deposited.

Field Office deposits should, if possible, be limited to such papers wherein the Patent Statutes do not provide a remedy for failure to obtain a particular date. Examples of these types of papers are: checks in payment of issue fees, new application papers wherein priority dates or statutory bars may be involved, amendments where the six month statutory period for response is about to expire, etc.

The Field Office in New York designated to receive papers for the U.S. Patent Office is located at:

41st Floor, Federal Office Bldg.
26 Federal Plaza, Foley Square
New York, N.Y.

The designated Field Office in Hartford, Connnecticut is located at:

Room 610–B, Federal Office Bldg.
450 Main St.
Hartford, Conn.

The addresses of Field Offices in other cities are listed in local directories and are available upon inquiry to the Commissioner of Patents.

RICHARD A. WAHL,
Acting Commissioner of Patents.

Mar. 19, 1970.

Classification Order No. 400

Classification Order No. 400, dated Mar. 26, 1970 incorporates changes in the following classes:

91, MOTORS, EXPANSIBLE CHAMBER TYPE
92, EXPANSIBLE CHAMBER DEVICES
103, PUMPS—Abolished
123, INTERNAL-COMBUSTION ENGINES
137, FLUID HANDLING
141, FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS
166, WELLS
188, BRAKES
206, SPECIAL RECEPTACLES AND PACKAGES
230, GAS PUMPS AND FANS—Abolished
310, ELECTRICAL GENERATOR OR MOTOR STRUCTURE
417, PUMPS—Established
418, ROTARY EXPANSIBLE CHAMBER DEVICE—Established

All changes will be incorporated in the Manual of Classification replacement pages dated April 1970.

WALTER W. BURNS, JR.
Administrator of the Office of Documentation.

Dedications

2,817,190.—*Fred Matson,* Hollywood, Calif. PLANT SUPPORT. Patent dated Dec. 24, 1957. Dedication filed Dec. 29, 1969, by the inventor.

Hereby dedicates to the Public the remaining term of the said patent.

3,355,805.—*Grant E. Kreuger* and *Harold F. Mohr,* Green Bay, Wis., and *Otto Charles Huber, Jr.,* Oak Park, Ill. CHEESE MANUFACTURING APPARATUS. Patent dated Dec. 5, 1967. Dedication filed Dec. 8, 1969, by the assignee, *National Dairy Products Corporation.*

Hereby dedicates to the Public the remaining term of the said patent.

New Applications Received During January 1970

Patents	7396
Designs	438
Plant Patents	11
Reissues	11
Total	7856

Issue—March 31, 1970

Patents	1301	No. 3,503,076 to No. 3,504,376, incl.
Designs	32	No. 217,050 to No. 217,081, incl.
Reissues	6	No. 26,840 to No. 26,845, incl.
Def. Pub.	4	No. T872,009 to No. T872,012, incl.
Total	1343	

Disclaimers

2,666,496.—*Ralph E. Willison,* North Branch, N.J. SYSTEM FOR ENERGIZING ELECTRICAL PRECIPITATORS AND THE LIKE. Patent dated Jan. 19, 1954. Disclaimer filed Dec. 8, 1969, by the assignee, *Research Corporation.*

Hereby disclaims the terminal portion of the term of the said patent subsequent to June 16, 1970.

2,718,314.—*Martin J. Nelson,* Chicago, and *Clifford E. Ives,* Wilmette, Ill. STACKER MECHANISM FOR COIL SPRINGS. Patent dated Sept. 20, 1955. Disclaimer filed Dec. 22, 1969, by the assignee, *Mathewson Corporation.*

Hereby enters this disclaimer to claims 11, 12 and 13 of said patent.

3,147,094.—*Herbert J. Hall,* Princeton, *Harold E. Van Hoesen,* Somerville, and *Harry J. White,* Basking Ridge, N.J. CONTROL SYSTEM FOR ELECTRICAL PRECIPITATORS. Patent dated Sept. 1, 1964. Disclaimer filed Dec. 8, 1969, by the assignee, *Research-Cottrell, Inc.*

Hereby enters this disclaimer to claims 11, 12 and 13 of said patent.

3,255,941.—*Richard A. Edwards,* Walnut Creek, Calif. STAMP DISPENSER. Patent dated June 14, 1966. Disclaimer filed Dec. 15, 1969, by the assignee, *Roto-Stamp Corporation.*

Hereby enters this disclaimer to claim 14 of said patent.

3,285,153.—*Russell E. Hartsough,* Walkerton, Ind. BUILDING VENTILATING SYSTEM. Patent dated Nov. 15, 1966. Disclaimer filed Dec. 8, 1969, by the inventor.

Hereby enters this disclaimer to claims 3, 5, 6 and 7 of said patent.

3,378,793.—*Wilfrid Sinden Mortley,* Great Baddow, England. DISPERSIVE DELAY CELLS. Patent dated Apr. 16, 1968. Disclaimer filed Dec. 29, 1969, by the assignee, *The Marconi Company Limited.*

Hereby enters this disclaimer to claims 1, 3, 4, 7, 9, 11 and 12 of said patent.

3,398,115.—*Arthur C. Hecker,* Forest Hills, N.Y., and *Norman L. Perry,* Wayne, N.J. POLYOLEFINS STABILIZED WITH MIXTURES COMPRISING AN ORGANIC PHOSPHORUS ACID, PHOSPHITE TRIESTER AND THIODIPROPIONATE. Patent dated Aug. 20, 1968. Disclaimer filed Nov. 12, 1969, by the assignee, *Argus Chemical Corporation.*

Hereby enters this disclaimer to claim 1 of said patent.

3,449,862.—*Alexander J. Biro,* Indiana, Pa. WINDOW STRUCTURE. Patent dated June 17, 1969. Disclaimer filed Dec. 18, 1969, by the assignee, *Season-All Industries, Inc.*

Hereby enters this disclaimer to claims 20 and 21 of said patent.

3,455,737.—*Thomas M. Seibert,* Chicago, Ill. METHOD OF REMOVING A COATING. Patent dated July 15, 1969. Disclaimer filed Nov. 3, 1969, by the assignee, *Teletype Corporation.*

Hereby enters this disclaimer to claims 5, 6, 9, 10 and 11 of said patent.

3,478,747.—*Charles M. Sachs,* Teaneck, N.J. BRASSIERE. Patent dated Nov. 18, 1969. Disclaimer filed Dec. 29, 1969, by the assignee, *International Playtex Corporation.*

Hereby disclaims the terminal portion of the term of said patent subsequent to May 30, 1984.

3,481,133.—*Robert H. Knospe,* Wilmington, Del. MIXED SHRINKAGE YARN. Patent dated Dec. 2, 1969. Disclaimer filed Oct. 8, 1969, by the inventor; the assignee, *E. I. du Pont de Nemours and Company,* consenting.

Hereby disclaims the terminal portion of the term of the said patent subsequent to Dec. 17, 1985.

Patents Available for Licensing or Sale

D. 215,183. FLEXIBLE TRANSMISSION FOR THREE-WHEELED VEHICLE. James H. Mayland, 173 Southwood Drive, Old Bridge, N.J., 08857.

2,659,109. ALL RAMP GARAGE. Philip H. Burn et al. Correspondence to: Roy C. Hopgood, Sandoe, Hopgood and Calimafde, 60 E. 42nd St., New York, N.Y., 10017.

3,372,551. MINE ROOF SUPPORT. Hans-Joachim Von Hippel, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,419,926. COLLAPSIBLE CABIN BOAT. Adam Magin, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,465,185. ELECTRIC MOTOR DRIVE FOR TWO WINDING SHAFTS. Dr. C. Schachenmann & Co., Basel, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,479,749. METHOD AND APPLIANCE FOR DRYING MOIST ARTICLES. Martin Duarte Del Moral, Madrid, Spain. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,485,398. TENNIS BALL PICK-UP AND COLLECTING MACHINE. Maximilian Offner. Correspondence to: Peter Xiarhos, 9 Minot Ave., Acton, Mass., 01720.

3,487,614. SHRUBBERY SHAPER AND TRIMMER. Emil Uhor, P.O. Box 414, Bowie, Md., 20715.

3,490,588. PUNCH CARD SORTER. Littlecomputer Inc., 1214 Logan St., Denver, Colo., 80203.

3,494,246. COMPRESSION LOCKING TUBULAR RIVET. Urban N. Hensley, Rte. 1, Box 55, Donnellson, Ill., 62019.

The following 2 patents are offered by: William H. Atkinson, 703 Market St., San Francisco, Calif., 94103.

3,354,596. COLLAPSIBLE SCAFFOLDING.

3,373,844. COMPACT MOTORIZED SCAFFOLD ARRANGEMENT.

The following 3 patents are offered by: Ernest I. Gifford, 26400 Southfield Road, Lathrup Village, Mich., 48075.

3,017,895. FLOOD CONTROL SYSTEM.

3,224,791. HANGER FOR VEHICLE SPLASH GUARDS.

3,338,868. MUD FLAP SUPPORT.

The following 5 patents are offered by: Roy C. Hopgood, Sandoe, Hopgood and Calimafde, 60 E. 42nd St., New York, N.Y., 10017.

2,644,150. AUTOMATIC TRAFFIC DIRECTING DEVICE FOR GARAGES.

2,678,165. REGISTERING SYSTEM.

2,689,384. GARAGE.

3,024,468. MARINE TOILET SYSTEM.

3,154,795. MARINE TOILET.

The following 7 patents are offered by: Thomas P. O'Donnell, 220 Highland Blvd., Brooklyn, N.Y., 11207.

D. 198,127. VEHICLE ROOF.

D. 202,418. VEHICLE ROOF.

D. 201,745. COMBINATION DRAINER AND HOLDER HAVING DUAL ATTACHING ELEMENTS OR SIMILAR ARTICLE.

D. 201,746. COMBINATION DRAINER AND HOLDER HAVING DUAL ATTACHING ELEMENTS.

3,316,042. ENCLOSURE COMPRISING OUTSIDE SHELF AND INSIDE COMPARTMENT MACHINE INSTALLATIONALLY DISPOSED.

3,423,798. CLAMP OVERALL ADAPTABLY COMBINED WITH A WRITING PLATFORM.

3,500,769. WRITING PLATFORM COMPRISING A CONTAINER ELEMENT.

Rohm and Haas Company is prepared to grant non-exclusive licenses on reasonable terms and conditions under the following patent.

Inquiries concerning licenses should be addressed to: Assistant Manager, Industrial Chemicals Dept., Rohm and Haas Co., Independence Mall West, Philadelphia, Pa., 19105.

2,795,564. AQUEOUS PAINT BASES AND WATER-BASE PAINTS AND PROCESS OF PREPARING THEM.

General Electrical Company is prepared to grant non-exclusive licenses under the following 50 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Space Division, General Electric Co., P.O. Box 8555, Philadelphia, Pa., 19101.

3,433,631. HIGH TEMPERATURE ALLOY.

Applications for license under the following patent may be addressed to: Patent Counsel, Industry Control Department, General Electric Company, 1501 Roanoke Blvd., Salem, Va., 24153.

3,100,268. SYMPATHETIC SILICON CONTROLLED RECTIFIER CIRCUIT.

Applications for license under the following 5 patents may be addressed to: Patent Counsel, Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Bldg. 21 ES, Bridgeport, Conn., 06602.

3,160,280. DEVICE FOR MOUNTING APPARATUS.

3,176,150. MASTER SLAVE PUSH PULL AMPLIFIER UTILIZING TWO SILICON CONTROLLED RECTIFIERS.

3,189,748. FREQUENCY RESPONSIVE POWER AMPLIFIER.

3,351,732. ELECTRIC WELDING DEVICE.

3,411,127. SELF-MATING ELECTRIC CONNECTOR ASSEMBLY.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, Electronic Components Div., General Electric Co., 316 E. 9th St., Owensboro, Ky., 42301.

3,375,390. ELECTRON OPTICAL SYSTEM HAVING SPIRAL COLLIMATING ELECTRODE ADJACENT THE TARGET.

3,378,362. METHOD FOR MAKING THIN FILM GLASS ELEMENTS.

3,379,566. METHOD OF MAKING A POLYCRYSTALLINE DUAL LAYERED ALUMINUM OXIDE-MAGNESIUM OXIDE STORAGE ELECTRODE.

3,390,294. TARGET VIBRATION ISOLATION MOUNT.

3,407,322. INFRARED CAMERA TUBE WITH COOLING MEANS FOR INTERNAL ELEMENTS.

3,437,860. IMAGE ORTHICON GLASS TARGET WITH ALUMINUM-TANTALUM OXIDE COATING.

Applications for license under the following 11 patents may be addressed to: Patent Counsel, Appliance and Television Group, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,151,472. HOUSEHOLD REFRIGERATOR.

3,151,608. OVEN WITH SOIL PROTECTION LINER.

3,156,509. SHELF GUARD FOR REFRIGERATOR DOOR SHELVES.

3,159,980. REFRIGERATOR INCLUDING COMBINATION EVAPORATOR FAN MOTOR AND DEFROST CONTROL.

3,309,887. HOUSEHOLD REFRIGERATOR INCLUDING DEFROST CONTROL MEANS.

3,311,072. CANTILEVER SLIDE-OUT SHELF.

3,327,493. HOUSEHOLD REFRIGERATOR INCLUDING AUTOMATIC ICE MAKER AND CONTROL MEANS THEREFOR.

3,345,102. MAGNETIC LATCH ASSEMBLY.

3,474,638. ELECTRONIC REFRIGERATION SYSTEM DEFROST CONTROL.

3,474,640. HOUSEHOLD REFRIGERATOR CABINET CONSTRUCTION.

3,489,477. REFRIGERATOR CABINET CONSTRUCTION.

Applications for license under the following 25 patents may be addressed to: Patent Counsel, Consumer Electronics Division, General Electric Company, Bldg. 1, Room 104, Electronics Park, Syracuse, N.Y., 13201.

3,200,199. STEREOPHONIC REVERBERATION CIRCUIT.

3,219,352. STYLUS CAPTIVATOR FOR PHONOGRAPH CARTRIDGE.

3,219,757. SOUND REPRODUCTION FROM MONAURAL INFORMATION.

3,219,764. STYLUS ASSEMBLY FOR A PHONOGRAPH PICKUP CARTRIDGE.

3,220,736. STYLUS CAPTIVATOR FOR PHONOGRAPH CARTRIDGE.

3,222,455. AURAL STEREOPHONIC BALANCE INDICATOR.

3,231,927. HINGE STRUCTURE.

3,233,906. STYLUS DRIVER FOR A PHONOGRAPH.

3,284,485. ELECTRONIC MUSICAL INSTRUMENT TONE GENERATOR HAVING VIBRATO EFFECT.

3,236,526. FOLDING TONE ARM FOR A PHONOGRAPH.

3,266,326. MASTER CONTROL ASSEMBLY FOR AN AUDIO VOLUME CONTROL SYSTEM.

3,266,808. STEREO PHONOGRAPH CARTRIDGE.

3,266,809. PHONOGRAPH CARTRIDGE.

3,268,229. PORTABLE PHONOGRAPH.

3,290,045. DUST REMOVER FOR PHONOGRAPHS.

3,291,488. TONE ARM AND CARTRIDGE COMBINATION.

3,292,931. SOUND REPRODUCING DEVICE.

3,292,933. STABILIZER ARM FOR PHONOGRAPHS.

3,292,934. STABILIZER ARM FOR PHONOGRAPHS.

3,296,360. ELECTRIC ISOLATION MEANS FOR COMPONENTS ON A PRINTED CIRCUIT BOARD.

3,301,087. STRUCTURE FOR CONTROLLING PUSH-BUTTONS.

D. 198,715. RECORD PLAYER OR SIMILAR ARTICLE.

D. 200,733. PHONOGRAPH OR SIMILAR ARTICLE.

D. 201,205. PORTABLE PHONOGRAPH OR THE LIKE.

D. 201,206. PORTABLE PHONOGRAPH OR THE LIKE.

The Department of Health, Education and Welfare, is prepared to grant licenses as provided by Title 45 C.F.R. Section 6.3 on the following 116 patents.

Inquiries should be addressed to: Dr. Roger O. Egeberg, Assistant Secretary for Health and Scientific Affairs, Department of Health, Education, and Welfare, Washington, D.C., 20201.

2,649,727. CHEMICAL FUME HOOD.

2,651,236. THERMAL EXPANSION DEVICE.

2,653,160. PREPARATION OF ORGANO-METALLIC COMPOUNDS IN ORGANIC SOLVENTS

2,658,021. TISSUE CULTURE PROCEDURES.

2,684,365. CONVERTING TOMATIDINE.

2,705,489. BIOLOGICAL APPARATUS.

2,786,464. BIOLOGICAL APPARATUS.

2,796,382. CHEMICAL TRANSFORMATION OF STEROIDS BY MEANS OF BACTERIAL ENZYMES.

2,802,005. 5-FLUOROURACIL.

2,802,391. IMPROVED COLORIMETER.

2,845,929. APPARATUS FOR THE COLLECTION AND COOLING OF BLOOD.

2,858,036. CULTURE FLASK FOR USE WITH PLANE SURFACE SUBSTRATE TISSUE CULTURE.

2,885,396. N-GLYCOSIDES OF 5-FLUOROURACIL.

2,892,755. PROCESS FOR PREPARING A SEROLOGICALLY ACTIVE FRACTION OF VIRULENT TREPONEMA PALLIDUM.

2,918,409. DERIVATION FROM LIVER EXTRACT ACTIVE AGAINST HYPOCHROMIC ANEMIA.

2,940,981. METHOD FOR ISOLATING AND CRYSTALIZING CHLOROPHYLL.

2,945,038. 5 - FLUOROCYTOSINE AND PREPARATION THEREOF.

2,947,116. METHOD OF PRODUCING TISSUE CULTURE FLASKS.

2,948,725. 5-FLUOROOROTIC ACID AND PREPARATION THEREOF.

2,970,139. 5-FLUOROURACIL NUCLEOTIDES AND PREPARATION THEREOF.

2,990,335. FLUID SUSPENSION CULTURE METHOD FOR FIXED TISSUE CELLS.

2,999,792. SEROLOGIC TEST.

3,002,965. NUCLEOSIDES AND THEIR PREPARATION.

3,009,917. PROTOVERINE 6,7-DIACETATE 15(1)2' METHYL-BUTYRATE AND ITS PREPARATION.

3,016,284. PROCESS FOR INTRODUCING STERILE MATERIAL IN APPARATUS HAVING CONTROLLED ATMOSPHERE.

3,020,161. PROCESS OF REMOVAL OF RADIONUCLIDES FROM MILK.

3,026,251. METHOD OF ISOLATING GASTRIC SECRETION INHIBITORY SUBSTANCE, AND THE ENZYME GASTRICSIN, AND THE RESULTING PRODUCTS.

3,029,244. AROYLPIPERIDINOLS AND ESTERS THEREOF.

3,050,791. SEALED DOOR FOR A COMPARTMENT HAVING A CONTROLLED ENVIRONMENT.

3,051,163. ISOLATING DEVICE.

3,051,164. JACKET ISOLATOR FOR USE IN STERILE TECHNIQUES.

3,059,831. CONNECTION BETWEEN TWO SEALED CHAMBERS AND METHOD OF MAKING SAME.

3,066,141. QUINOLINE-TYPE MUSTARDS AND PROCESS FOR PRODUCING SAME.

3,066,142. ESTERS OF PROTOVERINE.

3,066,143. ESTERS OF PROTOVERINE.

3,066,144. ESTERS OF PROTOVERINE.

3,087,765. MEDICINE CABINET LATCH.

3,090,861. CELL FOR USE IN RADIATION ABSORPTION ANALYSIS.

3,063,650. PHENAZOCINE.

3,096,250. NOVEL PARTICULATE ANTIGENS AND PROCESS.

3,102,843. OCCURRENCE AND ISOLATION OF MYCORIBNIN-T6P, A NATURALLY OCCURRING INHIBITOR OF DISACCHARIDE.

3,105,009. ANTI-MITOTIC CHEMOTHERAPEUTIC COMPOUNDS.

3,105,068. IMPROVED PREPARATION OF ALLOPREGNENOLONE AND PREGNADIENOLONE FROM TOMATIDINE AND SOLASODINE.

3,105,089. ANGELIC ACID ESTERS.

3,138,603. NEW BENZOMORPHANS (METHANOBENZAZOCINES) AND PREPARATIONS THEREOF.

3,157,672. α,ω-BIS (3-ALKYLIDENE-5,5-DIALKYL-1-PYRROLIDIN-2) ALKANES AND ETHERS.

3,162,654. TETRA-SUBSTITUTED BENZOQUINONES AND DERIVATIVES OF THE SAME.

3,167,485. WATER INSOLUBLE MODIFIED ENZYMES.

3,170,246. SPACE FILLING ATOMIC UNITS AND CONNECTORS FOR MOLECULAR MODELS.

3,179,563. MEDICINE FOR COMBATING ILLNESSES OF THE CENTRAL NERVOUS SYSTEM.

3,200,142. SURFACE-ACTIVE COMONOMER AND METHOD OF PREPARATION.

3,201,387. 5-TRIFLUORMETHYLURACIL, DERIVATIVES THEREOF, AND PROCESSES FOR PREPARING SAME.

3,206,072. PIPETTING MACHINE.

3,221,769. PNEUMATIC VALVE OPERATED PROSTHETIC DEVICES.

3,229,687. ELECTROCARDIO RECORDING AND REPRODUCING SYSTEM.

3,232,089. ANASTOMOTIC CLIP AND ELEMENTS.

3,239,417. METHODS AND COMPOSITIONS FOR INHIBITING STEROL BIOSYNTHESIS.

3,241,920. METHOD OF MEASURING ORGANIC CHLORIDE CONTAMINATION OF MILK.

3,243,049. TRAY ASSEMBLY.

2,245,882. BACTERIOLOGIC TESTING METHOD AND MEANS THEREFOR.

3,248,293. PHOSPHATIDO-PEPTIDE FRACTION AS A CARRIER FOR CATIONIC SUBSTANCES.

3,264,280. TRICOSAPEPTIDES AND INTERMEDIATES FOR THE PREPARATION THEREOF.

3,272,348. MICROTOME SECTION PICKUP AND MANIPULATOR.

3,274,193. PURIN-6-yl-TRIMETHYLAMMONIUM CHLORIDE AND PROCESSES OF MAKING IT.

3,297,533. BIOLOGICALLY ACTIVE ANIMAL EXTRACTS.

3,299,042. IODINATION OF THE HETEROCYCLIC BASES IN NUCLEOSIDES, NUCLEOTIDES, NUCLEOSIDE-5'-POLYPHOSPHATES AND NUCLEIC ACIDS.

3,303,841. PROCESS AND APPARATUS FOR PRESSURIZING LOWER EXTREMITIES OF A PATIENT DURING VENTRICULAR DIASTOLE.

3,308,653. VIBRATION TONOMETER.

3,308,667. TEMPERATURE DETERMINATION SYSTEM.

3,317,393. IMMUNIZATION BY SELECTIVE INFECTION OF THE INTESTINAL TRACT WITH AN ENCAPSULATED LIVE VIRUS.

3,319,792. MULTIPLE FILTRATION APPARATUS.

3,328,253. PROCESSES FOR THE PRODUCTION AND PURIFICATION OF OGAWA LIPOPOLYSACCHARIDE CHOLERA ANTIGEN.

3,328,582. ROTATABLE PATIENT SUPPORT WITH MEANS TO SHIFT THE AXIS OF ROTATION IN TWO MUTUALLY PERPENDICULAR DIRECTIONS.

3,247,375. GAS ANALYSIS METHOD AND DEVICE FOR THE QUALITATIVE AND QUANTITATIVE ANALYSIS OF CLASSES OF ORGANIC VAPORS.

3,342,695. EXPONENTIAL FEED METHOD AND APPARATUS.

3,360,434. METHOD FOR REDUCING BLOOD PRESSURE WITH PHENYLALANINE DERIVATIVES.

3,362,879. TYROSINE TRANQUILIZING COMPOSITIONS AND METHOD OF TREATMENT.

3,366,540. ANTIBIOTIC ANTI-TUMOR AGENTS AND METHOD OF PRODUCING SAME.

3,372,994. FLAME IONIZATION DETECTOR.

3,373,081. METHOD FOR DIAGNOSING PHEOCHROMOCYTOMA.

3,376,863. BIVENTRICULAR CARDIAC ASSISTER.

3,390,397. PSYCHOLOGICAL TESTING RECORDER.

3,394,464. TRANSFER HOOD.

3,385,159. RANGING INSTRUMENT.

3,413,095. MEMBRANE OXYGENATOR.

3,386,882. PURIFIED VACCINE FROM BRAIN TISSUE.

3,412,935. GAS DISPENSING DEVICES.

3,419,320. DEVICE FOR PREVENTING DAMAGE TO RADIO-ACTIVE SOURCES IN LEAD-FILLED TRAYS OR DRAWERS.

3,425,806. METHOD AND MEANS FOR DETECTING A HALOGEN OR PHOSPHORUS IN A GASEOUS MATERIAL.

3,384,086. STEREOTAXIC ORIENTED MACROTOME DEVICE.

3,429,912. STRAINED RING CENTRAL NERVOUS SYSTEM DEPRESSANT.

3,434,162. TOTALLY IMPLANTED ARTIFICIAL HEART POWER SYSTEM UTILIZING A RECHARGEABLE THERMAL ENERGY SOURCE.

3,438,374. METHOD OF BONDING TISSUE SURFACES AND CONTROLLING HEMORRHAGING THEREOF USING TISSUE ADHESIVE AND HEMOSTATIC COMPOSITION.

3,372,173. SELENO-SUBSTITUTED STEROID COMPOUNDS.

3,448,465. PIVOTED BUTTERFLY TYPE HEART VALVE.

3,451,260. APPARATUS FOR ULTRASONIC SCANNING USING AN ELLIPTIC REFLECTING SYSTEM.

3,453,998. EYE MEASURING DEVICE.

3,338,447. QUICK CLOSING STOPPER.

3,450,816. STERILIZATION OF FEMALE MOSQUITOES WITH A HORMONE DERIVED FROM MALE MOSQUITOES.

3,454,583. SYNTHESIS OF VINCAMINE.

3,456,134. PIEZOELECTRIC ENERGY CONVERTER FOR ELECTRONIC IMPLANTS.

3,457,098. NONTHROMBOGENIC SURFACES AND PREPARATION THEREOF.

3,463,772. SYNTHESIS OF 3'5' LINKED ARABINOOLIGONUCLEOTIDES.

3,463,782. 7-10, ETHANO-1-THIA-4,7-DIAZASPIRO (4.5) DECANE.

3,463,012. PIPETTING DEVICE FOR TISSUE CULTURE DISSEMINATION.

3,468,886. TETRAHYDROHOMOFOLIC ACID SULFATE AND SYNTHESIS THEREOF.

3,463,728. DIALYSATE CAPACITY AUGMENTATION PROCESS.

3,466,368. CLEAVAGE OF HUMAN GAMMA GLOBULIN BY MEANS OF CYANOGEN BROMIDE.

3,465,884. CHANNEL LAYER CHROMATOGRAPHY.

3,480,610. ALKALINE EXTRACTION OF M PROTEIN FROM GROUP A HEMOLYTIC STREPTOCOCCI AND PRODUCTS THEREOF.

3,490,523. TRANSFER DEVICE.

3,487,148. PARTIALLY DIGESTED M PROTEIN VACCINE AND METHOD OF MAKING SAME.

3,489,145. METHOD AND APPARATUS FOR CONTINUOUS SEPARATION OF BLOOD INVIVO.

3,492,876. ALIQUANT DISCHARGE DEVICE.

3,462,366. CARIOSTATIC BUFFER COMPOSITION.

3,290,501. SMALL PARTICLE COLLECTION AND DETECTION APPARATUS.

Certificates of Correction for the Week of Mar. 31, 1970

Re. 26,277	3,408,330	3,421,450	3,426,548	3,429,677	3,431,906	3,433,797	3,448,682
Re. 26,531	3,409,020	3,421,565	3,426,593	3,429,678	3,431,915	3,433,826	3,448,717
Re. 26,601	3,409,295	3,422,095	3,426,763	3,429,723	3,431,937	3,433,994	3,449,671
Re. 26,607	3,409,582	3,422,098	3,426,834	3,429,802	3,432,027	3,434,002	3,450,525
D. 213,376	3,409,893	3,422,100	3,427,136	3,429,818	3,432,121	3,434,039	3,450,554
D. 213,664	3,411,284	3,422,178	3,427,257	3,429,856	3,432,161	3,434,049	3,450,694
3,206,688	3,411,891	3,422 495	3,427,264	3,429,859	3,432,265	3,434,124	3,451,768
3,260,505	3,412,245	3,422,609	3,427,272	3,429,874	3,432,312	3,434,245	3,451,855
3,314,209	3,412,280	3,422,675	3,427,348	3,429,891	3,432,319	3,434,292	3,451,964
3,322,575	3,412,293	3,423,256	3,427,535	3,429,900	3,432 398	3,434,357	3,452,560
3,351,354	3,412,360	3,423,301	3,427,777	3,429,906	3,432,449	3,434,542	3,453,131
3,363,984	3,412,642	3,423,331	3,427,816	3,429,913	3,432,455	3,434,567	3,453,257
3,366,646	3,413,226	3,423,385	3,427.852	3,430,084	3,432,596	3,434,659	3,453,865
3,369,726	3,413,258	3,423,489	3,427,863	3,430,291	3,432,605	3,434,772	3,453,883
3,371,616	3,413,628	3,423,512	3,427,989	3,430,400	3,432,620	3,435,017	3,454,508
3,374,642	3,413,806	3,423,949	3,428,053	3,430,478	3,432,663	3,435,027	3,455,987
3,379,989	3,414,590	3,423,967	3,428,237	3,430,622	3,432,667	3,435 091	3,456,086
3,385,857	3,414,729	3,424,310	3,428,478	3,430,679	3,432,805	3,435,164	3,456,696
3,386,847	3,414,777	3,424,366	3,428,480	3,430,731	3,432,816	3,435,217	3,456,818
3,387,934	3,415,223	3,424,515	3,428,494	3,430,750	3,432,820	3,435,530	3,457,027
3,388,545	3,415,605	3,424,660	3,428,573	3,430,786	3,433,018	3,435,547	3,457,072
3,389,093	3,415,633	3,424,699	3,428,627	3,430,825	3,433,098	3,435,888	3,457,085
3,390,552	3,415,875	3,424,773	3,428,634	3,430,829	3,433,180	3,436,056	3,457,303
3,390,562	3,415,881	3,424,833	3,428,635	3,430,832	3,433,228	3,436,241	3,457,375
3,391,031	3,415,932	3,424,942	3,428,643	3,430,840	3,433,266	3,436,787	3,457,761
3,391,032	3,416,465	3,425,183	3,428,656	3,431,003	3,433.312	3,437,172	3,458,053
3,391,108	3,416,622	3,425,189	3,428,716	3,431,090	3,433,349	3,437,807	3,458,393
3,391,738	3,417,112	3,425,279	3,428,720	3 431,100	3,433,397	3,439,486	3,458,772
3,395,037	3,418,551	3,425,444	3,428 830	3,431,156	3,433,408	3,440,199	3,458,825
3,395,115	3,419,075	3,425,464	3,428,839	3,431,202	3,433,417	3,440,228	3,458,869
3,397,038	3,419,162	3,425,504	3,428,864	3,431,214	3,433,419	3,441,588	3,459,676
3,397,090	3,419,409	3,425,625	3,429,096	3,431,280	3,433,505	3,442 795	3,459,737
3,398,169	3,419 582	3,425,663	3,429,247	3,431,380	3,433.535	3,443,080	3,459,743
3,402,047	3,420,048	3,425,770	3,429,317	3,431,398	3,433,607	3,443,663	3,459,755
3,402,059	3,420,768	3,425,850	3,429,354	3,431.491	3,433,679	3,444,141	3,460,020
3,403,396	3,420,829	3,425,939	3,429,389	3,431,514	3,433,681	3,446,015	3,460,276
3,403,812	3,420,866	3,426,096	3,429,459	3,431,612	3,433,690	3,446,798	3,462,096
3,405,858	3,421,004	3,426,111	3,429,499	3,431,621	3,433,724	3,446,855	3,468,864
3,406,102	3,421,057	3,426 133	3,429,634	3,431,677	3,433,728	3,447,888	3,475.111
3,407,437	3,421,076	3,426,176	3,429,662	3,431,857	3,433,732	3,448,029	3,477,250
3,407,987	3,421,111	3,426,225	3,429,675	3,431,866	3,433,772	3,448,156	3,490,807
3,408,007	3,421,326	3,426,238					

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

SUBCHAPTER A—GENERAL

PART 1—RULES OF PRACTICE IN PATENT CASES

Delegation of Authority to Render Determination of Petitions

Pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), paragraph (g) of § 1.181, of Title 37, Code of Federal Regulations, is hereby revised as set forth below.

The authority to render determinations on various kinds of petitions may appropriately be delegated to officials in the Patent Office other than the Group Directors, the Solicitor and the Law Examiners previously specified under paragraph (g) of § 1.181. This change is in keeping with the reassignment of responsibilities within the Patent Office organization, as set forth in Department Organization Order 30-3B (34 F.R. 19556, December 11, 1969). Since the change imposes no burden on any person, notice and public procedure thereon are deemed unnecessary.

Effective date. This revision shall become effective upon publication in the Federal Register.

Paragraph (g) of § 1.181 is revised to read as follows:

§ 1.181 *Petition to the Commissioner.*

* * * * *

(g) The Commissioner may delegate to appropriate Patent Office officials the determination of petitions under this section, with the exception of petitions under § 1.183.

RICHARD A. WAHL,
Acting Commissioner of Patents.

Approved: March 3, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70-2826; Filed, Mar. 6, 1970; 8:49 a.m.]

Erratum

In the OFFICIAL GAZETTE, Feb. 10, 1970, vol. 871, in the body of the decision of *Morton S. De Groff* v. *Daniel D. Roth and Robert M. Hall*, p. 341, line 43, after "does" insert *not*.

Notice of Daylight Saving Time

The Patent Office will operate on Daylight Saving Time from April 26, 1970 through October 25, 1970.

Photocopies of Applications

Many of the patent application papers received by the Patent Office are copies of the original, ribbon copy. These are acceptable if, in the opinion of the Office, they are legible and permanent. Legibility includes ability to be photocopied and photomicrographed so that suitable reprints can be made. This requires a high contrast, with black lines and a white background. Gray lines and/or a gray background sharply reduce photo reproduction quality.

Applicants should make every effort to file patent applications in a form that is clear and reproducible. The Office may accept for filing date purposes papers of reduced quality but will require that acceptable copies be supplied for further processing.

Additionally, legibility of some application papers becomes impaired due to abrasion or aging of the printed material during examination and ordinary handling of the file. It may be necessary to require that clear, legible copies be furnished at later stages after filing, especially when preparing for issue.

RICHARD A. WAHL,
Assistant Commissioner.

Jan. 28, 1970.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 10, 1970

*Denotes oldest new application.

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-04-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*8-29-67
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-24-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-68
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director.. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	10-26-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ASHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-03-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-19-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-68
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-02-68
PHYSICS, GROUP 260—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-29-68
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-19-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10-11-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-04-68
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	7-09-68
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-03-68
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	9-11-68

Total number of pending applications (excluding Designs)	183,028
Total number of Design applications pending	2,920

Expiration of patents: The patents within the range of numbers indicated below expire during February 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,627,071 to 2,629,868, inclusive
Plant Patents	Numbers 1,162 to 1,171, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

ROBERT N. NOYCE *v.* JACK ST. CLAIR KILBY
JACK ST. CLAIR KILBY *v.* ROBERT N. NOYCE

Nos. 8182 and 8205. Decided November 6, 1969

[57 CCPA —; 416 F.2d 1391; 163 USPQ 550]

1. INTERFERENCE—BENEFIT OF FILING DATE OF PARENT APPLICATION—RIGHT TO MAKE.

"The criterion for determining whether an application supports a count is whether the 'necessary and only reasonable construction' to be given the disclosure by one skilled in the art is one which provides such support. * * * That requirement is the same where one relies on the earlier application for support in order to obtain the benefit of its filing date as where support in an application directly involved in interference is in issue."

APPEAL from Patent Office. Interference No. 92,841.

MODIFIED.

Roger S. Borovoy (*J. Harold Kilcoyne*, *Lawrence B. Dodds*, of counsel) for appellant and cross-appellee.

Ellsworth H. Mosher (*Samuel H. Mims, Jr.*, *Stevens, Davis, Miller & Mosher*, of counsel) for appellee and cross-appellant.

Before RICH, *Acting Chief Judge*, MCGUIRE, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

These are cross-appeals from the decision of the Board of Patent Interferences awarding priority of invention as to counts 1–4 to Kilby and counts 5 and 6 to Noyce in Interference No. 92,841 involving Noyce Patent No. 2,981,877, issued April 25, 1961 on an application [1] filed July 30, 1959, and Kilby application Serial No. 169,557, filed January 29, 1962.

The sole issue is whether counts 1–4, the subject matter of No. 8182 taken by Noyce, and count 6,[2] involved in No. 8205 brought by Kilby, are supported by a prior copending application of Kilby, Serial No. 791,602, filed February 6, 1959 (hereinafter the '602 application).[3] For reasons hereinafter stated, we find that the counts in issue are not supported by the '602 application, and therefore *reverse* the decision of the Board as to counts 1–4 in No. 8182 and *affirm* it as to count 6 in No. 8205.

The subject matter in issue is a semiconductor device including an electrical lead or connection thereto, which device is suitable for use in integrated electronic circuits of very small size.[4] Count 1 is representative:

1. A semiconductor device comprising a body of semiconductor having a surface, said body containing adjacent P-type and N-type regions with a junction therebetween extending to said surface, two closely spaced contacts a [sic] adherent to said surface upon opposite sides of and adjacent to one portion of said junction, an insulating layer consisting essentially of oxide of said semiconductor on and adherent to said surface, said layer extending across a different portion of said junction, and an electrical connection to one of said contacts comprising a conductor adherent to said layer, said conductor extending from said one contact over said layer across said different portion of the junction, thereby providing electrical connections to both of the closely spaced contacts.

[1] Serial No. 830,507.
[2] As to count 5, which was also involved in No. 8205, Kilby withdraws his appeal in his brief here and the appeal therefore is dismissed as to that count.
[3] Issued June 23, 1964 as Patent No. 3,138,743.
[4] As an example of the minute size of the circuits, the dimensions of the semiconductor wafer of FIG. 6a of the Kilby '602 application, which figure is reproduced and discussed hereinafter, are given as 0.200 x 0.080 x 0.0025 inch.

A multi-device semiconductor and lead structure embodying the invention is shown in FIGS. 3 and 4 of the Noyce patent, plan and sectional elevation, respectively, as follows:

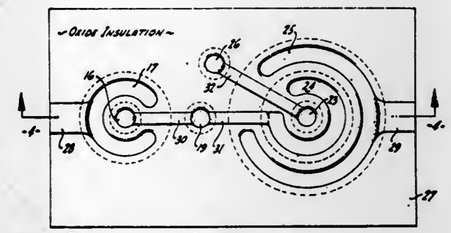


FIG. 3

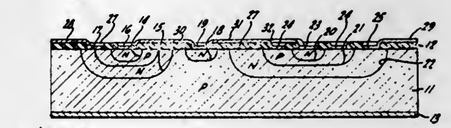


FIG. 4

The illustrated device includes a semiconductor body 11 of silicon of the P-type with one side having a surface 12 and the other side plated with a metal coating 13 which serves as an electrical contact. A plurality of circuit elements are formed within and on the body of silicon by diffusing N-type and P-type dopants, restricted to specific areas by known masking techniques, through the surface 12 to form a plurality of N-type and P-type semiconductor regions which are separated from the underlying P-type region and from each other by a plurality of disked, P-N junctions of various diameters and depths.

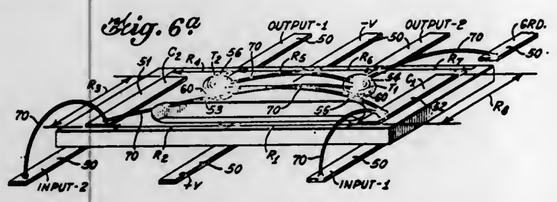
Toward the left end of the structure illustrated in FIGS. 3 and 4 is shown an N-type region overlying a small P-type region and separated therefrom by a disked junction 14. The small P-type region overlies another N-type region, and the latter N-type region in turn overlies the large P-type region comprising the bulk of the body and is separated therefrom by a disked junction 15. A discoid metal contact 16, adherent to surface 12 within junction 14, makes electrical connection to the upper N-type region. Electrical connection to the two regions between junctions 14 and 15 is made through a C-shaped metal contact 17 adherent to those regions. Since the two intermediate regions of semiconductor material are electrically interconnected by the contact 17, the resulting structure comprises two rectifying P-N junctions in series circuit.

Except for the contacts 16 and 17 and the contacts for other semiconductor devices shown to the right of the device just described, the entire surface 12 is covered with an insulating layer of oxidized silicon. That insulating layer may be formed upon the exposed surface of the silicon during the diffusion of the dopants into the silicon and the contact areas subsequently cleared of the layer by photo-engraving techniques. Afterward, conductive metal such as aluminum may be deposited by vacuum deposition and photo-engraving procedures may be used subsequently to remove all the deposited metal except that forming the contacts, such as 16 and 17, and electrical connecting leads thereto such as are shown at 28 and 30. Thus the metal lead strip 30

constituting the conductor from contact 16 passes over junctions 14 and 15 in insulated relationship thereto as the result of intervening oxide layer 27. The Noyce specification emphasizes throughout that the lead strips or conductors are adherent to the oxide layer.

The conductor 30 similarly passes in insulated relationship over another junction 18 of a semiconductor device designed to serve as a capacitor to make electrical connection to terminal 19 of that device. Additional semiconductor devices shown in the drawing include a transistor.

The disclosure of Kilby application '602 is best considered in connection with FIG. 6*a* thereof:



A thin wafer of single-crystal semiconductor material containing a diffused P-N junction shown there has been processed and shaped to form an integrated electronic circuit constituting a multivibrator. Among the elements of the circuit are resistors R_1, R_2 and R_3 and capacitors C_1 and C_2. Also formed are mesa transistors [5] T_1 and T_2. Although a semiconducting wafer that is "preferably silicon or germanium" is mentioned, P-type germanium is said to be used for the device shown. In producing the device, one side of the wafer is lapped and polished and then subjected to an antimony diffusion process to provide an N-type layer. Gold is evaporated through a mask to produce areas 51 to 54 which provide ohmic contact [6] with the N-type region such as the transistor base connections. Aluminum is evaporated through a mask shaped to provide the transistor emitter areas 56, which areas form rectifying contacts with the N-type layer. After utilizing a photosensitive resist process to etch the wafer to the proper shape, the photoresist is removed by a solvent and mesa areas 60 are masked by the same photographic process, and the wafer is again etched and the N-type layer removed in the exposed areas. Gold wires 70 are then thermally bonded to appropriate areas to make the necessary electrical connections. As examples, one wire 70 interconnects the emitter areas 56 of the two transistors T_1 and T_2 and base areas of the transistors are connected to contacts 51 and 52, respectively.

Kilby's FIG. 6*a* embodiment shows the gold connecting wires 70 insulated from the other circuit components and from each other by reason of their extending upwardly from the wafer into the air. However, the application describes a modification in a partial paragraph thereof as follows:

> Instead of using the gold wires 70, in making electrical connections, connections may be provided in other ways. For example, an insulating and inert material such as silicon oxide may be evaporated onto the semiconductor circuit wafer through a mask either to cover the wafer completely except at the points where electrical contact is to be made thereto, or to cover only selected portions joining the points to be electrically connected. Electrically conducting material such as gold may then be laid down on the insulating material to make the necessary electrical circuit connections.

[5] The application includes an enlarged illustration of such a transistor revealing that its designation arises from its having a region of one type conductivity, as the base region, projecting like a plateau or *mesa* from the surface of a region of a different type conductivity, as the collector region.

[6] The record reveals that an ohmic contact is linear in contrast to the contact at a P-N junction which is non-linear or rectifying.

The issue which we must determine is whether Kilby '602 supports recitations such as those in count 1, supra, which require a conductor that is adherent to the surface of an insulating layer of oxide of the semiconductor and provides an electrical connection passing across a junction at the surface of the semiconductor between P-type and N-type regions.

Kilby's continuation-in-part application directly involved in the interference, filed after the Noyce patent issued, contains much material not included in the parent '602 application and its support for the counts in issue is unquestioned. Thus, the later application adds to the statement in '602 that electrically conducting material such as gold may be "laid down" on the insulating material, a disclosure of "gold ribbons * * * plated onto and adhering to the silicon oxide layer." The involved application also adds a disclosure of a method for applying gold interconnections and includes several new figures which, taken with their description, clearly disclose the structure of the counts.

The Board found the reference to an insulating material "such as silicon oxide" in the described modification of FIG. 6*a* supports the requirement for an insulating material consisting of "oxide of said semiconductor," because of the disclosure that either silicon or germanium could be used as semiconductor material, which precedes the statement that the wafer of FIG. 6*a* is of germanium. Apparently Noyce does not challenge that conclusion here.

With respect to the requirement of count 1 for a conductor adherent to the layer of insulation, the Board referred to testimony taken by Noyce "to show that gold film deposited on silicon oxide is not adherent thereto." [7] It stated that it was not particularly impressed by that testimony because it was directed exclusively to gold and took the view that the statement in Kilby '602 that electrically conducting material "such as gold" may be laid down merely gives gold as an example. The Board then concluded that "one skilled in the art of fabricating such devices * * * would have no difficulty in selecting a metal which would unquestionably adhere to the silicon oxide layer." It further referred to the fact that Kilby '602 discloses forming a capacitor on a semiconductor wafer by applying a coating of aluminum on a layer of silicon oxide previously provided on the wafer and stated that there was no suggestion by Noyce that aluminum or some other material known to be adherent would not be satisfactory to obtain a "conductive film."

The Board also specifically considered the limitation in count 1 reading:

> * * * said conductor extending from said one contact over said [insulating] layer across said different portion of the junction * * *.

It viewed that limitation as requiring only one insulating layer and one conducting film thereon crossing a junction between the P-type and N-type regions and stated that it would be satisfied if the single conductor 70 interconnecting the emitter contacts 56 of FIG. 6*a* of Kilby were "provided by a conductive film on a layer of silicon oxide."

[7] It appears that the testimony for Noyce might be more precisely described as directed to showing that gold could not be deposited on silicon dioxide so as to adhere satisfactorily thereto *at the time the Kilby '602 application was filed in 1959*. Kilby joined issue on that matter and both parties conducted inter partes tests. Since we do not rest our decision here on those tests, they will not be further discussed.

While conceding that Kilby '602 does not expressly point out, or distinctly show, where the junction between P-type and N-type regions is found or where there is a "different portion" of that junction which is crossed by the insulating layer and overlaying conductor, the Board held that those features "are necessarily implicit therein."

Before us, Noyce stresses the argument that a "conductor adherent to the surface of the oxide and crossing a junction" is an essential feature of the invention and is not disclosed by the Kilby '602 application. He observes that Kilby must rely for the "conductor adherent" limitation of count 1 on the sentence in the reference to the modification of his FIG. 6*a* structure which states that "[e]lectrically conducting material such as gold may then be laid down on the insulating material to make the necessary electrical circuit connections." It is Noyce's position that this suggestion that the electrical connection be "laid down" on the insulating layer does not teach that it be "adherent" thereto and that such adherency is not otherwise taught in the '602 application.

Kilby does not deny that his '602 application lacks language stating that a conductor in his modified FIG. 6*a* construction is "adherent" to the insulating layer. He nevertheless contends that the application should be interpreted as supporting the limitations in question.

As pointed out by Noyce, the present case generally parallels the case of *Dyer* v. *Field*, 55 CCPA 771, 386 F.2d 466, 156 USPQ 85 (1967). There, the junior party Field was involved in interference on a continuation-in-part application which was expanded substantially over the parent application relied on for priority with respect to the very feature of the invention in issue that was in controversy. The same is true here with the additional aspect that Kilby's directly involved application was filed after Noyce's patent issued. However, we agree with Kilby that Field's being involved in the interference on a new application having an expanded disclosure "alone was not what caused the final ruling adverse to Field." Rather, the decision there was based on a finding that the earlier Field application did not disclose the invention in issue. So too, the determinative matter here is whether earlier filed Kilby '602 supports the counts. **[1]** The criterion for determining whether an application supports a count is whether the "necessary and only reasonable construction" to be given the disclosure by one skilled in the art is one which provides such support. *Binstead* v. *Littmann*, 44 CCPA 839, 242 F.2d 766, 113 USPQ 279 (1957). That requirement is the same where one relies on the earlier application for support in order to obtain the benefit of its filing date as where support in an application directly involved in interference is in issue. See *Guyer* v. *Cramer*, 50 CCPA 1386, 318 F.2d 757, 138 USPQ 125 (1963). The burden on one copying a claim from a patent was recently summarized in *Gubelmann* v. *Gang*, 56 CCPA 1013, 408 F.2d 758, 161 USPQ 216 (1969), as follows:

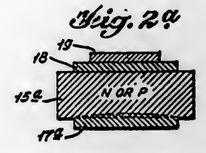
> One copying a claim from a patent has the burden of showing that his application clearly supports the count. In determining applicant's right to make a copied claim, all limitations in the claim will be considered material and doubts arising as to such right must be resolved against the copier. Where support must be based on an inherent disclosure, it is not sufficient that a person following the disclosure might obtain the result set forth in the count; it must invariably happen. See *Smith* v. *Wehn*, 50 CCPA 1544, 318 F.2d 325, 138 USPQ 52, and *Dreyfus and Harrison* v. *Sternau*, 53 CCPA 1050, 357 F.2d 411, 149 USPQ 63.

Although the Board held here, as already noted, that one skilled in the art would have no difficulty in "selecting" a metal which would adhere to the silicon oxide layer suggested in the Kilby '602 application, that finding avoids the real issue which is whether the application includes a disclosure that the conductor is to be adherent to the layer. The Board did subsequently get to that issue, stating:

> Noyce urges that there is nothing in the paragraph relied on in the parent Kilby case to indicate that Kilby had any concern about whether the conducting material would have any adherence at all since there is only the statement that the conducting material be "laid down on the insulating material." This is true only to the extent that Kilby clearly suggested no particular degree of adherence as mentioned above. *We think that the clear import of the Kilby disclosure is that the device constructed in the manner taught would be usable under ordinary circumstances and would be expected to withstand normal handling. In our opinion this would necessarily involve at least some degree of adherence* * * *. [Emphasis supplied.]

No sound support is seen for the Board's view that "at least some degree of adherence" would necessarily be involved. As pointed out by Noyce, the implication of the reasoning by which the Board reaches that conclusion is that "*Kilby's own preferred embodiment* in '602, shown in FIG. 6*a*, where the gold wires 70 clearly were not adherent, *was not 'usable under ordinary circumstances.'* "

The disclosure relied on by the Board of a coating of aluminum on silicon oxide in a capacitor is illustrated in FIG. 2*a* of Kilby '602 reproduced below:



There, a body 15*a* of semiconductor material constitutes one plate of the capacitor. Silicon oxide is applied to that body by evaporation or thermal oxidation techniques to serve as the dielectric 18 of the capacitor. The second plate 19 is provided by evaporating on the oxide dielectric a conductive material, gold or aluminum being described as satisfactory.

While that disclosure indicates that it was known in 1959 that aluminum could be deposited on an oxide layer to form the plate of a capacitor, it does not seem to us to constitute any clear suggestion that conductors interconnecting terminals of semiconductor devices should be so deposited.

The gist of the reasoning of Kilby on the point under consideration is found in the following argument in his brief:

> The word "laid" (the past participle of the word "lay") has quite a large number of meanings. In addition to laying down as a carpet on a floor, there are other meanings given in Webster's International Dictionary, such as to dispose of as over a surface; as to lay a pavement; to coat. For the word "laying" the meaning is given as that of "the act of one who acts or sets, puts, places, *fixes*, etc." The intention of Kilby was to describe in a very broad sense the act of making appropriate and necessary electrical connections to semiconductor devices wherein an inert and insulating material such as silicon oxide separated the electrical conductor from the semiconductor substrate. It was Kilby's purpose to describe an operative embodiment so as to teach the art the means of making necessary electrical connections in integrated circuits. The words "laid down" quite obviously mean depositing or plating by an appropriate means such as that referred to in his application in connection with the evaporation of

aluminum and gold onto the same kind of substrates and same kinds of materials. The language is quite clear to one desiring to make the same kinds of electrical connections unless one deliberately intends to misunderstand. Therefore, it seems clear that an effort has been made to find a lack of teaching where none exists. Neither the Primary Examiner nor the Board of Patent Interferences had any difficulty with the language in question.

That argument embodies an inherent concession that "laid down" can cover a relationship where adherency is lacking as well as one where it exists, which fact precludes any conclusion that the term "laid down" per se meets the requirement that the claimed features must be inherently disclosed in order to find support in an application. It is also apparent that Kilby has not demonstrated that the term "laid down" had at the time of filing of the '602 application in 1959, or has since, acquired a meaning in electronic or semiconductor arts which necessarily connotes adherence.[8] The position that "laid down" means depositing or plating by means such as are referred to in the application "in connection with the evaporation of aluminum and gold onto the same kind of substrates and same kinds of materials" cannot stand analysis. The disclosure in Kilby '602 of evaporating conductive metal onto a substrate of oxide relates to the forming of the plate 19 of the capacitor of FIG. 2*a* as discussed hereinabove. As there pointed out, that plate is an element of the capacitor and is not a conductor for making an electrical connection between circuit elements. We do not find any suggestion in the application that would lead a person of ordinary skill in the art to interpret Kilby's discussion of a modified electrical connecting means as teaching the use of a process he discloses only for making a capacitor plate.

As to Kilby's statement that neither the Examiner nor the Board had "any difficulty with the language in question," we do not regard the concurrence of the Examiner and Board to have any substantial significance in the present circumstances. The record shows merely that the Examiner held that there was support in the portions of the '602 application considered here and not that he gave any reasons for his views. The analysis by which the Board reached its conclusion is considered to be clearly in error for the reasons already pointed out.

In summary, the best that can be said for Kilby's position with respect to the recitation in count 1 regarding a "conductor adherent" to the proposed layer of oxide and crossing a junction of the semiconductor is that there might be a possibility that one skilled in the art following the Kilby '602 application would have provided such a structure. However, we are not convinced that such person would inevitably do so or that such structure would result from the necessary and only reasonable construction of the disclosure by one skilled in the art.

Since counts 2–4, which call for "a metal strip" which is "adherent" to the oxide layer, possess in substance the same requirements as count 1 on the point under discussion, it must be held that the Board erred in finding support for those counts as well as for count 1.

[8] Each party took testimony of a witness who was an expert in the art and both of those witnesses agreed that "laid down" does not necessarily imply adherence. Kilby's expert, Professor Maurer, testified:

XQ29. * * * supposing I do the operation with a long piece of wire and I just lay it down across the pads? A. Yes.

XQ30. And then I come with the heater and bond the two ends; haven't I laid down this gold wire on the device? A. I think the term could include that. As I believe I testified before, I don't consider that laid down implies more than the act of placing in contact.

Now, you may lay down an object on a table. I say I laid down the match box. That does not imply that the match box adheres to the table. But I might say I laid down a coat of tar on a highway and that would certainly imply that the tar adhered to the ground. It wouldn't serve its purpose otherwise.

As to count 6, the Board held that the Kilby '602 application lacked support for a limitation therein regarding the circuit in which the semiconductor device is to be used. Before us, Noyce concedes error in that particular holding. However, as pointed out by Noyce, that count embodies substantially the same limitations regarding the adherent conductor which we have here found unsupported in counts 1–4. The Board's holding that the '602 application fails to support count 6 must therefore be sustained on the latter basis.

The decision is *reversed* as to counts 1–4 involved in No. 8182 and *affirmed* as to count 6 in No. 8205.

MODIFIED.

U.S. Court of Customs and Patent Appeals

IN RE LAWRENCE A. KOCINA

No. 8199. Decided November 20, 1969

[57 CCPA —; F.2d —; 163 USPQ 622]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"STANDOFF LADDER STABILIZER."
The decision of the Board of Appeals, refusing certain claims in an application entitled "Standoff Ladder Stabilizer" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 436,762.

AFFIRMED.

J. H. Slough for appellant.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

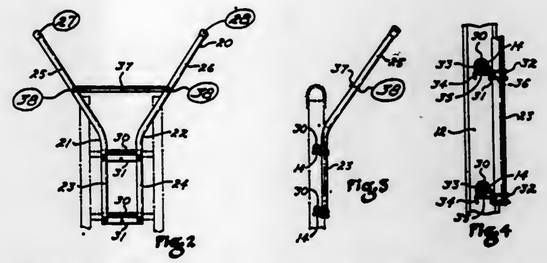
Before RICH, *Acting Chief Judge*, MATTHEWS, *Judge*, sitting by designation, ALMOND, BALDWIN AND LANE, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals which affirmed the rejection of all the claims in appellant's application [1] as unpatentable over Fillery [2] in view of Taylor [3] and Stanley,[4] under 35 U.S.C. 103.

THE INVENTION

The invention is a device adapted to be readily attached or detached from the top portion of a ladder and designed primarily to stabilize the ladder against lateral tipping and space its upper end away from the surface toward which the ladder is inclined, thus providing a more upright, and hence, safer and more convenient work position. It is best described with reference to the application drawing, portions of which are reproduced below:



[1] Serial No. 436,762, filed Mar. 3, 1965, entitled "Standoff Ladder Stabilizers."
[2] British patent spec. 629,851, accepted Sept. 29, 1949.
[3] U.S. Patent 1,393,922, issued Oct. 18, 1921.
[4] U.S. Patent 2,720,354, issued Oct. 11, 1955.

FIGURES 2 and 3 show alternate views of the stabilizer as attached to the upper end of a ladder. FIGURE 4 is an enlarged fragmentary detail of the lower portion of the stabilizer showing how it is attached to the ladder.

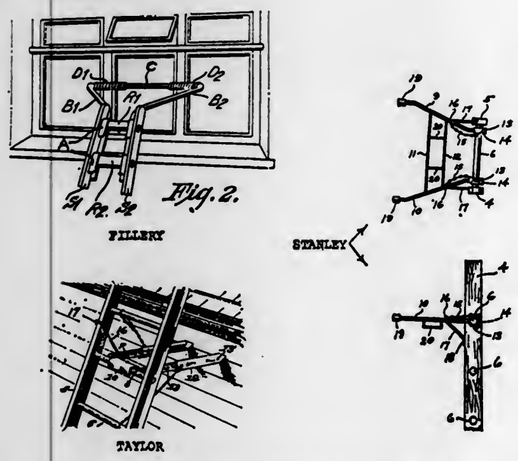
As can be seen, the device comprises a pair of spaced, angularly bent support members 21, 22 having parallel portions 23, 24 and upwardly and outwardly diverging leg portions 25, 26, connected between the parallel portions by a pair of inverted, U-shaped channels 30, and between the divergent leg portions by a brace 37. Claim 12, the broadest of the appealed claims, reads:

> 12. A stabilizer for a straight ladder comprising a plurality of ladder rungs and parallel side rails, a pair of channel shaped mounting means, each said mounting means adapted to embrace a medial portion of the length of one of a pair of spaced ladder rungs, spaced support means connected to the ends of said mounting means, said support means having portions parallel to said parallel side rails traversing and supporting rearward portions of said pair of rungs, said support means each having a leg portion of equal length extending upwardly and laterally of the ladder, the said legs being divergent and angled away from a plane defined by the mounting means and having free ends adapted to abut spaced portions of an upright work surface area disposed on either side and laterally outwardly of the side rails of the ladder upwardly and inwardly of the ladder portions of the stabilizer wherefor the upper end portions of the ladder are spaced outwardly of the work surface and the upper portion of the ladder is supported solely laterally by the angled and divergent free ends of the leg portions.

The other claims each depend from claim 12. Claim 13 further defines the channel shaped mounting means as embracing a substantial portion of each engaged ladder rung. Claim 14 specifies that the ends of the support legs are disposed laterally away from the ladder side rails thus providing for a wider work surface. Claim 15 adds the brace to the structure recited in claim 12.

THE REFERENCES

Pertinent portions of the reference drawings, illustrating the individual devices, are shown below:



Fillery's device comprises two substantially parallel support members which branch out into angularly diverging arms B and have four hooks A mounted thereon for engagement with the rungs of a ladder.

The support members are connected by a cross tie (not shown) at a point slightly below the uppermost pair of mounting hooks and by a bearing rail C between the ends of the divergent arms B. D_1 and D_2 are rubber sleeves which protect the work surface against marring.

Taylor's ladder support comprises what he calls a "stirrup-like strut" 7 having extendable legs for spacing the ladder away from a surface and being pivotally mounted on a single ladder rung by means of a channel-shaped member 10.

Stanley discloses a spacer unit comprising a pair of outwardly diverging support legs 9, 10 having bifurcated attachments 13 for pivotal mounting on a ladder rung and secured together by bars 11 and 12 at points inward from their free ends.

THE REJECTION

The Examiner took the position that Fillery showed the general combination of a stabilizer having mounting means attached to the rungs of a ladder and outwardly and upwardly divergent leg portions for spacing the ladder away from the wall. He then considered that it would be obvious in view of Taylor to make each pair of hooks in Fillery integral, thereby creating "channel shaped mounting means," since "[a] pair of hooks * * * located in the same plane are considered to be the full mechanical equivalent to a single elongated channel member." It was further maintained that it would also be obvious, in view of Stanley, to substitute for the brace C of Fillery, another brace between midportions of the legs B_1 and B_2.

The Board stated:

> We have considered appellant's disclosure and arguments as presented in the brief but are not convinced as to error in the Examiner's position. It appears to us that the attaching means of Taylor and the wall engaging principle of Stanley present features which can be carried into the Fillery device without introducing any new or unexpected relationship or involving any function or advantage not fully recognized in the respective references.

OPINION

Appellant argues that none of the references shows or suggests a device having the enhanced stability, safety and convenience of the claimed device.

The Solicitor counters by pointing out that the hooks shown in Fillery are, in fact, "channel shaped mounting means" which could obviously be made integral to engage a central portion of the ladder rung as suggested by Taylor. He further states:

> [I]t is believed clear that Stanley shows that the idea of locating a brace away from the distal ends of the legs 9, 10 of a ladder spacer attachment so as to get point instead of line contact with a wall is old in the art. With the disclosure of Stanley before him, it is submitted that one skilled in the art who encountered difficulties in using the Fillery device on rough or odd shaped surfaces would be motivated to move the brace C inwardly and thereby free the ends of the legs for two point contact as taught by Stanley.

We are constrained to agree with the Solicitor. Although we believe that appellant's ladder stabilizer is an improvement over the device shown in Fillery, we are convinced that such improvement would be within the reach of one of ordinary skill in the art as evidenced by the reference disclosures. The manner of mounting the device on the ladder rungs appears clearly to be a matter of individual design preference. To add a certain degree of lateral stability while

also providing for a more open work space for more convenient painting by relocating the position of a bracing means would be only slightly less arbitrary. Nothing in the record or arguments of appellant has convinced us to the contrary. [1] The decision of the Board of Appeals is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE WALTER E. BUTING

No. 8210. Decided December 4, 1969

[57 CCPA —; 417 F.2d 540; 163 USPQ 689]

1. PATENTABILITY—UTILITY—EVIDENCE—CREDIBILITY OF ALLEGED UTILITY.

"In *In re Irons* * * * this court said that the proofs of utility should be convincing to one skilled in the art; however, it is evident that the *amount* of evidence required depends on the facts of each individual case. * * * The character and amount of evidence needed may vary, depending on whether the alleged operation described appears to accord with or to contravene established scientific principles and beliefs."

2. SAME—SAME—SAME—MEDICAL COMPOUNDS—EFFECT OF ANIMAL TESTS.

"While the court's consideration of tests demonstrating effectiveness of compounds in treating diseases in animals indicates that such are not to be disregarded, it is clear that such tests must be viewed with respect to the utility asserted. Here, appellant acknowledges that 'the application on appeal is specifically directed toward the treatment of human subjects' and the utility asserted is essentially that expressed in the opening phrase of claim 6 * * *."

3. SAME—SAME—SAME—CANCER TREATING COMPOUNDS—EVIDENCE SHOULD BE COMMENSURATE WITH CLAIMED SCOPE OF UTILITY.

"We do not find such evidence, limited to one compound and two types of cancer, to be commensurate with the broad scope of utility asserted and claimed, viz, that of treating seven types of cancer with several compounds. Rather, we think it incumbent upon an appellant either to limit his claims to the area where utility has not been properly challenged or to submit evidence refuting that challenge."

APPEAL from Patent Office. Serial No. 346,401.

AFFIRMED.

Everett F. Smith (*Leroy Whitaker*, of counsel) for appellant.

Joseph Schimmel (*Leroy B. Randall*, *Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, MATTHEWS, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 6, 7 and 8 of appellant's application.[1] No claims have been allowed.

The invention before us relates to a method of treating a malignant condition, i.e. cancer, in humans by the administration of one of a group of compounds known as bis(β-aziridino-ethyl) sulfones. It is stated that significant activity of the compounds has been demonstrated against a broad spectrum of experimental neoplasms including certain leukemias, sarcomas, adenocarcinomas, and lymphosarcomas, when the drugs are given by a variety of routes including intraperitoneal, subcutaneous and oral administration.

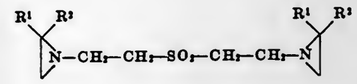
Confirmation of the activity by clinical treatment of human subjects is alleged. As proof of the asserted utility, appellant presented,

[1] Serial No. 346,401, filed February 21, 1964, for "Composition and Methods for Treating Malignant Diseases."

in the specification and by affidavit, evidence of efficacy against a spectrum of leukemia and ascitic and solid tumors in experimental mice of two of the claimed sulfones as well as results of the treatment of two human patients, one with Hodgkin's disease and the other with chronic myelogenous leukemia, with a composition comprising bis[β-(2-methylaziridino)ethyl] sulfone in 95 percent aqueous ethanol. In the patient suffering from Hodgkin's disease, reduction in the nodes in the inguinal and axillary regions of more than 75 percent and a marked decrease in pulmonary infiltrates were observed during treatment. The patient suffering from chronic myelogenous leukemia experienced a remission of the lesions during treatment with the composition.

Claim 6 is representative:

6. The method of treating a malignant condition selected from the group consisting of leukemias, sarcomas, adenocarcinomas, lymphosarcomas, melanomas, myelomas, and ascitic tumors which comprises the administration to a patient suffering from said disease of a therapeutically effective amount of a compound of the formula



wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, and ethyl.

Claims 7 and 8 are drawn to methods employing species embraced within the genus of claim 6.

The sole question involved in the appeal is whether the demonstrated evidence of efficacy, summarized above, is sufficient, under 35 U.S.C. 101, to support an allegation of utility in humans.

The Examiner thought not, finding it unapparent that one skilled in the art would accept the clinical data as statistically significant evidence that all the compounds are safe and effective in humans against all the malignant diseases specified in the claims, citing *In re Krimmel*, 48 CCPA 1116, 292 F.2d 948, 130 USPQ 215; *In re Novak*, 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335; *In re Citron*, 51 CCPA 852, 325 F.2d 248, 139 USPQ 516.

In affirming, the Board stated that insofar as the claims were directed to a method of treating humans for conditions heretofore regarded as incurable or, at best, subject to remission, clear and convincing evidence of utility for the claimed purpose would be required. The Board then concluded:

We are not aware of any reputable authority which would accept appellant's two clinical cases as establishing utility for treatment of cancer in humans. As was pointed out in *Brenner* v. *Manson*, 148 USPQ 689, a process to be patentable must produce a useful result and be of substantial utility not merely of scientific interest or for further testing. In this case further testing seems necessary.

Appellant attacks the Board's decision by arguing that existing law does not require large numbers of clinical cases for proof of utility. The cases relied on by the Patent Office are alleged to be either irrelevant to the present fact situation or to fail to support the position expounded by the Examiner and Board. Acknowledging that, in appropriate circumstances, proof of utility may be required by the Patent Office, appellant contends, nevertheless, that the Patent Office has erred in the nature and quantum of the proof called for, in that no case law supports the proposition that *extensive* clinical data are

necessary to support an allegation of utility directed to human therapy. The test, it is urged, is as stated in the concurring opinion in *In re Hartop*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419, "whether 'the invention has been brought to such perfection as to be capable of practical employment.'"

The record, appellant argues, contains detailed evidence of the efficacy of the drug from which those skilled in the art would conclude that utility in humans has been demonstrated. The Board ignored, it is alleged, the evidence with respect to animals and failed to appreciate the remarkable success obtained with the two human patients, one of whom had been unsuccessfully treated with two established anticancer agents. The qualifications of appellant's expert who concluded that the drug used was a safe, effective and useful agent in the area of cancer chemotherapy were not challenged. That the drug may not be ready for marketing for human therapy, appellant points out, does not detract from its patentability.

We agree with appellant that the prior decisions relied on by the Patent Office are of little assistance in the situation before us. **[1]** In *In re Irons*, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351, this court said that the proofs of utility should be convincing to one skilled in the art; however, it is evident that the *amount* of evidence required depends on the facts of each individual case. *In re Gazave*, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92. The character and amount of evidence needed may vary, depending on whether the alleged operation described appears to accord with or to contravene established scientific principles and beliefs. *In re Chilowsky*, 43 CCPA 775, 229 F.2d 457, 108 USPQ 321.

Nor do we find *Brenner* v. *Manson*, 383 U.S. 519, 148 USPQ 689, apposite. There the question was whether the *alleged utility* was sufficient to satisfy the requirement of 35 U.S.C. 101, and not whether any such alleged utility had been *proved*. The issue before us concerns degree of proof, not the statutory sufficiency of the utility asserted.

The Solicitor contends that the test to be applied is the acceptability to those skilled in the art both of the asserted utility and of the evidence submitted to prove the assertion, if evidence is necessary. He requests that this court judicially notice medical publications, appended to his brief, alleged to show that those skilled in the art conclude that it is not possible to extrapolate data obtained in one particular species with a particular tumor to another species. Thus, having removed the animal test data as supporting proof for the utility alleged, there are left only two case histories of one compound to prove utility for seven separate classes of tumors for the entire class of compounds defined in the claims on appeal. Such evidence, it is argued, is insufficient.

We need not consider the materials presented by the Solicitor, for this court observed in *Krimmel*, supra, at 1123:

> We wish to point out that this court is aware of the common practice of using "experimental animals" in considerable variety for the evaluation of chemical compounds for possible pharmaceutical applications prior to clinical testing on humans. It is also our understanding that a demonstration that a compound has desirable or beneficial properties in the prevention, alleviation, or cure of some disease or manifestation of a disease in experimental animals does not necessarily mean that the compound will have the same properties when used with humans.

[2] While the court's consideration of tests demonstrating effectiveness of compounds in treating diseases in animals indicates that such are not to be disregarded, it is clear that such tests must be viewed with respect to the utility asserted.[2] Here, appellant acknowledges that "the application on appeal is specifically directed toward the treatment of human subjects" and the utility asserted is essentially that expressed in the opening phrase of claim 6, reproduced previously. Appellant has shown by clinical case histories only that bis[β-(2-methylaziridino)ethyl] sulfone is useful in treating Hodgkin's disease and chronic myelogenous leukemia. While the Patent Office tribunals appear to have accepted this observation and evidence, they challenge its adequacy as establishing utility for the stated purposes of treatment of the other kinds of cancer in humans recited in the claims.

[3] We do not find such evidence, limited to one compound and two types of cancer, to be commensurate with the broad scope of utility asserted and claimed, viz, that of treating seven types of cancer with several compounds. Rather, we think it incumbent upon an appellant either to limit his claims to the area where utility has not been properly challenged or to submit evidence refuting that challenge. *In re Harwood*, 55 CCPA 922, 390 F.2d 985, 156 USPQ 673.

Since appellant has done neither, the decision of the Board is, accordingly, affirmed.

AFFIRMED.

[2] See *In re Krimmel*, supra, *In re Bergel*, 48 CCPA 1102, 292 F.2d 955, 130 USPQ 206, and *In re Hitchings*, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637.

U.S. Court of Customs and Patent Appeals

IN RE HOWARD B. CUMMINGS AND RALPH GIBSON

No. 8124. Decided December 11, 1969

[57 CCPA —; 418 F.2d 932; 164 USPQ 18]

1. CLAIM—CONSTRUCTION OF CLAIMS—PROCESS.

"We do not agree with the Board's view that the language of claim 5 permits of the inclusion of 'unreacted' materials in the final sintered article. Granting that there is no explicit negative limitation to this effect, the claim language, in our opinion, renders such a limitation implicit. It is clear that in the claimed process only '*the*' ceramic suspension is used to form '*the*' casting and equally clear that '*the*' ceramic suspension is prepared only from materials 'which have been mixed and then reacted * * *.'"

2. SAME—SAME—SAME.

"If the phrase 'in proportions determined by a particular end product to be produced' in claim 12 is disregarded, that claim would unquestionably read on Bennett's method of preparing a ceramic article using his clay-containing 'reinforcing agent.' Appellants urge, however, that this phrase should be so interpreted that the ingredients in the 'plurality of ceramic materials including clay in a mixture liquid' will constitute a *complete* casting composition suitable for casting a ceramic article without the addition of other ingredients. This it is said would distinguish the claim from Bennett who does not suggest reacting all the ingredients used to prepare a casting. While the meaning that appellants would have us give to the phrase in question may well have been what the claim drafter intended, there is no clear explanation of the meaning of this phrase in appellants' specification and we do not feel that such an interpretation is otherwise clearly enough required to justify a reversal of the rejection of claim 12."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"PROCESS FOR THE MANUFACTURE OF CERAMIC ARTICLES AND PRODUCT DERIVED FROM SUCH PROCESS."

The refusal of certain claims in an application entitled "Process for the Manufacture of Ceramic Articles and Product Derived From Such Process," as unpatentable over the prior art, is reversed as to certain claims and affirmed as to the others.

APPEAL from Patent Office. Serial No. 150,724.

MODIFIED.

Henry L. Burkitt for appellants.

Joseph Schimmel (*J. F. Nakamura*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, GANEY, *Judge*, sitting by designation, ALMOND, BALDWIN and LANE, *Associate Judges*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals[1] affirming the rejection of claims 5, 8, 12–27, and 31–39 of application Serial No. 150,724, entitled "Process for the Manufacture of Ceramic Articles, and Product Derived From Such Process." Twelve claims have been allowed.

The invention pertains to the manufacture of ceramic articles such as china, refractory bodies, wall tile, and sanitary ware. The well established method of manufacturing these articles begins with the mixing in water of a plurality of particulate materials, e.g., clay, talc, and aluminum oxide, to form a viscous slurry referred to in the art as a "slip." This slip is formed into a shape approximating that of the final article to be produced by "casting" the slip in a porous mold. After sufficient water has been absorbed by the walls of the mold to render the casting self-supporting, it is removed from the mold, allowed to dry further, and finally fired or sintered to fix the shape as that of the article desired.

Appellants have discovered that a number of beneficial results can be achieved if *all* the ingredients used to prepare the slip are first processed in a particular manner. Specifically, appellants' procedure involves the steps of (1) combining *all* the raw ingredients in a liquid such as water to form a viscous mixture, (2) extruding this mixture into a form resembling thick spaghetti or noodles, (3) drying and then heating the extrusions to a temperature approximating that at which cast ceramic articles having the same composition would normally be sintered, e.g., 2150° to 2900° F., and (4) after cooling, reducing the extrusions to a particle size suitable for preparing a viscous mixture used for casting.[2] Step 3, which appellants call a "reacting" step, drives off water of crystallization and carbonaceous and other oxidizable materials present in the raw ingredients and also effects certain chemical and physical changes which would otherwise not occur until the firing or sintering of the casting.

Some of the benefits which derive from the use of appellants' process are that warping, excessive shrinkage and other changes which otherwise occur in a casting during firing or sintering are avoided, and that products of improved strength and uniformity in structural and electrical properties are obtained.

There is one preferred embodiment of appellants' invention which also requires mention. Namely, appellants have found it desirable in step 4 to limit their reacted material to a particle size not greater than 44 microns and to limit the amount of particles finer than one micron to from 9.5% to 35% by weight. Appellants' specification indicates that by so limiting the particle sizes, products of particularly high densities and uniformity of chemical and physical properties are

[1] Bailey and Brewrink, Examiners-in-Chief, and Bendett, Acting Examiner-in-Chief; opinion by Brewrink.

[2] Appellants refer to viscous mixtures of particles processed according to their invention as "ceramic suspensions" to distinguish them from other slips.

obtained and the clogging of porous molds by ultra-fine particles is avoided.

Each of the appealed claims is rejected under 35 U.S.C. 103 as unpatentable over one or more of the following references:

Casselman, 1,692,887, Nov. 27, 1928.
Bennett, 2,159,349, May 23, 1939.
Bickford, 2,299,374, Oct. 20, 1942.
Austin, 2,534,653, Dec. 19, 1950.

Casselman is relied on for a disclosure of the use of porous molds for casting ceramic articles while Austin is relied on for a disclosure of the use, for the same purpose, of non-absorbent molds having an absorbent internal core.

Bennett, the reference of principal importance here, discloses a method of preparing casting slips containing a flaky, magnesia-containing mineral such as talc or pyrophyllite. In one embodiment, the magnesia-containing material is calcined and ground so that it does not assume the undesirable flaky form and is then mixed in water with clay and other particulate materials to form a slip. More pertinent here is a second embodiment described in Bennett as follows (our emphasis):

> Instead of simply calcining the magnesia-containing material, a reinforcing agent of even greater effectiveness may be produced by mixing finely ground talc with a matrix material, adding *but a very small percentage of a binder (for example, 5% of clay* or a small quantity of sodium alginate, gum tragacanth, goulac or lignon extract, etc.) extruding the mixture through an auger so as to compact the same and form bodies or masses, and then burning the bodies or masses to vitrifying or semi-vitrifying temperatures. The mass can be extruded in the form of a rod and then broken up into pieces of desired size before burning the same. As an illustration, a reinforcing agent can be made by intimately mixing 45% of sepiolite or talc with 50% of ground glass and 5% of clay. After intimately mixing and extruding the mass through a die, the extruded material is broken up into pieces ranging from 1 to 4 inches in diameter, and then burned to cone 02 or cone 03.[3] At this temperature the mass will be found to have been rendered substantially vitreous. These masses are then ground to a suitable state of division.

The scope of the expression "matrix material" is stated by Bennett as follows:

> By the term "matrix material" as used herein, reference is made to prefused amorphous, relatively low melting point substances or frits such as window glass cullet, bottle glass, soda lime glass, or other previously fused and prepared frits, or highly alkaline natural materials such as sodalite, lepidolite, phonolite, nephelite, syenite, etc., volcanic glasses such as rhyolite and obsidian, colemanite, and other natural materials preferably containing a high proportion of alkalies.

In the manufacture of hotel china, Bennett suggests combining on a weight basis, 40% of the substantially vitrified, ground reinforcing agent described above, 30% of clay, 20% of ground glass or equivalent matrix material and 10% of raw talc or other magnesia-containing material. Bennett also suggests several other formulations, each of which calls for from 0 to 60% of a reinforcing agent and from 40 to 100% of other particulate materials.

Bickford relates to a method of casting non-plastic ceramic materials such as alumina and calcined substances such as burned clays. This method involves wet milling the non-plastic ceramic material until 95% of it is less than 44 microns in size, drying the resulting slip,

[3] The Examiner has indicated that temperatures corresponding to cone 02 and cone 03 are 2098° and 2068° F., respectively. This has not been disputed by appellants.

repowdering the material, and mixing it with water to form a slip for casting in a porous mold. Bickford cautions against excessively long wet milling and indicates that an abundance of ultra fine particles can cause clogging of porous molds.

The Board acknowledged that appellants have disclosed a patentable invention, saying:

> We * * * are convinced that appellants have presented a novel and useful contribution over the applied references. The reacting of all ingredients at a higher temperature than the final sintering appears to reasonably assure against unpredicted warping and changes in the article in the firing step. It further appears reasonable that the advantages would follow as to uniformity in the structural and electrical properties of the product. Within the Bennett patent, we do not find any suggestion of "reacting" all the ingredients that are to be used in molding an article and thus no appreciation or solution of appellants' argued and disclosed contribution to the production of stable and uniform articles. While Bickford is more expressive of treating all of the ingredients, within our understanding of this reference the "reacting" step is not approached with the intent of more than a drying, or at most calcining objective.

The Board felt, however, that the appealed claims do not proscribe the inclusion of some "unreacted" ingredients in the final ceramic article. Being of that view and apparently of the view that Bennett's disclosure of the preparation of his "reinforcing agent" would make it obvious to react anything short of *all* the ingredients used in a ceramic article, the Board held that the appealed claims do not distinguish over the references. Thus, although the rejection is based on § 103 obviousness, the ultimate issue here primarily involves only claim interpretation.

The appealed claims were treated below in three groups: (1) 5 and 8; (2) 12–27 and 39; and (3) 31–38. In reproducing representative claims from each group hereinafter, claim language which is at the heart of the interpretation issue is emphasized and paragraphing has been added to facilitate comprehension. Claim 5 is representative of the first group and reads as follows:

> 5. A process for manufacturing ceramic articles, which *includes the steps of preparing a viscous ceramic suspension* in a liquid carrier of ground ceramic materials *which have been mixed and then reacted through a temperature range to a maximum temperature* predetermined to complete certain physical and chemical changes in the mixed material, and then ground to a particle size within certain predetermined limits,
> forming a casting from *the* ceramic suspension between opposed mold faces one of which is pervious to and an absorbent for the carrier liquid and the other is impervious to and does not absorb the carrier liquid so that the ceramic particles deposit and build up substantially only on the pervious face,
> separating the casting from the mold, and
> sintering the casting at a temperature substantially below the reaction temperature.

With respect to the claims in this group, the Board said:

> Claims 5 and 8 do not appear to us to detail the ingredients in a manner excluding the materials added by Bennett to his "reacted" portion. We share the Examiner's view that where other unreacted parts can be used in the sintered article the references render obvious the recited steps.

[1] We do not agree with the Board's view that the language of claim 5 permits of the inclusion of "unreacted" materials in the final sintered article. Granting that there is no explicit negative limitation to this effect, the claim language, in our opinion, renders such a limitation implicit. It is clear that in the claimed process only "*the*" ceramic suspension is used to form "*the*" casting and equally clear

that "*the*" ceramic suspension is prepared only from materials "which have been mixed and then reacted * * *." The rejection of claims 5 and 8 is accordingly reversed.

Claims 12 and 13 are representative of the claims of group (2) and read:

> 12. A process for manufacturing ceramic article, *including the steps of producing a substantially uniform viscous mixture of a plurality of ceramic materials* including clay in a mixture liquid *in proportions determined by a particular end product to be produced*,
> dividing up *the* viscous mixture into relatively small portions to which are imparted any shape without any predetermined relation to the shape of any end product to be produced,
> reacting *the* shaped mixture by heating to a temperature of predetermined magnitude sufficient to carry to a desired end point effectuation of chemical and physical changes in the shaped mixture,
> disintegrating *the* reaction product into fine particles, and
> eliminating from *the* disintegrated particles all particles of a size outside certain predetermined limits.
> 13. A process for manufacturing ceramic articles, *including the steps of producing a substantially uniform viscous mixture of aluminum oxide, clay and talc* in a mixture liquid,
> dividing up *the* viscous mixture into relatively small portions to which are imparted any shape without any predetermined relation to the shape of any end product to be produced,
> reacting *the* shaped mixture by heating to a temperature of predetermined magnitude sufficient to carry to a desired end point effectuation of chemical and physical changes in the shaped mixture,
> disintegrating *the* reaction product into fine particles, and
> eliminating from *the* disintegrated particles all particles of a size outside certain predetermined limits.

With respect to these claims the Board said:

> Claims 12 through 27 and 39 appear to us be similarly open to rejection on the reference patents in that the "product" recited by claims such as claim 12 is not more clearly expressed than to be a definition of the "reacted" component of Bennett. We share the Examiner's views that the methods recited in these claims are not caused to be significantly distinguished over the applied references by reason of the stated ingredients and proportioning thereof.

[2] If the phrase "in proportions determined by a particular end product to be produced" in claim 12 is disregarded, that claim would unquestionably read on Bennett's method of preparing a ceramic article using his clay-containing "reinforcing agent." Appellants urge, however, that this phrase should be so interpreted that the ingredients in the "plurality of ceramic materials including clay in a mixture liquid" will constitute a *complete* casting composition suitable for casting a ceramic article without the addition of other ingredients. This it is said would distinguish the claim from Bennett who does not suggest reacting all the ingredients used to prepare a casting. While the meaning that appellants would have us give to the phrase in question may well have been what the claim drafter intended, there is no clear explanation of the meaning of this phrase in appellants' specification and we do not feel that such an interpretation is otherwise clearly enough required to justify a reversal of the rejection of claim 12. Claims 15–17 are identical to claim 12 except that each prescribes an upper limit or upper and lower limits on the sizes of particles to be retained after the elimination recited in the final step of the claims. However, in view of the teachings of Bickford mentioned above and the absence of evidence or convincing arguments to the contrary, we are of the opinion that limiting the size of the reacted particles in this manner does not alone render the process as a whole

unobvious. Claim 39 is a product-by-process claim directed to the product of the process of claim 12. Our remarks with respect to the latter are equally applicable to the former. The rejection of claims 12, 15–17 and 39 is therefore affirmed.

Claim 13 and the claims of which it is representative (18, 20, 22, 24, and 26) differ from claim 12 in that two, three, or four specific ingredients reacted are recited. In claim 13, for example, the ingredients which are reacted together are "aluminum oxide, clay and talc." We have carefully reviewed the details of the Bennett disclosure and do not find that claim 13, or any other claim of which it is representative, reads on that disclosure or any subject matter rendered obvious thereby, notwithstanding that these claims are "open" to the extent that they do not preclude the use of some unreacted materials in the final ceramic article. We find nothing in Bennett or the other references that would suggest "reacting" the particular combinations of ingredients recited in these claims and thus disagree with the Board's view that Bennett would suggest reacting anything short of *all* the ingredients to be used in a ceramic article. The rejection of claims 13, 18, 20, 22, 24, and 26 is therefore reversed.

Claims 14, 19, 21, 23, 25, and 27 differ from those represented by claim 13 only in that percentages of the ingredients, in each instance totalling 100%, are also specified. Our remarks with respect to the claims represented by claim 13 are equally applicable here. The rejection of claims 14, 19, 21, 23, 25, and 27 is therefore reversed.

Claim 31, which is representative of the third group of claims, reads:

> 31. A process for manufacturing ceramic articles, *including the steps of producing a substantially uniform viscous mixture of 90% aluminum oxide, 4% clay and 6% talc in a mixture liquid,*
> dividing up *the* viscous mixture into relatively small portions to which are imparted any shape without any predetermined relation to the shape of any end product to be produced,
> reacting *the* shaped mixture by heating to a temperature of predetermined magnitude sufficient to carry to a desired end point effectuation of chemical and physical changes in the shaped mixture,
> distintegrating *the* reaction product into fine particles,
> processing *the* disintegrated particles to discard therefrom substantially all particles of a size greater than 44 microns and substantially all particles finer than one micron in excess of 15% to 20% of the total weight of the particles,
> making a ceramic suspension of *the* remaining particles in a carrier liquid under controlled viscosity conditions,
> forming a ceramic casting from *the* ceramic suspension within a mold, walls of which are moisture absorbent, separating the casting from the mold, and
> sintering *the* casting at a temperature substantially below the reaction temperature.

Although considerably narrower in that it contains recitations of ingredients, proportions thereof, and particle size distributions, claim 31 exactly parallels claim 5 considered above. Our remarks with respect to claim 5 are equally applicable to all the claims of group 3. We therefore reverse the rejection of claims 31–38.

[3] In sum, the decision of the Board is reversed as to claims 5, 8, 13, 14, 18–27, and 31–38 and is affirmed as to claims 12, 15–17, and 39.

MODIFIED.

DEFENSIVE PUBLICATIONS

MARCH 31, 1970

Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T872,009
POLYAMIDES

Frederick Keith, Duxbury, and Brian Arthur Mountfield, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Sept. 23, 1968, Ser. No. 761,859
Int. Cl. C08g *51/56*
U.S. Cl. 260—45.75
No Drawing. 7 Pages Specification

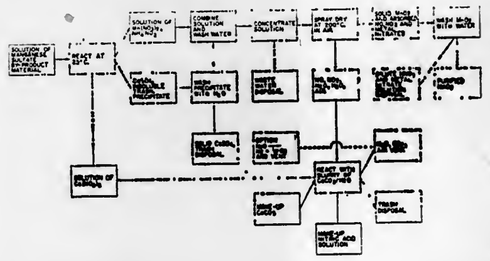
A process for the manufacture of polyamides is disclosed wherein the polyamide is obtained by polycondensation of p- or m-xylene diamine with a dicarboxylic acid with the application of heat in the presence of a metal salt of hypophosphorous acid and removing the water of condensation. Metal salts include the metals of Groups I*a* and II*a* of the Periodic System, as for example sodium, potassium, calcium and barium hypophosphites.

Stabilizers are desirably added to the condensation mixture. Such additives include copper salts of organic carboxylic acids or an enol; halides including ammonium iodide, alkali or alkaline earth metal iodides, hexamethylenediamine hydriiodide; and aminic and phenolic antioxidants. Such polyamides, particularly in the form of filaments, possess improved color stability during thermal processing.

T872.010
PROCESS FOR PRODUCING MANGANESE DIOXIDE FROM CRUDE MANGANESE SULFATE

Thomas H. Larkins, Jr., 300 Stuffle St. 37660, and Howard S. Young, 1909 E. Sevier Ave. 37664, both of Kingsport, Tenn.

Filed Dec. 5, 1968, Ser. No. 781,324
Int. Cl. C01g *45/02;* **C01f** *11/36*
U.S. Cl. 23—145
2 Sheets Drawing. 10 Pages Specification

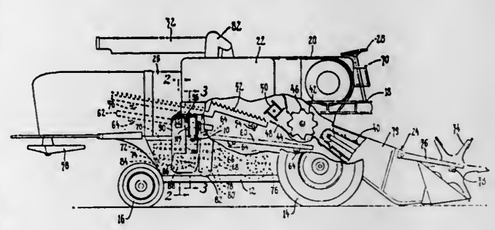


Manganese dioxide may be recovered from a manganese sulfate by-product material obtained from a process involving the oxidation of aniline sulfate in sulfuric acid to p-benzoquinone employing manganese dioxide. The recovery process generally involves feeding a crude manganese sulfate by-product material and calcium nitrate to a reactor and converting the manganese sulfate to manganese nitrate. Thereafter, the manganese nitrate is thermally decomposed to manganese dioxide and various oxides of nitrogen. The oxides of nitrogen are used to produce calcium nitrate for feeding to the reactor. An alterative method is to recycle the oxides of nitrogen to the reactor and feed calcium carbonate or hydroxide with the crude manganese sulfate to the reactor to form the calcium nitrate in situ in the reactor.

T872,011
TAILINGS RETHRESHER STONE TRAP

Robert Ashton, Islington, Ontario, and Jerzy M. Brzustowski, Toronto, Ontario, Canada, assignors to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Apr. 1, 1969, Ser. No. 812,122
Int. Cl. A01f *12/18*
U.S. Cl. 130—27
3 Sheets Drawing. 9 Pages Specification



A combine harvester thresher with an auxiliary cylinder and concave for rethreshing the tailings and a stone trap to protect the rethresher from damage by rocks and other hard objects in the tailings. The stone trap is a box with an open top in communication with an opening in the rethresher. Hard objects such as rocks are driven into the stone trap by the rotating cylinder in the rethresher. A door on the stone trap can be opened to remove the hard objects.

T872,012
PROCESS OF SOLVENT POLISHING PLASTIC MOLDED ARTICLES

Clay D. Holt, P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 684,537, Nov. 20, 1967. This application Oct. 20, 1969, Ser. No. 867,969
Int. Cl. B29c *25/00;* **B44d** *5/10*
U.S. Cl. 264—341
No Drawing. 11 Pages Specification

Plastic articles are smoothed and polished by applying a mixture of low and high boiling components and oven heating. Neither component is a solvent until the article is heated. As the low boiling component boils away, it

removes surface blemishes while the high boiling component keeps the surface soft and flowable until all blemishes disappear. Injection molded cellulose acetate (CA), or its propionate (CAP) or butyrate (CAB) with flaws, mold flash and surface strain may be treated with a liquid of 80 to 99% low boiling solvent (200° F., or lower) and 20 to 1% higher boiling solvent (over 200° F., up to 350° F.) by dipping, spraying, roller, or brush at or below 75° F. After contact for 20 sec. to 4 min., excess solvent may be spun off and the article is placed in an oven for 1 to 4 min. at or above the boiling point of the lowest boiling solvent (190° to 300° F.). Examples are: (1) CAB with toluene 90%, tetrachloroethylene 5%, tributyrin 5%, one min. at room temp. (RT), two min. at 250° F.; (2) CAB with trichloroethylene 98%, ethylene glycol diacetate 2%, three min. at RT, three min. at 195°; (3) CAP with trichloroethylene 90%, ethylene glycoldiacetate 10%, three min. at RT, three min. at 195° F.; (4) CA with trichloroethylene 90%, methyl "Cellosolve" acetate 10%, two min. RT, three min. at 195° F. Xylene and naphthylene/triacetin are other, low/high boilers respectively.

REISSUES

GRANTED MARCH 31, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,840

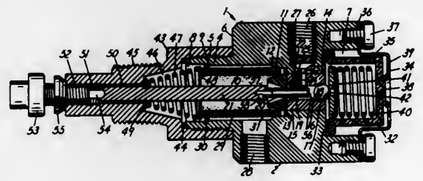
TEMPERATURE ACTUATED VALVES

Leon C. Harvey, Cadillac, Mich., assignor to Kysor Industrial Corporation, Cadillac, Mich.

Original No. 3,313,485, dated Apr. 11, 1967, Ser. No. 488,361, Sept. 20, 1965. Application for reissue Apr. 9, 1969, Ser. No. 822,072

Int. Cl. G05d *23/275*

U.S. Cl. 236—86 **17 Claims**



A temperature responsive valve employing a thermally responsive push pin and a spherical valve cooperative to open the valve between a supply means and a delivery means or between the delivery means and exhaust.

26,841

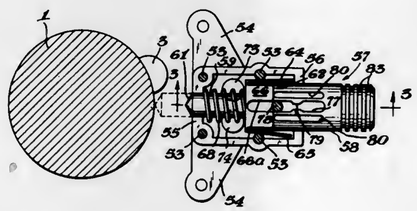
COMBINED VEHICLE DIRECTION AND FLARE SIGNAL

William L. Brown, Garden City, Mich., assignor to Essex International, Inc., a corporation of Michigan

Original No. 3,235,837, dated Feb. 15, 1966, Ser. No. 166,157, Jan. 15, 1962. Application for reissue Oct. 21, 1968, Ser. No. 807,461

Int. Cl. B60q *1/52*

U.S. Cl. 340—81 **19 Claims**



Signaling apparatus for a vehicle having rotatable steering means for turning the vehicle to the left or to the right and having left hand and right hand signaling indicators operable simultaneously to indicate a hazard warning, the signaling indicators being cancelable simultaneously in response to rotation of the steering means either to the left or to the right.

26,842

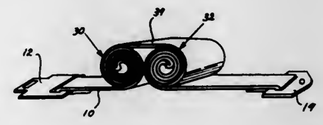
RETRACTABLE SEAT BELT CONSTRUCTION

Henry Blaszkowski, 22315 Maplewood Drive, Southfield, Mich. 48075

Original No. 3,243,232, dated Mar. 29, 1966, Ser. No. 359,575, Apr. 14, 1964, which is a continuation-in-part of applications Ser. No. 338,061, Jan. 16, 1964, and Ser. No. 342,103, Feb. 3, 1964. Application for reissue Mar. 27, 1968, Ser. No. 742,102

Int. Cl. B60r *21/10;* **A62b** *31/00*

U.S. Cl. 297—388 **12 Claims**



A self-retracting seat belt having a self-rolling section located along the length of the belt adapted to roll simultaneously from both ends into two spiral rolls when released.

26,843

PROCESS FOR THE MANUFACTURE OF PHOSPHATE PELLETS

Hans-Werner Ziegler, Werner Kowalski, and Arnulf Hinz, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Original No. 3,345,443, dated Oct. 3, 1967, Ser. No. 380,912, July 7, 1964. Application for reissue Jan. 15, 1969, Ser. No. 798,246

Claims priority, application Germany, July 8, 1963, K 50,157; May 6, 1964, K 52,883

Int. Cl. C01b *25/30*

U.S. Cl. 264—117 **8 Claims**

A method of preparing phosphate pellets in which phosphate crude powder is sprayed with a suspension of alkali metal phosphate, alkali metal silicate as a binder, bentonite clay, and phosphate dust from electro filter waste gas. The mixture is then shaped to pellet form on a granulating plate and the formed pellets dried or baked.

26,844

CONTINUOUSLY OPERATING CENTRIFUGAL DEVICE

Cerso Roberto Cuza, 2940–E NW. 22nd St., Miami, Fla. 33142

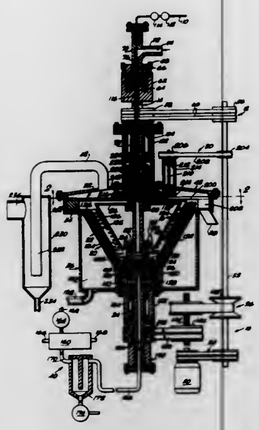
Original No. 3,385,443, dated May 28, 1968, Ser. No. 660,434, Aug. 14, 1967. Application for reissue Jan. 22, 1969, Ser. No. 796,641

Int. Cl. B01d *35/18*

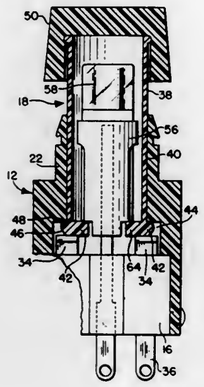
U.S. Cl. 210—178 **22 Claims**

A centrifuge which is adapted to separate granular solid matter from liquids or fluids and particularly a device of this type for separating molasses or syrup from massecuite or concentrated granular sugar solutions in a continuous operation. The massecuite or other material is

fed through a vertical centrally disposed drive tube, said tube also being utilized to drive the two inner members of a frusto-conical basket assembly which are spaced apart to provide a chamber for the reception of the massecuite from the drive tube. A third or outer member of the frusto-conical basket assembly is driven at a somewhat slower speed and is provided with a plurality of air jets to sweep the outer surface of the intermediate or perforated member of the basket assembly with pressurized air for purging the granular solids after filtration and directing said solids upwardly to a discharge mechanism.



26,845
SWITCH ASSEMBLY INCLUDING INDICATING MEANS
John A. Koepke, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original No. 3,350,531, dated Oct. 31, 1967, Ser. No. 564,822, July 13, 1966. Application for reissue Nov. 29, 1968, Ser. No. 794,828
Int. Cl. H01h *9/18*
U.S. Cl. 200—167 **9 Claims**



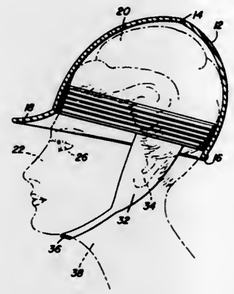
A lighted push button switch assembly having lamp bulb ejecting features associated therewith to facilitate removal and/or replacement of the lamp bulb relative to the switch assembly.

PATENTS

GRANTED MARCH 31, 1970

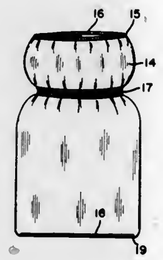
GENERAL AND MECHANICAL

3,503,076
SWIMMING CAP WITH RIGID DOME
Lillian I. Marks, 301 Palmetto St., West Palm Beach, Fla. 33405
Filed July 10, 1968, Ser. No. 743,795
Int. Cl. A42b *1/12*
U.S. Cl. 2—68 **4 Claims**



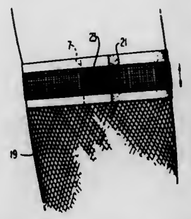
An article of headwear in the form of a swimming cap having a rigid dome to resist water pressure with a seal around the bottom periphery thereof engaging peripherally of the head of the wearer to protect the coiffure of the wearer from the damaging effect of water and also preventing damaging effects caused by crushing the coiffure which occurs when using conventional flexible swimming caps.

3,503,077
SLIPPER
Earle A. Connelly, Troy, N.C., assignor to Russell Hosiery Mills, Inc., Star, N.C., a corporation of North Carolina
Filed Apr. 22, 1968, Ser. No. 722,893
Int. Cl. A41b *11/00;* **A43b** *3/10*
U.S. Cl. 2—239 **10 Claims**



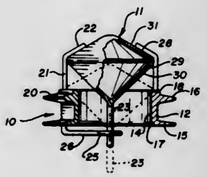
A slipper or slipper sock of seamless construction for covering the foot and ankle in which circular courses are knit with stretchable yarn to form a tubular body. The body is seamed closed at one end with the other foot entry end having an elastic selvage, and an elastic circular band is axially spaced from the selvage to gather the body to the wearer's ankle. Terry and fleeced or brushed terry loops may extend from the body fabric in selected areas with the upper portion of the body capable of forming a turned down cuff.

3,503,078
STOCKING SUPPORT
Clyde S. Gallian, 325 11th Ave., Huntington, W. Va. 25701
Filed Mar. 22, 1968, Ser. No. 715,329
Int. Cl. A41f *9/00, 11/00*
U.S. Cl. 2—311 **4 Claims**



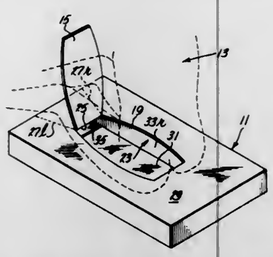
Stocking supports are cut from a rolled-up strip of indeterminate length that is comprised of three tapes secured together side-by-side. The central tape has one-way stretch in a direction perpendicular to its length. The outer two or marginal tapes are inelastic and have pressure-sensitive adhesive on the side opposite the elastic tape. In use, a length from the roll is wrapped around the wearer's leg with the adhesive on the inner side and cut to length; and one edge strip clings to the top of the stocking while the other edge strip clings to the leg. The cut-to-length feature eliminates the need for stretch lengthwise of the strip.

3,503,079
HEART VALVE HAVING A GUIDED VALVE FLOAT
Charles A. Smith, Denver, Colo., by order of distribution to Joane W. Smith, Denver, Colo.
Filed Sept. 5, 1967, Ser. No. 665,429
Int. Cl. A61f *1/22*
U.S. Cl. 3—1 **1 Claim**



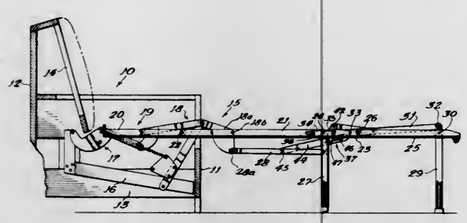
A heart valve prosthesis has a valve body ring formed with spaced suture flanges extending radially outwardly. A conical hollow valve float is positioned for axial movement to or from a line edge seat defined at one end of the ring. A plurality of fingers on the ring form a retaining cage for the float, and the float includes a depending stem slidably engaged through an eye defined in a guide arm projecting from the ring. All parts are formed of titanium or titanium alloy.

3,503,080
DISPOSABLE BEDPAN
William Laufer, 692 N. Pearl St. 12204, and Robert I. Greenbaum, 24 Holmesdale 12203, both of Albany, N.Y.
Filed Mar. 15, 1968, Ser. No. 713,479
Int. Cl. A61g 9/00; B65d 5/40
U.S. Cl. 4—112 6 Claims



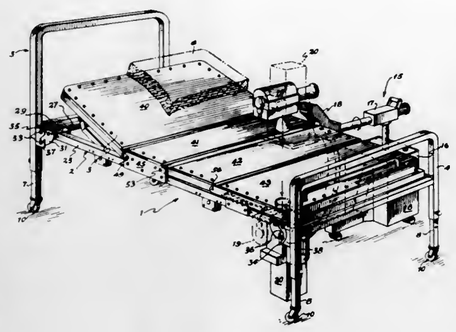
The present disclosure is directed to a device which may be entitled a disposable bedpan. The entire unit is formed of one piece of strong waterproof cardboard or like material. This single piece of material is laid out flat to be stacked for storage in a small space. After use, the entire unit is disposed of as by incineration. In use the structure is that of a box-like receptacle provided with internal supports to impart rigidity and strength. These internal supports are peripherally disposed channels. A cover or flap member opens out to expose a main opening of conventional size and shape. In open position the cover member serves additionally as a guard against splashing. To empty the pan, the cover may be entirely removed. For this purpose the upper part or deck is provided with scoring whereby the cover can be ripped free from the main unit. The device being entirely disposable, no usual cleaning or autoclave operation is necessary.

3,503,081
SOFA SLEEPER WITH AUTOMATIC SECTION LOCKING MEANS
Aloysius J. Mikos, Skokie, Ill., assignor to The Seng Company, a corporation of Illinois
Filed July 15, 1968, Ser. No. 745,020
Int. Cl. A47c 17/13
U.S. Cl. 5—31 7 Claims



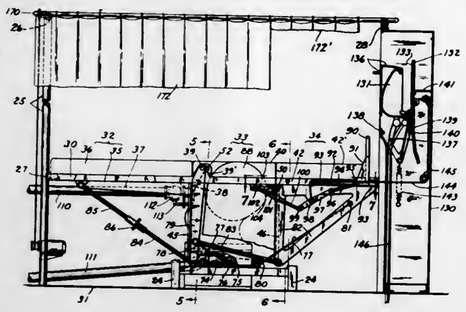
Linkage means for a four-section sofa sleeper which automatically draws down and locks the outer bed section during movement of the bed from intermediate position to folded position, said linkage means including a short lever pivoted intermediate its ends on the hinge bed section, a locking link which is pivoted at one end to a link that folds the outer legs of the bed structure during movement from bed position to intermediate position and which has its other end pivoted to a first arm of the lever that is below the lever pivot in intermediate position, and a lost motion linkage between the other arm of the lever and a linkage which moves the bed sections between intermediate position and folded position.

3,503,082
HOSPITAL BED
Malcolm Kerwit, 40—26 Terhune Place, Fair Lawn, N.J. 07410
Filed Dec. 18, 1968, Ser. No. 784,747
Int. Cl. A61g 7/10
U.S. Cl. 5—67 10 Claims



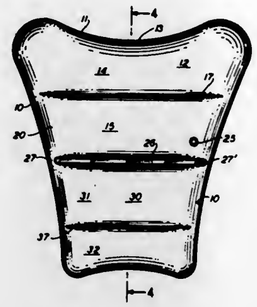
An improved hospital bed including a patient supporting top including panels formed of radiolucent material, which are adjustably mounted on an open rectangular bed frame defining a plan view area substantially the size of the bed through which a radiograph may be taken. The mechanism for adjusting the supporting top is so arranged that it does not obstruct radiographic view through said area.

3,503,083
INVALID'S BED ADJUSTABLE TO SITTING UP POSITION AND HAVING TOILET FACILITIES
Forest H. Barnett, 625 S. Trafton, Tacoma, Wash. 98405
Filed Mar. 22, 1968, Ser. No. 715,206
Int. Cl. A61g 7/02, 7/04; A47k 3/06
U.S. Cl. 5—90 6 Claims



The bed has an adjustable head section, an approximately horizontal intermediate or mid-section and an adjustable foot section. The head and foot sections are tiltable and are operated by self-locking power means which will hold them at any desired angle between a horizontal position for use as a bed and a generally upright position for use as a chair, there being a toilet bowl under the intermediate section and mattress parts of the intermediate section being retractable to uncover said bowl, there also being a foldable wash basin and mirror in a cabinet at the foot of the bed and a foldable bathtub alongside of the bed, the toilet bowl, wash basin and bathtub all having water supply and sewer connections.

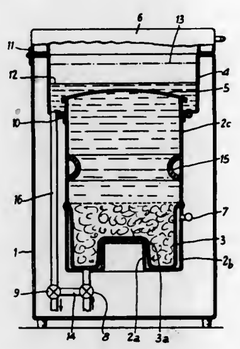
3,503,084
INFLATABLE CUSHION
John R. Meinwieser, New Providence, N.J., assignor to Better Sleep Inc., Berkeley Heights, N.J., a corporation of New Jersey
Filed Oct. 18, 1968, Ser. No. 779,293
Int. Cl. A61g 7/06
U.S. Cl. 5—349 4 Claims



A generally wedge shaped inflated cushion relatively proportioned and graduated in size so that the part designed to carry the greatest body weight will support said weight higher than the part designed to carry the lesser body weight, although said parts are pneumatically interconnected to allow partial inflating and deflating or shifting of the content of said parts in response to a rocking action of the supported weight and also providing self-conforming of the cushion to the curvature of the body portion supported. The cushion is also characterized by a plurality of generally cylindrical inflated bulges of graduated diameters and/or lengths substantially parallel, normal and symmetrical to the longitudinal centerline of the cushion.

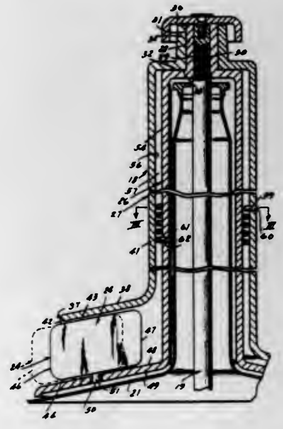
While the principles set forth have wide applications the illustration is that of a marital cushion.

3,503,085
LINEN WASHING MACHINE
René Groebli, 46 Porte-de-Crouy, 02 Soissons, France
Filed June 19, 1968, Ser. No. 738,193
Claims priority, application France, June 30, 1967, 112,621
Int. Cl. D06f 29/02
U.S. Cl. 8—158 10 Claims



A linen washing machine wherein the linen-carrying bag is enclosed in a vat inside which it is caused to rise intermittently towards a perforated cover under the action of the pressure of incoming water. The vat is provided with a medial section of a reduced cross-sectional area between its lower and upper sections. Thus, when the bag rises through said medial section, the linen carried by it is rolled so as to then spread out and turn round in the upper section of the vat without being pressed harshly against the perforated cover of the vat.

3,503,086
VARIABLE VANE AGITATOR WITH SELF-COMPENSATING MEANS
Anthony Mason, Benton Harbor, Mich., Keith D. Salisbury, Arlington, Mass., and David A. Matzen, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed June 5, 1968, Ser. No. 734,695
Int. Cl. D06f 23/04, 17/08, 17/10
U.S. Cl. 8—159 18 Claims

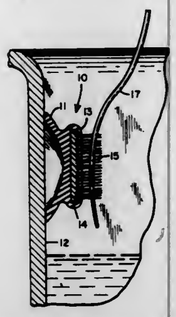


A washing machine including an agitator assembly for agitating the material to be laundered. The agitator assembly includes a rotatable agitator shell and a plurality of agitation vanes rotatable with the shell and adjustable for varying the level of agitation in accordance with the quantity of material being laundered. The agitator shell is driven by an oscillating rotatable drive shaft to which it is connected by means of a coupling arrangement including a spring member so that the agitator shell lags behind or follows the drive shaft by an angle which is proportionate to the turn-resisting force imposed on the agitator shell and the agitation vanes by the laundry material. The agitation vanes are automatically moved to a position of adjustment as a function of the angle by which the agitator shell lags behind the drive shaft.

3,503,087
MARKING FIBROUS MATERIAL
Hans Wolf, Wilhelm Ruettiger, and Klaus Gulbins, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,792
Claims priority, application Germany, Apr. 10, 1964, 1,266,718
Int. Cl. C09b 9/02
U.S. Cl. 8—164 11 Claims

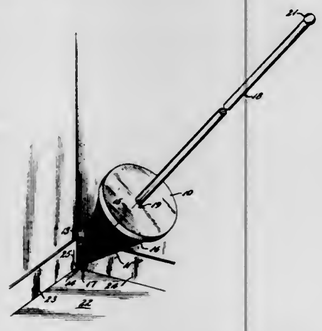
A process for the sighting of fibrous material with a tinting color capable of being removed therefrom by subsequent washing by applying to said fibrous material a water-soluble addition copolymer consisting essentially of an ethylenically unsaturated azo or anthraquinone dye and a water soluble comonomer.

3,503,088
DETACHABLY MOUNTED RESIDUE REMOVER
Marcella M. Anthone, 594 E. County Road B–2, St. Paul, Minn. 55717
Filed Nov. 13, 1968, Ser. No. 775,359
Int. Cl. A46b *1/00*
U.S. Cl. 15—160 **2 Claims**



A utensil cleaning device having a bristle brush suitable for mounting on a kitchen sink to allow a user to clean residue from inaccessible places on utensils with one hand.

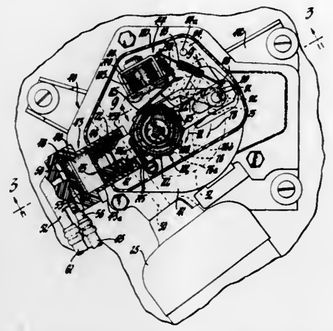
3,503,089
CORNER BRUSH
Clara L. Coneway, P.O. Box 2444, Harlingen, Tex. 78550
Filed Oct. 2, 1968, Ser. No. 764,485
Int. Cl. A46b *9/00*
U.S. Cl. 15—160 **1 Claim**



A brush for cleaning corners including a brush body in the form of a disk having bristles of nylon or other appropriate bristle material embedded therein and extending from one side in conical shape or tapering to a central point at the axis of the disk, and with a handle threaded in the center and at right angles to the disk on the opposite side from the bristles, the conical shape facilitating the use of the brush in corners and other places difficult to reach.

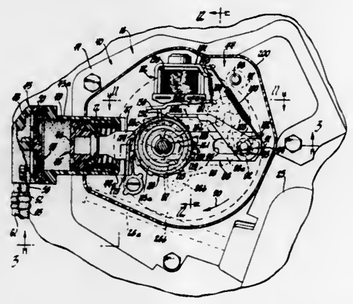
3,503,090
FLEXIBLE TOOTH IMPROVED WINDSHIELD WASHER
Robert F. Romanowski, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,443
Int. Cl. B60s *1/48*
U.S. Cl. 15—250.02 **10 Claims**

This disclosure relates to a windshield cleaning apparatus having a wiper unit for wiping the windshield of a vehicle and a programmed washer unit for intermittently delivering squirts of cleaning fluid to the windshield and which is operable conjointly with the wiper unit for a predetermined number of wiper strokes. The washer unit includes a reciprocable pump having a spring actuated delivery stroke and an interruptible driving connection with a wiper unit motor. The washer unit further includes a control mechanism which is operable to establish a driving connection between the pump and the wiper unit motor



such that the pump is fully reciprocated through its delivery and return strokes for a predetermined number of wiper strokes so that the cleaning fluid is delivered to the windshield for each of the predetermined number of wiper strokes at the same or substantially the same pressure, and to automatically, abruptly interrupt the driving connection therebetween after the predetermined number of wiper strokes have been completed.

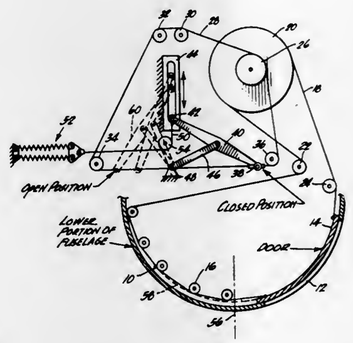
3,503,091
FAST RESPONSE WINDSHIELD WASHER
Ronald G. Petry, Dayton, and Harry Kronson, Jr., Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 4, 1968, Ser. No. 718,843
Int. Cl. B60s *1/02;* **B05b** *1/10*
U.S. Cl. 15—250.02 **5 Claims**



This disclosure relates to a windshield cleaning apparatus having a wiper unit including a wiper which is movable across the windshield in opposite directions between first and second positions during running operation and to a parked position upon termination of the running operation and a washer unit which is adapted to be operated conjointly with the wiper unit. The washer unit includes a washer pump assembly having an interruptible driving connection with a drive motor of the wiper unit. The washer pump assembly comprises a reciprocally movable pumping member which is spring actuated through its discharge stroke and which is cam actuated through its

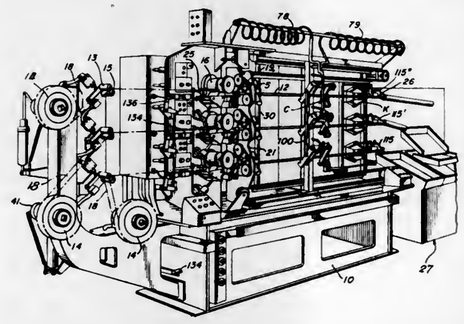
intake stroke. The pumping member is normally held against movement through its discharge stroke by a lockout means or cam and with the spring being in a charged condition. The lockout means is adapted to be moved to release the pumping member for movement through its discharge stroke in response to movement of the wiper from its parked position to its first position so that a charge of washing fluid is applied to the windshield prior to the start of the running operation of the wiper.

3,503,092
DOOR BALANCE MECHANISM
Graydon L. Welch, Artesia, Calif., assignor to McDonnell Douglas Corporation, a corporation of Maryland
Filed Jan. 10, 1968, Ser. No. 696,781
Int. Cl. E05d *13/12*
U.S. Cl. 16—1 **4 Claims**



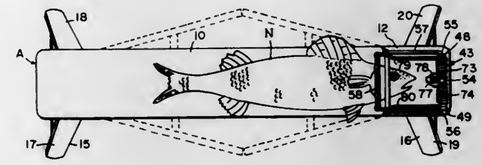
A counter balance system for a door wherein a spring operates through a linkage to maintain the door in a neutral state in conjunction with its fixed supporting structure negating the pull of gravity thereon.

3,503,093
APPARATUS FOR PRODUCING SHIRRED FOOD CASINGS
Walter V. Marbach, Palos Heights, Victor K. Naudzius, Chicago, and Edward S. Sherman, Palos Heights, Ill., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 18, 1967, Ser. No. 661,689
Int. Cl. A22c *11/02, 13/00*
U.S. Cl. 17—42 **7 Claims**



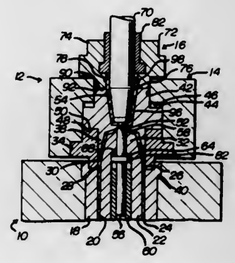
Shirring and compression of food casings are accomplished on a multi-mandrel machine having common drive and control systems for a plurality of casing strands, the steps of shirring, compacting and severing being performed on each mandrel independent of action on each other mandrel despite common drive mechanisms. Provision is made for detecting and remedying discontinuities in casing material supplied to each mandrel and automatic systems reject casing lengths deviating from a predetermined standard.

3,503,094
FISH CLAMPING TABLES
Lawrence J. Kennedy, 84 Windsor Ave., Flin Flon, Manitoba, Canada
Filed July 29, 1968, Ser. No. 748,453
Int. Cl. A22c *25/06*
U.S. Cl. 17—70 **5 Claims**



Disclosed is a portable fish-supporting table having a long narrow top provided at one end portion with a transversely disposed clamp engageable with the head or tail of a fish lying lengthwise on the table top. The clamp includes a movable jaw that is spring urged toward a stationary jaw and that is provided with a handle bar usable for pulling the movable jaw toward its open position and also usable in carrying the table with its legs folded.

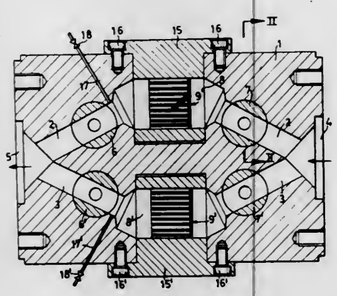
3,503,095
INJECTED PARISON BLOW MOLDING APPARATUS
Albert R. Uhlig, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 679,126
Int. Cl. B29c
U.S. Cl. 18—5 **3 Claims**



Plastic articles are formed by a combination of injection molding and blow molding wherein a plastic parison is formed by movement of a mold assembly to reduce the volume of a body of plasticized material and thereby displace plasticized material from the body into the mold assembly. The mold assembly includes a first movable mold part having a core pin and an annular structure about the core pin forming with the core pin a finish space for the molding of a finish portion of a parison. The mold assembly also includes a second movable mold part which defines part of a chamber for containing the body

of plasticized materials, and the second mold part has a gate opening which is normally blocked by a movable blocking member. The first mold part is moved into contact with the second mold part to form a mold cavity which communicates with the finish space about the core pin, the blocking member is moved out of the gate opening, and the first and second mold parts are moved jointly to reduce the volume of the chamber and thereby inject plasticized material through the gate opening into the mold cavity and the finish space to form a parison. Next, the gate opening is closed by the blocking member. The mold parts and the blocking member are then returned to positions wherein the chamber is at its original volume, and the first mold part is moved further with the plastic parison thereon to a blowing station. Blow molds close on the parison, and a blowing medium is introduced into the parison through the core pin to blow the parison into conformity with the blow molds and thereby form a complete article having a finish portion formed by the finish space of the first mold part.

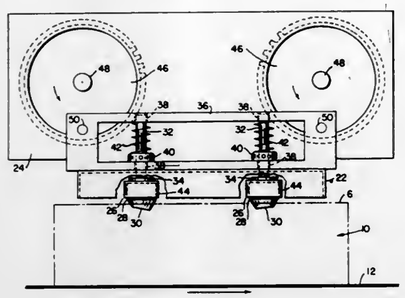
3,503,096
CONTINUOUS-FLOW FILTER FOR EXTRUDERS AND SIMILAR MACHINES FOR PROCESSING PLASTIC MATERIALS
Luigi Marianelli, Via Risorgimento 1, Sesto San Giovanni, Milan, Italy
Filed Feb. 2, 1968, Ser. No. 702,677
Claims priority, application Italy, Feb. 6, 1967, 12,320/67
Int. Cl. B29f *3/03*; D01d *1/10*
U.S. Cl. 18—12 **2 Claims**



A filtering assembly for extruders of plastic materials is disclosed, which comprises two shunted channels inserted between the inlet and the outlet for said plastic material, said channels having, each, a filtering member inserted in a chamber positioned roughly midway of each channel. Stopcocks are also provided for bypassing either filtering member whenever this is necessary for repair, cleaning or replacement purposes.

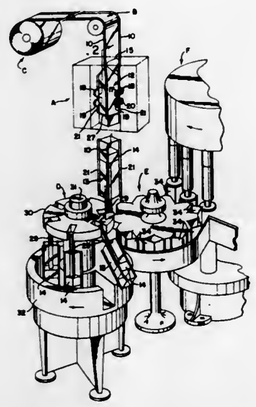
3,503,097
METHOD OF AND APPARATUS FOR PERFORATING FILMS OF THERMOPLASTIC MATERIAL
J Paul Krupp, Jr., Mechanicsville, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,174
Int. Cl. B26d *7/10*; B29c *17/10*
U.S. Cl. 18—1 **12 Claims**

Apparatus for perforating a film of thermoplastic material which is heat shrunk about a plurality of containers to form package carrier. A novel heated punch is used to form finger-sized horseshoe-shaped apertures which facilitate lifting the package. A tongue of thermoplastic material left in the film aperture is useful as a pull tab for opening packages wrapped in the film. During



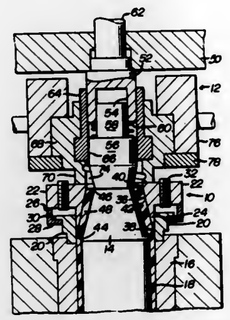
perforations, the film is subjected to a controlled melting to provide a reinforcing bead or thickened section at the perimeter of the aperture.

3,503,098
METHOD AND APPARATUS FOR FABRICATING FLEXIBLE SHEET MATERIAL
William S. Shore, Mayfield Heights, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 654,241, July 18, 1967, which is a continuation-in-part of application Ser. No. 567,935, July 26, 1966. This application Nov. 3, 1967, Ser. No. 680,586
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **11 Claims**



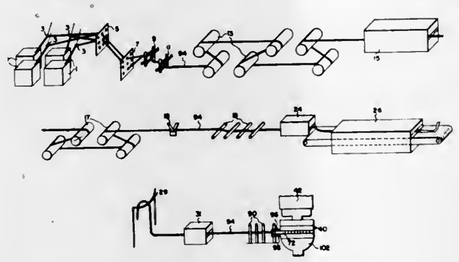
The method and apparatus disclosed are effective to fabricate advancing flexible sheet material such as extruded tubular plastic film, to form sleeves of finite length. The apparatus utilizes a shaping mandrel to shape the material into tubular form and a reciprocating support mandrel which supports the shaping mandrel during a part of the cycle and receives from the discharge end of the shaping mandrel an end portion of the shaped material. The formed sleeve is severed from the advancing end of the mandrel cutting elements which move into supporting engagement with the shaping mandrel at the end of their cutting stroke to support the shaping mandrel while the support mandrel moves away to remove the severed sleeve.

3,503,099
PLASTIC MOLDING APPARATUS
Albert R. Uhlig, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 678,968
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 **6 Claims**



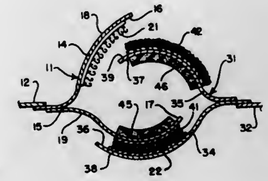
A plastic molding apparatus includes a displacement chamber formed by a movable orifice structure having an opening therein and a fixed mandrel having a portion within the opening of the orifice structure. The displacement chamber is filled with plasticized material supplied from a source. A mold contacts the orifice structure and moves it to reduce the volume of the chamber and force plasticized material from the chamber into the mold. The orifice structure and the mandrel have concentric conical surfaces forming boundaries of the displacement chamber and tapering at different angles so that the conical surfaces wedge plasticized material into the mold when the volume of the chamber is reduced and also form a restriction which inhibits flow of plasticized material to the source to allow a higher pressure in the displacement chamber than that of the source. The method of the invention includes the step of wedging plasticized material from the chamber into the mold by moving one of the conical surfaces toward the other and at the same time forming a restriction which inhibits the flow of plasticized material to the source.

3,503,100
METHOD OF PROCESSING LARGE DENIER TOW
Theodore W. Glynn III, and Garland B. Keith, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 577,930, Sept. 8, 1966. This application June 19, 1967, Ser. No. 646,855
Int. Cl. D01g *1/00*
U.S. Cl. 19—.32 **6 Claims**



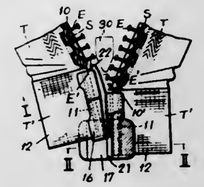
Method of continuously processing a tow of at least 800,000 total denier at speeds of at least 70 meters per minute. The process includes drafting, crimping, heat setting, lubricating and cutting the tow into predetermined lengths.

3,503,101
FASTENING APPARATUS
Arpad Kolozsvary, Wharton, N.J., assignor to American Velcro, Inc., a corporation of New Hampshire
Filed June 21, 1968, Ser. No. 738,953
Int. Cl. A44b *17/00*, *21/00*, *13/00*
U.S. Cl. 24—204 **8 Claims**



Fastening apparatus for releasably joining sheet members under tensile stress wherein fastening members are secured to either sheet member, each fastening member including spaced apart portions having inwardly and outwardly facing surfaces, the inwardly facing surface of one portion of each fastening member defined by a plurality of hooking elements and the outwardly facing surface of each other portion defined by a plurality of complementary hooking elements; one portion of either fastening member is receivable between a portion of the other fastening member and the hooking elements on the inwardly facing surfaces of either fastening member are engageable with complementary hooking elements on the respective opposing outwardly facing surfaces of the other fastening member when the respective fastening members are forced together in face-to-face relationship.

3,503,102
SLIDE FASTENERS
Mitsuo Inazawa, Kurobe-shi, Japan, assignor to Yoshida Kogyo K.K., Tokyo, Japan
Filed Mar. 8, 1967, Ser. No. 621,508
Claims priority, application Japan, Apr. 13, 1966, 41/34,070; Apr. 18, 1966, 41/24,490
Int. Cl. A44b *19/02*
U.S. Cl. 24—205.11 **6 Claims**



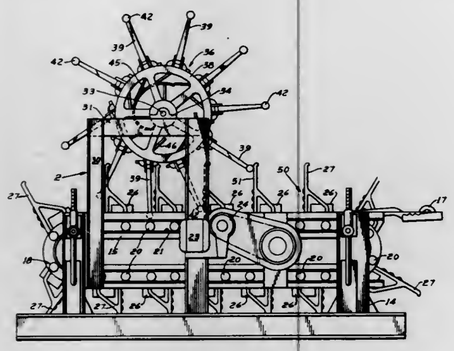
A slide fastener comprising a pair of stringer tapes carrying rows of continuous plastic fastener elements interlockable by a slider. A terminal fastener element on each tape stringer is provided with a blank, linear end extension which is anchored to the tape thereby preventing the terminal element from shifting away from the stitching which holds it to the tape.

3,503,103

APPARATUS FOR CUTTING UNDULATED ENDS ON CONTINUOUSLY MOVING TILE

Paul C. Deters, 841 E. 3rd St., Ottawa, Ohio 45875

Filed Apr. 29, 1963, Ser. No. 276,395
Int. Cl. B28b *11/14*
U.S. Cl. 25—110 3 Claims



1. In an apparatus for cutting clay tile from a blank comprising endless chain means for conveying the tile and blank through the apparatus, a rotary cutting reel supporting a plurality of cutting arms thereon having ends spaced apart a greater distance than the diameter of the tile to be cut, wires for cutting and severing the tile from the blank, a said wire extending between the ends of each said arm, guide means carried by said endless chain and having faces lying in vertical planes and engaging said ends of each said arm, respectively, and guiding said arms and wire to move in a vertical path, perpendicular to the longitudinal axis of said tile and blank as said tile and blank are advanced through said apparatus, and means maintaining each said arm end in engagement with the faces, respectively, of said guide means while the wire extending therebetween severs a tile and is in the path of travel of said blank, the improvement that said guide means comprises a plurality of vertically spaced, longitudinally displaced surfaces on said guide means and in a different vertical plane than the plane of said face, and a plurality of angularly disposed surfaces interconnecting each said longitudinally displaced surface with said face of said guide means for reciprocating the ends of said arms and the wires respectively carried thereby longitudinally, relative to said axis of said tile and blank, as said arms and wires are, respectively, guided vertically to cut and sever each said tile from said blank.

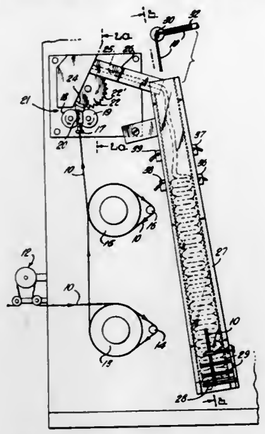
3,503,104

YARN AND METHOD AND APPARATUS FOR PRODUCING THE SAME

Fred B. Satterwhite, Williamsburg, Va., assignor, by mesne assignments, to The Klinger Manufacturing Company, Limited, London, England, a corporation of Great Britain

Filed Oct. 19, 1966, Ser. No. 587,783
Int. Cl. D02g *1/14*
U.S. Cl. 28—1 23 Claims

Yarn is crimped by longitudinally compressing it in a stuffer box to form a plug of crimped yarn and, while still in the form of a plug, is advanced from the stuffer box through setting means and relaxation means whereby the crimp is set in the yarn and the yarn is then permitted to relax before being subjected to tension to withdraw it from the relaxation means.

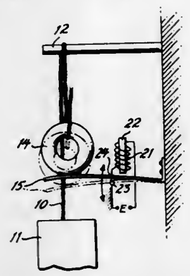


3,503,105

STRAND TREATMENT

Eddie E. Sizemore, Elkton, Md., assignor, by mesne assignments, to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania

Filed June 3, 1968, Ser. No. 734,075
Int. Cl. D02g *1/12*
U.S. Cl. 28—72.14 14 Claims



Slub removal from bulked multifilament textile strands is effected by means of a vibrating guide therefor.

In the bulking of textile strands, especially those composed at least partially of synthetic filaments, undesired knotlike bunches called "slubs" often occur and should be removed, if possible. Many devices, including various guides, often with constrictions therein have been developed with the object of removing slubs. However, some slub-removal guides are so extreme in their action as to break some or all of the filaments when a slub is encountered.

3,503,106

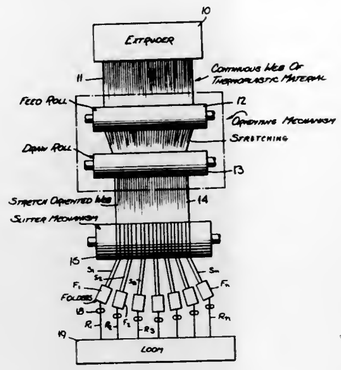
CONTINUOUS TECHNIQUES FOR MAKING FLAT WOVEN SYNTHETIC FABRICS

Morton I. Port, West End, N.J., and Bernard L. Schwartz, Scarsdale, N.Y., assignors to Patchogue Plymouth Company, a division of Avisun Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 378,179, June 26, 1964. This application June 27, 1968, Ser. No. 740,627
Int. Cl. D03d *15/00;* B29h *7/18*
U.S. Cl. 28—72 3 Claims

A continuous technique for manufacturing flat woven fabrics wherein thermoplastic material is extruded into a

web which is stretch-oriented to increase its tensile strength, the web being slit before or after orientation to produce individual strips that are folded into narrow ribbons in which the cut edges of the strips are concealed, the ribbons being directly supplied into a loom where they are woven into a flat fabric.



3,503,107

HIGH TEMPERATURE PALMING OF LIGATED FIBROUS MATS

Kenneth E. Thompson, Jr., Hendersonville, and Michael D. Yallourakis, Nashville, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,224
Int. Cl. D02j *13/00*
U.S. Cl. 28—74 10 Claims

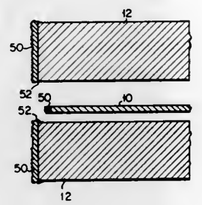
A ligated fibrous mat of spontaneously elongatable synthetic fibers, such as polyethylene terephthalate, is heated to a temperature above about 200° C. During heating, the mat is restrained so as to prevent a surface area increase and to keep a constant density. After treatment, the mat exhibits improved levelness from edge to edge and possesses smooth surfaces.

3,503,108

CUTTING AND SAWING BLADES

David J. Kidgell, Excelsior, Minn., and Frank A. Besha, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application Dec. 31, 1963, Ser. No. 334,829, now Patent No. 3,399,649. Divided and this application Mar. 11, 1968, Ser. No. 739,958
Int. Cl. B26d *1/12*
U.S. Cl. 29—103 5 Claims



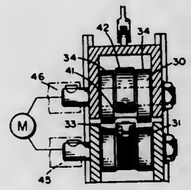
An extremely thin cutting and sawing blade, suitable for forming the required gap in magnetic recording and reproducing heads, comprises a circular disc having a typical thickness of about 0.0001–0.001 inch, and in the form of a metallic body, stable to temperatures of about 1000° F. or above. A thin, uniform layer of hard, high temperature resistant, metal-containing cutting and sawing material and having a thickness corresponding to that of the body is bonded to the outer periphery of the body.

3,503,109

METHOD AND APPARATUS FOR FORMING FLANGE BEARINGS

Charles F. Krall, Willowick, Ohio, assignor to Clevite Corporation, a corporation of Ohio

Filed June 15, 1967, Ser. No. 646,213
Int. Cl. B21d *53/10;* B21b *15/00*
U.S. Cl. 29—149.5 6 Claims



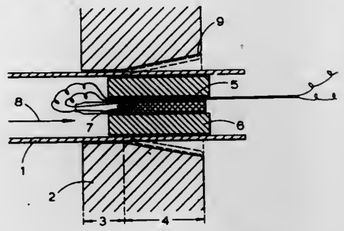
The apparatus herein disclosed comprises a pair of die rollers for rolling flange bearings from flanged metal strip, wherein one of the rollers is knurled and driven to draw the strip through the rollers with the aid of a pusher device, and back up roll means couple the strip to the knurled roller. In the method disclosed herein the channel shaped flat strip has an initial length substantially equal to the arcuate length of the finished bearing, and it is bent in the die rollers to stretch the outer flange edges and simultaneously to compress the flange height so that upon completion of the forming operation the four flange end faces, which become the parting line of the bearing, lie substantially in a common plane. The oil hole and the oil groove may be in the strip before the bending operation.

3,503,110

SECURING TUBES INTO TUBE PLATES

David John Berry, Sherburn-in-Elmet, and Roy Hardwick, Woodlesford, near Leeds, England, assignors to Yorkshire Imperial Metals Limited, Stourton, near Leeds, Yorkshire, England

Continuation-in-part of application Ser. No. 576,938, Sept. 2, 1966. This application Feb. 24, 1967, Ser. No. 618,489
Claims priority, application Great Britain, Sept. 14, 1965, 39,172/65
Int. Cl. B23k *31/02*
U.S. Cl. 29—157.4 6 Claims



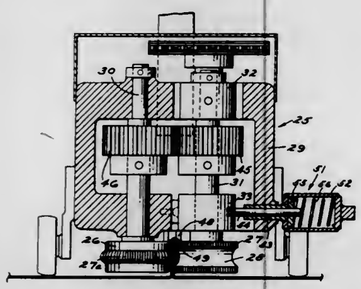
A method is disclosed for securing a metal tube having a smooth exterior into a metal tube plate. The tube is inserted in an aperture in the tube plate, the aperture having a smooth interior and the distance between the

inner wall of the aperture and the outer wall of the tube is tapered to increase toward one end of the tube. The aperture or the tube may be constructed to provide this taper. An explosive charge is placed within the tube and detonation of the charge serves to weld the tube to the tube plate. An outer end of the aperture may be radiused or angled so that when the welding operation is carried out a portion of the tube projecting beyond said end will be severed and removed.

3,503,111
INDUSTRIAL OVEN WALL CONSTRUCTION

Louis J. Janecek, Southfield, Mich., assignor, by mesne assignments, to Mahon Technology Group, Inc., Sterling Heights, Mich., a corporation of Delaware

Application Dec. 7, 1966, Ser. No. 599,968, now Patent No. 3,457,629, dated July 29, 1969, which is a division of application Ser. No. 246,623, Dec. 21, 1962, now Patent No. 3,303,619. Divided and this application Feb. 5, 1969, Ser. No. 796,783
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **4 Claims**

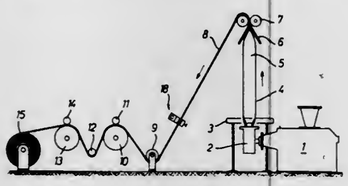


An apparatus for longitudinally crimping the joint formed between adjacent sheet metal panels having a flange portion along one side edge and a reversely bent portion along the other side edge which comprises a frame supported for movement longitudinally along the joint and complementary rolls mounted on the frame with their axes generally perpendicular to the plane of the wall. Means are provided for driving the rolls and guiding the frame along the joint.

3,503,112
APPARATUS FOR ALIGNING AND CLOSING PROFILED BARS OF A FASTENER OF A WRAPPER OF FLEXIBLE PLASTICS MATERIAL

Karl-Heinz Siegel, Birkenstrasse 1a, Schwaig, via Nuremberg, Germany

Filed Jan. 9, 1967, Ser. No. 607,926
Claims priority, application Germany, Feb. 7, 1966, A 51,516; June 22, 1966, A 52,819
Int. Cl. B23p *19/04*
U.S. Cl. 29—202.5 **8 Claims**

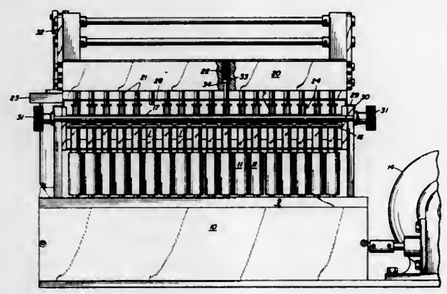


This disclosure relates to apparatus for aligning and closing profiled strips with a fastener of a wrapper of flexible plastics material in the form of seamless tubing. The inside surfaces of the tubing are superimposed after leaving the pinch rolls and are then separated by a weak air cushion. The tubing portion provided with the profiled strips is moved through a closing element, which embraces said tubing portion from the outside. The apparatus may comprise closing elements in the form of grooved members and/or of cooperating rollers.

3,503,113
AUTOMATIC MACHINE FOR APPLYING HANDLES TO FILLED HYPODERMIC SYRINGES

Julius Bernard Lagsdin, Pearl River, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Jan. 11, 1968, Ser. No. 697,096
Int. Cl. B23p *19/04*
U.S. Cl. 29—208 **3 Claims**



Threaded handles are applied on semi-automatic machinery to threaded stoppers in a filled hypodermic syringe to form a plunger. The machine has a series of cylinders of suitable size to receive the barrels of the syringes. These cylinders are provided at the top with soft gaskets of elastomer to grip the syringe barrel. Handles for the syringes, provided with ribs to prevent turning, are then dropped into syringe barrels inserted in the cylinders of the machine. Guide plates with suitable holes guide the handles as they are inserted. Movable locking plates adjacent to the cylinder handles are swung into position and prevent turning of the handles when the cylinders turn. The threaded handles are inserted, and then a second bar having rods aligned to contact the top of the handles is lowered. The rods are provided with light springs so that when lowered they press against the handles with a light, predetermined pressure. The cylinders are then rotated in the proper direction to screw the threaded handles into the threaded stoppers. The light spring pressure assures that there is sufficient pressure to screw in the handles but insufficient pressure to cause the stopper to move and thus discharge part of the contents of the syringe. The soft elastomer gaskets around the tops of the cylinders grip the syringe barrels sufficiently so that the barrels are turned when the cylinders turn.

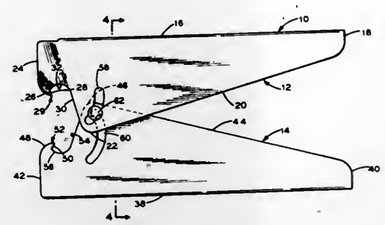
3,503,114
TOOL FOR SPREADING APART THE ENDS OF A ZIPPER SLIDE

Robert P. Stanton, 65 Mayflower Ave., Williston Park, N.Y. 11596

Filed July 25, 1967, Ser. No. 655,951
Int. Cl. B23p *19/04*
U.S. Cl. 29—207.5 **7 Claims**

A tool for spreading apart the halves of a zipper slide which includes two members each one of which is provided with a hook-shaped portion adapted to engage the respective free ends of the slide. The members are further

provided with complementary formed surfaces opposite the hook-shaped portion which are adapted to engage the slide to move the free ends of the slide toward the hook-shaped portions when the members of the tool are moved

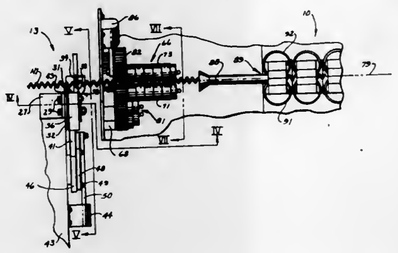


toward each other to firmly lock the slide in place during the operation of the tool. Further movement of the members toward each other causes the members to spread or pry apart the free ends of the slide so that the slide may be removed or loosened.

3,503,115
HELICAL FEEDING MECHANISM FOR SPRING ASSEMBLY MACHINE

Carl O. Kirchner, Carthage, Mo., assignor to Leggett and Platt Incorporated, Carthage, Mo., a corporation of Missouri

Filed June 12, 1967, Ser. No. 645,341
Int. Cl. B23p *19/04;* **B23g** *7/10*
U.S. Cl. 29—208 **4 Claims**



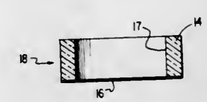
Apparatus including a plurality of feed rolls and mechanism for supporting and feeding one helical tie wire at a time into engagement with the terminal convolutions of two adjacent rows of coil springs. The feeding mechanism includes cylinder means located on one axial side of the rolls coaxial with the feedline of the helical tie wire, and spaced edge means on the other side of said rolls extending transversely of the feedline and arranged to move the helical tie wires from a supply thereof into a single row whereby finger means can select and discharge one helical tie wire at a time from said row.

3,503,116
METHOD OF FABRICATING A PRESSURE TRANSDUCER

Richard R. Strack, Sturbridge, Mass., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1967, Ser. No. 673,578
Int. Cl. H04r *31/00*
U.S. Cl. 29—423 **4 Claims**

The transducer is fabricated by depositing a thin coating of light reflecting material on a flat, polished surface of a substrate consisting of a mosaic comprising a glass core or cores encased by a glass casing or matrix of different etching properties than the glass cores. After coating, the core or cores are removed from the substrate by etching to furnish an edge-supporting membrane or membranes consisting of residual coating in the area from which the cores are removed. The light transmitting and receiving fibers are formed from a bundle of optical fibers suitably

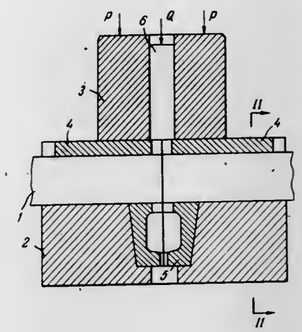


arranged and encased in a matrix of glass having different etching properties than those of the fibers. The bundles are fixed in the openings formed by removal of the cores. The matrix encasing the fibers is removed by etching, and the respective fibers are then segregated by size and connected to a source of light or to the sensing device, as appropriate.

3,503,117
METHOD OF BUTT-WELDING OF PARTS AND DEVICE FOR EFFECTING SAME

Leonid Alexandrovich Nikolsky, Dokhturovsky pereulok 20, kv. 13, Moscow, U.S.S.R.

Filed May 15, 1967, Ser. No. 638,202
Int. Cl. B23k *31/02*
U.S. Cl. 29—470.1 **3 Claims**



A welding method comprises abutting two parts to be welded and extruding a filler metal, under welding pressure, in a direction normal to the axis of the parts and at the surfaces thereof to be welded together to cause the adjoining ends of the parts to be displaced and replaced by filler metal. The filler metal is cleaned of oxide coatings or the like when extruded and before introduction between the parts.

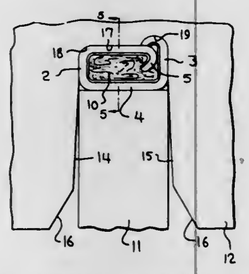
3,503,118
OXIDATION RESISTANT GRAPHITE COMPOSITE ARTICLE

John M. Criscione, Broadview Heights, and Herbert F. Volk, Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,297
Int. Cl. C23c *9/02;* **B23k** *31/02*
U.S. Cl. 29—472.9 **3 Claims**

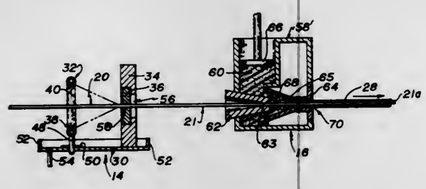
A graphite substrate having a contiguous coating of elemental iridium characterized by resistance to oxidation at elevated temperatures.

3,503,119
METHOD FOR APPLYING A CLOSURE DEVICE TO AN END OF A FLEXIBLE CONTAINER
Edward Lamonte Seitz, Jr., Petersburg, and Allen Edwin Travis, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Oiginal application Aug. 22, 1966, Ser. No. 574,091, now Patent No. 3,369,277, dated Feb. 20, 1968. Divided and this application Dec. 22, 1967, Ser. No. 692,866
Int. Cl. B21d *39/00;* B23p *11/00*
U.S. Cl. 29—509 3 Claims



A method for applying a U-shaped closure device to an end of a flexible container comprises bending a long leg of the U-shaped closure device after the end of the flexible container has been placed in the closure device until an outer section thereof is substantially parallel with the bight of the closure device, and bending a free end of a short leg of the closure device into an arcuate configuration with the free end being in engagement with the outer section of the long leg.

3,503,120
METHOD OF PRODUCING COVERED WIRE
Paul R. Pierce, Bristol, R.I., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,490
Int. Cl. B23p *17/00*
U.S. Cl. 29—527.2 11 Claims



An improved method of producing a covered wire and more particularly an electrical insulated conductor from wire annealed in an uncontrolled atmosphere wherein the wire is controllably lubricated by use of a die device prior to the application of a covering to the wire.

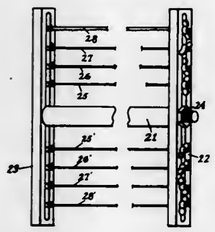
3,503,121
SELF-LOCKING BEARING RING
Ralph S. Howe, Jr., New Britain, Conn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Nov. 9, 1967, Ser. No. 681,627
Int. Cl. B21d *53/12*
U.S. Cl. 29—527.2 7 Claims

The invention contemplates fabrication of a resilient self-locking structure in the bore of a ring to be mounted on a shaft. The structure involves an annulus of elastomeric material bonded to the bore and having a bore of diameter to encounter interference with a given shaft diameter, on which the resiliently lined ring is to be mounted. Plural angularly spaced metal feet are embedded in the elastomeric material, the feet being in



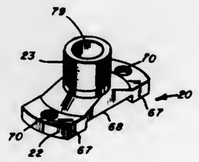
radial clearance relation with the bearing ring bore and having inner surfaces exposed at the bore of the elastomeric material. Thus, the interference encountered upon shaft insertion develops resiliently loaded radially outward displacement of the clamping feet.

3,503,122
METHOD OF FORMING A TUBULAR ARTICLE
Helge Ragnar Albrektson, % Robin Machine Products, Inc., 1554 Eastern Ave., Covington, Ky. 41014
Filed Mar. 29, 1965, Ser. No. 443,466
Int. Cl. B23p *13/04;* B26d *4/00*
U.S. Cl. 29—558 7 Claims



A method of forming semi-cylindrical articles wherein a cutting means having several parallel straight blades is inserted between two blocks of cuttable material which are in substantially face to face contact and the cutting means is rotated with respect to the blocks about an axis parallel to the blades.

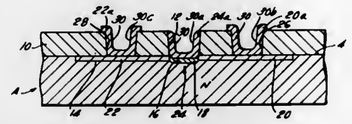
3,503,123
METHOD OF MAKING A FITTING
Robert D. Law, Brooklyn, Ohio, assignor to Tru-Fit Screw Products Corporation, a corporation of Ohio
Filed Jan. 18, 1968, Ser. No. 698,942
Int. Cl. B23p *13/02*
U.S. Cl. 29—558 5 Claims



The method of making a fitting having a conduit portion integrally connected to a mounting base which has spaced feet, by selecting a cylindrical metal blank of

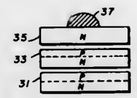
generally constant diameter throughout its length and at a first station cold heading the same to increase the diameter of one end of the blank relative to the other. Moving the blank to a second station where by cold heading the diameter of the one end is further reduced and the other end is formed into a generally frustoconical shape and at a final station cold heading the blank to completely flatten the other end to produce a head which has a diameter of at least four times that of the shank. Counterboring the head and then cutting off the metal of the head along parallel, spaced and tangential lines on either side of the center of the head which lines substantially intersect the counterbore to produce spaced feet with a recessed portion therebetween. The excess shank is removed, an axial opening is produced through the head and shank and the shank is threaded.

3,503,124
METHOD OF MAKING A SEMICONDUCTOR DEVICE
Frank M. Wanlass, 30 Mulberry Court, Jericho, N.Y. 11753; Aldo Mecchi, 102 E. Cypress Lane, Westbury, N.Y. 11590; and Warren H. Muller, 2 Wyngate Place, Great Neck, N.Y. 11021
Filed Feb. 8, 1967, Ser. No. 614,715
Int. Cl. H01l *11/14*
U.S. Cl. 29—571 14 Claims



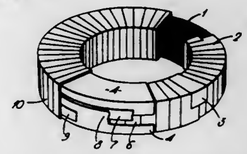
Accurate registration of gate electrode with gate area is achieved by forming the gate area in registration with an opening in an oxide layer and using that opening, in conjunction with a specific photo-resist process, to fix the location and limit the size of the gate electrode.

3,503,125
METHOD OF MAKING A SEMICONDUCTOR MULTI-STACK FOR REGULATING CHARGING OF CURRENT PRODUCING CELLS
Rolf R. Haberecht, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Original application Sept. 21, 1961, Ser. No. 139,704, now Patent No. 3,274,454, dated Sept. 20, 1966. Divided and this application Apr. 18, 1966, Ser. No. 562,984
Int. Cl. B01j *17/00;* B23k *31/02*
U.S. Cl. 29—576 5 Claims



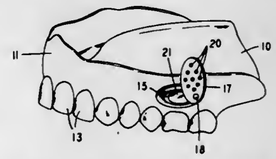
A method for preparing a composite stacked semiconductor device including providing a plurality of semiconductor wafers having surfaces thereof coated with a layer of conductive metal, stacking said wafers so that each pair of adjacent surfaces are coated with the conductive metal and heating said stack of wafers under pressure whereby said metal coating bonds said adjacent wafers together and forms a bonded composite of stacked wafers.

3,503,126
METHOD OF MAKING ELECTROSTATIC SCREENS, ESPECIALLY FOR TOROIDAL TRANSFORMERS
Brian Michael Faller, Hertfordshire, England, assignor to Hawker Siddeley Dynamics Limited, Hatfield, Hertfordshire, England
Filed Mar. 15, 1967, Ser. No. 623,327
Claims priority, application Great Britain, Mar. 17, 1966, 11,827/66
Int. Cl. H01f *7/06*
U.S. Cl. 29—602 6 Claims



A technique is described for making an electrostatic screen in the form of an open-circuited turn, between two windings laid one upon another on a toroidal transformer. In this technique, a metallic paint coating is applied over the end winding, leaving a peripheral gap all around the toroid ring. A strip of insulating tape is then applied so that it overlaps one margin only of the applied metallic coating and extends part way only across the width of the gap. After this, the screen is completed by continuing the paint coating across the outer surface of the insulating tape strip, so that this further application of conductive paint units with the margin of the previous conductive coating not covered by the tape, and overlaps but does not touch the margin of the previous paint coating that is covered by the tape.

3,503,127
DENTURE WITH A RECEPTACLE THEREIN
Simon Kasdin, 42 Western Ave., Morristown, N.J. 07960, and Sidney Schneider, Morris Township, Morris County, N.J. (576 Sussex Ave., Morristown, N.J. 07960)
Filed Dec. 24, 1968, Ser. No. 786,652
Int. Cl. A61c *13/00*
U.S. Cl. 32—2 6 Claims



A denture has a small cup implanted in the buckle flange above the teeth on each side. The cup, which is to be filled with a pill or concentrate of a sweetened chemical, such as oil of cinnamon, has a cap pivoted to close over the cup. The cap is apertured so that saliva can flow through it to dissolve the pill slowly.

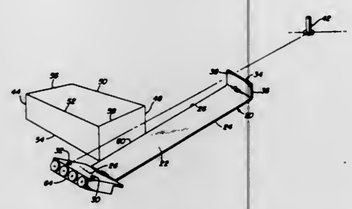
3,503,128
DENTAL FILLING COMPOSITION OF A COEFFICIENT OF THERMAL EXPANSION APPROXIMATING THAT OF NATURAL TOOTH ENAMEL
Robert N. Boyd, Maplewood, N.J., and Lawrence Colin, Chappaqua, and Edward G. Kaufman, Lake Success, N.Y., assignors, by mesne assignments, to Dentsply International Inc., York, Pa., a corporation of Delaware
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,727
Int. Cl. A61k *5/02;* C08g *51/04*
U.S. Cl. 32—15 4 Claims

A process of filling a cavity within a tooth with a filled-resin dental filling material or composition comprising:
(a) from about 5% to about 50% by weight of a synthetic resin capable of being cured at a low temperature; and

(b) a finely divided filler comprising
(1) 50 to 80% by weight, based on the weight of the total composition, of one or more materials having a negative coefficient of thermal expansion; and
(2) 0 to 25% by weight, based on the weight of the total composition, of one or more materials having a low coefficient of thermal expansion.

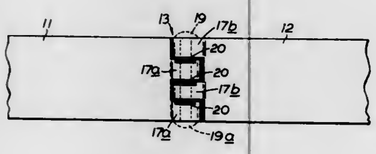
The composition is such that the combined coefficient of thermal expansion of the filler and resin closely approximates that of the tooth enamel over the entire temperature range existing within the oral environment. Optionally, a silane bonding agent is employed to enhance adhesion between the filler and resin.

3,503,129
SIGHT RULER FOR PERSPECTIVE DRAFTING
Clarence E. Saxton, 4522 Orchard Ave., San Diego, Calif. 92107
Filed May 20, 1968, Ser. No. 730,263
Int. Cl. B43l *7/00*
U.S. Cl. 33—72 **4 Claims**



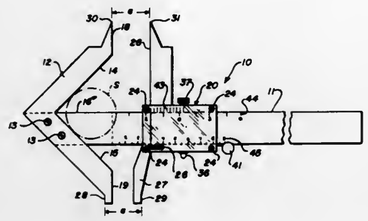
A sight rule for drawing perspective views comprising an integral element forming a straightedge, a mirror disposed at one end of the straightedge at approximately forty-five degrees with respect to the straightedge, a sight on the mirror and a sight at the other end of the element, the sights being in a plane which extends vertically along the pencil guiding edge of the straightedge.

3,503,130
FOLDING RULES
Ian Agar Ferguson, Solihull, England, assignor to Rabone Chesterman Limited, Birmingham, England, a British company
Filed Aug. 16, 1968, Ser. No. 753,149
Claims priority, application Great Britain, Feb. 16, 1968, 7,624/68
Int. Cl. G01f *3/06*
U.S. Cl. 33—105 **7 Claims**



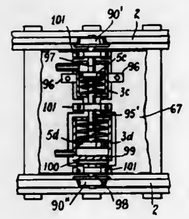
A folding rule having a pair of synthetic plastic legs interconnected by a knuckle joint, wherein metal washers are located in recesses in the interfaces of the knuckle joint transversely of its pivot axis.

3,503,131
MULTIPURPOSE INSTRUMENT
Louis A. Warner, 5223 N. Natoma, Chicago, Ill. 60656
Filed Jan. 27, 1969, Ser. No. 794,024
Int. Cl. G01b *5/02, 5/14*
U.S. Cl. 33—143 **6 Claims**



A multipurpose instrument which is adapted for use as a sliding caliper for measuring inside and outside dimensions, a divider, a compass, a circular cutter, a T-square and a center finder for circular stock.

3,503,132
HYDRAULIC MECHANICAL ELECTRICAL SENSING DEVICE
Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada
Original application Apr. 2, 1965, Ser. No. 445,123, now Patent No. 3,364,579, dated Jan. 23, 1968. Divided and this application Nov. 22, 1967, Ser. No. 721,885
Int. Cl. E01b *29/04*
U.S. Cl. 33—146 **1 Claim**

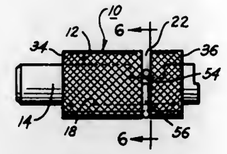


A device for measuring the distance between two rails and also the straightness of the rails by means of hydraulic sensors and indicators. The hydraulic cylinder for sensing the gage of the rails is in axial alignment with the cylinder for sensing the horizontal alignment so that only one piston rod is needed.

3,503,133
GAGE FASTENING DEVICE
Robert O. Bogue and Arthur Glenton, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Aug. 15, 1968, Ser. No. 752,859
Int. Cl. G01b *3/28*
U.S. Cl. 33—169 **1 Claim**

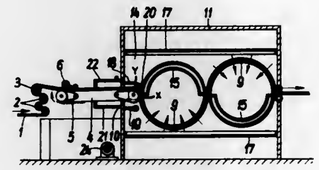
A gage fastening device having a body with an axial bore therein and a transverse opening intersecting said axial bore. A retaining means operatively engages said

transverse opening and projects into said axial bore. A shaft means having thereon a transverse slot is slidably disposed in said axial bore with said transverse slot pro-



viding for axial engagement with said retaining means thereby providing for predetermined axial movement of said shaft means with respect to said body.

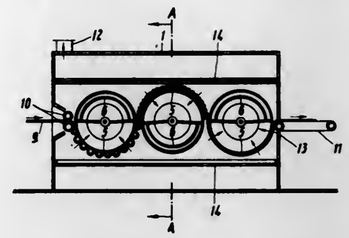
3,503,134
PROCESS AND APPARATUS FOR THE TREATMENT OF MATERIALS, COMPRISING TENSIONING AND SIEVE DRUM MEANS
Heinz Fleissner, Egelsbach, near Frankfurt, Germany, assignor to VEPA, AG
Filed July 20, 1967, Ser. No. 654,728
Claims priority, application Germany, July 20, 1966, V 31,539; Sept. 16, 1966, V 31,951; Oct. 3, 1966, V 32,059; Nov. 29, 1966, V 32,447
Int. Cl. F26b *3/06, 13/30*
U.S. Cl. 34—12 **22 Claims**



The present disclosure relates to a process and apparatus for the treatment of materials, for example drying, steaming, setting, curing, etc., lengths of textile materials such as woven and knitted fabrics, non-woven, tufteds, and the like, with a treatment medium, for example, air, steam or air/steam mixtures. More particularly, the present disclosure is directed to a process and apparatus for the treatment of materials which comprises conveying a continuous length of material through a treatment chamber on the surface of at least one sieve means subjected to a suction draft, said material being held to said sieve means by said suction draft, and drawing a treatment medium around and through the material being treated, said material being held and guided at the inlet of the apparatus and/or at the outlet of the apparatus in a stretched condition on tensioning elements before it is introduced onto the sieve means and/or after it is removed from the sieve means.

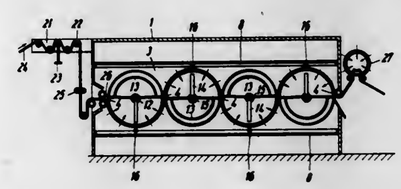
3,503,135
PROCESS AND APPARATUS FOR THE TREATMENT OF TEXTILE MATERIALS
Heinz Fleissner, Frankfurt am Main, Germany, assignor to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Filed Jan. 23, 1968, Ser. No. 699,932
Claims priority, application Germany, Jan. 28, 1967, A 54,741
Int. Cl. F26b *7/00*
U.S. Cl. 34—12 **28 Claims**

The present disclosure is directed to a process for the treatment of textile materials which comprises introducing the material to be treated into the treatment chamber in a folded condition on the surface of at least one conveying means by overfeeding said material to said conveying means, said folds extending radially from the surface of said conveying means, and exposing said textile material



to a treatment medium in the folded condition during only a part of the treatment process. The present invention is also concerned with the apparatus for conducting the recited process.

3,503,136
METHOD AND APPARATUS FOR THE TREATMENT OF GAS-PERMEABLE AND/OR LIQUID-PERMEABLE MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA, AG.
Filed Dec. 5, 1968, Ser. No. 781,503
Claims priority, application Germany, Dec. 6, 1967, 1,635,357
Int. Cl. F26b *5/04*
U.S. Cl. 34—15 **22 Claims**

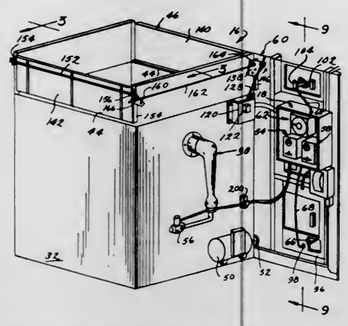


The present disclosure is directed to a method and apparatus for the treatment of gas-permeable and/or liquid-permeable materials which comprises introducing the material to be treated to a treatment housing, conveying the material on the surface of a perforated conveying element through the treatment housing while penetrating said material with a circulating treatment medium, sensing the pressure on both sides of the material being treated, thereby determining the pressure differential between the inside and outside of the conveying element and accordingly varying the capacity for circulating the treatment medium depending on said pressure differential and the material being treated.

3,503,137
AUTOMATIC TOBACCO CURING APPARATUS
Robert W. Wilson, Charlotte, N.C., assignor to R. H. Bouligny, Inc., Charlotte, N.C., a corporation of North Carolina
Continuation of abandoned application Ser. No. 601,634, Dec. 14, 1966. This application Dec. 18, 1968, Ser. No. 785,865
Int. Cl. F26b *19/00;* **A24b** *3/04;* **G05d** *22/02*
U.S. Cl. 34—45 **27 Claims**

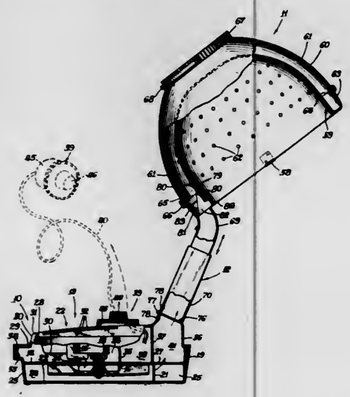
A bulk curing tobacco barn including a plurality of bulk curing racks for supporting a multiplicity of tobacco leaves in a compact bed within a controlled flow of air, a fan for establishing and maintaining a forced flow of air

in a circulating path through the bed of leaves supported by the bulk curing racks, a heater for applying heat to the air in the path, a damper for admitting fresh air to the flow path and for discharging heated air from the path, and a control system for automatically operating the heater and damper through a curing cycle which includes coloring or yellowing of the leaves, drying the leaves, and drying the stems of the tobacco supported within the barn by the bulk curing racks. The control includes a thermostat for operating the heater in response to temperature



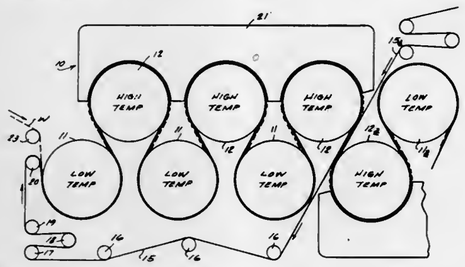
conditions of the air in the flow path and a mechanism for advancing the thermostat at an adjustable predetermined rate, and a mechanism for effecting movement of the damper to control the humidity of the air in the flow path in response to the sensing of a condition of the heated air flowing in the path indicative of relative humidity and a timer for advancing the temperature and humidity controls throughout the curing procedure including the yellowing of the leaves, drying of the leaves and drying of the stems.

3,503,138
HAIR DRYER
Richard C. Fuchs and Willi K. E. Haeselich, Milwaukee, Wis., assignors to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 558,660, June 20, 1966. This application May 19, 1969, Ser. No. 849,532
Int. Cl. A45d
U.S. Cl. 34—99 **15 Claims**



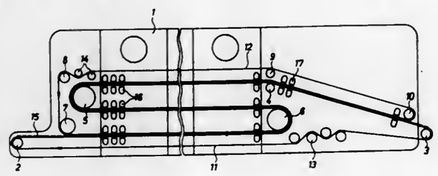
A portable hair dryer having a base unit housing with a motor-blower unit in the housing and a dome-shaped hood defined by an outer imperforate casing and an inner perforate shell to form a drying air chamber. A tubular air conduit is pivotally connected at its lower end to an air outlet in the housing and pivotally connected at its upper end to an air inlet of the hood. This permits the hood to be moved from a hair drying position into a carrying position superimposed on the housing and without disconnecting the tubular air conduit from the housing and the hood.

3,503,139
APPARATUS FOR DRYING FIBROUS WEBS ON EXTERNAL DRUMS
Ralph P. Mahoney, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 11, 1968, Ser. No. 712,260
Int. Cl. F26b *11/04*
U.S. Cl. 34—111 **12 Claims**



Drying apparatus for fibrous webs such as coated and uncoated paper sheets. A felt is in direct contact with the dryer drum and forms a porous backing for the web when traveling about the dryer drum. In one drying application the felt is in the form of a loop and serves as a carrier to carry the moist paper web to the dryer drum. In another drying application, particularly adapted for drying uncoated papers, at least two parallel spaced rows of dryer drums are provided, with the drums of one row between the drums of the other row. The dryer drums in one row are heated to a much higher temperature than the dryer drums in the other row. A felt in the form of a continuous loop is trained in a serpentine path alternately about the drums of each row of dryer drums. The felt and dryer drums form a guide to train the fibrous web alternately under the felt about the drums of lower temperature and over the felt about the drums of higher temperature. A hood extends over the drums of higher temperature to remove moisture laden air from the web and felt. The hood may also impinge heated air on the web.

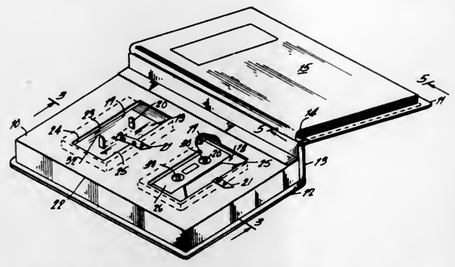
3,503,140
DRIER FOR SHEET MATERIALS
Robert Hildebrand, Nuertinger Str. 68, Oberboihingen, Wurttemberg, Germany
Filed Jan. 11, 1967, Ser. No. 613,066
Claims priority, application Germany, Jan. 12, 1966, H 58,215
Int. Cl. F26b *9/00*
U.S. Cl. 34—162 **4 Claims**



A drier for continuously drying sheet materials by means of at least two heated endless conveyor belts which directly engage upon the opposite sides of the sheets and

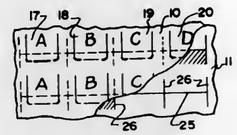
directly transmit the drying heat thereto and also smooth the surfaces thereof while carrying the sheets through the drier. In order to reduce the dimensions of the drier, the continuously moving conveyor belts preferably pass back and forth several times on guide rollers.

3,503,141
INSTRUCTION BOOK
Louis E. Schwartz, New York Law School, 57 Worth St., New York, N.Y. 10013
Filed May 27, 1968, Ser. No. 732,119
Int. Cl. G09b *5/06*
U.S. Cl. 35—8 **3 Claims**



An instruction book incorporating within one of its covers, recesses to receive recorded tape cartridges for supplementing the printed matter in the book. Spaced upstanding members are provided in the recesses which enter central openings of the tape spools in the cartridge to insure proper orientation of the cartridge within the recesses and subsequent proper orientation of the cartridge in the tape play back machine.

3,503,142
SELF-TESTING DEVICE
Richard S. Wolowicz, Wonder Lake, and Anthony R. Manzo, Jr., Elmhurst, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,705
Int. Cl. G09b *3/08*
U.S. Cl. 35—9 **9 Claims**

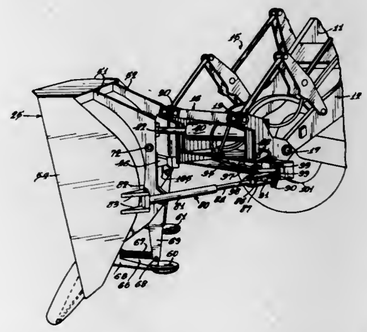


A paperboard device comprising front and rear panels having tabs in the front panel registering with tab-receiving openings in the rear panel. The tabs are in groups and suitably marked to operate by biasing the tabs into the receiving openings and past a coded marginal lip which retais the tab in displaced position. The code mark on the lip is revealed when the tab has been forced past and retained by the lip.

3,503,143
BLOCK COPOLYMER FOOTWEAR ASSEMBLY
Geoffrey Holden, Los Alamitos, and William B. Luther, Long Beach, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 16, 1968, Ser. No. 698,105
Int. Cl. A43b *1/02*
U.S. Cl. 36—9 **6 Claims**

The invention comprises a shoe assembly utilizing a first block copolymer composition as a combining paste for two layers of textile in the upper and a second block polymer composition as a foxing with physical combination and coalescence of the second coating with the combining composition to provide high wet peel strength laminates.

3,503,144
CONVERTIBLE LOADING AND PLOWING DEVICE
Richard P. Stewart, Omaha, Nebr., assignor to Omsteel Industries, Inc., a corporation of Nebraska
Continuation-in-part of application Ser. No. 502,162, Oct. 22, 1965. This application Mar. 16, 1967, Ser. No. 623,654
Int. Cl. E02f *3/83*
U.S. Cl. 37—117.5 **17 Claims**



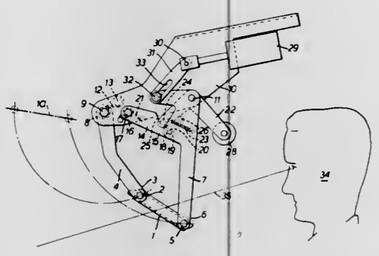
A loading device to be mounted for vertical movement relative to a vehicle and including a bucket having a concave wrapper with front and back terminal sections extending at an included angle of about 90° with the front terminal section being arranged to have a 20°–30° angle with the ground when in contact therewith, there being a blade on the front terminal section and pivotal mounting means on the bucket having vertically spaced axes with the lower of the axes being only slightly above the level of the blade when the device is in an initial loading position. Additionally, there is provided a cradle pivotally connectable to the lift structure of the vehicle for carrying the bucket for movement between a forwardly tilted plow position and an upright load carrying position, a pivotal mount interconnecting the bucket and the cradle and having a pivot axis extending transverse to the length of the bucket and a collapsible strut member extending between the cradle and the bucket to brace the bucket when the same is pivoted about the transverse axis to a plowing angle.

3,503,145
DEFERRED CURING PROCESS FOR TEXTILE FABRICS
Fujio Mashio, Kyoto, and Sadatoma Maruta, Eiichi Kawai, and Hiroki Yamamoto, Takarazuka-shi, and Shigeru Tajima, Ashiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,041
Claims priority, application Japan, July 13, 1965, 40/42,196; Dec. 1, 1965, 40/74,116
Int. Cl. D06c *27/100*; D06m *15/52*
U.S. Cl. 38—144 **2 Claims**

Textile fabric is endowed with crease resistance and permanent press properties by a deferred curing process

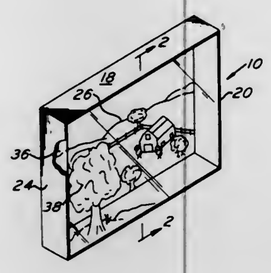
employing as an impregnating agent a N-methylolated acrylamide telomer.

3,503,146
HEAD-UP DISPLAY SYSTEMS
Peter J. Woplin, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Sept. 1, 1967, Ser. No. 665,007
Claims priority, application Great Britain, Sept. 3, 1966, 39,495/66
Int. Cl. G09f *11/00*
U.S. Cl. 40—51 **7 Claims**



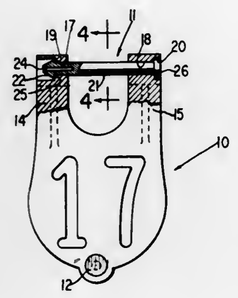
A mechanism for removing from the line of sight of an observer the reflector of head-up display apparatus of an aircraft in the event of sudden deceleration. The mechanism includes a spring acting as an energy store, the energy of which is released by a latch either on impact with the observer's head or on receiving a movement of deceleration sensitive device.

3,503,147
DISPLAY DEVICES
Melvin B. Herrin and Lenard H. Herrin, both of 15th and Huntingdon Sts., Philadelphia, Pa.
Filed Mar. 4, 1968, Ser. No. 710,065
Int. Cl. G09f *1/00, 1/12*
U.S. Cl. 40—124.1 **7 Claims**



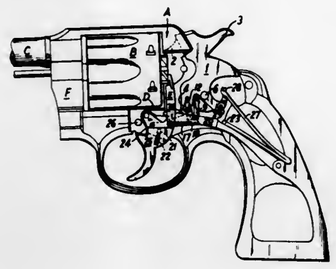
Display devices are presented wherein the device comprises an opaque rear member telescopically coupled to a transparent front member. Indicia is provided on a portion of the face of the transparent member and indicia is provided on the rear member so it can be visible through the transparent member. The indicia on each member are preferably related or compatible with one another so that together they present an organized display which may be utilized for advertising purposes. The said display devices may be supported by a dispenser housing which also contains at least one compartment into which will be placed articles to be dispensed. The indicia on each of the front and rear members of the display device is preferably coordinated with the articles to be dispensed.

3,503,148
ANIMAL MARKER
Harley E. Nichols, Jr., Hardwick, Vt., assignor to C. H. Dana Co., Inc., Hyde Park, Vt., a corporation of New Hampshire
Filed Mar. 18, 1968, Ser. No. 713,838
Int. Cl. G09f *3/12*
U.S. Cl. 40—300 **1 Claim**



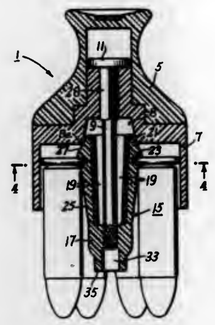
An animal marker for identifying domestic cattle such as cows, sheep, etc. including a tag member which is freely swivelled on a pin member having a shank portion disposed in a hole extending through the loose brisket skin of the animal.

3,503,149
REVOLVER FIRING ACTION MECHANISM
Hubert F. Hedges, 85 Richmond Hill, New Canaan, Conn. 06018, and Richard R. Bergmann, Perry Ave., Norwalk, Conn. 06850
Filed Jan. 5, 1968, Ser. No. 696,066
Int. Cl. F41c *1/00, 19/14*
U.S. Cl. 42—65 **1 Claim**



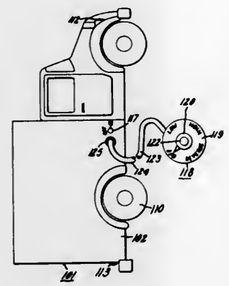
Firing action mechanism adaptable to conventional firing mechanisms, in which the trigger cocking lever and hammer strut are reshaped and new sear, connector and disconnector elements are provided to permit the hammer to be cocked by an initial long pull on the trigger and to remain cocked while the trigger is free to return to its forward position. A second slight pressure on the trigger fires the hammer and the trigger is restrained from further rearward movement during the hammer fall. At the terminal small increment of hammer fall, the trigger restraint is released and it continues rearward to initiate a subsequent firing cycle.

3,503,150
CARTRIDGE HOLDER FOR A REVOLVER
Werner O. Brunhuber, Stamford, Conn. (19 W. 24th St., New York, N.Y. 10010), and William C. Bye, 169 Cypress Ave., Bronx, N.Y. 10454
Filed Mar. 8, 1968, Ser. No. 711,701
Int. Cl. F42b *39/04*
U.S. Cl. 42—89 **6 Claims**



A cartridge holder capable of securely retaining cartridge shells within the holder while providing at the same time a mechanism for effecting simultaneous release of the shells into the barrel of a revolver. The holder is provided with an axial stem member on which is mounted a specially designed lock-release element adapted to move relative to the holder and providing flexible fingers which are cammed by the shells on loading the holder for retaining purposes and cammed by an annular shoulder provided within the holder for effective shell release. Appropriate cam surfaces are disposed on the fingers to serve both ends. In one embodiment of the invention the lock-release element and the stem are actuated together by the revolver barrel during release and in another embodiment the element is actuated by the barrel so as to move relative to a stationary stem fixedly secured within the holder.

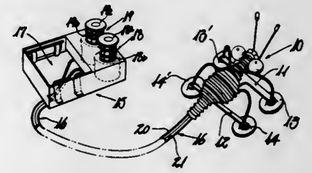
3,503,151
SEALED FUEL CELL POWER PACK IN COMBINATION WITH A TOY VEHICLE
Eugene R. White, Topsfield, and Gene E. Lewis, Wenham, Mass., assignors to General Electric Company, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,823
Int. Cl. A63h *17/00*
U.S. Cl. 46—243 **7 Claims**



A power pack is disclosed formed by mounting an electrolyte element, such as an ion exchange membrane, in a casing so as to form two sealed chambers. An electrode is mounted by the electrolyte element in each chamber. Initially one of the chambers contains water, and the casing is formed of transparent material so that the water within the chamber can be seen. Hydrogen is formed in one chamber of the power pack and oxygen in the remaining chamber by electrolyzing the water in the electrolyte element in the one chamber. The source of direct current to perform the electrolysis may be an AC-DC converter. With hydrogen and oxygen in the chambers of the power pack it may be utilized to operate a toy, lamp, or other device merely by connecting the power pack to electrical terminals thereof. In another form the device to be operated by the electrical output may be totally or partially formed integrally with the power pack casing.

In a specific toy construction, a DC motor and a power pack are mounted in a toy vehicle. An external control unit is removably connected to the toy vehicle so that the speed of the DC motor may be externally controlled. The vehicle is also provided with lights and externally controlled horn.

3,503,152
DRIVE SYSTEM FOR WALKING TOYS
Masaru Aoki and Osamu Kimura, both % Tomy Kogyo Co., Ltd., 10, 9, 7-chome, Tateishi, Katsushika-ku, Tokyo, Japan
Filed Feb. 20, 1968, Ser. No. 706,887
Claims priority, application Japan, June 1, 1967, 42/46,484
Int. Cl. A63h *11/04, 11/16, 33/26*
U.S. Cl. 46—247 **9 Claims**

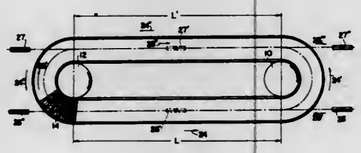


A drive system for walking toys which enables such toys to crawl about such surfaces as a wall face, a ceiling face, etc. The drive system comprises a limb mechanism, which is operated by an electric motor, and a plurality of suckers to and from which air is supplied and removed by means of pneumatic systems. By operating the pneumatic systems the suckers are forced to stick fast to and to separate from a contacting surface, thereby enabling the toy to walk along any desired surface.

3,503,153
BEE-LINE FLOW FINISHING APPARATUS
Hisamine Kobayashi, 13, 3-chome, Kikuzono-cho, Showa-ku, Nagoya, Japan
Original application Mar. 21, 1967, Ser. No. 624,874. Divided and this application Jan. 22, 1969, Ser. No. 807,152
Claims priority, application Japan, June 18, 1966, 41/39,505, 41/39,506, 41/39,507
Int. Cl. B24b *31/00*
U.S. Cl. 51—17 **6 Claims**

A carrier device of U-shaped endless belt type composed of a durable wire net is tightly spanned between a pair of vertical belt wheels and its bottom is supported by a plurality of bearing rollers while each of its side walls is supported by a plurality of guide rollers except

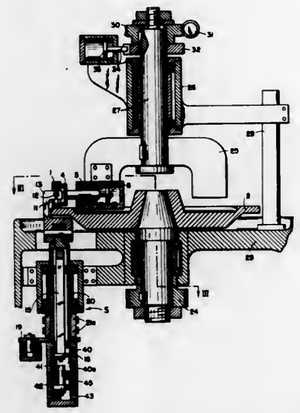
for the ranges of the belt wheels. A quantity of abrasives is loaded in the form of a loose layer into the device. One of the belt wheels is driven to rotate the device and therefore the abrasive layer is moved in one direction in the horizontal plane. Workpieces are moved one after another in counterflow relation in either or both of the rectilinear portions of the traveling abrasive layer. If desired, the workpieces may push against the surface of the rectilinear abrasive portion. Also a layer of abrasives can be rotated in a vertical plane. A carrier device of channelled endless belt type composed of a flexible material is tightly spanned between a pair of horizontal belt wheels such that the major part of its upper rectilinear section formed between the belt wheels is of a substantially U-shaped cross section confined by a plurality of roller sets such as above described for purpose of surface finishing while the remaining section of the devices has a closed cross sectional profile by having a plural sets of four rollers disposed on four sides of the device excepting that the inside rollers are omitted in the range of each belt wheel. Further a pair of channelled endless belts can be juxtaposed into an X-shaped arrangement



in the respective vertical planes and be rotated in the opposite directions. A layer of abrasives is formed in the ascending upper rectilinear section of each traveling belt and is transferred from its top end onto the other ascending rectilinear belt section through a transfer chute. Workpieces are successively passed through one of the rectilinear streams of the abrasive layer from its upper end to its lower end and then transferred to the other rectilinear stream with their orientation remaining unchanged followed by the similar passage through the other stream. Alternatively both rectilinear streams may be utilized for separate finishing operations. Preferably the speed of the workpieces relative to the rectilinear abrasive stream ranges from 70 to 500 meters per minute and the finishing time ranges from 10 seconds to 15 minutes. The rectilinear abrasive stream has a length of from less than 1 to more than 10 meters. The abrasives may be of either dry or wet type.

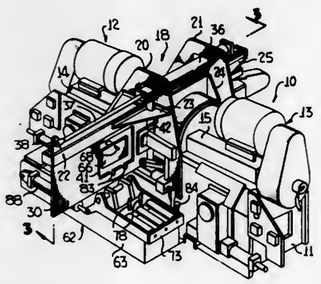
3,503,154
APPARATUS FOR THE PRECISION MACHINING OF ANNULAR WORKPIECES
Thomas Joachim Schmidt, Munchingen-Kallenberg, Germany, assignor to Supfina, Wieck & Hentzen, Remscheld, Germany
Filed Jan. 6, 1967, Ser. No. 607,789
Claims priority, application Germany, Jan. 8, 1966, S 101,351
Int. Cl. B24b *33/02*
U.S. Cl. 51—58 **15 Claims**

Apparatus for precision machining circumferentially extending grooves in the periphery of annular or cylindrical workpieces, such as raceways for ball bearings, wherein the annular or cylindrical workpiece is rotated by a frictional drive and an arcuate cross section groove is machined in a periphery of the workpiece by a grinding or honing stone which is oscillated about the center of the circular arc of the groove cross section, including a rotating drive disk frictionally engaged with one or more annular or cylindrical workpieces, a stationary pressure guide which supports the workpiece at its outer circumference and with an end face of the workpiece being directed toward the axis of the drive disk, and a rotatable axially displaceable stop arranged concentrically to the workpiece axis and bearing against the radially inner



face of the workpiece. The common axis of the rotatable stop and the workpiece extends parallel to a radius of the drive disk, but is offset from such a radius in the direction of rotation of the drive disk and by an amount sufficient to provide for a centrally directed motive component of the workpiece.

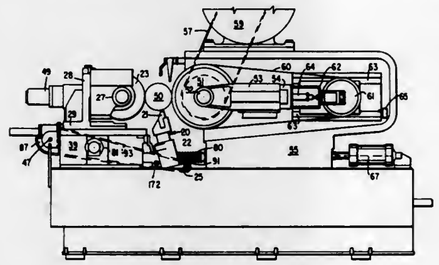
3,503,155
DISC GRINDER LOADER AND CARRIER ASSEMBLY
Elman R. Dunn, Roscoe, Ill., assignor to Landis Tool Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1967, Ser. No. 668,039
Int. Cl. B24b *47/02*
U.S. Cl. 51—114 **14 Claims**



The disclosure of this application relates to horizontal double spindle disc grinders of the type in which the workpieces are inserted between the discs for a grinding operation and removed therefrom by means of a reciprocating member known as a gun-type carrier. In accordance with this disclosure, the reciprocating member is attached to a carriage on an overhead track and moved into and out of the grinding zone preferably by means of a hydraulic motor. Guide rollers engage the sides of the reciprocating member adjacent the bottom thereof to align it with the abrasive disc. The overhead track is supported by a pair of inverted U-shaped members mounted on the

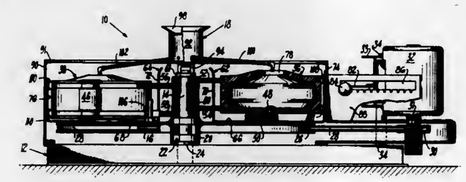
front and rear portions of the machine. A work inserting member or loader is pivotally mounted underneath and transversely of the gun-type carrier. The work inserting member is operable when the carrier is in a retracted position to remove a ground workpiece and insert an unground workpiece.

3,503,156
CENTERLESS GRINDING SYSTEM
Robert L. Schaller, Camillus, N.Y., assignor to Engelberg, Inc., Liverpool, N.Y., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,584
Int. Cl. B24b *21/02, 5/18*
U.S. Cl. 51—139 **7 Claims**



Centerless grinding system wherein all bar supporting and grinding components are adjustable on linear paths by servomechanism which may have numerical control to accommodate bars of different diameters over a large range and maintain bars of all diameters on a preselected grinding axis.

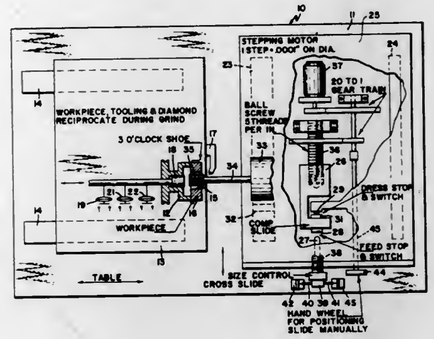
3,503,157
ORBITAL BARREL FINISHING MACHINE
John F. Harper, Ames Hollow Road, Portland, Conn. 06480
Filed Feb. 1, 1967, Ser. No. 613,212
Int. Cl. B24b *31/02*
U.S. Cl. 51—164 **12 Claims**



The apparatus of this invention includes finishing barrels with continuously exposed open tops and a frame provided with sling mounting means serving to support the barrels thereon for orbital movement about a fixed axis with each barrel being counter-rotatable about its own axis The apparatus further includes a feeding device mounted on the frame and in continuous communication with the barrels for selectively charging the same during movement thereof.

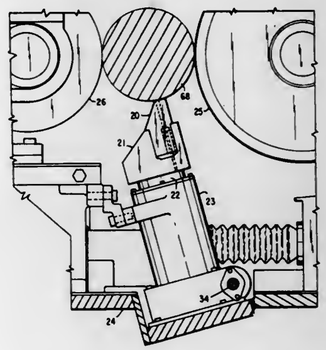
3,503,158
GRINDING MACHINE
Edward G. Robillard and Herbert R. Uhtenwoldt, Worcester, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,222
Int. Cl. B24b *49/00, 51/00*
U.S. Cl. 51—165 **9 Claims**

This invention relates to a grinding machine and, more particularly, to apparatus for finishing a surface of revolution by the abrasive grinding process, including a step-



ping motor for bringing about a cross-feed cycle in accordance with a predetermined pattern.

3,503,159
AUTOMATIC WEAR COMPENSATING MECHANISM FOR WORK REST IN CENTERLESS GRINDING MACHINES
Robert L. Schaller, Camillus, N.Y., assignor to Engelberg, Inc., Liverpool, N.Y., a corporation of Delaware
Filed Jan. 9, 1968, Ser. No. 696,523
Int. Cl. B24b *41/06, 5/00, 5/18*
U.S. Cl. 51—238 **3 Claims**

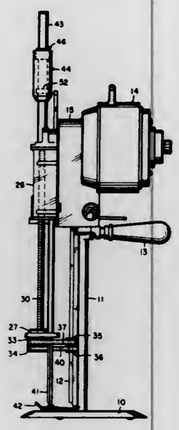


A servo system is employed to effect vertical adjustment of the work rest. A contact element of wear resisting material is mounted in the work rest blade for movement by the work piece as wear is occasioned on the blade. This movement is transmitted to a linear transducer, the output of which is varied proportionately to the extent of movement of the contact element. The output of the transducer is connected to the servo system, which also includes the usual position sensor with feed back.

3,503,160
VIBRATION-DAMPING ASSEMBLY FOR A PORTABLE CLOTH-CUTTING MACHINE
John B. Gury III, Kirkwood, Mo. (% J. B. Gury Mfg. Company, 801 N. Skinker Blvd., St. Louis, Mo. 63130)
Filed Mar. 2, 1967, Ser. No. 620,158
Int. Cl. B24b *19/00, 41/00*; B26d *5/08*
U.S. Cl. 51—246 **18 Claims**

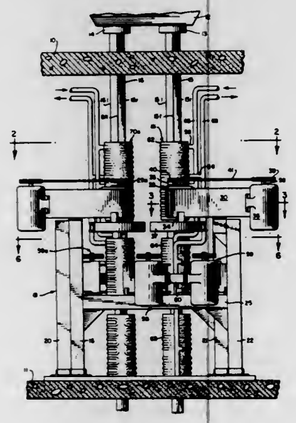
A vibration-damping assembly for a portable cloth-cutting machine in which a weight is adjustably located

along the length of and fixed to an elongate extension on the machine to dampen the vibration of the machine otherwise caused by both the reciprocating movement of the reciprocating means connected to and reciprocating a cloth-cutting knife, and the rotary movement of the rotary means operatively connected to and actuating the



reciprocating means, in addition to the movements of other working parts. The elongate extension is tubular and receives a reciprocatively movable threaded rod that carries a knife-sharpening means, the knife-sharpening means being movable reciprocatively along the length of the knife upon actuation of the rotary means.

3,503,161
METHOD OF TREATING A CONTINUOUSLY CAST BILLET
Byrns E. Long, Williamsville, N.Y., assignor to Cayuga Machine & Fabrication Co., Inc., Depew, N.Y., a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,722
Int. Cl. B24b *1/00, 7/00*
U.S. Cl. 51—281 **5 Claims**

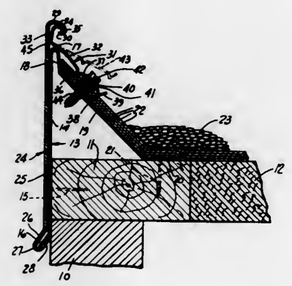


A method and apparatus are provided for grinding off the corner edges of a continuously cast metal billet of generally rectangular shape in cross section while the billet remains attached to the tundish which forms the same.

ERRATUM

For Class 51—314 see:
Patent No. 3,504,124

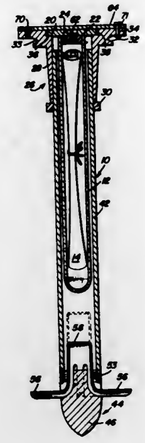
3,503,162
COMBINATION WATER CANT, SEALER STRIP AND FASCIA
James H. Ward, 508 Des Moines Drive, Hermitage, Tenn. 37076
Filed Oct. 16, 1968, Ser. No. 768,002
Int. Cl. E04d *1/36, 3/38, 13/15*
U.S. Cl. 52—60 **4 Claims**



A combination water dam, sealer strip and fascia edge structure for a flat roof having a built-up roofing material which includes a plurality of roofing plies. The roof edge structure includes a cant having an outer vertical portion secured to the outer edge of the roof and having an inner inclined portion secured to the roof, with the roofing plies laid thereover. The upper end of the cant outer vertical portion is integrally joined to the upper end of the inner inclined portion. The roof edge structure further includes a fascia member having the lower end releasably engaged with the lower end of the cant outer vertical portion, and having the upper edge thereof folded inwardly, and downwardly and outwardly, to form a hook with an upwardly facing support lip. The roof edge structure further includes a sealer strip having a downwardly facing hook formed along the upper edge thereof and extended into the hook formed along the upper edge of the fascia member, with the edge of the sealer strip hook engaging said support lip. The sealer strip has its upper end in pivotal engagement with the outer end of the cant vertical portion and with the sealer strip body portion pivoted downward into sealing engagement with the roofing covering so as to move the fascia member downwardly and the upper end of the fascia member inwardly, and the lower end of the fascia member outwardly into sealing engagement with the lower end of the cant vertical portion. The roof edge structure further includes means for securing the sealer strip to said cant inner inclined portion to compress the roofing covering against the cant inner inclined portion to form a weather seal.

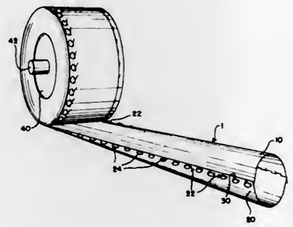
3,503,163
SURVEYOR'S MARKER WITH INFORMATION CONTAINER
Charles L. Lutz, 8 N. Main St., Bel Air, Md. 21014
Filed Sept. 27, 1968, Ser. No. 763,086
Int. Cl. E01f *9/02;* **E04h** *13/00*
U.S. Cl. 52—103 **3 Claims**

A hollowed stake having a laterally deflectable anchor device at the lower end thereof encloses a document container. Sealing members are fastened to the upward end of the stake to prevent water leakage therein. A marker



rule attachment may be connected to the stake, the rule extends vertically upwardly to facilitate remote sightings.

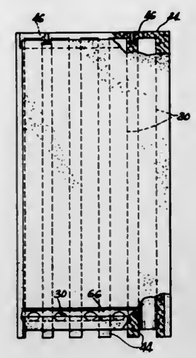
3,503,164
TUBULAR EXTENDABLE STRUCTURE
Thomas G. Berry, Silver Spring, Einar Medal, Rockville, and Donald Reichle, Kensington, Md., assignors to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland
Filed Jan. 3, 1968, Ser. No. 695,403
Int. Cl. E04h *12/18*
U.S. Cl. 52—108 **4 Claims**



A tubular extendable element formed by a pair of sheets of material which are interlocked by hinges and rolled up. When unwound, the sheets form a tubular structure which is self-supporting. The element may also use sheets formed with longitudinally extending ribs which increase the allowable bending and column loads of the element.

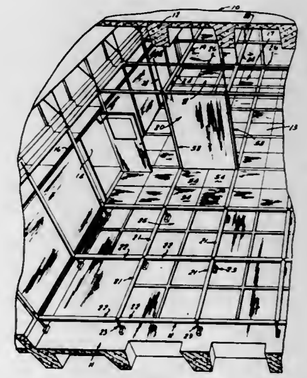
3,503,165
PREFABRICATED LIGHT WEIGHT PANELS OF CEMENTITIOUS MATERIAL
William G. Hardt, Lake Geneva, Wis., assignor to Arrowall Corporation, Dundee, Ill.
Filed June 12, 1967, Ser. No. 645,253
Int. Cl. E04c *2/52, 1/06, 2/04*
U.S. Cl. 52—125 **11 Claims**

Panels and wall structures formed thereof in which the panels are prefabricated of cementitious material with voids extending continuously through the interior thereof from the lower edge to a distance short of the top edge with the portions between the hollow sections extending downwardly as feet adapted to be received and supported within grooves provided in a footing and with recessed portions extending continuously crosswise through one wall of the panel and for a distance inwardly to intersect



the hollow sections for continuous circulation of air through the interior of the panel when in the assembled relationship and designs in the form of brickwork, stonework and the like impressed in one or both of the surfaces of the panel walls.

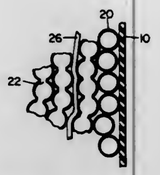
3,503,166
ARCHITECTURAL SYSTEM OF INTERIOR MODULAR CONSTRUCTION
Yoshio Nakazawa, Evanston, and Harold A. Lipper, Chicago, Ill., assignors to Yosh Nakazawa & Associates, Inc., Evanston, Ill., a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 715,281
Int. Cl. E04b *5/10, 5/43, 5/58*
U.S. Cl. 52—126 **4 Claims**



An architectural system of modular construction for building structures including floor and ceiling rails or stringers forming rectangular floor and ceiling sections in vertical alignment with one another, pedestals adapted to be supported on a structural concrete floor for supporting the floor rails, suspension rods adapted to be hung from a structural concrete ceiling for supporting the ceiling rails and vertical corner posts which may be erected at the corners of any of the vertically aligned floor and ceiling sections to extend between the floor and ceiling

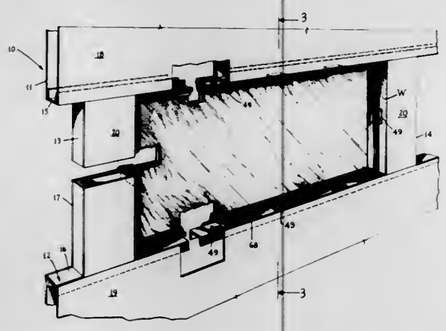
rails. Panels for the floor and ceiling are supported in the same plane as the floor and ceiling rails on horizontal flanges extending from the floor and ceiling rails. Thus the panels are disposed adjacent the rails, and do not overly the rails. Partition wall panels may be mounted between the erected corner posts in abutting relation with the floor and ceiling rails for selective partitioning of the floor and ceiling sections. The pedestals are adapted for vertical adjustment from above the floor line without removing the floor panels and the corner posts and partition wall panels can be erected and removed without interference with the floor and ceiling rails and panels to provide for a highly flexible and easily altered modular construction.

3,503,167
BUILDING STRUCTURE WITH DIFFERENT FOAM LAYERS
William L. Mackie, Ventura, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1968, Ser. No. 762,463
Int. Cl. E04c *2/10;* **E04g** *11/04;* **E04b** *1/04*
U.S. Cl. 52—173 **4 Claims**



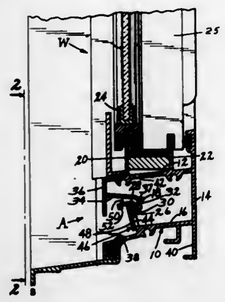
An expendable shelter for men or equipment and the method of forming the same comprising an inflated form secured to a base plate and a thick insulation foam plastic sprayed over the outside of the form and allowed to harden. Doors and windows may be cut out as required. To improve temperature control, the use of different types of foamed plastic in layers is envisioned.

3,503,168
WINDOW SASH CONSTRUCTION
Walter S. Eggert, Jr., Huntingdon Valley, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1967, Ser. No. 686,891
Int. Cl. E06b *1/60;* **B60j** *1/08;* **B61d** *25/00*
U.S. Cl. 52—208 **1 Claim**



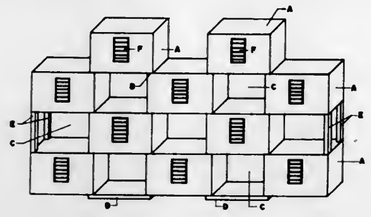
A window sash construction for a side frame wall unit of a railway vehicle. The side frame of the vehicle defines a window opening from which project a series of roll pins. A plurality of slotted clip members each include a flange which engages the sash unit. Stationary pins project from the frame through the slots in the clips. As the clips are driven relative to the stationary pins, the sash unit is correspondingly cammed into a final position. Additional pins or stops are provided to prevent reverse movement of the clip members.

3,503,169
SELF-DRAINING WINDOW SILL
Donald I. Johnson and Joseph E. Maki, Minneapolis, Minn., assignors to De Vac, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 5, 1968, Ser. No. 703,160
Int. Cl. E06b *7/14*
U.S. Cl. 52—209 **4 Claims**



The disclosure relates to a sill construction of a window frame having a sash or sashes contactable therewith and includes a tubular sill having a drain hole on the upper portion thereof and a weep hole on the outer angularly disposed wall portion thereof. A valve closure member having a top formation in the form of a hook which is pivotally mounted in an offset position on a flange on the outer wall of the sill with the hook formation in engagement with the flange and adapted to normally position against the weep hole and close off the same but which is opened by water pressure built up in the tubular sill whereby water drains from the sill through the weep hole. Wind pressure against the valve pivotally moves the same upon the weep hole to seal off the same.

3,503,170
MODULAR POST-TENSIONED OVERLAPPED STAGGERED BUILDING CONSTRUCTION
Shelley W. Shelley, 58 C St., Urb. Industrial Constitution, Puerto Nuevo, Isla Verde, Puerto Rico 00630
Filed Aug. 14, 1968, Ser. No. 762,668
Int. Cl. E04c *3/22, 5/08;* **E04b** *1/348*
U.S. Cl. 52—227 **6 Claims**



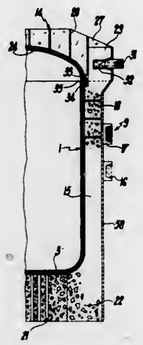
The present disclosure relates to a modular post-tensioned overlapped staggered building construction in which individual prefabricated three-dimensional boxlike units are first formed and then assembled at a distance between each other and overlapped and staggered in respect to each other so that between each four units additional living space is created, and shafts for reception

of utilities. Desirably, the overlapping portions of the wall are post-tensioned together to form a unitary building structure.

In forming the units, the walls and partitions are first pre-cast and then set in position for a secondary prefabrication procedure, according to which, after placing the walls in position, one floor slab is cast to form a monolithic structure with the walls and partitions. Then, either in position or after inversion, the floor slab is cast to form a monolithic box structure with the walls and partitions and the floor.

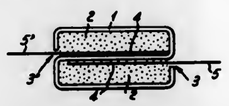
The complete unit, including partitions and slabs, will form a beam structure in one or two directions, which will reduce the span of the slab from the total size of the box to the total sizes of the individual rooms.

3,503,171
VESSEL PROVIDING RESISTANCE TO HIGH PRESSURES
Leon Frohly, Boulogne-Billancourt, Hauts-de-Seine, France, assignor to Commissariat a l'Energie Atomique and Compagnie Francaise d'Entreprises Metalliques
Filed Feb. 5, 1968, Ser. No. 703,087
Claims priority, application France, Feb. 10, 1967, 94,447
Int. Cl. E04c *2/34;* **E04g** *11/04*
U.S. Cl. 52—224 **15 Claims**



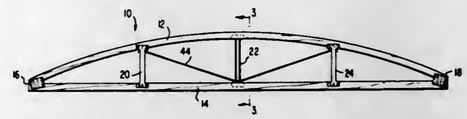
A vessel which is designed to withstand very high internal pressures and constituted by a cylinder in the form of a metallic structure which is prestressed transversely and longitudinally.

3,503,172
EDGE-JOINED SHEET MATERIAL
Gilbert H. Beguin, 32 Rue des Noirettes 1227 ACACIAS, Geneva, Switzerland
Filed Jan. 29, 1968, Ser. No. 704,981
Claims priority, application Switzerland, Feb. 8, 1967, 1,896/67
Int. Cl. E04b *2/10, 1/30, 7/14*
U.S. Cl. 52—434 **1 Claim**



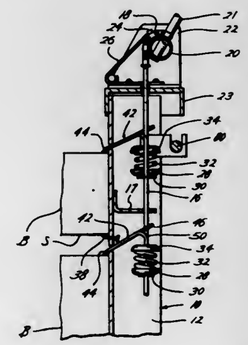
A connection for sheet material to a tubular member in which the edge of the sheet material is placed in the internal void of a hollow thin-walled member through a longitudinal passage of said member and in which this internal void is filled up with a binding mass. The invention is especially useful for constructing lightweight roofs.

3,503,173
TRUSS, TOOTH CONNECTOR AND METHOD OF ASSEMBLY
John C. Jureit, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Mar. 3, 1967, Ser. No. 620,495
The portion of the term of the patent subsequent to Jan. 17, 1984, has been disclaimed
Int. Cl. E04c *3/42, 3/18*
U.S. Cl. 52—644 **15 Claims**



Disclosed are novel bow string trusses particularly suited for use in mobile home constructions. They incorporate novel metal struts in the form of connector plates having integral teeth and integral truss spacers such as flanges or punched out tabs. The struts are provided with apertures adapted to receive diagonal tension members such as wires or the like which pass through the struts and are simply connected to them as by tieing, bending, etc. Also disclosed is a novel method of assembling trusses by driving all connector plates into one side of the truss.

3,503,174
MACHINE FOR CONSTRUCTING AND ERECTING BUILDING STRUCTURES FORMED OF BRICKS AND THE LIKE
Roy A. Nichols, 5119 Saxon Drive, Houston, Tex. 77018
Filed June 19, 1967, Ser. No. 646,831
Int. Cl. E04d *15/00;* **E04f** *21/18;* **E04g** *21/22*
U.S. Cl. 52—749 **2 Claims**

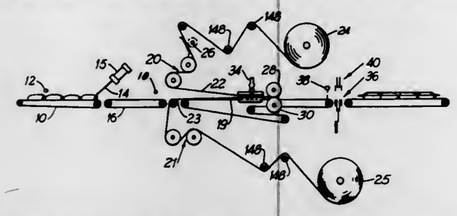


A device for holding bricks, or the like, in spaced apart assembled relation for the introduction of mortar therebetween to form a wall section, and by which a plurality of such sections may be erected to form a building structure.

3,503,175
BULK PACKER
Fred D. Marasso and Robert E. Rademacher, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 28, 1966, Ser. No. 597,316
Int. Cl. B65b *9/02, 57/12*
U.S. Cl. 53—28 **7 Claims**

A method of packaging articles, which comprises placing an article to be packaged between two continuous webs of material, sealing said webs of material to each

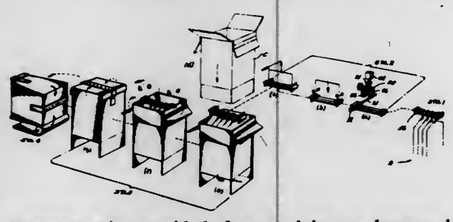
other opposite the front and sides of said article, perforating at least one of said webs of material in a predetermined pattern, and sealing and severing the webs of material opposite the rear of the article to form a package therearound.



3,503,176
GARMENT BOXING METHOD AND APPARATUS

Walton B. Crane, Sherman Oaks, Calif., assignor to Allied Plastic Company, Los Angeles, Calif., a corporation of California

Filed Dec. 21, 1967, Ser. No. 692,390
Int. Cl. B65b 5/06, 25/20, 35/10
U.S. Cl. 53—29 35 Claims

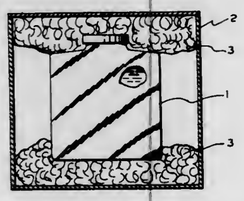


Apparatus is provided for receiving a hanger bar loaded with a plurality of garments suspended on hangers from the hanger bar, the hanger bar being automatically positioned at a predetermined location. A cardboard carton is opened into a tubular shape and placed on a frame above the loaded hanger bar and then moved into registration therewith so that the open-ended carton can be drawn downwardly over the hanger bar. The hanger bar is then released from its support so that it can be seated upon the sides of the carton. The ends of the carton are then closed, producing a container assembly with hanger-supported clothing inside the carton which serves as a shipping container. The apparatus provided reduces to a minimum manual operations involved in the loading of garments into the carton.

3,503,177
METHOD OF PACKAGING ARTICLES

Earle L. Kropscott, Gunnar R. Franson, and Robert G. Hanlon, Midland, and Dennis L. Krueger, Brighton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,675
Int. Cl. B65b 5/04, 21/00; B65d 81/14
U.S. Cl. 53—35 5 Claims

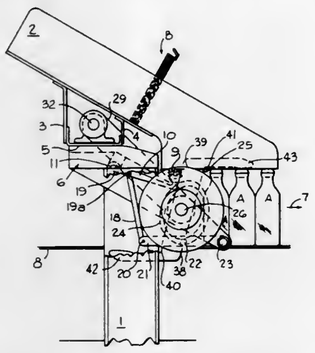


The controlled reexpansion of expandable, shrunken, preferably low density, polystyrene beads contained within air-permeable plastic bags is employed as a method for packaging delicate articles.

3,503,178
FEEDING AND FOLDING APPARATUS

Hermond G. Gentry, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio

Filed Sept. 14, 1967, Ser. No. 667,728
Int. Cl. B65b 21/00
U.S. Cl. 53—48 9 Claims

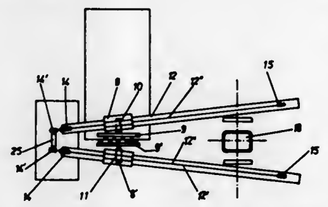


The mechanisms as disclosed herein are for the purpose of withdrawing a blank from a hopper and for partially folding the blank about one or more objects moving along a predetermined path. The apparatus comprises a reciprocable feeder means arranged to engage a blank disposed in a hopper and to withdraw the blank downwardly to a position above the path of movement of the objects to be packaged. Blank advancing means engages the blank and moves it in the direction of travel of the articles to be packaged and out of the path of movement of the reciprocable feeder so that the feeder is provided with clearance for its return travel whereby a subsequent blank is engaged and fed. Following advancement of the blank by the blank advancing means, blank folding means is operable to engage the blank and to fold it downwardly alongside one or more articles to be packaged, such downward folding being effective to establish an interrelationship between the blank and the article or articles whereby continued movement of the article or articles causes the blank to move therewith.

3,503,179
BAGGING APPARATUS

Jean-Louis Pierre, Grand-Couronne, France, assignor to Potasse & Engrais Chimiques, Paris, France

Filed Feb. 13, 1968, Ser. No. 705,193
Claims priority, application France, Feb. 15, 1967, 94,951
Int. Cl. B65b 43/30, 43/44
U.S. Cl. 53—188 10 Claims

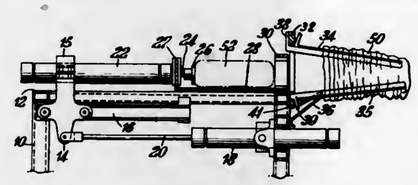


A bagging apparatus having a pair of bag gripping carriages movable on diverging rails. The rails terminate beneath a bag filling nozzle where additional grippers are provided to retain the opened bag at that point for filling. A transfer mechanism provides lifting of individual bags from a horizontal stack magazine to the gripping carriages and signal generating mechanisms are provided to sequentially actuate the components of the apparatus for automatic operation.

3,503,180
PACKAGING APPARATUS

Michael J. Myles, Downers Grove, and John P. Spellman, Oak Lawn, Ill., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,582
Int. Cl. B65b 5/00, 39/00
U.S. Cl. 53—258 11 Claims

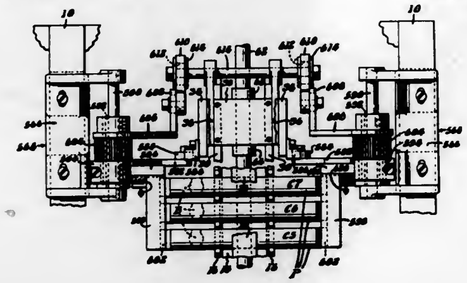


Means are provided for opening elastic, plastic bags uniformly about their defined perimeters and along their lengths to facilitate the packaging therein of food items having varying sizes and shapes.

3,503,181
DEVICE FOR HEAT SEALING WRAPPERS IN A CIGAR OVERWRAPPING AND BANDING MACHINE

Dale R. Smith, York, Pa., assignor to York Production Engineering Co., Inc., Windsor, Pa., a corporation of Pennsylvania

Original application July 26, 1965, Ser. No. 474,754, now Patent No. 3,441,616, dated Nov. 19, 1968. Divided and this application Oct. 4, 1967, Ser. No. 706,729
Int. Cl. B65b 7/18, 51/32
U.S. Cl. 53—379 4 Claims

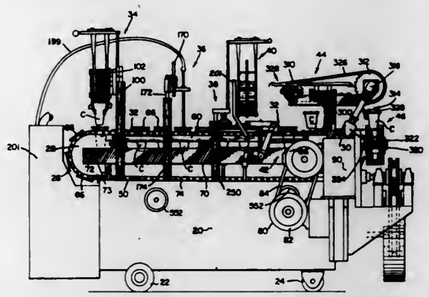


In a cigar overwrapping and banding machine, automatic means are provided for heat sealing the folded ends of the wrapper which extend beyond the two ends of the cigar. The jaws of the heat sealing mechanism have an upstream section and a downstream section. The jaws of the upstream section close upon each other to form a horizontal heat seal. The jaws of the downstream section close upon each other to change the horizontal seal to a vertical seal and to further heat seal the vertical seal. Both sections of the jaws are advanced downstream at the same speed as the cigars are advancing. The jaws then open and return upstream. The jaws then close. The jaws of the upstream section close on a new cigar wrapper end fold. The downstream section jaws close on a wrapper end which has been previously heat sealed by the upstream jaws.

3,503,182
LIQUID FILLING MACHINE

Robert E. Phipps, Greenville, N.H., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Massachusetts

Filed Jan. 4, 1967, Ser. No. 607,251
Int. Cl. B65b 3/00, 7/28
U.S. Cl. 53—282 10 Claims

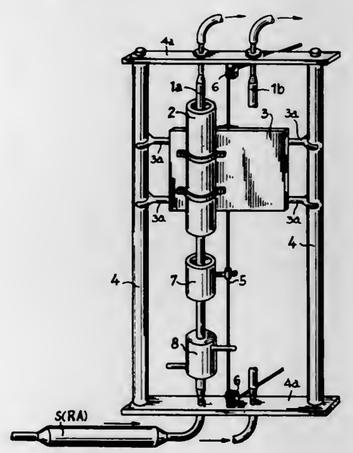


A liquid filling machine having a plurality of parallel lines defined by a flight conveyor 26 that moves step by step through a number of stations that contain container dispensers 34, liquid feeding subassemblies 36, lid dispensers and transfer mechanisms 40, lid capping mechanisms 38, cup elevator assemblies 42, a transfer conveyor 44, and means for timing the operation of the mechanisms in each station with the step movement of the flight conveyor.

3,503,183
METHOD OF AND APPARATUS FOR THE SEPARATION AND DETERMINATION OF GAS AND VAPOR COMPONENTS

Rudolf Kaiser, Bad Durkheim, Germany, assignor to Siemens Aktiengesellschaft, a company of Germany

Filed June 6, 1967, Ser. No. 643,943
Claims priority, application Germany, June 10, 1966, B 87,482
Int. Cl. B01d 15/08
U.S. Cl. 55—67 5 Claims

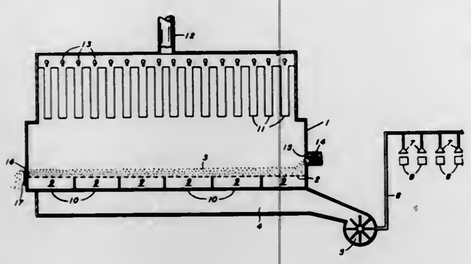


In gas chromatographic apparatus the separation column is surrounded by a plurality of longitudinally spaced movable members generating a plurality of reciprocatingly traveling heating or cooling temperature fields extending transversally across the separation column.

3,503,184
TREATMENT OF GASES EVOLVED IN THE PRODUCTION OF ALUMINUM

Lester L. Knapp and Clayton C. Cook, Maryville, Tenn., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 7, 1968, Ser. No. 711,279
Int. Cl. B01d *19/00*; C01b *9/08*
U.S. Cl. 55—71 5 Claims

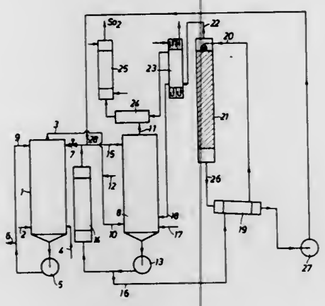


Hydrogen fluoride and finely divided solids are removed from gases evolved in the electrolytic production of aluminum, by means of a bed of alumina particles fluidized by a stream of such gases. Alumina particles combined with the hydrogen fluoride, and finely divided solids entrapped in the bed, discharge from the bed.

3,503,185
PROCESS FOR THE RECOVERY OF SULFUR DIOXIDE IN RESIDUAL GASES

Amand Delzenne, Marquette, Raymond Armand Hamelin, Neuilly, and Michel Marie Jacques Outin and Claude Paul René Pelecier, Paris, France, assignors to Societe Anonyme: Ugine Kuhlmann, Paris, and Societe Anonyme, Weiritam, France, both corporations of France

Filed Dec. 27, 1968, Ser. No. 787,518
Claims priority, application France, Dec. 28, 1967, 134,054; July 4, 1968, 157,959
Int. Cl. B01d *53/14*
U.S. Cl. 55—73 10 Claims



Gases to be scrubbed, for example, boiler or thermal plant smokes, particularly for the purpose of preventing atmospheric pollution, are subjected to a pre-washing treatment by means of an aqueous sulfite lye before introducing the washed gases into a unit for absorbing SO_2 with ammonium sulfite and/or bisulfite solutions followed by a unit for the desorption of SO_2 which is recovered, the overall SO_2 absorption-desorption cycle being run under special conditions, taking into account the low SO_2 content (1000 to 5000 p.p.m.) in the gases to be treated.

3,503,186
LIQUID MEMBRANE FOR SULPHUR DIOXIDE EXTRACTION

William J. Ward III, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

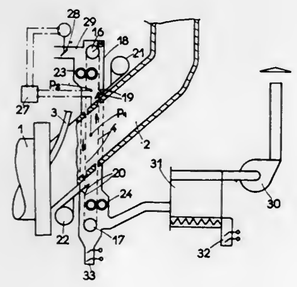
No Drawing. Filed Aug. 15, 1968, Ser. No. 752,803
Int. Cl. B01d *59/10*
U.S. Cl. 55—16 4 Claims

A porous cellulose film about 1–3 mils thick impregnated with polyethylene glycol liquid is employed for the separation of sulphur dioxide from gas mixtures. A method for the preparation of such liquid films using tetraethylene glycol dimethyl ether (TEG-DME), is described.

3,503,187
DEVICE FOR CONTINUOUS EXTRACTION OF ALKALIS FROM THE ESCAPE GASES OF A CEMENT KILN

Gérard Deynat, Chalon-sur-Saone, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France

Filed Aug. 2, 1968, Ser. No. 749,692
Claims priority, application France, Dec. 15, 1967, 132,571
Int. Cl. B01d *41/00*
U.S. Cl. 55—290 1 Claim

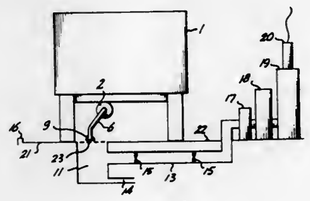


This device extracts alkali from exhaust gases of a cement kiln, includes a duct including a curtain of endless chain elements with chain cleaning arrangements for the chains.

3,503,188
AIR POLLUTION PREVENTION SYSTEM AND APPARATUS

Conrad O. Gardner, Hopewell, N.J.
(1329 NW. 20th St., Seattle, Wash. 98177)

Filed Apr. 25, 1966, Ser. No. 545,117
Int. Cl. B01d *53/34*; A62b *15/00*; B60r *27/00*
U.S. Cl. 55—385 3 Claims

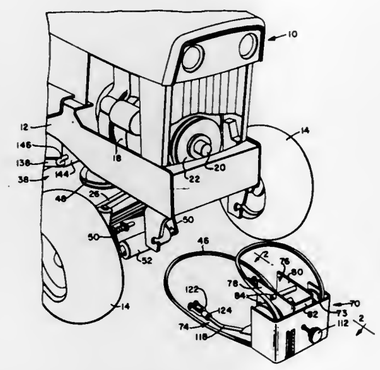


A system for collecting and processing exhaust emissions from motor vehicles travelling on a highway is provided. Exhaust emissions from individual motor vehicles are directed by means on the motor vehicle into receiving means distributed along the highway surface. The received exhaust emissions are passed to a centralized processing means which removes a pollutant thereby preventing air pollution.

3,503,189
TRACTOR-MOUNTED MOWERS

Leon Paul Erdman, Beaver Dam, Wis., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Nov. 7, 1967, Ser. No. 681,208
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 10 Claims



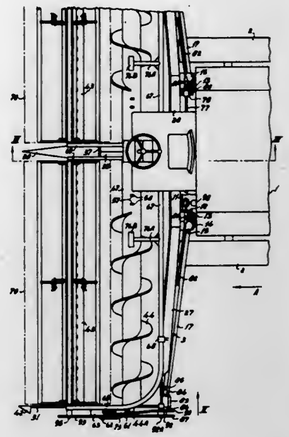
A belt driven rotary mower is suspended beneath a tractor by front and rear pairs of forwardly extending parallel draft links. The rear draft links are secured to the chassis of the tractor by quick connect and disconnect fastener means and the front draft links are secured to the mower by quick connect and disconnect fastener means. The forward end of the tractor has a pair of depending brackets provided with forwardly open slots and a mounting structure is supported from the brackets by transversely extending studs on the mounting structure disposed within the slots. The front draft links are pivotally connected to the mounting structure. The mounting structure also carries a pair of sheaves and the studs are retained within the slots by an endless flexible belt tensioned over the sheaves on the mounting structure, a forward drive sheave on the tractor and a driven sheave on the mower.

3,503,190
HARVESTING MACHINES

Cornelis van der Lely, 7 Bruschenrain, Zug, Switzerland

Filed Nov. 17, 1965, Ser. No. 517,199
Claims priority, application Netherlands, Nov. 27, 1964, 6413779; Oct. 27, 1965, 6513871
Int. Cl. A01d *43/00, 47/00*
U.S. Cl. 56—23 14 Claims

A harvesting machine having two adjacent crop receiving portions disposed side by side and adapted to fold together about spaced apart axes which are directed substantially in the direction of travel of the implement, an elongated element mounted on the frame of the machine located between the crop receiving portions so that they bear against it when in position to receive crop, the crop receiving portions thus presenting an uninterrupted passage for receipt of crop therein; the crop receiving portions each including a mower, a reel and an auger for moving the cut crop, tines being mounted eccentrically in portions of the augers located centrally relative to the machine. Optionally, the elongated element may be provided with a forwardly extending crop divider or rotary mower.



3,503,191
COTTON PICKING SPINDLE

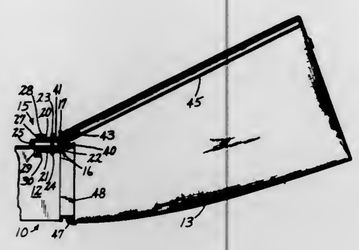
Norman G. Hayward, Rte. 2, Box 119–G, Manassas, Va. 22110

Filed Sept. 29, 1967, Ser. No. 671,781
Int. Cl. A01d *45/20*
U.S. Cl. 56—50 6 Claims



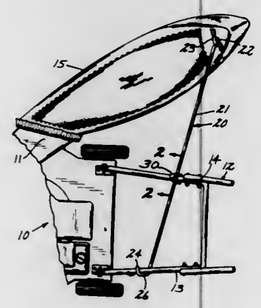
A spindle for cotton picking machinery, the spindle comprising a metallic base with an outward portion, and a plastic sleeve for said outward portion, the sleeve having means for releasable engagement with the portion and having teeth therein.

3,503,192
ATTACHMENT APPARATUS
Harold B. Berg, 1110 Welcome Circle, Golden Valley, Minneapolis, Minn. 55422, and Edward R. Reynolds, St. Paul, Minn.; said Reynolds assignor to said Berg
Filed Oct. 11, 1967, Ser. No. 674,429
Int. Cl. A01d 35/22
U.S. Cl. 56—202 8 Claims



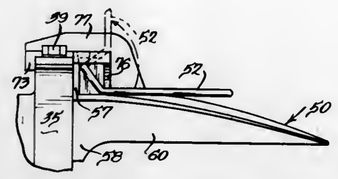
A first member having a generally U-shaped cross section reversibly mounted on the upper wall of the discharge outlet of a mower by means of upper and lower centrally located set screws. Upper and lower lip-like stops cooperating with the set screws to removably receive a second member in overlying relationship on the first member, in either position, and maintain the second member rigidily in position relative to the outlet. A grass bag attaching frame affixed to the second member to position the opening of a grass bag over the outlet.

3,503,193
BAG SUPPORTING ATTACHMENT FOR ROTARY MOWERS
Harold B. Berg, 1110 Welcome Circle, Golden Valley, Minneapolis, Minn. 55422, and Edward R. Reynolds, St. Paul, Minn.; said Reynolds assignor to said Berg
Filed Oct. 11, 1967, Ser. No. 674,430
Int. Cl. A01d 35/22
U.S. Cl. 56—202 7 Claims



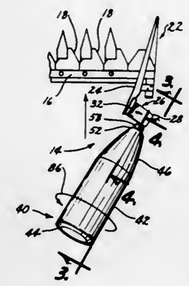
An elongated rod having a generally helical bend at one end thereof with the axis positioned at angle to the longitudinal axis of the main body of the rod such that the rod extends transversely outwardly from the handle of a mower when the helical bend is positioned in encircling engagement with a longitudinally extending portion of the handle. The elongated rod is formed so that it can be attached to substantially any mower handle to support a grass retaining bag therefrom.

3,503,194
GRASS DEFLECTOR ATTACHMENT
Mikelis Ritums, Oak Lawn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1968, Ser. No. 716,781
Int. Cl. A01d 55/18
U.S. Cl. 56—255 12 Claims



A detachable grass deflector attachment which is readily securable to a rotary lawn mower above the grass discharge opening for deflecting downwardly the grass clippings and the like propelled through the discharge opening.

3,503,195
MOWING MACHINE
Walter F. Barnes, R.R. 2, Bedford, Iowa 50833
Filed Mar. 2, 1967, Ser. No. 620,159
Int. Cl. A01d 63/02
U.S. Cl. 56—314 7 Claims

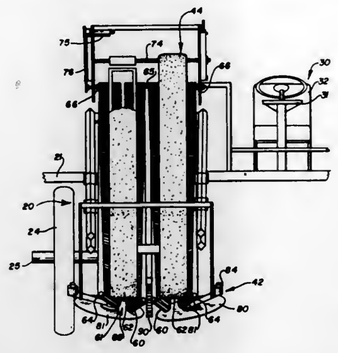


A turning device for one end of a cutter bar to provide a path cleared of cut material. The turning device or roto divider includes a rotatable roller mounted rearwardly of the outer end of the cutter bar and extending rearwardly and transversely thereof such that the roller rotates forwardly as the cutter bar advances. The roller has a nose shaped forward end to minimize collecting cut material and also minimize frictional drag on the ground. The roller is also mounted on the outer side of an outer shoe secured to the outer end of the cutter bar. An alternate embodiment of the roller involves a cylindrical member telescopingly received in a nose portion secured to the outer shoe. The roller is free to pivot upwardly to ride over obstructions on the ground and is limited against downward pivotal movement when the cutter bar is raised to a vertical position.

3,503,196
VEGETABLE CROP HARVESTER
Tracy C. Jarrett, Denver, Colo., assignor to Jarrett Industries, Inc., Denver, Colo.
Filed Nov. 21, 1967, Ser. No. 684,682
Int. Cl. A01d 45/26
U.S. Cl. 56—327 13 Claims

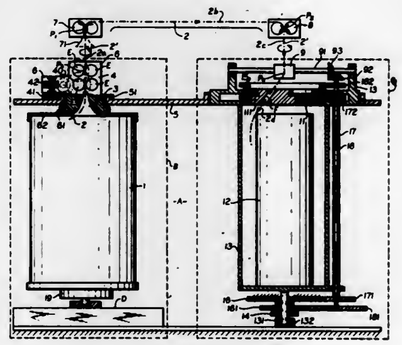
A vegetable crop harvester comprises a wheeled dirigible automotive vehicle having a platform thereon and crop cutting and lifting means secured to said platform in

forwardly and downwardly extending relation thereto. A ground level sensing device positions the crop cutting and lifting means relative to the ground, and power means are provided for driving said crop cutting and lifting



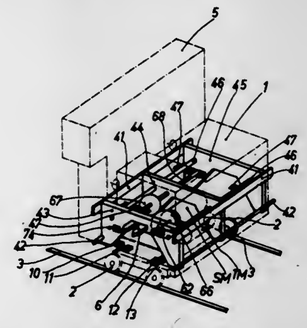
means to cut the crops at or near ground level, pick up said crops and lift the same to the platform. Various crop trimming, inspecting, sorting and packaging stations are located on the platform for handling the cut crops.

3,503,197
PROCESS AND APPARATUS FOR DRAWING AND TWISTING FIBROUS SLIVERS
Emil Fess and Fritz Schumann, Ingolstadt, Germany, assignors to Deutscher Spinnereimaschinenbau Ingolstadt, Ingolstadt (Danube), Germany, a corporation of Germany
Filed Apr. 14, 1965, Ser. No. 448,157
Claims priority, application Germany, Apr. 15, 1964, D 44,154
Int. Cl. D01h 5/00, 5/28, 7/00
U.S. Cl. 57—36 12 Claims



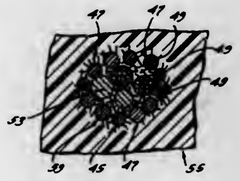
A process and apparatus are disclosed wherein the twisting of a fibre sliver is continuously carried out in two stages. An initial twist is imparted along a length of the sliver which runs between a drawing mechanism and a first pinch point contact device i.e., holding point device, and a final twist is imparted along a length of the sliver running between a second pinch point contact device and the roving can filling mechanism. Both the initial and final twists are of identical sense so that there is produced a resultant twist which is the sum of the first and second twists. The twisting imparts to the sliver the cohesive and strength properties which are necessary and desirable for further processing operations. The apparatus comprises a sliver infeed system having a conventional drawing device which is rotated about the drawn sliver transport axis that inherently passes through the pinch point of a following first pair of stationary pinch or calender rolls whereby a twist is imparted over the moving sliver portion between the pinch point and the rotating drawing device. A second pair of pinch rolls is provided, the sliver being passed from said first rolls to said second rolls, the latter rotating relative to the first rolls so as to impart to the sliver an augmented final twist.

3,503,198
CENTERING APPARATUS FOR TRANSPORT SYSTEM FOR MOVING COP CHANGING APPARATUS
Georg Goldammer and Gottfried Schneider, Ingolstadt, Germany, assignors to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Germany, a corporation of Germany
Filed June 24, 1968, Ser. No. 741,156
Claims priority, application Germany, June 24, 1967, Sch 40,931
Int. Cl. D01h 9/00, 9/10
U.S. Cl. 57—53 8 Claims



Apparatus that defines the precise position for aligning rails of a ring spinning machine and a transport system used for moving cop changing apparatus from one ring spinning machine to another.

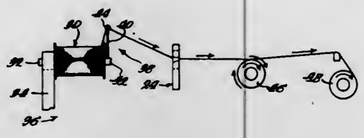
3,503,199
PLASTIC STRUCTURE REINFORCED WITH BRANCHED FILAMENTS
Timothy Nesbitt-Dufort, Langley, near Macclesfield, England, assignor to Ernest Scragg and Sons Limited, Macclesfield, England
Continuation-in-part of application Ser. No. 323,505, Nov. 13, 1963. This application Nov. 29, 1965, Ser. No. 510,190
Claims priority, application Great Britain, Nov. 13, 1962, 42,796/62
Int. Cl. D02g 3/36; B29h 17/28
U.S. Cl. 57—149 13 Claims



A reinforced plastic structure in which elongated reinforcing means including filament means having a plurality of integral branch means projecting therefrom are embedded permanently in a body of plastic material which

permanently surrounds such filaments means and branch means, whereby the reinforcing means is permanently anchored in the plastic material.

3,503,200
METHODS OF FORMING TWISTED STRUCTURES
John A. Roberts, North Chelmsford, and Joseph R. Quirk, Woburn, Mass., assignors to Brunswick Corporation, a corporation of Delaware
Original application June 17, 1965, Ser. No. 464,721, now Patent No. 3,378,999, dated Apr. 23, 1968. Divided and this application Feb. 21, 1968, Ser. No. 707,162
Int. Cl. D02g *3/00*
U.S. Cl. 57—156 **24 Claims**



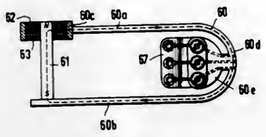
A metal yarn structure wherein the filaments are set under pressure while in a substantially nonelastic state to be free of residual torsion while having a preselected helical twist. The setting of the filaments in the helical configuration is effected by twisting the filaments in a matrix while concurrently effecting constriction thereof to fluidize the filaments and permit the setting thereof upon release of the constriction forces in the torsion-free helical configuration.

3,503,201
PROCESS FOR THE PRODUCTION OF ELASTIC CRIMPED FILAMENTS
Herbert Scherzberg and Robert Schnegg, Dormagen, and Walter Kleinhammes, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 4, 1968, Ser. No. 734,230
Claims priority, application Germany, June 6, 1967, F 52,610
Int. Cl. D02g *1/02*
U.S. Cl. 57—157 **3 Claims**

This invention relates to a process for the production of elastic voluminous crimped filaments from synthetic polymers especially from synthetic linear high molecular weight polyamides which comprises a two-step treatment of the filaments. In the first step the unstretched filaments were subjected to a false-twist crimping and stretching under heating and subsequently cooling the filaments. The stretching being effected without the aid of a stretching pin. In the second step the filaments being subjected to a further false-twist crimping in the opposite direction, and a further stretching and cooling operation. The filaments being relieved of tension or subjected to a shrinking procedure.

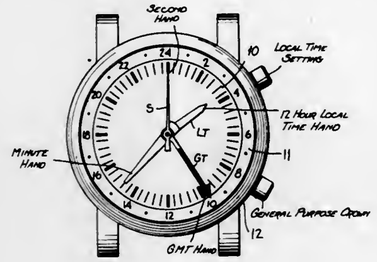
3,503,202
TUNING FORK DEVICES
Wolfgang Ganter, Schramberg-Sulgen, and Friedrich Assmus, Schramberg-Wurttemberg, Germany, assignors to Messrs. Gebruder Jughans Gesellschaft mit beschrankter Haftung, Schramberg-Wurttemberg, Germany, a corporation of Germany
Original application June 7, 1966, Ser. No. 555,766. Divided and this application Apr. 15, 1969, Ser. No. 816,267
Claims priority, application Germany, June 8, 1965, J 28,304
Int. Cl. G04c *3/02*
U.S. Cl. 58—23 **4 Claims**

A tuning fork maintained in vibration by electromagnetic means and particularly adapted for timekeeping devices having a permanent magnet as a part of a closed magnetic path and arranged on one prong of the tuning fork with a coil on the other prong and with



the coil consisting of a control coil and a driving coil coaxially arranged and acted upon directly by the permanent magnet arrangement.

3,503,203
TWO-ZONE TIMEPIECE
William W. Mutter, Paramus, and George P. Gruner, Ridgewood, N.J., assignors to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 15, 1967, Ser. No. 683,393
Int. Cl. G04b *19/22*
U.S. Cl. 58—42.5 **12 Claims**

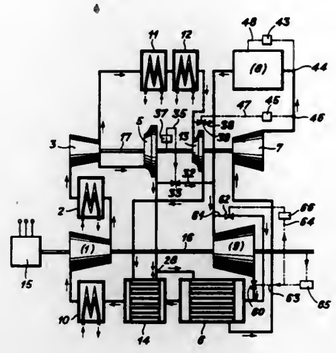


A timepiece capable of displaying time in two zones and having two hour hands, one serving to indicate Greenwich mean time or time at a home base, the other to indicate time in a local zone, the local-time hand being adjustable in 30° increments in either direction independently of the first hour hand so that it may be shifted when entering a new time zone without affecting the GMT or home-base time reading, incremental adjustment being effected by a planetary gear system whose sun gear is driven by the watch motor and whose planet carrier is linked to the local-time hand, the ring gear of this system being shiftable abruptly in either direction to effect a discrete one-hour change in the position of the local-time hand.

3,503,204
GAS TURBINE POWER PLANT PROTECTIVE CIRCUIT
Peter Suter, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed July 29, 1968, Ser. No. 748,251
Claims priority, application Switzerland, July 27, 1967, 10,677/67
U.S. Cl. 60—36 **3 Claims**

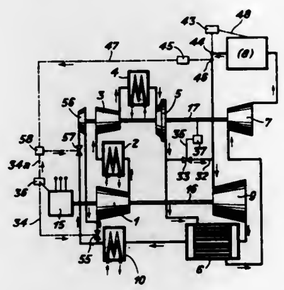
There is disclosed a closed cycle CO_2 gas turbine power plant employing a nuclear reactor as a heat source, with high and low pressure turbines on separate shafts and with a bypass around the low pressure turbine and around

a valve in series therewith, this valve being adjusted in accordance with low pressure shaft speed while a valve



in the bypass is adjusted in accordance with low pressure shaft speed, but through a variable delay element.

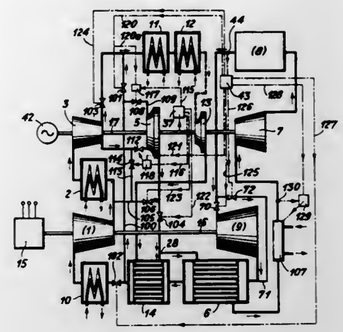
3,503,205
GAS TURBINE POWER PLANT
Peter Suter, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed July 29, 1968, Ser. No. 748,364
Claims priority, application Switzerland, July 27, 1967, 10,682/67
Int. Cl. F01k *25/00, 3/18*
U.S. Cl. 60—36 **3 Claims**



There is disclosed a CO_2 gas turbine power plant including high and low pressure turbines and high and low pressure compressors on separate shafts, with an adjustable valve in the CO_2 flow path upstream of the low pressure compressor and a regenerative turbine coupled to the high pressure shaft and connected in parallel with the valve.

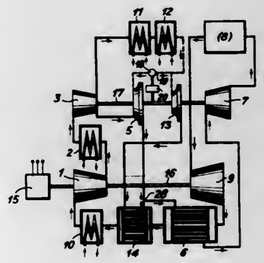
3,503,206
CLOSED CYCLE GAS TURBINE POWER PLANT AND METHOD OF STARTING THE SAME
René Strub, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed July 29, 1968, Ser. No. 748,365
Claims priority, application Switzerland, July 27, 1967, 10,675/67
Int. Cl. F01k *25/00, 3/18*
U.S. Cl. 60—36 **7 Claims**

There is disclosed a method of starting up a closed cycle CO_2 gas turbine power plant including high and low pressure expansion and compression stages on separate shafts. According to the method of the invention the high pressure shaft is set into rotation by an auxiliary motor while the low pressure turbine and at least one



stage of compression lower than the highest are bypassed until the temperature of the working substance at the inlet to the low pressure turbine rises to a suitable level. Apparatus for practice of the method is also disclosed.

3,503,207
CLOSED CYCLE CO_2 GAS TURBINE POWER PLANT WITH PARTIAL CONDENSATION OF THE WORKING SUBSTANCE PRIOR TO EXPANSION THEREOF
René Strub, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed July 29, 1968, Ser. No. 748,553
Claims priority, application Switzerland, July 27, 1967, 10,680/67
Int. Cl. F01k *25/10, 19/00*; F01n *3/04*
U.S. Cl. 60—36 **7 Claims**



There is disclosed a closed cycle CO_2 gas turbine power plant in which the CO_2 is compressed in plural stages and then expanded in plural stages with heat being supplied thereto between two expansion stages, and in which moreover at an intermediate stage of compression the flow of working substance is divided into two streams. One stream undergoes further compression while the other undergoes partial condensation and pumping to higher pressure before being reunited with the first stream, as further compressed, prior to passage through the high pressure expansion stage. A part of the stream so condensed is

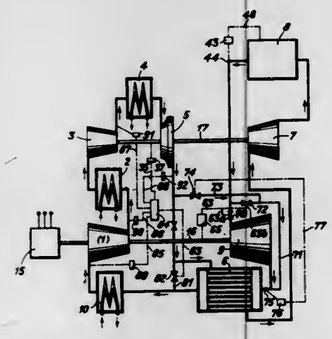
recombined, prior to pumping to higher pressure, with the first stream at an appropriate pressure level therein, with a resultant saving in compressor power requirements.

3,503,208

CO_2 GAS TURBINE POWER PLANT

David Schmidt, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed July 29, 1968, Ser. No. 748,564
Claims priority, application Switzerland, July 27, 1967, 10,678/67
Int. Cl. F01k *7/20, 9/00, 25/00*
U.S. Cl. 60—36 **6 Claims**



There is disclosed a closed cycle gas turbine power plant in which CO_2 flows as the working substance through a high pressure turbine, a heat source, a low pressure turbine, a low pressure compressor coupled to the low pressure turbine, an intermediate pressure compressor and (at least in part) a high pressure compressor both coupled to the high pressure turbine. A line is provided connecting the output of the high pressure compressor with a point of low pressure in the cycle, and means responsive to the pressure ratios of the separate compressors are provided to control flow of CO_2 through this line. A valve is provided at the inlet to the low pressure turbine, and a bypass having a valve therein is provided around the low pressure turbine. These valves are coupled for adjustment in opposite senses in response to speed or acceleration values of the low pressure turbine. Provision is also made to inject cooled, compressed or condensed CO_2 into the bypass in an amount varying directly with the temperature at the downstream end of the bypass. A relay is also provided to open the bypass in the event of loss of the load, which is coupled to the low pressure turbine.

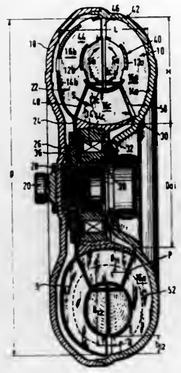
3,503,209

HYDRAULIC TORQUE CONVERTER

Herbert Loffelholz, Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany

Filed Aug. 27, 1968, Ser. No. 755,541
Claims priority, application Germany, Sept. 2, 1967, 1,650,696
Int. Cl. F16d *33/00;* **F04d** *29/18*
U.S. Cl. 60—54 **5 Claims**

The coupling characteristics of an otherwise conventional torque converter are improved when the operating elements of the same satisfy dimensional requirements more fully described in the specification. The torque converter has a relatively small impeller input torque beneficial in automatic transmissions connected to automobile



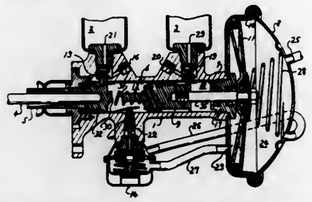
engines of relatively small displacement, and very little slip under normal operating conditions.

3,503,210

HYDRAULIC CYLINDER ASSEMBLY

Toyoju Mochizuki, 5–10 7-chome Roppongi, and Mamoru Watanabe, 16 6-chome Takenogowa, Kitaku, both of Tokyo, Japan

Filed Jan. 13, 1969, Ser. No. 790,677
Claims priority, application Japan, Jan. 11, 1968, 43/1,198
Int. Cl. F15b *7/08, 9/00*
U.S. Cl. 60—54.6 **5 Claims**



A hydraulic cylinder assembly of tandem type has a cylinder body with a closed end accommodating a main piston and a secondary piston, there being a primary hydraulic chamber formed in front of the main piston and in communication with the rear wheel brakes, and a secondary hydraulic chamber formed in front of the secondary piston and in communication with the front wheel brakes. A servo-motor is mounted on the rear end of the cylinder body and is coupled to the secondary piston to displace the same, and a relay piston is adapted to be normally driven by the hydraulic pressure in the primary hydraulic chamber to actuate an air pressure controller for the servo-motor, whereas in the event of any leakage of hydraulic pressure from the system of the primary hydraulic chamber the primary piston will displace freely and mechanically act on the relay piston to drive the same.

3,503,211

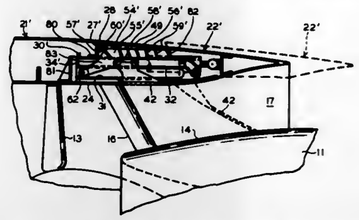
THRUST REVERSER

George E. Medawar, San Diego, and Leonard Holman, Imperial Beach, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Apr. 10, 1968, Ser. No. 720,036
Int. Cl. F02k *1/00, 3/02;* **B64c** *15/04*
U.S. Cl. 60—229 **6 Claims**

A thrust reverser arrangement for a fan type jet propulsion engine includes a ring of flow reversing cascades

which are uncovered when the aft portion of a split cowl for the engine fan is translated rearwardly on a roller and track support to an extended position. During the terminal translational movement of the aft portion, peripherally disposed blocker doors which are pivotally secured to the aft portion are rotated into position to block the fan air and force the same through the cascades. The



ring of cascades may be secured to the aft portion for translational movement therewith or, alternatively, may be secured to the forward cowl portion. Track members carried by the forward portion are engaged by rollers carried by the translationally moved members and certain of the rollers carried only by the blockers doors move in a curved portion of the track members to produce the rotational movement of the doors.

3,503,212

CATALYTIC HYDRAZINE DECOMPOSITION PROCESS USING CHROMIUM CONTAINING CATALYST

Thomas J. Jennings, Lafayette, and Hervey H. Voge, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1968, Ser. No. 719,856
Int. Cl. C06d *5/04;* **C06c** *1/02;* **F23r** *1/14*
U.S. Cl. 60—219 **6 Claims**

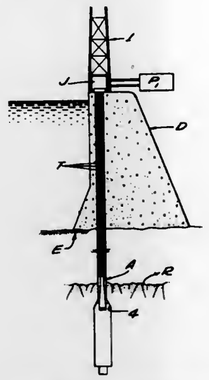
An improved hydrazine decomposition process employs, as catalyst, mixed oxides of copper and chromium and optionally additionally nickel on an inert, porous support.

3,503,213

METHOD OF AND APPARATUS FOR INSTALLING REINFORCING MEMBERS IN BOREHOLES

Archer W. Kammerer, Jr., Fullerton, Calif., assignor, by direct and mesne assignments, to Rotary Oil Tool Company, Buena Park, Calif., a corporation of California

Filed Aug. 14, 1967, Ser. No. 660,297
Int. Cl. E02d *27/40, 27/48*
U.S. Cl. 61—33 **18 Claims**



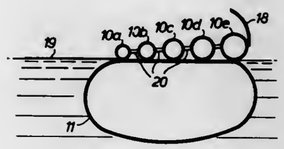
A method of and apparatus for anchoring and tensioning reinforcing steel tendons in boreholes traversing dam structures and the subsurface earth formation, and filling the holes with cement aggregate while the tendons are under tension.

3,503,214

BARRIER FOR OIL SPILT ON WATER

Denis Henry Desty, Walton-on-Thames, Surrey, Leslie Bretherick, Windsor, and Michael Guthrie Webb, Wootton Bridge, Isle of Wight, England, assignors to The British Petroleum Company Limited & Gordon Low (Plastics) Ltd., London, England

Filed June 20, 1968, Ser. No. 738,560
Int. Cl. E02b *15/04*
U.S. Cl. 61—1 **7 Claims**



An inflatable barrier which comprises a plurality of air hoses positioned side by side to form, when inflated, a raft which has one or more water ballast chambers attached below. The barrier floats with part below and part above the water surface to impede the passage of floating oil.

Preferably the air hoses are graded to give a wedge-shaped raft.

3,503,215

ABATEMENT OF ACTIVE SOIL SLIDES

Edward D. Graf, 1680 Bryant St., Daly City, Calif. 92615, and Jason G. Kuhn, Pacifica, Calif.; said Kuhn assignor to said Graf

No Drawing. Filed May 15, 1968, Ser. No. 729,387
Int. Cl. E02d *3/12, 3/14*
U.S. Cl. 61—35 **6 Claims**

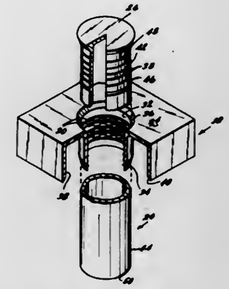
Treatment of an active soil slide by directly contacting at least a portion of the slip surface with an aqueous solution of a soil stabilizing agent selected from lime, trivalent metal cations, a lower molecular weight amine having up to about 8 carbon atoms, calcium orthophosphate, ammonium phosphate, and calcium chloride.

3,503,216

UNDERWATER PAVING ELEMENT

Ramiro M. Oquita, 547 Greenbank, Duarte, Calif. 91010

Filed Jan. 29, 1968, Ser. No. 701,236
Int. Cl. E02b *3/14;* **E01e** *5/00*
U.S. Cl. 61—37 **3 Claims**



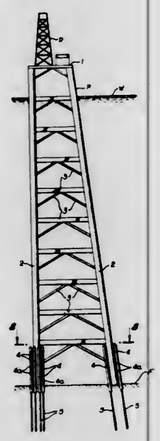
A system is disclosed for paving the surface of a stratus, comprising for example a super-saturated, or semi-liquid earth, sediment or sludge, which may be covered

with water. The system incorporates a plurality of individual elements each of which comprises a paving cap or surface element that is affixed to a hollow shaft to be vacuum-locked into the receiving stratum. A seal is provided to close the exterior end of the shaft (carrying the paving element) after the shaft is substantially filled with the sludge of the stratus. As a result, the element is locked in place by the sludge contained within the shaft and by the abutment of the paving cap against the surface of the stratum.

3,503,217
METHOD OF AND APPARATUS FOR ANCHORING WELL-DRILLING PLATFORMS TO THE OCEAN FLOOR

Max E. Kliewer, Whittier, Calif., assignor to Baker Oil Tools, Inc., Commerce, Calif., a corporation of California

Filed Mar. 7, 1968, Ser. No. 711,249
Int. Cl. E21b *40/00, 23/00*; E02b *17/00*
U.S. Cl. 61—46.5 **17 Claims**



A method of anchoring a well-drilling platform to the ocean floor by running lengths of pipe or piles through outer pipes attached to platform legs and into holes formed in the ocean floor. The lengths of pipe or piles are cemented in the holes, and are also connected to the outer pipes by cementing the annuli between the outer pipes and such piles. Apparatus is provided for supporting or anchoring the piles in the outer pipes, for enabling the cementing of the piles in the holes, and for cementing the annuli between the outer pipes and the piles.

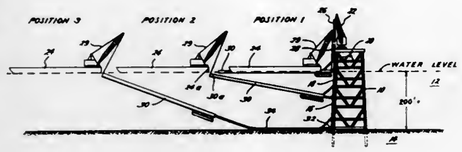
3,503,218
RISER INSTALLATION METHOD

Edgar R. Broadway, Gretna, and Robert B. McLeod, Belle Chasse, La., assignors to Brown & Root, Inc., Houston, Tex., a corporation of Texas

Original application Feb. 11, 1963, Ser. No. 257,706, now Patent No. 3,258,928, dated July 5, 1966. Divided and this application Feb. 17, 1966, Ser. No. 538,882
Int. Cl. E21b *15/02*; F16b *1/00*
U.S. Cl. 61—72.3 **17 Claims**

17. A method of placing a tubular structure on an offshore structure in a body of water comprising:

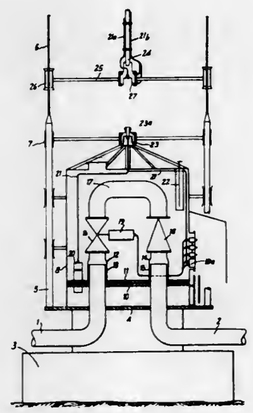
supporting a substantially horizontal section of the tubular structure in said body of water as a substantially vertical section coupled to said horizontal section is disposed on said offshore structure; and adding lengths of tubular structure to said vertical section as said vertical section is lowered on said offshore structure until said horizontal section rests on the bottom of the body of water.



3,503,219
CONNECTION FOR SUBMERGED PIPELINES OR RESERVOIRS

Jean-Jacques Houot, Maisons-Laffitte, France, assignor to Etablissement Public a Caractere Industriel et Commercial dit: Entreprise de Recherches et d'Activites Petrolieres, Paris, France, a corporation of France

Filed Mar. 1, 1968, Ser. No. 710,449
Claims priority, application France, Mar. 3, 1967, 97,270
Int. Cl. F16l *35/00*
U.S. Cl. 61—72.3 **5 Claims**



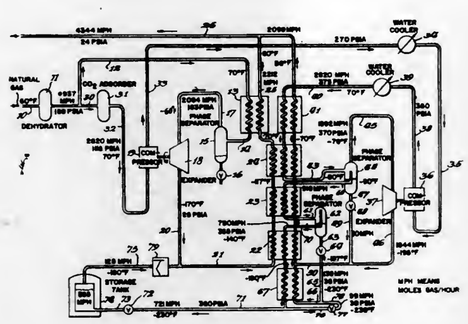
Connection for submerged pipelines, comprising a closed chamber inside which there are fixed connecting elements placed on the machined ends of the connected pipelines.

3,503,220
EXPANDER CYCLE FOR NATURAL GAS LIQUEFICATION WITH SPLIT FEED STREAM

Sudhir Harilal Desai, Clarendon Hills, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois

Filed July 27, 1967, Ser. No. 656,441
Int. Cl. F25j *3/08*
U.S. Cl. 62—23 **1 Claim**

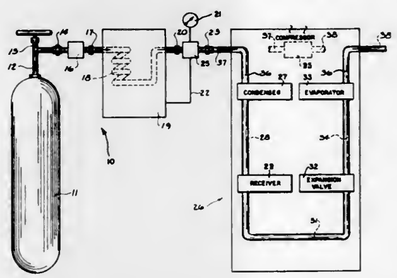
Provided is a process and apparatus for liquefying natural gas containing carbon dioxide. The natural gas stream is divided into two parts. A first part, from which carbon dioxide is not removed, is expanded to provide refrigeration for the second part. The second part is purified of carbon dioxide and cooled by (a) heat exchange with the cooled first part and (b) heat exchange with some of the second part which is expanded to provide low temperature refrigeration, and then flashed to storage at about atmospheric pressure and —259° F.



3,503,221
DEHYDRATION, CLEANING AND STERILIZATION METHOD AND APPARATUS

Frank C. Martin, 2325 N. 75th Ave., Omaha, Nebr. 68104

Filed June 17, 1968, Ser. No. 737,613
Int. Cl. F25b *45/00*
U.S. Cl. 62—77 **10 Claims**



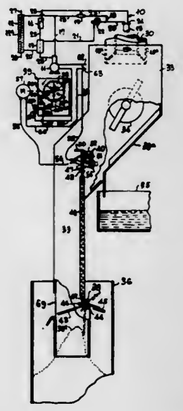
This invention pertains to a method and apparatus for dehydrating, cleaning and sterilizing of electrical, refrigeration and air conditioning systems by heating a non-combustible, non-corrosive gas to at least the boiling point of water and allowing the heated gas to pass through the system thus vaporizing the moisture therein and blowing the vapor and other foreign objects therefrom. The apparatus comprising a cylinder adapted to contain a gas under pressure, a control valve, a heating device, a thermostatic control and visible gauge, and fittings.

3,503,222
BIN ACTUATED STOP MOTION FOR ICE MAKING MACHINES

Paul H. Dinger and James T. Stultz, Orlando, Fla., assignors to Ice Industries International, Inc., Longwood, Fla., a corporation of Florida

Filed Oct. 16, 1968, Ser. No. 768,115
Int. Cl. F25c *1/06*
U.S. Cl. 62—137 **10 Claims**

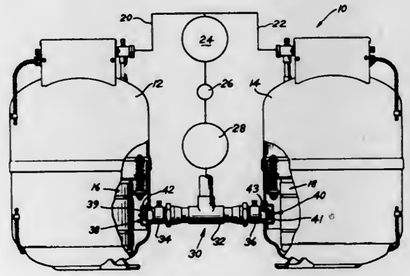
A mechanism for controlling the level of ice discharged downwardly from an ice maker into a bin at the expiration of a predetermined time interval beginning with but longer than the ice harvesting phase. At the beginning of the harvesting phase, a feeler responsive to the discharging ice and to the rising ice level in the bin actuates a timer to start the time interval. If ice continues in contact with the feeler beyond the expiration of the time interval, the timer will cause a control switch to open and thereby interrupt or stop operation of the ice maker. If ice ceases contact with the feeler during the time interval, the timer will automatically reset itself for the succeeding harvesting phase thus permitting the ice maker control switch to remain closed.



3,503,223
REFRIGERATION SYSTEM HAVING TANDEM COMPRESSOR ARRANGEMENT

Sidney A. Parker, Fort Worth, Tex., assignor to Lennox Industries Inc., a corporation of Iowa

Filed July 29, 1968, Ser. No. 748,263
Int. Cl. F25b *31/02*
U.S. Cl. 62—510 **4 Claims**



A refrigeration system including a pair of compressors connected in tandem is provided with check-valve means for preventing contamination of one compressor in the event of damage or malfunction of the second compressor.

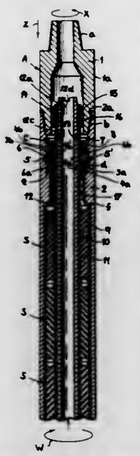
3,503,224
DRILL STRING VIBRATION DAMPER

Grigore Davidescu, Str. Olteni 68, Bucharest, Rumania

Filed July 11, 1968, Ser. No. 744,232
Int. Cl. F16d *3/17*
U.S. Cl. 64—11 **10 Claims**

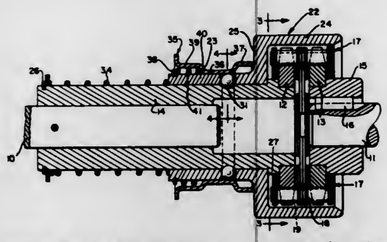
A vibration-damping system for a drill string wherein at least one pipe length therealong is provided with a stack of tubular springs having outer metallic shells bearing upon one another and bonded to a rubber sleeve and inner metallic shells bonded to the rubber sleeve and

bearing axially upon one another. The string length includes a tubular core extending through the cylindrical



cushion sleeves and bearing against the axially aligned inner sleeves while being anchored to the outer shell of the length.

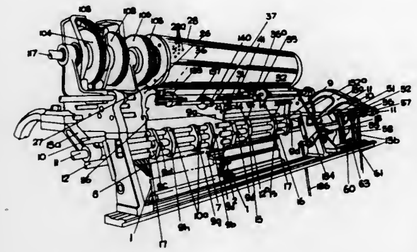
3,503,225
SHAFT COUPLER
Joseph John Shindelar, Des Moines, and Ronald Michael Stellen, Ankeny, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 10, 1968, Ser. No. 743,671
Int. Cl. F16d *5/54*
U.S. Cl. 64—19 **5 Claims**



A coupler device for drivingly interconnecting the ends of axially aligned shafts that is composed of a pair of sprockets fixed to rotate with the respective shafts and disposed in side-by-side relation to one another. A free length of chain is wrapped about both sprockets to cause the sprockets and shafts to rotate in unison. Supported on one of the shafts is an annular ring that may shift axially to overlie the sprockets and to retain the chain on the respective sprockets. The ring may be shifted axially so that the chain may be removed and the two shafts uncoupled.

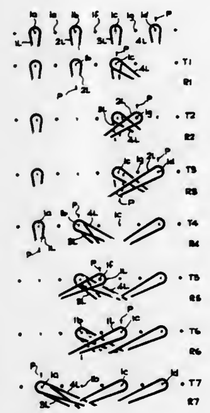
3,503,226
STRAIGHT BAR KNITTING MACHINES
Herbert Edward Woodcock, Loughborough, England, Francis Simpson, Wilton Dean, Hawick, Scotland, and William Clayton, Rawlatts Hill, England, assignors to The Bentley Machine Development Company Limited
Filed Oct. 30, 1967, Ser. No. 681,058
Claims priority, application Great Britain, Nov. 5, 1966, 49,686/66
Int. Cl. D04b *15/04, 11/06*
U.S. Cl. 66—96 **11 Claims**

A straight bar knitting machine having lacing mechanism comprising two half length rows of transfer points selectively operable by two half rows of sliders in a narrowing head which in its upward movements carries the sliders into selective cooperation with racked pattern drum selected selector elements of stationary selecting mechanism, the two half rows of points and sliders being adjustably displaced towards and away from each other for sideways loop transference by the selected points one or more needle distances, and there being inner and outer



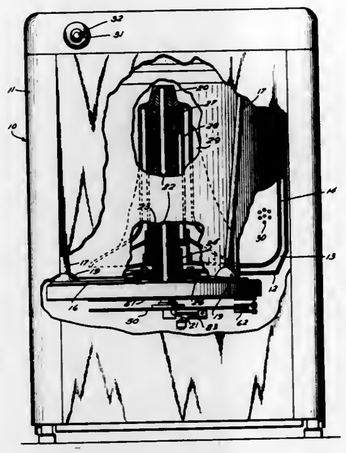
control devices rotationally and laterally displaceable to be operable on small groups of the selector elements for blanking out the pattern and fashioning on outer groups of selvedge needles and V-neck selvedge needles, if required, and the outer control devices having either inner portions for controlling filling up half points for use after widening on the outer groups of the needles or outer portions for fashioning by outer two selvedge points only.

3,503,227
STRAIGHT BAR KNITTING MACHINES
Raymond Blood, Shepshed, and Barry Colin Strong, Syston, England, assignors to William Cotton Limited
Filed June 30, 1967, Ser. No. 650,421
Claims priority, application Great Britain, May 17, 1967, 22,807/67
Int. Cl. D04b *15/04*
U.S. Cl. 66—96 **3 Claims**



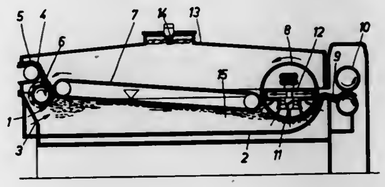
A method of cable stitching in knitted fabric by one, two or four transfer points in seven, nine and four transfer and reset motions respectively with sideways transfer motions in selective manner over half gauge needles and dummy needles for varying needle space distance in varying directions so that the cable stitch loops are on three, four or three half gauge needles respectively in half gauge fabric.

3,503,228
DIRECT MOTOR DRIVE FOR AGITATOR AND SPIN TUB
Robert E. Lake, Benton Harbor, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,420
Int. Cl. D06f *33/02, 37/04, 23/04*
U.S. Cl. 68—12 **3 Claims**



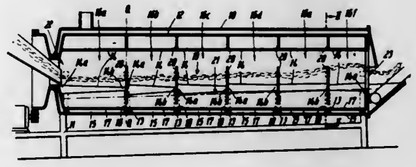
1. Laundry apparatus for washing and centrifuging fabrics in programmed sequence comprising, a rotary container for retaining the fabrics to be washed in the presence of a laundry fluid during a washing operation and to be centrifuged during a fluid extraction operation, agitating means positioned within said container for agitating said fabrics during said washing operation, a rotary disk of nonmagnetic, electrically-conductive material connected in driving relationship to said rotary container, an oscillatory disk of nonmagnetic, electrically-conductive material connected in driving relationship to said agitating means, arcuately shaped stators respectively positioned immediately adjacent each of said disks and having respective coplanar magnetic poles terminating in planes parallel to said disks, said disks including portions of reduced cross section immediately adjacent said arcuately shaped stators, circuit means for energizing said stators, said circuit means including polarity reversing switch means electrically connected to the stator positioned adjacent said oscillatory disk, a relay controlling actuation of said reversing switch means, a pair of limit switches electrically connected to said relay, a limit switch actuating arm rigidly connected to said oscillatory disk and engageable with said limit switches to thereby actuate said relay and said polarity reversing switches upon oscillatory movements of said oscillatory disk, agitate-centrifuge selector switch means connected to said circuit means and controlling the energizing of said polarity reversing switch means, a sequential program timer controlling the energization of said agitate-centrifuge selector switch means, circuit control means for supplying predetermined supply voltages to each of said stators, said circuit control means including a pair of silicon control rectifiers each having a gating control, a timing control circuit connected to said gating controls and including a unijunction transistor and a R-C circuit including a charging capacitor and a pair of adjustable resistors, a series switch respectively connected to each of said resistors and controlled by said program timer, said program timer selectively connecting one of said resistors in said timing control circuit during said washing operation and connecting the other of said resistors in said timing control circuit during said fluid extraction operation, a D-C voltage source supplying said timing control circuit with a D-C voltage, and means for varying the resistance values of said resistors to vary the charging rate of said charging capacitor to control the firing of said unijunction transistor and the voltage supplied to said stators by said silicon control rectifiers.

3,503,229
APPARATUS FOR REWASHING RAW WOOL
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland
Filed Nov. 22, 1966, Ser. No. 596,212
Claims priority, application Germany, Nov. 22, 1965, A 50,839
Int. Cl. D06f *29/00*
U.S. Cl. 68—18 **9 Claims**



The present disclosure relates to an apparatus for rewashing raw wool which has been prewashed with a solvent. The raw wool is introduced into a treatment bath which is heated to a temperature higher than the volatilization temperature of the solvent, and through the use of conveying elements shown in the figure, proper guidance of the loose wool is insured and complete removal of the solvent as well as a good and complete opening of the raw wool tufts is achieved.

3,503,230
DOUBLE-DRUM FLOW-THROUGH WASHING MACHINE
Erich Sulzmann, Provincia di Como, Campione d'Italia, Italy
Filed Dec. 14, 1967, Ser. No. 690,547
Claims priority, application Germany, Jan. 27, 1967, S 108,037
Int. Cl. D06f *37/06, 37/08*
U.S. Cl. 68—58 **11 Claims**



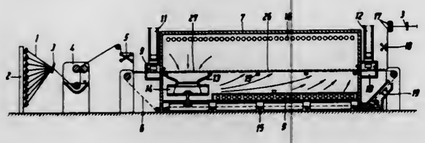
This invention provides a double-drum flow-through washing machine which comprises longitudinal guide ribs and radial washing-liquid separators inside the washing drum so that the wash can pass through the washing drum without being hindered by annular ribs. These longitudinal guide ribs may be conically tapered to determine the speed of the wash as it passes through each washing zone of the washing drum. The washing-liquid separators which may be made of sheet metal serve to separate the washing zones from one another so that different washing processes can be carried out adjacent to one

another while the washing liquids mix with each other as little as possible and the wash can pass easily through the washing drum.

3,503,231
APPARATUS FOR THE STEAM TREATMENT OF MATERIALS

Heinz Fleissner and Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignors to Vepa AG, Basel, Switzerland

Filed July 24, 1967, Ser. No. 655,549
Claims priority, application Germany, July 22, 1966, V 31,559; Aug. 20, 1966, V 31,757; Sept. 21, 1966, V 31,982; Sept. 24, 1966, V 32,013; Mar. 25, 1967, V 33,317
Int. Cl. D06c *1/06*
U.S. Cl. 68—5 10 Claims

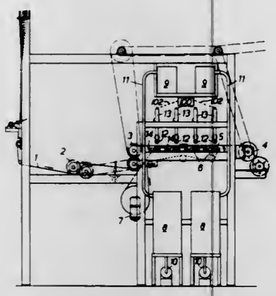


The present disclosure relates to process and apparatus for the steaming of materials, for example textile materials, as applied to shrinking, dyeing, bleaching, setting, finishing and similar treatment processes. The apparatus of the present disclosure includes at least one treatment chamber and a steam-permeable conveying means, preferably a conveyor belt made of a metal cloth and/or at least one sieve drum, which is used to guide the material being treated through the treatment chamber.

3,503,232
YARN DYEING

William Greenhalgh Farrer and Brian Hargreaves, Bacup, England, assignors to Stalwart Dyeing Company Limited, Bacup, England, a corporation of Great Britain

Filed Feb. 14, 1966, Ser. No. 527,129
Claims priority, application Great Britain, Feb. 23, 1965, 7,717/65; Mar. 4, 1965, 9,273/65; Aug. 13, 1965, 34,680/65
Int. Cl. B41f *17/10*; B05c *1/04, 1/08*
U.S. Cl. 68—203 1 Claim

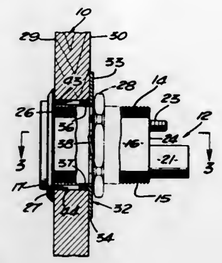


In a space-dyeing apparatus of the type having a vertically movable presser roller which presses a moving warp against a dye applicator roller random movement of the presser roller is obtained with a pattern control mechanism which includes two series-connected switches each opened and closed by a cam rotating at a different speed. The resulting open or closed circuit electrically activates a pneumatic piston and cylinder which either raises or lowers the presser roller.

3,503,233
RETAINING PLATE FOR A DOOR OR DRAWER CAM LOCK

Fred J. Russell, South Gate, Richard L. Armstrong, Santa Fe Springs, and Humberto A. Rodriguez, Los Angeles, Calif., assignors to Norris Industries, Inc., Los Angeles, Calif., a corporation of California

Filed June 5, 1968, Ser. No. 734,616
Int. Cl. E05b *9/08*
U.S. Cl. 70—370 7 Claims

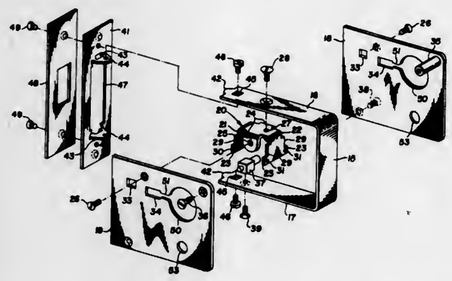


A retaining plate for anchoring a lock assembly on a door or drawer. The door or drawer has a circular mounting opening therethrough and a pair of cutouts formed contiguous to the opening. The lock assembly includes a partially threaded lock housing adapted for mounting in the opening and a fastening nut for engaging the threaded housing so as to clamp the lock assembly between the faces of the door. To anchor the housing against rotational movement, a retaining plate is disposed between one face of the door and the fastening nut. The retaining plate is nonrotatably mounted over the lock housing through an aperture formed in the plate. A pair of anchoring tabs protrude from the plate in engagement with the cutouts in the door. A pair of anti-loosening tabs are formed on the retaining plate so that the surfaces of each anti-loosening tab extend beyond the faces of the plate prior to engagement of the fastening nut. After the fastening nut is tightened, the lock assembly is restrained from rotating due to the engagement between the anchoring tabs and the cutouts, and the fastening nut is prevented from loosening due to the tension forces applied between the door and nut by the anti-loosening tabs.

3,503,234
SHEET METAL CASE FOR MORTISE LOCK

Jerald Schultz, Woodmere, N.Y., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 14, 1968, Ser. No. 752,641
Int. Cl. E05b *9/08*
U.S. Cl. 70—451 10 Claims

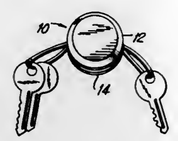


A mortise lock case is formed through the assembly of flat side plates against the edges of a U-shaped strip, with a sheet metal bracket between the side plates. The bracket is bent to form legs that interlock with the side plates and that support a fastener screw for a tumbler cylinder engaged in an opening of a side plate. There is a front plate mounted for angular adjustment on the ends of the U-shaped strip.

3,503,235
SNAP APART KEY HOLDER

Jack W. Field, Franklin Township, Somerset County, N.J. (% J. W. Field Company, Inc., 16 E. 52nd St., New York, N.Y. 10022)

Filed Aug. 15, 1968, Ser. No. 752,814
Int. Cl. A44b *15/00*
U.S. Cl. 70—456 10 Claims

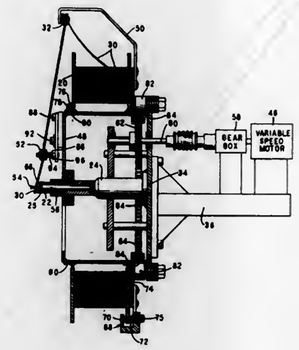


A pull apart key holder is formed of two dish shaped circular sections having opposing faces. One section contains a female recess with a constricted resilient throat on its internal face; a mating male snap member is provided in the internal face of the complementary section. Each section is molded of elastomeric plastic material and includes a unitary flexible band extending radially from its periphery. The band has a knob element at its free end. The respective knobs are snapped into mating sockets on the internal faces of each section to form the bands into key receiving loops. The knob ends are further secured by the opposing faces of each section.

3,503,236
MACHINE FOR CONTINUOUS PRODUCTION OF AN UNSUPPORTED HELIX

Walter H. H. Moebus, North Plainfield, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 17, 1967, Ser. No. 632,150
Int. Cl. B21d *11/00*
U.S. Cl. 72—66 7 Claims

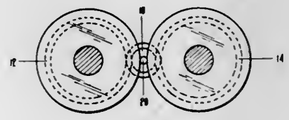


A cam with a substantially plane operating surface is arranged to push with different portions of its surface against a helical winding of ribbon or filament on a stationary mandrel supported with one end free, the cam operating in synchronism with a winding mechanism by which the material is laid upon the mandrel in contact with the pushing portion of the cam surface, so that the completed portion of the winding is substantially continuously moved toward and off from the free end of the mandrel. The helical winding is formed of a ribbon of form-retaining material, such as aluminum, cooper, or alloys thereof.

3,503,237
FABRICATION OF ARTICLES BY ROLLING

Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein

Filed Dec. 27, 1966, Ser. No. 605,062
Claims priority, application Republic of South Africa, Jan. 3, 1966, 66/13; Apr. 25, 1966, 66/2,361
Int. Cl. B21b *1/08*; B21d *15/04*
U.S. Cl. 72—80 1 Claim

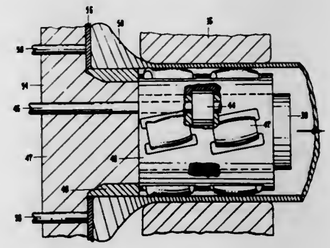


Solid cylindrical workpieces are profiled by drawing them into and through the convergent throat defined between a pair of juxtaposed rollers, to have imposed on them the profile of the surfaces with which they are in contact during their period of dwell in the throat, while their longitudinal spread is controlled. Preferably the blanks are "hot-rolled." Surplus material is extruded into an escape gap or gaps to form flashes. The rollers may be formed with profiling formations oblique to the axis or with a series of identical circumferential profiling formations abreast, to form a line of articles joined together by severable filaments.

3,503,238
MANUFACTURE OF TUBES

Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein

Filed May 1, 1967, Ser. No. 634,943
Claims priority, application Republic of South Africa, May 5, 1966, 66/2,610; Aug. 17, 1966, 66/4,911
Int. Cl. B21b *19/04, 25/00*
U.S. Cl. 72—96 5 Claims

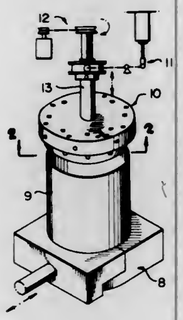


Tubular articles are made by drawing a billet through an annular throat one wall of which is defined by a series of skewed rollers the contour of each of which is such as to make line contact with the tube traversing the

throat, and to draw material from the billet through the throat. The billet may be annular, and it may be continuously made from molten metal replenished from a reservoir.

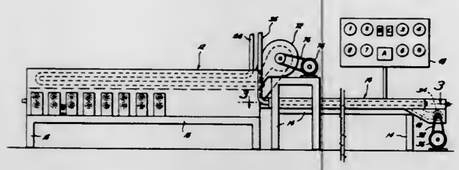
3,503,239
ROD-INSERT SPIN FLANGING HEAD
Ants Hansson, Evanston, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 27, 1966, Ser. No. 560,676
Int. Cl. B21d *3/02*
U.S. Cl. 72—119 **13 Claims**

This is a method and apparatus for spin-flanging the edges of metal can bodies. A rotating head, having a plurality of fixed flanging elements spaced around the periphery thereof, is brought into contact with the open end of a can. Each series of flanging elements is inclined at a different angle to the longitudinal axis of the head.



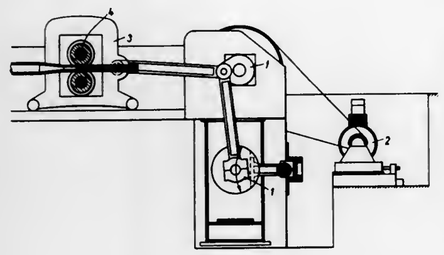
As the rotating head is pressed into the open end of the can, the inner periphery thereof is sequentially contacted by each series of flanging elements.

3,503,240
HEAT TREATING METHOD AND APPARATUS
James R. Lawler, 3102 Dunvale, Houston, Tex. 77042
Filed Aug. 1, 1966, Ser. No. 569,403
Int. Cl. B21b *27/06*
U.S. Cl. 72—202 **22 Claims**



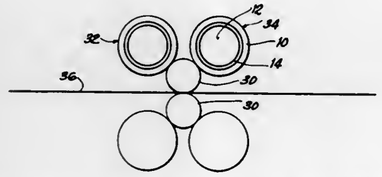
The present invention relates to a method and apparatus for heat treating a metal alloy at substantially high and closely controlled temperatures. Heating is accomplished by passing a non-reactive gas in indirect heat exchange relationship with products of combustion such that the products of combustion do not directly impinge the metal alloy thereby avoiding hydrogen embrittlement and excessive scaling of the alloy. Means such as adjustable baffles are provided to control circulation of the non-reactive gas into contact with the metal strip thereby providing close control of temperature.

3,503,241
COLD ROLLING MILL
Walter vom Dorp, Fritz Zeunert, and Horst Stinnertz, Rheydt, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, Monchen-Gladbach, Germany, a corporation of Germany
Filed June 6, 1966, Ser. No. 555,420
Claims priority, application Germany, Sept. 23, 1965, M 66,738; Nov. 16, 1965, M 67,291
Int. Cl. B21d *7/02*
U.S. Cl. 72—214 **1 Claim**



A pilger cold rolling mill with an oscillating frame has balancing means therefor and shrunk-mounted roll groove rings the developed length of which is from 1.5 to 2.5 times that of conventional roll jaws of the same groove diameter.

3,503,242
MILL ROLLING MACHINE
Natalis H. Polakowski, 226 Laurel Ave., Wilmette, Ill. 60091
Filed Apr. 20, 1967, Ser. No. 632,421
Int. Cl. B21b *13/14*
U.S. Cl. 72—241 **9 Claims**

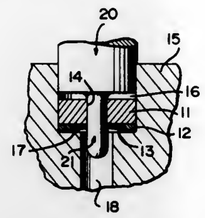


The invention resides in a mill roll and machine embodying same for use in the production of flattened sheet, plate or strip in which the roll is in the form of a composite having a hardened metal outer shell, a steel arbor and a thin layer of resilient material between the shell and arbor whereby the working surface of the working roll in engagement with the material can conform to the profile of the material processed through the machine to effect uniform reduction percentage-wise crosswise of the material.

3,503,243
METHOD OF MAKING EXTRUDED TUBING
Albert Katz, Cleveland, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 14, 1967, Ser. No. 630,974
Int. Cl. B21c *23/22*
U.S. Cl. 72—258 **13 Claims**

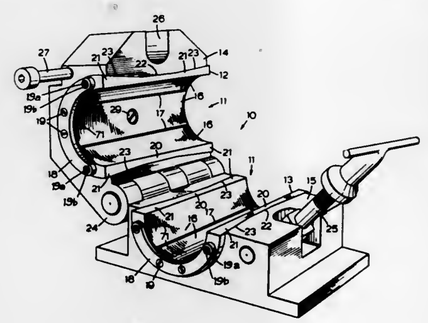
A method of making brazing alloy coated extruded tubing wherein a bi-metallic slug having a first portion of brazing alloy and a second portion of a base metal is impact extruded to provide a tube of base metal with a brazing alloy coating of uniform thickness therein. To obtain such uniform thickness the brazing alloy portion

of the slug is provided with a conical depression that is positioned adjacent the extrusion aperture of an extrusion



die and the slug is then forced through the aperture to form the coated extruded tube.

3,503,244
PIPE HOLDING MECHANISM
Alvin Earl Joslin, 1559 Elite Drive, Clarkson, Ontario, Canada
Filed May 29, 1967, Ser. No. 642,126
Int. Cl. B21d *41/02*
U.S. Cl. 72—317 **11 Claims**



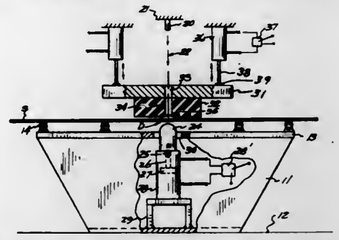
A pipe holding mechanism having a collet portion split into two halves, each half being slidably mounted in a mouting block and having at least two spaced apart lengthwise segments. The mounting blocks are securely but releasably attached together so that the collet halves from a uniform pipe-receiving inner cylinder and each collet half has a middle portion of uniform thickness and uniformly diverges in thickness towards each end. A pipe clamped in the device when pulled in either direction is gripped increasingly strongly as the pulling intensity increases.

ERRATUM

For Class 72—324 see:
Patent No. 3,503,630

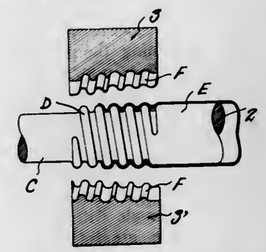
3,503,245
METHOD AND APPARATUS FOR REMOVING DEFECTS FROM SHEET METAL
Ben Brandl, Royal Oak, Mich.
(233 Kirk Lane, Troy, Mich. 48084)
Filed Oct. 4, 1967, Ser. No. 672,875
Int. Cl. B21c *51/00;* **B21d** *11/04, 1/05, 31/06*
U.S. Cl. 72—340 **6 Claims**

The method and apparatus for correcting defects, such as gouges, scratches, indentations, scale marks, or coil marks in sheet metal, which would otherwise be scrapped, by locating such defect in the sheet in registry with a hardened steel anvil or hammer; mechanically upsetting the metal to a height at least equal to the depth of such



defect, and surface grinding away of excess metal and rolling same to provide a prime sheet.

3,503,246
METHOD OF MANUFACTURING A SPIRAL METAL TUBE
Hiroyasu Shiokawa, 28 Sone-Nishino-cho, 2-chome, Toyonaka, Osaka-fu, Japan
Filed Dec. 28, 1967, Ser. No. 694,236
Int. Cl. B21d *17/02*
U.S. Cl. 72—370 **2 Claims**



A spiral metal tube is formed by alternately urging a tubular workpiece over a cylindrical core formed externally as a helix and pressing dies formed with a female screw surface into said workpiece to cause said workpiece to conform to the shape of said helix.

3,503,247
GREY IRON TREATMENT
Josef K. Murek, 4454 Casitas St., San Diego, Calif. 92107
Filed Jan. 27, 1966, Ser. No. 523,457
Int. Cl. B21j *5/00*
U.S. Cl. 72—377 **8 Claims**



Grey iron elements, heated in an inert atmosphere to between 1650° F. and 1750° F., are formed in closed, vented, dies at a pressure of from 30,000 p.s.i. to 90,000

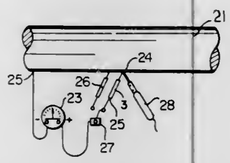
p.s.i. applied for on the order of 5 milliseconds, thereby increasing the density and tensile strength of the grey iron by at least ½ percent and 1,000 p.s.i. respectively.

3,503,248

METHOD FOR DETERMINING A HEAT TREATMENT TEMPERATURE FOR CARBON AND GRAPHITE

Sennosuke Sato, Toshio Honda, and Hisanori Ito, Naka-gun, Ibaraki-ken, Japan, assignors to Japan Atomic Energy Research Institute, Tokyo, Japan

Filed Apr. 14, 1967, Ser. No. 631,029
Claims priority, application Japan, June 8, 1966, 41/36,542
Int. Cl. G01m *25/00*
U.S. Cl. 73—15 **1 Claim**



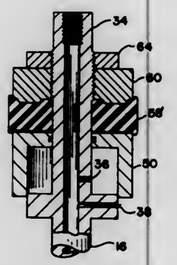
A method for determining the heat treatment temperature of carbon or graphite materials in the manufacturing process of graphite comprises forming a plurality of sample sticks of a material of the same composition and preselected orientation as the parent material after molding or calcination thereof but before heat treatment, applying heat treatment to the plurality of sample sticks to produce a plurality of heat treated samples at predetermined temperature intervals within the range of the inner temperature of the graphitization furnace and forming thermocouples with selected sample sticks and the heat-treated parent material to determine which sample stick, when its junction with the parent material is formed, produces the minimum thermo-electric output. Thereby the sample stick producing the minimum thermo-electric output is used to determine the condition of the heat treatment of the parent material.

3,503,249

TOOL FOR TESTING PIPE JOINTS

Joseph Frank Dumond, 2001 Kermit Highway, Apt. 7, Odessa, Tex. 79760

Filed May 10, 1968, Ser. No. 728,286
Int. Cl. G01n *3/28*
U.S. Cl. 73—49.1 **8 Claims**



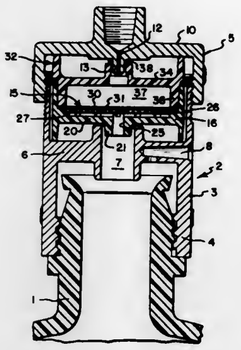
A tool for testing pipe comprising a mandrel having upper and lower sealing members spaced apart thereon with the tool being slidably received within a joint of pipe. When pressure is applied to the mandrel, the upper and lower sealing members movably respond to the applied pressure to thereby seal the interior of the length of pipe which is located between the upper and lower sealing members. The annular space about the mandrel and between the sealing members is then pressurized to a predetermined magnitude of pressure after which the pressure is held static while it is observed in order to ascertain the presence of any leaks.

3,503,250

FILTER FOR GRAVIMETRIC DETERMINATIONS

Richard A. Cotton, Waban, and Donald R. Hamelin, Georgetown, Mass., assignors to Millipore Corporation, Bedford, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 424,488, Jan. 11, 1965. This application Sept. 23, 1968, Ser. No. 768,599
Int. Cl. B01d *23/02, 25/04;* **G06n** *5/00*
U.S. Cl. 73—61 **6 Claims**



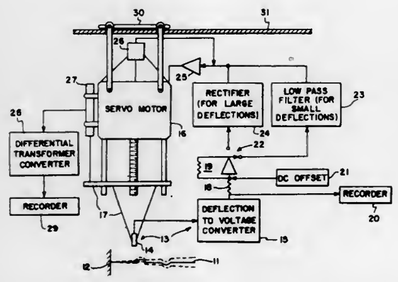
The gravimetric determination of particulate contaminants in fluids in which a pair of weight matched plastic membrane filters are provided with the parameters effecting changes in tare weight being identical to each other, and the differences in weight of the filters after the fluid has been passed therethrough is measured to find the weight of the contaminants.

3,503,251

VIBRATING STRUCTURE DISPLACEMENT MEASURING INSTRUMENT

Bruce Flagge, Yorktown, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Sept. 26, 1966, Ser. No. 582,171
Int. Cl. G01r *9/04*
U.S. Cl. 73—71.4 **6 Claims**



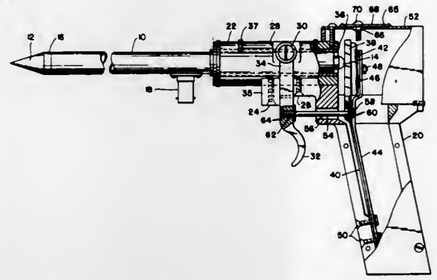
A noncontacting transducer coupled to a servo motor for moving it up or down over a vibrating structure as the transducer is moved along the structure to measure vibration deflection. The initial height of the transducer above the structure is set by manually adjusting an offset voltage which is added to a voltage generated by the transducer to produce a zero voltage at the input of the servo motor. Any change in height of the transducer will result in an error voltage at the input of the servo motor which will cause it to reposition the transducer to its initial height. The output of the transducer is indicative of the vibration of the structure.

3,503,252

IMPACT SIGNAL DEVICE FOR SONIC TESTING

Benjamin D. Miller, Dearborn, Mich., assignor to The Detroit Edison Company, Detroit, Mich., a corporation of New York

Filed Sept. 21, 1967, Ser. No. 669,625
Int. Cl. G01n *29/00*
U.S. Cl. 73—71.5 **10 Claims**



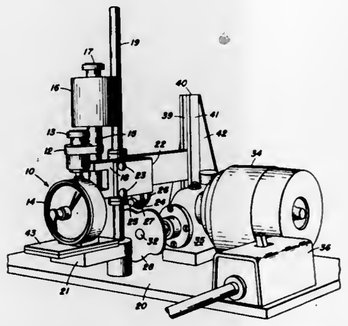
An impact signal device comprising a probe adapted to contact the article to be tested, said probe having an electric signal transmitter connected thereto, a pistol type holder for the probe including a trigger and a spring urged hammer, and means responsive to continuous movement of the trigger to move the hammer against the spring and then to release the hammer for forward movement against the inner end of the probe.

3,503,253

DUROMETER INSTRUMENT

Walter J. Budd, Jr., Waterbury, and Fred A. Mauger, Cheshire, Conn., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 511,190, Dec. 2, 1965. This application Nov. 1, 1968, Ser. No. 772,696
Int. Cl. G01n *3/42*
U.S. Cl. 73—81 **5 Claims**



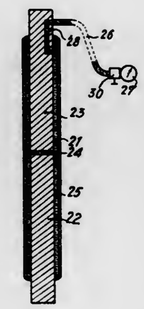
An instrument for measuring the hardness of rubber which has the advantages of obtaining more uniform, accurate and reproducible readings. The instrument operates automatically and allows the test specimen to be changed while the instrument continues to operate continuously. The instrument utilizes a durometer slidably supported along a vertical column. A channel for a stabilizing arm prevents rotation of the durometer with respect to the vertical column. A cam and cam follower are utilized to control the operating cycle. The weight of the durometer, the slidable support, and the stabilizing arm is directly applied to the cam. The rotation of the cam is effective to move the durometer toward and away from the specimen.

3,503,254

APPARATUS FOR MEASURING, IN SITU, STRESSES IN A MATERIAL

Louis François Auguste Menard, 54 Avenue de la Motte Picquet, Paris 15, France

Filed Sept. 22, 1967, Ser. No. 669,940
Claims priority, application France, Sept. 23, 1966, 77,497; July 31, 1967, 116,325
Int. Cl. G01b *5/30;* **G01l** *5/00*
U.S. Cl. 73—88 **8 Claims**



Apparatus for the in-situ measurement of the modulus of deformation and stresses, in a material (e.g. concrete) comprises a tube embedded in the material and having inner and outer walls defining therebetween an annular fluid chamber, the chamber being connected by ducting to a fluid-pressure measuring device outside the material. For measuring the modulus of deformation, the inner wall defines an inner fluid chamber to which pressure-measuring and pressure-varying means are connected.

3,503,255

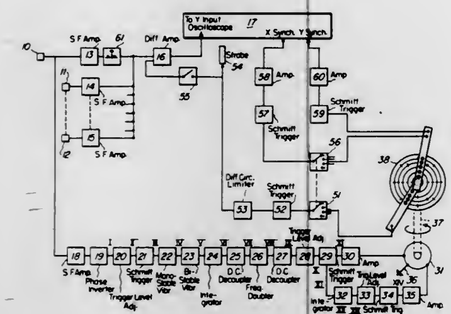
DIESEL ENGINE ANALYZER

Reimar Germann and Kurt Wiederwohl, Graz, and Martin Schwertfuhrer, Vienna, Austria, assignors, by mesne assignments, to Mobil Oil Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 587,096, Oct. 17, 1966. This application Apr. 7, 1969, Ser. No. 822,809
Claims priority, application Austria, Sept. 27, 1966, A 9,063/66
Int. Cl. G01m *15/00*
U.S. Cl. 73—117.2 **18 Claims**

A system is disclosed for synchronizing displays of diesel engine fuel injection pressures on an engine oscilloscope with engine operation. The fuel injection pressures are detected by transducers, and signals representative of the pressures are transmitted to the oscilloscope. The fuel injection pressure signal to one of the cylinders is

used to drive a motor at a rate which is proportional to the speed of the engine, and the motor drives a device for generating vertical and horizontal synchronization

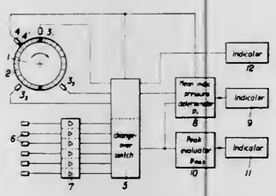


input signals to the oscilloscope for synchronizing the display of the fuel injection pressure signals with engine operation.

3,503,256
APPARATUS FOR MONITORING THE MECHANICAL AND THERMAL STRESS ON INTERNAL COMBUSTION ENGINES

Hans List, 126 Heinrichstrasse, Graz, Austria, and Reimar Germann, Graz, Austria; said Germann assignor to said List

Filed Nov. 25, 1968, Ser. No. 778,612
Int. Cl. G01m *15/00*
U.S. Cl. 73—115 **8 Claims**



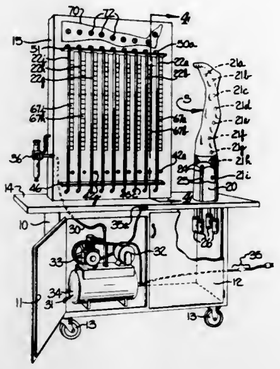
Apparatus for the monitoring of the mechanical and thermal stress on internal combustion engines and of the uniform load distribution among their cylinders. Pressure measurements of the various cylinders of the engine are shown either individually or collectively on the screen of an oscillograph.

3,503,257
GARMENT TESTING APPARATUS

James H. McElhaney and Edward F. Byars, Morgantown, W. Va., assignors to Pilot Research Corporation, Valdese, N.C., a corporation of North Carolina

Filed May 9, 1968, Ser. No. 727,830
Int. Cl. G011 *1/02*
U.S. Cl. 73—133 **8 Claims**

The relative compressive forces applied by a garment on various portions of the body are simultaneously measured by this testing apparatus. The garment is positioned on a form substantially conforming to the shape of that portion of the body on which the garment is to be worn. Liquid level type pressure gauges are supported adjacent the form and in side-by-side relationship and operatively connected to corresponding pressure sensors positioned in spaced positions on the form. The gauges provide a

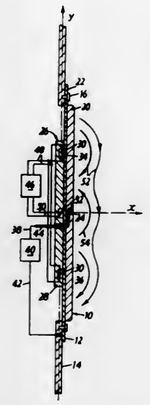


graphic visual indication of the relative compressive forces applied by the garment on the various portions of the form.

3,503,258
FLUID FLOW VELOCITY MEASUREMENT

Roger Cecil Baker, Cambridge, England, assignor to George Kent Limited, London, England, a British company

Filed Feb. 5, 1968, Ser. No. 703,083
Claims priority, application Great Britain, Feb. 9, 1967, 6,333/67; Feb. 22, 1967, 8,557/67
Int. Cl. G01p *5/08*
U.S. Cl. 73—194 **20 Claims**

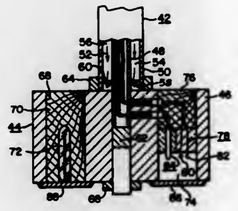


In the electromagnetic measurement of the flow velocity of electrically conductive fluids, the effects of disturbances in the boundary layers in the fluid adjacent the measuring apparatus are offset by a reversal in the direction of the effective magnetic field so that the electric potential sensed by the apparatus is due primarily to the fluid flow remote from the apparatus, the flow adjacent the device producing opposed potentials which cancel out. By altering the distance from the apparatus at which the field reverses, the portion of the fluid flow contributing the potential sensed can be changed. The apparatus can be suitable for static and marine applications. It may have two electrodes preferably so positioned in the field as to sense potentials of opposed sense or one electrode in the field and a second outside; such a second electrode can comprise the exposed periphery of an electrostatic screen between the electrode and the means for producing the magnetic field.

3,503,259
DIRECT SAMPLER FOR USE IN BASIC OXYGEN FURNACES AND THE LIKE

Norman R. Carlson, Export, Richard E. J. Putman, Penn Hills, and James T. Carleton, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 27, 1967, Ser. No. 649,235
Int. Cl. G01k *13/12*
U.S. Cl. 73—354 **4 Claims**

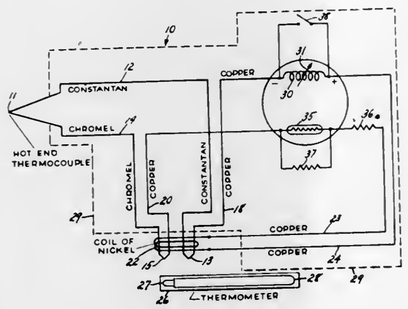


A molten metal sampling device. A water cooled lance-like member has a sampler carrying unit at its lower end and is operated in a basic oxygen furnace during the decarburizing oxygen blow to withdraw a bath sample. The sampler carrying unit also contains a contact pair operable to signify the sampling time.

3,503,260
PYROMETER CONSTRUCTION

Nathan H. Polsky, Levittown, N.Y., assignor to Electronic Development Laboratories, Inc., Plainview, N.Y.

Filed Apr. 1, 1968, Ser. No. 717,608
Int. Cl. G01k *7/12*
U.S. Cl. 73—361 **4 Claims**

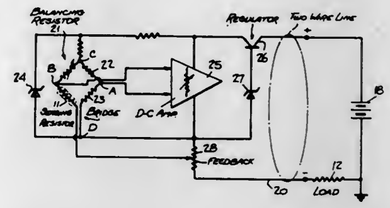


Pyrometer construction in which the cold ends are disposed outwardly of the casing of the instrument adjacent a bulb thermometer, whereby the instrument may be calibrated thereagainst. Means are provided for completely electrically isolating the galvanometer during such calibration. The device is so constructed that when the same is exposed to a rapid change in temperature, the temperature of the cold end will vary at substantially the same rate of change as the bulb of the thermometer.

3,503,261
RESISTANCE TO CURRENT CONVERTER

Hubert A. Riester, Huntingdon Valley, and Tamotsu Kobayashi, Hatboro, Pa., assignors to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania

Filed Nov. 1, 1967, Ser. No. 679,890
Int. Cl. G01k *7/24;* **G08c** *19/04;* **H04b** *3/50*
U.S. Cl. 73—362 **6 Claims**

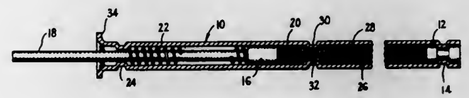


A resistance-to-current converter which derives its operating power from the same two-wire line used to convey the output current to a remote indicator, the converter acting in conjunction with a sensing resistor responsive to a physical condition and included in a bridge circuit. The output voltage of the bridge circuit is fed into the input of a differential amplifier in series opposition with a feedback voltage derived from the output thereof to minimize the effect of bridge non-linearity. The output of the amplifier, in which functions effectively as a variable impedance, is connected through a voltage regulator and an extended two-wire line to a D-C power source connected in series with the indicator, the regulator acting to stabilize the operating voltage of the amplifier despite variations in output current resulting from variations in the value of the sensing resistor.

3,503,262
THERMOSTATIC REGULATOR

Walter C. Staire, Torrington, Conn., assignor to Tube Bends, Incorporated, New Britain, Conn., a corporation of Connecticut

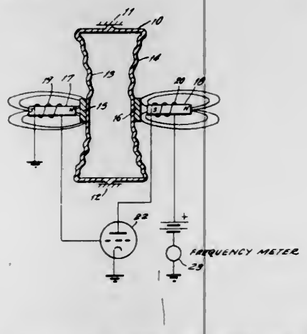
Filed July 19, 1968, Ser. No. 746,134
Int. Cl. G01k *5/00, 5/44*
U.S. Cl. 73—368.3 **13 Claims**



A thermostatic regulator comprises a tubular body which is closed at one end and which has a piston slidably received therein adjacent the other end, with a cavity between the closed end and the piston. A solid thermoplastic material, which is expansively fusible at a preselected temperature above ambient, is contained in the cavity, and the volume thereof is sufficient to allow the material to bear upon the piston with a predetermined minimum hydraulic force when in the fluid state. The body has a cavity-constricting portion adjacent the piston which serves to restrain movement of the

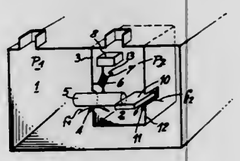
thermoplastic material toward the piston until it is substantially completely fluid at which point it may flow thereby. The hydraulic force brought to bear upon the piston when the thermoplastic material passes by the constricting portion drives it outwardly of the body against the opposing force of biasing means which is provided therein.

3,503,263
SONIC ALTIMETER
Julius Intraub, Plainview, N.Y., assignor to Kollsman Instrument Corporation, Syosset, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 535,118, Mar. 17, 1966. This application July 30, 1968, Ser. No. 748,685
Int. Cl. G01l *7/12, 9/08*
U.S. Cl. 73—386 **12 Claims**



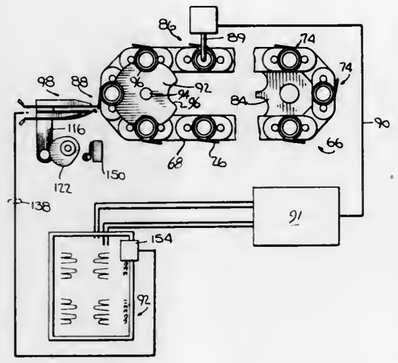
A pressure measuring system for measuring the differential pressure of an aneroid capsule by vibrating the capsule wall and measuring its natural resonant frequency which is functionally related to the differential pressure.

3,503,264
DEVICE FOR MEASURING DIFFERENTIAL PRESSURE OF LIQUID OR GASEOUS FLUIDS, PARTICULARLY VERY SMALL PRESSURE DIFFERENCES, AS WELL AS APPLICATIONS OF THIS DEVICE
Edmond Auguste Gassies, Montrouge, France, assignor to Compagnie des Compteurs, Paris, France, a French company
Filed Aug. 25, 1967, Ser. No. 663,314
Claims priority, application France, Sept. 13, 1966, 76,135
Int. Cl. G01l *7/16, 7/00*
U.S. Cl. 73—419 **5 Claims**



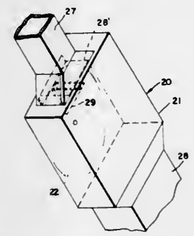
Device for measuring the difference of pressure between two pressure sources. Two embodiments use servo-equilibrating devices to balance action against pistons and other bodies placed in apertures in walls situated between chambers which are in communication with the pressure sources. One other embodiment uses a flat member over an aperture to sense pressure differential and again a servo balances motion tendencies of the flat member away from the aperture. The force applied by the various servo devices are indicative of the pressure difference.

3,503,265
CONTAINER ASSEMBLY WITH IDENTIFICATION MEANS
Jack Isreeli, Mamaroneck, N.Y., assignor to Technicon Corporation, Chauncey, N.Y., a corporation of New York
Filed Aug. 21, 1964, Ser. No. 391,093
Int. Cl. G01n *1/00*
U.S. Cl. 73—423 **4 Claims**



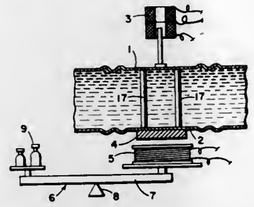
The system includes a main container and a sample container which are concurrently marked with uniquely identifying indicia by a single group of indicia applying means. The containers are initially joined by a linking member having a line of severance along and across which the indicia are applied. After severance, the sample container may be disposed in an analytical device wherein the contents of the container may be withdrawn for analysis and the indicia may be read automatically. The particular indicia disclosed are notches which are read by feeler wires.

3,503,266
GRAIN SAMPLER DEVICE
Frank J. Jirik, Rte. 2, Fisher, Minn. 48202
Filed Oct. 26, 1967, Ser. No. 678,413
Int. Cl. G01n *1/02*
U.S. Cl. 73—424 **2 Claims**



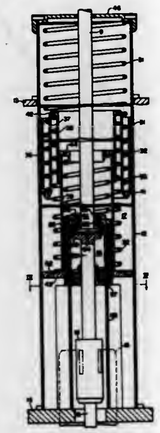
A grain sampler has a vertical input chute, a housing beneath the input chute, an output chute beneath the housing and a disc mounted within the housing and spaced from the wall of the housing. A funnel is mounted on the face of the disc with an open end projecting radially outward from the horizontal axis of the disc and another open end directed toward the face of the disc. The disc has an aperture in its face to connect with the open end of the funnel. A conduit projects into the housing with its face adjacent the disc surface. When grain falls into the housing the funnel will deflect a sample through the aperture and into the conduit as the aperture and conduit face are aligned. The alignment takes place only once for each complete revolution of the disc.

3,503,267
METHOD OF MEASURING PHYSICAL QUANTITY UTILIZING MAGNETIC REPULSION
Kamekichi Shiba, 159 Kagomachi, Bunkyo-ku, and Tadashi Ichinose, 23 Koenji-1-chome, Suginami-ku, both of Tokyo, Japan
Continuation-in-part of application Ser. No. 298,689, July 30, 1963. This application Jan. 26, 1968, Ser. No. 700,823
Claims priority, application Japan, Aug. 2, 1962, 37/32,263, 37/32,264, 37/32,270
Int. Cl. G01n *9/06*
U.S. Cl. 73—434 **9 Claims**



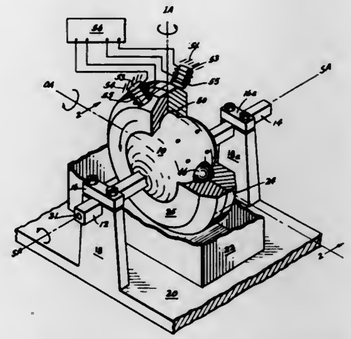
A method and apparatus for determining physical quantities of a fluid by utilizing magnetic repulsion and weighing the apparent change in mass due to the magnetic repulsion. The magnetic repulsion takes place between a first magnetic means mounted on a diaphragm and responsive to the fluid being measured and a second magnetic means associated with a weighing means such as a balance beam.

3,503,268
CONTROL ROD INSERTION SYSTEM
Harry N. Andrews, Monroeville, Pitcairn, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1967, Ser. No. 608,854
Int. Cl. G21c *7/10*
U.S. Cl. 74—2 **8 Claims**



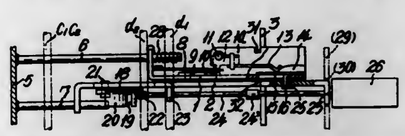
A plurality of coil springs are so disposed in spring holders that they function in series to drive a reactor control rod from its fully withdrawn to its fully inserted position in the reactor core irrespective of the axial position of the core. The springs have successively smaller diameters so that one can nest inside another in the compressed position. The spring holders are in telescoping relation with one functioning as a guide for the other and the coil springs being separated from each other by the walls of the spring holders.

3,503,269
MEANS FOR SUPPORTING A ROTOR OF A SINGLE DEGREE OF FREEDOM GYROSCOPE
Thomas E. O'Connor, Hawthorne, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,882
Int. Cl. G01c *19/16*
U.S. Cl. 74—5.43 **14 Claims**



A single degree of freedom gyroscope having a rotor rotating on a fixed member. The rotor and member have opposing spherical portions forming a fluid pressure bearing therebetween. The rotor has an annular groove in the spherical portion receiving torque elements on the fixed member to enable the rotor to rotate about a first axis and move angularly about a second axis and to restrain movement about a third axis mutually perpendicular to the first and second axes.

3,503,270
PUSHBUTTON TYPE TUNING APPARATUS
Tamaki Ohashi, 1629 Tanashi-shi, Tokyo, Japan
Filed Apr. 22, 1968, Ser. No. 723,117
Claims priority, application Japan, Apr. 20, 1967, 42/24,790
Int. Cl. F16h *35/18*
U.S. Cl. 74—10.33 **16 Claims**

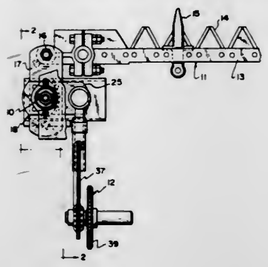


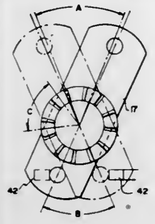
A pushbutton tuner having a plurality of pushbuttons, the depression of each of which simultaneously acts to adjust a receiver to a pre-set broadcast band and a pre-set frequency. Each pushbutton is coupled to a pair of arms, one of which carries a lockable tuning frequency adjustment plate and the other a broadcast band selector plate. The tuning frequency adjustment plate is locked in a position corresponding to a pre-selected frequency when the pushbutton is depressed after the latter plate has been released, whereas the broadcast band selector plate is directly adjusted from the front of the pushbutton.

3,503,271
MOWING MACHINE DRIVE
John L. Heinlein, Shelbyville, Ill., assignor to Oliver Corporation, Chicago, Ill., a corporation of Delaware
Filed May 27, 1968, Ser. No. 732,331
Int. Cl. F16d *1/10;* **F16h** *21/44*
U.S. Cl. 74—44 **10 Claims**

An improved mowing machine drive for use in a mower for mowing hay, cutting grain, or the like having a cutter bar with knife sections thereon and a bellcrank having

one arm pivotally connected to the cutting member and the other arm pivotally connected to a pitman driver for reciprocating the bellcrank, the improvement residing in the provision of a clutch mechanism between the arms of the bellcrank which clutch mechanism upon clogging



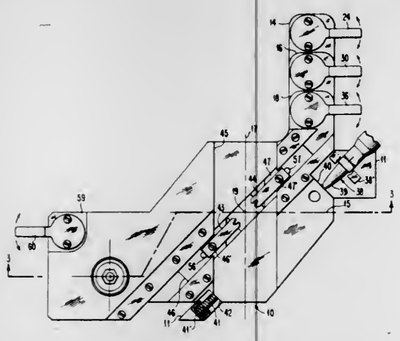


or jamming of the cutter bar or knife sections with foreign objects or material will cam out of driving engagement and on the reverse stroke of the pitman driver will move or drag the cutter bar away from the clogged or jammed position.

3,503,272
POSITIONING APPARATUS

Thomas J. Cochran, Lighthouse Point, Fla., and Joseph C. Formichelli, Fishkill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 27, 1968, Ser. No. 732,290
Int. Cl. F16h *21/58*
U.S. Cl. 74—89.15 **14 Claims**



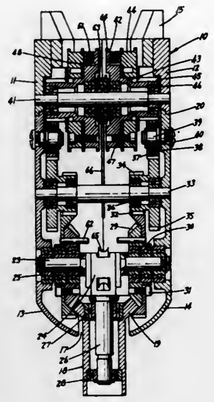
A positioning apparatus includes a plurality of members movable relative to each other along two axial directions and about an axis of rotation. Through utilizing a single adjusting means acting on the upper member along a single axis, an element clamped to the upper member may be positioned about the axis of rotation and along the two axial directions.

3,503,273
WRIST JOINT

Lester W. Haaker and Demetrius G. Jelatis, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota

Filed Nov. 8, 1968, Ser. No. 774,467
Int. Cl. F16h *1/06;* **B25j** *3/00*
U.S. Cl. 74—89.16 **9 Claims**

A wrist joint for mounting the handle and tong means of a remote control master-slave manipulator characterized by increased work load capacity without excessive tape deflection through increased tape drum speed and increased rigidity. These results are accomplished by transmission of elevation and twist motions to the tape drums through a pair of differential gears to a pair of cluster gears and a pair of idlers to the drums. The wrist joint

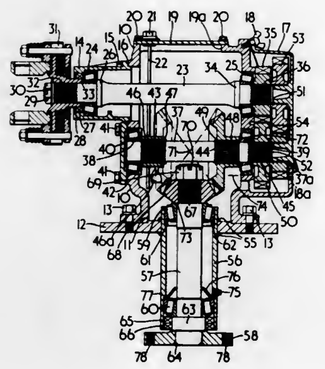


assembly is separable vertically to permit access for ease of initial assembly and adjustment. The tape drums are composed of two relatively movable segments having means of attachment permitting a plurality of assembly positions for adjustment of tape tension.

3,503,274
DRIVE TRANSMISSION GEARBOX

John Arthur Howard, West Horndon, England, assignor to Rotary Hoes Limited, West Horndon, Essex, England

Filed May 9, 1968, Ser. No. 727,893
Claims priority, application Great Britain, May 12, 1967, 22,063/67
Int. Cl. F16h *3/08, 1/14, 1/20*
U.S. Cl. 74—325 **7 Claims**



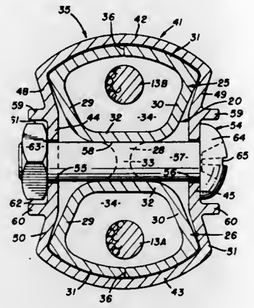
A drive transmission gearbox comprising a driving shaft arranged at right-angles across one end of an output shaft, drives the latter through a substitutable pair of meshed bevel gear wheels, the bevel gear wheel on the driving shaft being optionally transferable to mesh

the other bevel gear wheel at opposite ends of a diameter of the latter so as to drive the output shaft in one direction or the other.

3,503,275
SYSTEM FOR MOTION TRANSFER BY BALANCED CABLES

John F. Morse, Hudson, Ohio, assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,332
Int. Cl. F16c *1/10;* **F16l** *9/16, 9/00*
U.S. Cl. 74—501 **21 Claims**



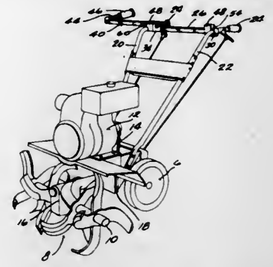
A system for transferring motion between remote locations by balanced control cables. The system employs a unique conduit of unitary construction with two, distinct, opposed ducts. Each duct and the chamber therein presents generally a cross-sectional shape of a truncated sector. The truncating chord walls of opposed ducts are joined by a transverse web. The included arcuate wall between the side walls of each duct is cleft longitudinally of the conduit. The conduit thus formed has excellent columnar and beam strength but limited torsional strength so that the conduit may be torsionally twisted, and set, to effect a selected change in the plane of the cables passing through the ducts without distortion of the chambers within each duct and therefore without restricting the movement of the cables therein. Unique couplers are provided for joining lengths of the conduit together, also without restriction, and special elbows are provided through which the cables can be reeved from either conduit with assured entrance into the appropriate chambers of the other conduit attached to such elbow. Lateral take-offs are also provided to permit tributary connections in the system by accommodating a departing and return run of one of the cables with respect to the direction in which the other cable is continued.

3,503,276
LATERAL EXTENSION HANDLE FOR CULTIVATORS

Serge R. Vigot, La Celle St. Cloud, France, assignor to Ariens Company, Brillion, Wis., a corporation of Wisconsin

Filed Oct. 18, 1968, Ser. No. 768,851
Int. Cl. B62d *51/04*
U.S. Cl. 74—544 **6 Claims**

A support bar applicable across the handle of a conventional cultivator or the like carries a slide to which an extension handle is pivoted for use either at the right or the left of the regular cultivator handle. A latch releasably holds the slide and auxiliary handle in selected position so that the operator can use the auxiliary handle to

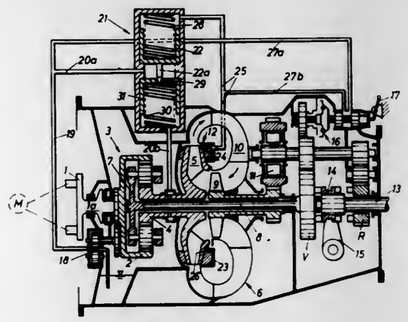


walk at one side of the path of the cultivator instead of directly behind it.

3,503,277
DIFFERENTIAL TORQUE CONVERTER TRANSMISSION

Hellmut Weinrich, Zang kreis Heidenheim, and Ernst-Otto Sierck, Heidenheim (Brenz), Germany, assignors to Voith Getriebe KG, Heidenheim (Brenz), Germany

Filed Aug. 30, 1968, Ser. No. 756,496
Claims priority, application Germany, Sept. 9, 1967, 1,655,632
Int. Cl. F16h *47/08, 5/60;* **B60k** *21/00*
U.S. Cl. 74—645 **4 Claims**



A differential converter transmission with the power path divided into a mechanical and a hydrodynamic power path including a converter, which last mentioned power path may selectively be made ineffective by braking the pump wheel of said converter by means of a brake piston so as to arrest said pump wheel, while throttle means associated with said converter is operable to reduce the high pressure in said converter so that the braking pressure acting upon said braking piston will not have to work against a high inner pressure in said converter.

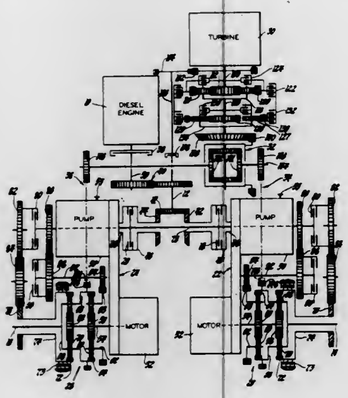
3,503,278
VEHICLE DRIVE AND STEER SYSTEM WITH POWER BOOST

William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 21, 1968, Ser. No. 754,400
Int. Cl. F16h *37/06;* **B60k** *17/30*
U.S. Cl. 74—661 **10 Claims**

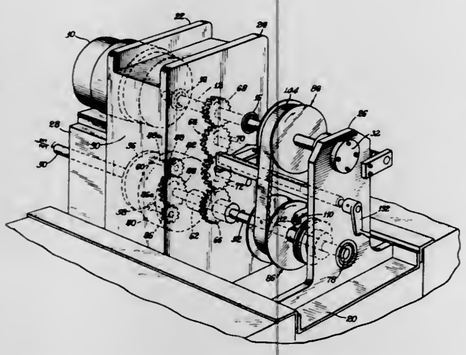
A primary engine supplies power through a transmission providing a plurality of drive ratios which includes left and right planetary gearsets that respectively drive left

and right transmission output shafts. The primary engine also drives hydrostatic steer pump and motor means having output means drivingly connected to each planetary gearset for vehicle steering purposes. There is a secondary engine which is drivingly connected to each of the output



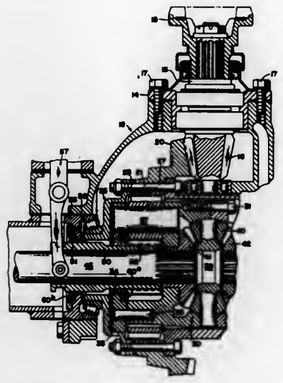
shafts by separate multi-ratio range transmission and power transmitting means so that secondary engine power can be added to that of the primary engine for power boost. The secondary engine can be utilized by itself for vehicle drive and steer and also for starting the primary engine.

3,503,279
VARIABLE SPEED POWER TRANSMISSION MECHANISM
Paul M. Sievert, Oak Park, and Carl G. Wennerstrom, Evanston, Ill., assignor to Sievert Electric Co., Chicago, Ill., a corporation of Illinois
Filed June 1, 1967, Ser. No. 642,767
Int. Cl. F16h *37/12*
U.S. Cl. 74—689 **2 Claims**



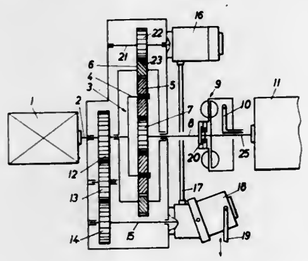
The novel invention comprises a general purpose variable speed and reversible power transmission comprised of input and output shafts mounted in spaced parallel arrangement, a planetary gear set and two mechanical energy transmission path means independently linking through the planetary gear set the input and output shafts.

3,503,280
BLOCKER DEVICE
Warren G. Bopp, Farmington, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 19, 1967, Ser. No. 691,905
Int. Cl. F16h *37/08*
U.S. Cl. 74—695 **18 Claims**



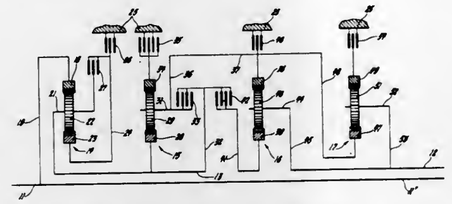
A blocker to prevent engagement of two relatively shiftable parts until their rotation is substantially synchronized. The obstructions of primary and secondary blocker rings overlap during nonsynchronous rotation of the two shiftable parts, but align with one another at the shift interval to permit teeth on one of the shiftable parts to pass through the blocker and engage cooperating teeth on the other shiftable part. At rest and low speed conditions of the two shiftable parts, shifting straight through the blocker is made possible by resilient means built into the unit, as distinguished from conventional blocker arrangements which operate to prevent nonsynchronous shifting at all times.

3,503,281
POWER TRANSMITTING PLANT WITH CONTROLLABLE FLUID COUPLING
Wilhelm Gsching and Dieter Rottmann, Hamburg-Altona, Germany, assignors to Voith Getrieb KG, Heidenheim, Germany
Filed Mar. 6, 1967, Ser. No. 621,062
Claims priority, application Germany, Mar. 8, 1966, 1,550,977
Int. Cl. F16h *37/00*
U.S. Cl. 74—732 **2 Claims**



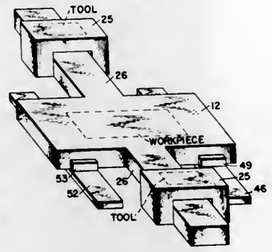
Low loss variable speed transmission with a planetary gear set and a controllable fluid coupling in series with the planetary gear set having three elements of which one receives power from a main drive motor, another supplies power to a driven working machine, while the third is driven at variable speed by a drive means so as to superimpose a control for modifying the speed of the working machine.

3,503,282
MULTISPEED TRANSMISSION
Ronald G. Peterson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 8, 1968, Ser. No. 743,227
Int. Cl. F16h *57/10*
U.S. Cl. 74—759 **5 Claims**



A multispeed ratio gearing arrangement in which a planetary splitter unit having two output speeds continuously drives one range planetary unit and selectively drives another range planetary unit which is connected to the transmission output is herein disclosed. The two range planetary units are drivingly connected to a forward-reverse planetary, which is also connected to the output, such that selective combinations of drive paths established by engagement of seven friction drive establishing devices, which control the drive ratio of the planetary units, provides ten forward drive ratios and two reverse drive ratios.

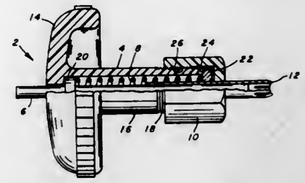
3,503,283
MACHINE TOOL
Alden H. Jacobson, Princeton, and Albert L. Larson, Holden, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,030
Int. Cl. B23b *39/00, 17/00;* **F16c** *5/00*
U.S. Cl. 77—1 **9 Claims**



This invention relates to a machine tool and, more particularly, to a horizontal boring machine or the like having a slidable table supported on flat ways and having guides separate from the ways.

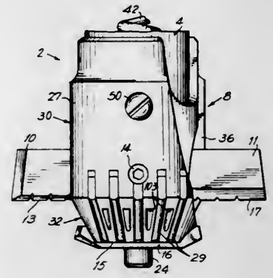
3,503,284
CABLE DRILL
John W. Swineford, Glenshaw, Pa., assignor to Goss Gas, Inc., Glenshaw, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1968, Ser. No. 725,453
Int. Cl. B23b *45/06*
U.S. Cl. 77—7 **4 Claims**

This patent discloses a cable drill that is substantially less expensive to manufacture than the ones that are now used and, at the same time, more advantageous, in that it is not necessary to use a vise or a pair of wrenches to tighten the drill bit into place and thus prevent it from failing to rotate with the handle of the cable drill when



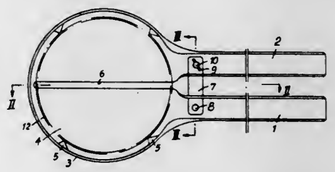
the drill is in use. The handle and the nut securing the drill bit thereto are made of plastic, and the drill bit used has a shoulder that is shaped to fit into the handle.

3,503,285
BORING TOOL
William Halpern, Haviland Road, Harrison, N.Y. 07029
Filed Mar. 17, 1967, Ser. No. 623,982
The portion of the term of the patent subsequent to Mar. 21, 1984, has been disclaimed
Int. Cl. B23b *29/02*
U.S. Cl. 77—58 **1 Claim**



A boring tool is disclosed of the type shown in United States Patents Nos. 3,309,945 and 3,314,314 but having two boring bits. The bits are positioned face to face with their cutting edges in substantial alignment. A sliding nose cone engages an original hole in the workpiece and provides firm support in alignment with the cutting edges.

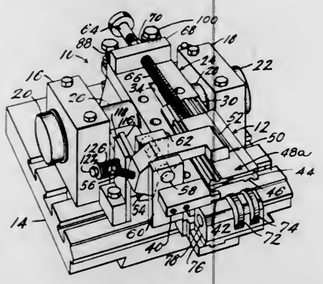
3,503,286
APPLIANCE FOR LOOSENING SCREW CAPS OF RECEPTACLES
Günter Flügel, 3 Kopernikusweg, Solingen, Germany
Filed Apr. 18, 1968, Ser. No. 722,407
Claims priority, application Germany, Apr. 20, 1967, F 52,199
Int. Cl. B67b *7/18;* **B25b** *13/00*
U.S. Cl. 81—3.41 **6 Claims**



The invention provides an appliance for loosening screw caps of receptacles which comprises a pair of arms, a cover-like head portion formed at one end of said arms and

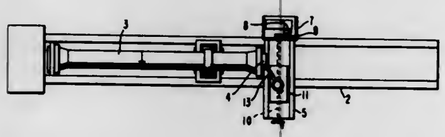
provided with an open ended slot extending in the longitudinal direction of the arms and opening therebetween, and a substantially annular skirt depending from said head portion and forming a clamping jaw for a screw cap to be loosened.

3,503,287
TOOL AND TOOLHOLDER
Robert C. Zeller, 643 Clinton St., and Warren W. Weible, 635 Holgate Ave., both of Defiance, Ohio 43512
Filed Mar. 17, 1967, Ser. No. 623,938
Int. Cl. B23b *29/60, 29/16*
U.S. Cl. 82—35 **7 Claims**



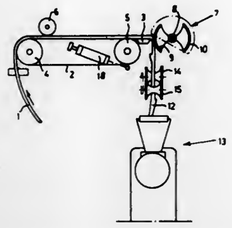
The invention is directed to a shave tool and a shave toolholder for cutting and forming machines, e.g. screw machines. The tool has a transverse cross section which is shaped, in part, the same as the piece to be machined so that the tool can be sharpened merely by grinding an end portion thereof. Also, all but a small portion of the tool can be utilized. The toolholder has adjustments for accurately positioning the tool with respect to a workpiece, with all of the adjustments being readily accessible. The toolholder has a contoured surface supporting the tool, with the mating surfaces of the holder and tool positioning the more critical areas of the tool precisely with respect to the workpiece.

3,503,288
APPARATUS FOR TRANSVERSELY CUTTING A PLURALITY OF SMALL HOLLOW PLASTIC TUBULAR ELEMENTS EMBEDDED IN A SOLID MATRIX OF PLASTIC MATERIAL TO MAINTAIN THE ENDS THEREOF OPEN
Lennart Gerhard Swartling, 20 Rockrose Drive, Newark, Del. 19711
Filed May 22, 1967, Ser. No. 640,183
Int. Cl. B23b *1/00*
U.S. Cl. 82—48 **3 Claims**



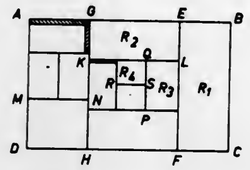
An arrangement for cutting hollow plastic filaments embedded in a solid plastic matrix generally comprising steps of and means for securing a cylindrical solid mass with hollow filaments embedded therein in a driven rotary means and rotating the mass about its longitudinal axis, coarse cutting the end of the rotating mass to square the face just outside the intended final surface, trimming the "squared" end face of the rotating mass with a chisel-shaped cutter beginning at the periphery and progressively advancing the cutter radially inward along the end face. The cutting edge of the cutter being positioned so that the edge length lies in the plane of the end face and is perpendicular to the rotational axis of the permeator with the lower corner of the edge traveling along a line that intersects the center of rotation, and advancing the cutter at a continuously increasing rate to accommodate for the decreasing diameter of the ridge of material being removed and insure that a given point on the mass engaging a position on the cutter on one revolution of the mass will pass radially outward of the cutting edge without being contacted thereby on any succeeding revolution.

3,503,289
DEVICE FOR CUTTING A CONTINUOUS STRIP FROM AN ELONGATED SHEET
John Inge Ronnie Friberg, Gislaved, Sweden, assignor to N.V. Veluwse Machine Industrie, Epe, Netherlands
Filed May 8, 1967, Ser. No. 636,774
Claims priority, application Sweden, May 18, 1966, 6,893/66
Int. Cl. B29h *7/18;* **B26d** *3/12, 1/38*
U.S. Cl. 83—1 **7 Claims**



A device for obtaining a narrow strip from an elongated sheet which has a pair of opposed longitudinal side edges. The sheet is longitudinally fed, by a suitable feeding means, in the direction of its side edges. Then the sheet is cut transversely by a cutting means which coacts with the feeding means for cutting transversely across the sheet first from one of its side edges to the region of the other of its side edges and then from this other side edge back to the region of the one side edge after the sheet has been fed by the feeding means through a given increment which will determine the width of the strip. These operations are cyclically repeated so that a continuous elongated strip is obtained in this way from the sheet.

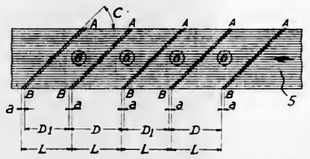
3,503,290
METHOD FOR CUTTING A SHEET OR STRIP INTO A PLURALITY OF PIECES
Jean-Adolphe Valembois, Woluwe-St. Lambert, and Jean-Marie Couvreur, Moustier-sur-Sambre, Belgium, assignors to Glaverbel, Watermael-Boitsfort, Belgium
Filed Dec. 8, 1967, Ser. No. 689,126
Claims priority, application Luxembourg, Dec. 13, 1966, 52,594
Int. Cl. B26d *1/00*
U.S. Cl. 83—23 **8 Claims**



A method for cutting sheets or strips of material into a number of pieces of predetermined dimensions listed in an order book, by detecting the coordinates of any

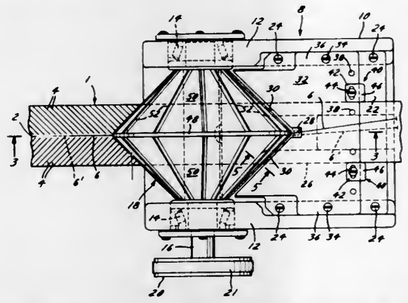
flaws present in each sheet or strip, allocating to each piece of predetermined dimensions to be produced a numerical value representing the cost price of the piece, establishing sheet or strip cutting patterns taking account of the flaws present, by developing various arrangements on the strip or sheet of the pieces of predetermined dimensions taken from at least a part of the order book, selecting and retaining that cutting pattern for which the ratio between the sum of the numerical values representing the cost prices of the pieces appearing in the pattern and the total sheet or strip area utilized is a maximum, and cutting the sheet or strip in accordance with at least a part of the selected cutting pattern.

3,503,291
METHOD AND MACHINE FOR CUTTING RUBBERISED FABRIC
Jacques Pouilloux, St. Gratien, France, assignor to Pneumatiques Caoutchouc Manufacture et Plastiques Kleber-Colombes, Colombes, France, a corporation of France
Filed Mar. 27, 1967, Ser. No. 626,171
Claims priority, application France, Mar. 31, 1966, 55,900
Int. Cl. B26d *3/00, 5/20*
U.S. Cl. 83—42 **8 Claims**



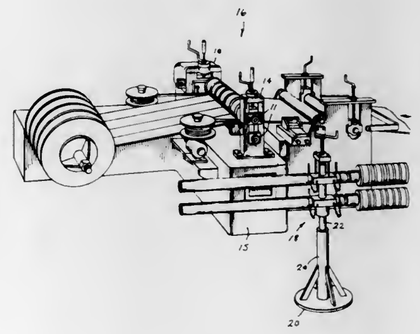
The invention relates to a method of and apparatus for cutting rubberised fabric and the like by means of one or more rotary knives moving transversely of the fabric. The fabric is advanced after the end of each travel of the knives for successive unequal distances, the fabric being moved for the forward travel of the knives by a distance equal to the width of the strip to be cut plus twice the predetermined displacement from the theoretical cutting line and for the return travel of the knives the fabric is moved by a distance equal to the width of the strip to be cut minus twice said predetermined displacement.

3,503,292
SHEET CUTTING DEVICE
Arthur H. Kingberg, Norwalk, Conn., assignor to Paper Novelty Manufacturing Company, Hartford, Conn., a corporation of New York
Filed Feb. 19, 1968, Ser. No. 706,340
Int. Cl. B26d *5/20*
U.S. Cl. 83—355 **26 Claims**



A device for cutting sheet material to produce a spaced series of cuts on side portions of the sheet at a desired angle relative to the sheet axis while maintaining the longitudinal continuity of the sheet, thereby to produce cut sheet material suitable for fabrication into garlands, imitation tree limbs and the like. The cutter comprises a stationary body on which the sheet material is adapted to move, that body terminating in an edge shaped to correspond to the desired angularity of the cuts to be produced and, in cooperation therewith, a rotary cutter which carries cutting members oriented in directions corresponding to said edge of the stationary body. The cutter as it is rotated causes the cutting members to move past said edge so as to cut the sheet therebetween. Longitudinal continuity of the sheet is produced by providing the cutter with a circumferential space free of cutting members, that space cooperating with a corresponding section of the edge on the stationary body.

3,503,293
SLITTER CUTTING DISK ASSEMBLY TRANSFER DEVICE
Lester E. Sander, 3608 Parthenon Way, Olympia Fields, Ill. 60461
Filed Mar. 11, 1968, Ser. No. 712,082
Int. Cl. B23d *19/00;* **B26d** *1/14*
U.S. Cl. 83—481 **8 Claims**

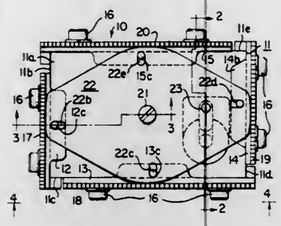


A cutting disk assembly transfer device for use with a slitter and having upper and lower sets of arms spacedly positioned and rotatably mounted upon an upstanding support. Each arm has an outer telescopic part of an outer cross sectional configuration similar to that of an arbor of the slitter, and is adapted to support a cutting disk assembly and to be positioned in alignment with and abutting the end of a slitter arbor for transfer of a cutting disk assembly from the arbor onto an arm and vice versa.

3,503,294
SAWING APPARATUS FOR GEOMETRIC SHAPES
Joseph Vinciguerra and James J. Henigan, both % 5216 Knox St., Philadelphia, Pa. 19144
Filed Feb. 2, 1968, Ser. No. 702,722
Int. Cl. B26d *5/08*
U.S. Cl. 83—618 **7 Claims**

This apparatus includes a central generally rectangular mounting block. Four saw-retaining plates with four rectangular saw blades fixed thereto slide back and forth in channels formed in the sides of the block. Each retaining plate includes a pin which extends beyond the top surface of the block and fits in a slot formed in a rocking driving plate fixed to the top side of the block. This plate rotates alternately clockwise and counter-clockwise in response to the movement of a crank member which ec-

centrically engages it. The crank member is adapted to be coupled to an appropriate source of rotary power. As a result, the saw blades alternately move clockwise and



counter-clockwise around the block, the path of each saw blade overlapping the path of the two saw blades next-adjacent thereto.

3,503,295

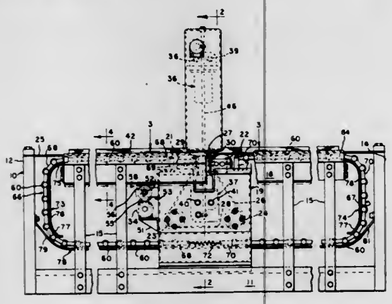
SUPPORT FOR FLEXIBLE TABLE TOP

James G. Wiatt and Edward C. Bruns, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Continuation of application Ser. No. 666,097, Sept. 7, 1967. This application Jan. 28, 1969, Ser. No. 800,802

Int. Cl. B26d *5/08*

U.S. Cl. 83—648 **11 Claims**



A material cutting machine has a flexible band upon which material to be cut is supported. The opposite ends of the flexible band are fixedly attached to a fixed support structure whereby the band forms the top of a table. Cutting means is supported on a carriage, which has means cooperating with the flexible band to form a loop in the band into which the cutting means may extend. As the carriage moves longitudinally, the loop in the flexible band moves therewith. One group of rollers is attached to one side of the carriage and extends therefrom to provide support between the one side of the carriage and adjacent one end of the flexible band. A second group of rollers is attached to the other side of the carriage and extends therefrom to provide support between the other side of the carriage and adjacent the other end of the band. Each of the groups of rollers has sufficient length to provide support to substantially the entire length of the band when the carriage is disposed adjacent either end of the table. The two groups of rollers are connected to each other by resilient means. The support structure has means to support shafts of the rollers when the rollers are supporting the band and other means to support the rollers directly when the rollers are not supporting the band and are disposed in areas beneath the band.

3,503,296

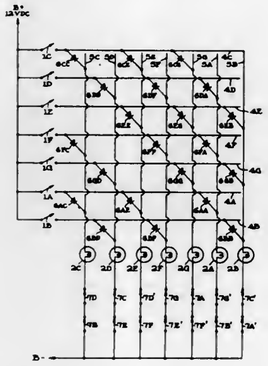
VISUAL KEYBOARD TEACHING DEVICE

Arthur R. Schmoyer, Potomac, James J. Dozier, Jr., Glen Echo, and Richard H. Bradford, Kensington, Md., and John E. E. Boswell, Jr., Falls Church, Va., assignors, by direct and mesne assignments, to Electro Learner Corporation, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 623,168, Feb. 2, 1967, which is a continuation-in-part of application Ser. No. 602,607, Dec. 19, 1966. This application July 18, 1967, Ser. No. 654,189

Int. Cl. G09b *15/02*

U.S. Cl. 84—478 **10 Claims**



A keyboard teaching device including light indicators visually associated with individual keys and activated by manual depression of, touch contact with, or proximity to a selected key by a finger of the student to indicate the companion keys to be depressed together with the initially activated key in order to form a chord triad. Specific circuitry involves a diode matrix and associated activating, enabling, and inhibit circuits.

3,503,297

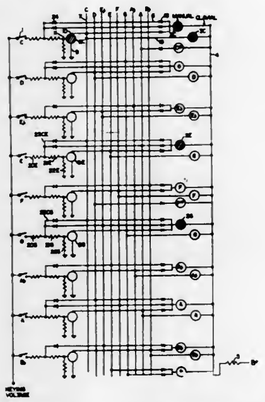
ELECTRONIC KEYING SYSTEM

Arthur R. Schmoyer, Potomac Falls, Md., and George B. Schaefer, Des Plaines, and William Wangard, Maywood, Ill., assignors to Electro-Learner Corporation, Wilmington, Del., a corporation of Delaware

Filed Nov. 12, 1968, Ser. No. 774,997

Int. Cl. G09b *15/04*

U.S. Cl. 84—478 **5 Claims**



An electronic keying system particularly adaptable to keyboard teaching devices uses a plurality of high impedance input solid state switching devices, a selected

one of said devices being triggered upon keying to simultaneously activate a plurality of functions and while so triggered inhibiting the triggering of other subsequently keyed switching devices.

3,503,298

WALL PLUGS AND THE LIKE

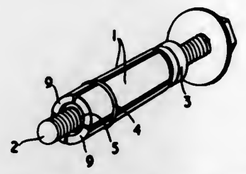
Etienne J. J. M. van Thiel, Oranjelaan 40, Beek en Donk, Netherlands

Filed July 8, 1968, Ser. No. 750,416

Claims priority, application Netherlands, July 27, 1967, 6710357

Int. Cl. F16b *13/06*

U.S. Cl. 85—75 **9 Claims**



A wall plug comprising two or more outer partially cylindrical elements interconnected at one end to permit shifting of the opposite ends of the elements outwardly from the axis of the plug to expand the latter. Tapered thickenings integral with the elements on the inner surfaces thereof cooperate with a bolt having a faceted nut to force the elements into their expanded positions upon rotation of the nut relative to said thickenings.

3,503,299

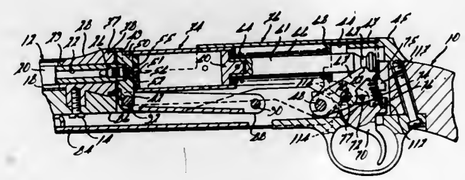
AIR OPERATED PROJECTILE FIRING APPARATUS

Ronald Wayne Joyce, Springdale, Eugene Elton Billingslea, Rogers, and Paul Oliver Hurley, Springdale, Ark., assignors, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 30, 1966, Ser. No. 598,086

Int. Cl. F41f *17/06*

U.S. Cl. 89—7 **12 Claims**



There is herein disclosed a single shot firearm adapted to fire caseless ammunition from a firing chamber formed in the rear of the barrel by surface contact with high temperature air delivered from an axially movable air compression cylinder slidably mounted in a guide housing and operable by a lever connected through an elongated slot.

3,503,300

HIGH FIRING RATE HYPERVELOCITY GUN AND AMMUNITION THEREFOR

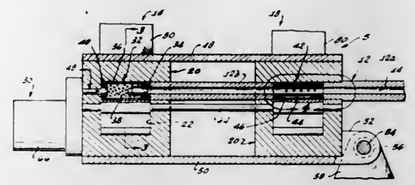
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Sept. 1, 1967, Ser. No. 665,155

Int. Cl. F41d *11/14*

U.S. Cl. 89—8 **20 Claims**

A high firing rate hypervelocity gun having at least one barrel, a primary breech mechanism at the breech end of the barrel for successively transporting primary rounds to and firing each round in firing position to effect forward propulsion of its projectile through the barrel, and at least one secondary breech mechanism located at a booster station along the barrel forwardly of the primary mechanism for successively transporting booster rounds to firing position simultaneously with the primary rounds in such manner that the propellant charge in each booster



round is exposed to and ignited by the propellant gas generated by the corresponding fired primary round upon forward travel of its projectile through the respective booster station, thereby to increase the propellant gas pressure behind the projectile and accelerate the latter through the barrel. Booster ammunition for the hypervelociiy gun.

3,503,301

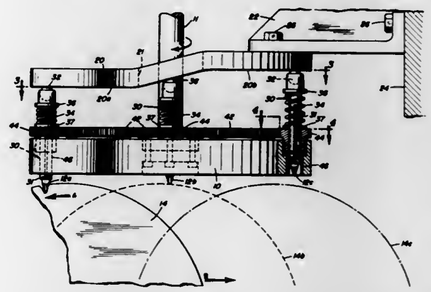
APPARATUS AND METHOD FOR CUTTING GEARS

Dan R. Cantrell, Brookside Apartments, Apt. A, Dickson, Tenn. 37055

Continuation-in-part of application Ser. No. 699,700, Jan. 22, 1968. This application Apr. 4, 1968, Ser. No. 718,813

Int. Cl. B23f *9/10;* **B23d** *13/06*

U.S. Cl. 90—5 **12 Claims**



An apparatus and method for cutting gears wherein a cutter blade is rotated in a circular path while a gear blank is continuously rotated and translated into a portion of said path. Means are provided to retract the cutter blade into an inoperative position during travel of the cutter blade in the remaining portion of said circular path.

3,503,302

MINE ROOF SUPPORTS

Hermann-Josef Schulze-Helming and Herbert Schulze-Helming, both of Kreugstrasse 24, Horneburg, Germany

Filed May 10, 1967, Ser. No. 637,569

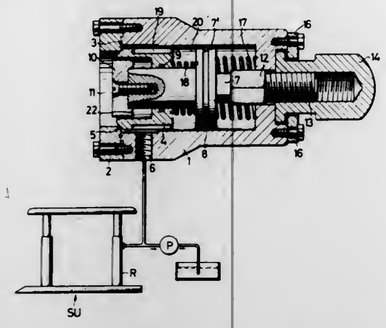
Claims priority, application Germany, May 14, 1966, K 59,250

Int. Cl. F01b *25/26;* **F15b** *11/08;* **F16k** *31/44*

U.S. Cl. 91—1 **2 Claims**

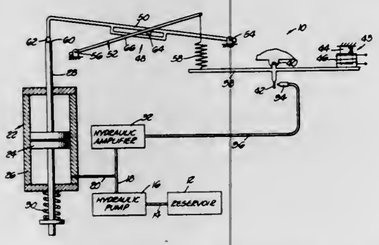
A self-advancing mine roof support having a hydraulic ram for holding a beam against a roof support in which a pump pressurizes the ram and hydraulic pressure fluid

is released from the ram by a device having an expansible chamber communicating with the ram and which has means for releasing fluid from such chamber, there being controllable means for enlarging such chamber so that it



can accommodate a greater volume of pressure fluid to lower the pressure on the ram. A manually adjustable setting nut is associated with a scale so that the enlargement of the chamber as well as the release of fluid can be predetermined.

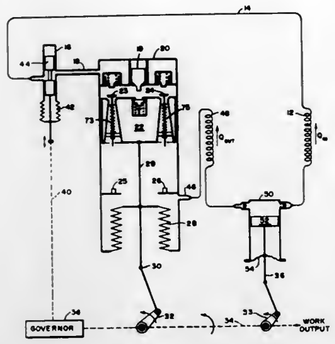
3,503,303
TENSION SPRING SUPPORTING ARRANGEMENT
Frank Francis Domyan, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1968, Ser. No. 718,448
Int. Cl. F15b *9/08, 13/16;* **F16h** *21/44*
U.S. Cl. 91—47 **3 Claims**



The invention relates to an improvement in a control employed in a hydraulic apparatus which has a vertical piston rod that controls a large force by the use of a small change in fluid pressure. The small change in fluid pressure is achieved by varying the amount of hydraulic fluid which is permitted to escape from a bleed nozzle by the use of a vane movable toward and away from the nozzle orifice. The improved control employs a vertical feedback spring which is connected through a pivoted arm to the piston rod in such a manner that the spring remains vertical regardless of the vertical position of the rod.

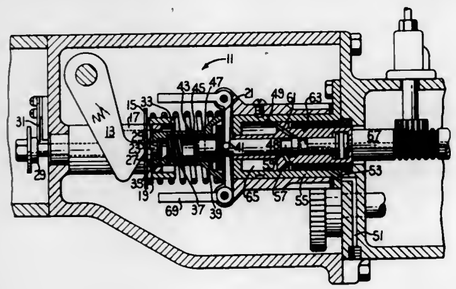
3,503,304
POWER SOURCE
Joseph Comeau, Jr., Danvers, Robert J. Harvey, Sudbury, and Thomas C. Robinson, West Newton, Mass., assignors to Thermo Electron Corporation, Waltham, Mass., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,643
Int. Cl. F01b *25/06;* **F16j** *15/18;* **F15b** *11/08*
U.S. Cl. 91—336 **3 Claims**

A silent, efficient power source organized about a Rankine-cycle vapor engine of the reciprocating type having a thermal side and mechanical or driving side. The vapor or working fluid is hermetically sealed in the thermal side and thus isolated from the mechanical side and from the outside atmosphere. A hermetic seal similarly



isolates the working fluid from the mechanical side of the auxiliary engine components such as the feed pump and power control members and the entire thermal system is also hermetically sealed from the outside atmosphere.

3,503,305
ENGINE GOVERNOR WITH EXCESS FUEL DEVICE
Kenneth W. Updyke, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 24, 1968, Ser. No. 723,694
Int. Cl. F15b *9/02, 15/17;* **F02c** *9/04*
U.S. Cl. 91—366 **2 Claims**

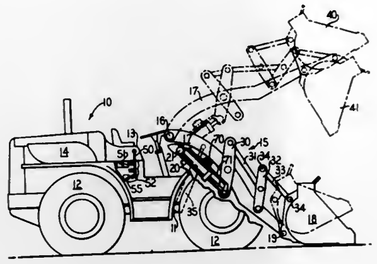


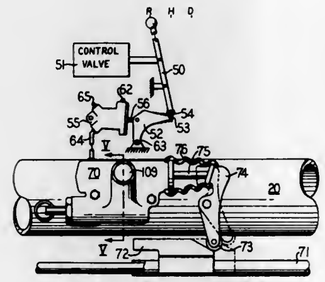
A spring in series with the servo valve of a known hydro-mechanical governor, which spring causes the fuel pump rack to move past its full load setting and permit excess fuel to be injected into the engine during starting.

3,503,306
POSITIVE PRESSURE DETENT AND RELEASE APPARATUS FOR CONTROL VALVES
Donald R. Muellner, Aurora, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 23, 1968, Ser. No. 746,939
Int. Cl. F15b *13/16, 7/00;* **F01b** *31/00*
U.S. Cl. 91—388 **5 Claims**

In many modern day hydraulic systems employing spring centered control valves, these valves often must be manually held in an open position until a desired actuation has occurred. Detents holding such valves in the open position with release means triggered by the completion of the desired actuation are often desirable to

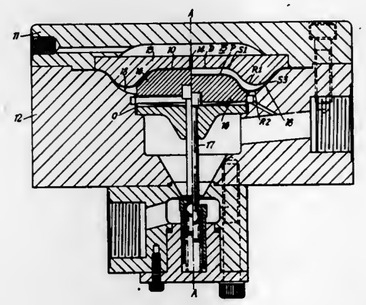
free the operator's hands for other operations. The current invention is an improved cam detent and release apparatus for use with spring centered control valves having a hydraulic receiver operable to release the control valve spool





from a cam maintained open position and a remote hydraulic sender connected to the receiver through a conduit in which a pressurized reservoir maintains a minimum positive static pressure system at all times.

3,503,307
DIAPHRAGMS
Kazimierz Migdal, London, England, assignor to I.V. Pressure Controllers Limited, Feltham, England, a British company
Filed Mar. 28, 1968, Ser. No. 716,952
Claims priority, application Great Britain, Mar. 31, 1967, 14,997/67
Int. Cl. F01b *19/00;* **F16j** *3/00*
U.S. Cl. 92—98 **4 Claims**



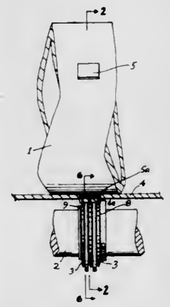
In a diaphragm operated pressure reducing valve or the like a rolling diaphragm is employed which is formed of a non-elastomeric material and is supported both during and at the limits of its travel so that the diaphragm will never be subjected to full differential pressure without support.

3,503,308
METHOD OF MANUFACTURING END CLOSURES FOR A VACUUM CLEANER DUST BAG
William S. Henry, Stamford, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Mar. 28, 1967, Ser. No. 626,617
Int. Cl. B31d *5/00*
U.S. Cl. 93—1 **4 Claims**



In order to pretensioning an elastic strip which overlies a pair of flaps hinged on a disc of a dust bag closure plate, the disc having the flaps is bent so that it forms a semicircle or arc, and the elastic strip is applied as the chord of the arc. When the bent disc is straightened the elastic strip is elongated slightly providing a pretension therein to more positively close the flaps.

3,503,309
FLOATING COMBS FOR SCRAP STRIPPING DEVICE
Kenneth W. Jones, 1713 Jackson Lane, Middletown, Ohio 45042
Filed June 14, 1968, Ser. No. 737,050
Int. Cl. B31b *3/74*
U.S. Cl. 93—36 **5 Claims**



Floating combs for use in a scrap stripping device wherein paperboard or similar sheet materials having scrap areas to be removed are advanced in a path of travel between an overlying timing wheel mounting adjustable pads which contact the scrap areas of the sheet and deflect them downwardly into engagement with one or more rotating stripping discs mounted on a common shaft and provided throughout their peripheries with continuous sets of teeth, the combs being in the form of annular discs loosely fitted on the common shaft adjacent the stripping discs and of a size such that when a piece of scrap is engaged by the teeth on the stripping discs and the discs rotated to carry the scrap downwardly, the annular combs will be displaced upwardly by the scrap for contact by the overlying timing wheel which will deflect the annular combs downwardly beyond the outermost edges of the scrap engaging teeth to thereby remove the scrap areas from the teeth.

3,503,310
METHOD OF MAKING A MULTILAYERED PAPER CONTAINER

Kurt Goetz, Zofingen, Aargau, Switzerland, assignor to Impragnieranstalt A.G., Zofingen, Aargau, Switzerland

Filed Feb. 26, 1968, Ser. No. 708,193
Claims priority, application Switzerland, Feb. 28, 1967, 2,923/67
Int. Cl. B65h
U.S. Cl. 93—94 9 Claims



A multilayer conical container is made by winding a strip of laminated paper material on a mandrel to obtain a tube, and the tube shell is passed between corrugated forming tools to provide axially extending corrugations to the shell, the corrugations gradually decreasing in depth from one end of the tube shell towards the other end, whereby to impart a cone-shape to the shell.

3,503,311
JOINT AND CRACK SEAL AND METHOD FOR SEALING JOINTS AND CRACKS

Duane W. Gagle and Homer L. Draper, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 26, 1968, Ser. No. 762,873
Int. Cl. E01c *11/10*
U.S. Cl. 94—18 5 Claims



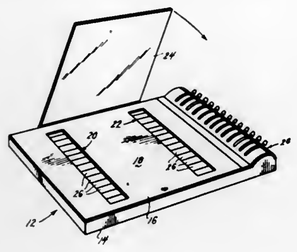
Joints or cracks, e.g., space between concrete slabs are packed employing polypropylene tow saturated with cationic asphalt emulsion. The tow can be saturated before or after it has been placed into the joint or crack. Several layers of tow can be used filling to about ¼-inch from pavement surface and cationic asphalt emulsion added to bring the packed joint level to about ⅛-inch of the pavement surface. Optionally, the last ⅛-inch fill can be air-blown cut-back asphalt impregnated with about 5 percent asbestos filler. A small amount of cationic asphalt emulsion can be placed into the void between the slabs to prime the bottom area prior to inserting the polypropylene tow. Other asphalt emulsions are disclosed. The adhesiveness of the asphalt mass containing the polypropylene filler is retained through repeated extensions and compressions thereof.

3,503,312
PHOTOGRAPHIC CODING MEANS

Horace S. Allen, St. Louis, and Donald L. Briggs, Florissant, Mo., assignors, by mesne assignments, to McDonnell Douglas Corporation, St. Louis, Mo., a corporation of Maryland

Filed Dec. 30, 1966, Ser. No. 606,139
Int. Cl. G03b *17/24, 27/52*
U.S. Cl. 95—1.1 8 Claims

A device for encoding photographic images having a surface portion on which the object to be photographed is positioned. Positioned adjacent the surface portion are a plurality of movable code bars having two solid color portions thereon separated by a different solid color portion therebetween. The code bars are movable between two alternate operating positions whereby

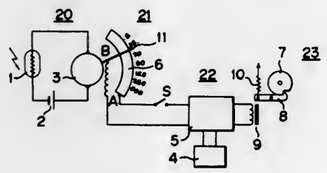


selected ones of the solid color portions of each bar are exposed to form a code pattern adjacent to the object to be photographed.

3,503,313
AUTOMATIC EXPOSURE CONTROLLING DEVICE FOR FOCAL PLANE SHUTTER CAMERAS

Yoshio Kuramoto, Osaka, Japan, assignor to Minolta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan, a Japanese corporation

Filed May 27, 1966, Ser. No. 553,476
Claims priority, application Japan, June 11, 1965, 40/34,888
Int. Cl. G03b *7/08*
U.S. Cl. 95—10 1 Claim



An automatic exposure control device for a camera in which light from a subject is measured by a behind-the-lens measuring system and the shutter speed thereof is electrically controlled by a timing circuit having an RC integral circuit. As the shutter is released, the resistance R of the RC integral circuit is either automatically selected corresponding to an angular position of an ammeter pointer on a resistor on which the pointer is pressed by a shutter button, the position being relative to an amount of light impinging on a cell, or manually selected by a resistance group disposed in parallel with the resistor through a manually setting member having a following pointer followed by the ammeter pointer.

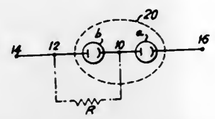
3,503,314
PHOTOGRAPHIC EXPOSURE CONTROL SYSTEM

Yasuo Tanabe, Tokyo, Japan, assignor to Kabushiki Kaisha Hattori Tokeiten

Continuation-in-part of application Ser. No. 566,972, July 21, 1966. This application May 8, 1967, Ser. No. 636,694
Claims priority, application Japan, July 30, 1965, 40/62,151
Int. Cl. G01j *1/00*
U.S. Cl. 95—10 5 Claims

An electronic photographic exposure control circuit comprising photoconductive cells including first and second photoconductive elements, having first and second photo-

resistive characteristics. The first and second photoresistive elements are connected to provide a combined photoresistive characteristic, wherein the first photoresistive characteristic will be dominant from the start of the shutter opening until the shutter is fully open, and the second photoresistive element will be dominant thereafter until

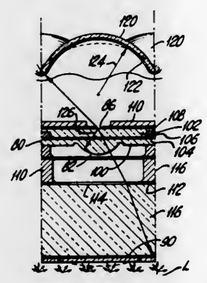


the shutter is closed. In this way, the combined photoresistive characteristic will be a function of exposure time and aperture opening from the start of the shutter opening, until the shutter is fully open, and will be a function only of change of exposure time, after the shutter is fully opened, i.e. maximum aperture area.

3,503,315
INTEGRAL PHOTOGRAPHY

Roger Lannes de Montebello, New York, N.Y., assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Dec. 12, 1966, Ser. No. 600,957
Int. Cl. G03b *35/24*
U.S. Cl. 95—18 8 Claims



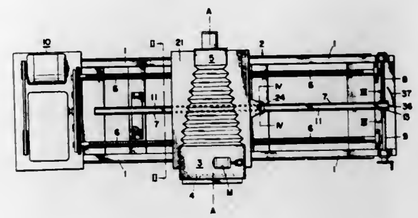
The invention provides a process for the production and display of a picture in panoramic stereoscopic relief, as distinguished from pseudoscopic relief, and which is a very wide-angle summation image of a scene. This summation image, as perceived, is three dimensional and orthoscopic in both horizontal and vertical axes and is directly visible in virtual space beyond and through its transparent support, an integral, spherilenticular network. The process restores fully natural binocular vision, offering widely variable perspective and aspect changes and complete masking and unmasking of objects by other objects, according to the distance and angle of observation, exactly as is the case in the presence of an actual scene, without any artificial compression of the Z or depth axis, and without the phases or shifts, pseudoscopic zones or repeat images found in the prior art.

3,503,316
APPARATUS FOR PRODUCING STEREOSCOPIC PICTURES

Tetsuya Takano and Takao Shibata, Tokyo, Japan, assignors to Toppan Printing Company Limited, Tokyo, Japan

Filed Nov. 8, 1966, Ser. No. 592,899
Claims priority, application Japan, Nov. 9, 1965, 40/68,298
Int. Cl. G03b *35/04*
U.S. Cl. 95—18 2 Claims

Apparatus for taking stereoscopic pictures, including a base for supporting the camera for lateral and pivotal movement with respect to the screen image, a camera mounted upon the base and including means for positioning a lenticular screen which is laterally movable with respect to the film supported within the camera. The

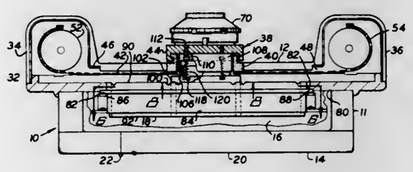


prior art shows means for laterally and pivotally moving a stereoscopic camera but does not suggest means for independently moving the lenticular screen within the camera.

3,503,317
CAMERA FOR PROVIDING MULTIPLE EXPOSURES ON ONE AREA OF FILM

Clayton G. Johnson, Motley, Minn., assignor to Multi-Photo Camera Corporation, Motley, Minn.

Filed Oct. 17, 1968, Ser. No. 768,330
Int. Cl. G03b *5/02*
U.S. Cl. 95—36 7 Claims



A camera for providing multiple exposures on successive positions of a single area of film by means of an insert block providing a plurality of portions of the area, which portions each have a predetermined size and configuration. A camera lens assembly is selectively moved and aligned with the predetermined areas of the insert block and is detented therewith by means of mating raised and recess portions in corresponding sections of the insert block and the camera lens assembly.

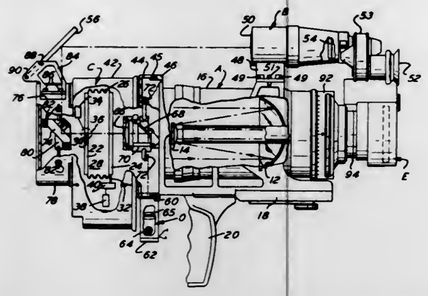
3,503,318
TARGET ACQUISITION SYSTEM FOR HIGH POWER OPTICAL DEVICES

Juan de la Cierva, Oreland, Pa., assignor to Dynascience Corporation, Blue Bell, Pa., a corporation of Pennsylvania

Filed Oct. 6, 1967, Ser. No. 673,430
Int. Cl. G03b *3/10*
U.S. Cl. 95—44 10 Claims

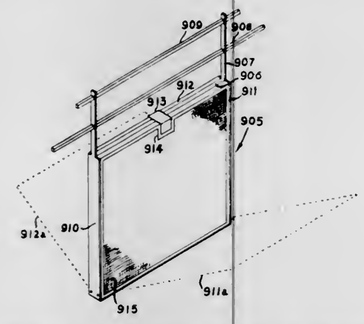
A target acquisition system comprising a very high power telescope having an attendant narrow field of view coupled with a relatively low power scanning telescope having a much wider field of view. The image produced by the high power Telephoto system is stabilized by a variable-angle fluid wedge which automatically compensates for high frequency angular motion between the Telephoto lens and the target. A reference pattern in col-

limation with the Telephoto lens and stabilized by the compensator wedge is superimprosed upon the low power



reticle plane to locate and define the high power field of view therein.

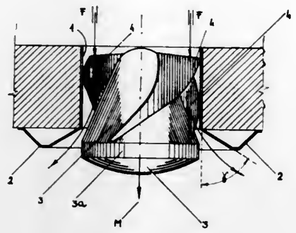
3,503,319
CARRIER FOR THE WET TREATMENT OF PHOTOGRAPHIC MATERIALS
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Continuation-in-part of application Ser. No. 649,059, June 26, 1967. This application Nov. 24, 1967, Ser. No. 695,815
Int. Cl. G03d *3/10*
U.S. Cl. 95—100 **2 Claims**



A photographic sheet material holder for processing sheet material having at least two compartments in which each compartment is provided with a narrow bottom, narrow vertical end members, and two perforate vertical major side members. One of the major side members forms a common wall for two adjacent compartments while the outer major side member of each compartment is pivotably mounted to permit opening and closing of the compartment. The holder also has a locking device for maintaining the major side members in the closed position and support arms for suspending the holder in a processing tank.

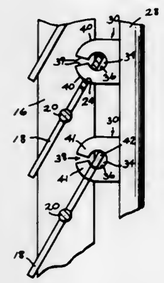
3,503,320
VENT
Salvatore Geromet, Trieste, Italy, assignor to Sogeco-Societa Generale Condizionaments, Monfalcone, Gorizia, Italy
Filed Apr. 5, 1968, Ser. No. 719,076
Claims priority, application Italy, Apr. 18, 1967, 60,321/67
Int. Cl. F24f *13/06*
U.S. Cl. 98—40 **8 Claims**

A ventilator comprises a frame defining a cylindrical passage through which air is adapted to flow. A closure member is located in this passage and movable deeper into the same whereby to close the passage against flow of air, and further out of the passage to define with the



wall bounding the passage annular gaps whose cross-sectional area increases as the closure member moves farther out of the passage.

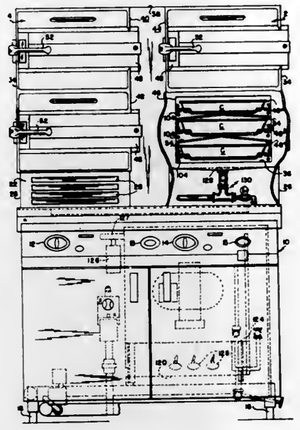
3,503,321
LOUVER ASSEMBLY
David A. Hartman and Gerald M. Ganger, Elkhart, Ind., assignors to Industrial Plastics Corporation, Elkhart, Ind., a corporation of Indiana
Filed June 17, 1968, Ser. No. 737,547
Int. Cl. F24f *13/14*
U.S. Cl. 98—110 **4 Claims**



A louver assembly including a frame and a plurality of tiltable parallel louvers journaled at their ends in said frame. Each louver has an aperture adjacent a longitudinal edge thereof and separated from said longitudinal edge by a web. An actuator rod for simultaneously tilted and positioning said louvers has a plurality of longitudinally spaced apertures and is pivotally connected with each louver at its aperture.

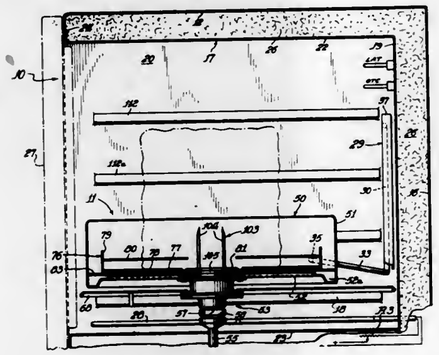
3,503,322
STEAM COOKER DEVICE
James R. Mecredy, Lakewood, Ohio, assignor to The Cleveland Range Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 14, 1967, Ser. No. 616,001
Int. Cl. A23l *1/00*
U.S. Cl. 99—324 **14 Claims**

A steam cooker for heating and/or cooking food items including a plurality of superposed rows of compartments. Each compartment having a series of superposed baffle members dividing each compartment into a plurality of separate heating and/or cooking chambers. Each chamber having a removable support rack for supporting one or more food containers in laterally spaced relationship for movement into and out of the chamber. A heat system disposed in each of the chambers including at least one pair of oppositely disposed apertured steam lines located



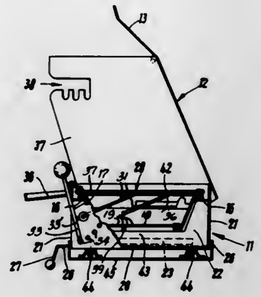
immediately below and adjacent the opposed ends of the respective support racks for impinging steam upwardly and directly onto the containers for heating and/or cooking food items contained therein.

3,503,323
FOOD COOKING APPARATUS
Myron Swetlitz, Omaha, Nebr., assignor, by mesne assignments, to Fedders Corporation, a corporation of New York
Filed May 25, 1966, Ser. No. 552,948
Int. Cl. A47j *37/04*
U.S. Cl. 99—352 **13 Claims**



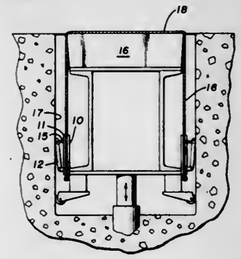
A cooking apparatus which prevents spatter from reaching and soiling the oven walls. The meat or other food product being cooked is rotated so that the fat and water constituents, which are normally responsible for spatter explosions, are driven from the meat into an underlying container before reaching their explosive temperature. A porous shield is positioned between the meat and the bottom surface of the container such that the fat and water constituents which collect therein after penetrating the shield are protected from further heating.

3,503,324
COLLAPSIBLE CHARCOAL GRILL
Hans Gmeiner, Ganghoferstrasse 52, Munich, Germany
Filed Nov. 8, 1967, Ser. No. 681,401
Claims priority, application Germany, Nov. 10, 1966, G 35,828
Int. Cl. A47j *37/08*
U.S. Cl. 99—393 **11 Claims**



A collapsible charcoal grill including a housing having an open top which is closable by a cover member and containing a charcoal pan and grill bars disposed above the pan and adjustable in height with respect to the pan, the pan being disposed in the housing in such a manner as to define at least one air space with the floor and side walls of the housing, the pan and housing being arranged to close the air space around the upper edges of the housing side walls, at least one lateral side wall having an adjustable opening for the passage of air to the air space, the grill further including lever means for adjusting the height of the grill bars over a large range, detachable members for providing a heat deflector, for protecting the grilling area from wind, and for supporting a rotary spit, and collapsible or foldable legs for supporting the grill when it is to be used.

3,503,325
CLAMP FOR BALE WRAP CARTON
James E. Aldridge, Trinity, and Andrew P. Carter, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 22, 1968, Ser. No. 754,674
Int. Cl. B30b *9/00*
U.S. Cl. 100—102 **2 Claims**

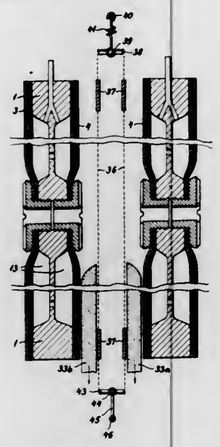


The novel clamping device retains a bale wrap carton in position during the lowering of a bale press follow block assembly into its recess and releases the same upon emerging from the recess thereby relieving the operator from the duty of manually holding the carton during the baling operation.

3,503,326
FILTER PRESS

Adam Juhasz, Budapest, and Attila Mahig, Almasfuzit, Hungary, assignors to Chemokomplex Vegyipari Gep-es Berendezes Export-Import Vallalat, Budapest, Hungary

Filed Dec. 30, 1966, Ser. No. 606,470
Claims priority, application Hungary, Jan. 8, 1966, Ju 169
Int. Cl. B30b *9/06*
U.S. Cl. 100—115 1 Claim

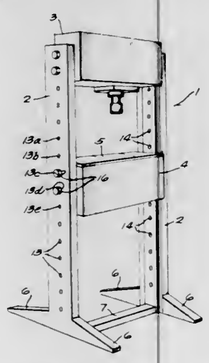


A filter press is composed of filter frames juxtaposed without the insertion of filter plates. Each frame has separate diaphragms on opposite sides thereof, which carry on their outer sides filter cloths with spacers between the diaphragms and filter cloths. The liquid is fed between adjacent filter cloths of two different filter frames and the filtrate is abducted between associated filter cloths and diaphragms. A filter cake remover comprises an endless net both webs of which are between adjacent filter frames. The filter cake adheres to the net and coheres through its meshes; and when the frames are opened, the cake is discharged by separating from each other both webs of the net, causing the filter cake to split and drop.

3,503,327
FRAME CONSTRUCTION

Leonard L. Lenz, Hales Corners, Wis., assignor to Shop-Matic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 13, 1968, Ser. No. 712,745
Int. Cl. B30b *5/00;* B21j *7/46;* B23p *19/04*
U.S. Cl. 100—257 11 Claims

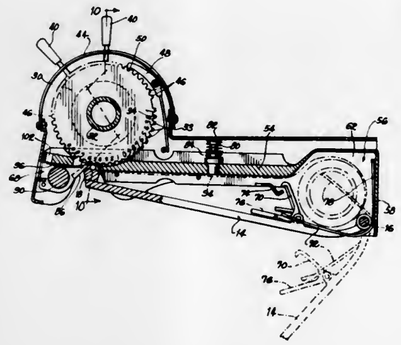


The invention relates to a frame construction for a press including a pair of vertical side members, and a fixed upper bed and a movable lower bed are secured between the side members. The side members are each provided with a series of equally spaced holes and the ends of the lower bed are also provided with a series of spaced holes having the same spacing as the holes in the side members. A pair of pins extend through the aligned holes in the side members and the ends of the lower bed to support the bed from the side members.

3,503,328
WIRE STAMPING TOOL

Ernest I. Ternovits, 4652 Lawrence Ave., Chicago, Ill. 60630

Filed Feb. 14, 1968, Ser. No. 705,496
Int. Cl. B44b *5/00;* B41j *1/22*
U.S. Cl. 101—10 16 Claims



A wire stamping device of the type having a plurality of heads carrying identifying characters and an anvil for supporting a wire whereby the wire can be pressed into engagement with the heads. A marking tape is interposed between the wire and heads to leave an impression on the surface of the wire. The heads are each provided with an extending handle for relative adjustment to provide different combinations of characters. The heads are located in a main body portion which includes a separately mounted support member carrying the tape in normally spaced apart relationship with respect to the heads. An arm is provided for carrying the anvil, and movement of the arm first forces the support member and associated tape into marking position and thereafter the wire is marked.

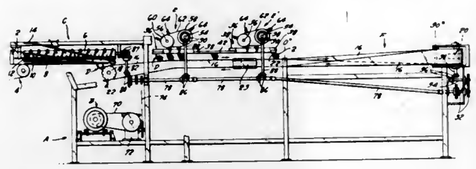
3,503,329
FEEDING AND DELIVERY MEANS FOR BOTTLES AND THE LIKE IN DECORATING MACHINES

Anthony T. Rossi, 1800 Point Pleasant Ave., Bradenton, Fla. 33505

Filed Aug. 2, 1967, Ser. No. 657,884
Int. Cl. B41b *17/08;* B41l *27/00*
U.S. Cl. 101—40 8 Claims

A machine for applying decoration to the outer surfaces of objects such as cans or bottles; the objects to be decorated are received within holders therefor which are continuously moved past a decorating station having decoration-producing means extending therealong, the objects being rotated as they move past the docoration-producing means so that appropriate decoration are applied to the entire surface of the object; a plurality of decorating stations may be provided, in which case the rotation of the bottles as they move from one station to the other is continued,

thereby to ensure proper registration between the decorations applied at the two stations; the rotation of the objects within their holders, as they move along one or the other of the decorating stations or between a pair



of separated decorating stations, is preferably accomplished by urging the bottles, while within their holders, against an elongated element over which they roll as they are translated through the machine.

3,503,330
WIPE-ON LITHOGRAPHIC PLATES

Simon L. Chu, New York, N.Y., assignor to Polychrome Corporation, Yonkers, N.Y.

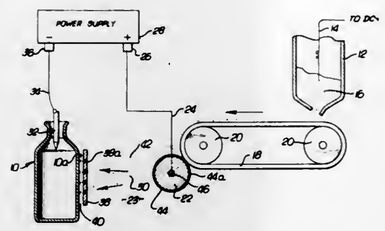
No Drawing. Filed Jan. 9, 1967, Ser. No. 607,879
Int. Cl. B41n *1/12;* G03c *1/52*
U.S. Cl. 101—455 7 Claims

Wipe-on lithographic printing plates can be improved vis-a-vis their resistance to deterioration during storage prior to use and during press runs by treating either an intermediate binder layer on an underlying base sheet or a metallic base sheet directly with a benzophenone compound, particularly those substituted on one or both of the phenyl moieties by one or more hydroxyl, sulfonic acid, nitro, alkyl and alkoxy groups.

3,503,331
CONTROLLED CURRENT FLOW ELECTROSTATIC PRINTING

William T. Fisher, Los Alamitos, Robert D. Thompson, San Jose, Charles B. Patterson, Lakewood, and Stanley M. Dahl, Whittier, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

Continuation of application Ser. No. 624,388, Mar. 20, 1967. This application Aug. 23, 1968, Ser. No. 778,876
Int. Cl. B41m *5/20*
U.S. Cl. 101—114 13 Claims

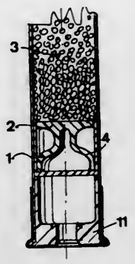


Excessive flow of current in electrostatic printing, across the gaseous medium through which the particle moving field has been established, is prevented and current flow automatically controlled by the use of a resistive launching electrode which selectively compensates for incipient increases in current flow therethrough, and thus across the field, by decreasing the voltage in the affected portions of the electrode, without lowering the overall field strength, so that printing operations may continue unaffected.

3,503,332
WAD

Vito De Gregorio, Milan, Sesto San Giovanni, Italy (% Dr. Ing. Misitano A.G., Via Padova 217, Milan, Italy)

Filed Jan. 29, 1968, Ser. No. 701,306
Claims priority, application Italy, Feb. 27, 1967, 13,115/67
Int. Cl. B42b *7/08*
U.S. Cl. 102—95 2 Claims

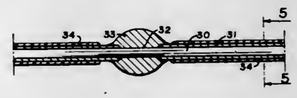


The wad according to this invention comprises a first component shaped as a cylindrical capsule (10–10′) fitting a second component shaped as a chalice (1), the bottom (2) of the said chalice being adjacent to the small shots (3) and the cylindrical capsule (10–10′) abutting by a side against a powder container (11) and by the opposite side presenting a recess (20) fitting the abutting rim of the chalice (1) so as to obtain during the cartridge deflagration a high expansion and recoil force absorption coefficient.

3,503,333
RESISTANCE FUSE WIRE

Vernon Dale Estes, Penrose, Colo.

Continuation of application Ser. No. 492,399, Oct. 4, 1965. This application Dec. 6, 1967, Ser. No. 723,958
Int. Cl. F42b *3/12*
U.S. Cl. 102—28 2 Claims



The disclosure is to a small diameter wire constituting an electrical ignition fuse. The wire is folded to a narrow U-form to be inserted into a small-diameter socket, constituting the exhaust of a toy rocket motor. An electric current through the wire will ignite the fuel charge therewithin. To effect ignition, the portion of the wire at the fold is reduced in area to provide a heating section of increased electrical resistance. The reduced section may be formed by electrodeposition on the remainder of the wire. Supplementary features will include a pyrogenous bead at the fold to facilitate ignition and insulation on the wire.

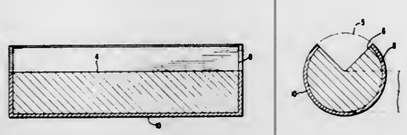
3,503,334
SOLID PROPELLANT CHARGE FOR ROCKETS

Heinz Dilchert, Steyerberg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Sept. 27, 1967, Ser. No. 670,968
Claims priority, application Germany, Sept. 30, 1966, D 51,211
Int. Cl. F42b *9/14*
U.S. Cl. 102—103 7 Claims

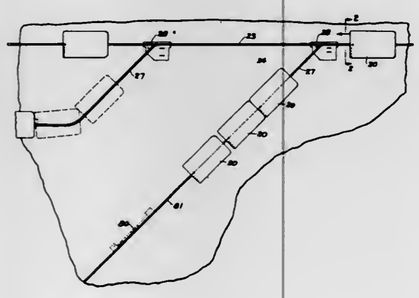
A solid propellant charge for rockets, particularly for line-throwing rockets, comprising a massive cylindrical

body of solid propellant having an axially parallel recess in the shape of a wedge or the like, said recess extending



along the entire length of said body, and the walls of said recess forming the combustion surface for the fuel.

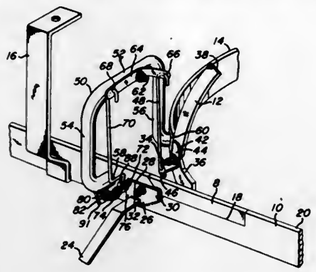
3,503,335
TOW TRUCK CONVEYOR SYSTEM
Leonard J. Bishop, Bloomfield Hills, Mich., assignor, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 28, 1967, Ser. No. 671,276
Int. Cl. B61k *1/00;* **B61j** *3/06*
U.S. Cl. 104—88 **31 Claims**



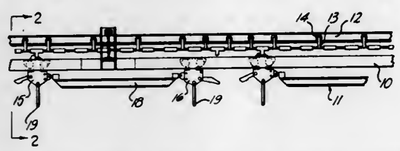
A tow truck conveyor system comprises a plurality of tow trucks, each of which has a downwardly extending tow pin and a plurality of signal members selectively mounted thereon. A cam bar is engaged by a tow pin as it moves along a main slot and swings a cam that engages a first signal reader and moves it upwardly into the path of a signal member on the tow truck. If the tow truck is carrying properly located signal members, the first signal member engages the first signal reader to cause a second signal reader to move upwardly into the path of a second signal member on the truck. The two signal members then cause the switch tongue to be moved for diverting the tow pin.

3,503,336
SWITCH MECHANISM FOR OVERHEAD TROLLEY
Leif Heilberg, San Francisco, Calif., assignor to Cincinnati Butchers' Supply Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 15, 1967, Ser. No. 668,315
Int. Cl. B61b *5/00;* **E01b** *25/26*
U.S. Cl. 104—103 **12 Claims**

The switch elements for directing a trolley along one of two alternative routes, incorporate a spring-biased mechanism operative subsequently to an initial manual displacement of a switch element control lever, for ensuring snap-action instant disposition of the switch elements to one or the other of two home positions providing continuity of trackage for the trolley advancement. The switching is performed instantaneously and without frictional lag, so as to minimize the possibility of trolley derailment.

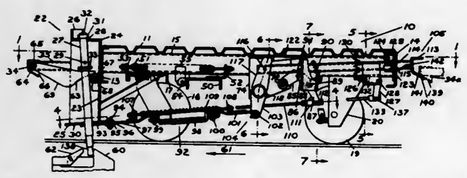


3,503,337
ACCUMULATING CONVEYOR SYSTEM
Robert Haase, Troy, Mich., assignor, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed May 29, 1967, Ser. No. 642,107
Int. Cl. B61b *13/00*
U.S. Cl. 104—172 **10 Claims**



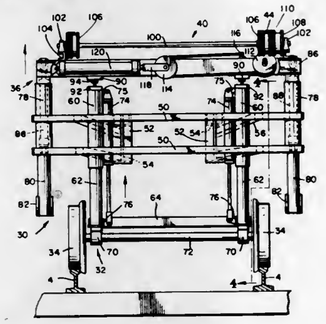
The accumulating power and free conveyor system disclosed herein comprises a main track along which carriers are movable and a conveyor track along which a carrier chain is movable, the two tracks being substantially uniformly spaced throughout the zone to which the present invention prefers. Each carrier is provided with a movable pusher dog and the conveyor chain is provided with pusher lugs that engage the pusher dogs to move the carriers along the track. A stop member is provided along the track and is movable into position for engaging the pusher dog on the carrier to hold it out of the path of the pusher lugs on the conveyor chain. The stop member engages the body of the carrier to prevent inadvertent movement of the carrier along the track. The pusher dog is interconnected with an accumulating lever on the carrier which engages a preceding carrier or an obstacle to move the pusher dog out of the path of the pusher lug in the event that an obstacle or a preceding carrier is encountered.

3,503,338
SUBFLOOR CONVEYOR TOW TRUCKS
Paul Klamp, 22730 St. Joan Ave., St. Clair Shores, Mich. 48080
Filed Mar. 21, 1968, Ser. No. 714,879
Int. Cl. B61b *13/00;* **B61c** *11/00*
U.S. Cl. 104—172 **9 Claims**



The invention relates to subfloor conveyor tow trucks which are adapted for having one truck pushing another from a chain powered main line into a non-powered spur line into which the first of the two trucks was diverted through a switch plate or tongue in response to a signal carried by the first truck, and which are adapted to be accumulated in one or more of the main conveyor runs behind a truck stop which is moved into the path of the trucks for accumulation and retracted for releasing the accumulated trucks.

3,503,339
CONVERTIBLE RAIL-HIGHWAY HEAD BLOCK ASSEMBLY
John Knox Kershaw, Southport, Ind., assignor, by mesne assignments, to The Marmon Group, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 3, 1968, Ser. No. 718,560
Int. Cl. B60f *1/04;* **E01b** *27/00*
U.S. Cl. 105—215 **6 Claims**



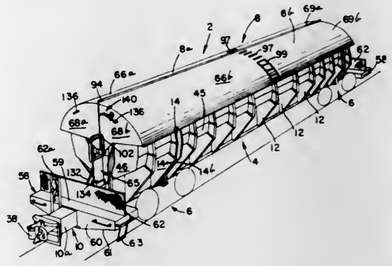
A head block assembly for mounting rail-wheels on a road and rail machine and for mounting and independently adjusting the elevation and level of an overhanging railway implement. A head block frame fixed to the spring structure of a road-rail vehicle carries a first set of guides for a wheel carrier which can be lowered to position rail wheels in rail engaging position to provide positive rail support for such frame, and also carries second guides in which an implement mounting frame is vertically adjustable. The implement mounting frame has pivot mounting brackets at the bottom and a pair of winch drums at the top from which cables extend to support an overhanging implement pivoted to the brackets. A hydraulic cylinder pulls on a drive cable to drive the winch drums.

3,503,340
AUTO TRANSPORTING PASSENGER TRAIN
George A. Warren, 270 Wildwood Ave., Worcester, Mass. 01602
Filed Sept. 11, 1967, Ser. No. 666,696
Int. Cl. B61d *1/06, 3/02, 47/00*
U.S. Cl. 105—368 **1 Claim**



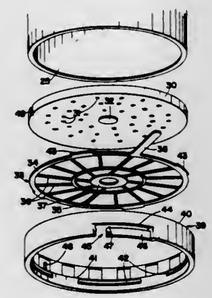
A railroad car adapted to transport a number of autos and passengers including end loading arrangements and elevator means on the railroad car to lift the autos for dual level storage and an enclosed passenger carrying compartment for transportation convenience and comfort.

3,503,341
COVERED VEHICLE AND COVERED OPERATING MECHANISM THEREFOR
Gary W. Widell and Theodore A. Branson, Calumet City, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,352
Int. Cl. B61d *39/00, 3/16*
U.S. Cl. 105—377 **19 Claims**



A covered lading carrying vehicle comprising a longitudinally extending body having a cross section of generally sector-like shape and defining a generally open trough portion for storing lading therein, a pair of longitudinally extending cover sections, each cover section being generally sector-like shaped in cross section and pivotally mounted to the ends of said body and positionable overhead thereof in closing engagement with one another to define at generally enlarged sector-like overhead closure means in forming a generally round-like cross section with the body, and cover operating mechanism mounted on said vehicle and operatively connected with each of the cover sections and the body and operative to move each cover section relative to the other in a generally curved path between a raised closed overhead position and lowered open down position.

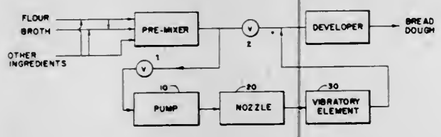
3,503,342
APPARATUS FOR MIXING AND EXTRUDING POTATO DOUGH
Laurence James Ilines, 7 Feldbar Court, Willowdale, Ontario, Canada
Filed Dec. 26, 1967, Ser. No. 693,474
Int. Cl. A21c *11/16*
U.S. Cl. 107—14 **6 Claims**



This specification discloses apparatus for the mixing of potato dough and for subsequently extruding the potato dough from the same apparatus, when such apparatus is placed in any suitable extrusion press, the apparatus including a cylinder and pressure plate which is used both

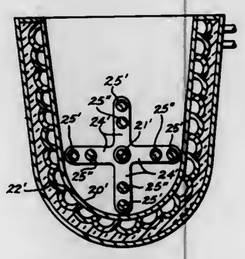
as a mixing vessel and also as the extrusion cylinder, and further including a die member and cutter assembly which is removably detachable from one end of the cylinder member so that, after mixing of the potato dough in a first operation, the apparatus may then be assembled and inverted and placed in the extrusion press ready for extrusion of potato chips, thereby reducing the number of operations required each time a batch is mixed, and also simplifying the cleaning and servicing of the parts.

3,503,343
METHOD AND APPARATUS FOR MAKING CONTINUOUS MIX BREAD
Simon S. Jackel, Scarsdale, N.Y., assignor, by mesne assignments, to Baker Research Development Service Inc., New York, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,767
Int. Cl. A21c *1/00*
U.S. Cl. 107—30 **11 Claims**



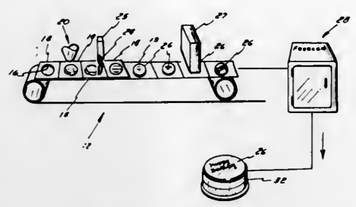
The use of a vibratory device to increase throughput or reduce operating temperature of the continuous mix breadmaking process. The vibratory unit may be of the ultrasonic type known as a liquid whistle. The unit is used between the pre-mixing and developing zones of a continuous mix breadmaking operation.

3,503,344
DOUGH DEVELOPING AGITATING MEANS AND METHOD
George P. Sternberg, 3740 Wyoming St., Kansas City, Mo. 64111
Continuation-in-part of application Ser. No. 574,079, Aug. 22, 1966. This application Nov. 1, 1968, Ser. No. 772,792
Int. Cl. A21c *1/06*
U.S. Cl. 107—40 **11 Claims**



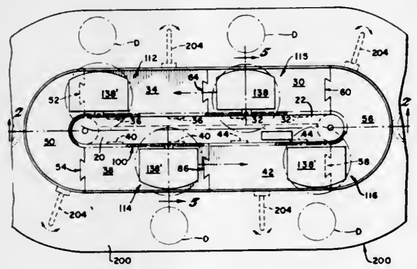
A circular series of uniformly spaced agitator bars equidistant from the horizontal axis of agitator rotation having longitudinally extending wide, flat topped gripping ribs either rectangular or tapering in cross section with downwardly diverging side walls, the ribs being either continuous or rows of short ribs. Rotation of the bars about their own axes and around the axis of an arcuate wall portion of the bowl produces a continuous rolling pressure and pulling action stretching the gluten continuously in the same direction and carrying the dough around this axis is a continuous stream.

3,503,345
PRE-FORMED CAKE ICING AND METHOD OF MAKING SAME
Louis Abrams, 20664 Knob Woods Drive, Apt. 211, Southfield, Mich. 48075
Filed Feb. 20, 1968, Ser. No. 706,813
Int. Cl. A23g *3/00*
U.S. Cl. 107—54 **12 Claims**



A method for decorating a cake by pre-forming a disk of icing, freezing the disk so that it hardens to facilitate handling, and then placing it on the cake so that it softens to form the top of the cake.

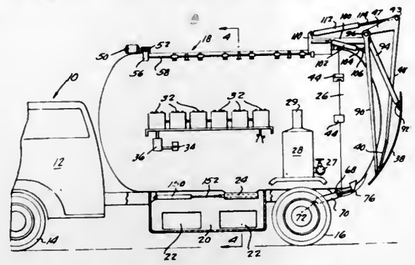
3,503,346
FOOD HANDLING APPARATUS
John Y. S. Chan, 10065 Elm Ave., Loma Linda, Calif. 92354
Filed May 3, 1968, Ser. No. 726,321
Int. Cl. A47b *85/00*
U.S. Cl. 108—22 **12 Claims**



A plurality of platform means for carrying plates are mounted for movement along a closed path on a supporting trackway. A drive chain is selectively operated to move the platform means in opposite directions. Each platform means includes a vertically movable portion, and elevating means is provided for raising and lowering such portions at predetermined positions along the trackway so that plates supported by the platform means will clear one another.

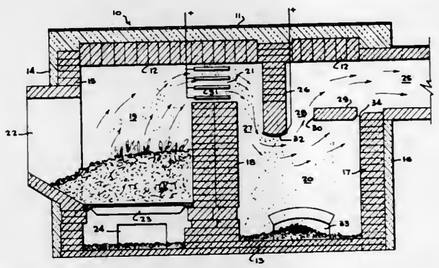
3,503,347
METHOD AND ELECTRICAL ARC APPARATUS FOR INCINERATING TRASH AND GARBAGE
Andrew W. Marr, Jr., and Dewey K. Wallace, Ardmore, Okla., assignors to Electrode Incinerators, Inc., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,557
Int. Cl. F23g *5/06, 5/10*; H05b *7/18*
U.S. Cl. 110—8 **7 Claims**

An incinerator for trash and garbage comprising a generally cylindrical, refractory lined combustion chamber; one end of said chamber being movable to act as an entrance gate; a plurality of arc-forming electrodes in



spaced groups adjacent the upper surface of said chamber and means to energize said arcs.

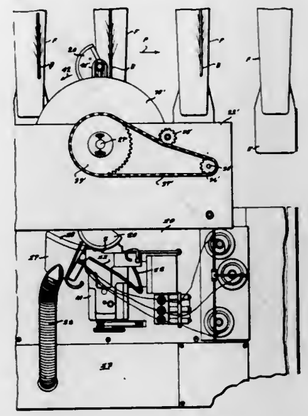
3,503,348
INCINERATOR
Miro Dvirka, Long Island City, N.Y., assignor to Hagan Industries, Incorporated, Corona, N.Y., a corporation of New York
Filed Aug. 30, 1968, Ser. No. 756,531
Int. Cl. F23g *3/00*
U.S. Cl. 110—8 **10 Claims**



An incinerator comprising a combustion chamber, a settling chamber, a flue, passageways interconnecting the combustion chamber and flue with the settling chamber being disposed relative to each other whereby combustion gases passing through the settling chamber describe a curved path about a center of curvature disposed between the passageways, the outlet passageway of the settling chamber having an inlet disposed sufficiently adjacent the center of curvature whereby fly ash carried with the gases passing through the settling chamber migrate along involute paths, a first electrical means for imparting an electrical bias to the fly ash entrained in the combustion gasses introduced into the settling chamber and a second electrical means having the same electrical bias disposed adjacent the center of curvature of the path of combustion gases for generating an electric field for repelling the fly ash carried with the combustion gases through the settling chamber whereby the centrifugal forces and the repelling forces of the electrical field cooperate to precipitate the fly ash entrained in the combustion gas traversing the settling chamber.

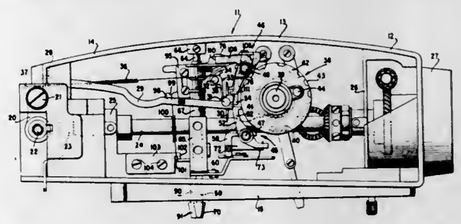
3,503,349
APPARATUS FOR AUTOMATICALLY CLOSING THE ENDS OF TUBULAR FABRIC ARTICLES
Gene E. Hart, Charlotte, N.C., assignor to Spelzman Industries, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Oct. 7, 1968, Ser. No. 765,600
Int. Cl. D05b *19/00*
U.S. Cl. 112—121.11 **34 Claims**

An apparatus that automatically closes the ends of tubular fabric articles, such as the toe-ends of hosiery, using clamping sets that travel in an endless path and act sequentially to clamp article ends that are on a series of advancing forms, to advance the clamped article ends from the forms past end closing means, such as a sewing machine, release the article ends after closing, and



to return across the forms to the initial clamping position, with the area circumscribed by the endless clamping set path being open to permit free passage therethrough of the advancing forms and the articles carried thereby.

3,503,350
SEWING MACHINE CAM SELECTOR MECHANISMS
Danilo P. Buan, Old Bridge, and August Monteiro, Kearny, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 20, 1967, Ser. No. 684,425
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 **7 Claims**

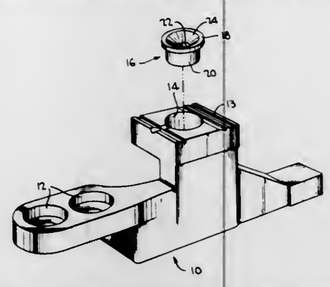


A cam selector mechanism is disclosed for a multi-cam zigzag sewing machine in which the spring bias exerted by the needle jogging control linkage on the cam follower is withdrawn from the cam follower during cam selection by operation of the same cam selecting mechanism by which the cam follower is shifted from one cam to another so that the cam follower is substantially free of frictional drag while being moved from one cam to another.

3,503,351
FEED DOG WITH REPLACEABLE INSERT
Leonard J. Solomon, 7936 Biscayne Point Circle, Miami Beach, Fla. 33141
Filed July 12, 1968, Ser. No. 744,375
Int. Cl. D05b *27/02*
U.S. Cl. 112—216 **6 Claims**

An improved sewing machine feed dog is disclosed. The feed dog contains a replaceable insert which is press-fit into a bored hole. A thread guide opening is provided

in the insert which is formed of a highly wear-resistant material, preferably case-hardened steel or porcelain.



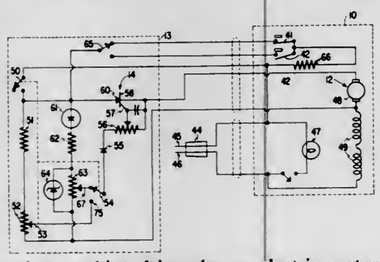
When the thread guide opening wears, the insert is replaced, thereby allowing re-use of the feed dog.

3,503,352

AUTOMATIC POSITIONERS FOR ELECTRICALLY DRIVEN FAMILY SEWING MACHINES

Wesley R. Peterson, Bound Brook, N.J., assignor to The Singer Company, a corporation of New Jersey

Filed July 1, 1968, Ser. No. 741,458
Int. Cl. D05b *69/00;* **F16d** *11/06;* **H02k** *23/08*
U.S. Cl. 112—219 **5 Claims**



A sewing machine driven by an electric motor has a foot-controller-actuated variable resistance arranged in a first circuit for variably gating a solid state controlled rectifier (SCR) to provide normal running speed range control. A second circuit provides a fixed resistance low-speed high-torque SCR drive for the motor. The motor is drivingly coupled to the arm shaft of the sewing machine through a one-way pawl clutch and a handwheel is fixed to the arm shaft through a spring-biased lost-motion connection. The input end of the clutch positionally controls the actuation of a selected one of two switches corresponding respectively to a different predetermined stop position of the arm shaft. These switches operate to disable the second circuit in response to the attainment of a selected one of said positions as sensed from the input end of the clutch. Means operative responsively to complete relaxation of the foot controller disables the first circuit, enables the second circuit and selects one of said switches for positional control of said second circuit. Means operative responsively to slight actuation of the foot controller from its fully relaxed position to a second relaxed position selects the other one of said switches for positional control. After a motor-driven positional stop, the handwheel can be immediately used to manually turn the armshaft further in the driven direction without interference from the motor drive because of the one-way clutch feature. Initial reverse turning of the handwheel due to the lost-motion connection with respect to the armshaft, first operates a pawl lifter to disengage the clutch, freeing the motor drive and further reverse movement of the handwheel then rotates the armshaft for manual repositioning without interference from the positioning motor drive because of the disengaged clutch.

3,503,353

LINKING NEEDLE FOR CHAIN STITCH LINKING MACHINE

Denis Matthews, Sutton-in-Ashfield, Nottinghamshire, England, assignor to Matthews & Birkhamshaw Limited, Sutton-in-Ashfield, Nottinghamshire, England

Original application Feb. 11, 1963, Ser. No. 257,715, now Patent No. 3,265,021, dated Aug. 9, 1966. Divided and this application Nov. 30, 1965, Ser. No. 510,534
Claims priority, application Great Britain, Feb. 12, 1962, 5,358/62; June 6, 1962, 21,817/62
Int. Cl. D05b *85/00, 7/00*
U.S. Cl. 112—222 **4 Claims**



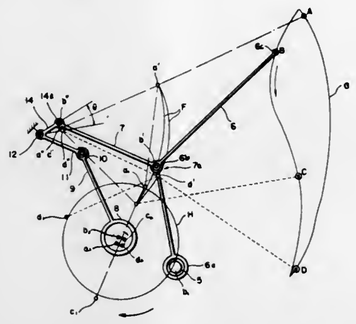
A linking needle for a chain stitch linking machine is disclosed as comprising an elongated stem having a shank portion at one end for releasable attachment in an operating member of a linking machine, the opposite end of the stem having an elongated imperforate portion of constantly substantially circular cross section gradually tapering to a point suitable to readily penetrate loops of overlapped fabric portions to be chain stitched to each other. The needle has yarn and loop control means, including a slot formed in and extending generally obliquely across the stem inwardly of the imperforate portion and inwardly from a surface of the stem, to releasably receive new yarn, the slot formation defining a hook facing away from the point and having an outer surface included within the forwardly extending, peripherally conforming projection of that surface of the stem inwardly of the hook. The outer surface enables the passage of the yarn over the slot, so that the needle may be used without requiring a complex looper.

3,503,354

LINK TYPE THREAD TAKE-UP LEVER MECHANISM FOR A SEWING MACHINE

Yutaka Tomida, Kariya, Japan, assignor to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi, Japan

Filed Oct. 31, 1967, Ser. No. 679,353
Claims priority, application Japan, Nov. 4, 1966, 41/72,777
Int. Cl. D05b *49/00*
U.S. Cl. 112—241 **2 Claims**



A thread take-up lever mechanism of the link type, in which a thread take-up lever support is oscillated through a stud by means of a cam securely mounted to an arm

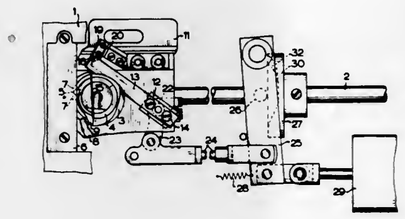
shaft, so that the movement of the thread take-up lever is improved, and the tension release of the upper thread is controlled substantially in proportion to the amount of the thread taken into the shuttle race of the sewing machine during the sewing operation, whereby the take-up lever functions substantially according to the theoretical value of the required slack of the thread, thereby always attaining an ideal sewing operation.

3,503,355

THREAD CUTTING DEVICE FOR LOCKSTITCH SEWING MACHINES

Heinz Hagemeyer, Leopoldshone, and Gerhard Bierweller, Jollenbeck, Germany, assignors to Kochs Adlernahmaschinen Werke AG, Bielefeld, Germany

Filed Oct. 1, 1968, Ser. No. 764,106
Claims priority, application Germany, Oct. 10, 1967, K 59,154
Int. Cl. D05b *65/00*
U.S. Cl. 112—252 **4 Claims**



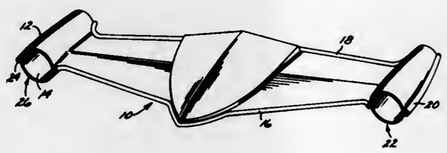
A lockstitch sewing machine having at least one stitch forming means with a horizontal lockstitch looper, a thread cutting device for cutting off the needle and looper threads below a workpiece after completion of a sewing operation. The device is provided with a thread catcher means for back and forth movements along a path extending in a horizontal plane above the looper means. Stationary counter knife means in combination with thread clamping means are provided opposite the lug means for the bobbin case holder means. Thread catcher means are provided which move out of a normal position between the counter knife means and the thread clamping means into a position for catching the threads and return with the caught threads to the normal position.

3,503,356

UNDERWATER PROPULSION DEVICE

Eugene L. Wilson, Chatsworth, Calif., assignor of one tenth each to Roger Schroeder, Simi, Calif., and George D. Vogt, North Hollywood, Calif.

Filed July 26, 1968, Ser. No. 748,027
Int. Cl. B63g *8/00*
U.S. Cl. 114—16 **9 Claims**



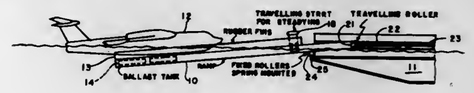
This invention relates to improvements in underwater propulsion devices. The embodiment selected for illustration in the drawing comprises an elongate fluid conduit the opposite ends of which are provided with fluid nozzles arranged to direct two parallel streams of fluid in a common plane. Provision is made for introducing pressurized propulsion fluid to the conduit intermediate the nozzles. The conduit and nozzles are housed in an elongate body the ends of which form cowls about the nozzles. The cowls are formed on an axis substantially coincident with the nozzle axes. Midway between the cowls the housing has a central section which houses the pressurized fluid inlet and an inlet fluid control valve. Between the central housing and the cowls the body of the device is generally wing-shaped, being wider in said common plane than it is thick. At its lower surface the submarine housing is provided with a pair of handles by which the unit may be steered in the vertical plane while in operation.

3,503,357

RAMP FOR DOCKING SEAPLANES

Laurence W. Ferris, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 27, 1959, Ser. No. 809,321
Int. Cl. B63b *35/50, 35/00;* **B63c** *1/02*
U.S. Cl. 114—43.5 **2 Claims**



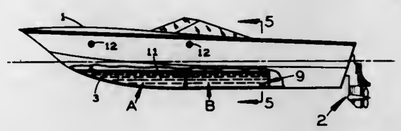
A docking ramp for an aircraft for utilization in conjunction with a surface ship having a floodable well deck. The ramp and ship system is provided with facilities for extension and retraction of the ramp relative to the well deck and when extended for boarding usage by the aircraft is disposed in an inclined relationship relative to the surface of the body of water. The upper surface of the ramp is provided with a plurality of longitudinally disposed fins or ribs which are tapered to provide deep V-shaped grooves between adjacent ribs.

3,503,358

SELF-STABILIZING BOAT HULL

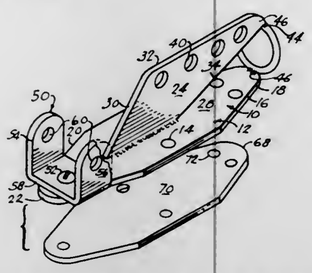
Carl Moesly, 6041 SW. 102nd St., Miami, Fla. 33143

Filed Oct. 29, 1968, Ser. No. 771,483
Int. Cl. B63b *43/06*
U.S. Cl. 114—125 **6 Claims**



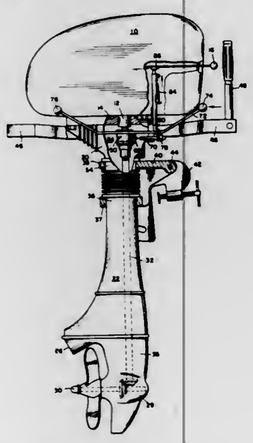
A boat hull having a longitudinal enclosed tunnel directly above the keel thereof with a transverse bulkhead approximately central of the tunnel forming two ballast compartments with a metering orifice in the bulkhead. An additional orifice opening through the hull enters the rear compartment for flooding both compartments when the boat is at rest or at slow speeds, and for first draining the rear compartment and sequentially draining the forward compartment through the metering orifice for stabilizing the attitude of the boat when accelerated to a planing position.

3,503,359
BOAT BOW PLATE WITH BULLNOSE AND BOOM PIVOT
John D. Cornwell, Jr., Henry County, near Stockbridge, Ga., assignor of fifty percent to Patrick F. Henry, Atlanta, Ga.
Filed June 10, 1968, Ser. No. 735,902
Int. Cl. B63b *21/04*
U.S. Cl. 114—218 1 Claim



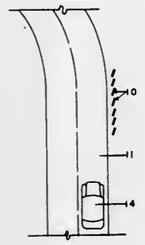
A bow plate for boats having a top plate which can be attached to the deck of a boat such as a sailboat near the bow and having a vertical plate welded thereto with aligned, spaced holes along the top thereof and a bullnose ring welded to the front tip of the vertical plate and also to the deck plate so that a line such as a towline can be led to the bullnose. The bottom portion of the vertical plate is removed leaving a triangular space facilitating handling of lines. The back of the deck plate supports a 360° rotational jib club boom pivot. The composite device provides a very good means of running a line through the bullnose as well as a jib club boom attachment and also a selective position in the holes on the vertical plate for other fittings. The deck plate may be held in place by a back-up plate underneath the deck through which is inserted bolts.

3,503,360
OUTBOARD MOTOR CLUTCH AND INTERLOCK
Stephen J. Hoff, Richmond, Ind., assignor to Comet Industries, Inc., Richmond, Ind., a corporation of Indiana
Filed June 30, 1967, Ser. No. 650,328
Int. Cl. B63h *23/30*; F16d *23/12*
U.S. Cl. 115—18 3 Claims



In an outboard motor, a self-contained clutch assembly of the readily-releasable coil-spring type is mounted immediately below the motor head, as a coupling between the power shaft and the drive shaft, in the enlarged upper end of the exhaust passage through the stem. The clutch is biased to engaged condition and is released by a shift handle operable from front or rear which moves a stop to obstruct rotation of the leading end of the clutch spring. A blocker actuated by the throttle prevents clutch actuation above a selected motor speed.

3,503,361
VEHICULAR SPEED WARNING METHOD AND MEANS
George W. Icke, 111 Gerry Court, Madison, Wis. 53715
Filed Jan. 6, 1967, Ser. No. 607,710
Int. Cl. G08b
U.S. Cl. 116—63 8 Claims



A stationary vehicle speed and/or directional warning device embodying a plurality of luminous or reflecting means disposed to project narrowly confined beams of light into a path of vehicle travel to be intercepted by a moving vehicle at intervals so as to appear as a single continuous beam if the speed of the moving vehicle equals or exceeds warning speed, and otherwise to appear as discrete beams.

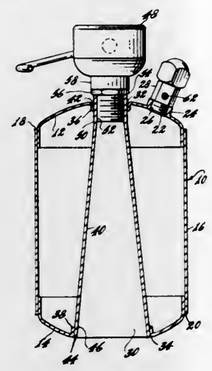
3,503,362
AUTOMATIC WARNING DEVICE ESPECIALLY APPLICABLE FOR CONSTANT DEFLECTION TORQUE WRENCHES
Paul Ollagnon, Saint-Etienne, France, assignor to Forges Stephanoises, Saint-Etienne, Loire, France
Filed Jan. 23, 1968, Ser. No. 699,868
Claims priority, application France, Feb. 2, 1967, 9,634
Int. Cl. G08b *3/00*
U.S. Cl. 116—67 13 Claims



An automatic warning device, particularly for constant deflection torque wrenches, comprises two opposed knife-edges of V-shaped section each forming a double ramp. One knife-edge is firmly attachable to the rigid body of the wrench; the other is couplable to its flexible stem. A spring urges the knife-edges together and the separation between the crests of the knife-edges corresponds to the constant deflection of the wrench. The coupling of the second knife-edge to the stem has a play less in value than said deflection, resulting in a sharp noise on the stem as the crests cross on tightening the wrench and enabling the device to reset itself automatically by the return of the stem to its resting position. Each knife edge may comprise a single V-shaped section or two V-shaped sections

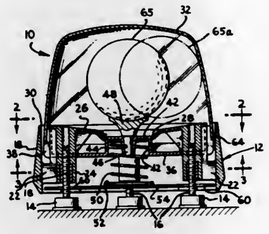
at 180°. Each knife-edge may form an angle of 90° to form a double 45° ramp. A resonance box intensifies the noise and may be the hollow handle of the wrench.

3,503,363
TANK INTEGRAL HORN TRUMPET
Sidney J. Jacoby, 601 W. Susquehanna Ave., Philadelphia, Pa. 19122
Filed Jan. 2, 1968, Ser. No. 694,900
Int. Cl. G08b *21/00*
U.S. Cl. 116—106 1 Claim



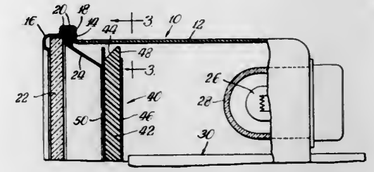
A compressed gas tank suitable for operation with a gas operated horn wherein the tank is provided with an axial bore conforming to the required configurations of a horn trumpet to thereby eliminate the need for an external trumpet.

3,503,364
MOTOR VEHICLE ACCELERATION RESPONSIVE INDICATOR
William Dirks, San Francisco, Calif. (3 Centerville Road, Box 165, Hannibal, Mo. 63401)
Filed June 2, 1969, Ser. No. 829,505
Int. Cl. G01p *15/00*
U.S. Cl. 116—114 10 Claims



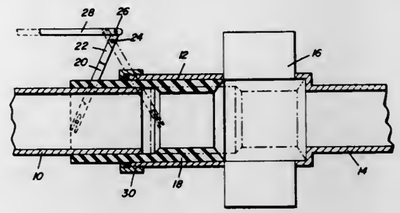
An acceleration responsive indicator is provided on the dashboard or other suitable shelf-like support of a motor vehicle, preferably in plain view of the operator, for recording a fault or demerit whenever the vehicle is started or stopped with objectionable abruptness, or rounds a curve too fast. When a fault occurs, a ball, contained within a hollow transparent dome, rolls off of a spring supported pedestal into the space between the pedestal and the dome. The ball may be replaced on the pedestal simply by depressing the dome, and thereby depressing the pedestal below the level of a fixed surface which surrounds the pedestal and slopes inward. When the cover is released, the pedestal, with the ball replaced on it, rises to its normal level.

3,503,365
TRANSLUCENT INSTRUMENT DIAL MEANS
Edgar R. Baez, Evanston, Walter M. Heinke, Chicago, Marshall Miles, Wilmette, and Josef von Nemeth, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Continuation-in-part of application Ser. No. 587,207, Oct. 17, 1966. This application May 9, 1967, Ser. No. 641,105
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 18 Claims



Instrument lighting means having dial plate means adapted to transmit light from a light source within the casing to show the pointer and indicia in silhouette when the light source is energized and to show the pointer and indicia in contrasting reflected light when the light source is not energized. The dial plate is a transparent disc supporting a translucent layer of light colored material on the inside surface and various types of optical layers on the outside surface to produce different effects.

3,503,366
APPARATUS FOR FORMING AND/OR AUGMENTING AN ENERGY WAVE
Clarence W. Brandon, 2641 E. 59th St., Tulsa, Okla. 74105
Original application June 29, 1962, Ser. No. 206,207, now Patent No. 3,438,352, dated Apr. 15, 1969. Divided and this application Apr. 14, 1969, Ser. No. 815,590
Int. Cl. B06b *3/00*
U.S. Cl. 116—137 41 Claims

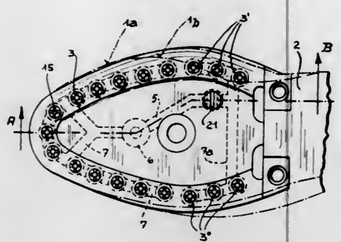


Apparatus for effecting heat transfer that is intermittently varied to produce a pulsating flow of heat in predetermined phase relation to an energy wave propagated through an energy transmitting medium in heat exchange with heating or cooling means with respect to which the intermittent heat transfer occurs. The energy level of the wave is thereby increased.

3,503,367
CEMENT APPLICATORS IN SHOE LAST MACHINES
Herbert Schindler, Pirmasens, Germany, assignor to Schon & Cie G.m.b.H., Pirmasens, Germany
Filed May 24, 1968, Ser. No. 731,767
Claims priority, application Germany, May 24, 1967, Sch 40,765
Int. Cl. B05c *11/00*
U.S. Cl. 118—3 8 Claims

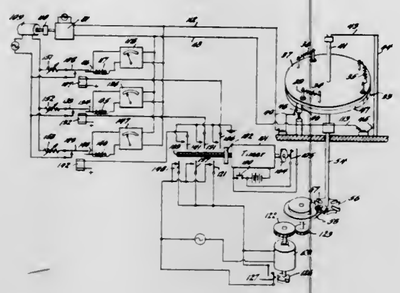
A die having feed elements for the application of cement on an insole in which passages for the cement to the feed

elements are arranged to supply cement to respective groups of feed elements and a valve is contained in the



passage feeding one particular group to close the flow of cement to such group.

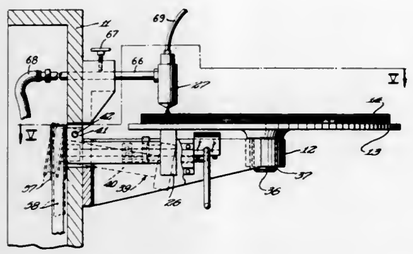
3,503,368
APPARATUS FOR SEQUENTIALLY VACUUM DEPOSITING METAL FILM ON SUBSTRATES
Richard A. Pudliner, Hokendauqua, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,691
Int. Cl. C23c *13/02, 13/12*
U.S. Cl. 118—7 **13 Claims**



Workholders arrayed about an evaporation area support a plurality of ceramic substrates upon which several layers of metal vapor are to be successively deposited. Three evaporation coils, which support slugs of metal to be deposited, are mounted in a triangular configuration on a rotatable carrier which successively positions each coil in the evaporation area. A triangular shield is provided between the coils so that as each of the metals is being vaporized, it will not contaminate the metal slugs on the other coils. Means control rotation of the carrier an energization of the evaporation coils.

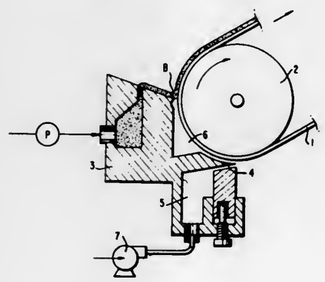
3,503,369
GLUE TABLE HAVING A ROTATABLE TURNTABLE
Lawrence A. Moore, King of Prussia, Pa., assignor to Beloit Eastern Corporation, Downington, Pa., a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,408
Int. Cl. B05c *11/08;* **B05b** *13/04*
U.S. Cl. 118—7 **11 Claims**

A glue table adapted for applying an adhesive to a header which is to be applied to the end of a wrapped roll. The glue table includes a rotatable turntable mounted on a beam of the housing beneath an adhesive applicator and a drive system capable of selectively driving the turntable during the application of the adhesive to the header. In the preferred embodiment the glue table includes more than one turntable with each of the turntables being provided with a drive means including a clutch mechanism to selectively rotate one of the turntables which is supporting the header of the preferred or desired size. The drive means includes a latch arrangement for holding the drive means in engagement with



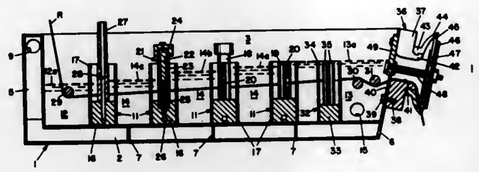
the turntable and a protuberance on the bottom of the turntable for engaging the latch means to allow the drive means to be taken out of engagement after the turntable has moved through the desired angular displacement. The device further includes a brake for engaging the table when the drive means is disengaged for slowing and stopping the table at a predetermined angular position. The actuating means for engaging the drive means include means for activating the adhesive applicator so that the adhesive is applied only during rotation of the turntable.

3,503,370
COATING APPARATUS
Mamoru Ishiwata and Akio Huruya, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed May 2, 1967, Ser. No. 635,540
Claims priority, application Japan, May 2, 1966, 41/27,845
Int. Cl. C23c *13/08*
U.S. Cl. 118—50 **2 Claims**



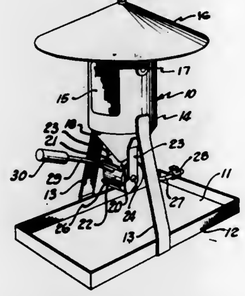
Apparatus for applying a coating composition on a web by a bridge of the coating composition between a coating applicator and the web, a gas blowing slot is formed at the side of the coating applicator into which the web enters to remove air or dust carried on the surface of the entering support and to provide a reduced pressure space at the back side of the bridge so that the bridge is maintained stable when the coating speed is increased.

3,503,371
ROVING IMPREGNATOR FOR MAKING LOW-VOID FILAMENT WOUND ARTICLES
David G. Meyers and James T. Paul, Jr., Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Apr. 9, 1968, Ser. No. 719,877
Int. Cl. B05c *3/12*
U.S. Cl. 118—405 **10 Claims**



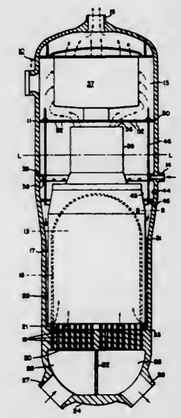
An impregnator for use in making low-void filament wound articles by eliminating voids from the filaments prior to winding, the impregnator comprising a resin chamber through which the filaments pass and which is divided into successive compartments, the dividing means including guide elements defining to tortuous path for the filaments and having cooperating sealing elements that collapse the filaments against each guide element and also including progressively reduced highth whereby fresh resin introduced at the filament exit compartment spills over the divider to fill each compartment successively toward the filament input compartment.

3,503,372
BIRD FEEDER OF THE AUTOMATIC TYPE
William J. Saurer, 3429 Rosemary Ave., Glendale, Calif. 91208
Filed Nov. 14, 1967, Ser. No. 682,771
Int. Cl. A01k *5/00*
U.S. Cl. 119—55 **3 Claims**



This invention consists of a horizontally disposed and rectangular shaped food tray from the longitudinal center of each side of which upwardly extends a strap type of support whose upper end is secured to the periphery of a vertically disposed cylindrical container in which the feed for the birds is placed. The top of the aforesaid cylindrical container is protected by a cone-shaped metal roof whose periphery extends for a considerable distance out beyond the aforesaid cylindrical container. The bottom of the cylindrical container is provided with a cone-shaped hopper whose open apex terminates in a curved shoe under which is rotatably located a laterally disposed roller having a V-shaped opening therein through which the bird feed will flow when this novel bird feeder is operating, as will hereinafter be described. The aforesaid roller is rotatably supported at each end by a strap that extends downward from each side of the aforesaid cone-shaped hopper. A rod extends outwardly from the lateral center of each side of the aforesaid roller, one of the rods being provided with a longitudinally adjustable counterweight and the other rod being provided with a perch on the outer end thereof on which the bird can perch while eating food from the aforesaid tray.

3,503,373
VAPOR GENERATING APPARATUS
Peter F. Sokolowski, Lester, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1966, Ser. No. 576,570
Int. Cl. F22b *1/16, 21/30;* **F22d** *5/00*
U.S. Cl. 122—32 **10 Claims**

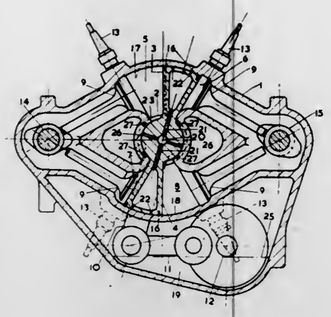


A vertical vapor generator, having an annular downcomer passageway encompassing a vapor generating space and defined on its outer periphery by the tubular outer shell and on its inner periphery by a tubular wall defining the vapor generating space, is provided with a ring-shaped member to restrict the downward flow of liquid in the downcomer passageway. The ring member is preferably adjustably supported so that the restricting effect may be adjusted as required to overcome hydrodynamic instability of the vapor generator and render it less sensitive to fluctuations in load.

3,503,374
OSCILLATING VANE MACHINES
Josef Ehrlich, Ashridge, Zdzislaw T. Marczewski, Sunbury-on-Thames, England, assignors to Ehrlich Engineering Limited, Bletchley, England, a British company
Filed Feb. 19, 1968, Ser. No. 706,473
Claims priority, application Great Britain, Feb. 20, 1967, 8,011/67; Feb. 21, 1967, 8,310/67; July 26, 1967, 34,358/67
Int. Cl. F02b *55/04, 67/00*
U.S. Cl. 123—18 **11 Claims**

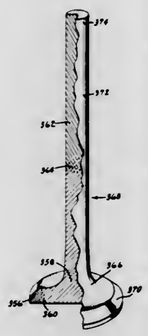
An oscillating vane (which may be an internal combustion engine, or a compressor or pump, or both combined) comprises one or more vanes each on a shaft and rotationally reciprocable therewith within a casing which defines working spaces on each side of each vane. The end and outer surfaces of each vane are provided with double seals between them and respective opposed surfaces of the casings, defining interseal spaces between the double seals, and oil under pressure is supplied to the interseal spaces. In a preferred embodiment, two hollow

coaxial shafts, end to end, each carry two hollow vanes interposed between the vanes carried by the other, and the two shafts are connected to a double-throw crankshaft and reciprocate in antiphase. A cam shaft driven from the crankshaft rotates within the two coaxial shafts



and at its ends carries cams which control inlet and outlet valves provided in the casing for each working space which is arranged to operate an interseal combustion process which may be either two-stroke or four-stroke; and an oil pump supplies oil under pressure through the coaxial shafts and vanes to the interseal spaces.

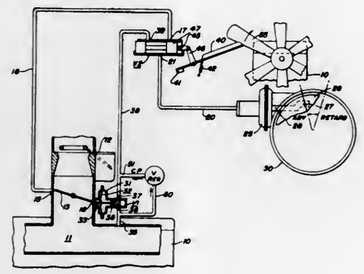
3,503,375
VALVE
Earl A. Thompson, Ferndale, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan
Original application Sept. 4, 1962, Ser. No. 221,115. Divided and this application June 17, 1968, Ser. No. 777,512
Int. Cl. F01l *3/02*
U.S. Cl. 123—188 **8 Claims**



A valve for an internal combustion engine is integrally cast of two or more alloys autogenously joined. The rim of the head is first cast centrifugally of one alloy, then a bonding zone is obtained by cooling the exposed surface of the metal to form a non-liquid barrier while the metal behind the barrier remains molten, then casting a different alloy to form the rest of the head and at least part of the stem. The barrier prevents turbulence and this prevents mixing of the two molten metals except in a limited zone determined by the barrier. The second alloy melts the barrier while the two alloys are not turbulent, and the two molten alloys mix in the limited zone to form a third alloy providing an autogenous bond between the first and second alloys.

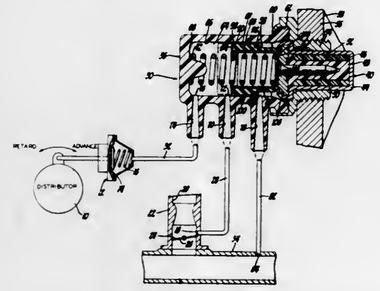
The process may be repeated between the head and stem, or between parts of the stem.

3,503,376
ENGINE IGNITION TIMER
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Aug. 14, 1967, Ser. No. 660,264
Int. Cl. F02p *5/10, 5/04;* **F02d** *37/02*
U.S. Cl. 123—117 **3 Claims**



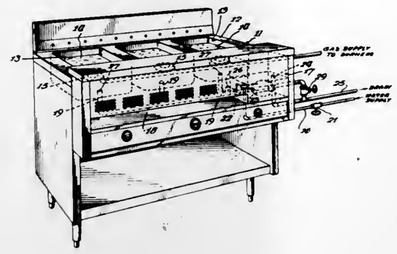
A device response to speed and throttle position to control the timing of the ignition in an internal combustion engine. The conventional suction operated motor is selectively connected by a pair of conduits and an engine speed sensing valve to the intake manifold or to the high port in the carburetor in accordance with the speed of the engine. The conduit from the manifold is provided with a by-pass section containing a suction regulating valve. A valve response to the engine idle position of the throttle connects reduced manifold suction through the suction regulator to the speed sensing valve. The high port connects the speed sensing valve to atmosphere when the throttle is in engine idle position.

3,503,377
CONTROL VALVE
Paul K. Beatenbough, Medina, John A. Gardner, Jr., Newfane, and Ward H. Hutchins, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 30, 1968, Ser. No. 749,923
Int. Cl. F02p *5/10;* **F16k** *11/02*
U.S. Cl. 123—117 **6 Claims**



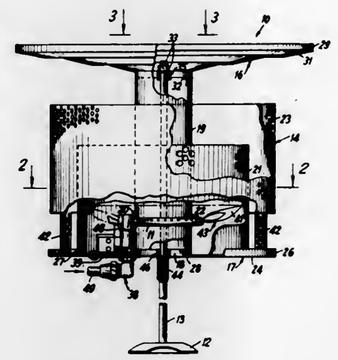
A thermostatically responsive valve for directing vacuum ignition timing signals to the distributor vacuum control assembly comprises a slide valve incorporating a pair of resilient radial lip members.

3,503,378
HOT FOOD TABLE
Harold B. Jones, Lombard, Ill., assignor to Leitner Equipment Company, a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 709,081
Int. Cl. A47j *39/02*
U.S. Cl. 126—33 **2 Claims**



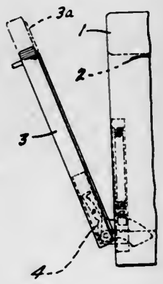
A plurality of steam wells in a hot food table are connected to a source of water through a conduit system having a single float control means for maintaining a constant water level in all of the wells. A first valve controls the flow of water into the float control means, and a second valve controls the flow of water from the wells to a drain. The wells are filed and drained through manifold pipes by regulating the valves. A removable standpipe may be used in any of the wells to keep it from being filled or drained when the other wells are filled or drained.

3,503,379
RADIANT HEATING DEVICE
William J. Kuhn, Springfield, and Paul E. Maurice, Ludlow, Mass., assignors to Heatbath Manufacturing Co., Inc., Indian Orchard, Mass., a corporation of Massachusetts
Filed Jan. 12, 1968, Ser. No. 697,500
Int. Cl. F24c *3/04;* **F23d** *13/14*
U.S. Cl. 126—85 **19 Claims**



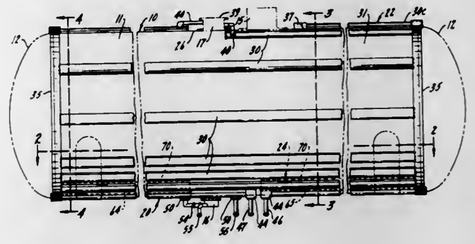
A radiant heater having a non-primary aerated burner, one embodiment of which comprises a poultry brooder, includes a base plate having an aperture extending axially therethrough and a plurality of upwardly protruding flanges which locate the various portions of the heating unit. An annular burner having a plurality of ports upwardly inclined from the horizontal surrounds a cylindrical support tube which in turn is assembled over the aperture in the base plate. A reflecting heat shield with a single central hole is mounted to the other end of the tube to provide heat distribution. A pervious radiant member is mounted a predetermined distance from the burner so that the flame emanating from the burner envelopes the radiant when impinged thereon. An outer heat shield is also mounted on the base plate a spaced distance from the pervious radiant.

3,503,380
HINGES
Frank J. Vasaturo, Holmes, Pa., assignor, by mesne assignments, to United Filtration Corporation, Chicago, Ill., a corporation of Illinois
Filed June 6, 1968, Ser. No. 735,120
Int. Cl. F24c *15/02*
U.S. Cl. 126—191 **6 Claims**



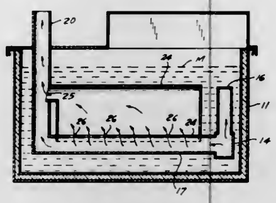
A hinge for mounting a door, gate, lid, or the like on a piece of equipment or structure comprising a fixed frame for securing the door and pivotally connected to the frame for rotation in a vertical direction and a cam spring arrangement contained wholly within the hinge to counterbalance the door during the rotation.

3,503,381
TANK CAR HEATING SYSTEM
Harry Role, Chicago, Ill., assignor, by mesne assignments, to Union Tank Car Company, a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,450
Int. Cl. E01c *19/45;* **F24h** *1/00*
U.S. Cl. 126—343.5 **5 Claims**



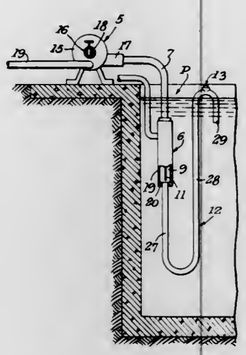
A heating system and method of melting partially solidified lading in a railway tank car or the like. System includes external heating complex on tank outer surface which melts lading crust at tank inner surface to form liquid film. Internal fin is also heated and melts through crust to place molten core and film in communication and greatly hasten complete liquification of lading.

3,503,382
ASPHALT MELTING KETTLE
Paul Wollner, North Bergen, N.J., assignor to Aeroil Products Company, Inc., South Hackensack, N.J., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,708
Int. Cl. E01c *19/45*
U.S. Cl. 126—343.5 **6 Claims**



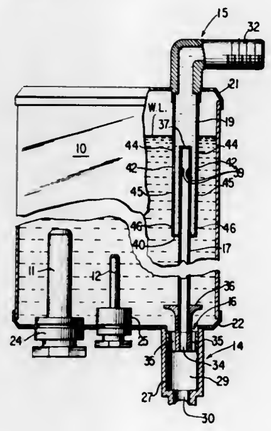
The application discloses an asphalt melting kettle having a burner for introducing heated combustion products into tubing immersed in the melt. The tubing, herein designated the return tubing, which opens into the stacks, also communicates with fins which convey the products by an alternate route to the stacks through flow control openings. The fins are uniquely shaped to minimize the danger of flashing which commonly occurs at the surface of the melt. Also, the fins provide additional heat transfer area in contact with the melt thus affording an improved melting operation. In one embodiment of the invention the fins contain perforated baffle plates for flow control purposes.

3,503,383
MEANS FOR HEATING A BODY OF LIQUID
Phillip O. Meyer, P.O. Box 6203, Glendale, Calif. 91204
Filed Mar. 25, 1968, Ser. No. 715,742
Int. Cl. F24h *1/20*
U.S. Cl. 126—360 **4 Claims**



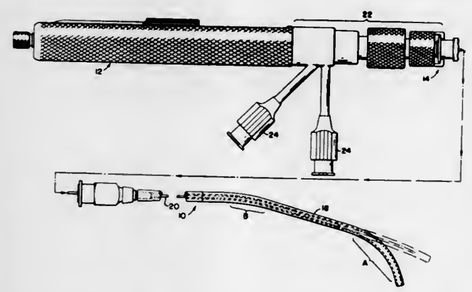
A blower to conduct a regulated flow of gaseous fuel to a combustion unit submerged in a body of fluid, a reed-type check valve interposed in said flow at the inlet to a combustion chamber in said unit, an igniter in the outlet side of the check valve which, by igniting the fuel in said chamber beyond said valve, explodes the same to produce a closing pressure on the valve followed instantly by sudden expansion of the gases which, thereby, are propelled along a conduit extending first downwardly in the body of liquid, then upwardly therein and terminating at the surface in a vacuum breaker, and an instantaneous condition of vacuity in the chamber being caused by reaction at the inner side of the reed valve, opening the same, such actions and reactions being repeated two to three hundred times per second.

3,503,384
HOT WATER HEATER WITH AIR EXPELLING AND COLD WATER MIXING ARRANGEMENT
Henry A. Matarazzo, Bloomfield, and Frank R. Giannella, Hawthorne, N.J., assignors to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of Delaware
Filed July 22, 1968, Ser. No. 746,667
Int. Cl. F24h *1/18, 9/12*
U.S. Cl. 126—362 **4 Claims**



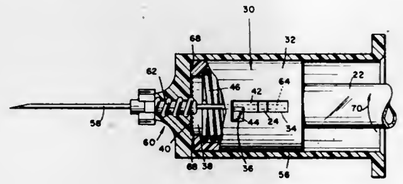
A hot water heater having a water storage chamber with a cold water inlet at the bottom, a hot water outlet at the top, and a cold water mixing arrangement near the outlet which functions during initial filling of the chamber to expel excess air from the chamber prior to any water flow through the outlet.

3,503,385
GUIDABLE CATHETER ASSEMBLY AND MANIPULATOR THEREFOR
Robert C. Stevens, Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed Sept. 27, 1965, Ser. No. 490,253
Int. Cl. A61b *5/10;* **A61m** *25/00*
U.S. Cl. 128—2 **4 Claims**



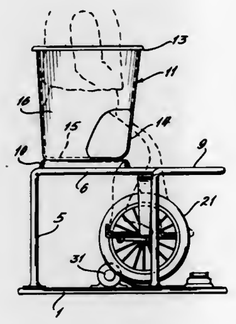
A guidable catheter which includes a control wire extending the length of the lumen movable axially to control the curvature of the catheter tip is operated by a manipulator by which the control wire may be moved while fluid is supplied to the catheter. The manipulation includes a forward fluid supply channel, which preferably includes relatively rotatable forward and rearward members through which the catheter may also be rotated. The fluid supply portion is closed at its rearward end by a fixed resilient dam through which the control wire penetrates, and is supplied with fluid by a conduit forward of the dam. The control wire is manipulated by a slidable member mounted to the rearward of the dam and connecting with the control wire.

3,503,386
BLOOD COLLECTING DEVICE
Glenn I. Pieratt, P.O. Box 249, Cicero, Ind. 46034
Filed Apr. 10, 1967, Ser. No. 629,470
Int. Cl. A61b *5/14;* **A61m** *1/00*
U.S. Cl. 128—2 **9 Claims**



A blood collecting device comprising a holder carrying a double-ended, hollow bored needle, an evacuated tube including a stopper at the forward end of the tube, the tube being engageable with the holder so that the stopper is penetrated by the rear end of the needle. Means are provided for removing the stopper from the needle, the removing means comprising energy storage means and latch means effective, when engaged, to store energy in the energy storage means and, when disengaged, to release the stored energy. The tube and latch means are arranged so that, when the stored energy is released, the stopper is removed from the needle.

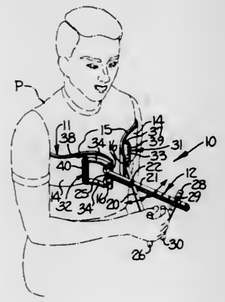
3,503,387
PHYSICAL THERAPY DEVICE
Jack S. McAllister, 467 73rd St., Centerville, Ill. 62206
Filed Aug. 21, 1967, Ser. No. 661,919
Int. Cl. A61h *1/00*
U.S. Cl. 128—25 **1 Claim**



An adjustable speed motor turns a wheel by frictional force (friction drive or clutch), Cranks on either side of the wheel are connected to the axle of the wheel. A pedal with a foot bracket is mounted on each of the cranks. A frame, mounted on a base of the device has on it a seat and a body support positioned above the wheel. The body support embraces the body of the user, has two openings through which the legs of the user extend, and has a peripheral rail around its top.

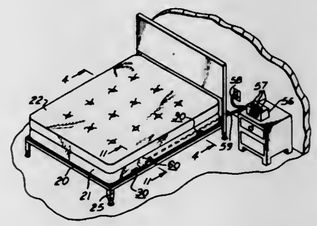
The device provides exercise and/or stimulation for the legs of the user, and is especially designed for those persons who have little or no use of their legs, such as victims of multiple sclerosis or some affliction.

3,503,388
RESPIRATION APPLIANCE
Jesse A. Cook, Mooresville, N.C., assignor of one-half to Leo B. Skeen, Mooresville, N.C.
Filed Apr. 17, 1967, Ser. No. 631,309
Int. Cl. A61h *31/00*
U.S. Cl. 128—28 **6 Claims**



A patient actuated manually operable appliance including an elongate band encircling the rib cage of a patient and adapted for construction thereabout, to partially collapse the lungs and thus expel air therefrom, and a lever arrangement operatively connected to the band for constricting the same upon manual actuation thereof by the patient.

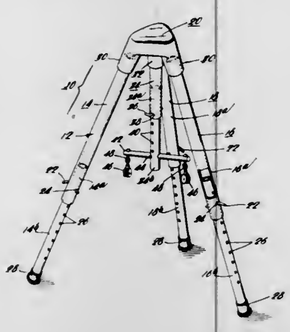
3,503,389
VIBRATION INDUCING APPARATUS AND METHOD
Herbert A. McKee, 463 Park Ave., Collingswood, N.J. 08108, and Charles E. Kensil, 719 E. Ontario St. 19134, and Walter B. Udell, 8527 Castor Ave. 19152, both of Philadelphia, Pa.; said McKee, Kensil and Udell assignors to said McKee, Kensil and Udell
Filed June 12, 1967, Ser. No. 645,454
Int. Cl. A61h *1/00*
U.S. Cl. 128—33 **21 Claims**



A plurality of resilient supports or floats are interposed between a body support structure such as the box spring of a bed and the bed frame to float the box spring and

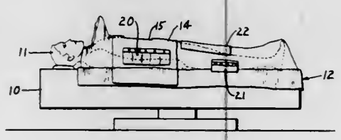
mattress, and an electrically energizable vibrator is rigidly clamped to the box spring base to impart vibrations to the entire box spring and mattress when energized. The positioning of the floats and vibrator and the vibratory characteristics of each affect the vibrational amplitude and direction generated at different points on the support structure. Optimum general usage combination is provided by two floats on each side of the box spring end-spaced inward with the vibrator clamped to one side of the box spring base between the floats and closer to the foot end.

3,503,390
PORTABLE TRACTION DEVICE
John G. Peters, 814 Roslyn Ave., West Chester, Pa. 19380
Filed Mar. 7, 1967, Ser. No. 621,295
Int. Cl. A61h *1/02, 5/04*
U.S. Cl. 128—75 **5 Claims**



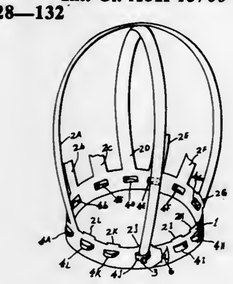
A portable traction device comprising a tripod structure having telescoping adjustable legs demountable from an apex member, a downwardly depending member secured to the apex member and having means such as a cross arm for suspending weight pulleys, the downwardly depending member being of sufficient length to provide lateral and vertical stability to the structure when weights are suspended from the pulleys.

3,503,391
NON-WOVEN SURGICAL SHIELD OR COVER MEMBER
Frederick J. Melges, 314 N. Orchard Place, Battle Creek, Mich. 49017
Filed Feb. 14, 1967, Ser. No. 616,128
Int. Cl. A61f *13/00, 13/18;* **A61l** *15/00*
U.S. Cl. 128—132 **11 Claims**



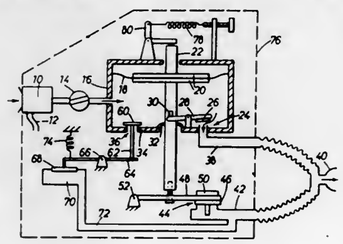
The non-woven surgical shield or cover member which carries improvements in the form of special reinforcement, adhesive anchoring means, multiple compartment instrument holding pocket members, supply carrying pockets, waterproofing, special construction of the surgical opening, and a rough surfaced reinforcing member near but spaced from surgical opening.

3,503,392
DRESSING SUPPORT
Harriet Howes Beeman, 4034 Montgomery Road, Cincinnati, Ohio 45212
Filed Oct. 17, 1967, Ser. No. 675,908
Int. Cl. A61f *13/00*
U.S. Cl. 128—132 **8 Claims**



A support for maintaining dressings and the like in spaced relationship to a wound. The support comprises a band having a plurality of slots extending longitudinally thereof and a plurality of lateral extensions or fingers extending from one side thereof. The band may be affixed to or wrapped about a portion of the patient's body near the wound, and selected ones of the extensions or fingers may be bent over the wound with their free ends engaged in selected ones of the slots in the band, whereby to form a cage-like support over the wound to which dressings may be applied.

3,503,393
PATIENT CONTROLLED RESPIRATORY APPARATUS
Roger E. W. Manley, Chorleywood, England, assignor to Blease Anaesthetic Equipment Limited, Chesham, England
Filed May 19, 1966, Ser. No. 551,285
Int. Cl. A62b *7/00;* **A61m** *17/00*
U.S. Cl. 128—145.6 **5 Claims**

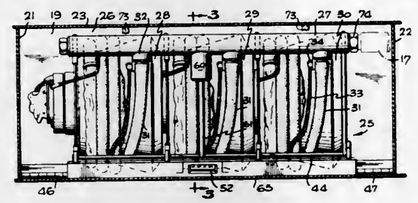


A respiratory machine particularly for domestic use has a continuously-fed expansible-contractible chamber with a flexible diaphragm whose movements actuate an outlet valve through which the chamber contents pass to a user. A vent valve opened by an attempt to inhale by the user allows the chamber to contract thereby opening the outlet valve and supplying the user with his air or gas requirements.

3,503,394
MODULIZED PASSENGER MASK ASSEMBLY
Leo F. Hotz, Burbank, and Sherman S. Watts, Upland, Calif., assignors to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California
Filed July 22, 1968, Ser. No. 746,662
Int. Cl. A62b *25/00*
U.S. Cl. 128—146.4 **9 Claims**

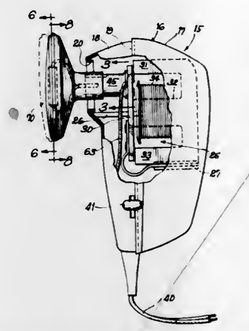
A removable and replaceable fixture mounting three passenger masks comprises an oxygen supply manifold acting as a strongback upon which is mounted a series

of fixed upper mask retaining cradles with lower mask retaining cradles pivotally secured to respective upper cradles. There is a downwardly open door frame hinged to one side of a housing in which the module is releasably retained. The door frame serves to hold all of the lower cradles in mask retaining position, the frame being se-



cured to the housing by a latch which can be tripped by remote control acting through a solenoid end plunger. A separate door hinged to the housing opens and closes an opening in the door frame, the separate door having its own releasable catch so that it can be opened for inspection purposes without releasing the masks.

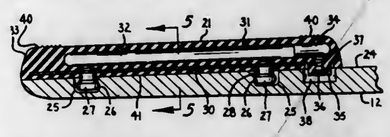
3,503,395
HEATED VIBRATORY MASSAGER
Roy E. Meyer, Sterling, Ill., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Feb. 1, 1968, Ser. No. 702,242
Int. Cl. A61h *23/02*
U.S. Cl. 128—24.2 **9 Claims**



An electromatic vibratory massager having a detachable heatable massaging member which simultaneously provides the therapeutic advantages of both massage and heat. An electric resistance heater mounted within the massaging member automatically is connected in circuit when the member is mounted on the massager. Non-heatable massaging members of conventional type also are detachably mountable on the massager.

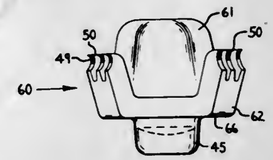
3,503,396
ATRAUMATIC SURGICAL CLAMP
Will R. Pierie, Tustin, and Donald A. Raible, Corona, Calif., assignors, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 486,266, Sept. 10, 1965. This application Sept. 21, 1967, Ser. No. 669,442
Int. Cl. A61b *17/28, 17/12*
U.S. Cl. 128—322 **8 Claims**

A clamp having a pair of clamp jaws with interchangeable hard and soft jaw inserts, or combined hard and soft jaw inserts, to apply traction and/or occlusiveness of a vessel. The hard jaw element is equipped with obliquely directed teeth in herringbone pattern for bi-directional traction while the soft jaw element comprises a resilient hydraulic jacket or pad containing liquid. A



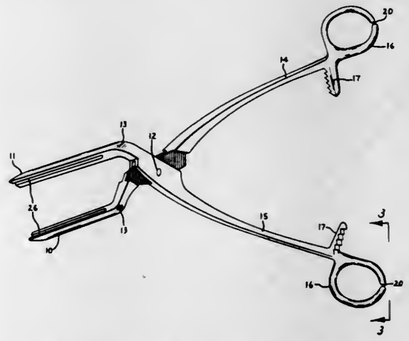
novel type of snap fastener is provided for detachably mounting the inserts on the jaws of a clamp.

3,503,397
ATRAUMATIC SURGICAL CLAMP
Thomas J. Fogarty, Portland, Oreg., and Donald A. Raible, Corona, and Lawrence W. Blake, Huntington Beach, Calif.; said Raible and said Blake assignors, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 486,266, Sept. 10, 1965. This application Sept. 21, 1967, Ser. No. 669,443
Int. Cl. A61b *17/28, 17/12*
U.S. Cl. 128—322 **18 Claims**



A clamp having a pair of clamp jaws with interchangeable hard and soft jaw inserts, or combined hard and soft jaw inserts, to apply traction and/or occlusiveness of a vessel. The hard jaw element is equipped with obliquely directed teeth in herringbone pattern for bi-directional traction while the soft jaw element comprises a resilient hydraulic jacket or pad containing liquid. A novel type of snap fastener is provided for detachably mounting the inserts on the jaws of a clamp.

3,503,398
ATRAUMATIC CLAMP FOR VASCULAR SURGERY
Thomas J. Fogarty, Bethesda, Md., and Donald A. Raible, Corona, and George G. Siposs, Garden Grove, Calif.; said Raible and said Siposs assignors, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Sept. 10, 1965, Ser. No. 486,266
Int. Cl. A61b *17/12, 17/28*
U.S. Cl. 128—346 **19 Claims**



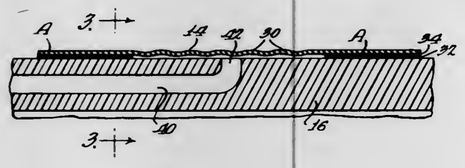
Two types of removable and interchangeable jaw inserts are provided for the clamp. One is a hydraulic jack com-

prising a closed chamber filled with liquid, the jacket being resiliently deformable under applied pressure on a clamped object. The other type of insert is a tooth bar wherein the tooth points are directed parallel with the clamping plane so as to be capable of applying traction but being non-penetrating by clamping pressure alone.

3,503,399
RETENTION CATHETER WITH BALLOON SECURED THERETO BY AN ADHESIVE PREVENTING PLASTICIZER MIGRATION

Henry L. Ettman, Clayton, Mo., Frank E. Kuester, Muskegon, Mich., John J. Weisz, Solon, Ohio, and Richard S. Clark, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Filed Feb. 6, 1967, Ser. No. 614,207
Int. Cl. A61m 25/00
U.S. Cl. 128—349 20 Claims

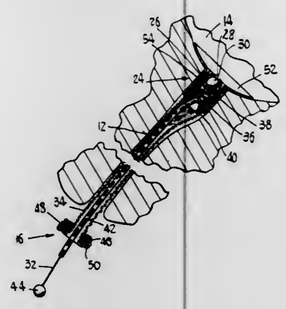


An inflatable insertion catheter device including a plasticized polar plastic (e.g. polyvinylchloride) tube, a less or nonpolar plastic (e.g. rubber) balloon, and an adhesive system exemplified as having two layers, one of highly polar adhesive (e.g. nitrile rubber) adhered to the tube and the other of less polar adhesive (e.g. acrylic modified rubber) adhering the balloon to the first adhesive layer. The adhesive system has wetting characteristics and balanced surface energy characteristics providing excellent bond to both the polar and nonpolar surfaces. Preferably it includes a plasticizer migration blocking agent (e.g. isocyanate cross-linking agent).

3,503,400
URETHRAL VALVE

Sven M. Osthagen, 267 Neck St., North Weymouth, Mass. 02191, and Henry M. Wise, Jr., 22 Caroline Park, Waban, Mass. 02168

Filed July 12, 1967, Ser. No. 652,916
Int. Cl. A61m 25/00
U.S. Cl. 128—349 17 Claims

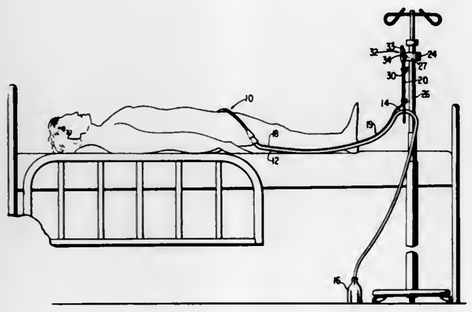


An internally contained valved drainage-control device adapted to be retained in the urinary canal, comprising a tubular valve housing having a valve seat and cooperable valve. The housing mounts a collapsible annular retainer flange, and is adapted to be positioned in the canal with the flange occupying an adjoining space in the bladder. A porous elongate tether means such as a sheath of synthetic fibers is connected to the housing and extends through the canal to the exterior. The sheath acts as a tether for purposes of removal of the valve, and also provides a passage for the flow of liquid, permitting a natural flushing of the urethral wall when the valve is operated to the open position. The valve is operated either electrically or mechanically, by means of one or more wires extending to the exterior through or alongside the porous sheath.

3,503,401
DRAINAGE CONTROL SYSTEM

Harold W. Andersen and Charles H. Harrison, Oyster Bay, N.Y., assignors to H. W. Andersen Products, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 473,917, July 22, 1965. This application Aug. 27, 1968, Ser. No. 764,007
Int. Cl. A61m 3/00, 25/00
U.S. Cl. 128—349 4 Claims



A method and apparatus for urinary drainage in which the normally closed system includes an adjustably upward course between the bladder and the downward course leading to a drainage receptacle, with the provision of venting means in the upper portion of the system designed to admit atmospheric air cyclicly when the flow of liquid in the downward course causes negative pressure in the upward course, whereby the system is periodically emptied and permitted to refill in a simulation of normal physiological filling and emptying of the bladder.

3,503,402
SHUNT DEVICE

Rudolf R. Schulte, 3328 Calle Fresno, Santa Barbara, Calif. 93105

Filed Mar. 23, 1966, Ser. No. 536,685
Int. Cl. A61m 27/00
U.S. Cl. 128—350 2 Claims

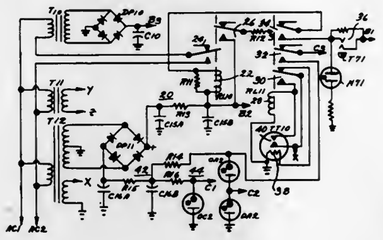


This invention relates to a device for use in physiological shunt circuits. It includes in a shunt system which has an inlet and an outlet, a first and a second chamber each with a resilient wall connected in series between the inlet and outlet, the second chamber including a check valve comprising a ported flexible diaphragm. The two chambers are made of homogeneous material and shaped to lie flat against bony structure. The homogeneity avoids complications which arise with the use of dissimilar materials in a flow stream containing electrolytes, and the flatness reduces cosmetic distortions of the person in whose body the device is implanted.

3,503,403
POWER SUPPLY

Frank A. Yarger, Miami Beach, Fla., assignor to Medical Electronics Corporation, Camp Hill, Pa., a corporation of Delaware

Filed Apr. 27, 1967, Ser. No. 634,354
Int. Cl. A61n 1/00
U.S. Cl. 128—421 6 Claims

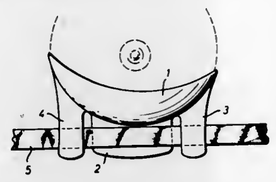


Power supply for pulse generators used in electrotherapeutic apparatus. A timer delay tube provides a 90-second interval which must elapse before bias voltages are applied to the output stage of the pulsed radio frequency generator. The timer delay tube is energized in such a way that, if momentary shorting of its contacts should occur, it will immediately cause a relay to be activated while at the same time cause itself to be de-energized, thereby preventing any possible damage to the output tubes due to successive momentary closure of the contacts of the timer delay tube. Upon energization of the relay controlled by the timer delay tube, bias voltage is applied to the output stage and thus the equipment becomes operative but only after the filaments of the output stage tubes have been heated over the 90-second time interval mentioned above.

3,503,404
STRAPLESS BRASSIERE

Kurt Evers, Gartenstrasse, Langenburg, Germany

Filed June 16, 1967, Ser. No. 646,664
Claims priority, application Germany, June 23, 1966, E 31,919; Dec. 19, 1966, E 33,048
Int. Cl. A41c 3/06, 1/14
U.S. Cl. 128—463 10 Claims

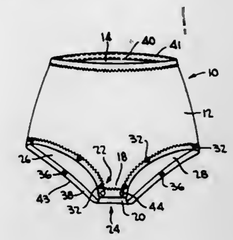


A contact web is provided below each cup of a brassiere and arranged directly to contact the chest.

3,503,405
MULTIPURPOSE PANTY GIRDLE TYPE UNDERGARMENT

Frank Porco, Bronx, N.Y., assignor to Biflex Foundations, Inc., New York, N.Y., a corporation of New York

Filed Apr. 26, 1968, Ser. No. 724,341
Int. Cl. A41c 1/00
U.S. Cl. 128—519 9 Claims

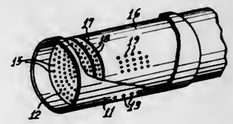


A multipurpose panty girdle type undergarment which can be used for a number of purposes. The garment incorporates a body encirling main element with tongue means projecting from the lower portion thereof, which tongue means can be releasably joined to form the crotch portion of a panty girdle and/or releasably separated to permit the garment to be rotated so that the tongue means overlie the user's side thighs. Additional securing means are provided that permit stockings and/or garters to be releasably attached to the garment.

3,503,406
CIGARETTES

Lawrence Murry Riegel, 129 E. 69th St., and Samuel Brooke White, 430 E. 63rd St., both of New York, N.Y. 10021

Filed Oct. 28, 1968, Ser. No. 771,174
Int. Cl. A24d 1/04; A24f 5/04
U.S. Cl. 131—10 12 Claims



A sleeve containing a control element is provided for cooperating with the cylindrical tip end of a cigarette containing a complementary control element in order to control the flow of smoke and air in balanced portions. The sleeve and tip also have aeration means displaced a predetermined distance from the sleeve control element and the tip end. The sleeve is movable independently both rotationally and axially relative to the tip end to effect a full range of air/smoke ratio and damping to assure balanced draw.

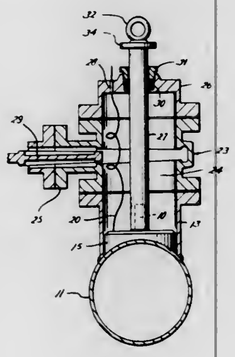
3,503,407
METHOD OF TAPPING A PIPELINE OR THE LIKE

Burton Ver Nooy, Tulsa, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.

Filed July 18, 1968, Ser. No. 745,844
Int. Cl. F16l 41/04
U.S. Cl. 137—15 20 Claims

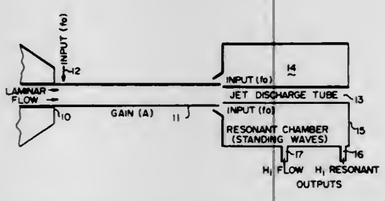
In a method of hot tapping a pipeline or the like, a part is attached to the area of the pipeline to be tapped, and a saddle is arranged about the part to dispose a shaped charge carried by the saddle over and adjacent to

such area. A housing is installed on the pipeline to enclose the shaped charge in fluid-tight relation, and a connection is established between the housing and the part attached to the pipeline. This part comprises a threaded stud, and the connection comprises a rod threaded at one end to the stud and sealably extending through the housing for reciprocation therein. The shaped charge is then detonated to cut a coupon from the area to be tapped, and the rod is actuated to withdraw the coupon and the saddle into a portion of the housing removed from such area. The saddle is guided onto the pipeline by aligning



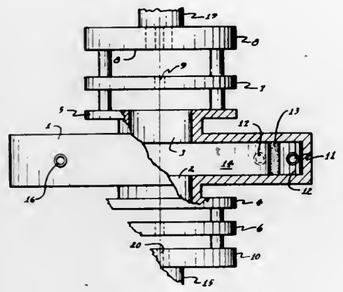
an opening through it with the stud attached to the pipeline. The housing is installed on a hollow support which is mounted on the pipeline in surrounding relation to such area to be tapped. In one form of such method, the support is welded to the pipeline, in which case the saddle is removed from within the support during the welding. In another form of the method, the hollow support comprises a portion of a split T which is secured about the pipeline, in which case the saddle may be in place over and adjacent the area of the pipeline to be tapped when the T is so secured.

3,503,408
COUPLED MODE FLUID DEVICES
Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Mar. 7, 1966, Ser. No. 532,385
Int. Cl. F15c *1/18*
U.S. Cl. 137—81.5 **13 Claims**



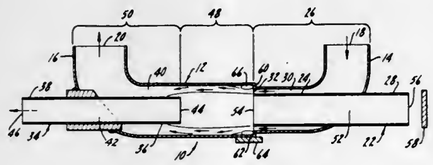
A fluidic amplifier system which operates as a coupled mode device, a jet of fluid immersed in a medium being subjected to an acoustic disturbance which does not extend into the core of the jet, the jet interacting with a resonant structure or structures, while in a non-saturated condition.

3,503,409
READOUT DEVICE FOR VORTEX AMPLIFIERS
Donnie R. Jones, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Dec. 9, 1964, Ser. No. 417,850
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **20 Claims**



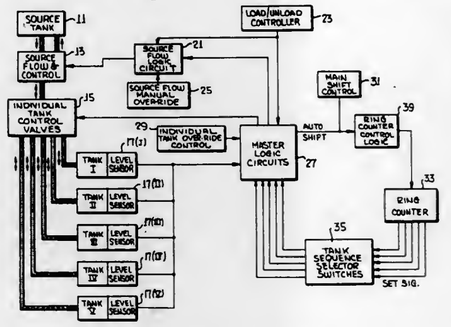
1. An apparatus for determining when the rate of rotation of a fluid input stream has achieved a predetermined value, comprising a first member having a rectangular slot formed therein for receiving said fluid input stream and for issuing said input stream as a further fluid stream from said rectangular slot, said further fluid stream having a flow configuration which varies from the shape of said rectangular slot as a function of the rate of rotation of said input fluid stream, a second member generally coaxial with and spaced downstream from said first member and having a slot formed therein, said slot in said second member having a generally S-shaped configuration, said slot in said second member passing therethrough varying quantities of said further fluid stream as a function of the flow configuration of said further fluid stream, and means adapted to direct said input fluid stream toward said first member.

3,503,410
FLUID AMPLIFIER
George B. Richards, P.O. Box 278, Highland Park, Ill. 60035
Filed Mar. 16, 1967, Ser. No. 623,740
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **19 Claims**



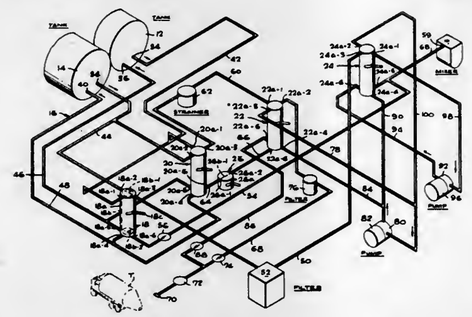
A fluidic element employing a boundary layer self-attachment principle and/or the Coanada boundary layer wall-attachment principle in which the power jet is annular and the control fluid exerts control pressure upon a generally annular or cylindrical surface of the power jet to cause the power jet to flow into either a central outlet or a surrounding annular outlet. Various embodiments and variations are presented.

3,503,411
PURE FLUID AUTOMATIC CARGO CONTROL SYSTEM
Peter Bauer, Germantown, and Edwin U. Sowers III, Silver Spring, Md., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed June 12, 1967, Ser. No. 645,115
Int. Cl. G05d *11/00*; F15c *1/08*; G06m *1/12*
U.S. Cl. 137—101.25 **29 Claims**



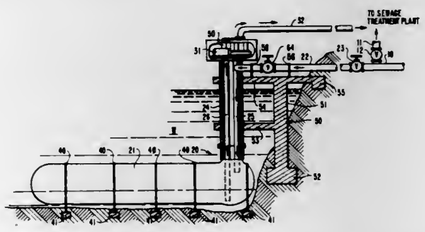
A system for loading and/or unloading any or all of a plurality of tanks in a freely selectable programmed sequence, there being provided remote means for manually overriding the programmed sequence at any time during the loading or unloading cycle such that the loading or unloading of a programmed tank or tanks can be terminated in favor of the loading or unloading of the next programmed tank or tanks in the sequence, and such that the original preselected sequential order can be changed with respect to any of the remaining tanks which have not been loaded or unloaded in accordance with the preselected sequential order. There is additionally provided a circuit for assuring that the system is preset to a proper stand-by condition when system power is initially applied. There is also provided a flow amplifier for binary fluid flow signals comprising plural bistable pure fluid amplifiers, each responsive to a binary fluid flow signal so as to provide respective plural fluid flow output signals, the flows from which are combined to provide the amplified signal.

3,503,412
TWO TANK BULK FLUID SYSTEM
William H. Schuler, 8502 S. Hoover Ave., Los Angeles, Calif. 90044
Filed Feb. 26, 1968, Ser. No. 708,290
Int. Cl. F17d *1/14*; A21b *7/00*
U.S. Cl. 137—265 **8 Claims**



The invention is embodied in a multiple tank, multiple valve system for the handling of liquid shortening which serves a variety of needs and economizes in the number of pumps by making use of valves with multiple functions. There are two storage tanks which can be called upon in the alternative to supply a mixer. Fluid can be changed from one tank to the other. There is also a connection to the system which can be attached to a tank truck so that the tank truck can be connected to either of the storage tanks for either filling or emptying the storage tanks, or can be connected to the mixer. The entire system is a self-contained system of piping completely sanitary for the handling of edible fluid oils in that nothing need be touched by hand other than the valve handles.

3,503,413
AUXILIARY SEWAGE STORAGE SYSTEM FOR TEMPORARILY STORING SEWAGE
Benjamin Franklin Rose, Jr., Covina, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed May 3, 1967, Ser. No. 635,877
Int. Cl. E03f *5/10, 1/00*
U.S. Cl. 137—266 **9 Claims**

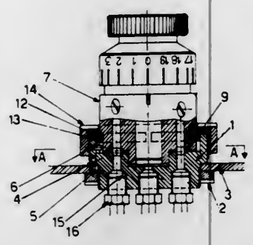


This disclosure concerns an auxiliary sewage storage system for temporarily storing raw sewage under peak load conditions for the sewage treatment plant to which it is an adjunct so as to provide for subsequent processing of the raw sewage stored in the auxiliary sewage storage system by the sewage treatment plant when the load conditions thereof return to normal. The auxiliary sewage storage system comprises one or more flexible storage bags connected into a by-pass conduit arrangement having a normally closed valve therein such that raw sewage is ordinarily introduced via a main conduit into the sewage treatment plant for processing. When the sewage treatment plant is operating at capacity under peak load conditions, the inlet conduit thereto from the main conduit is closed and the valve in the by-pass conduit is opened so as to direct additional raw sewage to the flexible storage bags instead of the sewage treatment plant for temporary storage thereof. When the load conditions for the sewage treatment plant have returned to normal, raw sewage contained within the flexible storage bags is piped therefrom to the sewage treatment plant for processing.

3,503,414
PLUG-IN VALVE FOR HYDRAULIC AND PNEUMATIC CONTROL SYSTEMS
Oscar Schnellmann, Zurich, Switzerland, assignor to Hydrel AG., Romanshorn TG., Switzerland, a corporation of Switzerland
Filed Dec. 20, 1967, Ser. No. 692,174
Int. Cl. F16k *27/00, 51/00*
U.S. Cl. 137—269 **3 Claims**

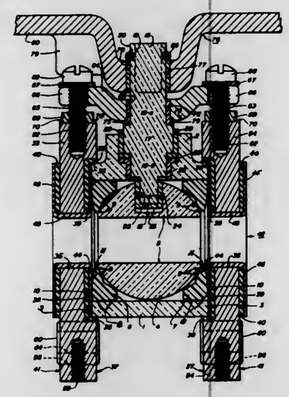
A plug-in valve assembly for hydraulic and pneumatic control systems on machines including baseplates with a locating pin firmly secured by means of a clamping ring in a mounting plate at standard distances from each other. The baseplates have a number of connecting pipings and a packing ring inserted therein to provide pressure-tight connection. The valve bodies for any desired

function are secured to the baseplates by means of a fastening ring, a tightening ring and a locating pin in



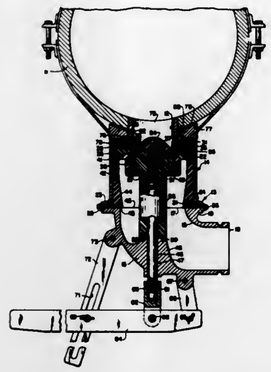
a predetermined position. The plug-in valves are arranged vertically on the mounting plate for easy access.

3,503,415
BALL VALVE AND CONSTRUCTION THEREOF
William M. DeAngelis, Wilton, Conn., William W. Rawstron, Northborough, Mass., and Oscar H. Grauer, Philadelphia, and Peter T. Hatzis, Dresher, Pa.; said DeAngelis, Grauer, and Hatzis assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 538,771, Mar. 30, 1966. This application June 8, 1966, Ser. No. 556,071
Int. Cl. F16k *5/06, 31/60*
U.S. Cl. 137—375 **22 Claims**



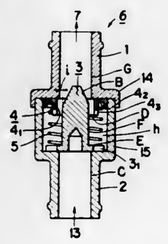
A glass ball-valve including a tubular glass valve-housing having a valve-stem-passage hole through the side wall thereof, a pair of oppositely facing sealing-rings of Teflon or the like in opposite ends of the bore of the valve-housing, a ball-like glass valve-member rotatably mounted and supported by the two sealing-rings out of contact with the valve-housing and having a fluid-passageway therethrough and having a valve-stem-keying socket therein, a metallic valve-flange at each end of the valve-housing, tie-bolts extending through the valve-flanges (but not through nor contacting the valve-housing) adjustably drawing the valve-flanges against the ends of the valve-housing and pressing the sealing rings against the valve-ball, an impact-resistant ceramic valve-stem extending through and revolvably in the valve-stem-passage hole and having an inner end keyingly telescoped into the socket in the valve-ball, a fluid-seal between the valve stem and the valve-stem-passage hole, a yoke extending across the valve-housing and overlapping the valve-flanges and having a stem-passage hole therein through which the valve-stem extends, and screws adjustably securing the ends of the yoke to the respective valve-flanges and exerting a variable axially inward force on the valve-stem.

3,503,416
VALVE ASSEMBLY
John Robert Clarkson, Palo Alto, Calif., assignor to The J. R. Clarkson Company, Palo Alto, Calif., a corporation of California
Filed Jan. 15, 1968, Ser. No. 697,688
Int. Cl. F16k *1/12, 1/42, 21/04*
U.S. Cl. 137—375 **11 Claims**



A valve assembly mounted over a lateral opening in a conduit comprises a body secured to the conduit by flexible metal straps and having the inlet end adapted to the shape of the conduit by an interposed saddle block, there being a rubber valve seat at the inlet end against which seats a rubber covered reciprocable valve element operated by an external lever system, with the interior of the body being rubber lined around the seat and valve element region and the valve element being urged toward closed position by an axially compressed rubber sleeve surrounding the stem of the valve element.

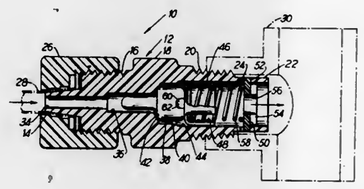
3,503,417
CONTROL VALVE FOR REGULATING FLOW OF BLOW-BY GAS
Tadahide Toda and Mitsumasa Yamada, Toyota, Japan, assignors to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota, Japan, a corporation of Japan
Filed Aug. 7, 1967, Ser. No. 658,895
Int. Cl. F16k *17/04*
U.S. Cl. 137—480 **4 Claims**



A control valve for regulating the flow of blow-by gas in an internal combustion engine which comprises a free piston axially movable in response to the negative pressure on the intake manifold side of the engine between a

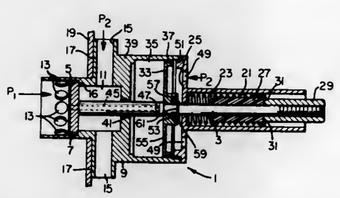
first position in which it cuts off said flow, through an intermediate position permitting maximum flow, through a succession of positions in which said flow is progressively reduced to a final position at which said flow is at a predetermined minimum. The piston is spring-biassed toward the first position and a cushion is provided between the surfaces on the piston and chamber wall which contact each other at said final position. The piston carries a tapered projection which is progressively inserted into a portion of the flow path having a diameter slightly greater than that of said projection in order to produce said progressive reduction in the volume of flow. Both the head of the piston and the cushioning means are peripherally notched to provide a flow path at all but said first position of the piston.

3,503,418
CHEMICAL FEEDING APPARATUS
Raymond Mark Petrucci, Waterbury, and Theodore Clifford De Paola, Meriden, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 4, 1968, Ser. No. 710,315
Int. Cl. F16k *15/02, 17/04*
U.S. Cl. 137—515 **5 Claims**



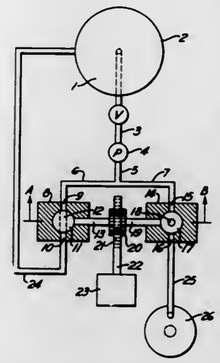
An anti-syphoning valve for use between the pump of an additive fluid and a watering system having means for permitting fluid to flow in one direction only and upon operation of the pump only.

3,503,419
DIFFERENTIAL PRESSURE RELIEF VALVE
William B. Poinsot, Sherman Oaks, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Dec. 12, 1967, Ser. No. 689,834
Int. Cl. F16k *15/00, 31/12*
U.S. Cl. 137—526 **10 Claims**



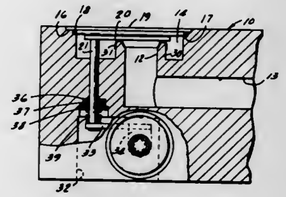
A differential pressure relief valve for maintaining a relatively constant pressure differential between two pneumatic pressure sources, e.g. an atmospheric source and a vacuum pump source. The valve includes a regulating piston subjected on one surface to one pressure source and on the other to the second pressure source. Intermediate the two sources is a bleeding means such that as the regulating piston travels due to a change in the pressure differential between the two sources, bleeding occurs neutralizing the change in the differential. The piston is under tension by a biasing means, the tension of which is preset according to the desired pressure differential. The biasing means prevents movement of the piston until the force of the preset tension is neutralized by the force of a countering pressure differential.

3,503,420
DIVERTER VALVE
Jesse Fred Gurley, Pittsburgh, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 20, 1968, Ser. No. 714,705
Int. Cl. F16k *11/08, 19/00;* **F17d** *1/16*
U.S. Cl. 137—609 **4 Claims**



A diverter valve supply system utilizing two two-way valves adapted to have their valve stems simultaneously rotate to block and unblock the flow through each of said valves.

3,503,421
PNEUMATIC OR VACUUM OPERATED MIXING VALVE
Nello L. Benedetti, Mount Prospect, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed May 22, 1967, Ser. No. 639,949
Int. Cl. F17d; F16k *11/00, 31/12*
U.S. Cl. 137—625.4 **3 Claims**



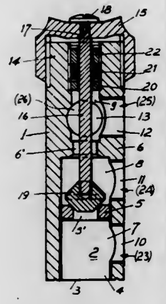
A pneumatically operated mixing valve for controlling the flow of different temperature fluids through the valve, as for example, hot and cold water, to obtain at the outlet port of the valve either cold water, hot water, or an intermediate temperature water derived by mixing of the hot and cold water within the valve housing. A rotatable apertured plate is positioned within the fluid chamber of the valve and overlies a port therein to control the flow of fluid through the chamber. The plate is secured to a rotatable shaft which extends through the housing and which has one end thereof connected to a pneumatic

actuator. The pneumatic actuator rotates the shaft thereby placing the aperture in the plate in and out of registry with the port assocated therewith. A groove is formed in the housing and about the shaft and an O-ring is held in position in the groove so as to embrace the shaft thereby providing a fluid tight seal between the shaft and the chamber.

3,503,422
MULTI-WAY VALVE DEVICE FOR ADJUSTING HEAT EXCHANGE APPARATUS

Gianluigi Lanzoni, Via Civitali 13, Milan, Italy

Filed June 8, 1967, Ser. No. 644,676
Claims priority, application Italy, June 10, 1966, 18,863/66
Int. Cl. F16k *11/06, 1/44, 19/00*
U.S. Cl. 137—625.29 1 Claim

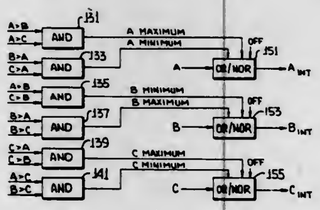


The present invention relates to a multi-way valve device particularly for heat exchange such as radiators, comprising a valve body defining inside thereof a longitudinal cavity containing two perforated cross-seats which divide the cavity into three compartments, four cross-holes for communication with outer pipes opening into the longitudinal cavity and a plugging body movable between the said perforated cross-seats and adapted to close the said perforated seats, the said plugging body actuated by an externally accessible rod-like element.

3,503,423
FLUIDIC SIGNAL SELECTOR

Ira C. Edell, Bowie, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Apr. 10, 1968, Ser. No. 720,274
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 13 Claims

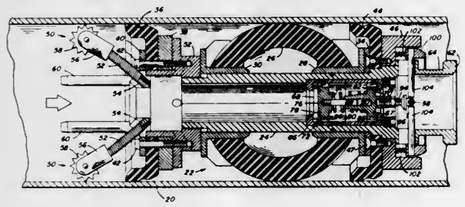


One or more of three or more fluid signals is selected in accordance with the pressure level of the selected signals relative to the remainder of the input signals. In one embodiment the lower pressure signal of plural variable pressure signals is passed by a respective one of plural signal transmission gates. The plural signals are arranged in pairs, each signal being paired with each of the other signals, and the pairs compared as opposing control signals in respective fluidic binary elements. The output signal from each binary element acts as in inhibit signal at the transmission gate for the input signal having the higher pressure in each compared signal pair. Output signals passed from the gates are fed to fluidic maximum pressure selectors which provide output signals corresponding to the highest pressure passed by either gate. A similar technique is employed to select the minimum pressure signal between the input signals. Where three or more input signals are present, logic circuitry is provided whereby the lowest, highest, next highest, next lowest, etc. pressure signals may be selected from the input signal group.

3,503,424
PIPELINE PLUGGING PIG AND METHOD FOR TEMPORARILY PLUGGING PIPELINES

Willard A. Sawyer, 3127 E. 49th St., Tulsa, Okla. 74135

Filed Apr. 22, 1968, Ser. No. 723,353
Int. Cl. F16l *55/12*
U.S. Cl. 138—97 8 Claims

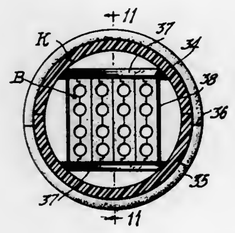


A flow-through pipeline pig having valve controls operable by fluid pressure or mechanical external pipeline actuating devices is used in the repair or replacement of portions of pipelines.

3,503,425
CURB, SIDEWALK AND CONDUIT STRUCTURE

Alfred J. Holm, 266 U.S. Highway 206 Stanhope, N.J. 07874

Filed May 12, 1967, Ser. No. 637,951
Int. Cl. F16l *9/08, 9/22;* E01c *11/22*
U.S. Cl. 138—108 3 Claims

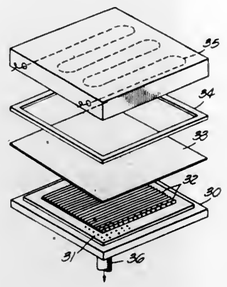


A combination of conduit sections, molded or cast either in one piece or in two parts, with longitudinal openings therethrough for electrical cables, tubes and the like, and cover sections molded or cast in the form of a curb, or a combined curb and sidewalk unit, or a road divider, or a hollow multiple part concrete or tile pipe, the conduit sections being laid side-by-side for easy installation and replacement in vertical directions and the cover sections being applied over and removable from the conduit sections by vertical movement for easy and quick access to the conduit sections and for repair or replacement of the conduit and cover sections.

3,503,426
ONE-PIECE ELBOW JACKET AND METHOD OF MAKING THE SAME

Douglas R. MacMillan, Buena Park, Calif. and Frank D. Eichberg, Scottsdale, Ariz., assignors to Walter A. Plummer, Sherman Oaks, Calif.

Filed Oct. 11, 1967, Ser. No. 674,509
Int. Cl. F16l *59/12, 11/12, 43/00*
U.S. Cl. 138—168 5 Claims

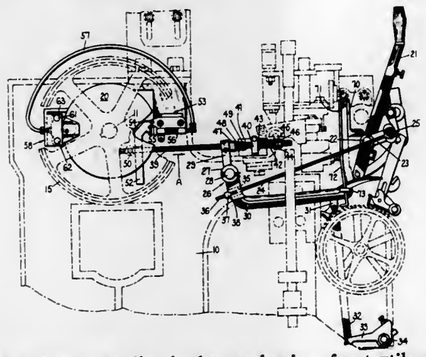


A one-piece seamed tubular plastic jacket for enclosing elbows and the like bends in conduits, cabling, wire harnesses, etc. and a method of making the same using vacuum-forming techniques. The main body is corrugated circumferentially to facilitate flexing and the expansion and contraction of the jacket when applied to an object to be enclosed. The seam includes provision for locking it assembled in various degrees of overlap to accommodate objects of differing sizes. A series of weakness grooves lengthwise of the seam expedites removal of excess seam material.

3,503,427
BRAKING DEVICE FOR TEXTILE MACHINERY

Raymond L. Booth, Milford, Mass., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed July 23, 1968, Ser. No. 746,899
Int. Cl. D03d *49/04*
U.S. Cl. 139—100 5 Claims



A caliper type disc brake mechanism for textile machinery such as looms adapted to be actuated by hydraulic means which receives its dictates through linkage elements interconnected with the loom's shipper motion.

3,503,428
LOG SAWMILL

Bo Ingemar Ackerfeldt, 15 Rosornas Vag, Danderyd, Sweden

Filed Nov. 10, 1965, Ser. No. 507,101
Claims priority, application Sweden, Oct. 5, 1965, 12,874/65
Int. Cl. B27b *29/04*
U.S. Cl. 143—25 13 Claims

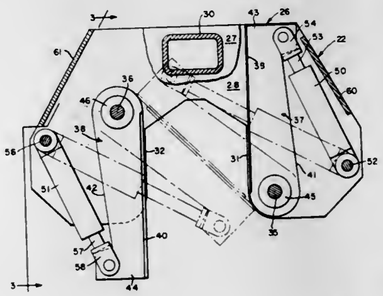


A log sawmill in which a log to be sawed is advanced along a sawing line from an input side of a saw unit to an output side of the unit by a log holding device which is movable along an overhead track.

3,503,429
TREE SHEAR

Edwin Lee Whisler, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed June 28, 1968, Ser. No. 740,921
Int. Cl. A01g *23/02*
U.S. Cl. 144—34 17 Claims



A tree shear composed of a U-shaped frame defining a throat for receiving a tree section and a pair of shearing blades on opposite sides of the throat with one being pivoted on the frame adjacent the open end of the frame and the other being pivotally mounted to the frame adjacent the closed end of the frame. A pair of cylinders mounted on the frame outward of the respective blades and adapted to shift the free ends of the blades into and out of the passage, whereby when shearing, one of the blades will move angularly about its pivot inwardly and toward the open end of the throat and the other blade will move angularly inwardly and toward the closed end of the throat.

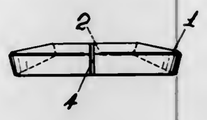
3,503,430
ANNULAR SPRING LOCK WASHER

Ichizo Tsurumoto, 15, 15 Ban, 5-chome, Koshienguchi, Nishinomiya, Hyogo Prefecture, Japan

Filed Nov. 19, 1968, Ser. No. 777,082
Claims priority, application Japan, May 29, 1968, 43/36,894
Int. Cl. F16b *39/24*
U.S. Cl. 151—38 5 Claims

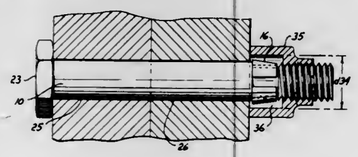
A lock washer consisting of an annular spring body of conical shape and of a trapezoidal, cross section, carrying

a hole at its center to accommodate a bolt passing therethrough and a slit made from the circumferential edge of the hole to the outer periphery, said spring body being made by coiling spirally a wire having the required cross-



sectional shape around a spindle of the required diameter and by cutting it off at each pitch so that its fiber flow may show itself in its circumferential direction.

3,503,431
SAFETY BOLT
Joseph P. Villo, Rydal, Pa., and Roger B. Whiteside, Cinnaminson, N.J., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 517,549, Dec. 30, 1965. This application Dec. 16, 1968, Ser. No. 785,451
Int. Cl. F16b *43/00*
U.S. Cl. 151—69 **9 Claims**



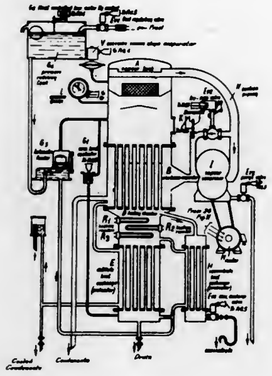
A fastener assembly including a self-retained bolt having a threaded end portion with an annular groove adjacent thereto and a spring collar mounted within the groove and a nut element having a counterbored bearing face to receive the collar. The spring collar comprises a pair of oppositely disposed frusto conic sections which facilitate installation and withdrawal of the bolt collar assembly in a workpiece.

3,503,432
RESISTING STRUCTURE OF PNEUMATIC TIRES FOR VEHICLE WHEELS
Luigi Maiocchi, Milan, Italy, assignor to Pirelli Societa per Azioni, Milan, Italy
Filed Nov. 14, 1966, Ser. No. 593,996
Claims priority, application Italy, Dec. 18, 1965, 28,070/65
Int. Cl. B60c *11/02*
U.S. Cl. 152—176 **8 Claims**



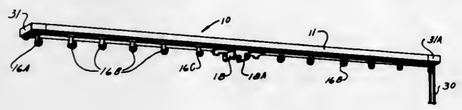
A pneumatic tire whose tread band includes a reinforcing structure comprising two layers of metal cords overlain by one layer of textile cords, the textile cords being pre-stressed in tension in the completed tire.

3,503,433
CONTROLLED RECOMPRESSION EVAPORATOR WITH REGULATED HEATING, FEED AND DISCHARGE
Pietro Riva, Via De Amicis 15, and Guido Riva, Via Cavour 5, both of Soresina, Cremona, Italy
Filed Sept. 7, 1966, Ser. No. 577,726
Claims priority, application Italy, Apr. 13, 1966, 16,746/66
Int. Cl. B01d *1/06, 1/28, 3/42*
U.S. Cl. 159—44 **10 Claims**



A completely automated mechanical thermo-compression evaporator for aqueous solutions which comprises a number of interrelated means to control the various phases of the evaporator via electrical control circuitry. The various means include means feeding an aqueous solution into the evaporator and for preheating same. Means for starting the compressor are provided and for running the evaporator under steady state conditions and thereafter for stopping same. The electrical control circuitry also functions to signal various abnormalities in the operation of the evaporator to shut it down.

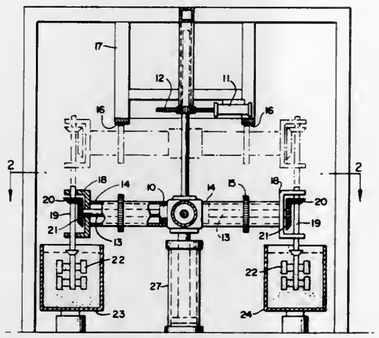
3,503,434
TRAVERSE ROD
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Filed Jan. 19, 1967, Ser. No. 610,441
Int. Cl. A47h *5/032, 13/12*
U.S. Cl. 160—345 **14 Claims**



A traverse rod structure for the support and traversing of draperies across windows and/or other similar openings and particularly to a type thereof which is of an inconspicuous nature and which is particularly adapted for packing the draperies into a minimum of pack-back space. The term "pack-back space" refers to the space occupied by the draperies when the draperies are in an open position. This is accomplished by the intermediate portion of the drapery being supported by hangers of such design that the drapery apart from the master carrier can pivot into a position generally parallel with the extent of the track when said draperies are drawn or can pivot into positions crosswise of the track when said draperies are open. Further, a hanger which supports the outer end portion of the drapery pivotally with respect to the track is provided so that even the last section of said drapery

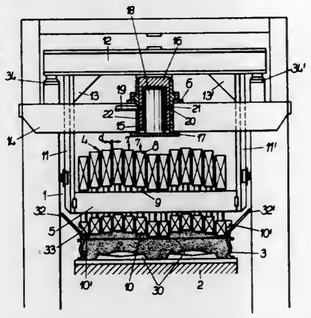
at said outer and end may turn crosswise of the track to provide a minimum pack-back space when said draperies are open.

3,503,435
APPARATUS FOR USE IN THE MANUFACTURE OF SHELL MOULDS
Adam Dunlop, 23 Manse View Terrace, Douglas, Lanark, Scotland
Filed June 11, 1968, Ser. No. 736,108
Claims priority, application Great Britain, June 15, 1967, 27,687/67
Int. Cl. B22c *13/08*; B29c *13/00*
U.S. Cl. 164—166 **6 Claims**



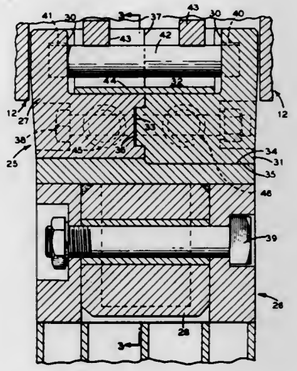
Shell moulds are prepared by supporting at least one pattern from a carrier rotatable around a horizontal axis so that the patterns will project transversely from one side of the axis of rotation of the carrier, and means for raising and lowering the carrier is provided so that the pattern can be immersed in a first container of mould-forming material, raised and moved to a position over a second container, immersed in the second container of mould-forming material and so on to build up the desired number of layers of refractory material. A minimum of space is used with this apparatus.

3,503,436
APPARATUS FOR COMPRESSING AND PACKING MOLDING SAND
Herbert Grolla, Laasphe im Westphalia, Germany, assignor to Firma Heinrich Wagner Maschinenfabrik, Laasphe im Westphalia, Germany
Filed Dec. 28, 1967, Ser. No. 694,329
Claims priority application Germany, Dec. 28, 1966, W 43,079
Int. Cl. B22c *15/00*
U.S. Cl. 164—172 **7 Claims**



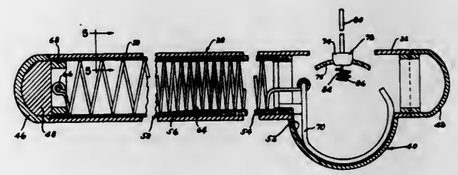
An apparatus for compressing and packing casting and moulding sand in a form by means of a plurality of automatic tampers, operable together and guided in frame members.

3,503,437
CONTINUOUS CASTING STARTER HEAD
William G. Wilson, Beaver Falls, Pa., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 21, 1967, Ser. No. 692,341
Int. Cl. B22d *11/08*
U.S. Cl. 164—274 **6 Claims**



A starter head for continuous casting having a recess in one end thereof and a tang extending from the opposite end of the starter head for attachment to a starter bar. The recess having sockets in the opposite side walls thereof to receive a bar forming a heat sink for attachment of initially frozen metal of the continuous casting thereto. At least one wall of the starter head recess containing a socket is transversely removable for insertion of the bar and removal of the casting discard after use in the continuous casting operation.

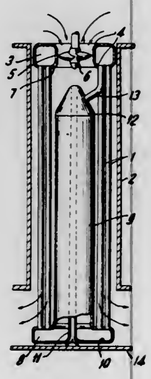
3,503,438
HYDROGEN RELEASE FOR A HEAT PIPE
Wallace T. Geyer, Des Peres, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 25, 1968, Ser. No. 770,558
Int. Cl. F28d *15/00*; F24h *1/00*
U.S. Cl. 165—105 **10 Claims**



A heat pipe system, particularly for a railway car, using water, which may dissociate and develop a dangerously high pressure of hydrogen, is provided with a hydrogen release device located outside the car. The release device is a palladium or palladium alloy tube sealed to a wall of

the heat pipe system and having a closed inner end and an open outer end.

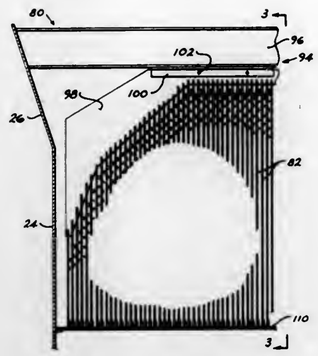
3,503,439
HEAT EXCHANGER
Oskar Wanka, Deggendorf (Danube), and Adolf Jäger, Plattling, Germany, assignors to Deggendorfer Werft und Eisenbau Gesellschaft m.b.H., Deggendorf (Danube), Germany
Filed Sept. 26, 1968, Ser. No. 762,830
Claims priority, application Germany, Sept. 26, 1967, 1,601,180
Int. Cl. F28f *13/12*
U.S. Cl. 165—108 **10 Claims**



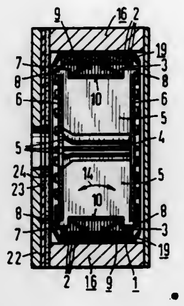
A heat exchanger has an annular upwardly oriented tube bundle including headers connected with the tubes as opposite ends of the bundle, the bundle and the headers being removable from the installed position as a unit. In its operating state, the unit is surrounded by a heat exchange medium of an apparatus for effecting chemical reactions, and a propeller circulates the heat exchange medium. The heat exchanger extends upwardly into the range of the propeller and one of the headers is circular and closely surrounds the propeller with its inner wall to form a nozzle for the propeller. A current displacer extends upwardly through the interior of the tube bundle and may be traversed by a heat exchange medium or may have internal heating means, whereby to serve as an additional heat exchange surface.

3,503,440
FORMED PLATE TUBE SUPPORT
Nicholas D. Romanos, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 785,914
Int. Cl. F28d *7/00*; F28f *9/00*; F22b *7/04*
U.S. Cl. 165—162 **6 Claims**

Tube support structure especially adapted for supporting the free-standing, horizontally extending connecting portion between the depending legs of U-tubes arranged in the tube bundle of a shell and tube type heat exchanger against the effects of vibrations. The tube support structure consists of a plurality of plate members having mutually spaced, formed projections along both side edges thereof. The projections are offset normal to the plane of the plate members to define U-shaped, tube-engaging receptacles adapted to retain the tubes along their connecting portions. The plate members are disposed in a row between each layer of tubes in the tube bundle and are anchored at their top and bottom ends to the tube bundle enclosure to secure the support structure with respect to the shell.



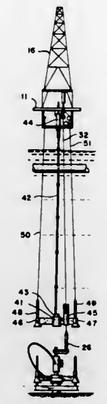
3,503,441
ELECTRODE COOLING DEVICE
Herbert Sarnezki, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Apr. 26, 1968, Ser. No. 724,337
Int. Cl. F28f *7/00*; H01j *7/24*
U.S. Cl. 165—185 **10 Claims**



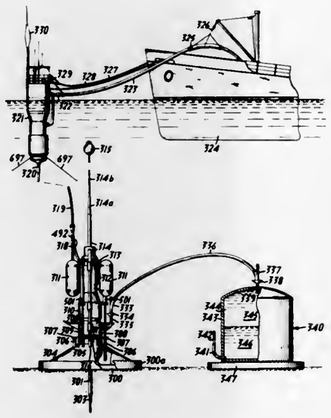
A cooling element for high temperature tube electrodes such as electron catchers of traveling-wave tubes. The cooling element contains cooling ribs which are braced against the electrode by at least one spring. The cooling ribs are anchored to a metal block which has slots grouped in a star-like fashion around the electrode and, the cooling ribs are placed in the slots and set up in the form of a plate which is movable against the force of the spring.

3,503,442
MARINE CONDUCTOR PIPE CONNECTING METHOD
Paul L. Dodd, Metairie, La., and Charles P. Peterman and William H. Petersen, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 31, 1968, Ser. No. 749,195
Int. Cl. E21b *33/035*
U.S. Cl. 166—.5 **5 Claims**

A method of connecting a marine conductor pipe to an underwater wellhead assembly including the steps of remotely attaching a mono-guideline to a wellhead assembly, lowering marine conductor pipe means and guideline attaching means along the mono-guideline and pulling both of said means into operative engagement with the wellhead assembly.

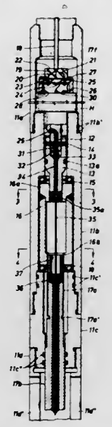


3,503,443
PRODUCT HANDLING SYSTEM FOR UNDERWATER WELLS
John E. Blanding, Old Lyme, Edmund C. Trageser, Norwich, and James Vincent Harrington, Mystic, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Original application Apr. 26, 1962, Ser. No. 193,040. Divided and this application Sept. 11, 1967, Ser. No. 671,532
Int. Cl. E21b *43/01*; B63b *35/44*
U.S. Cl. 166—.6 **13 Claims**



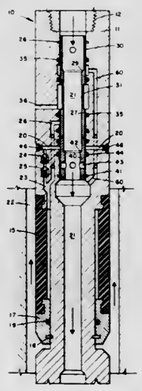
Production equipment is mounted adjacent to an underwater wellhead. The production equipment includes means for separating gas and oil. A tank is mounted under water for receiving and temporarily storing oil from the well. Valving directs movement of a well product from the production equipment to and from the tank and from the production equipment to a floating buoy. The gas is delivered to and flared at the buoy, and the oil is collected from the buoy by a surface vessel.

3,503,444
ELECTRIC SETTING MECHANISM FOR SUBSURFACE WELL TOOLS
Arthur L. Owen, Houston, Tex., assignor to Electric Wireline Specialties, Inc., Alice, Tex., a corporation of Texas
Filed Oct. 3, 1968, Ser. No. 764,763
Int. Cl. E21b *43/00*
U.S. Cl. 166—65 **34 Claims**



A reversible electric motor acting through a gear train retracts or extends an axial shaft assembly through a stationary sleeve to activate a retrieving or setting mechanism on a down-hole tool. The setting mechanism and attached tools are suspended in a well bore by an electrical wire line which supplies electrical conductors for controlling and driving the motor and for completing an electrical circuit with equipment carried below the setting mechanism. The moving shaft has a variable diameter to compensate for the differential effects of well presure and prevent the shaft from binding.

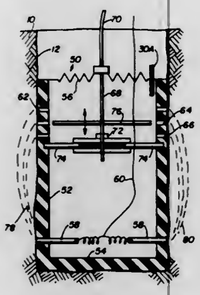
3,503,445
WELL CONTROL DURING DRILLING OPERATIONS
Kenneth L. Cochrum and John W. Kenneday, Houston, Tex., assignors to Esso Production Research Company
Filed Apr. 16, 1968, Ser. No. 721,636
Int. Cl. E21b *43/00*, *33/126*
U.S. Cl. 166—244 **17 Claims**



Method and apparatus for use in controlling wells during drilling operations in which drilling fluid is circulated down the drill string and up the annulus be-

tween the drill string and the borehole wall. A tubular member is inserted in the drill string. The tubular member has arranged thereon a fluid-inflatable packer adapted to close off the annulus surrouding the tubular member. Plugs pumped from the surface cause sleeves arranged within the tubular member to shift under the application of fluid pressure and open ports and passage to cause the inflatable packer to first close and later reopen the annulus and to bypass the plugged bore of the tubular member. A port may be opened above the annulus closure upon application of a predetermined fluid pressure to permit fluid to circulate down the drill string and up the annulus between the drill string and the borehole wall. Alternatively, fluid may be applied to the formation surrounding the lower end of the drill string below the annulus closure by application of a predetermined fluid pressure in said drill string to unplug the bore of said tubular member after said inflatable packer has closed off the annulus and before the packer has been deflated to open the annulus.

3,503,446
METHOD AND APPARATUS FOR FORMING AND/OR AUGMENTING AN ENERGY WAVE
Clarence W. Brandon, Tallahassee, Fla., assignor of twelve and one-half percent to Orpha B. Brandon, Tulsa, Okla., fifty percent to Nat A. Hardin, Catherine H. Newton, and Hazel H. Wright, jointly, all of Forsyth, Ga., and five percent to Harvey B. Jacob, Washington, D.C.
Continuation of application Ser. No. 511,957, Dec. 6, 1965. This application May 13, 1968, Ser. No. 728,852
Int. Cl. E21b *43/26*
U.S. Cl. 166—249 **52 Claims**

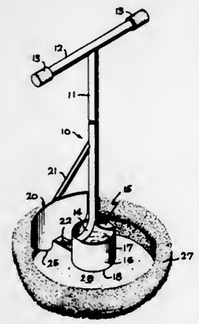


A method in which an energy wave at a controlled frequency is superimposed on another energy wave transmitted through some medium to increase the energy level and heat the medium through which the energy waves are propagated. One of the energy waves is generated from an electrical current source connected to electrodes in contact with the wave transmitting medium.

3,503,447
METHOD OF LOCATING AND PLUGGING THIEF ZONES
Tyler W. Hamby, Jr., Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,404
Int. Cl. E21b *33/138, 47/10*
U.S. Cl. 166—254 **4 Claims**

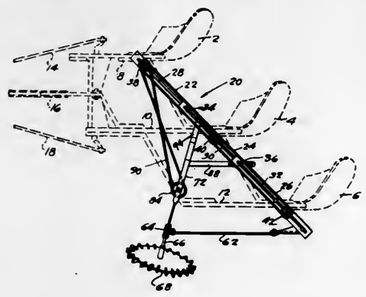
The permeability of a thief zone of a well is treated and the injectivity along an interval into which the well is opened is normalized by measuring the depth within the well of at least one zone in which the injectivity into the surrounding earth formation is relatively high. The suspension of macroscopic radioactive solid particles through the well and into the surrounding earth formations is measured. The permeability of a zone of relatively high permeability is reduced by (a) injecting a liquid solution, capable of penetrating into and forming plugging material within the pores of a porous earth formation, into any portion of the zone where the radioactivity is relatively high and (b) injecting a liquid suspension of particles, capable of bridging across and sealing off fractures and vugs, into any portion of the zone where the radioactivity is substantially nominal.

3,503,448
LAWN TRIMMING APPARATUS
Lyle H. Schwartz, 13516 Oxnard St., Van Nuys, Calif. 91401, and Jerold H. Schwartz, 8030 Loma Verde St., Canoga Park, Calif. 91304
Filed Nov. 30, 1966, Ser. No. 597,911
Int. Cl. A01b *45/00*
U.S. Cl. 172—18 **6 Claims**



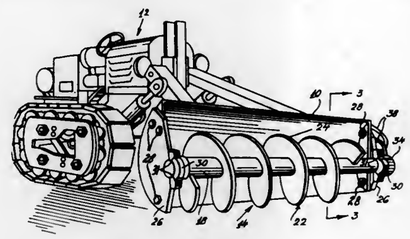
A lawn trimming apparatus having an arcuate cutter and a horizontal cutter adapted to trim grass away from a lawn sprinkler head.

3,503,449
ANTI-CLOGGING ATTACHMENT FOR MOLDBOARD PLOWS
Otto R. Schaper, Estherville, Iowa 51334
Filed Jan. 5, 1968, Ser. No. 696,007
Int. Cl. A01b *9/00*
U.S. Cl. 172—39 **5 Claims**



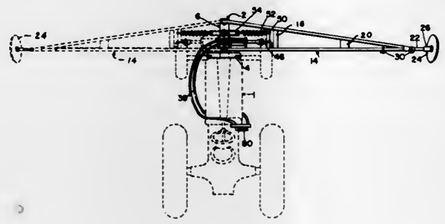
Anti-clogging attachment for moldboard plows, said attachment comprising: a frame; paddle members journaled in said frame for rotation about vertical axes; clamping means for attaching said frame to moldboard plows and means to rotate said paddle members.

3,503,450
SPIRAL CONVEYOR BACKFILL ATTACHMENT FOR BULLDOZERS
Chester B. Day, 101 Terry Blvd., Gering, Nebr. 69341
Filed July 17, 1967, Ser. No. 653,962
Int. Cl. E02f *3/81, 3/84*; E01h *5/00*
U.S. Cl. 172—71 **1 Claim**



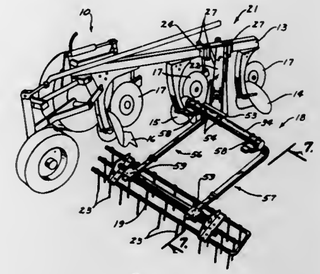
A spiral conveyor backfill device for attachment to the front of a bulldozer for picking up a pile of dirt from the side of a ditch or the like, piled therealong, and conveying the dirt sidewise to refill the ditch. The device is rotated from mechanism on the backfill attachment.

3,503,451
FLUID ACTUATED MARKER ELEMENT FOR TRACTORS AND THE LIKE
Robert L. Eastman, P.O. Box 127, Randlett, Okla. 73562
Filed Nov. 28, 1967, Ser. No. 686,101
Int. Cl. A01b *69/02*
U.S. Cl. 172—132 **7 Claims**



A row marker for a tractor or a tractor operated implement, which is mounted on the tractor or implement along the longitudinal axis of the tractor, with a pivoted arm and an adjustable extension thereon with ground engaging marker element such as a disc, on the adjustable extension, which will mark on either side of the tractor. A fluid actuated cylinder is provided to move the arm of the marker from an outwardly extending position on one side of the longitudinal axis of the tractor, upward to a point near the dead top center, whereupon, the inertia, together with the tension of a spring biased between a bell crank mechanism and the row marker arm, will cause the row marker arm to be carried over dead top center and the fluid actuated cylinder, which is actuated by remote control, may be used as a retarding element to gently lower the row marker into place on the opposite side of the tractor. The spring may be utilized as a balance to partially support the row marker arm or may be used to cause the row marker element to engage the earth to the desired extent. The row marker element is remotely controlled by the operator, from the seat of the tractor.

3,503,452
LATERALLY TILTABLE HARROW ATTACHMENT
Byron L. Godbersen, Ida Grove, Iowa 51445
Filed Nov, 18, 1966, Ser. No. 595,509
Int. Cl. A01b *23/04, 49/02, 13/00*
U.S. Cl. 172—202 **3 Claims**



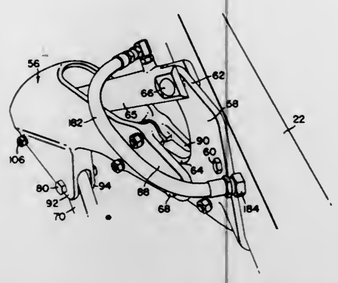
This invention relates to an apparatus for attaching a harrow to the beam of a trailing-type moldboard plow, wherein the apparatus includes a shaft attached to the plow beam and extended angularly rearwardly with a drawbar attached to the free end of the shaft, the drawbar extended at right angles to the direction of movement of the plow. A pair of resilient strap elements are connected in parallel and spaced relation to the drawbar, and carry alone and without other connection the harrow at their free rear ends.

3,503,453
SEMI-INTEGRAL REVERSIBLE DISK PLOW WITH STEERABLE TRANSPORT WHEEL
Bruno Bernhardt Johannsen, Moline, and Robert Earl Cox, Rock Island, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,704
Int. Cl. A01b *3/40*
U.S. Cl. 172—212 **7 Claims**



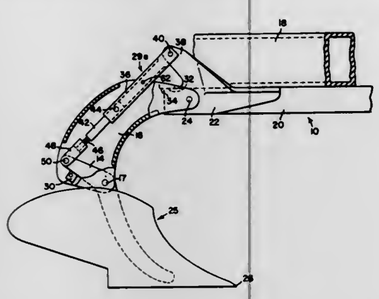
A reversible disk plow having a main frame which is interconnectible with tractor draft links through means of a pivot post carried by a mounting structure. Pivotally carried on the main frame is a subframe to which disk plow standards are rotatably secured. A reversing cylinder mounted on the main frame can swing the subframe from right to left sides. Pivotally secured to the rear end of the subframe is a wheel mounting frame which carries at its rear end a transport wheel that can be raised and lowered by a second cylinder. The wheel mounting frame is held parallel to the fore-and-aft center line of the main frame by a parallelogram link which interconnects the wheel mounting frame with the main frame. A steering arm on the pivot post is interconnected with a steering arm on the transport wheel by three steering links and two intermediate arms that are carried by the pivot pins which interconnect the subframe with the main frame and the wheel carrying frame.

3,503,454
PLOWS HAVING HYDRAULIC TRIP BOTTOMS
Orey William Oerman, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,681
Int. Cl. A01b *61/04*
U.S. Cl. 172—265 **4 Claims**



A tractor drawn plow having a plurality of plow bottoms, each interconnected with an obliquely extending hollow main frame member by means of a hydraulic cylinder, the rod end of the cylinder being disposed within a tubular mounting beam that pivotally interconnects the plow bottom assembly with the main frame beam, the fluid line means connecting the cylinders with a source of fluid under pressure on the tractor being disposed at least in part within the hollow main frame beam.

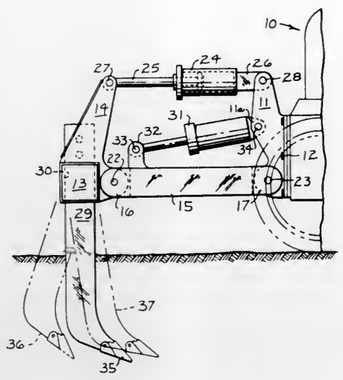
3,503,455
OVERLOAD TRIP DEVICE
Orey William Oerman, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 11, 1967, Ser. No. 652,503
Int. Cl. A01b *61/00*
U.S. Cl. 172—271 **7 Claims**



An overlood trip device for a plow standard secured to a plow frame by a pivoted intermediate link, said device interconnecting the standard to the frame by structure which will shear when overload conditions are encountered.

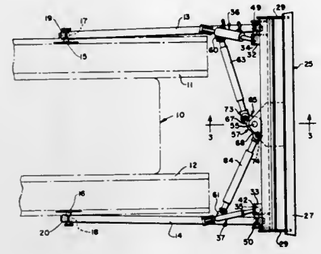
3,503,456
MOUNTING LINKAGE FOR RIPPERS
Donald J. Larson, Will County, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 1, 1967, Ser. No. 665,051
Int. Cl. A01b *63/00, 13/08*
U.S. Cl. 172—484 **2 Claims**

A mounting linkage for rippers including a construction which allows a combination of parallelogram-type ripper linkage control and hinge-type ripper linkage control at the selection of the operator. To accomplish this objective one side or arm of a parallelogram-type ripper linkage is formed with actuators whereby the parallelogram-type linkage may be modified and jack means are



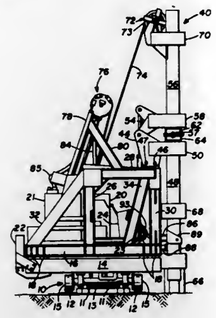
used to control the height of one end of the parallelogram linkages from the ground and thus the depth of pentration of the ripper.

3,503,457
BULLDOZER
James Richard Smith, La Motte, Iowa, and Harry Albert Land, Algonquin, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,649
Int. Cl. E02f *3/76*
U.S. Cl. 172—803 **7 Claims**



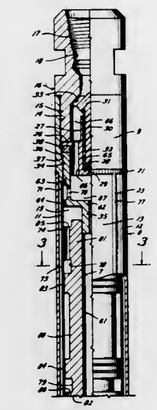
A bulldozer including a blade, a pair of parallel push arms supported at their rear ends on a tractor and having their forward ends connected to the blade; a pair of struts supported on the respective arms and extending upwardly and forwardly from the arms to and for connection with the back of the blade, at least one of the struts being extensible and retractable for effecting tilting of the blade; a pair of elongated rigid brace elements having outer ends connected to the respective arms and extending inwardly and forwardly toward the center of the blade; a coupler device pivotally supported on the rear side of the blade and in a central location thereof; and a pair of connectors on the coupler spaced radially from the pivot on opposite sides of the pivot and adapted for connection to the inner ends of the braces whereby the forces exerted by one of the braces will be forwardly of the pivot and the lines of force exerted by the other of the braces will be rearwardly of the pivot.

3,503,458
POLE DRIVER
Lester N. Hambrick, P.O. Box 176, Irving, Tex. 75060
Filed Mar. 27, 1968, Ser. No. 716,588
Int. Cl. E01b *2/00;* **E02d** *7/08, 7/16*
U.S. Cl. 173—19 **12 Claims**



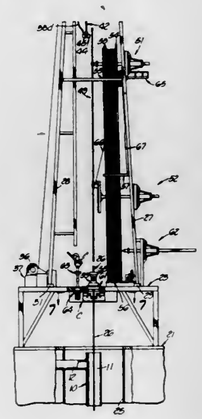
A pole driver rotatably mounted on a frame supported by a running gear for movement along a track. A hammer, slidably positioned in a vertical derrick, drives a pole into the ground as it falls under the force of gravity from a raised position. A hydraulically driven block and tackle raises the hammer from a lower position to the driving position. To maintain the derrick in a substantially vertical position, a two-position pivotal support is provided at approximately its midpoint. The derrick rotates about the pivot support by means of hydraulic cylinders.

3,503,459
PERCUSSION DRILL MOTOR
Marvin E. Schindler, Houston, Tex., assignor to Mission Manufacturing Company, Houston, Tex., a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,413
Int. Cl. E21c *7/10*
U.S. Cl. 173—80 **6 Claims**



This application is directed to a down-hole type percussion drill motor comprising a rugged casing forming the working chamber in which a hammer piston reciprocates and including operating fluid passages, yet adapted to withstand the tensional, compressive, torsional, and other forces, abrasions, and blows to which such a motor is subjected in normal operation with minimum thickness of metal. Maximum operating efficiency is assured by the provision of ample pressured working fluid passages of segmental section which are formed between integrally united, interfitting barrels, while exhaust from the rear working chamber flows through a passage in the center of the hammer piston.

3,503,460
PIPE HANDLING AND CENTERING APPARATUS FOR WELL DRILLING RIGS
John F. Gadbois, Houston, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed July 3, 1968, Ser. No. 742,258
Int. Cl. E21b *7/12*
U.S. Cl. 175—5 **28 Claims**

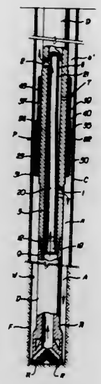


Pipe handling and centering apparatus for well drilling rigs in which a length of pipe is supported by a well drilling derrick mounted on a derrick floor which is movable relative to a length of pipe extending into the well bore and supported in a gimbal master bushing and pipe centering apparatus is employed to engage the length of pipe below the gimbal master bushing to deflect the pipe so as to align the length of pipe supported in the gimbal master bushing with the length of pipe supported in the derrick to facilitate the making up of threaded connections therebetween. Such apparatus in which the pipe centering apparatus includes opposing rams hydraulically actuated to engage and move the length of pipe supported in the gimbal master bushing and in which one of the rams is relieved of hydraulic fluid pressure in the event that the tendency of the derrick to move relative to the length of pipe supported in the gimbal master bushing is excessive.

3,503,461
REVERSE CIRCULATION TOOL
Kirk R. Shirley, 182 E. Cameron Place, Long Beach, Calif. 90807
Filed July 3, 1968, Ser. No. 742,363
Int. Cl. E21b *17/00*
U.S. Cl. 175—325 **16 Claims**

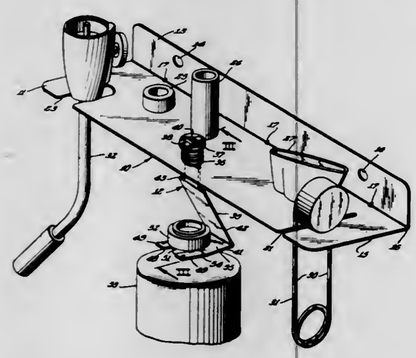
A reverse circulation tool for use in a string of pipe for drilling or enlarging well bores extending into or through subsurface earth formation, in which drilling fluid passes from the drill pipe into the annulus between the drill pipe and the well wall below a packer on the tool and engaged with the well wall, the fluid returning through the drill pipe and entering the annulus above the packer. Such a reverse circulation tool in which the packer remains non-rotative while the drill string rotates. Such a tool in which the packer is initially retracted, and is expanded into sealing engagement with the well wall responsive to the pressure of drilling fluid in the tool.

In the drilling of wells into or through the subsurface earth formation, it is sometimes the practice to employ what is known as reverse circulation of the drilling fluid in order to more effectively wash cuttings or scrapings from the well bore adjacent the drill bit or reaming tool, or the like, into the drill pipe and thence back to the top of the well, Moreover, devices for effecting such reverse circulation flow path of the drilling fluid have been devised, which are adapted to be installed in the string



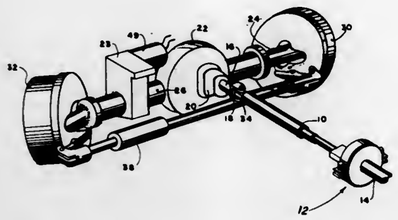
of well drilling pipe and which are provided with a cross-over flow passage through which fluid is caused to flow from the drill pipe into the annular space between the drill pipe and the well wall or casing, as the case may be, below a packing or seal which is rotatably engaged with the well wall, the fluid flowing downwardly through the annular space and returning to the cross-over device through the drill pipe, and then passing through the cross-over passage into the annular space between the drill pipe and the well wall above the packer or packing.

3,503,462
ACCESSORY WALL RACK AND TANK SCALE
Bernard H. Baher, 52 E. High St., Avon, Mass. 02322
Filed Oct. 2, 1968, Ser. No. 764,388
Int. Cl. G01g *3/02, 19/52*
U.S. Cl. 177—144 **7 Claims**



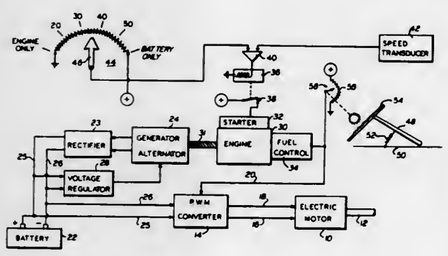
A wall rack including a tank scale for storing accessories of a propane torch kit and for weighing the propane tank having a rack portion provided with apertures for receiving torch burner tips and having one slot for receiving the torch valve assembly and the other slot for receiving a torch igniter. The wall rack supports a scale for weighing a propane container or tank which scale is supported by the rack and utilizes a portion of the rack as an indicator for the determination of the weight of the container.

3,503,463
PIVOT STEERING TRACTOR
Walter P. Lestoque, Aurora, Colo., assignor, by mesne assignments, to The American-Coleman Company, Littleton, Colo., a corporation of Delaware
Filed July 7, 1966, Ser. No. 563,492
Int. Cl. B62d *11/00, 5/00*
U.S. Cl. 180—6.2 **9 Claims**



A vehicle provided with at least two sets of steerable wheels, four steer wheels on two axles, two wheels of which may be arranged for conventional two wheel steering, and expandable tie rods on each set of wheels are arranged for moving the front two wheels into a toe-in-steering and the rear two wheels for toe-out-steering whereby the vehicle may be made to pivot around a center point between the two sets of wheels. A preferred form of the invention utilizes two sets of steerable drive wheels.

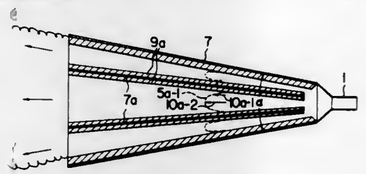
3,503,464
CONTROL SYSTEM FOR A BATTERY AND HYDROCARBON POWERED VEHICLE
Michel N. Yardney, 366 Central Park W., New York, N.Y. 10025
Filed Mar 4, 1968, Ser. No. 710,347
Int. Cl. B60k *1/00;* **B60l** *11/12;* **B61c** *9/38*
U.S. Cl. 180—65 **10 Claims**



A novel control system for a hybrid-powered vehicle wherein a battery of sufficient power and an engine are combined to alternatively provide propulsion power as a function of preselected vehicle speed. Means are provided to select a vehicle speed at which the transition between engine and battery power occurs. Switch means are actuated to selectively couple the battery to an electric propulsion motor when the vehicle speed is below the selected transition speed. In a first embodiment the control system includes an electronic control. In a second embodiment a mechanical arrangement is shown wherein a governor is

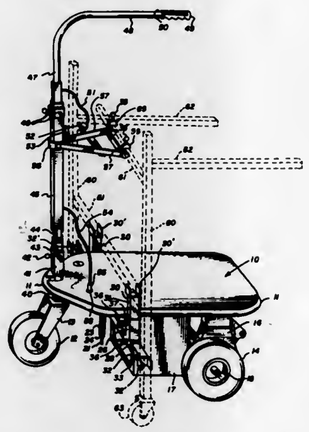
provided with a speed-reference lever and actuates a switch at a preselected vehicle speed. The switch in turn effectively controls the transition between battery and engine for driving the vehicle.

3,503,465
SILENCER FOR SUCTION OR DISCHARGE OF FLUIDS UNDER PRESSURE
Shunji Kobayashi, Yokohama-shi, Koichi Hiramatsu, Isao Yoshihara, and Sathihiro Kuwabara, Tokyo-to, Japan, assignors to Chiyoda Kako Kensetsu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 4, 1967, Ser. No. 658,395
Claims priority, application Japan, Aug. 5, 1966, 41/51,104; Jan. 30, 1967, 42/5,612
Int. Cl. F01n *1/24*
U.S. Cl. 181—42 **2 Claims**



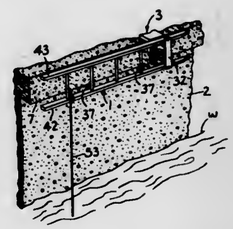
On the basis of the observation that a fluid under pressure diffuses in a conical path with a certain divergent angle into a region of lower pressure, a silencer, through which a noise generating flow of a fluid is passed, is made up of a combination of concentric outer, intermediate, and inner shells respectively having shapes of hollow truncated cones with specific divergent angles in the discharge direction and provided on both surfaces or single surfaces thereof with sound absorbing layers of specific thicknesses.

3,503,466
SCAFFOLD MOVING AND GUIDING DEVICE
Judge E. Rosander, 7200 W. Arkansas Ave., Denver, Colo. 80226
Filed Oct. 7, 1968, Ser. No. 765,556
Int. Cl. E04g *1/24*
U.S. Cl. 182—13 **8 Claims**



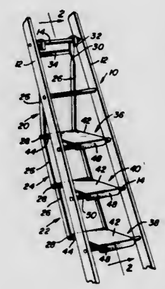
In combination with a wheel supported scaffold having vertical and horizontal members connected together, a scaffold moving and guiding device which comprises a wheeled motor driven frame, a transversely extending bolster having extension means movable in directions at right angles to each other for fastener-free engagement with transverse and vertical members of the scaffold, and a standard mounted on the frame for guiding and controlling the movement of the frame and scaffold when engaged by the extension means. The bolster is pivotally connected to the frame to permit movement of the scaffold and frame relatively to each other when a wheel passes over an uneven surface.

3,503,467
LADDER FOR BOAT DOCK, SEAWALL, OR THE LIKE
Frederick W. Lindblad, 835 Illinois Ave., Batavia, Ill. 60506
Filed Feb. 12, 1968, Ser. No. 704,793
Int. Cl. E06c *9/06*
U.S. Cl. 182—97 **2 Claims**



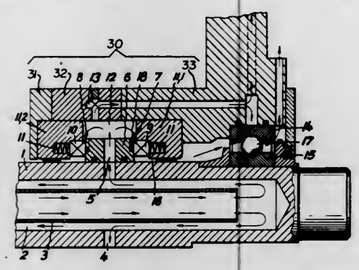
A ladder is pivotally connected to a boat dock, seawall or like structure and overhangs the water. The ladder is rotatable to and from a storage position in which the ladder is horizontal and alongside of the structure to a vertical position in which the ladder projects downwardly from its pivot axis toward the water. A releasable locking mechanism secures the ladder in either of the two positions.

3,503,468
PLATFORM ATTACHMENT FOR LADDERS
Lee E. Taylor, Sr., Deatsville, Ala., assignor of eighty percent to Earl W. Solomon, Montgomery, Ala.
Filed July 22, 1968, Ser. No. 746,389
Int. Cl. E06c *7/16*
U.S. Cl. 182—121 **7 Claims**



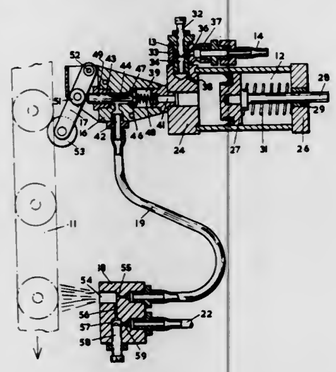
These attachments lend themselves to readily applicable use on ladders. The foldable sectional type attachments cooperate with (1) the steps on a stepladder or (2) the rungs of an extension ladder. These two embodiments are self-contained and provide broad-surfaced platforms on which the user can stand safely and comfortably while working and without becoming unduly tired, dizzy or careless. The third cradle-type embodiment lends itself to suspension from a rung on an A-ladder an provides a rung-suspended but stable self-levelling platform.

3,503,469
BEARING LUBRICATING ARRANGEMENT
Eugen Renz, Mulheim, Helmut Widder, Essen, and Hubert Rothert, Berlin, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed June 13, 1968, Ser. No. 736,610
Claims priority, application Germany, June 19, 1967, L 56,765
Int. Cl. F16n *1/00*
U.S. Cl. 184—5 **6 Claims**



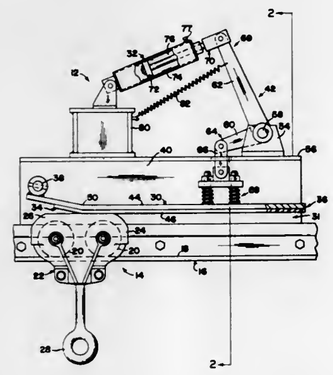
An arrangement for lubricating a bearing of a high-speed oil-cooled rotary machine, such as a generator. The arrangement includes a rotor shaft having a cavity for holding cooling oil and at least one oil outlet that communicates with the cavity; a bearing, spaced from the outlet, rotatably supporting the shaft; a stator having a portion spaced from the outlet which, together with the shaft, forms a space into which the outlet opens and a sealing unit arranged in and sealing the space. The sealing unit includes a rotary ring which is rotatable with the shaft and a stationary ring arranged in sealing engagement with the rotary ring but inherently allowing the flow of leakage oil between itself and the rotary ring. Means are also provided for conducting the major portion of the oil out of the space and for conducting the remainder, which leaks between the two rings, to the bearing.

3,503,470
INTERMITTENT LUBRICANT SPRAY DEVICE
Cyril Douglas Lister, Mill Lane, Caunton, Newark, Nottinghamshire, England
Filed Aug. 4, 1967, Ser. No. 658,476
Claims priority, application Great Britain, Aug. 12, 1966, 36,172/66
Int. Cl. F16n *7/34;* **F01m** *1/08*
U.S. Cl. 184—55 **10 Claims**



A device for delivering a charge of lubricant at intervals e.g., as when lubricating the links of a conveyor chain, is provided with an air spray device having a suction connection to a lubricant conduit. A valve chest with an air passage connects the spray device with a source of air under pressure and a control valve in the air passage operable at predetermined intervals, e.g., by successive links of the conveyor chain, to cause a blast of air to pass through the spray device to operate the suction connection whereby a quantity of lubricant is entrained in the blast of air issuing from the spray device.

3,503,471
MONORAIL BRAKE SYSTEM
Earl W. Balke, Mentor Lake, Ohio, assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Apr. 3, 1968, Ser. No. 718,582
Int. Cl. B61h *13/00;* **B61k** *7/00*
U.S. Cl. 188—57 **8 Claims**

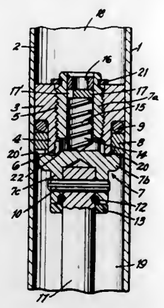


A brake system for article transporting equipment, and particularly for a overhead monorail assembly, wherein a long brake shoe approximately parallel to the assembly rail is pivotally attached to the assembly rail at one end of the shoe, and a braking force is applied near the other end of the shoe designed to force the shoe against a surface of the trolley moving past the shoe. Application of the braking force is by means of a movement multiplying linkage and dash-pot connected to the linkage, which together prevent chattering of the brake shoe during use, and provide a brake system which is simpler and more effective than those heretofore used.

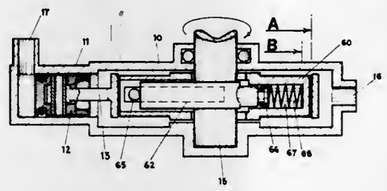
3,503,472
EXTENDABLE SUPPORT COLUMN
Ludwig Axthammer, Garmisch-Partenkirchen, Germany, assignor to Fichtel & Sachs Aktiengesellschaft, Schweinfurt am Main, Germany
Filed Feb. 23, 1968, Ser. No. 707,846
Claims priority, application Germany, Mar. 22, 1967, F 51,907
Int. Cl. F16d *63/00, 57/00;* **F16j** *15/00*
U.S. Cl. 188—86 **8 Claims**

A hydropneumatic support column for a table top or the like has a cylinder, a piston in the cylinder, and a piston rod threadedly fastened to the piston and extending therefrom outwardly of the cylinder. The two compartments on either axial side of the piston communicate through a duct which is opened and closed when the piston rod is turned. A sealing ring in a circumferential groove of the piston is axially compressed, and thereby

forced against the cylinder wall when the duct is closed, and is relieved of pressure when the duct is opened. When the duct is open, the effective length of the column can be adjusted.



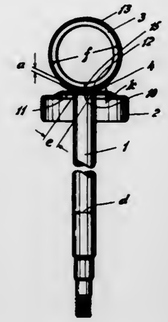
3,503,473
FLUID BRAKING DEVICE
Norman H. Hackett, Bondi, New South Wales, Australia, assignor of fifty percent to Roy J. Cochran, Los Angeles, Calif.
Filed Dec. 14, 1967, Ser. No. 690,603
Claims priority, application Australia, Dec. 16, 1966, 15,432/66
Int. Cl. F16d *57/02*
U.S. Cl. 188—91 **3 Claims**



A braking system for a vehicle wherein each wheel assembly to be provided with braking means is provided with a fluid braking device including a selectively driven reciprocating piston having opposed pumping faces whereby the piston simultaneously, on opposed sides of the piston, intakes fluid and discharges fluid. A fluid conduit means is provided to interconnect the pumping cylinders disposed on the opposed pumping faces of the piston. Fluid control means interposed in the aforementioned fluid conduit means, and actuatable in response to actuation of the vehicle brake pedal, selectively restricts the passage of fluid between the aforementioned opposed cylinders thereby permitting selective retarding or complete arresting of the travel of the pumping piston and accordingly braking the vehicle wheel with which the aforementioned assembly is associated.

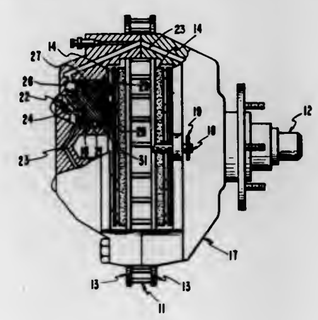
3,503,474
WELDED SHOCK ABSORBER ASSEMBLY
August Raab, Schweinfurt, Germany, assignor to Fichtel & Sachs Aktiengesellschaft, Schweinfurt, Germany
Filed Mar. 27, 1968, Ser. No. 716,442
Claims priority, application Germany, Apr. 1, 1967, F 52,006
Int. Cl. F16f *9/32*
U.S. Cl. 188—100 **6 Claims**

Mounting rings are attached to the piston rod or the cylinder of a shock absorber by interposing an annular spherically dished washer between the cylindrical outer ring surface and an end face of the piston rod or cylinder, the convex side of the washer engaging the end face, compressing the washer between the ring and the end face until they touch each other through the aperture in the



washer, and passing welding current between the ring and end face. The weld metal is contained in the washer without spattering.

3,503,475
VENTED DISC BRAKE FRICTION PAD AND DISC BRAKE SYSTEM EMPLOYING SAME
Carlo A. Mione, 14599 Acapulco Road, San Leandro, Calif. 95177
Filed Mar. 6, 1968, Ser. No. 710,843
The portion of the term of the patent subsequent to Sept. 10, 1985, has been disclaimed
Int. Cl. F16d *65/04, 65/12*
U.S. Cl. 188—250 **11 Claims**

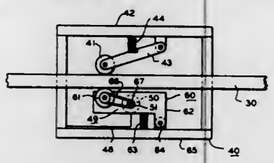


A disc brake spot-type friction pad assembly includes a lining of friction material on a backing plate supported spaced from a base plate to define a vented air space between the backing and base plates. Thermally reflective material is coated on the surface of the base plate facing the backing plate.

3,503,476
OSCILLATION DAMPER FOR A STACKER VEHICLE
Arthur R. Burch and James H. Snyder, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed June 7, 1968, Ser. No. 735,382
Int. Cl. B60l *7/22*
U.S. Cl. 188—159 **13 Claims**

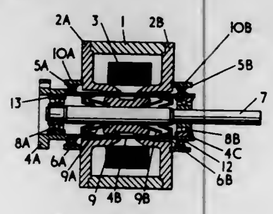
A stacker vehicle operates to transfer material longitudinally along an aisle by movement along a set of rails, vertically by movement of an elevator within the superstructure of the vehicle, and laterally by the operation of a laterally movable platform portion of the elevator. A

damping mechanism mounted at the top of the vehicle has two rollers biased against a guide rail. One of the rollers is connected to drive a selectively energized elec-



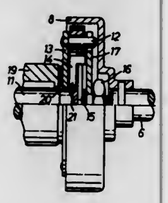
trical generator that absorbs the energy of oscillation and thereby damps out the oscillation of the superstructure resulting from stopping of the vehicle.

3,503,477
MAGNETIC PARTICLE COUPLINGS
Kenneth George Hoer, Beckenham, England, assignor to Muirhead & Co. Limited, Beckenham, Kent, England, a British company
Filed Nov. 3, 1967, Ser. No. 680,438
Claims priority, application Great Britain, Nov. 14, 1966, 50,880/66
Int. Cl. F16d *37/02*
U.S. Cl. 192—21.5 **1 Claim**



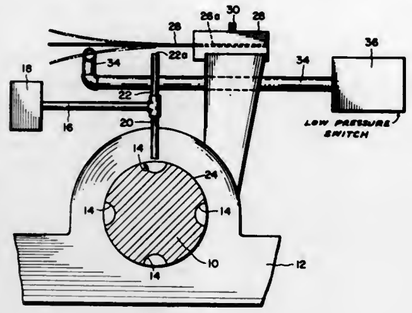
A magnetic particle coupling in which the magnetic particles are contained between a cylindrical rotor mounted on longitudinal spaced bearings and a shaft concentrically mounted for rotation within the cylindrical rotor and locked for rotation therewith when the coupling is magnetized.

3,503,478
HIGH AND LOW SPEED MOTORS CONNECTED BY TORQUE LIMITING CLUTCH
Gernot Neumann, Lipperreihe, near Bielefeld, Germany, assignor to Hanning Elektro-Werke Robert Hanning, Bielefeld, Germany, a German firm
Filed May 27, 1968, Ser. No. 732,312
Int. Cl. F16d *43/20, 13/20*
U.S. Cl. 192—35 **9 Claims**



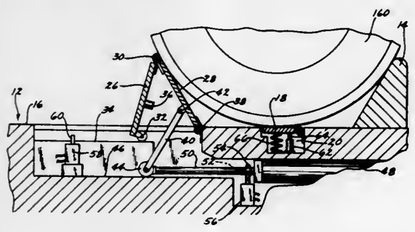
A multi-speed drive unit for a washing machine, in which two motors are linked by a torque limiting clutch. In order to avoid overloads on the clutch and associated gearing, the clutch includes linkage means between the clutch members and the motor to which they are connected which limit the engagement forces between the clutch members and its drum.

3,503,479
CONTROL APPARATUS AND METHOD FOR ROTATING ELEMENTS
Fred Canova, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 9, 1968, Ser. No. 719,956
Int. Cl. F16d *43/04;* **H02p** *3/02;* **H01h** *35/40*
U.S. Cl. 192—103 **9 Claims**



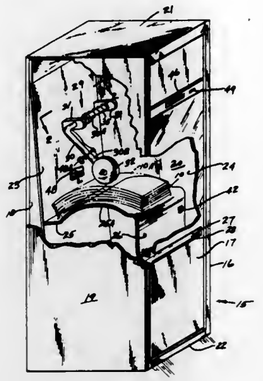
An apparatus for controlling the rotation of a rotating element, employing a pulsating fluid signal variable in frequency in response to variations in the rotary speed of the rotating element. The fluid signal is directed onto a flexible actuating element which, upon a predetermined frequency of the fluid signal, oscillates through a predetermined large amplitude to actuate a low pressure switch to stop rotation of the rotating element. Also, a method for controlling the rotation of a rotating element through the employment of such a control apparatus.

3,503,480
MEANS OF SELF-ENFORCING PARKING
Clark L. Selby, Jr., 9543 Walmer Lane, Overland Park, Kans. 66212
Filed July 2, 1968, Ser. No. 741,985
Int. Cl. G07f *1/00, 3/00, 5/00, 9/00*
U.S. Cl. 194—1 **1 Claim**



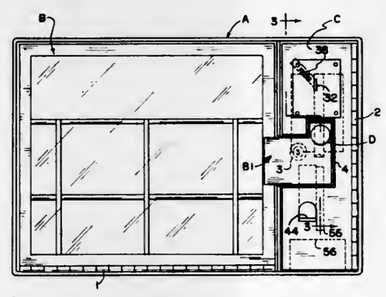
A method and means of self-enforcing parking whereby the driver deposits money into a parking meter only for that time which the vehicle was actually parked in the parking space. A parking barrier raises from the parking surface when the vehicle is driven into the parking space. The vehicle energizes various pressure switches which causes the parking meter to be activated. When the driver desires to remove the vehicle from the parking space, he must deposit sufficient coins into the parking meter to pay for the elapsed parking time and the charges therefor. When the proper amount of coins have been deposited, the parking barrier lowers from behind the vehicle wheels to permit the vehicle to leave the parking area.

3,503,481
BAG DISPENSER WITH DISPENSING WHEEL
Stanley S. Brenner, Massapequa, N.Y., assignor to John R. Lebb Distributors Inc., New York, N.Y.
Filed Mar. 25, 1968, Ser. No. 715,935
Int. Cl. G07f *11/00;* **B65g** *59/00;* **B65h** *3/02*
U.S. Cl. 194—10 **12 Claims**



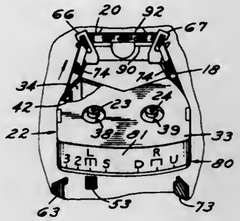
This disclosure is directed to a bag dispenser and more and more specifically to a coin actuator dispenser for dispensing plastic shopping bags. The dispenser comprises essentially a housing for containing a stack of superposed plastic bags in which a means is provided for individually dispensing the bags one at a time by peeling off the uppermost bag from the stack of bags each time a coin of proper denomination is inserted into the coin slot of the machine.

3,503,482
COIN CONTROLLED VENDING MACHINE
Wallace E. Davis, 2318 Royal Oaks Drive, Alamo, Calif. 94507
Filed May 22, 1968, Ser. No. 731,157
Int. Cl. G07f *5/00*
U.S. Cl. 194—54 **8 Claims**



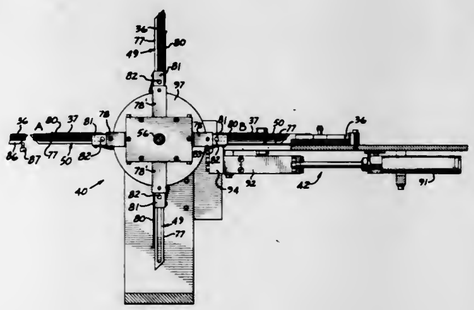
A coin controlled vending machine in which the knob for opening the vending machine door performs the additional function, when pushed inwardly, of returning the wrong coin or combination of coins to the purchaser that he has inadvertently inserted into the coin chute. The coin chute is formed of two parts, one stationary and the other swingably mounted. The depressing of the door-opening knob will not open the door, but instead will actuate an integral plunger with a cone-shaped end for swinging the pivoted coin chute part away from the stationary part for freeing the coins to permit them to drop into the coin return receptacle. A magnet holds the swingable coin chute part in closed position and the inward movement of the door knob must swing this part a sufficient distance to break the magnetic holding attraction and this distance is enough to free all of the coins in the chute.

3,503,483
RIBBON DISCRIMINATOR
Jess P. Santo, 1242 Beard St., Detroit, Mich. 48209
Filed Feb. 5, 1968, Ser. No. 703,097
Int. Cl. B41j *33/42, 35/28*
U.S. Cl. 197—151 **10 Claims**



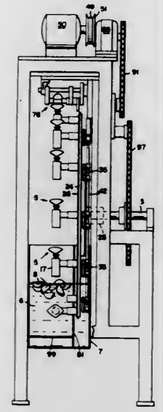
A ribbon discriminator for a typewriting machine with a printing head and ribbon carrier which traverses the paper carrier in the line of the printing. The discriminator includes indexing means for changing the position of the ribbon with respect to the printing head and/or the direction of feed of the ribbon and distinguishing means on the ribbon carrier cooperating with the indexing means and distinctly relating the several positions thereof to the positions and/or feed directions of the ribbon.

3,503,484
STAPLE PACKAGING MACHINE AND METHOD
Ronald J. Mosetich, Lombard, John Mosetich, Elmhurst, and Aivars Osis, Norridge, Ill., assignors to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Aug. 22, 1967, Ser. No. 662,394
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **12 Claims**



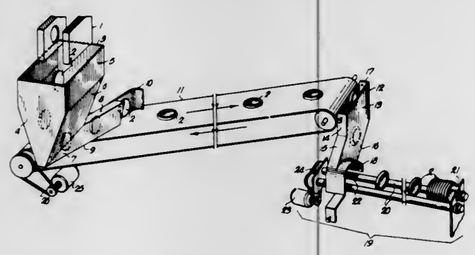
A machine is provided for packaging layers of staples into a carton, each layer including adjacent pairs of nested staple strips nested oppositely relative to each other. The machine receives the individual strips, turns alternate ones of the strips about their longitudinal axis, and deposits the strips into a layer. The layer along with a separating divider is then pushed into a carton. A method is also provided for packaging staplers and including forming a layer of pairs of nested staple strips nested oppositely to each other, and thereafter depositing simultaneously a layer of staple strips and a divider into the carton.

3,503,485
APPARATUS FOR AUTOMATICALLY FEEDING, ORIENTING AND PITTING DRUPE HALVES AND METHOD
Etheridge R. McClelland, Hayward, and Henry L. Spence, Dublin, Calif., assignors to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Nov. 14, 1967, Ser. No. 682,813
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **16 Claims**



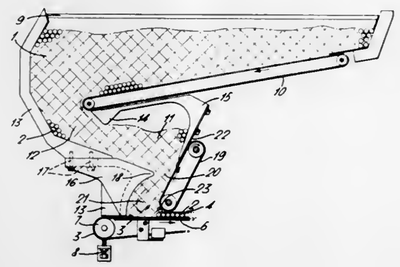
A feeder for unpitted drupe halves, including means continuously movable in a closed path for passage in one direction through a mass of indiscriminately arranged unpitted drupe halves, for picking up individual halves from said mass, then carrying each half to a pitter, and orienting said half on the way to the pitter so each half will be presented to the pitter for automatic removal of the pit half by the pit removing means on the pitter.

3,503,486
LID CONVEYOR SYSTEM
Richard L. Alexander and Calvin C. Baker, Greensburg, and Richard G. Schmid, Osgood, Ind., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 7, 1968, Ser. No. 735,442
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **5 Claims**



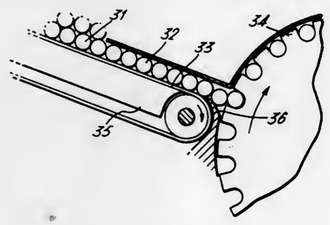
Apparatus and method for conveying lids from injection molding machine to inspection and packing point comprise a collection chute which catches the injection molded lids as they drop from the mold, stands them on edge and presents them all facing in the same direction on the conveyor belt which conveys them to a discharge chute having a lower offset opening which presents them to a spinner apparatus still facing in the same direction and spinning for inspection and packing still facing in the same direction.

3,503,487
ARTICLE FEEDING APPARATUS
William Charles London, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Mar. 11, 1968, Ser. No. 712,184
Claims priority, application Great Britain, Feb. 16, 1968, 7,765/68
Int. Cl. B65g *47/18*
U.S. Cl. 198—57 **14 Claims**



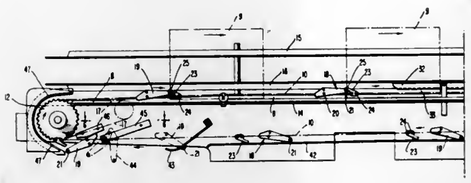
A gravity feed hopper for feeding plugs being lengths of cigarette filter material from trays into a single, high-speed stream moving transversely to their lengths, having a first endless belt moving across the bottom of the hopper to support the plugs in the hopper and to withdraw them therefrom in said stream and a second upwardly extending moving belt to break up the flow of plugs immediately above the first belt to enable them to form into said stream.

3,503,488
ARTICLE FEEDING APPARATUS AND METHOD
Horace Alexander Stone, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Feb. 28, 1968, Ser. No. 708,928
Claims priority, application Great Britain, Mar. 3, 1967, 10,098/67
Int. Cl. B65g *37/00*
U.S. Cl. 198—103 **11 Claims**



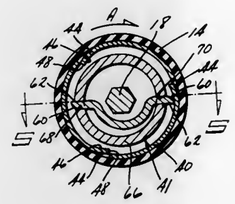
Cigarette filter plug feeding apparatus in which a continuous stream of plugs one row deep is pushed sideways by a belt conveyor running underneath them, into the flutes of a rotating drum. The belt acts positively to urge each plug into a flute.

3,503,489
CONVEYOR
Edward William Sells, Allendale, N.J., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 8, 1967, Ser. No. 659,226
Int. Cl. B65g *19/02, 19/22*
U.S. Cl. 198—170 **22 Claims**



Apparatus for continuously conveying book blocks to and in timed relation with the continuously operating saddle conveyor of a book casing-in machine, said apparatus comprising an endless pusher-type conveyor which pushes the book blocks into registry position for pick-up by the saddle conveyor and includes pivoted bail-type pushers and automatic hold down and control means therefor.

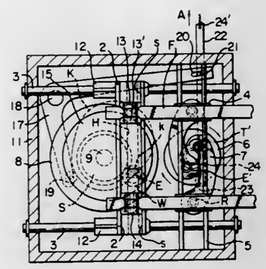
3,503,490
DESCENDING ACCUMULATING CONVEYOR
Clarence A. Heyne, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 5, 1968, Ser. No. 695,951
Int. Cl. B65g *15/00*
U.S. Cl. 198—183 **11 Claims**



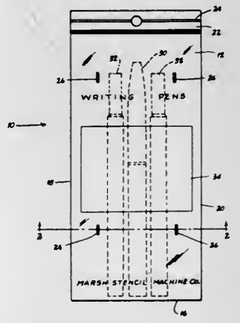
An inclined power-driven conveyor of the type having a plurality of rotatable, article-transporting rollers positioned about chain-driven axles disposed transversely of the conveyor, wherein a longitudinally-oscillatable pawl member and a ratchet member are enclosed within the respective roller for restraining downwardly-directed rotation of the load-bearing surfaces of said rollers, and for allowing upwardly-directed free rotation of such roller surfaces.

3,503,491
DEVICE FOR SERIALLY AND SYNCHRONOUSLY FEEDING WORKPIECES
Naonori Taniguchi, Sagamihara-shi, Japan, assignor to Aida Iron Works & Co., Ltd., Kanagawa-ken, Japan
Filed Aug. 21, 1967, Ser. No. 662,035
Int. Cl. B65g *25/04*
U.S. Cl. 198—218 **5 Claims**

A device for serially and synchronously feeding pieces to be worked to succeeding working stations, respectively, for use with a working machine having a plurality of working stations equally spaced apart from each other in a straight line of feed of workpieces for successive working steps comprising a pair of parallel spaced feeding rods located on respective sides of the row of working stations, said rods being first laterally moved in parallel toward each other for simultaneously gripping the workpieces on each of the working stations, then longitudinally moved so as to position the workpieces on the succeeding working stations, respectively, thereafter laterally moved away in parallel from each other thereby leaving the workpieces on each of the working stations in registry therewith, and finally longitudinally moved back to their initial positions so as to repeat the cycle of the above movements in succession, the speed of each of the longitudinal and lateral movements of the feeding rods being reduced to the minimum at the start and the end of each of the movements thereby decreasing the acceleration and retardation of the moving parts of the device.



3,503,492
PLASTIC BAG FOR POSITIONING CONTAINED ARTICLES
Walton C. Marsh, Belleville, Ill., assignor to Marsh Stencil Machine Company, Belleville, Ill., a corporation of Illinois
Filed Sept. 5, 1968, Ser. No. 757,604
Int. Cl. B65d *65/16, 31/12*
U.S. Cl. 206—45.33 **2 Claims**

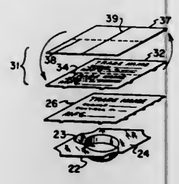


A plastic bag for packaging elongated items, as writing pens, and the like, in orderly position, yet allowing enough lateral space for product advertising, and the like, comprising a plastic bag of suitable dimensions for advertising and for receiving the writing pens, and the like, spaced pairs of opposed spot welds securing the front and the back of the bag together and defining a central pocket into which pens, and the like, are inserted from one end of the bag.

3,503,493
MEDICAMENT PACKAGING DEVICE

Julius Joseph Nagy, Montville, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

Filed Jan. 8, 1968, Ser. No. 696,377
Int. Cl. B65d *83/04, 61/00*
U.S. Cl. 206—56 7 Claims

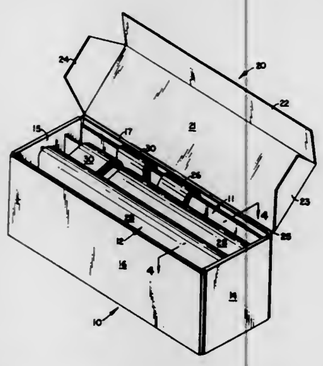


A unit dose package for dispensing of medicaments including an identification means for record keeping and similar purposes. The identification means includes on one side preprinted indicia concerning the drug contained within the unit dose package and is removably secured to the main body of the unit dose package, which main body additionally includes preprinted indicia concerning the drug. At the other side of the identification means is a pressure-sensitive adhesive-coated surface substantially covered by a protective release strip arranged for ease of removal therefrom. The identification means when removed from the main body of the unit dose package and freed of the protective release strip may be readily adhered to a document surface. The unit dose package is also designed for facility of assembly in removably securing the identification means thereto and so that in manufacture a plurality of such unit dose packages may conveniently be detachably connected for ease of handling and distribution. A disclosed embodiment shows the identification means and protective release strip to be divisible with similar preprinted indicia at each portion, for employment with separate document surfaces.

3,503,494
DISPENSING PACKAGE FOR APRONS

Robert A. Blatz, Clayton, Calif., and Lamont F. Andrews, Omaha, Nebr., assignors to Handgards Inc., Pittsburg, Calif., a corporation of Nebraska

Filed Jan. 7, 1969, Ser. No. 789,492
Int. Cl. B65d *85/18, 83/08;* B65h *3/26*
U.S. Cl. 206—57 2 Claims



A package of thin sheet-plastic aprons or the like stacked for individual dispensing. A rack is folded from a flat sheet to provide major upstanding portions against the front and rear walls of an outer box and a series of major upstanding portions in between, with minor bottom portions resting on the bottom wall of the outer box and cooperating with the major portions and the box to porvide compartments. In the series of major upstanding portions, two major portions back up each other and are folded flat against each other by top folds, each group of two such major portions being separated from the next major portion on each side by a minor portion. A stack of plastic articles is then supported accordion fashion by the rack in the box.

3,503,495
MASKING TAPE

Kenneth H. Gustafson, Excelsior, and Lloyd E. Picard, St. Mary's Point, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

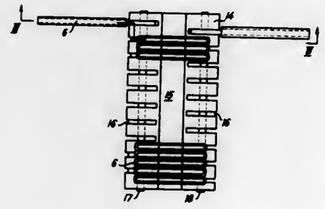
No Drawing. Continuation-in-part of application Ser. No. 440,946, Mar. 18, 1965. This application Nov. 29, 1968, Ser. No. 780,285
Int. Cl. C09j *7/04*
U.S. Cl. 206—59 2 Claims

Unusually thin stretchable pressure-sensitive adhesive masking tapes having a novel extensible, paper backing with a flat smooth non-creped appearing surface.

3,503,496
SLIDE MAGAZINE FOR A PHOTOGRAPHIC PROJECTOR

Alois Kovářík, Prague, and Jindřich Suchánek, Brno, Czechoslovakia, assignors to Meopta Narodni Podnik, Preror, Czechoslovakia

Filed May 31, 1967, Ser. No. 642,536
Int. Cl. G03b *23/02, 23/06;* B65d *85/54*
U.S. Cl. 206—62 2 Claims



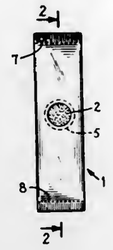
A slide magazine having frames for individual transparencies attached to a common carrier for pivoting movement about a common axis toward and away from an inoperative position in which the frames form a stack from which they may be swung individually into an operative position in the optical axis of the projector, thereby preventing the transparencies from being spilled accidentally from the magazine.

3,503,497
BREATHER CONTAINER

Phyllis Riely, Massapequa, N.Y., and Joseph G. Adiletta, Thompson, Conn., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York

Filed July 25, 1968, Ser. No. 747,532
Int. Cl. A61b *17/06, 19/02;* B65d *33/00, 65/02*
U.S. Cl. 206—63.2 13 Claims

A breather container is provided that is at constant equilibrium pressure with the surrounding atmosphere, whether gas or liquid, and is yet closed in a manner to prevent contamination of either the container contents or the atmosphere by interchange of bacteria and other microorganisms. Because the container of this invention permits gas flow between the inside and the outside thereof, it has the additional advantage of permitting gas-

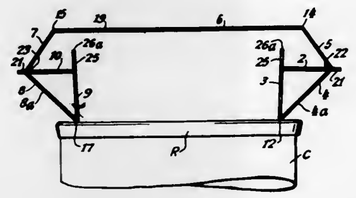


sterilization of the contents after the container has been closed.

3,503,498
HOLDERS FOR RIMMED ARTICLES

Frank D. Lawrence, 387 Chickerell Road, Weymouth, Dorset, England

Filed Oct. 7, 1968, Ser. No. 765,309
Claims priority, application Great Britain, Oct. 13, 1967, 46,861/67
Int. Cl. B65d *61/00*
U.S. Cl. 206—65 7 Claims



A holder, preferably made from a one-piece blank, which is snapped on the rimmed ends of articles arranged in a row, comprising an end wall for disposing adjacent to one end of a rimmed article, two side members connected to the end wall for disposing at opposite sides of said article and having rim-holding means for holding the rim formed at said end of said article, two tie walls connected to the side members and inwardly directed therefrom towards said end wall and having openings for receiving the body portion of said article adjacent to said rim of said article, and two strut members for disposing between said end of said article and the end wall, at least a part of each strut member being outwardly directed from, and bordered with, a hinge line connecting said strut member to the adjacent tie wall.

3,503,499
FLOTATION PROCESS INCLUDING OZONE TREATMENT

Aldo P. Allegrini, Westfield, and Daniel A. Jacobs and Venancio V. Mercade, Metuchen, N.J., assignors to Engelhard Minerals & Chemicals Corporation, Woodbridge, N.J., a corporation of Delaware

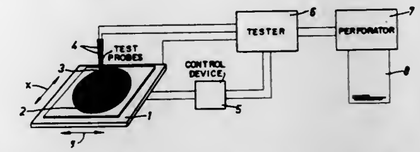
No Drawing. Filed June 27, 1968, Ser. No. 740,456
Int. Cl. B03b *1/00;* B03d *1/04*
U.S. Cl. 209—5 2 Claims

Ozone is used as the oxidizing agent in a flotation process in which an ore pulp, such as a pulp of impure gray kaolin clay, is treated with an oxidizing agent and is then beneficiated by flotation in the presence of a reagent that is adversely affected by an oxidizing agent.

3,503,500
SORTING APPARATUS AND METHOD

Walter Klossika, Raffelter Steige, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Continuation of application Ser. No. 580,442, Sept. 19, 1966. This application Dec. 9, 1968, Ser. No. 788,677
Claims priority, application Germany, Sept. 18, 1965, T 29,430
Int. Cl. B07c *5/344;* B07b *15/00*
U.S. Cl. 209—74 10 Claims

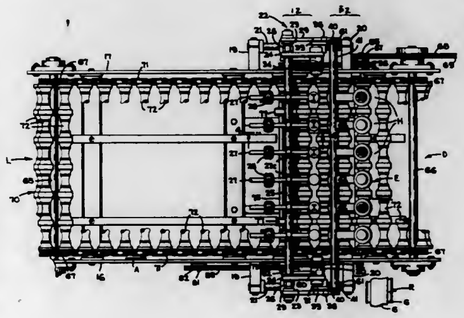


Method and apparatus for testing and sorting our semiconductor elements from a semiconductor wafer containing a large number of semiconductor elements. The elements are successively scanned so as to test their electrical characteristics, whereupon all the test results of each element are stored in numerical form. The elements are then again successively scanned so as to sort them out with the aid of the stored test results and criteria established by a predetermined program.

3,503,501
METHOD OF AND DEVICE FOR DETECTING CRACKS IN EGGS

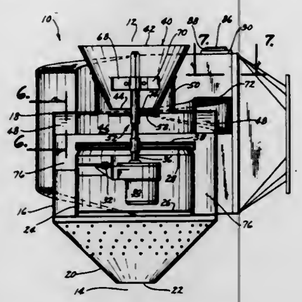
Paul E. Seaborn, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,285
Int. Cl. B07c *5/34;* G01m *7/00;* G01n *29/04*
U.S. Cl. 209—111.9 25 Claims



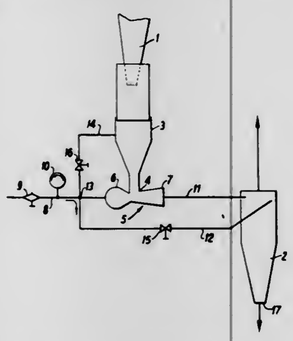
A device for detecting cracks in eggs has a conveyor with rows of cradles which carry rotating eggs through an inspection zone. A reciprocating carriage, which moves in the inspection zone parallel to the conveyor, has a row of probes to engage, successively, successive moving rows of rotating eggs on successive strokes of the carriage. Each probe is continuously vibrated by an oscillator at a frequency below the natural frequency of a sound egg shell section but above the natural frequency of a cracked egg shell section. Each probe has a piezoelectric element therein which senses the force between the probe and the egg shell. The phase difference between the vibration induced in the probe and the vibratory reaction force between the probe and the egg shell indicates whether the egg shell is cracked. An egg ejector operates in response to the phase difference indicative of a cracked egg shell to reject the egg.

3,503,502
PARTICULATE MATERIAL CLEANER
Harlan J. Donelson, Jr., West Highway 330, Marshalltown, Iowa 50158
Filed Sept. 26, 1968, Ser. No. 762,714
Int. Cl. B07b *4/00*
U.S. Cl. 209—139 **9 Claims**



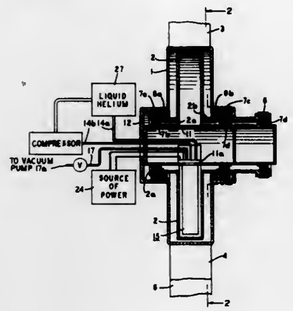
A cleaner for particulate material such as grain or the like and including a hopper means having a material intake opening at its upper end and a discharge opening at its lower end. A housing with a turntable is positioned below the hopper and has an air passageway formed therein which is adapted to permit the upward flow of air therethrough. A fan means is in operative communication with the air passageway and is adapted to pull air upwardly through the air passageway. The discharge opening of the hopper means is in communication with the air passageway whereby material deposited in the hopper means will be directed to the air passageway so that the air moving upwardly through the air passageway will separate the debris from the desirable material. A spiral conduit extends around the housing and is in communication with the air passageway and is adapted to receive the debris from the air passageway and to convey it to an area outside of the cleaner.

3,503,503
APPARATUS FOR THE PURIFICATION OF LIQUID SUSPENSIONS
Jean-Claude Ramond, 21 Rue Laurin, 92 Rueil-Malmaison, France
Filed July 5, 1968, Ser. No. 742,917
Claims priority, application France, July 5, 1967, 113,173
Int. Cl. B03d *1/24*
U.S. Cl. 209—211 **3 Claims**



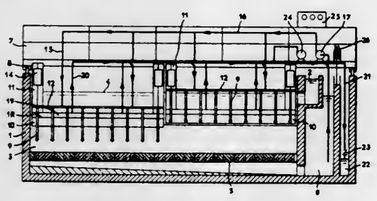
In apparatus for the purification of suspensions of the type in which the rejects of one stage of purification are treated by a following purification stage, a rejects collector is provided between two successive stages of purification, connected at its bottom to the neck of a venturi. The entrance of the venturi is connected to a source of pressurized water, and the discharge thereof is connected to the upper part of the following stage.

3,503,504
SUPERCONDUCTIVE MAGNETIC SEPARATOR
John D. Bannister, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 5, 1968, Ser. No. 750,162
Int. Cl. H01f *7/22;* **B03c** *1/02*
U.S. Cl. 209—223 **20 Claims**



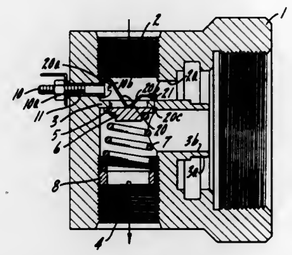
System employing a superconducting magnet for separating magnetic and nonmagnetic components. A preferred embodiment takes the form of an ore separator in which the magnetic element is a thin panel of normally conducting material which encloses an array of superconductive magnetic coils. The panel is maintained at cryogenic temperatures by liquid helium circulating between the coils. A rotating disk serves to move a slurry comprising magnetic and nonmagnetic components adjacent to the magnetic panel, where the magnetic components are deflected by the magnetic field, permitting the nonmagnetic gangue to move out through one exit channel. The magnetic components clinging to the disk are subsequently moved out of the magnetic field by further rotation of the disk, and are washed off of the disk and removed through a separate exit channel.

3,503,505
PROCESS FOR WASHING OPEN OR GRAVITATIONAL FILTERS FOR THE PURIFICATION OF WATER
André R. Rensonnet, Moulin de Limal, Limal, Belgium
Filed Mar. 25, 1968, Ser. No. 715,866
Claims priority, application France, Mar. 28, 1967, 100,376
Int. Cl. B01d *23/24*
U.S. Cl. 210—80 **1 Claim**



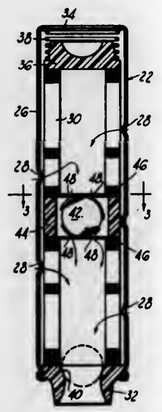
To carry out washing of a filter, a coffer is used open downwardly which is pivotally suspended on a mobile bridge by arms capable of effecting a vertical movement limited with respect to the bridge. A series of nozzles fed by pipes traverse the coffer by guided sliding in order to inject washing water into the filtering layer to be washed, the dirty washing water being drawn off and removed by pipes at an amount superior to the amount of washing water injected by the nozzles.

3,503,506
FILTER PRESSURE SIGNAL
Walter J. Kudlaty, Elmhurst, and Peter Heinrich, Jr., Chicago, Ill., assignors to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 1, 1968, Ser. No. 764,104
Int. Cl. B01d *35/14*
U.S. Cl. 210—90 **6 Claims**



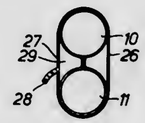
A pressure signal for filters in which a wall is moved in response to excess pressure in the filter housing and an electricity-transmitting member is yieldingly urged against the wall for movement therewith to make or break a signal circuit. In one form the wall is a bypass valve. In another form the wall is a piston interchangeable with the bypass valve and electricity-transmitting member.

3,503,507
SHUT-OFF VALVE FOR FUSE FILTER
Ray J. Raupp and Homer A. Williams, Madison Heights, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,632
Int. Cl. B01d *25/18*
U.S. Cl. 210—96 **5 Claims**



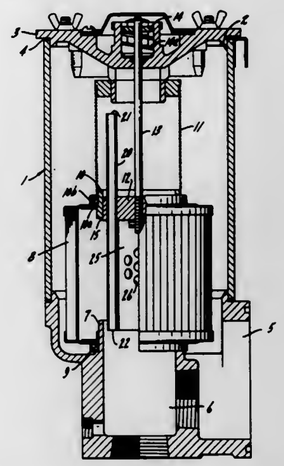
A positive shut-off valve device for interrupting the flow of fuel through a fuse filter element of a fuel-monitoring device in the event such fuel contains free water. The device which is located between the ends of the filter element includes a plastic spacer, a buoyant ball-type valve plug, and two perforated water-soluble paper discs, one of which is located on each side of a valve plug for retaining same within the spacer. Any water which passes through the filter element will dissolve the paper discs and cause release of the valve plug which will be propelled by fluid velocity into the filter element outlet to prevent further flow therethrough.

3,503,508
BARRIER FOR OIL SPILT ON WATER
Denis Henry Desty, Walton-on-Thames, Surrey, Leslie Bretherick, Windsor, and Michael Guthrie Webb, Wootton Bridge, Isle of Wight, England, assignors to The British Petroleum Company Limited and Gordon Low (Plastics) Limited, both of London, England
Filed June 20, 1968, Ser. No. 738,561
Int. Cl. E02b *15/04*
U.S. Cl. 210—121 **3 Claims**



A floatable barrier for skimming spilt oil off water. A flexible flap whose density is between that of oil and water is connected below the skimming inlets. During use the flap finds the oil/water interface to encourage preferential skimming of oil.

3,503,509
FILTERING ASSEMBLY
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed May 29, 1968, Ser. No. 733,034
Int. Cl. B01d *35/14*
U.S. Cl. 210—132 **3 Claims**

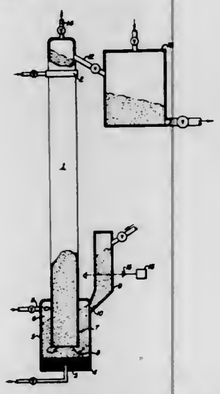


A filter housing having a bottom inlet and outlet, a filter surrounding the outlet, a diffuser tube extending into the outlet, a filter core forming with the outlet a restricted passage to produce an aspirating effect at the diffuser tube outlet, the filter core being carried on a bypass valve and serving to position and protect the diffuser tube.

3,503,510
INSTALLATION FOR TREATING LIQUIDS AND GRANULAR SOLIDS

Paul Minart, Grenoble, Claude Blain, Palaiseau, Roger Platzer, Chatillon-sous-Bagneux, and Jean-Claude Gervraud, Grenoble, France, assignors to Comissariat a l'Energie Atomique (C.E.A.), Paris, France, and Societe Grenoblois d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France

Filed May 19, 1967, Ser. No. 639,824
Claims priority, application France, May 20, 1966, 4,939
Int. Cl. B01d *23/10*
U.S. Cl. 210—189 **6 Claims**

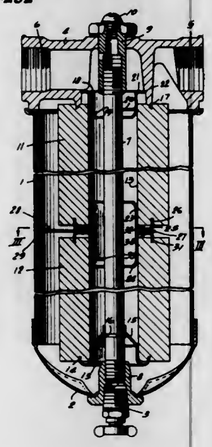


The installation comprises a cylindrically-shaped column enclosed at its lower portion by a closed annular chamber which is in communication with the lower end of the column and into which the fresh granular solids and liquid under pressure are fed.

3,503,511
CENTERING MEANS FOR FILTER ELEMENTS

Albert E. Spitzberg, Indianapolis, Ind., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Sept. 7, 1967, Ser. No. 666,145
Int. Cl. B01d *25/02*
U.S. Cl. 210—232 **4 Claims**

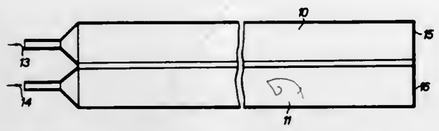


Centering means for maintaining a tubular filter element in a straight position around a center bolt within a casing, and for aligning superposed filter elements and maintaining them in proper straight position when such are utilized.

3,503,512
BARRIER FOR OIL SPILT ON WATER

Denis Henry Desty, Walton-on-Thames, Surrey, and Leslie Bretherick, Windsor, England, assignors to The British Petroleum Company Limited, London, England

Continuation of application Ser. No. 738,559, June 20, 1968. This application Oct. 14, 1969, Ser. No. 866,439
Claims priority, application Great Britain, June 22, 1967, 28,799/67
Int. Cl. B01d *17/02;* **E02b** *15/04*
U.S. Cl. 210—242 **6 Claims**

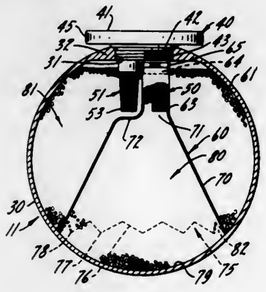


An inflatable barrier having water and air chambers which, when suitably inflated with air and water, floats with part below and part above the water surface to impede the passage of floating oil, e.g. a figure-of-eight cross-section which floats with its waist at the water level. The barrier may also have a skimming chamber which connects to water level.

3,503,513
LIQUID TREATMENT TANK

Benjamin H. Kryzer and Dennis G. Winberg, St. Paul, Minn., assignors, by mesne assignments, to The Union Tank Car Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 1, 1966, Ser. No. 569,502
Int. Cl. C02b *1/40;* **B01d** *23/24, 23/10*
U.S. Cl. 210—286 **4 Claims**



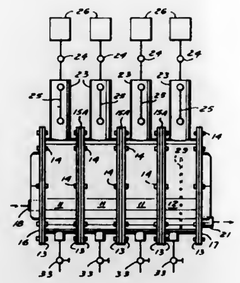
A liquid treatment tank, comprising a one piece spherical tank having an access port. An inlet and outlet means are mounted in said port. A flexible frusto-conical baffle having a diameter substantially larger than that of the port extends vertically within the tank and separates the interior thereof into an inlet and an outlet chamber communicating with each other near the bottom of the baffle. A bed of treatment material substantially fills the inlet and outlet chambers.

3,503,514
APPARATUS FOR SEPARATING MIXED LIQUIDS

Archibald Lawson, R.F.D. Rymph Road, Staatsburg, N.Y. 12580

Continuation of application Ser. No. 539,129, Mar. 31, 1966. This application Mar. 20, 1968, Ser. No. 714,609
Int. Cl. B01d *23/06*
U.S. Cl. 210—301 **12 Claims**

An apparatus for separating mixed liquids of different specific gravities particularly small amounts of oil from water at low rates of flow wherein a series arrangement of foraminous spool-like separator-coalescer elements are oriented in a housing with their axes horizontally disposed



for serially treating a generally horizontal liquid flow and a baffle plate is preferably provided just prior to the outlet of the housing to effect final gravity separation.

3,503,515
PERMEATION SEPARATORY APPARATUS

Victor J. Tomsic, Limestone Gardens, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 3, 1968, Ser. No. 764,674
Int. Cl. B01d *13/00*
U.S. Cl. 210—321 **6 Claims**



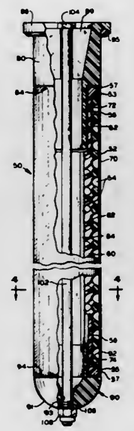
A permeation separatory apparatus for separating fluid mixture components, which comprises a cylindrical jacket or casing containing a plurality of permeable hollow fibers in its interior extending substantially the length of the cylinder and which open in a collecting zone separate from the interior of the casing. The interiors of the hollow fibers are not in communication with the interior of the casing thus allowing the component of the fluid mixture which passes through the walls of the hollow fibers to be drawn off in the collecting zone substantially free of the other components of the fluid feed mixture. The casing is packed with inert particulate material, such as sand, glass or plastic beads, thus filling void or empty spaces between the hollow fibers. Such packing ensures proper fluid flow around the fibers.

3,503,516
PRESSURE FILTER AND TUBULAR FILTER ELEMENTS THEREFOR

Harold H. Harms, Toledo, and Stephen N. McEwen, Bowling Green, Ohio, assignors to Henry Manufacturing Co., Inc., Bowling Green, Ohio, a corporation of Ohio

Filed Sept. 5, 1968, Ser. No. 757,697
Int. Cl. B01d *29/30*
U.S. Cl. 210—323 **9 Claims**

A pressure filter comprising a pressure vessel divided into two chambers by an apertured plate supporting a plurality of tubular filter elements. Each filter element is comprised of a smooth, preferably irregular surfaced perforated tubular member such as plastic, which tubular member may have collars providing smooth rims at each of its ends and which tube may have an independent internal means for stiffening it. This tube is surrounded by a flexible monofilament fabric filter sleeve longer than the tube so that its ends fold over the smooth ends of the tube or rims of the collars and tuck into each end of the tube. A tubular connector frictionally holds each tucked-in end of the filter sleeve inside its associated end or rim,

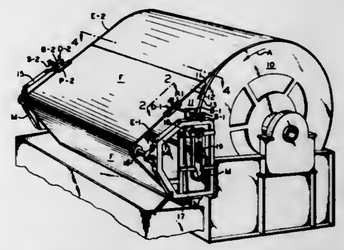


and one of the tubular connectors has a recessed grooved flange which seats an O-ring and also sealingly supports the tube filter element in the apertured plate of the pressure vessel. Fastening bolt type means extend through the tube and each tubular connector and releasably holds the connectors in engagement with the ends of the tube, and also closes the open end of the other tubular connector.

3,503,517
CENTERING DEVICES FOR ENDLESS FILTER BELT

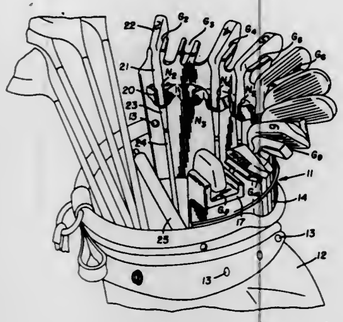
August C. Barnebl, Stamford, and Franz Bliem and Ernst R. Kus, Norwalk, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Jan. 25, 1968, Ser. No. 700,579
Int. Cl. B01d *21/24*
U.S. Cl. 210—401 **10 Claims**



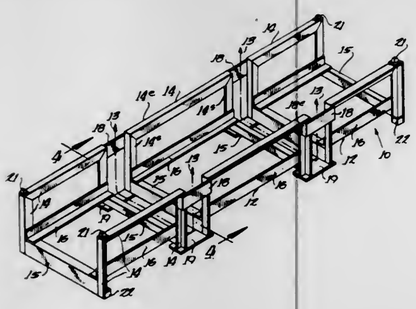
A pair of opposedly arranged belt centering devices for belt type vacuum drum filter apparatus, engaging respective side edge portions of the filter belt, each such device featuring a pair of glide shoes slidably engaging oppositely arranged tracks on the filter belt, the devices themselves being biased away from each other and from the side edges of the belt so that between them they exert a transverse stretch upon the filter media, also featuring specially molded flexible strip elements providing the tracks at the edges of the belt, and connector means for securing the ends of the strip to one another.

3,503,518
GOLF CLUB HOLDER FOR BAG
Howard J. Black, Massillon, Ohio, assignor of fifty percent to William H. Clendenin
Filed Sept. 29, 1967, Ser. No. 671,702
Int. Cl. A47f *7/00*
U.S. Cl. 211—60 **5 Claims**



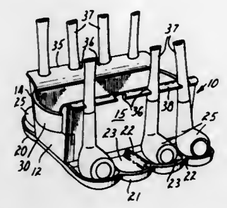
A golf bag having associated with the open end thereof a club holder portion provided with inclined individual grooves for selectively receiving and fitting the blades of a plurality of differently inclined iron clubs, and provided with a plurality of resilient notches spaced predetermined distances below said grooves, said notches each being dimensioned to grip the enlarged tapered portion connecting the shaft to the shank of the corresponding club when the blade is in its groove and to allow the adjacent smaller shaft portion of the club freely to pass through the notch when the blade is above its groove.

3,503,519
MATERIAL CONTAINER WITH SLING CLEARANCE
Richard S. Jay, Evanston, Ill., assignor to Jarke Corporation, a corporation of Illinois
Filed Jan. 26, 1968, Ser. No. 700,846
Int. Cl. A47f *5/00, 7/00*
U.S. Cl. 211—60 **9 Claims**



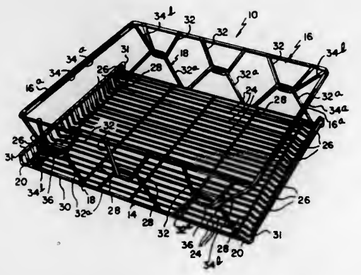
A material container for long flexible stock is disclosed which includes a plurality of longitudinally oriented support modules of similar cross-section which are joined or integrally formed to provide a sling passage at each joint between the modules. In one embodiment U-shaped upwardly cross-sectioned support modules are shown having U-shaped downwardly oriented end members joined by transverse stringers and having longitudinal stringers securing the same. A channel or sling passageway is defined between the adjacent support members by upper and lower connecting plates. In an alternative embodiment a unitary structure is disclosed preferably formed from sheet type material with U-shaped support members and a U-shaped sling passageway protruding from the cross-section of the U-shaped support member.

3,503,520
HOLDING MEANS FOR PIPES AND ACCESSORIES
Curtis W. Meyer, County Road K, Hager City, Wis. 54014
Filed Apr. 22, 1968, Ser. No. 723,034
Int. Cl. A24f *9/14*; A47f *7/00*
U.S. Cl. 211—60 **2 Claims**



A housing having a central cavity for pipe accessories covered by a sliding ash tray and racks along each side of the housing parallel with the direction of movement of the ash tray for holding a plurality of pipes in upstanding positions.

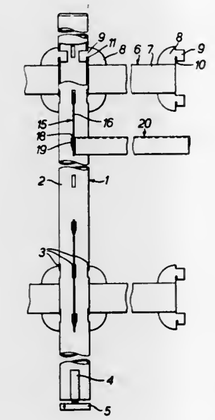
3,503,521
COLUMNAR SUSPENDIBLE AND NESTABLE RECEPTACLES
Joseph A. Rogus, Willowick, Ohio, assignor to Mid-West Metallic Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 7, 1968, Ser. No. 711,420
Int. Cl. A47f *3/14*; A47j *41/00*
U.S. Cl. 211—126 **3 Claims**



A receptacle or tray adapted for being suspended with other like receptacles into a columnlike or chainlike arrangement when in use, with the columnlike or chainlike arrangement being collapsible into nested condition when the receptacles are not being used, for conserving space. In one embodiment, each receptacle comprises a looplike upper edge portion and a bottom portion with side wall portions rigidly connecting the upper edge and bottom portions. The bottom portion is provided with

hooklike means on opposite ends thereof adapted for supporting or receiving the upper edge portion of the next lower receptacle for suspending the receptacles in said chainlike or columnlike condition. The side wall portions have abutment means thereon adapted for engaging the upper edge portion of the next lower receptacle when the receptacles are nested, for limiting the telescoping of the receptacles and stabilizing the nested receptacles. In other embodiments, tiering support portions on the receptacles are adapted for holding coaction with one another upon lifting up or suspending an upper receptacle with respect to a lower receptacle, for orienting a series of stacked receptacles into a chainlike arrangement.

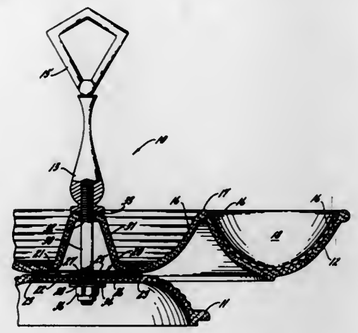
3,503,522
SHELVING
Herbert C. Keele, 83 Aldham Road, Hadleigh, Ipswich, Suffolk, England, and Michael E. Pullee, 29 The Ryde, Hatfield, Hertfordshire, England
Filed Oct. 26, 1967, Ser. No. 678,400
Claims priority, application Great Britain, Oct. 26, 1966, 48,087/66
Int. Cl. A47f *5/01*
U.S. Cl. 211—148 **5 Claims**



Freestanding shelving comprises uprights having feet at their lower ends to support the assembly in a vertical plane. Adjacent uprights are connected and spaced apart by cross members provided with end plates formed with hook-shaped portions adapted to engage in slots in the uprights. Plate like shelf brackets have hook-like portions for engaging other slots in the uprights and in position extend at right angles to the cross members. Strips secured by one edge to the shelf brackets form pockets to receive side flanges of shelves to support such shelves between pairs of brackets. An arrangement of spaced flanges at the front edge of a shelf defines a space to accommodate an extruded plastics section to which a label may be affixed.

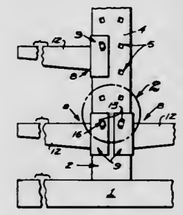
3,503,523
BEARING CONSTRUCTION FOR ROTATABLE TRAYS
William F. Hamilton and Stuart R. Scheyer, Mundelein, Ill., assignors to Decorel Corporation, Mundelein, Ill., a corporation of Illinois
Filed Jan. 17, 1968, Ser. No. 698,486
Int. Cl. A47g *23/08*; A47f *5/03, 5/04, 5/16*
U.S. Cl. 211—163 **9 Claims**

A rotatable serving tray or "Lazy Susan" is described in which a ceramic compartmented tray is pivoted for rotation about a ceramic base and in which a spoked bearing ring of anti-friction plastic is interposed between



the rotatable elements and is positioned by a central pivot shaft.

3,503,524
CANTILEVER RACK
Harry D. Krummell, deceased, late of 14663 La Cuarta St., Whittier, Calif. 90605, by Mildred A. Krummell, executrix, Whittier, Calif., and John D. Krummell, 1625 W. El Segundo Blvd., Whittier, Calif. 90222
Filed June 28, 1967, Ser. No. 649,747
Int. Cl. A47b *96/12*
U.S. Cl. 211—176 **9 Claims**

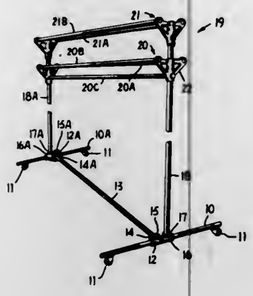


A cantilever rack having a channel shaped mounting fixture provided with a pair of angularly disposed apertures having curved bearing surfaces, and a mounting post provided with similarly disposed pairs of perforations also having curved bearing surfaces; corresponding apertures of the fixture and post being dimensioned to receive a cross bar having opposed sets of curved bearing surfaces, the radius of the bearing surfaces formed on the bar being slightly less than the radius of the mating bearing surfaces of said fixture and post to provide essentially line loading under nominal loading force and area loading under greater loading force without causing permanent deformation of the bearing surfaces formed by the walls of the apertures.

3,503,525
COLLAPSIBLE RACK
William Loebner, 220 W. 98th St., New York, N.Y. 10025
Filed Aug. 16, 1968, Ser. No. 753,224
Int. Cl. A47f *7/24, 5/13*
U.S. Cl. 211—177 **5 Claims**

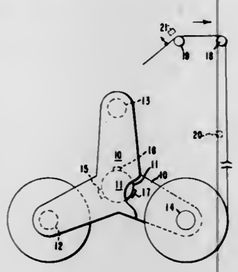
A collapsible rack comprising a pair of horizontal support bars which have vertical support bars mounted on them and a top horizontal hanger support mounts on

and between the vertical support bars and can be removed from it. When this top horizontal hanger support unit is removed from the vertical support bars, the vertical support bars may be folded inward coplanar with the



horizontal bars and the hanger support unit may then be secured to the horizontal bars, folding into a compact portable array. A wire brace is used to lock ordinary coat hangers in place to the hanger support.

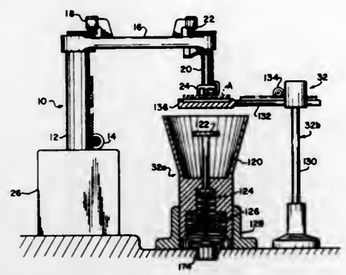
3,503,526
WEB HANDLING APPARATUS AND PROCESS
James Richmond Crafton, Hendersonville, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 27, 1967, Ser. No. 656,432
Int. Cl. B65h *17/18;* **H05f** *1/02*
U.S. Cl. 242—55 **7 Claims**



An apparatus for winding or unwinding continuous webs of non-conductive material, the appartus incorporating an alpha particle-emitting device directed toward a winding or unwinding roll of web beyond the point of tangency between the web and roll.

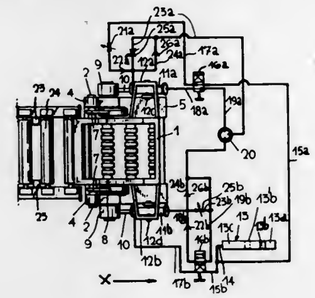
3,503,527
ARTICLE TRANSFER AND ORIENTING MEANS
George C. Devol, Box 1273, Greenwich, Conn. 06830
Filed May 8, 1967, Ser. No. 636,999
Int. Cl. B65g *47/92, 47/24*
U.S. Cl. 214—1 **12 Claims**

This invention relates to an article transfer apparatus that picks up an article at a supply point, transfers it to a preliminary orientation station wherein the article is tested for proper "right-side up" attitude and, if the article should be inverted, automatic means corrects this factor in the orientation of the article. In either case the article is carried to an orienting station where it is adjusted into the desired location and relationship to the article holder of the article transfer apparatus that, when it is delivered



at a receiving station, it will be in a precisely prescribed location.

3,503,528
TILTING DEVICE FOR INGOTS
Ghislain Antoine Jean-Marie Martelee, Liege, Belgium, assignor to Cockerill-Ougree-Providence, Seraing, Liege, Belgium
Original application June 15, 1967, Ser. No. 646,301. Divided and this application Aug. 5, 1968, Ser. No. 750,307
Claims priority, application Belgium, June 16, 1966, 40,986
Int. Cl. B25g *3/00;* **B66c** *23/18*
U.S. Cl. 214—1 **3 Claims**

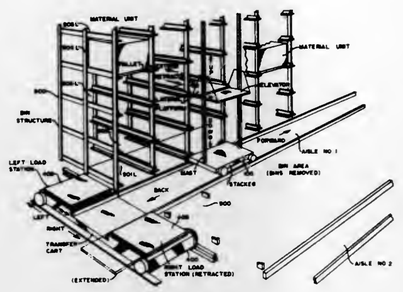


In a tilting device for ingots, a basket loaded with an ingot is rocked about a horizontal axis and compresses gas in a chamber so as to recuperate the gravity energy of the descent of the loaded basket which after unloading of the ingot is returned to its initial position by expansion of said compressed gas.

3,503,529
ADHESIVE, METHOD OF USE AND BONDED ARTICLES
Francis E. Brown, Orange, Tex., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennnsylvania
No Drawing. Original application Nov. 15, 1963, Ser. No. 323,919. Divided and this application July 27, 1967, Ser. No. 665,942
Int. Cl. B65d *57/00;* **B65g** *1/14*
U.S. Cl. 214—10.5 **14 Claims**

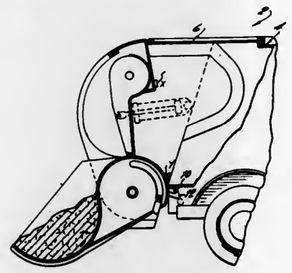
The invention relates to an adhesive held stack, said adhesive comprised of a normally tacky copolymer of ethylene and methyl methacrylate having copolymerized therein from about 33 to about 70 percent by weight of methyl methacrylate, said adhesive being applied to the lower surface of a polyethylene bag and the upper surface of another polyethylene bag stacked therebelow.

3,503,530
TRANSFER CART FOR TRANSFERRING AN ARTICLE HANDLING VEHICLE BETWEEN AISLES OF A WAREHOUSE
Arthur R. Burch, Wayzata, and Charles E. Bates, Minneapolis, Minn., assignors to Clark Equipment Company, a corporation of Michigan
Filed Apr. 18, 1966, Ser. No. 543,224
Int. Cl. B65g *35/00*
U.S. Cl. 214—16.4 **13 Claims**



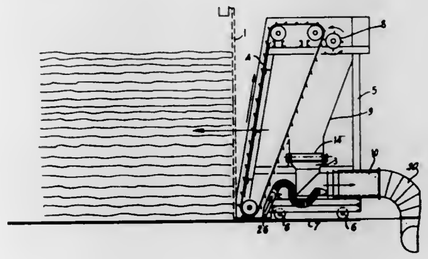
A material storage and handling system has a transfer vehicle and a stacker vehicle. The transfer vehicle is adapted to receive and carry the stacker vehicle and the stacker vehicle is adapted to carry and transfer material between the stacker vehicle and selected bins in a multi-aisle, multi-bin storage structure. The transfer cart has two receiving stations for receiving material for pickup by the stacker vehicle. The stacker vehicle operates to pick up and deposit material to both the right and left sides within the aisles and at the transfer vehicle.

3,503,531
APPARATUS FOR PROTECTING COMPONENTS OF WORK PERFORMING VEHICLES
Frank Barbieri, 62 Alabama St., Long Beach, N.Y. 11561
Filed May 27, 1968, Ser. No. 732,252
Int. Cl. B65f *3/06;* **B60k** *25/04*
U.S. Cl. 214—83.3 **2 Claims**



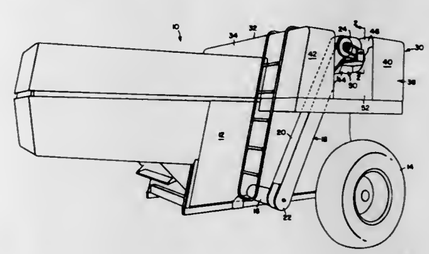
An improvement in a vehicle equipped with an air actuated power take-off unit wherein means are provided to prevent improper actuation of the power take-off unit or related converter assembly and to insure that the work performed by the vehicle is done by the proper sequence of steps. A device for use on a garbage truck to insure that the compacting element is not improperly actuated when the assembly is disengaged from abutment against the garbage truck body. A device in association with the air lines feeding the power take-off unit for limiting the engine cycle speed of the vehicle by engagement with the carburetor linkage system.

3,503,532
APPARATUS FOR MIXING AND AUTOMATICALLY EMPTYING CASES OF FIBERS OR TEXTILE MATERIALS
Pierre Hubert Marie Joseph Bouhon, Heusy, Belgium, assignor to Societe Anonyme des Ateliers Houget Duesberg Bosson, Verviers, Belgium.
Filed Feb. 20, 1968, Ser. No. 706,862
Claims priority, application Belgium, Feb. 20, 1967, 694,327
Int. Cl. B65b *69/00*
U.S. Cl. 214—309 **4 Claims**



Apparatus for mixing and automatically emptying cases of fibers or textile materials comprising a substantially vertical spiked apron and a detaching comb cylinder both mounted on a frame or carriage which moves into the case as it is emptied and a suction device disposed at each end of the apron and preceded by a scraper coming close to the side walls of the case.

3,503,533
COMBINE GRAIN TANK LOADING SYSTEM
Darwin Carl Bichel, East Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 4, 1968, Ser. No. 765,048
Int. Cl. B60p *1/42*
U.S. Cl. 214—519 **5 Claims**



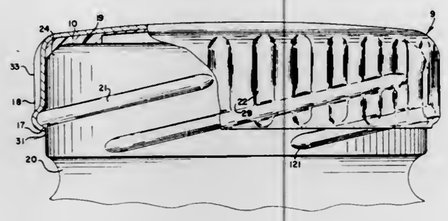
A pull-type combine has an elevated grain tank that overhangs both sides of the main separator body and a clean grain elevator alongside the body has its discharge end disposed in a recess in the grain tank side wall below the top of the grain tank. The clean grain elevator feeds a cantilevered upwardly and inwardly inclined auger which moves the grain through the grain tank side wall and discharges it in the center of the tank at approximately the level of the grain tank top.

3,503,534

BOTTLE CAP HAVING PROTECTIVE SKIRT EDGE

Jens L. Moller, Westmont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 26, 1968, Ser. No. 785,003
Int. Cl. B65d 41/10
U.S. Cl. 215—39 3 Claims



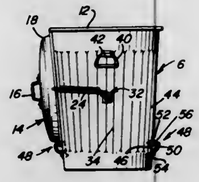
The subject is a bottle cap of the type which is first pushed on, but thereafter may be twisted off and on. A shell is made from a cupped blank having a substantially straight skirt. The skirt is then knurled or fluted, the inside root diameter of the flutes being a close sliding fit on the crests of the bottle finish threads to which the cap is to be applied. When knurling, the rim of the skirt is curled inward slightly to an inside diameter about the same as the inner root diameter of the flutes. After inserting a suitable seal ring or disc, the shell is pushed down over the threaded finish of the bottle into sealing engagement with the lip. While so holding the cap, portions of the skirt are conformed to the thread formations on the bottle finish, thus providing a releasable threaded engagement. As the threads are formed in the skirt, the inwardly turned edge is closely conformed to the finish, in which position the edge is shielded against accidental contact by the fingers, when unscrewing the cap to open the bottle.

3,503,535

GARBAGE CAN LID ANCHORING ATTACHMENT

Robert E. Sparks, Sr., 206 E. Bridge St., Streator, Ill. 61364

Filed Oct. 29, 1968, Ser. No. 771,420
Int. Cl. B65d 51/100, 45/100; A47j 27/08
U.S. Cl. 220—38.5 6 Claims



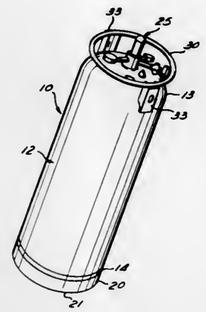
A garbage or trash can wherein a pair of diametrically opposite holddown coil springs have upper ends hooked on the usual rim of the handle-equipped lid and lower ends hooked to properly located spring anchoring brackets. The springs normally overlie the usual pivoted carrying handles. The lid remains in contact with the can at all times and can be yieldingly stored on either side of the can. Specifically, when the lid is open it is clampingly stored between the overhanging bead and a pair of positioning and retaining fixtures attached to the bottom part of the can.

3,503,536

MANIPULATABLE CRYOGENIC CONTAINER

Richard C. Woerner, Scotch Plains, N.J., and Ralph S. Ashworth, Jr., South Euclid, Ohio; said Woerner assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York, and said Ashworth assignor to Ryan Industries, Inc., a corporation of Delaware

Filed Jan. 18, 1968, Ser. No. 698,788
Int. Cl. B65d 25/00
U.S. Cl. 220—85 1 Claim



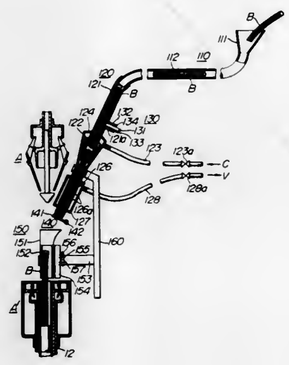
A manipulatable cryogenic container having an annular ring rigidly secured to the top of the container and surrounding the top end valving and conduit apparatus to protect it from being struck and to provide a hand grip for manipulating the container as by tilt rolling.

3,503,537

APPARATUS FOR FEEDING RAYON CAKE WRAPPING NETS AUTOMATICALLY INTO AUTOMATIC WRAPPING MACHINE

Shohachi Masai, Tadashi Araki, Shigemitsu Kawakami, and Tsugio Okamoto, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

Filed Dec. 1, 1965, Ser. No. 510,981
Claims priority, application Japan, Dec. 24, 1964, 39/72,543
Int. Cl. B65h 3/08
U.S. Cl. 221—278 4 Claims



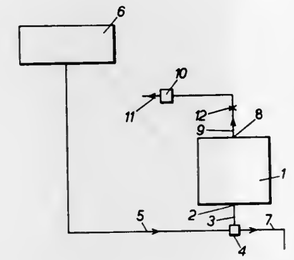
Apparatus for feeding rayon cake wrapping nets automatically into an automatic wrapping machine, the apparatus having a conveyor tube for receiving the wrapping nets and a guide aligned with the receiving head of the wrapping machine for transferring of an individual wrapping net thereto in a predetermined time relationship. The feeding apparatus is provided with a pressure injector for injecting a wrapping net into the guide and a vacuum device for drawing additional wrapping nets into the conveyor tube to replace those removed by the pressure injector, and a holding member being provided to hold a following wrapping net in the conveyor tube where the pressure injector is forcing a wrapping net into the guide and to release it when the vacuum device is drawing an additional wrapping net into the conveyor tube.

3,503,538

METERING PROCESS AND APPARATUS

Edward Barnes, Speldhurst, England, assignor to BP Chemicals (U.K.) Limited, London, England, a British company

Filed Nov. 9, 1967, Ser. No. 681,710
Claims priority, application Great Britain, Nov. 29, 1966, 53,290/66
Int. Cl. G01f 11/28
U.S. Cl. 222—1 3 Claims



A process and apparatus for dispensing measured quantities of a fluid which is stored under sufficient pressure for it to be liquid at ambient temperature, e.g. anhydrous liquid ammonia, comprises admitting the liquid under pressure to a chamber free from contaminating fluids, connecting the chamber to a dispense point at a lower pressure whereupon some of the liquid evaporates and forcibly dispenses the contents of the chamber therefrom, and admitting into the chamber further liquid under pressure in readiness for the next dispensing cycle. The invention is particularly useful in the dispensing of bulk liquid ammonia to the land.

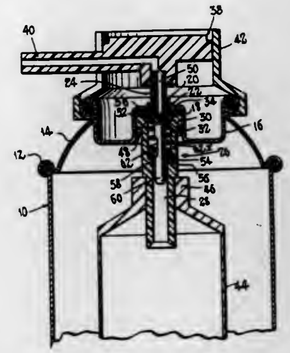
3,503,539

HAND-HELD DISPENSER WITH DUAL VALVE

William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 692,757, Dec. 22, 1967. This application Feb. 21, 1968, Ser. No. 707,264
Int. Cl. B65d 23/14
U.S. Cl. 222—95 1 Claim

A dispenser with dual valve and multiple compartments, comprising a tubular valve housing having two annular seats, and a valve stem longitudinally movable in the housing and having valve portions for simultaneously closing and opening the seats. The housing has a side passage, which may or may not be connected to a dip tube, and is at one end carried in the neck of a pressurized container in which there is also a flexible bag



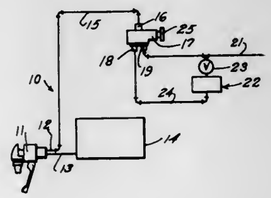
connected to the other housing end. Different liquids in the container and bag are mixed and discharged when the valve stem is shifted to open the valve seats.

3,503,540

BEVERAGE DISPENSING SYSTEM

William R. Fuerst, Park Ridge, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Sept. 27, 1967, Ser. No. 670,914
Int. Cl. B67d 5/56
U.S. Cl. 222—129.1 5 Claims

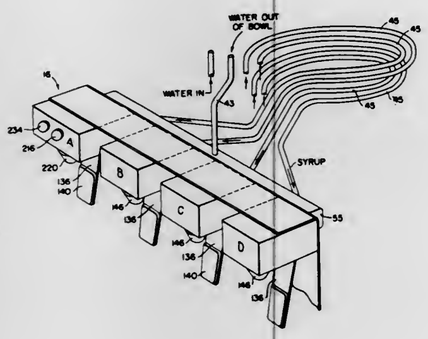


A beverage dispensing system in which the desired level of carbonation in the water is obtained by mixing plain water with a carbonated water source in the desired portions, including a mixing device with a valve which allows the selection of different proportions between the carbonated water and plain water to obtain different levels of carbonation. A mixing device comprises a housing having a cylindrical bore extending in from one end and threaded at the one end, with a pair of spaced inlets in communication with the bore and an outlet disposed between the spaced inlets and in communication with the bore. A valve means threaded to be engaged in the threaded bore is slidably disposed in the chamber and has a pair of spaced valve members disposed adjacent to the spaced inlets to open and close the inlets as the valve means is moved axially within the chamber. The spacing between the valve members is greater than the spacing between the inlets so that when one valve member is closing one inlet the other inlet is in an open position and the axial movement of the valve members will start to close the opened inlet as the closed inlet is opened.

3,503,541
MULTIBEVERAGE DISPENSER

William Jacobs, Chestnut Hill, and Robert L. Norton, Norfolk, Mass., assignors to Jet Spray Cooler, Inc., Waltham, Mass., a corporation of Massachusetts

Continuation-in-part of abandoned application Ser. No. 682,344, Nov. 13, 1967. This application July 17, 1968, Ser. No. 753,825
Int. Cl. B67d 5/56
U.S. Cl. 222—129.1 19 Claims

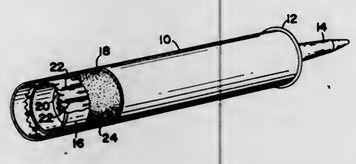


A beverage dispenser with a visual display bowl containing carbonated water and having a multivalve assembly with each valve individually connected to a flavor syrup source and to the bowl to dispense a variety of beverages from a single machine.

3,503,542
DISPENSER SEAL, METHOD AND APPARATUS FOR FORMING THE SAME

Aaron J. Ungerer, Lakewood, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 13, 1967, Ser. No. 630,555
Int. Cl. B67d 5/42
U.S. Cl. 222—386 1 Claim



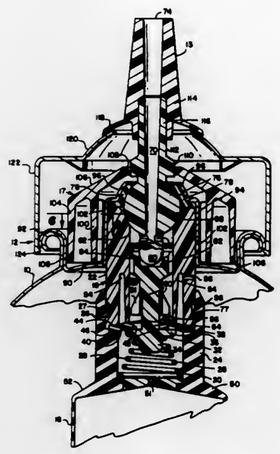
A seal for a cartridge dispenser, including a slidable end closure and interposed between the end closure and the inner wall of the cartridge, a substantially vapor impermeable, thin, flexible sheet having a low bursting strength, in pressure contact with the end closure.

3,503,543
AEROSOL VALVE ACTUATOR LOCKING DEVICE

Samuel B. Prussin, Los Angeles, and Jimmie L. Mason, Hacienda Heights, Calif., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware

Filed June 6, 1968, Ser. No. 735,032
Int. Cl. B65d 25/46; F16k 35/00
U.S. Cl. 222—402.11 12 Claims

An aerosol valve actuator locking device, wherein a gravity responsive locking member is freely movably mounted with respect to a valve actuator disposed to operate an aerosol valve; the locking device being disposed to release the actuator when a container carrying

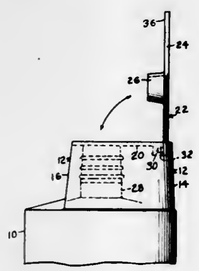


the valve is inverted so that the valve may be opened only when said container is disposed in inverted position.

3,503,544
TUBE FOR TOOTHPASTE OR SIMILAR MATERIAL

Roger Paul Setera, San Francisco, Calif. (2704 NE. 27th, Portland, Oreg. 97212)

Filed May 16, 1968, Ser. No. 729,698
Int. Cl. B65d 47/00
U.S. Cl. 222—556 1 Claim



A toothpaste or other tube is formed with a head at the upper end provided with a flat groove into which fits a hinged cover having a plug which enters the neck of the tube when the cover is closed, the lid having a projecting free end whereby it may be flipped open with the thumb of the hand holding the tube, thus permitting the tube to be opened and used with one hand.

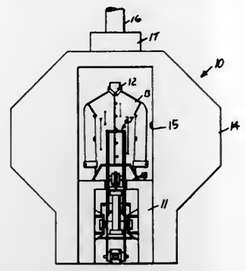
3,503,545
MOVABLE GARMENT PRESSING CHEST

Jerry N. McMillan, P.O. Box 167, Colville, Wash. 99114

Filed Nov. 4, 1968, Ser. No. 773,143
Int. Cl. D06c 15/00
U.S. Cl. 223—57 6 Claims

A garment pressing chest is movably mounted in a garment pressing and finishing machine for pressing and finishing the front portion of a garment mounted on an elevated upright form. The pressing chest is mounted to

a carriage that moves up and down in an upright track means. The carriage is connected to a chain that extends over an end of a piston rod for moving the carriage up or down a distance twice the stroke of the piston rod. The

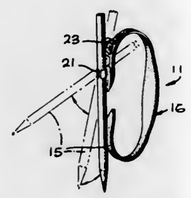


track means is pivotally mounted to the frame for moving the upper end toward and away from the form to press the chest against the form when the chest is in the up position.

3,503,546
WRITING IMPLEMENT HOLDER

Alvin W. Hunt, Las Vegas, Nev. (1209 Bay St., Apt. B, Santa Monica, Calif. 90405)

Filed Mar. 8, 1968, Ser. No. 711,609
Int. Cl. A46b 5/02
U.S. Cl. 224—28 4 Claims

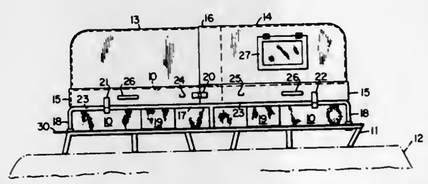


The application discloses a flexible band adapted to mount on a person's hand and means for holding a writing implement mounted on the band for limited pivotal movement about two axes whereby the writing implement can be selectively pivoted to an out-of-the-way position or to a position for writing.

3,503,547
AUTOMOBILE ROOF-TOP CARRIER

Valerie M. Shields, 120 Santa Paula Ave., San Francisco, Calif. 94127

Filed Mar. 4, 1968, Ser. No. 710,062
Int. Cl. B60r 9/04
U.S. Cl. 224—42.1 8 Claims

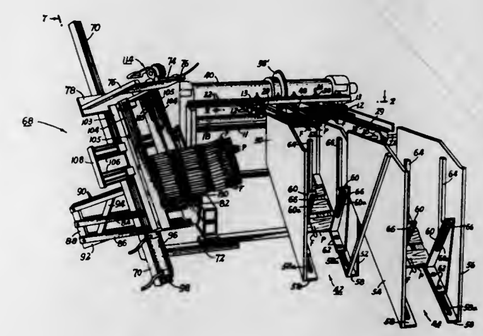


An automobile roof-top carrier is disclosed comprising a rectangular base compartment positioned on a rack on the roof of a vehicle over which is positioned the two halves of a weather-proof cover. A depending skirt on the cover overlaps the base compartment and a weather-proof sleeve on one half cover overlaps the other half cover. The half covers are adapted to slide along tracks provided on each side of the rectangular base compartment and suitable latches are provided to hold the half covers in position when they are either engaged or separated.

3,503,548
MACHINE FOR SEPARATING, STACKING AND BUNDLING BOX PARTS

Jerome W. Derenthal, Succasunna, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware

Filed Jan. 31, 1968, Ser. No. 702,068
Int. Cl. B26f 3/00
U.S. Cl. 225—96 5 Claims

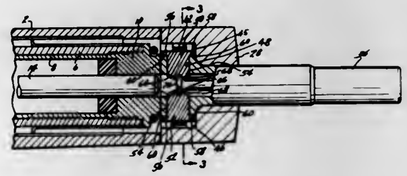


Machine with cutters for severing composite wooden box part units into separate box parts, elements supporting one of the box parts adjacent the line of severance while pressing downwardly on the other adjacent thereto to displace their severed edges and separate adhering fibers, staggered hoppers for aligning and stacking the separated box parts and a bundling station for compressing and binding the stacks.

3,503,549
MUZZLE BUSHING FOR PISTON-TYPE POWER-ACTUATED TOOL

Lawrence J. Brunelle, East Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

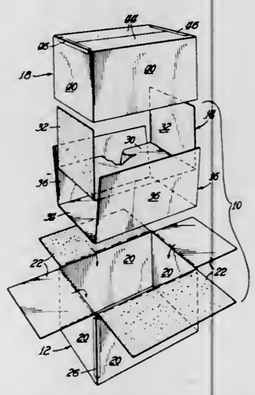
Filed Sept. 29, 1967, Ser. No. 671,783
Int. Cl. B25c 7/00
U.S. Cl. 227—149 8 Claims



A muzzle bushing having a longitudinal bore for a piston-type power-actuated tool. The muzzle bushing is provided with a plurality of key members which are peripherally spaced about the muzzle bushing and adapted

to extend into the bore. The inner end faces of each of the key members are provided with a slot for the reception of the head of a fastener to hold the fastener in a position to be driven by the piston.

3,503,550
MULTIPIECE PAPERBOARD CONTAINER
James W. Main, Mason, Wash., and Julian C. D'Esposito, Wilmette, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 711,659
Int. Cl. B65d *13/00*
U.S. Cl. 229—23 **5 Claims**

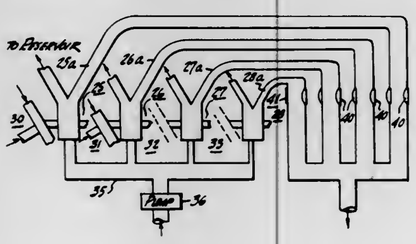


A reinforced, multipiece, paperboard container having a box-like body member with inner and outer side wall panels and being open at the top and bottom, and a pair of U-shaped reinforcing elements having side panels disposed between the side wall panels of the body member and having bottom wall panels disposed in overlying relation to close the bottom of the body member.

ERRATUM

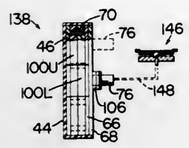
For Class 235—60 see:
Patent No. 3,504,163

3,503,551
DISPLAY APPARATUS
George W. Taylor, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,625
Int. Cl. G06d *1/08*
U.S. Cl. 235—201 **11 Claims**



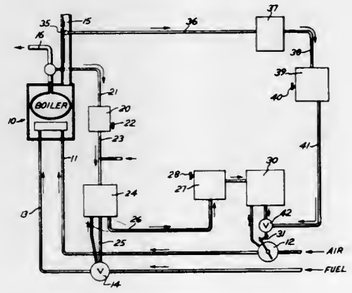
A display apparatus having a matrix of individual fluid display elements is operated by a coordinate selection technique to effect a display having a plurality of concurrently operated display elements.

3,503,552
SMALL PNEUMATIC THERMOSTAT CONSTRUCTIONS
Walter Jerome Berleyoung, Kenneth G. Kreuter, and Klaus Petro Mueller, Goshen, Ind., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Continuation-in-part of application Ser. No. 628,767, Apr. 5, 1967. This application Jan. 13, 1969, Ser. No. 790,701
Int. Cl. G05d *23/00*
U.S. Cl. 236—1 **12 Claims**



This application discloses the sonic or ultrasonic welding of two plates having a channel on one of the plates with raised means, such as ridges surrounding the channel so that the crests of the ridges are heated, melted and then solidified on each side of the channel to seal the channel between the plates. Openings are provided in one or both plates which connect the interior of the channel to the exterior of the plates. One or both plates may have tubes aligned with such openings so that the channel between the plates may be connected to other structures by such tubes. This application also discloses a fluid pressure control system enclosed within a unit made of thermoplastic plates sonically welded together to encompass channels, passageways, diaphragms, cams and the like between the plates. This application also discloses the welding of two identical plates with one of the plates rotated 180°, the plates having a diaphragm cavity facing another diaphragm cavity on the other plate and with sonic ridges adjacent such cavity on only one-half of one plate, so that such ridges on said one plate will then engage a flat surface without ridges on the other plate, to promote efficient sonic welding of the plates.

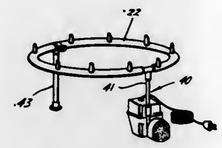
3,503,553
FUEL METERING COMBUSTION CONTROL SYSTEM WITH AUTOMATIC OXYGEN COMPENSATION
Louis H. Schomaker, Michigan City, Ind., assignor to The Hays Corporation, Michigan City, Ind.
Filed Nov. 13, 1967, Ser. No. 682,296
Int. Cl. F23n *3/06, 1/08, 5/00*
U.S. Cl. 236—14 **6 Claims**



A combustion control system for controlling the supply of fuel and air to a combustion unit in a selected ratio and responsive to the output of said combustion unit, wherein

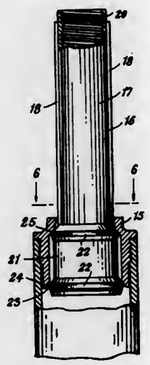
the air supply means includes an additional trimming control responsive only to measurement of the oxygen content of the products of combustion of the combustion unit and effective to control only a limited proportion of the total potential air supply.

3,503,554
FOUNTAIN DISPLAY APPARATUS
William Hugh Clifton, Oklahoma City, Okla., assignor to Little Giant Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Sept. 9, 1968, Ser. No. 758,285
Int. Cl. B05b *17/08*
U.S. Cl. 239—23 **5 Claims**



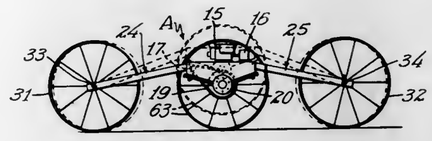
A knockdown water fountain includes a centrifugal recirculating pump having a vertical outlet, an adjustable length flow conduit supported by and connected to the outlet and to a swivel T, an open plastic ring having its ends joined by the T, a swivel clamp over the hole, a transparent plastic leg slipped into the clamp, a ferrule on the bottom of the leg, and a plurality of ball mounted swivel nozzles pressed into holes in the upper face of the ring.

3,503,555
LAWN SPRINKLERS
George H. Lockwood, 2125 NE. 27th Drive, Fort Lauderdale, Fla. 33305, and William Gordon Muschett, 6163 Rolling Road Drive, Miami, Fla. 33156
Filed Sept. 20, 1967, Ser. No. 669,231
Int. Cl. B05b *15/10*
U.S. Cl. 239—204 **3 Claims**



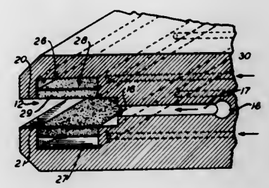
A lawn sprinkler of the disappearing type having a cup-shaped shell fitted into the ground and closed at the top by a disk carried by the sprinkler head. When the sprinkler head rises it raises the disk which gravitationally lowers upon the cessation of water under pressure. The sprinkler head is carried by a slidable piston having a two-point contact of spaced O-rings with seats on a bushing mounted in a cylinder in which the piston is axially, but non-rotatively moved. The disk is mounted on a cap fitted on a spindle that is threadably anchored.

3,503,556
SPRINKLER POWER MOVER UNIT
Thomas S. Moulton, Somerset, Wis. 54025
Filed Jan. 12, 1968, Ser. No. 697,515
Int. Cl. A01g *25/00*
U.S. Cl. 239—212 **10 Claims**



The invention lies in a sprinkler power mover unit for use in combination with an irrigating system in which water is forced through a series of pipe sections coupled together in end to end relation, with concentric wheels supporting the sections, to spaced sprinkler heads. A carriage having guide wheels arranged in tandem supports an engine for rotating the pipe in either direction. Ground engaging wheel means concentric with the pipe propel the carriage. Means is provided for elevating the ground engaging wheel means out of contact with the ground so that the pipe may be rotated while the carriage remains stationary, to straighten out the pipe relative to the carriage.

3,503,557
MEANS FOR INTRODUCING GAS TO OXYGEN STREAM
Harry T. Hutton, Jr., Somerville, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 11, 1966, Ser. No. 549,366
Int. Cl. B23k *7/00*
U.S. Cl. 239—433 **1 Claim**



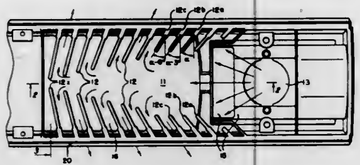
This invention relates broadly to a new apparatus and method for improved intermixing of fluids.

More particularly, this invention relates to an improved method and apparatus whereby fuel gas is added to an oxidizing stream through a porous surface. The invention is particularly applicable to oxy-fuel gas scarfing burners but is not limited thereto.

3,503,558
EXHAUST DIFFUSION MANIFOLD FOR A VACUUM CLEANER OR THE LIKE
Frank L. Galiulo, Harrison, N.Y., and Garret Mott, Jr., Wilton, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 713,024
Int. Cl. B05b *1/26*
U.S. Cl. 239—499 **4 Claims**

An exhaust air outlet conducts air from the interior of the vacuum cleaner body to the exterior of the body. The air is directed into an elongated exhaust diffusing manifold on an exterior surface of the body extending in

the longitudinal direction of the cleaner body. The exhaust air enters the manifold at the large end of a substantially conical or tapered centrally located passage in the manifold defined by vanes of varying lengths. Each

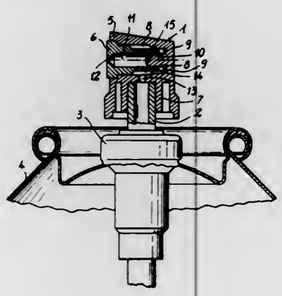


of the vanes is at a constantly changing angle from the base to the apex of the passage so that exhaust air entering ambient atmosphere is moving at a low velocity diffused over a large area.

3,503,559
DELIVERING CAP FOR AEROSOL DISPENSERS

Roberto Torretta, Milan, Italy, assignor to Coster Tecnologie Speciali S.p.A., Milan, Italy

Filed Dec. 5, 1967, Ser. No. 688,209
Claims priority, application Italy, Dec. 22, 1966, 31,412/66
Int. Cl. B05b *7/32, 1/30;* F23q *1/02*
U.S. Cl. 239—573 6 Claims



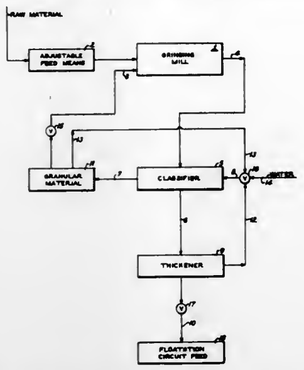
A delivering cap for aerosol dispensers, the cap comprising only two members, one of which is provided with fastening means on the stem of a valve provided on the dispenser and has an inner cavity, and the other member of which is accommodated in said cavity and has an outflow hole. The two members define therebetween and internally of the cap at least three expansion chambers connected to one another by holes or channels, so as to enable a high atomization of the material being delivered as aerosol.

3,503,560
CLOSED WET GRINDING CIRCUITS

Elie Condolios, Grenoble, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques (SOGREAH), Grenoble, France, a corporation of France

Filed Sept. 21, 1967, Ser. No. 669,612
Claims priority, application France, Oct. 6, 1966, 4,992
Int. Cl. B02c *1/00, 11/08, 17/02*
U.S. Cl. 241—20 4 Claims

The material delivered by a grinding mill to a classifier is diluted to bring it to optimum concentration for classification, and then the classified fine material to be further treated and the classified coarser material to be re-

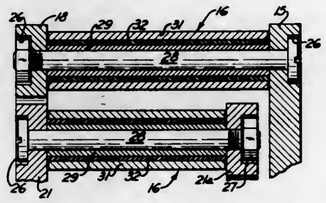


ground are separately thickened to the requisite concentrations for such operations.

3,503,561
DISINTEGRATOR CRUSHING MEMBER AND SUPPORT THEREFOR

Albert Oscar Johnson, Aurora, Ind., assignor to Stedman Foundry and Machine Company, Incorporated, Aurora, Ind., a corporation of Indiana

Filed Mar. 25, 1968, Ser. No. 715,600
Int. Cl. B02c *3/28, 7/04*
U.S. Cl. 241—188 5 Claims



This disclosure relates to improved cushion members and a construction for supporting these members of the type used in a multi-cage disintegrator. The disclosure provides pins made up of high strength steel bolts that extend between the cage and ring of the disintegrator. The bolts are designed to absorb all of the forces that normally work against the pins in the disintegrating operation, such as, the centrifugal force, bending moments, and torque. Around each bolt there is provided a steel tube which extends between the cage and ring and forms a separator for these two elements. The tube is so mounted as to float with respect to the bolt. Enclosing the tube is an outer sleeve made up preferably of a tungsten carbide material designed particularly to combat the wear by the material to be crushed, but in a manner to be free from the bending and torque forces involved in the operation. This is accomplished in the disclosure by providing between the tube and the outer sleeve a cushion in the form of rubber vulcanized to the outside diameter of the tube.

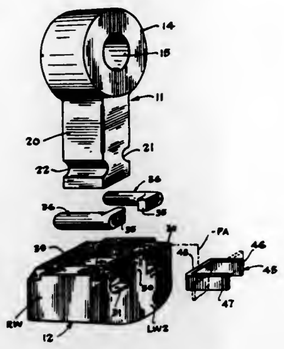
3,503,562
HAMMERS FOR HAMMER MILLS

Earl E. Haberman, St. Louis, Mo., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 26, 1967, Ser. No. 612,016
Int. Cl. B02c *13/28*
U.S. Cl. 241—195 3 Claims

A two-part mill hammer including a shank and a separable head either part having a cavity into which

the other part fits joined by a pin detachably residing in opposed seats within the shank and head, thereby joining

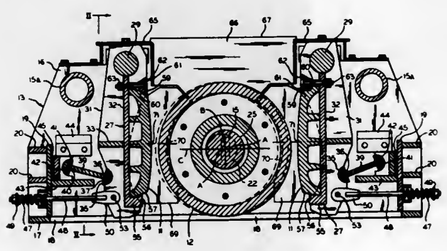


the head and shank, and held in place by a detachable retainer having a bent portion overlying the head of the pin.

3,503,563
GYRATORY ROCK CRUSHER

James G. Daly, Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 2, 1968, Ser. No. 726,193
Int. Cl. B02c *4/12, 2/08*
U.S. Cl. 241—204 5 Claims



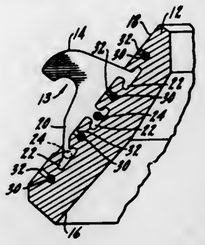
Horizontal gyratory rock crusher in which a gyratory crusher roll is journaled in a crusher housing on a rotatably driven eccentric which drives the gyratory crusher roll back and forth between two crusher jaws in a gyratory path. The crusher jaws have convex crushing faces which are identical and have the same crushing areas and are mounted on opposite sides of the gyratory roll for adjustable movement toward and from the axis of the roll.

3,503,564
BOWL FOR CRUSHERS AND THE LIKE

Howard W. Adam, Hales Corners, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 24, 1967, Ser. No. 663,156
Int. Cl. B02c *2/00*
U.S. Cl. 241—299 11 Claims

A liner for use in a cone crusher and having an inner conical crushing surface and an outer conical supporting surface. The liner includes a cast crushing member made from a hard, wear-resistant metal; means for mounting the crushing member within the cone crusher are secured to the crushing member. The mounting means is made from a tough, fracture-resistant metal such as

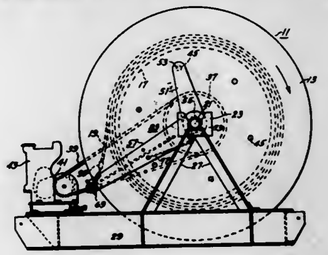


mild steel. The liner crushing member may have a plurality of retaining rings imbedded or in cavities therewithin.

3,503,565
METHOD AND APPARATUS FOR IMPROVED REELING

Jackson L. Durkee, Bethlehem, and Stephen R. Baker, Oley, Pa., and Alfred A. Siess, Jr., West Newton, Mass., assignors to Bethlehem Steel Corporation, a corporation of Delaware

Filed Sept. 19, 1968, Ser. No. 760,935
Int. Cl. B65h *54/00*
U.S. Cl. 242—25 6 Claims

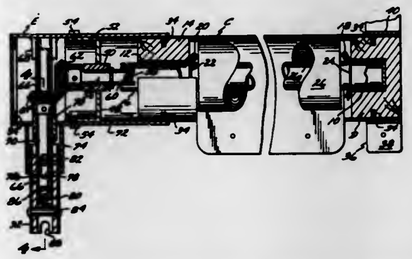


To facilitate unreeling after a long length of parallel wire strand is completely reeled upon a shipping reel the reel is spun several hundred times in the direction of reeling to feed accumulated slack toward the outside loops of the strand where the slack is taken up by a mechanical ratchet device.

3,503,566
CANOPY CONTAINER AND TENSIONING DEVICE

Jesse B. Travis, 7051 9th St., Buena Park, Calif. 90620

Filed Aug. 13, 1968, Ser. No. 752,216
Int. Cl. E04f *10/02;* B65h *75/38*
U.S. Cl. 242—55 6 Claims



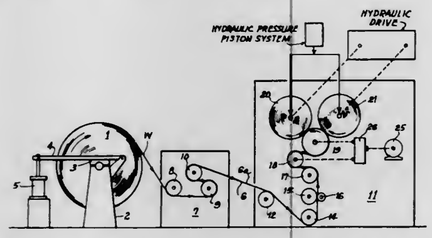
A device for so containing and supporting a generally rectangular sheet of pliable material on a side wall of a building structure or vehicle, which when a free end of

the sheet is extended in a fixed position from the side wall, is adapted to exert tension on the sheet to provide a taut canopy.

ERRATUM

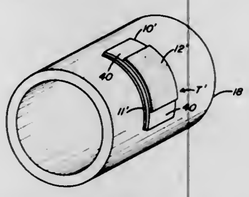
For Class 242—55 see:
Patent No. 3,503,526

3,503,567
METHOD AND MEANS FOR REWINDING PRESSURE-SENSITIVE SHEET MATERIAL
Lawrence J. Casey, Appleton, Wis., assignor to Appleton, Coated Paper Company, Appleton, Wis., a corporation of Wisconsin
Filed Nov. 20, 1967, Ser. No. 684,195
Int. Cl. B65h *17/02*
U.S. Cl. 242—67.1 **12 Claims**



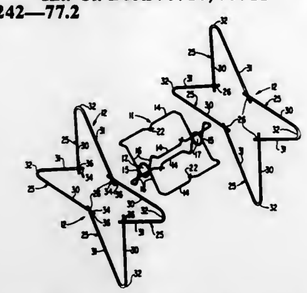
Sheet material such as a base paper having a pressure-sensitive coating containing a multiplicity of capsules which emit a dye solution when fractured, is rewound from a parent roll onto a plurality of finished-product rolls suitable for marketing. To meet marketing requirements that said rolls should have substantially uniform hardness throughout the roll and along the axial length of the roll, the invention provides a re-winding mechanism which includes a winding drum which is in pressure engagement with the finished-product rolls. The sheet material is passed between said rolls and the winding drum, whereupon the rolls and drum exert a nipping action on the sheet which is beneficial in producing the desired roll hardness. A cushion surface on the winding drum absorbs sufficient of the engagement pressure between the rolls and drum to protect the pressure-sensitive capsules of the sheet while maintaining the said nipping action.

3,503,568
ATTACHING TAPE
Hollis T. Galley, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 14, 1966, Ser. No. 598,583
Int. Cl. C09j *7/02*; **B65h** *75/28*
U.S. Cl. 242—74 **1 Claim**



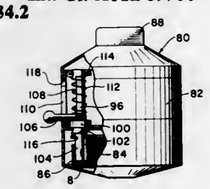
A tape adapted for detachably connecting the end of a web to a winding core. Both surfaces of the tape are coated with a pressure-sensitive adhesive for releasably attaching the web to a core such that the tape remains attached to the core when the web is unwound from the core.

3,503,569
WIRE FRAME REELS
Richard F. Gildart, Montebello, Calif., assignor to Rehrig Pacific Company, Los Angeles, Calif., a corporation of California
Filed Jan. 12, 1968, Ser. No. 697,450
Int. Cl. B65h *75/20, 75/22*
U.S. Cl. 242—77.2 **12 Claims**



A collapsible reel including wire frame end flanges which may be manually removed from the reel to permit uncoiling or stranded material wound thereon, and manually reinstalled on the reel without regard to the presence of material wound on the reel.

3,503,570
SPINNING REEL DEPTH GAUGING MEANS
Chester L. Coshow, 223 S. 12th Collinsville, Okla. 74021
Continuation-in-part of application Ser. No. 656,940, July 28, 1967. This application Apr. 22, 1968, Ser. No. 722,981
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **7 Claims**

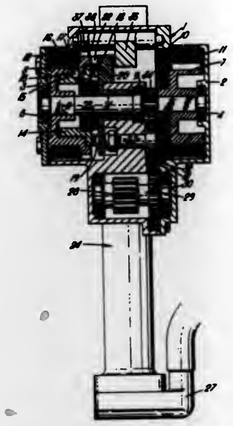


A spinning reel including metering means for paying-out predetermined lengths of line, comprising, a stationary spool having a peripheral surface upon which line can be wound, a revolvable member adjacent to said spool, and a gauge member, the latter being movable between a first position removed from the region of said peripheral surface of said stationary spool and a second position spacedly superposed with respect to said peripheral surface, said gauge member being removably retainable in either said first or second positions, whereby when in said second position line wound about said stationary spool will be spaced above the peripheral surface of said spool in the region of said gauge member and supported by the latter in said region, the length of line subsequently payable from said spool when said gauge member is in the second position being limited to those line windings supported by said gauge member.

3,503,571
INERTIA REEL DEVICES FOR SAFETY HARNESSES
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, Middlesex, England
Filed Mar. 20, 1968, Ser. No. 714,520
Claims priority, application Great Britain, Apr. 26, 1967, 19,229/67
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.4 **5 Claims**

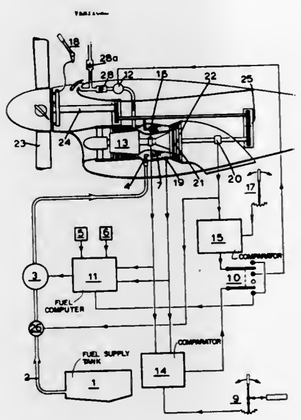
This invention concerns an inertia reel device particularly suitable for use with safety harnesses in vehicle

ejection seats, such device having a reef which becomes automatically locked against rotation when unwinding of a strap wound thereon causes an angular acceleration of the reel above a predetermined value, such automatic locking of the reel resulting from relative movement of



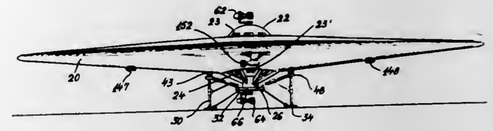
balls disposed radially in slots around the inertia member, such inertia reel device conveniently including means positively to lock said reel against rotation in a strap unwinding direction when said device is subjected to an acceleration or deceleration in excess of a predetermined value.

3,503,572
VERTICAL TAKE-OFF AND LANDING AIRCRAFT
Raoul Hafner, Yeovil, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Dec. 4, 1967, Ser. No. 687,747
Claims priority, application Great Britain, Dec. 12, 1966, 55,651/66
Int. Cl. B64c *27/28*
U.S. Cl. 244—7 **7 Claims**



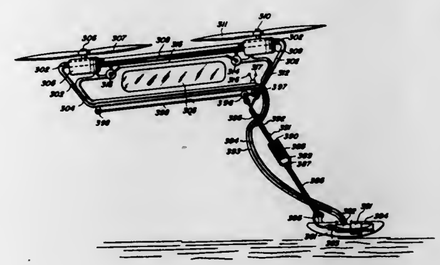
A boundary layer control arrangement for a movable lift surface of a convertible rotorcraft having one or more lift rotors is provided wherein air bled from a compressor or a gas generator for driving the rotors provides boundary layer control of a part or the whole of a tilting wing or lift surface of the convertible rotorcraft.

3,503,573
DISK FLYING CRAFT
James N. Modesti, Brooklyn, N.Y. (230 W. 76th St., New York, N.Y. 10023)
Filed Feb. 24, 1967, Ser. No. 618,523
Int. Cl. B64c *29/00, 39/00*
U.S. Cl. 244—12 **11 Claims**



The disclosure describes a flying aircraft or spacecraft having a spinning circular disc shaped wing and a centrally disposed spherical compartment—or cabin. Personnel are housed in the cabin and control operation of the craft. The craft includes retractable landing gear, manually controllable rocket or jet motors, control steering, spinning speed, axial inclination, landing and takeoff.

3,503,574
FLUID POWER OPERATED VEHICLE GROUPS
Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan
Filed May 27, 1966, Ser. No. 553,364
Int. Cl. B64f *3/00*
U.S. Cl. 244—17.17 **4 Claims**

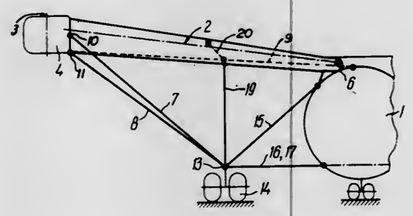


A vehicle group is formed of a flying vehicle and a base unit. Fluid power producing means are positioned in the base unit for supplying pressurized fluid to fluid motors located in the flying vehicle for rotating propulsion elements, such as propellers, which determine the attitude and movement of the flying vehicle. The power producing means and fluid motor are interconnected by fluid passageways for circulating the pressurized fluid to the fluid motor and then returning it to the power producing means. In order to control the attitude and the movement of the flying vehicle bypass conduits and valves are arranged in the flow passageways for varying the flow of pressurized fluid to individual fluid motors and additional control means are provided for regulating the flow of pressurized fluid to the fluid motors. The control means may be positioned in either the flying vehicle or the base vehicle. In some arrangements of the vehicle groups, connecting means are provided between the flying vehicle

and the base unit so that one can be pulled or towed by the other. The connecting means may contain a spring assembly to prevent or at least limit any transmission of uneven movement or vibration between the flying vehicle and the base unit.

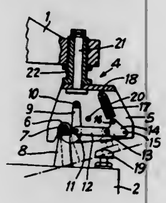
The base unit may be stationary or movable. The flying vehicle may be used as a conveyance for passengers and/or freight or it may be utilized as a crane or lifting device.

3,503,575
HELICOPTER
Mikhail Leontievich Mil, Starokonjushenny pereulok 19, kv. 51, Moscow, U.S.S.R., and Oleg Petrovich Bakhov, Ulitsa Elektrofikatsii 22, kv. 59, Ljubertsy, Moskovskaya oblast, U.S.S.R.
Filed Sept. 13, 1967, Ser. No. 667,583
Int. Cl. B64c *27/08, 25/06*
U.S. Cl. 244—17.17 **3 Claims**



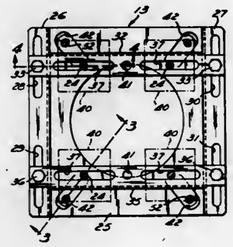
A helicopter having main rotors mounted on the tips of wings, tapered in plan, each wing being pivotally connected by its tapered tip to the fuselage and being additionally linked to the fuselage and landing gear assembly by means of a system of rods. The system of rods comprises three rods connected with the wider tip of each wing, two of which rods converge in the landing gear assembly of the helicopter, while the third one is secured to the tail section of the fuselage and has an additional support with the landing gear assembly and the wing.

3,503,576
AUTOMATIC-RELEASE RETAINING DEVICE FOR JETTISONABLE AIRCRAFT CARGO
Henri Louis Victor Savarieau, Montgeron, France, assignor to R. Alkan & Cie, Paris, France, a corporation of France
Filed Aug. 9, 1968, Ser. No. 751,440
Claims priority, application France, Nov. 10, 1967, 127,709
Int. Cl. B64d *1/12*
U.S. Cl. 244—137 **3 Claims**



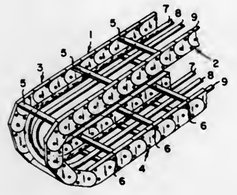
The invention relates to a load jettisoning device for aircraft, in which the release of the forward portion of the load causes the tilting of its rear portion which engages, by a projecting member, a device rigid with the aircraft and retaining the rear portion of the load, thus causing the aperture of this retaining device and the ejection of the load in a determined angular position.

3,503,577
BASE FOR SUPPORTING MACHINERY
Richard E. Martin, Willoughby, Ohio, assignor to Structural Fibers, Inc., Chardon, Ohio, a corporation of Ohio
Filed Apr. 30, 1968, Ser. No. 725,392
Int. Cl. F16m *1/00*
U.S. Cl. 248—23 **7 Claims**



A base adapted to be secured to a curved surface and having a plurality of slots to receive article fastening means, said slots being adjustable laterally to accommodate articles of varying dimensions.

3,503,578
CHAIN FOR SUPPORTING FLEXIBLE CONDUIT
Sam Kurlandsky, Kalamazoo, Mich., assignor to Aero-Motive Mfg. Co., Kalamazoo, Mich., a corporation of Michigan
Filed Aug. 30, 1967, Ser. No. 664,511
Int. Cl. F16l *3/00*
U.S. Cl. 248—51 **23 Claims**

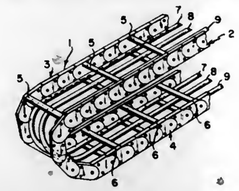


A chain for supporting flexible conduit formed of links, pivotally interconnected at their ends, and having complementary circular sectors providing limiting positions of pivotal movement between the links of the chain, and providing double support at each limiting position to limit or prevent the imposition of shear force at the pivotal point.

3,503,579
CHAIN FOR SUPPORTING FLEXIBLE CONDUIT
Sam Kurlandsky, Kalamazoo, Mich., assignor to Aero-Motive Mfg. Co., Kalamazoo, Mich., a corporation of Michigan
Filed Aug. 30, 1967, Ser. No. 664,512
Int. Cl. F16l *3/00*
U.S. Cl. 248—51 **35 Claims**

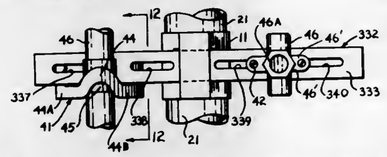
A chain for supporting flexible conduit formed of links, pivotally interconnected at their ends, and having two limit tabs and two complementary arcuate notches

providing limiting positions of pivotal movement between the links of the chain, and providing double support at



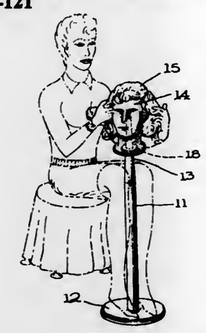
each limiting position to limit or prevent the imposition of shear force at the pivotal point.

3,503,580
UNIVERSAL CONDUIT SUPPORT BRACKET
Erwin Levy, 2728 41st Ave., San Francisco, Calif. 94116
Filed Mar. 25, 1968, Ser. No. 715,672
Int. Cl. F16l *3/12*
U.S. Cl. 248—62 **7 Claims**



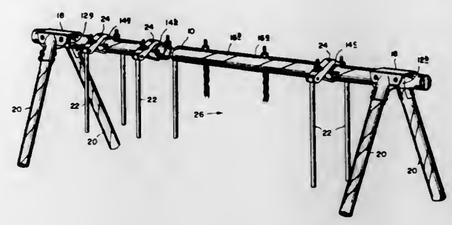
The invention comprises, in combination with a waste pipe or a vent pipe in a building, a split collar adapted to be adjustably fastened in encircling relation about said pipe; said collar being provided with a pair of slots arranged in one wing thereof in spaced relationship to one another, an elongated bracket extendable through said slots of said collar and thereby mountable on said collar in any selected one of a plurality of laterally extendable positions in relation to said pipe, and means adjustably mounted on said bracket for effecting clamping engagement with conduits in the building in proximity to said pipe and extending at various angular relationships thereto.

3,503,581
WIG HEAD STAND
Armand David Rouleau, Leesburg, Va., assignor to Dande Wig Stand Company, Falls Church, Va., a partnership
Filed Oct. 4, 1967, Ser. No. 672,822
Int. Cl. A47g *29/08;* **F16n** *11/02, 11/04*
U.S. Cl. 248—121 **10 Claims**



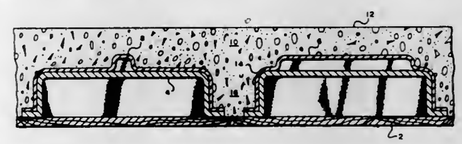
A stand designed to receive a head for a wig with a tapered upper portion which is inserted in a complementary hole in the wig head and a base sufficiently broad to receive feet thereon to maintain the stand in an upright and convenient position between an individual's legs for working on a wig.

3,503,582
PLAY GYM CONSTRUCTION
Raymond Boucher, % Hedstrom Union Company, Dothan, Ala. 36301
Filed Oct. 9, 1967, Ser. No. 673,575
Int. Cl. F16n *13/00;* **A17j** *47/16*
U.S. Cl. 248—370 **3 Claims**



An improved play gym employs a horizontal tube having a plurality of squared-off sections thereon. At least two of these sections are situated adjacent the opposite ends of the tube and a pair of similar leg fittings engage around them. The remaining sections are oriented approximately 90° from the end sections and the active gym elements are suspended from the tube by brackets which removably engage over these remaining tube sections. Each bracket includes a pair of opposed chevron-shaped members which engage opposite sides of the corresponding section and are adjustable toward and away from each other to nonrotatively clamp different diameter tubes.

3,503,583
PROFILED STRUCTURAL CEMENT SLAB FORM
Jan Edward Jester and William James Emerson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,805
Int. Cl. E04g *11/46;* **B28b** *7/34*
U.S. Cl. 249—176 **3 Claims**

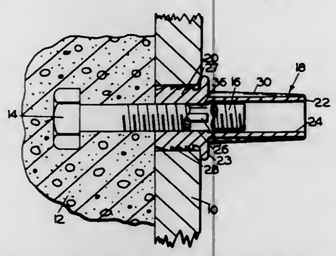


A mold arrangement for casting profile structural cement slabs with the use of a plurality of reinforcing shapes, the shapes being made out of a rigid plastic material which is reinforced.

3,503,584
ANCHOR STUD HOLDING ASSEMBLY FOR CONCRETE FORMS
Allan F. Erhart, Rte. 4, Box 193, Port Orchard, Wash. 98366, and Augustus F. Erhart, deceased, late of Portland, Oreg., by Anina G. Erhart, administratrix, 5715 N. Maryland, Portland, Oreg. 97217
Continuation-in-part of application Ser. No. 445,099, Apr. 2, 1965. This application May 1, 1967, Ser. No. 648,178
Int. Cl. E04g *21/12;* **B28b** *23/00;* **F16b** *37/04*
U.S. Cl. 249—205 **9 Claims**

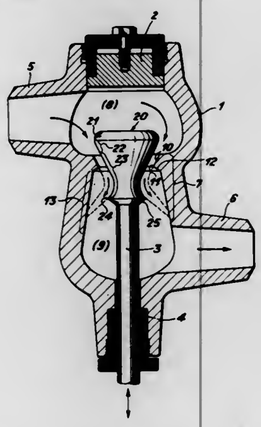
The invention includes an anchor stud holding assembly designed to be attached to concrete forms for holding an anchor stud in place while the concrete wall is being formed. The assembly has a holder arranged to be fric-

tionally but removably engaged in an aperture in the concrete form and having a central bore frictionally holding an anchor stud therein. The portion of the anchor stud to be embedded in the concrete projects from the



holder. The assembly also includes a plug for filling the hole in the form after the holder has been removed, and further includes a wrench for installing and removing the holder.

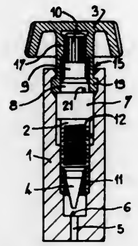
3,503,585
VALVE
Ernst Vogeli, Wiesendangen, Zurich, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Apr. 26, 1968, Ser. No. 724,451
Claims priority, application Switzerland, May 23, 1967, 7,248/67
Int. Cl. F16k *1/12, 47/00*
U.S. Cl. 251—121 **5 Claims**



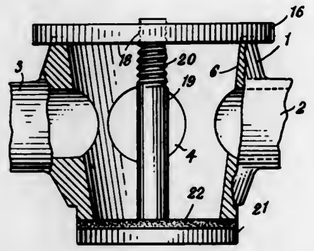
The upper cone surface of the seat zone cooperates with a portion of the valve head of infinite radius of curvature to accelerate the flow while below the external break-off edge the portion of the valve head of diminishing radius of curvature guides the flow from the internal break-off edge towards the conical housing wall to avoid cavitation erosion on the valve head.

3,503,586
VALVES
Maurice Bordes, Saint-Genis-Laval, France, assignor to Application des Gaz, Paris, France, a French joint-stock company
Filed June 7, 1968, Ser. No. 735,210
Claims priority, application France, June 21, 1967, 48,820
Int. Cl. F16k *31/50, 31/60*
U.S. Cl. 251—266 **10 Claims**

In a valve having a closure member actuated by a screw-threaded spindle (e.g. a needle valve), the operating knob is angularly connected with but axially slidable on the end of the spindle and it is formed with a resilient extension which surrounds the spindle, this extension being radially deformable (e.g. by being longitudinally slitted), and the extension carries projections which snap into a groove of the valve body when the knob is pushed on the spindle. The operating knob is thus retained in axial position while being free to rotate.



3,503,587
CLOSURE MEANS FOR VALVE HOUSINGS
William Sedutto, 100 Royal Oak Road, New York, N.Y. 10314
Filed Nov. 28, 1967, Ser. No. 686,118
Int. Cl. F16k *43/00*
U.S. Cl. 251—369 **4 Claims**

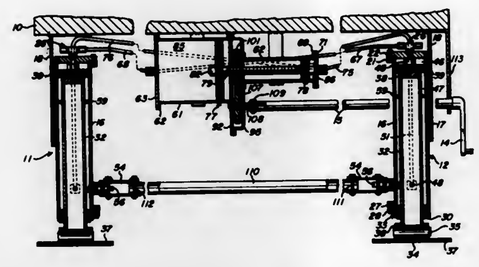


A closure for use on the housing of a valve that is particularly adapted for use in piping and similar arrangements especially in dairy and processing equipment, wherein a hot, strong detergent is forced through the system and which detergent comes into contact with valves in the system. The type of valve under consideration includes a rubber plug which, when brought into contact with the solution, would be likely to become damaged, distorted or otherwise soon rendered unsuitable for use. Hence the present invention contemplates a valve housing closure in the form of a non-corrosive or stainless steel adaptor which is substituted for the rubber plug and with such adaptor used on the valve housing during the cleaning operation. The rubber plug, while detached from the valve, can be separately cleaned with a mild solution of such a nature that it does not harm the plug, and then the plug is substituted for the adaptor after the cleaning operation in the system is completed.

3,503,588
LANDING GEAR FOR SEMITRAILERS
Richard Bach, 243 Roberts St., West Carrolton, Ohio 44615, by Marcella R. Bach, administratrix of said Richard Bach, deceased
Filed May 31, 1967, Ser. No. 642,510
Int. Cl. B60s *9/02;* **F15b** *7/00;* **F16h** *27/02*
U.S. Cl. 254—86 **17 Claims**

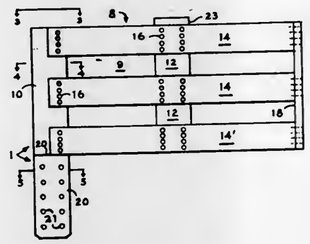
Landing gear for semitrailers wherein the landing gear legs are positively extended and retracted hydraulically,

the hydraulic actuating means comprising double acting cylinder means and dual piston means selectively reciprocated in such cylinder means, the cylinder and piston



means and a simplified means of effecting reciprocation being comprised in an integrated assembly supported beneath the trailer and accessible for remote operation.

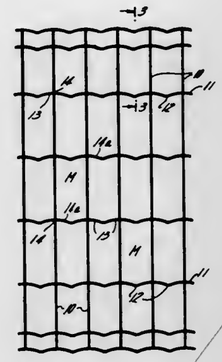
3,503,589
CONSTRUCTION UNIT
Alvin Edward Moore, 916 Beach Blvd., Waveland, Miss. 39576
Filed Apr. 22, 1968, Ser. No. 722,979
Int. Cl. E04h *17/14;* **E02b** *3/20*
U.S. Cl. 256—19 **12 Claims**



A sheet pile or construction element of a canal, channel, seawall, boat-house foundation, earth-retaining wall, basement or other house wall, or fence, at least part of which is positioned in the ground. Although it optionally may have an entirely straight, horizontal lower edge, driven into the earth, it preferably has at least one vertically elongated wooden or concrete post or pile part or relatively small cross-sectional area that is sunk into the ground and is fixed to a wide panel, which optionally may be either imbedded in or clear of the ground. The unit has a tongue and a groove for interconnecting (and optionally interlocking) with other units.

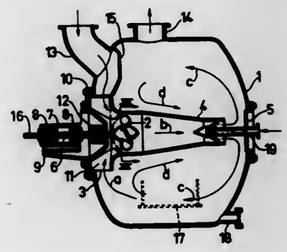
3,503,590
MESHED FENCING
Paul Henri Buysens, Outryve, Belgium, assignor to Trefileries Leon Bekaert P.V.B.A., Zwevegem, Belgium
Filed Oct. 9, 1967, Ser. No. 673,779
Claims priority, application Belgium, Apr. 14, 1967, 714
Int. Cl. B21f *27/10*
U.S. Cl. 256—32 **5 Claims**

Meshed fencing for residential and industrial uses in the form of a roll having reinforcing selvedges at both its ends, a crimp bulge being provided at the center of the upper and lower extremities of each mesh so that



when the fencing is unrolled into flat condition, it is imparted with a certain elasticity for proper stretching while being secured or fixed to conventional means.

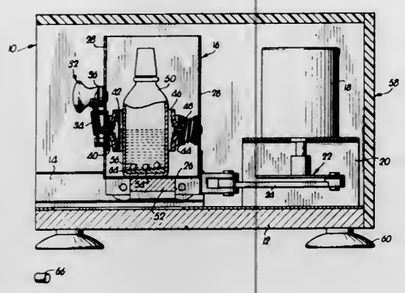
3,503,591
MIXING APPARATUS
Karl Erik Bergstedt, Timra, Sweden, assignor to Sunds Aktiebolag Sundsbruk, Sundsvall, Sweden
Filed Feb. 2, 1968, Ser. No. 702,580
Claims priority, application Sweden, Feb. 27, 1967, 2,701/67
Int. Cl. B01f *7/02, 5/12, 15/02*
U.S. Cl. 259—25 **6 Claims**



The apparatus according to the invention comprises a container for receiving the material, said container being provided with at least one inlet, debouching into the interior of the container and intended for material, and at least one outlet for treated material. The substantial characteristic features of the apparatus consist therein that within the container there is provided, on one hand, at least one pump means, preferentially in the shape of a pump wheel, said pump means communicating with the inlet for the material, and on the other hand, a casing, entirely or substantially entirely enclosing the pump wheel and preferably being in the shape of a sleeve, said casing being adapted to receive and to direct the flow of material, generated by the pump wheel, towards a plate-like surface, provided within the container or formed in the wall proper of the container, said surface extending substantially at right angles to the direction of movement of the flow of material and/or to the axial direction of

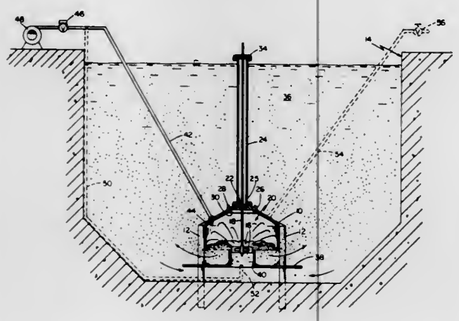
the sleeve-like casing, and also at least one means extending into the container and serving for supplying chemicals to the material introduced into the container.

3,503,592
LIQUID AGITATOR
George R. Taylor, Sr., and Urcy B. Taylor, 3125 Poplar, Kansas City, Mo. 64128
Filed Sept. 18, 1968, Ser. No. 760,509
Int. Cl. B01f *11/00, 13/08*
U.S. Cl. 259—91 8 Claims



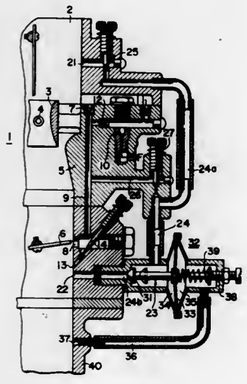
Apparatus for agitating liquid in a container including a frame provided with a track comprising a pair of spaced, parallel rails. A carriage is reciprocated along the rails by an eccentric driven by an electric motor. A container is carried in upright position on the carriage, and a ferromagnetic slug within the container is attracted toward the bottom of the container by a magnet mounted on the carriage beneath the container. Reciprocation at a speed which causes limited relative movement between the magnet and slug results in agitation of the settleable constituent of the liquid.

3,503,593
APPARATUS FOR PROMOTING DISSOLVING OF GAS IN LIQUID
George L. Nelson, Westwood, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 672,031, Oct. 2, 1967. This application June 4, 1969, Ser. No. 830,378
Int. Cl. B01f *3/04, 7/16*
U.S. Cl. 261—29 6 Claims



Apparatus for promoting dissolving gas in liquid has an impeller housing forming a chamber having its bottom at least about 12 feet below the surface of the liquid and exposed thereto, the chamber being capable of holding therein a body of gas under pressure up to the hydrostatic head of external liquid. The gas is supplied to the chamber to maintain a desired pressure of at least about 5 p.s.i. in the chamber. The impeller operates in the liquid exposed to the chamber to agitate and circulate it in and out of the chamber to expose it to the gas. At the superatmospheric pressure involved, dissolution of the gas takes place at a greatly increased rate. Control of the pressure enables control of the liquid level with respect to the impeller.

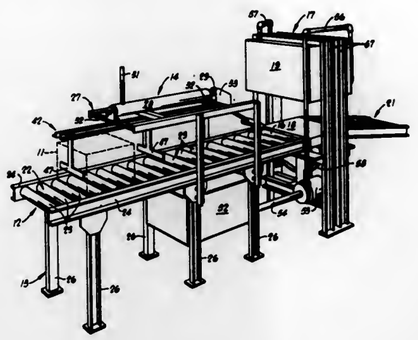
3,503,594
FUEL SYSTEM
Kenji Goto, Toyota-cho, Toyota-shi, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-cho, Toyota-shi, Aichi-ken, Japan, a corporation of Japan
Filed Aug. 21, 1968, Ser. No. 754,180
Claims priority, application Japan, Aug. 28, 1967, 42/54,814
Int. Cl. F02m *7/12*
U.S. Cl. 261—41 5 Claims



A carburetor for automobiles has an idle and low-speed pneumatic circuit for idling or running operation at the low speed of the engine. This pneumatic circuit consists of a series of openings and holes formed in the carburetor body which connect between an upper part of the carburetor air intake passage and ports below the throttle valve. To supply an air-fuel mixture of satisfactory richness for deceleration of the automobile by the engine brake, there is provided another pneumatic circuit which connects between an opening in the intake passage wall above the throttle valve and an opening below the throttle valve and the idle and low-speed pneumatic circuit has a branch line leading into this circuit. In this circuit there is provided a valve whose opening is controlled and is dependent upon the vacuum in the intake manifold.

3,503,595
HEATING APPARATUS WITH CONVEYOR
Robert Olson, 404 N. Main, Hillsboro, Kans. 67063, and Roy Mitchell, 924 N. 1st, Ponca City, Okla. 74601
Filed July 1, 1968, Ser. No. 741,670
Int. Cl. F27b *9/18*
U.S. Cl. 263—6 9 Claims

The present invention contemplates apparatus useful in applying uniform heat to a series of workpieces and includes an elonagted conveyor means upon which the workpieces are moved. A heating enclosure is provided which cooperates with a vertically movable heated platform which in its lowermost position is adjacent the discharge end of the conveyor to receive workpieces therefrom. Means are provided for moving the heated platform with a workpiece thereon into a position relative to the heating enclosure such that the workpiece is totally enclosed by heat radiating surfaces. Ram means are provided and are operated in timed relationship with the movable platform to move workpieces serially onto the surface of the platform.



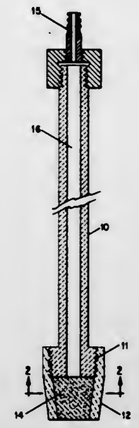
3,503,596
CORROSION INHIBITION BY HEAT TREATMENT
George R. Weber, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 25, 1967, Ser. No. 678,491
Int. Cl. F27b *5/00*
U.S. Cl. 263—52 6 Claims



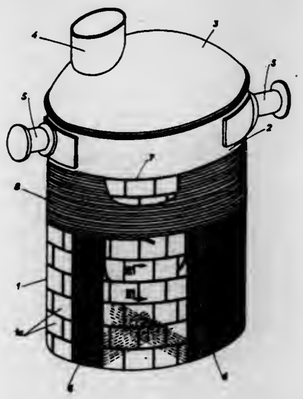
A process for inhibiting the corrosion of a metal object according to which the object is autoclaved for a time period of at least 72 hours in order to inhibit the autotrophic agents associated with the corrosion.

3,503,597
METAL TREATING DEVICE
Harry H. Kessler, 7 Dromara Road, Clayton, Mo. 63105, and William H. Moore, Meadow Lane, Purchase, N.Y. 10377
Filed Feb. 20, 1967, Ser. No. 617,364
Int. Cl. C21c *7/00;* B05b *1/14*
U.S. Cl. 266—34 1 Claim

A readily movable and portable gas insufflating device for stirring molten metal which includes an elongated member or tube with a gas opening therethrough into which gas in introduced through a gas connection at one end of the tube and a readily detachable holder secured to the other end of the tube and holding a gas permeable ceramic refractory plug which is in communication with the gas opening at one of the ends and which has its other end exposed for contact with the molten metal.



3,503,598
COMPOSITE METAL VESSEL
Louis Babel, Sauvigny-les-Bois, and André Girard, Nevers, France, assignors to Societe Metallurgique d'Imphy, Paris, France, a company of France
Filed Nov. 8, 1967, Ser. No. 681,348
Claims priority, application France, Nov. 28, 1966, 85,252
Int. Cl. C21c *7/00;* H05b *5/02*
U.S. Cl. 266—39 4 Claims

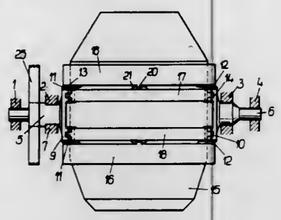


A composite metal vessel, fluid-tight and refractory, and more particularly a ladle with a cylindrical envelope for the treatment of metals in the melted state, characterised in that the vessel is constituted, in the heating zone, by assembling profiled metal elements made of a non-magnetic, refractory alloy, for example an austenitic steel, by means of tenons and mortices on these elements, and these elements are electrically insulated from each other by an insulating, refractory seal constituted by a heat-setting cement injected in a substantially liquid state into the continuous interstices between the assembled metal elements.

3,503,599
MOUNTING FOR METALLURGICAL CONVERTER

Wolfgang Janssa, Moers-Asberg, Siegfried Stresemann, Rheinhausen, and Günter Schmitz, Rumeln-Kaldenhausen, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany

Filed Aug. 11, 1967, Ser. No. 660,002
Claims priority, application Germany, Aug. 16, 1966, D 50,857
Int. Cl. C21c *5/46, 5/50*
U.S. Cl. 266—36 11 Claims



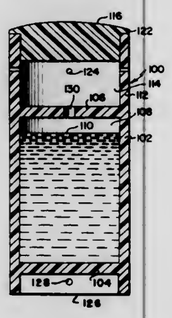
A mounting for a metallurgical converter includes a first mounting pin which advantageously carries the tilt drive gear and which is rotatably mounted in an axially fixed position. A second driving pin is mounted opposite the first at a spaced location therefrom and may be axially moved toward and away from said first pin in its supporting bearing in order to permit the placement and removal of a converter between the pins. Each pin includes end flanges with both horizontal and vertical projections which interengage in corresponding horizontal and vertical recesses defined on the exterior surface of the converter to support the converter for rotatable pivotal or tilting movement.

A further feature of the construction is the provision of members which extend around each side of the converter and interconnect the supporting flange portion of the first pin with the supporting flange portion of the second pin on each side and top and bottom thereof in order to provide an articulated joint so that the ends and the bearings therefor will be able to absorb all frictional forces acting on the pins in the event of a change in volume of the converter due to temperature changes.

3,503,600
LIQUID SHOCK ABSORBING BUFFER

John W. Rich, 3224 Churchill Road, Sacramento, Calif. 95825

Filed Aug. 30, 1967, Ser. No. 664,333
Int. Cl. F16f *5/00, 9/08*
U.S. Cl. 267—1 20 Claims

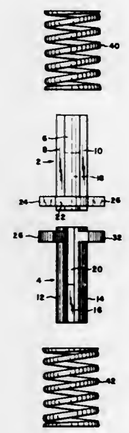


An impact absorbing resiliently deformable body having a chamber, an additional chamber which may have plastic chips therein, a plurality of passageways communicating between the chambers, liquid in the first chamber which may be covered with a nonevaporative liquid, and the composite buffers made up of a plurality of such bodies, for transferring the kinetic energy of a moving body to the liquid in such chambers is disclosed.

3,503,601
AXIAL SPRINGS LOADED IN PARALLEL

Joseph W. Wells, Bristol, Conn., assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware

Filed Oct. 20, 1967, Ser. No. 676,938
Int. Cl. F16f *3/00*
U.S. Cl. 267—1 2 Claims

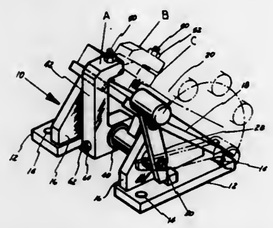


A spring assembly comprising two or more helical compression springs arranged in axial alignment, each of which is mounted on a ferrule, the ferrules being oppositely directed and telescopically arranged, whereby all of the springs are simultaneously loaded when a compressive force is applied to the device, thus providing the additive loading of springs arranged in parallel.

3,503,602
WORK-HOLDING CLAMP

William A. Waara, Detroit, Mich., assignor to Visi-Trol Engineering Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 16, 1967, Ser. No. 609,676
Int. Cl. B25b *1/08, 1/00*
U.S. Cl. 269—235 7 Claims

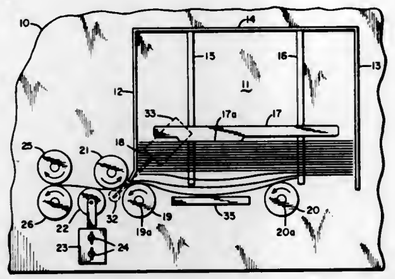


A cam-actuated clamp having a rotatable shaft with an eccentric, cylindrical cam section providing a circumferentially slidable bearing surface for a clamping arm. Rotation of the shaft pivots the clamping arm from an inoperative position to an intermediate position wherein the work-engaging end of the clamping arm is radially spaced from the work piece relative to the axis of rotation. Continued rotation of the shaft causes the cam section to move the clamping arm radially into engagement with the workpiece.

3,503,603
FRICTION FEED DEVICE

Thomas Dvorak, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 27, 1968, Ser. No. 708,557
Int. Cl. B65h *3/30*
U.S. Cl. 271—23 8 Claims

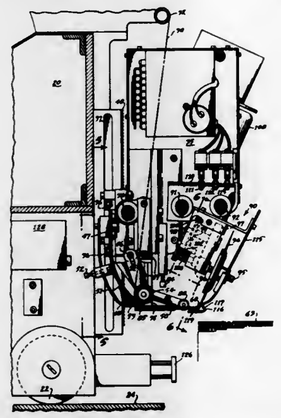


A document feeder is provided in which a first friction roller contacts the document stack near its trailing edge and a second friction roller having a lower peripheral velocity contacts the document stack near the leading edge thereof. The difference in peripheral velocities of the two rollers causes the lead document of the stack to bow outwardly from the stack and to thus separate the documents. A third reversely driven friction roller located on the stack side of the document transport path and down the path from the second friction roller acts to shear from the lead document any subsequent documents.

3,503,604
CUTTING APPARATUS FOR CLOTH SPREADING MACHINE

Thomas W. Martin and Albert F. Warner, Nashville, Tenn., assignors to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee

Filed July 24, 1967, Ser. No. 655,407
Int. Cl. B65h *29/46;* B26d *1/18*
U.S. Cl. 270—31 9 Claims

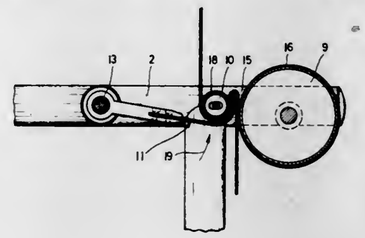


A transversely reciprocating cutter mounted on the mobile frame of a cloth spreading machine and cooperating with a spreader blade in order to cut the cloth after a layer of cloth has been spread. The spreader blade is also adapted to cooperate with a catcher mechanism for removing the cut end of the cloth from the spreader blade.

3,503,605
FABRIC SPREADING MACHINE WITH WEB THREADING MEANS

Gunter O. Stumpf, Mehrstetten, Kreis Munsingen, and Hermann Eppinger, Munsingen, Germany, assignors to Bullmerwerk Karl Bullmer, Mehrstetten, Kreis Munsingen, Germany

Filed May 6, 1968, Ser. No. 726,700
Claims priority, application Germany, May 31, 1967, B 92,810
Int. Cl. B65h *29/46, 23/00*
U.S. Cl. 270—31 10 Claims

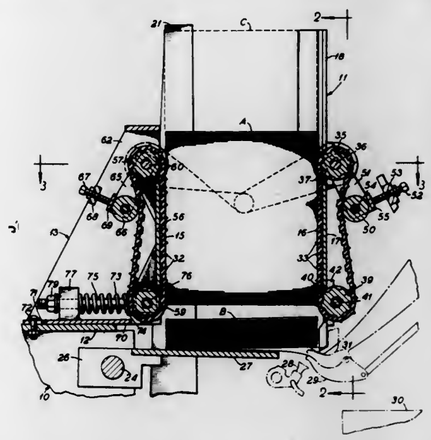


A fabric spreading machine having a reciprocally movable carriage carrying a roll of fabric to be unwound and a pivotable guide bar which serves to introduce the free end of the roll of fabric to the space between an idler and an unwinding roll carried by the carriage to cause the free end to be engaged and transported by the unwinding roll.

3,503,606
SIGNATURE FEEDER

Joseph M. Castellanet, 15207 Colina, Oak Forest, Ill. 60452

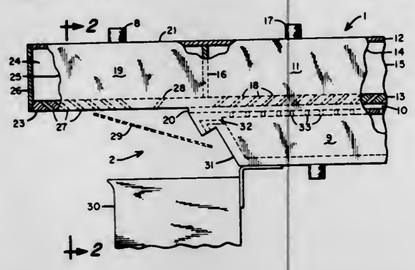
Filed Jan. 30, 1968, Ser. No. 701,675
Int. Cl. B65h *1/14*
U.S. Cl. 271—61 10 Claims



Feeder for retaining a relatively high stack of aligned sheets in a vertically extending hopper and feeding the sheets to successively drop one from the bottom of the hopper into a low stack for withdrawal. Two facing relatively narrow resilient endless belts extend between two

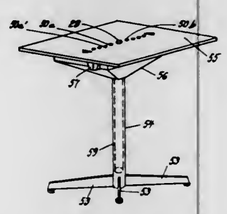
side walls of the hopper and are pressed into engagement with opposite sides of the stack of sheets in the hopper, to support the stack of sheets so they will arch about the center of the stack to give the stack the beam strength to allow the belts to support a relatively high stack of sheets. The endless belts are simultaneously driven in the same direction and release the sheets to drop onto a table beneath the hopper into a relatively low pile, where they may readily be jogged and picked up by a conventional mechanical pick-up means.

3,503,607
PNEUMATIC DOCUMENT STACKING DEVICE
Richard S. Gluskin, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1967, Ser. No. 693,920
Int. Cl. B65h *29/24*
U.S. Cl. 271—63 **6 Claims**



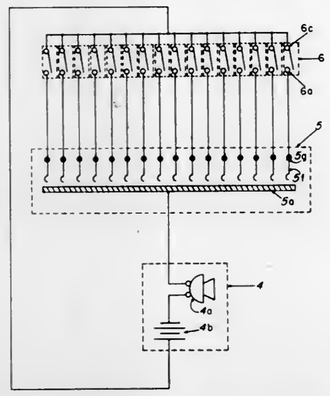
A pneumatic stacker mechanism is disclosed for a document feeder. Documents transported down the document feeder path encounter a series of reverse direction fluid jets located aft the exit point of the feeder mechanism. The reverse direction jets arrest the document motion and start the document back toward the feeder exit point. A document deflection jet means associated with the reverse direction jets deflects the document downwardly toward a stacker receptacle and the reverse direction jets together with the deflection jet means then act on the document to quickly force the document into the stacker receptacle. A fluid jet curtain located above the stacker receptacle acts to assist the reverse direction jets in guiding the document into the stacker receptacle.

3,503,608
REACTION TYPE GAME APPARATUS
Klaus Johannes Ylinen, Freigatan 13, Stockholm, Sweden
Filed Feb. 20, 1967, Ser. No. 617,299
Claims priority, application Sweden, Mar. 25, 1966, 3,998/66
Int. Cl. A63b *67/00*
U.S. Cl. 273—1 **2 Claims**



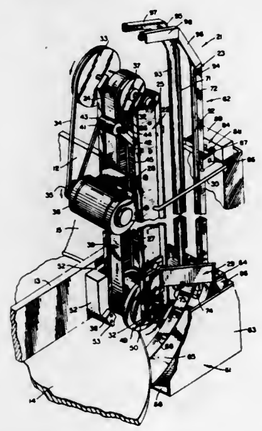
A combined serving and gaming table has a gaming device by which two competitors can compare their reaction times. When a light flashes, each competitor presses a button; and the first one to press the button illuminates one of a series of lights on his side of the table. The game is over when one player illuminates the last light of his series.

3,503,609
ELECTRIC AMUSEMENT GAME
Vincent Wojdat, 18 Woodbury Road, Hauppauge, N.Y. 11787
Filed Feb. 27, 1967, Ser. No. 618,878
Int. Cl. A63b *67/00*
U.S. Cl. 273—1 **1 Claim**



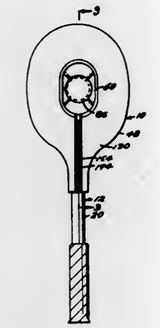
A plurality of switches are arranged on a playing board. Each of the switches is connected at one side to one side of a pattern sheet controlled selector switch, and at the other side through an energizer and an alarm to the other side of the pattern sheet controlled selector switch. When a given switch is manually closed, if the respective contacts of the selector switch are in communication through the pattern sheet, the alarm will sound.

3,503,610
BALL LIFT FOR PINSETTING MACHINE
Donald E. Trubey, 34 Depot St., Westford, Mass. 01886
Filed June 22, 1966, Ser. No. 559,452
Int. Cl. A63d *5/02*
U.S. Cl. 273—43 **4 Claims**



A ball separating and lifting means for use in a bowling pinsetting machine used in conjunction with a bowling game where the diameter of the ball exceeds the diameter of the pins. The means comprises two basic elements, a ramp member located in and on the wall of the pit at the rear of a bowling alley and a rotating member located above the pit floor at a distance sufficient to permit pins to pass freely thereunder. The balls are forced to assume a predetermined path adjacent the edge of the floor and are carried by the motion of the pit floor into contact with the rotating member. Upon contact with the rotating member the balls are forced sideways and upwardly from the predetermined path into a ball elevator. A blocking member is provided to prevent any ball which for any reason deviates from the predetermined path from coming into contact with the rotating member. The rotating member includes an elevating belt pulley and a flexible disk mounted on a common shaft, with the pulley mounted ahead of the disk relative to the direction of travel of the bowling balls.

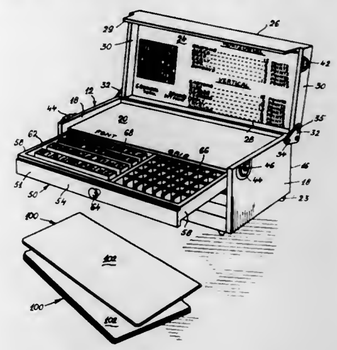
3,503,611
PRACTICE RACKET
Frances A. McPherson, Madison, Wis. (20 Edgewood Road, Durham, N.H. 03824)
Filed Oct. 24, 1965, Ser. No. 504,650
Int. Cl. A63b *61/00, 69/38*
U.S. Cl. 273—29 **5 Claims**



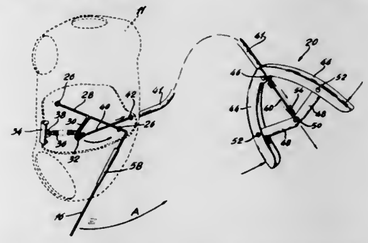
A racket for tennis and other games using a ball. The racket has a pouch for catching the ball, the pouch portion has an attached cover and bag fitted on two sides of an annular portion of the racket frame so that a standard tennis racket can be used without strings. The pouch is provided with an opening for receiving therethrough the handle of a tennis racket and the cover portion of the pouch is provided with a centrally located hole for passage of a ball which is caught and retained by the bag portion of the pouch.

3,503,612
WORD FORMING GAME APPARATUS
Nat Singer, 35 McClellan St., Bronx, N.Y. 10452
Filed Aug. 22, 1967, Ser. No. 662,390
Int. Cl. A63f *3/00*
U.S. Cl. 273—130 **2 Claims**

A kit for housing gameboards and playing pieces therefor having a hollow compartmented body with gameboards removably mounted in the compartments, each gameboard having a recess for removably receiving a frame for playing pieces and a grid for removably receiving said playing pieces. An easel is foldably mounted on each gameboard adapted to support the gameboard at a slight angle to the horizontal when seated on a supporting surface. Shields are provided for concealing the gameboards from opponents and an index sheet is provided for indicating point values of words and for indicating playing pieces to be used by the players



3,503,613
SIMULATED GOLFER
Salbe E. Caya, Jacques Cartier, Chambly, Quebec, Canada, assignor of fifty percent to Armand Caya, Jacques Cartier, Chambly, Quebec, Canada
Filed May 25, 1967, Ser. No. 641,371
Int. Cl. A63f *7/06*
U.S. Cl. 273—87.4 **1 Claim**

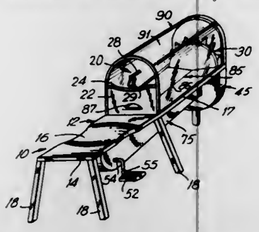


A simulated golfer consisting of a standing figure having a rod passing from the back to the front of the lower part of the body of the figure and extending forwardly and downwardly into a golf club shaft. The rod is solidly connected inside the body to a transverse member which is pulled by a spring to provide a rotation of the rod in one direction and by a cable slidably actuated by a handle to rotate the rod in the other direction so as to obtain a pendulum movement of the golf club. The handle member consists of two handles pivotally connected together at one end and connected together by a pair of pivoted links at their midpoints. The sheath of the cable is connected to the handle at the pivotal connection and the cable is connected to the links. A spring biases the links towards the pivotal connection. Upon squeezing the handles the spring is lengthened and the cable is moved relative to the sheath.

3,503,614
TOY SHOOTING GALLERY
Leonard W. Suroff, 12 Tompkins Ave., Jericho, N.Y. 11753, and Hyman Suroff, 254 E. 56th St., Brooklyn, N.Y. 11203
Filed Dec. 22, 1967, Ser. No. 692,858
Int. Cl. F41j *9/00*
U.S. Cl. 273—101 **2 Claims**

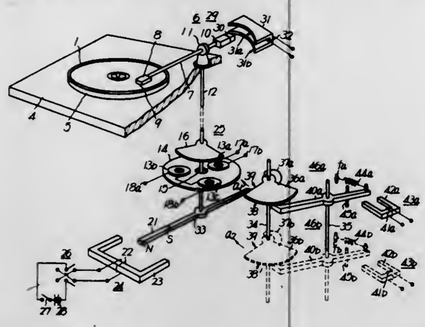
The specification discloses an amusement device in the form of a toy which may be used by a child or adult, to measure his skill and accuracy in marksmanship with

a movable target. The user is seated on a support in front of a target assembly which contains a movable target thereon that may be of a knock down type. Drive means in communication with the support and target assembly is provided for moving the target in a given direction, as by rotation of foot pedals, causing the target



to move at a speed in relation to the speed of rotation of the pedals. To project a missile or pellet against the target a gun is mounted in communication with the support stand, in easy reach of the user, for firing at the target assembly. Means for retrieving the pellets, and shield means to contain the missiles in a confined area, may also be provided.

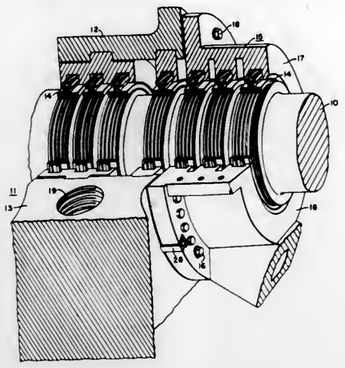
3,503,615
RECORD PLAYER
Hitoshi Matsuda, Tokyo, Japan, assignor to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Jan. 11, 1967, Ser. No. 608,583
Claims priority, application Japan, Jan. 19, 1966, 41/2,946
Int. Cl. G11b *17/08*
U.S. Cl. 274—10 **11 Claims**



A record player including means for detecting and memorizing the angular position of a pickup arm which means consist of a movable part affixed to the rotary shaft of the pickup arm and a stationary part disposed opposite to the movable part so that the parts cooperate with each other to produce an electric signal to memorize an angular position of the pickup arm at which the pickup arm is to begin playing, the foregoing parts also cooperating to help bring the pickup arm back to the memorized position to start playing.

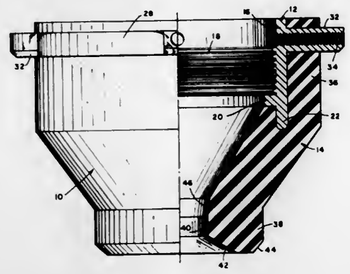
3,503,616
ECCENTRIC BUSHING FOR GLAND CASE KEYS
Herbert A. Hickey, Philadelphia, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1967, Ser. No. 693,470
Int. Cl. F16j *15/44*
U.S. Cl. 277—4 **6 Claims**

In the construction of a steam turbine having shaft seal rings mounted in a gland case attached to the end of the turbine casing, a plurality of gland case key assemblies are used to permit radial expansion and maintain proper clearance between the turbine rotor shaft and



the seal rings. An eccentric bushing is provided in each key assembly to make it unnecessary to hand fit the key in the gland case during assembly.

3,503,617
STRIPPER PACKER UNIT
Bob Williams, 823 Cavanaugh Road, Fort Smith, Ark. 72901
Filed Aug. 28, 1967, Ser. No. 663,839
Int. Cl. F16j *15/32, 15/56*
U.S. Cl. 277—9 **5 Claims**

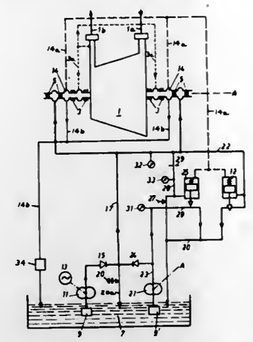


A stripper packer unit for rotary drilling rigs, and the like, wherein a rubber packing or stripper element is bonded to a support ring member. The support ring may be quickly and easily threaded onto a drilling head assembly or the like, thus facilitating the installation and/or replacement of the stripper packer unit on the drilling head.

3,503,618
ARRANGEMENT FOR ENSURING SUPPLY OF PRESSURIZED SEALING FLUID TO SHAFT SEALS OF HIGH PRESSURE MACHINES TO PREVENT GAS LEAKAGE IN EVENT OF FAILURE OF MAIN OIL PUMP
Paul Real, Schlieren, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Nov. 20, 1967, Ser. No. 684,120
Claims priority, application Switzerland, Dec. 23, 1966, 18,546
Int. Cl. F16j *15/40, 15/00*
U.S. Cl. 277—15 **5 Claims**

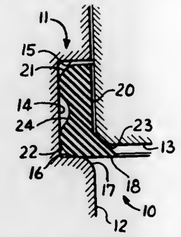
An arrangement for delivering pressurized oil to seal structures for the shaft of a rotary high pressure gas machine to prevent escape of gas from the machine along the shaft surface comprises a main oil pump for normally

supplying the oil seals at the desired pressure level and an auxiliary oil pump for supplying the oil seals in the event of a failure of the main oil pump. The auxiliary oil pump, which is thus used only in an emergency to take over the function of supplying the oil seals, is continuously driven from the shaft of the machine but runs in an essentially unloaded condition while the main oil



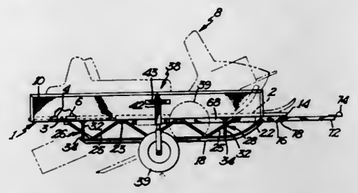
pump is operating normally, all of the oil handled by the auxiliary pump being returned to the oil sump under this condition. However, in event of a failure of the main oil pump, pressure is caused to immediately build up on the discharge side of the auxiliary pump and flows from the same into the oil feed supply lines leading to the oil seals.

3,503,619
SEALING GASKET
Lucien Jean Hainneville, Cleon-par Saint Aubin les Elbeuf, France, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,693
Claims priority, application France, Sept. 14, 1965, 31,299/65
Int. Cl. F16j *15/32, 15/54*
U.S. Cl. 277—208 **7 Claims**



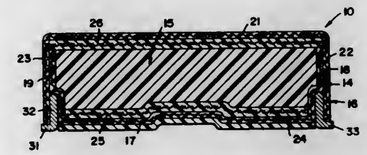
1. A joint assembly comprising, in combination, a member having a bore, a cylindrical member spaced from and movable within said bore, said bore and said cylindrical member providing cylindrical adjoining faces, one of said members having a peripheral gasket channel adjacent to and facing said other member, said gasket channel including two planar end walls, and a sealing gasket of deformable material retained within said gasket channel, said sealing gasket having an elongate cross-section, the smaller dimension of which is perpendicular to the adjoining faces of said members, and having an annular tongue of generally triangular cross-section, said tongue including a first edge face that is flush with one edge of said gasket and perpendicular to the adjoining faces of said members and a second edge face that intersects said first edge face at an acute angle, said tongue protruding radially beyond said channel with said first edge face engaging one of said two planar end walls and said second edge face engaging said other member, said tongue being displaced relative to said channel by said other member, whereby a portion of said gasket adjacent said tongue and intermediate said elongate cross-section is urged into sealing contact with said other member.

3,503,620
MULTIPLE PURPOSE TRAILER CONVEYANCE
Jerome E. Koskovich and Bernard A. Koskovich, both of Winthrop, Minn. 55396
Filed Nov. 6, 1967, Ser. No. 680,626
Int. Cl. B62b *13/18;* **B60d** *1/14*
U.S. Cl. 280—11 **4 Claims**



A trailer vehicle having an elongated, load-carrying chassis supported on runners is provided with wheel assemblies located radially outwardly beyond the sides of a platform mounted on the chassis, each of the wheel assemblies including a wheel which may be removed or shifted out of contact with the ground. A drawbar connected to the trailer is comprised of two sections which may be closely coupled as a rigid unit for connection to the rear of an automobile or coupled in an extended position in which one of the sections may pivot about a horizontal axis when the trailer is drawn behind a snowmobile.

3,503,621
FIBER GLASS SKI WITH CHANNEL CONSTRUCTION
Klaus D. Schmidt, San Francisco, and Merritt A. Robinson, San Anselmo, Calif., assignors to Kimball-Schmidt, Inc., San Rafael, Calif., a corporation of California
Filed May 8, 1968, Ser. No. 727,569
Int. Cl. A63c *5/12*
U.S. Cl. 280—11.13 **1 Claim**

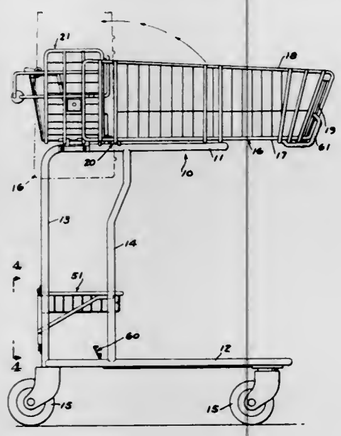


A fiber glass ski having two lengthwise members at least one of which has a molded-in camber and a U-shaped channel construction, the ski being filled with a plastic foam material. When both members are provided with a U-shaped channel construction the members are telescoped together. Steel edges can be inserted along the length of the ski with portions of said edges being disposed between the telescoped side walls of the ski members.

3,503,622
SUPERMARKET CART
Victor R. Romero, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich., a corporation of Michigan
Filed Nov. 7, 1967, Ser. No. 681,133
Int. Cl. B62b *3/02, 3/04*
U.S. Cl. 280—33.99 **46 Claims**

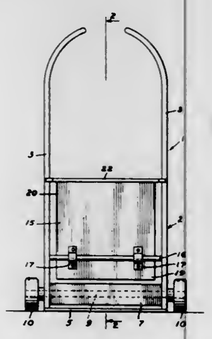
A supermarket cart comprises a supporting frame with spaced upright stanchions and forwardly projecting inwardly tapered bars forming upper and lower supports

open at one side to adapt them to telescope and nest in the frame of other carts, one within the other. Wheels depend from the frame to adapt it to be rolled from one location to another. A fixed receptacle is rigidly mounted on the upper support at the rear thereof and a forwardly projecting movable receptacle is hingedly mounted on the upper support of the frame forwardly of the fixed receptacle. The fixed receptacle includes side walls, a bottom wall and a rear wall having spaced leg receiving open-



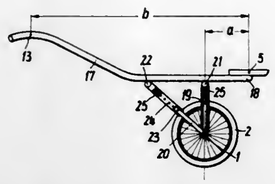
ings for a baby. A panel is movably mounted on the rear receptacle for movement from a position wherein it covers the leg receiving openings to a position forwardly where it forms a seat back for a baby seated in the receptacle on the bottom wall thereof. Truss means are provided between the stanchions, and cantilever means support a package tray in a forwardly extending position on the truss means. Bumper elements are provided at the forward end of the movable receptacle.

3,503,623
HAND TRUCK
Henry C. Mun, 162 7th St., Oakland, Calif. 94606
Filed May 31, 1968, Ser. No. 733,700
Int. Cl. B62b *1/04*
U.S. Cl. 280—47.28 **2 Claims**



A hand truck having, in addition to a usual plate for carrying loads, an auxiliary swingable platform for carrying long articles arranged thereon longitudinally in respect to the direction of the truck's travel.

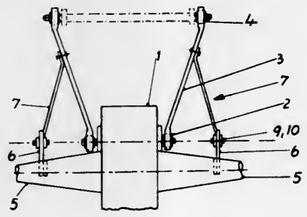
3,503,624
SULKY
Walter Weber, 25/II Clemensstrasse, Munich, Germany, and Herbert Templin, Heiligendorf, near Wolfsburg, Germany
Filed May 19, 1967, Ser. No. 639,894
Claims priority, application Germany, May 26, 1966, W 41,670
Int. Cl. B62d *61/00;* **B62c** *1/08*
U.S. Cl. 280—64 **7 Claims**



A sulky normally does not provide for variations in weight between different riders, and this is achieved in the invention by using struts between the frame and the axles which are pivotably adjustable so as to vary the angle between them.

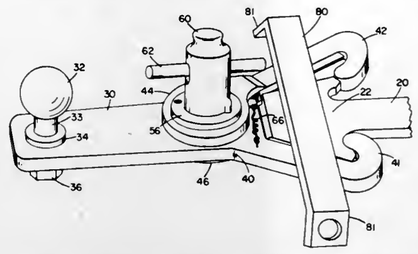
A modification of the invention provides for a single strut between the frame and each axle, the said strut being pivotable and held in position by bracing members. Shock-absorbing means are also provided.

3,503,625
LATERAL BRACE FOR THE LOWER LIFT GUIDE RODS OF TRACTORS OR THE LIKE
Hubert Müller and Hermann Fendt, Marktoberdorf, Germany, assignors to Xaver Fendt & Co., Marktoberdorf, Germany
Filed June 11, 1968, Ser. No. 736,107
Claims priority, application Germany, July 26, 1967, F 53,066
Int. Cl. B60d *1/00;* **A01b** *3/24*
U.S. Cl. 280—474 **20 Claims**



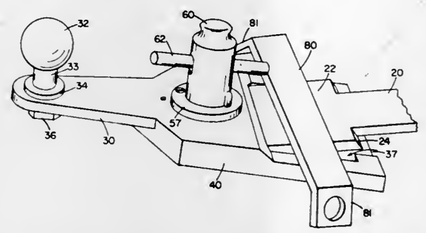
A lateral brace arrangement for the lower lift guide rods of a tractor or like vehicle, which provides for the selective limitation or complete preclusion of lateral motion of an implement connected to the lower lift guide rods. The brace includes pivoted strut sections connected, on each side of the vehicle, at one end of the lower lift guide rod, and at the other end, to a part of the tractor body. The present invention provides for the relatively-movable pivot axis of the pivoted strut sections to include, in its path of motion, a point at which said pivot axis is coaxial with the axis of the fulcrums at which the lower lift guide rods are attached to the body of the tractor and, further, provides for the selective locking of the strut sections in such a position. The present invention further provides suitable control means for remotely operating the selective locking means from a position in the region of the driver's seat of the vehicle.

3,503,626
TRAILER HITCH TONGUE AND MOVABLE JAW COUPLER ASSEMBLY
Robert D. Lowry and Russell B. Strout, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Filed Mar. 26, 1968, Ser. No. 716,100
Int. Cl. B60d *1/06, 1/00*
U.S. Cl. 280—491 **6 Claims**



A trailer hitch has a short coupler for attachment to a tongue permanently mounted on the rear end of a driving vehicle and presenting on its rear portion the conventional ball for attachment of the trailer. The coupler is disengageable. The coupler has a fixed jaw and a moveable jaw with the latter being rotated into a locking position by a cam.

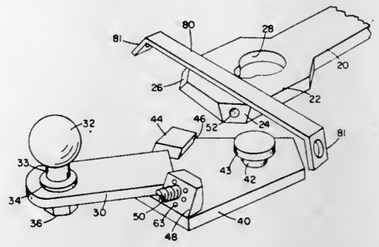
3,503,627
TRAILER HITCH TONGUE AND COUPLER ASSEMBLY
Robert D. Lowry and Russell B. Strout, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Filed Mar. 26, 1968, Ser. No. 716,170
Int. Cl. B60d *1/06, 1/00*
U.S. Cl. 280—491 **4 Claims**



A trailer hitch has a short coupler for attachment to a tongue permanently mounted on the rear end of a driving vehicle and presenting on its rear portion the conventional ball for attachment of the trailer. The coupler is disengageable. The tongue fits into an oversized socket in the coupler and is locked therein by a camming slide plate.

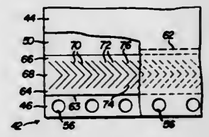
3,503,628
BAYONET TYPE TRAILER HITCH TONGUE AND COUPLER ASSEMBLY
Robert D. Lowry and Russell B. Strout, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Filed Mar. 26, 1968, Ser. No. 716,171
Int. Cl. B60d *1/00, 1/06*
U.S. Cl. 280—491 **4 Claims**

A trailer hitch has a short coupler for attachment to a tongue permanently mounted on the rear end of a driving vehicle and presenting on its rear portion the conventional ball for attachment of the trailer. The coupler is disengageable. The tongue has a bayonet slot for receiving an upstanding pin on the coupler and the tongue



and coupler are locked together by a relative angular rotation and are held in aligned rotated position by suitable securing means.

3,503,629
BONDING FOR MULTIPART CONTINUOUS BUSINESS FORMS
D'Arle G. Bash, Miami, Fla.
(1047 Venetia Ave., Coral Gables, Fla. 33134)
Filed Mar. 11, 1968, Ser. No. 712,246
Int. Cl. B41l *1/26*
U.S. Cl. 282—11.5 **4 Claims**

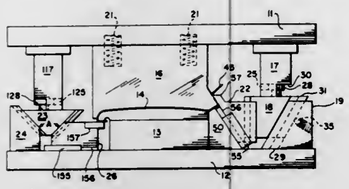


In a continuous forms assembly of the type wherein a pair of superposed strips are connected together by an intervening bonding member connected at one line to an overlying strip and at another line to the underlying strip, the improvement wherein the bonding member contains a longitudinally extending series of substantially V-shaped slits pointing in one longitudinal direction of the strips and forming a longitudinal extending series of chevron-shaped links which allow the pair of strips to move in both longitudinal directions relative to each other.

3,503,630
ANGULAR DIE SET FOR CHANGING THE DIRECTION OF THE TOOL PRESSURE STROKE IN A PUNCH PRESS
Frank J. Thomas, % Thomas Tool and Die Company, 3930 W. 25th St., Cleveland, Ohio 44109
Filed Aug. 1, 1966, Ser. No. 569,145
Int. Cl. B21d *28/14, 28/18*
U.S. Cl. 72—324 **23 Claims**

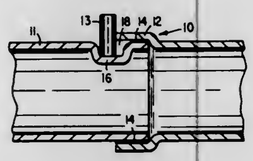
Disclosed is a cam set comprising a first heel block element having a planar cam surface and adapted to be secured to a base plate, a second tool carrying element having a planar cam surface inclined with respect to said cam surface of said first element, the second element is also adapted to be secured to the base plate. A third floating V-block element has a first and second planar cam surfaces inclined with respect to each other, and the first and second planar cam surfaces of the third element mate with the cam surfaces of said first and second elements by a tongue and groove couple so that they interlock. The third floating element is provided with a drive pin whereby a driving post may engage said

floating element and cause it to move in a direction parallel to the planar surface of one of the two other elements when said one element is held stationary with respect to said third element and the other of said two other elements so that the other element which is tool carrying moves an amount equal to the accumulated



displacement of both sides of the third V-block element. The driving post is connected to another base plate which in a punch press reciprocates relative to the first base plate on which the heel block is mounted. Also disclosed are tools and dies for a typical punch press operation illustrating uses of the invention.

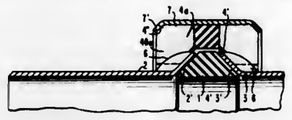
3,503,631
BRAZED JOINTS
James E. Greever, Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed No. 1, 1968, Ser. No. 772,785
Int. Cl. F16l *13/02, 35/00, 47/02, 55/00;* **B23k** *35/02*
U.S. Cl. 285—21 **14 Claims**



A method for making a brazed joint and a joint assembly between a pair of telescoped metal members. A dimple is formed in one of the members for receiving a brazing preform comprising brazing metal suspended in a glass matrix. The other of the members is telescoped over the first member to form a capillary space between the members and overlaps the dimple in the first member slightly to form a recess portion in the dimple. A brazing preform is inserted in the dimple and preferably extends into the recess portion thereof. Heat is applied to the joint assembly to melt and release the brazing metal from the preform. During this process the molten glass forms a protective layer over the molten brazing metal in the recess between the members to inhibit oxidation while the brazing alloy flows out of the recess into the capillary space between the members. The brazing preform may have a foot of enlarged dimension to assist in holding it in the recess.

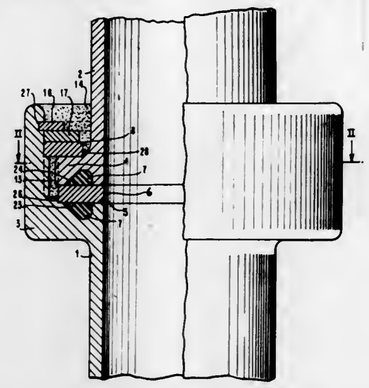
3,503,632
ELECTRICALLY INSULATING PIPE COUPLING ASSEMBLY, PARTICULARLY FOR SMALL DIAMETER PIPES
Karlheinz Braun, Pfarrgasse 6, Kehl (Rhine), Germany
Filed July 29, 1968, Ser. No. 748,490
Int. Cl. F16l *11/12*
U.S. Cl. 285—48 **3 Claims**

A pair of pipe stubs, to be assembled together, terminate in facing flared end sections. The flared ends of the pipe stubs have radial fins formed at the outside. A spacing ring having an essentially trapeze-shape cross section is located between the flared sections, to separate them electrically and seal them hydraulically; to secure the assembly together, a coupling clamp ring of electrically insulating material formed of independent sectors



surrounds the flared ends of the pipe stubs. An outer compression sleeve surrounds the coupling clamp ring and holds the parts together.

3,503,633
ELECTRICALLY INSULATING PIPE COUPLING ASSEMBLY, PARTICULARLY FOR DOMESTIC BRANCH EXTENSIONS
Karlheinz Braun, Pfarrgasse 6, and Werner Kipping, Schanzweg 3, both of Kehl (Rhine), Germany
Filed July 29, 1968, Ser. No. 748,432
Claims priority, application Germany, Aug. 2, 1967, 1,625,987
Int. Cl. F16l *13/10, 11/00, 21/08, 21/02, 55/00, 59/16*
U.S. Cl. 285—54 **5 Claims**

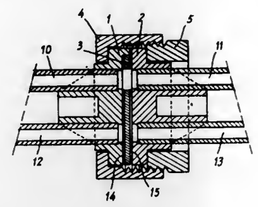


One pipe stub of the assembly has a circumferential flange, the other cup-shaped extension, into which the flange fits, with lateral clearance, to provide a compact, axially short coupling, a sealing ring is placed between the bottom of the cup, and the flange, another sealing ring on top, and the entire assembly held together by a C-ring snapped into a groove beyond the second sealing ring in the cup; after assembly epoxy resin is poured into the cup to seal the parts together. To insure against relative rotation of parts, for example where the pipe stubs are to be screw-connected, the outer edge of the flange and the inner edge of the cup are indented or crenelated, the epoxy resin filling all spaces and preventing relative rotation.

3,503,634
MULTIPLE COUPLING FOR FLUID CONDUITS
Jean Georges Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Continuation of application Ser. No. 622,630, Mar. 13, 1967. This application May 19, 1969, Ser. No. 828,425
Claims priority, application France, Mar. 24, 1966, 54,869; Feb. 16, 1967, 95,263
Int. Cl. F16l *39/00, 17/06, 15/08*
U.S. Cl. 285—137 **1 Claim**

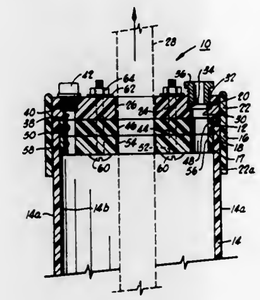
A coupling for joining together and assembling bundles of tubes of any desired number, in which two endpieces

fixable to the extremities of the tubes of a bundle are provided with projections and are associated with a fluid-tight sealing joint, the joint and the endpieces being



adapted to cooperate only in one single position during the assembly of the coupling by means of appropriate clamping devices.

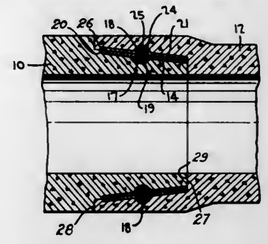
3,503,635
WELL SEALS
Lowell K. Cheatwood, Oklahoma City, and Jess A. Poindexter, Bethany, Okla., assignors to Jess and Lowell Well Casing Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Aug. 28, 1968, Ser. No. 755,850
Int. Cl. F16l *21/04*
U.S. Cl. 285—138 **10 Claims**



A device for forming a double sanitary well seal on well casing, the device consisting of a cover cap including an annular flange which is placeable over and around the top opening of a well casing, and including a gasket and insert plate disposed down within the top opening of the well casig such that the insert plate can be drawn toward the cover cap to displace the gasket radially outward into firm, sealing engagement with the inside of the well casing to further expand the casing outward for double sealing against the cover cap annular flange.

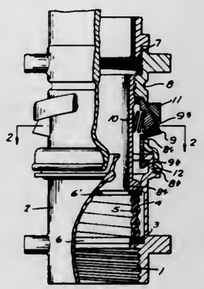
3,503,636
CONDUIT JOINT ASSEMBLY
Ray B. Bower, 239 Tremont Ave., Greensburg, Pa. 15601
Filed Nov. 29, 1966, Ser. No. 597,603
Int. Cl. F16l *37/00*
U.S. Cl. 285—305 **3 Claims**

A joint assembly for pipes in which one pipe end is in the form of a spigot end and the other pipe end is in the form of a bell end with the ends being assembled end to end in telescoping relation. Cooperating frusto-conical engagement surfaces on the respective pipe ends include inserts that extend continuously from the end face of the spigot pipe end toward the end face of the bell pipe end. The inserts each have circumferential grooves which define an annular retainer for a seal ring. The outer surfaces



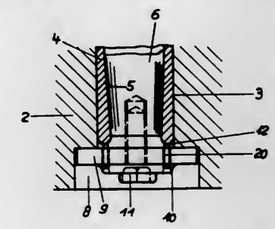
of the inserts are in direct engagement with each other and the seal ring serves to prevent the leakage of fluid through the joint and also locks the joint together.

3,503,637
PIPE COUPLING WITH SPRING BIASED DETENTS
Sosaburo Maeshiba, 118–1 Aza-Toryo, Oaza-Sumiyoshi, Fukuoka, Fukuoka Prefecture, Japan
Filed June 15, 1967, Ser. No. 646,350
Int. Cl. F16l *37/18*
U.S. Cl. 285—315 **1 Claim**



A pipe coupling comprising two pipe members, one located within the other with an annular packing axially compressed therebetween. Spring biased detent means are provided to hold the pipes in coupled relationship and pivoting means are provided to urge the detents into a releasing position.

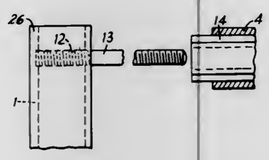
3,503,638
GUIDE COLUMN AND TOOL FRAME ASSEMBLY
Willy Hölzel, Calwerstrasse 3, Wildberg, Germany
Filed Sept. 24, 1968, Ser. No. 762,011
Int. Cl. B25g *3/28*
U.S. Cl. 287—20.3 **3 Claims**



A tool frame has a bore which receives a conical foot portion of a guide column. Said bore has on one side of said frame an enlarged portion, which defines a

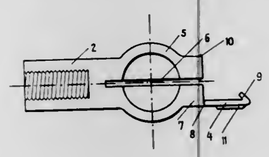
shoulder and receives a retaining plate. A conical expanding sleeve surrounds said foot portion in said bore and has an end face confronting said retaining plate. Said sleeve is tapered oppositely to said foot portion. A tension screw is threaded into said sleeve and extends through and bears on said retaining plate and bears on the side thereof remote from said adjacent end face of said sleeve. A collar is carried by said column and engages said frame on the side thereof which is opposite to said enlarged portion. The retaining plate is provided on the side thereof which faces said adjacent end face of said sleeve with projecting means which engage said adjacent end face of said sleeve.

3,503,639
CONSTRUCTION OF TUBULAR FRAME WORKS
George Oswald Taylor, London, England, assignor to The British Aluminum Company Limited, London, England, a company of Great Britain
Filed Aug. 8, 1967, Ser. No. 659,088
Int. Cl. E04c *3/00;* **F16b** *1/00, 7/10, 7/18*
U.S. Cl. 287—20.92 **2 Claims**



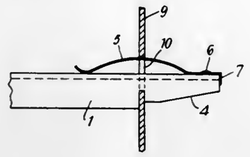
A corner stake made from a densified wood laminate in a corner construction. Two angularly disposed arms forming said corner stake and each fitted inside a tubular element. A threaded blind bore at the junction of the two arms and a stud threaded in said bore and extending from the stake. A further densified wood laminate arm mounted on the stud and fitted inside a further tubular element.

3,503,640
BALL JOINT
Gerhard Eberle, Albershausen uber Goppingen, Germany, assignor to Metallwaren G.m.b.H., Eislingen, Salach, Wurttemberg, Germany
Filed Dec. 9, 1968, Ser. No. 782,255
Claims priority, application Germany, Dec. 7, 1967, 1,625,581
Int. Cl. B25g *3/38;* **F16c** *11/06*
U.S. Cl. 287—89 **7 Claims**



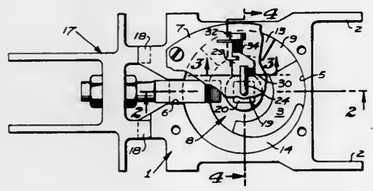
A ball joint with an improved socket member made of an elastic plastic. The socket has a first and second ball receiving portion. The closure is integrally connected to the socket member of a hinge in the form of an elastic plastic film which is arranged parallel to the one or more slots. The closure may also be reinforced. A ball joint constructed in this manner is resilient and economical to produce.

3,503,641
JOINT FOR CONNECTING PURLINS AND SAG RODS
Clarence Hosea Fraser, Coulsdon, England, assignor to Metal Trim Limited, Irvine, Ayrshire, Scotland, a British company
Filed Aug. 21, 1967, Ser. No. 662,078
Claims priority, application Great Britain, Sept. 29, 1966, 43,505/66
Int. Cl. E04b *7/00;* **F16b** *9/02, 21/08*
U.S. Cl. 287—189.36 **3 Claims**



A sag rod and a method of fixing same to a purlin in the fabrication of a roof structure, the sag rod having resilient means at each end thereof, each resilient means being compressed on that end of the sag rod being passed into an aperture in a purlin to engage a slot in the sag rod with the purlin.

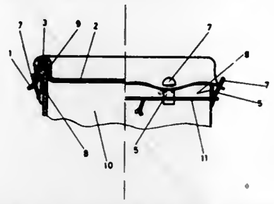
3,503,642
CONDITION INDICATOR FOR LATCHES
Lloyd Richard Poe, Los Angeles, Calif., assignor to Hartwell Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 18, 1968, Ser. No. 713,978
Int. Cl. E05c *19/10*
U.S. Cl. 292—101 **2 Claims**



A condition indicator for latches having a tool receiving rotatable socket. The indicator is slidable in the socket and is spring urged to an extended position. A shaft having a side arm extends from the backside of the latch and engages a catch to hold the indicator flush with the entrance to the tool receiving socket. Insertion of the tool disengages the side arm from the catch, and rotation of the socket moves the side arm clear of the catch so that the indicator protrudes from the socket on removal of the tool. The catch is provided with a deflecting cam so that the side arm cannot re-engage the catch until the latch is fully in its secured condition.

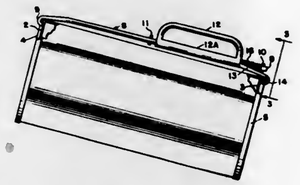
3,503,643
SEAL FOR CONTAINERS
Enrique Amat Alfaro, 7 Ifni St., San Adrian del Besos, Barcelona, Spain
Filed Sept. 3, 1968, Ser. No. 756,975
Claims priority, application Spain, Sept. 20, 1967, 132,586
Int. Cl. B65d *45/32*
U.S. Cl. 292—258 **3 Claims**

A container is closed by a cap having an annular rim provided with uniformly spaced slots extending longitudinally around the cap. A separate closure member has a tab extending through each slot and a tongue pressing against the ridge of the container opening. Each tab has a head engaging the edges of its slot. The closure members



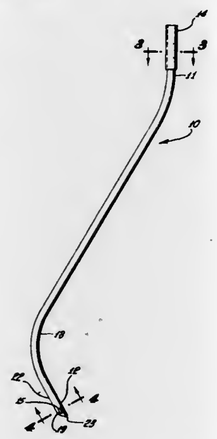
are held together by a wire extending around the container and fitting into recesses provided in the lower portions of the closure members.

3,503,644
SELF-ADJUSTING GRIPPING HANDLE
Glover J. Johnson, Salem, Oreg., assignor of one-half to Jonathan R. Charge, Salem, Oreg.
Filed Dec. 22, 1967, Ser. No. 692,761
Int. Cl. A47j *45/00*
U.S. Cl. 294—29 **1 Claim**



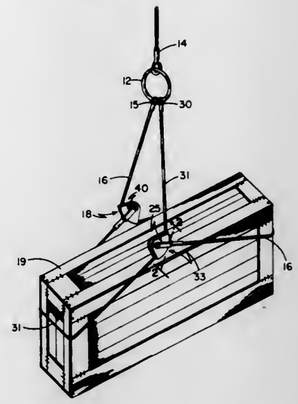
A handle device for automatic spring-urged gripping engagement with the top and bottom rims of containers by the use of one hand of an operator for carrying and pouring operations.

3,503,645
MAGNETIC RETRIEVER
Robert A. Huddy, Arcadia, Calif., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California
Filed Feb. 23, 1968, Ser. No. 707,601
Int. Cl. B66c *1/06*
U.S. Cl. 294—65.5 **6 Claims**



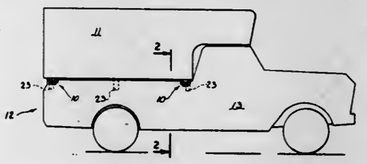
The invention concerns a magnetic retriever bar for picking up small ferrous objects which may be scattered about on a floor surface. The retriever consists of a handle which can be manipulated by a person standing on the surface, the working end of the device including an elongated magnetized arm which can be passed close to the surface and which because of its length covers an appreciable area of the surface with each passage of the device.

3,503,646
SELF-ADJUSTING HOIST SLING
Joseph L. Solomon, 194 Buckminster Road, Brookline, Mass. 02146
Filed Mar. 8, 1968, Ser. No. 711,684
Int. Cl. B66c *1/18*
U.S. Cl. 294—74 **4 Claims**



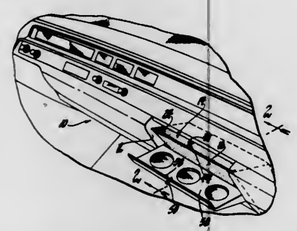
A sling is described which is usable with a hoist and which is self-adjusting with load and self-sustaining without load. The sling comprises a pair of wire ropes and a pair of retainer members, each having a connection and a passage. Each rope passes through one retainer member and is pivotally connected to the other so as to form a double sling. The retainer members have both inner and outer retaining surfaces, with the ropes being in frictional contact with the outer surfaces where there is no load.

3,503,647
CAMPER HOLDDOWN BRACKET
Frank T. Gostomski, Wahoo, Nebr. 68066
Filed May 16, 1968, Ser. No. 729,733
Int. Cl. B62d *27/06;* **B60p** *3/32*
U.S. Cl. 296—23 **8 Claims**



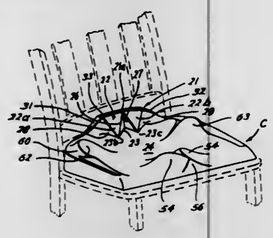
A universal camper holddown bracket for securing a camper to the bed of a pickup truck having lipped sidewalls, the bracket comprising a plate mounted on the underside of the camper disposed over the sidewalls, an arm pivotally connected to the plate and engageable with the lip of the sidewall of the truck, a rod slidably disposed on the plate and pivotally connected on one end to the arm, wherein the arm is pivotable, in response to movement of the rod, from a non-locking engagement to a locking engagement with the lip, and a locking device disposed on the rod for locking the arm in a locking engagement position.

3,503,648
GLOVE BOX COMPARTMENT FOR A MOTOR VEHICLE
Edward E. James, Silver Spring, Md., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 17, 1968, Ser. No. 745,591
Int. Cl. B60r *7/06*
U.S. Cl. 296—37 **5 Claims**



A pivotally mounted bin-type, open-topped glove box receptacle movable between a stored position wherein the open top is inaccessible through the glove box access opening, and an extended position wherein at least a part of the open top projects outside the access opening. A closure member is hingedly mounted on the front wall of the receptacle generally midway between the upper and lower edges thereof for movement relative to the receptacle between a first position in juxtaposition with the front wall of the receptacle and a second, generally horizontal tray-holding position in a plane angular to the plane of said front wall. A control cam projects from the closure member for engagement with a stationary follower, whereby the closure member is held in a substantially horizontal position regardless of the position of the receptacle.

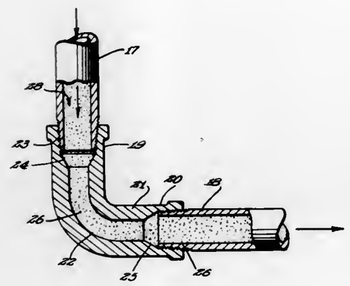
3,503,649
CONTOURED SUPPORT CUSHION
Merle E. Johnson, 1417 Carlisle, Rosenberg, Tex. 77471
Filed Apr. 1, 1968, Ser. No. 717,888
Int. Cl. A47c *7/02*
U.S. Cl. 297—459 **2 Claims**



A contoured seat cushion for aligning the pelvic girdle of a person seated thereon so as to properly support his lower back and support the weight of the torso of a person sitting erect thereon.

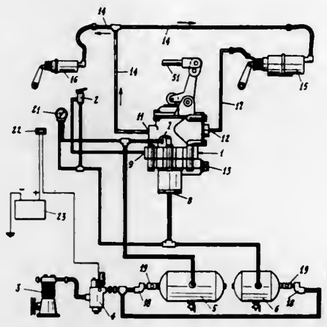
3,503,650
CONDUIT FOR DRY CHEMICAL FIRE EXTINGUISHER SYSTEMS
Mark E. Balmes, Sr., Northbrook, Ill., assignor to General Fire Extinguisher Corporation, Northbrook, Ill., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,771
Int. Cl. B65g *53/34*
U.S. Cl. 302—64 **4 Claims**

An elbow joint for use in the piping system of a dry chemical fire extinguishing system in which dry chemical fire extinguisher is propelled through the piping system from a storage area to the fire area by intermixed gas pressure. The elbow has a reduced diameter venturi having



a constant diameter portion extending through the bend of the elbow to prevent stream separation of the gas and dry chemical.

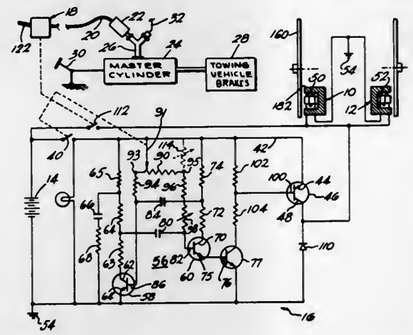
3,503,651
COMPRESSED-AIR BRAKE SYSTEM FOR MOTOR VEHICLES
Jean Gachot, 179 Avenue de la Division Leclerc, Enghien, and Fernand Perales, 87 Rue A.G. Belin, Argenteuil, both of Val-d' Oise, France
Filed Nov. 4, 1968, Ser. No. 772,918
Claims priority, application France, Nov. 8, 1967, 127,393
Int. Cl. B60t *13/36, 13/38*
U.S. Cl. 303—9 **11 Claims**



A compressed-air brake system for motor vehicles which comprises service application circuits for initiating brake application at the rear wheels and front wheels either in parallel or separately and an emergency application circuit for initiating brake application at least at the rear wheels, said system additionally comprising at least two separate reservoirs for supplying said circuits and a brake-actuating unit provided with a master piston actuated by the brake pedal and adapted to open mechanically in its first then in its second operating position two check-valves assigned to the service application and emergency application circuits, the second check-valve being opened mechanically by the master piston only if the pressure within the service application circuit falls below a predetermined value. The brake-actuating unit comprises a third check-valve for admission of compressed air to the rear-wheel emergency application circuit, said third

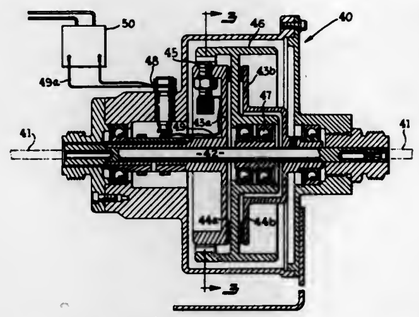
check-valve being controlled by the differential pressure between the service application circuit which is supplied from the first reservoir and the rear-wheel emergency application circuit which is supplied from the second reservoir.

3,503,652
CONTROL FOR ELECTRIC BRAKE
Jan A. Vanden Broek, Ann Arbor, Mich., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio
Filed Mar. 8, 1968, Ser. No. 711,665
Int. Cl. B60t *13/68, 13/74*
U.S. Cl. 303—3 **22 Claims**



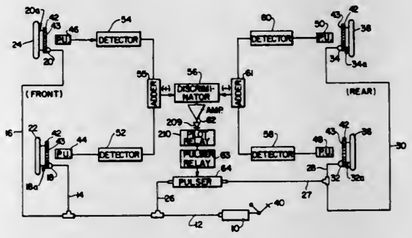
The energizing coil of an electric brake in a towed vehicle such as a trailer or the like is energized by pulsating direct current. The duty cycle or pulse-width ratio of the energizing current is controlled by a free-running multivibrator which, in turn, is hand-controlled by the driver in the towing vehicle. The hand control can be overridden by an auxiliary hydraulic cylinder and cable system operated by the hydraulic braking system in the towing vehicle. The multivibrator circuitry provides an initial surge current to the electric brake coils when the electric brake is first energized.

3,503,653
VELOCITY SENSING ANTI-SKID BRAKING SYSTEM
Alan R. Davis, Pontiac, I. Macit Gurol, Farmington, and Robert S. Mueller, Southfield, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 13, 1967, Ser. No. 622,566
Int. Cl. B60t *8/06*
U.S. Cl. 303—21 **4 Claims**



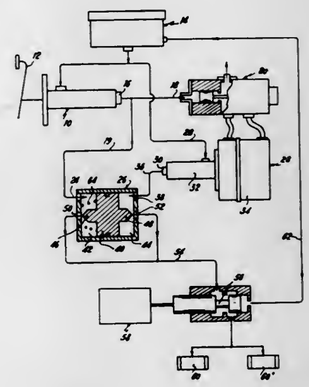
A velocity sensing brake control system which senses variations in braked wheel velocity and applies a continuous skid correction by controlling the effective braking pressure through an electrically generated signal and a vacuum booster arrangement.

3,503,654
BRAKE SYSTEM
Alex F. Stamm, Rochester, Mich., assignor, by mesne assignments, to Rockwell Standard Company, Pittsburgh, Pa., a corporation of Delaware
Continuation of application Ser. No. 557,739, June 15, 1966. This application Sept. 11, 1967, Ser. No. 667,004
Int. Cl. B60t *8/06*
U.S. Cl. 303—21 **11 Claims**



An automotive braking system in which the rotational velocity of certain wheels, usually the front wheels provides a reference for comparison with the rotational velocity of the other wheels to provide a signal to limit the braking effort said other wheels to a value just below that which will cause said other wheels to lock-up except when said front wheels are first locked.

3,503,655
HYDRAULIC BRAKING SYSTEM
Andre Heimler, Montreuil, France, assignor to Societe Anonyme D.B.A.
Filed Dec. 27, 1968, Ser. No. 787,417
Claims priority, application France, Dec. 27, 1967, 133,848
Int. Cl. B60t *8/06*
U.S. Cl. 303—21 **2 Claims**



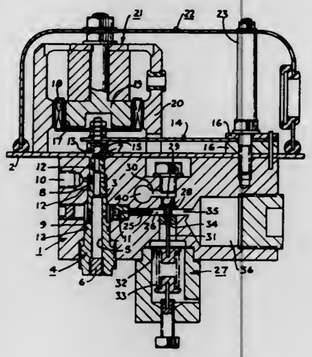
A hydraulic brake system comprising a master cylinder, a power braking device, an antiskid device, and a set of wheel brakes. The power braking device develops pressure in proportion to that developed by the master cylinder. The pressures developed by the master cylinder and

power braking device are compared in a valve means. The valve means allows the higher of these two pressures to actuate the set of wheel brakes through the antiskid device. This arrangement allows the master cylinder to actuate the brakes in event of failure of the power braking device without further actuation of the master cylinder.

3,503,656
FLUID PRESSURE CONTROL VALVES AND BRAKING APPARATUS

Charles F. B. Shattock, Oswald G. Shanks, Sydney A. Stevens, and Boguslaw W. Wojtecki, London, England, and Robert J. Dixon, Palos Verdes Peninsula, Calif., assignors to Westinghouse Brake and Signal Company Limited, London, England

Filed Dec. 12, 1966, Ser. No. 600,799
Claims priority, application Great Britain, Dec. 21, 1965, 54,066/65; Apr. 29, 1966, 18,817/66; May 18, 1966, 22,018/66; May 27, 1966, 23,776/66; July 8, 1966, 30,718/66; July 15, 1966, 31,868/66; July 20, 1966, 32,617/66
Int. Cl. B60t *8/22*
U.S. Cl. 303—22 **17 Claims**



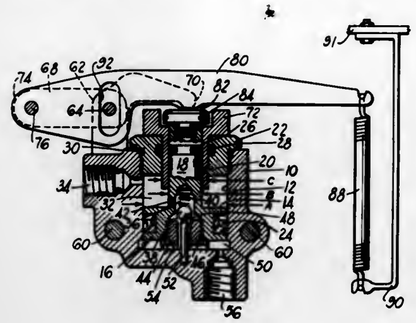
A braking apparatus including an electro-pneumatic conversion device for converting an electric current representative of a desired braking effect into fluid pressure and means for applying this fluid pressure to the fluid pressure responsive braking device. The conversion device has a restricted flow inlet, an outlet and an exhaust port provided with a valve seat. A throttling element is movable towards and away from this valve seat to vary the throttling effect and thereby vary the pressure at the outlet port in proportion to the amount of throttling. A cantilever-mounted leaf-spring has its free end operatively engaging the throttling element. Loading means, operable in response to a pre-determined signal, controls the movement of the free end of the leaf-spring and hence the movement of the throttling element.

3,503,657
DUAL RATIO LOAD SENSING PROPORTIONING VALVE

Stanley I. MacDuff, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Jan. 27, 1969, Ser. No. 795,146
Int. Cl. B60t *8/18*
U.S. Cl. 303—22 **8 Claims**

A load sensing proportioning valve especially applicable to braking systems of ground vehicles which has a differential pressure responsive means regulated by a load sensitive mechanism also controlling a device to vary the characteristics of the pressure responsive means to approximate ideal pressure requirements for maximum

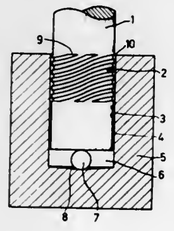


work of a motor such as are employed, for example, for actuating brakes for ground vehicles.

3,503,658
HYDRODYNAMIC SLIDING BEARING FOR RADIAL AND AXIAL LOADS

Gerrit Remmers, Emmasingel, Eindhoven, Netherlands, assignor by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware

Filed Mar. 18, 1968, Ser. No. 713,663
Claims priority, application Netherlands, Mar. 31, 1967, 6704590
Int. Cl. F16c *17/16, 19/12*
U.S. Cl. 308—9 **6 Claims**



A self adjusting hydrodynamic sliding bearing having a cylindrical shaft with lubricant urging grooves positioned within a bore formed in a journal housing. The end of the shaft is spaced from the end of the bore to form a lubricant pressure chamber. The shaft when stationary has a point contact with the end of the bore to reduce starting rotational torque.

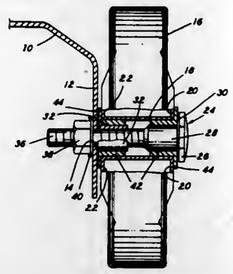
3,503,659
WHEEL MOUNT ADAPTER

Carol Clark Boylan, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan

Filed Aug. 5, 1968, Ser. No. 750,180
Int. Cl. F16c *13/04*
U.S. Cl. 308—16 **1 Claim**

An adapter wheel mount assembly for small load-bearing wheels such as used on lawn mowers and the like which permits replacement of bearings and other wearing parts, the adapter comprising essentially a headed bolt having a shoulder adjacent the head together with a sleeve threadable on the shank of the bolt having a diameter

the same as the shoulder on the bolt, the shoulder and the sleeve serving as spaced mounts for bearing collars of a wheel, these being adjustable axially to accommodate

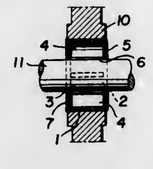


wheels of varying axle widths and having different type bearings, the assembly being mounted in cantilever fashion on an apertured wall with all the parts in locked position.

3,503,660
BEARING

Hideo Mori, 317 3-chome, Nishiawaji-cho, Higashiyodogawa-ku, Osaka-shi, Osaka-fu, Japan

Filed Apr. 12, 1968, Ser. No. 720,933
Claims priority, application Japan, Sept. 29, 1967, 42/62,300
Int. Cl. F16c *33/66*
U.S. Cl. 308—121 **3 Claims**

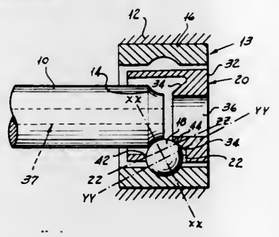


A bearing being provided with oil reservoirs around the center shaft hole, said oil reservoirs are led to the inner contact surface of said shaft hole through small openings such as slits and the like, and thus the lubricating oil contained in said oil reservoirs can be supplied onto the contact surfaces of the shaft and shaft hole properly and continuously for a long-term operation.

3,503,661
BALL RETAINER

William E. Taylor, Oakland, N.J., and Guy F. Ciacco, Bronx, N.Y., assignors to The Bendix Corporation, a corporation of Delaware

Filed Jan. 25, 1967, Ser. No. 611,702
Int. Cl. F16c *33/37, 35/58*
U.S. Cl. 308—193 **6 Claims**

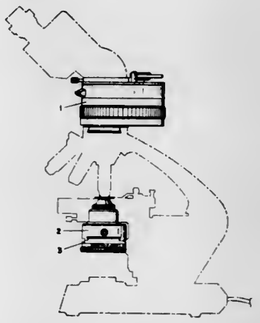


This invention relates to a high accuracy ball bearing of the kind used in gyroscopes having a cylindrical ball retainer with pockets for receiving and spacing the balls. The retainer has a truncated axial cone engaging the balls for accurately centering the retainer about the axis of rotation.

3,503,662
DEVICE FOR OPTICAL MICROSCOPE TRANSFORMATION INTO A POLARIZING INTERFEROMETER MICROSCOPE

Jerzy Grzelak, Pustelnicka St. 8a m. 6, and Janusz Józef Chalecki, Grochowska St. 54 m. 28, both of Warsaw, Poland

Filed May 5, 1965, Ser. No. 453,268
Claims priority, application Poland, May 7, 1964, P 104,494
Int. Cl. G02b *21/06, 21/14;* **G02f** *1/24*
U.S. Cl. 350—12 **7 Claims**



A conventional optical microscope is changed into a polarizing-interference microscope by the addition of an interference head attachment between the microscope head and ocular lens; a condenser is provided below the microscope stage.

3,503,663
GYROSCOPICALLY CONTROLLED MOTION COMPENSATOR FOR OPTICAL DEVICES

Juan de la Cierva, Philadelphia, and Leonard Goland, Meadowbrook, Pa., assignors to Dynasciences Corporation, Fort Washington, Pa., a corporation of Pennsylvania

Filed Jan. 6, 1964, Ser. No. 335,961
Int. Cl. G02b *23/00*
U.S. Cl. 350—16 **9 Claims**

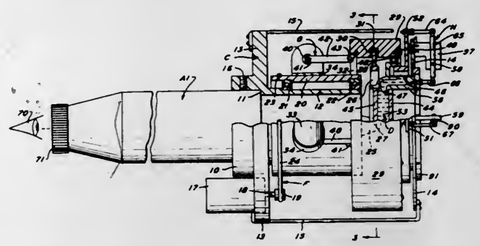
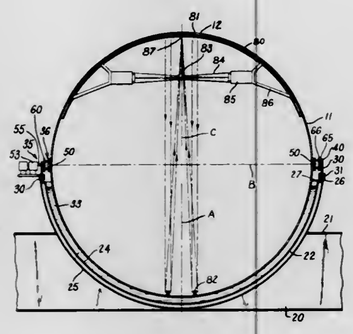


Image stabilizer for optical systems comprising a variable-angle fluid wedge enclosed between transparent plates actuated by gyroscopic mass spinning on an axis substantially coincident with optical system axis. Gyroscopic mass is linked mechanically along mutually perpendicular axes to the plates and to optical system. Dampers allow only substantially high frequency movement to angularly displace spin axis with respect to optical system thereby causing the fluid wedge formed to

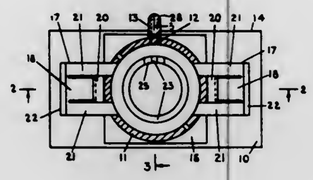
deviate light beam compensatory to such rapid motion between optical system and target but permit low frequency scanning motion without relative displacement of the spin and collimation axes.

3,503,664
FLUID TELESCOPE MOUNTING SYSTEM
Emerson E. Hadley, Eau Gallie, Fla. 32935; Doris J. Hadley, Eau Gallie, Emerson Rea Hadley, Titusville, and Joanne B. Long, Eau Gallie, Fla., heirs of said Emerson E. Hadley, deceased
Filed July 19, 1966, Ser. No. 566,319
Int. Cl. G02b *17/00*
U.S. Cl. 350—55 **7 Claims**



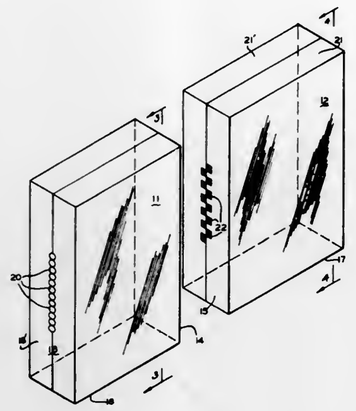
Heavy devices such as a long focal length telescope are mounted with the bearings of the drive systems thereof supporting substantially none of the weight of the supported device. Substantially all of the weight is supported by fluid floatation of a sphere having three axes of rotational freedom.

3,503,665
CELL CULTURE SLIDES
Stephen Barnaby Carter, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Jan. 3, 1966, Ser. No. 518,345
Claims priority, application Great Britain, Jan. 5, 1965, 430/65
Int. Cl. G02b *21/34*
U.S. Cl. 350—95 **2 Claims**



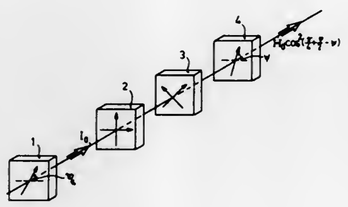
A cell culture slide, for microscope use, comprising a glass plate and a cover glass spaced apart by a boundary member secured to or integral with the glass plate and providing an abutment surface against which the cover glass may sealingly abut, the plate, cover glass and boundary member together defining a space for containing a cell culture medium, a closable inlet passage being provided through the boundary member.

3,503,666
OPTICAL SCANNING DEVICE
William C. Moore and Barden A. Conroe, Skaneateles, N.Y., assignors to Welch Allyn, Inc., Skaneateles Falls, N.Y.
Filed Feb. 27, 1968, Ser. No. 708,686
Int. Cl. G02b *5/16*
U.S. Cl. 350—96 **3 Claims**



An optical scanning device in the form of a rectangular block having a plurality of light transmitting optical fiber bundles embedded therein. The device has a scanning end and a read-out end, and the bundles are arranged so that input light received by a single bundle at the read-out end is transmitted through the device and emitted by a row of bundles at the scanning end. The same bundles also receive the reflected light which is transmitted back through the device and emitted by corresponding bundles at the read-out end.

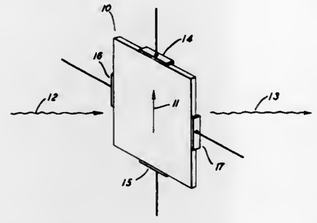
3,503,667
MODULATORS FOR ELECTROMAGNETIC RADIATION BY DOUBLE REFRACTION
Karl Joachim Schmidt-Tiedeman, Rellingen, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 570,015
Claims priority, application Germany, Aug. 10, 1965, P 37,427
Int. Cl. G02f *1/24*
U.S. Cl. 350—149 **10 Claims**



An apparatus for modulating electromagnetic radiation, particularly light, wherein the light illuminates a medium, particularly a solid such as silicon or germanium, and is doubly refracted by the medium. The concentration of

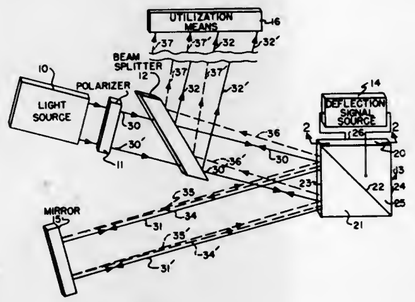
free charge carriers in the medium is modulated by controlling the injection of charge carriers. This changes the degree of the double refraction effect thus causing amplitude or phase modulation. The medium can be stressed to increase the efficiency.

3,503,668
ELECTRIC FIELD DEPENDENT DICHROIC DEVICES
Mauro Di Domenico, Jr., Madison, Joseph P. Remeika, Warren Township, Somerset County, and Edward G. Spencer, Union, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 19, 1966, Ser. No. 543,580
Int. Cl. G02f *1/26, 1/28;* **G02b** *5/30*
U.S. Cl. 350—150 **9 Claims**



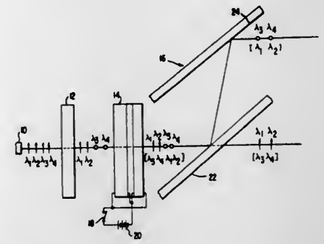
A light beam is modulated within a medium depending upon the direction and magnitude of an applied electric field. The effect of the field is to introduce or alter dichroism within the medium.

3,503,669
LIGHT BEAM CONTROL APPARATUS AND METHOD
James D. Zook, Burnsville, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,813
Int. Cl. G02f *1/26*
U.S. Cl. 350—150 **10 Claims**



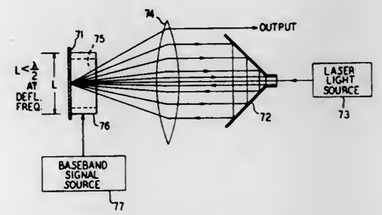
In a system for deflecting or modulating a light beam, reflective surfaces are positioned about an E–O crystal so as to direct the light beam through substantially the same volume of the crystal a plurality of times. In the deflection system, the deflection of the light beam on each passage through the deflector is cumulative, thereby increasing the number of resolvable spots obtained without utilizing substantial additional E–O material. In the modulation system, the rotation of the light beam's polarization vector is cumulative upon each traversal. Numerous arrangements for the reflective surfaces are described.

3,503,670
MULTIFREQUENCY LIGHT PROCESSOR AND DIGITAL DEFLECTOR
Kurt M. Kosanke and Werner W. Kulcke, Boblingen, and Erhard Max, Sindelfingen, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,638
Int. Cl. G02f *1/26, 1/40;* **H03k** *19/14*
U.S. Cl. 350—150 **10 Claims**



An apparatus for controlling the polarization of multifrequency light and deflecting the light in accordance with the polarization thereof to provide a plurality of position and frequency related light outputs. A dispersive rotator polarizes the light to give specific wavelengths perpendicular polarization directions. Polarization dependent beam splitters split the beam into parallel beams depending upon their polarization.

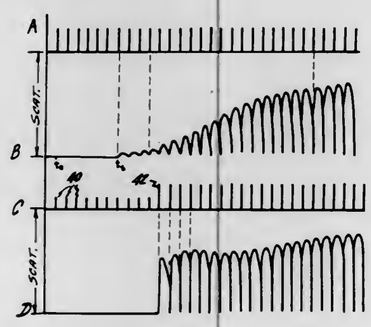
3,503,671
MULTIPLE-PASS LIGHT-DEFLECTING MODULATOR
Rudolf Kompfner, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 17, 1967, Ser. No. 631,394
Int. Cl. G02f *1/28;* **H01s** *3/00*
U.S. Cl. 350—160 **6 Claims**



High-speed deflection or modulation with substantial deflection angles of a coherent light beam is obtained by employing reflection and focusing arrangements providing multiple-pass operation in the deflector to multiply the deflection angles. In some embodiments, carrier-band modulation of the beam is provided as an inherent part of the deflection process. For example, one or more electro-optic crystals, each energized to have a variable index of refraction, are positioned at the common focal point of substantially confocally spaced reflectors. In this embodiment, the frequency of the variation is selected to increase the deflection once during every round trip between the deflectors. In still another embodiment, baseband modulation is provided either independently of the deflection or as an inherent part of the deflection. For example,

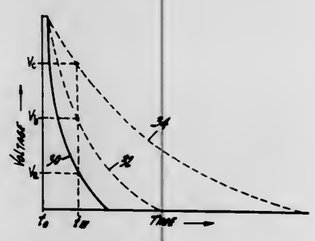
a planar reflector, a corner reflector and lens therebetween with focal point on the planar reflector can provide deflection if the planar reflector is tilted with respect to the lens axis. Modulation such as baseband phase modulation is provided by an electro-optic element in the vicinity of the planar reflector and a baseband signal source. The multiple pass phase modulation of the beam is greater than the single pass modulation would be, yet remains proportionally responsive to the phase modulation signal. Nevertheless, a nontilted planar reflector could also be employed in combination with an electro-optic deflector to provide the baseband modulation as an inherent part of the deflection.

3,503,672
REDUCTION OF TURN-ON DELAY IN LIQUID CRYSTAL CELL
Frank J. Marlowe, Somerset, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,856
Int. Cl. G02f *1/28*
U.S. Cl. 350—160 **3 Claims**



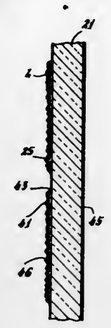
Turn-on response time of liquid crystal cell is decreased by applying pulses thereto at a level lower than the voltage threshold for dynamic scattering of the cell.

3,503,673
REDUCTION OF TURN-ON DELAY IN LIQUID CRYSTAL CELL
George H. Heilmeier, Philadelphia, Pa., and Louis A. Zanoni, Mercerville, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,857
Int. Cl. G02f *1/28*
U.S. Cl. 350—160 **6 Claims**



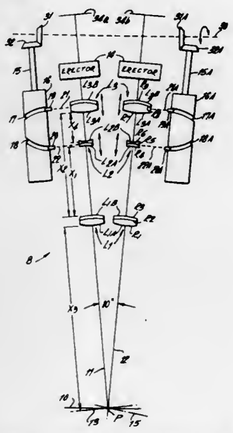
The application to a liquid crystal cell of an electrical bias at a voltage level lower than the voltage threshold for dynamic scattering increases the effective internal resistance of the cell and substantially decreases the response time of the cell.

3,503,674
SCATTERPLATE WITH ANTIREFLECTION COATINGS
Kurt W. Opperman, Stamford, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Feb. 5, 1968, Ser. No. 703,098
Int. Cl. G02b *1/10*
U.S. Cl. 350—164 **8 Claims**



A method and apparatus for making a scatterplate for use in a scatter fringe interferometer and the scatterplate so produced. The scatterplate contains two identical, symmetrically disposed sets of scatter points, a fiduciary mark at the center of symmetry and is antireflection coated on both sides. The scatterplate is made by doubly exposing a photographic plate to light generated by a laser after it is passed through a diffuser screen. The plate is rotated 180° in its plane between exposures. A pair of crossed wires placed in front of the plate and intersecting along the axis of rotation of the plate create an unexposed area on the plate at the center of symmetry. The plate is antireflection coated after it is developed, washed and bleached.

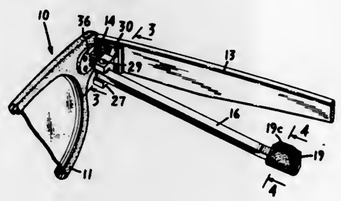
3,503,675
VARIABLE MAGNIFICATION STEREO OPTICAL SYSTEM
Robert M. Muller, Cheektowaga, N.Y., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,502
Int. Cl. G02b *15/16*
U.S. Cl. 350—184 **5 Claims**



A continuously variable magnification stereo optical system including two identical optical sub-systems, the axes of which intersect at an acute angle. Along each

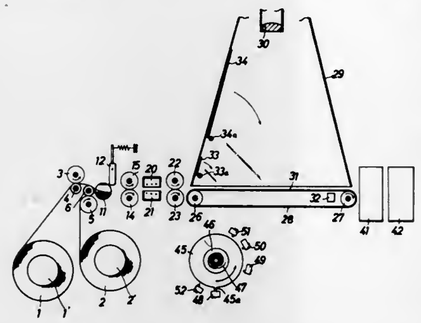
axis there is one fixed lens element and two lens elements which are movable relative to one another and to the fixed lens element. Each lens element is a cemented doublet. The particular characteristics of all the doublets, including their radii, thicknesses, refractive indices and dispersions, result in a system having well corrected aberrations over the entire magnification range while still achieving the desired continuously variable magnification function.

3,503,676
EYEGLASSES WITH TEMPORAL BONE BEARING AUXILIARY BOWS
Bert J. O'Neill, Bayside, N.Y.
(11 Center St., Greenport, N.Y. 11944)
Continuation-in-part of application Ser. No. 470,970, July 12, 1965. This application Sept. 5, 1968, Ser. No. 757,659
Int. Cl. G02c *5/14*
U.S. Cl. 351—123 **1 Claim**



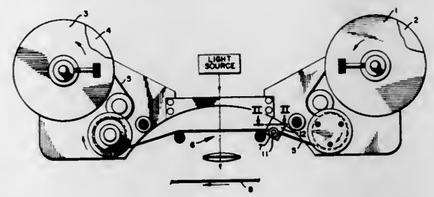
Eyeglasses are supported free of the nose of a wearer by two auxiliary bows which are designed to rest upon the temporal bones of the wearer's head. Each auxiliary bow is attached to the inner forward portion of the usual ear-engaging bow by a pivot mechanism which allows the position of the free end of the auxiliary bow to be adjusted.

3,503,677
ELECTROPHOTOGRAPHIC COPYING MACHINE
Tadamitsu Uchiyama, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed May 17, 1967, Ser. No. 639,187
Claims priority, application Japan, May 30, 1966, 41/34,254
Int. Cl. G03g *13/00, 15/00*; G03b *19/04*
U.S. Cl. 355—13 **4 Claims**



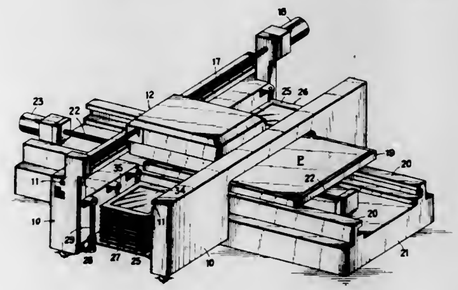
An electrophotographic machine having a plurality of rolls of photosensitive paper each roll being of a different width than the others to provide sheets of a different width. Paper feed rollers are provided for feeding a predetermined length of paper from a preselected one of the rolls and a cutter mechanism for cutting an appropriate length of paper from the preselected roll. After the paper is cut into its appropriate length, it is moved past suitable electrodes to be changed and then moved into a dark box where it is exposed to the object to be copied. Within the dark box is a belt conveyor for conveying the paper across one end of the box and a pivoted plate masking device adapted to cover one end of the box for masking part of the exposure area not occupied by paper when a smaller than the maximum size is being exposed.

3,503,678
FILM ALIGNMENT DEVICE AND PAPER ENGAGEMENT DEVICE FOR PHOTOCOPY EQUIPMENT
Frederic G. Ludwig, Woodbridge, Conn., assignor of one-third to Albert C. Nolte, Jr., New York, N.Y.
Filed Mar. 1, 1967, Ser. No. 619,840
Int. Cl. G03b *27/48*
U.S. Cl. 355—48 **10 Claims**



A film alignment device for aligning film with copy paper in photocopy equipment comprises an adjustment roller rotatably mounted for free rotation and axial movement transverse to the film on a shaft fixedly mounted on a frame of the photocopy equipment. A spring is positioned on the shaft between the adjustment roller and the frame. An adjusting nut is threadedly coupled on the threaded free end of the shaft. A locking nut is threadedly coupled on the free end of the shaft on the other side of the adjusting nut from the adjustment roller.

3,503,679
STEP-AND-REPEAT PHOTOCOMPOSING MACHINE
Masayoshi Kawarabayashi, Takatsuki, Takaaki Komori, Hikone, and Tsutomu Shimooka, Kyoto, Japan, assignors to Dainippon Screen Seizo Kabushiki Kaisha (Dainippon Screen Manufacturing Company, Limited), Kamikyo-ku, Kyoto, Japan
Filed Nov. 28, 1967, Ser. No. 686,042
Claims priority, application Japan, Dec. 5, 1966, 41/79,351
Int. Cl. G03b *27/08*
U.S. Cl. 355—53 **10 Claims**



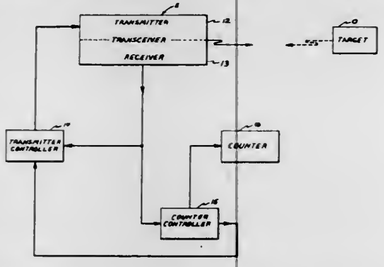
A step-and-repeat photocomposing machine having a magazine for holding a plurality of framed originals

stacked therein and a receptacle for receiving the originals. The carriage of the photocomposing machine automatically picks up an original from the magazine and moves the original into position for exposure on the platen of the machine. After repeated exposures, the carriage moves to the position above the receptacle and releases the original thereat. Then the carriage moves back to the magazine for receiving next original to be duplicated. The images of the originals are automatically transferred, by changing the originals in sequence, to a single photosensitized material which is located on the platen of the machine in accordance with a predetermined program.

3,503,680
RANGE MEASURING SYSTEM

Stanley Schenkerman, Mamaroneck, N.Y., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Mar. 31, 1967, Ser. No. 627,507
Int. Cl. G01c *3/00*; G01s *7/48*
U.S. Cl. 356—5 **10 Claims**



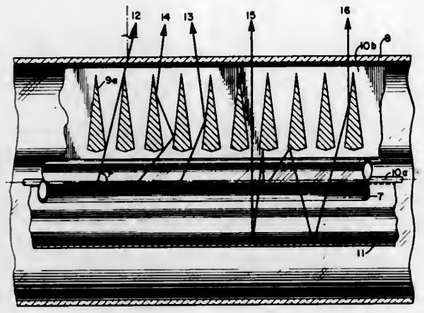
A pulse of energy is sent out in the direction of a target whose distance is being measured. The pulse is reflected by the target. When the echo pulse returns it is used as a signal for sending out another pulse of energy. Distance is measured by counting the time interval between the transmission of the first and the arrival back of the echo of the last of a predetermined number of pulses. The distance is proportional to and can be determined from this time interval.

3,503,681
ILLUMINATING DEVICE FOR REPRODUCTION PURPOSES

Kurt Jöns, Wiesbaden-Biebrich, and Gerhard Marx, Wiesbaden-Kastel, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

Filed Dec. 22, 1966, Ser. No. 603,837
Claims priority, application Germany, Dec. 22, 1965, K 57,981
Int. Cl. G03b *27/02*
U.S. Cl. 355—78 **22 Claims**

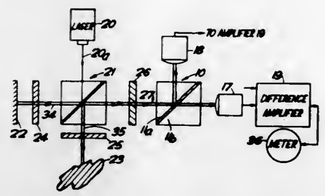
Apparatus is provided for reproduction purposes to obtain approximately parallel rays of light through a master to a copy sheet to prevent objectionable rays of light passing under the image portions of the master to obtain good copies with a resolution of the order of 180 lines per mm. The apparatus includes a source of light with a transparent support for the master and the copy sheet spaced from the source of light and a plurality of wedge shaped elements having an included angle of between 5 and 35 degrees arranged with their bases adjacent the source of light and there sharp edges adjacent the support with the central planes of the wedge shaped elements extending substantially perpendicularly to the light source and to the transparent support with the wedge shaped elements being closely spaced so a ray of light passing on one side of the base of one wedge and past the sharp edge of the adjacent wedge shaped element adjacent said one side will intersect the transparent support at an angle between 5 and 40 degrees to the vertical with the wedge shaped elements having their surfaces strongly reflective so that other rays striking the reflective surfaces will be reflected through the transparent support at an angle between 5 and 40 degrees to the vertical.



3,503,682
OPTICAL MIXING DEVICES

Stephen Charles Lauder Botcherby, London, England, assignor to Decca Limited, London, England, a British company

Filed Jan. 9, 1967, Ser. No. 608,042
Int. Cl. G01c *3/08*
U.S. Cl. 356—4 **7 Claims**



The invention relates to the use of a polarisation beam splitter as an optical mixing device in which unwanted signals common to one of two incident beams are removed. The optical mixing device essentially comprises a polarisation beam splitter arranged to received the incident beams, which are adjusted to have different, preferably orthogonal, planes of polarisation. A substracting circuit responsive to the beams transmitted and deflected by the beam splitter extracts a wanted signal derived from both incident beams. A use with Doppler velocity measuring apparatus is described.

ERRATUM

For Class 356—5 see:
Patent No. 3,503,680

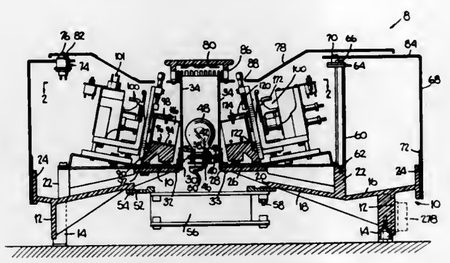
3,503,683
AUTOMATIC ANALYSIS APPARATUS

Jack Isreeli, Mamaroneck, and Richard H. Heimann, Flushing, N.Y., assignors to Technicon Corporation, a corporation of New York

Filed Feb. 23, 1966, Ser. No. 529,466
Int. Cl. G01n *1/00, 21/16*; G01j *3/46*
U.S. Cl. 356—36 **5 Claims**

The present invention relates to an improved static colorimeter structure for the concurrent quantitative analysis of a plurality of liquid samples. The colorimeter

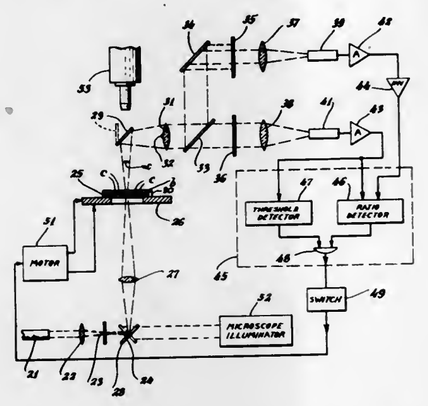
structure includes a central light source and plurality of flow cells along with companion light focusing means and light detecting means radially disposed about the light source. The flowcells, light focusing means, and light detecting means are relatively adjustable to insure proper illumination of each flowcell. A number of segments, or quotients, divided from a same liquid sample are treated for a known constituent, each treated segment then being directed to a different flowcell for colorimetric analysis. Since the flowcells are continuously illuminated, the analysis of the number of treated segments can be affected in any sequence, either continuously, concurrently, and/or sequentially, by proper control of the light detecting means.



3,503,684
METHOD AND APPARATUS FOR DETECTING MITOTIC BLOOD CELLS ON A BLOOD CELL SAMPLE SLIDE

Kendall Preston, Jr., New Haven, and Philip E. Norgren, Stamford, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Nov. 9, 1966, Ser. No. 593,056
Int. Cl. G01n *33/16*; G06k *9/08*
U.S. Cl. 356—39 **3 Claims**

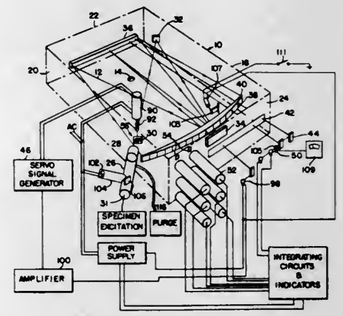


A method and apparatus for examining an object on a blood cell sample slide and determining if the object is a mitotic blood cell as opposed to a non-mitotic blood cell or other artifact that may be present on the blood cell sample slide. The object being examined is illuminated with a beam of monochromatic light. The intensity of light diffracted by the object is measured at two specific spatial frequency bands, one of the spatial frequency bands being at approximately 300 to 400 cycles/mm. and the other spatial frequency band being at approximately 65–90 cycles/mm. If the object is a mitotic blood cell, the intensity of light diffracted at the 300 to 400 cycles/mm. band relative to the input beam is about 1.4×10^{-4} and the ratio of the intensity of the two spatial frequency bands is approximately 0.5 or less. If both of these requirements are not met, the object is not a mitotic blood cell.

3,503,685
TEMPERATURE COMPENSATED SPECTROSCOPIC APPARATUS

Walter G. Driscoll, 163 Moore Road, Sudbury, Mass. 01776; Arthur L. Davison, 747 S. Fillmore, Allentown, Pa. 18103; and John R. Leeman, 411 Medford St., Somerville, Mass. 02145

Continuation-in-part of application Ser. No. 227,857, Oct. 2, 1962. This application Mar. 15, 1967, Ser. No. 623,268
Int. Cl. G01j *3/04*
U.S. Cl. 356—80 **4 Claims**

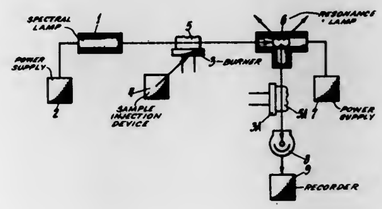


In a spectroscopic apparatus, the support for exit slits is fabricated from a material having a coefficient of expansion selected to compensate for changes in the interruling grating space resulting from changes in ambient temperature.

3,503,686
ATOMIC ABSORPTION SPECTROPHOTOMETER

Alan Walsh, Brighton, Victoria, and John Vincent Sullivan, Carnegie, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

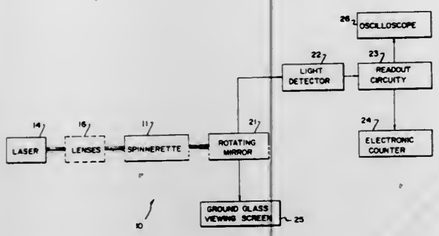
Filed May 31, 1966, Ser. No. 553,806
Claims priority, application Australia, May 28, 1965, 59,466/65
Int. Cl. G01j *3/42*; G01n *21/00*; H01l *17/04*
U.S. Cl. 356—85 **3 Claims**



An atomic absorption spectrophotometer utilizing a spectral lamp, a resonance lamp and photoelectric detector means wherein the resonance lamp is a multi-armed

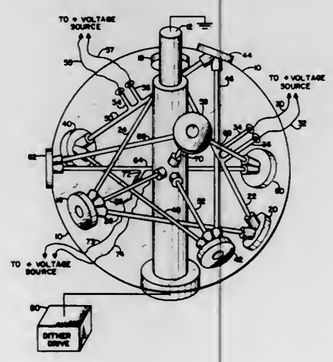
vapor generating tube which directs resonance radiation to the photoelectric detector means at right angles to the incident radiation from the spectral lamp.

3,503,687
SYSTEM USING A LASER BEAM FOR ANALYZING AN UNKNOWN APERTURE
Harry J. Venema, Wheaton, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 1, 1967, Ser. No. 634,991
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **2 Claims**



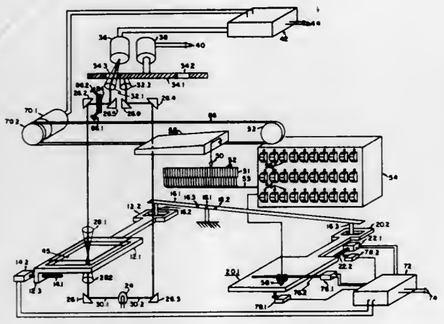
A laser beam measurement system in which a laser beam is directed at an unknown aperture in a spinnerette to effect a far-field diffraction pattern a predetermined distance beyond the aperture, a rotating mirror being located to intercept the diffraction pattern and transmit signals representative of the radiation intensity variation in the diffraction pattern to a readout circuit calibrated to feed signals to a legible indicator whereby the geometrical characteristics, for example, the diameter of the unknown aperture, are displayed.

3,503,688
MULTIPLE AXIS LASER ANGULAR RATE SENSOR
Robert R. Lechevalier, White Bear Lake, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,486
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **10 Claims**



A rugged and inexpensive structure for use in multiple axis laser angular rate sensors, in which a plurality of endless multi-sided light passages having intersecting effective planes are formed in a spherical block of quartz, the passages being completed by mirrors secured to the block at the ends of the passages to reflect light from one passage into another: angular oscillation communicated to the block simultaneously "dithers" the several passages to prevent "lock-in."

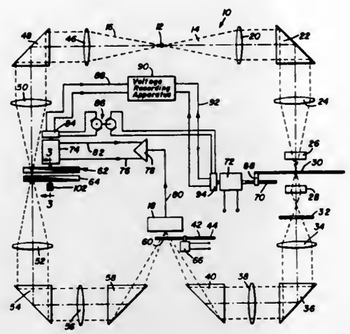
3,503,689
MICRODENSITOMETER
Carlton S. Miller, Bedford, Mass., and Frederick G. Parsons, Providence, R.I., assignors to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 372,239, June 3, 1964. This application Oct. 18, 1965, Ser. No. 497,421
Int. Cl. G01n *21/06, 21/22*
U.S. Cl. 356—203 **16 Claims**



This disclosure depicts apparatus for photo-detecting and recording in two dimensions incremental differences in a particular optical characteristic of an examined specimen including optical examining means for sequentially examining adjacent elemental regions of the specimen and print-out means responsive to a signal generated by the examining means for producing a quantized two-dimensional record indicative of the detected differences in said characteristic. The write-out means includes a plurality of pens containing different colored inks, each of which is capable of being actuated in one of a number of different marking modes, the apparatus having the capability of producing a number of different print-out codes equal to the product of the number of available pens and the number of available marking modes for each of the pens.

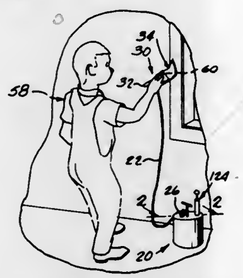
3,503,690
OPTICAL READING APPARATUS FOR MOIRE FRINGE PATTERNS
Cesar A. Sciammarella, Gainesville, Fla. (55 W. 14th St., New York, N.Y. 10011)
Filed June 8, 1966, Ser. No. 556,198
Int. Cl. G01n *21/22*
U.S. Cl. 356—205 **11 Claims**

Accurate information retrieval is obtained from film on which a moire fringe pattern is photographed by establishing two light beams respectively intersected by the film being interpreted and an optical attenuating wedge rotated to instantaneously vary the light intensity of the associated beam passing therethrough to balance the light of the beam passing through the film which is moved at a predetermined rate to scan the pattern recorded thereon. Distortion resulting from the nonlinear response of the film when exposed is compensated by a film sample on the optical wedge to obtain an output signal from the balanc-



ing circuit that is a linear function of the light intensity distribution of the actual moire fringe pattern image itself.

3,503,691
PRESSURIZED APPLICATORY-LIQUID FEEDING AND APPLYING APPARATUS
Paul W. Kirch, 2325 Kellogg Court, Altadena, Calif. 91001
Continuation-in-part of application Ser. No. 565,302, July 14, 1966. This application Sept. 13, 1968, Ser. No. 759,710
Int. Cl. A46b *11/02*
U.S. Cl. 401—188 **8 Claims**

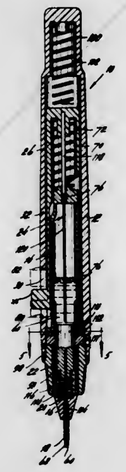


The specification discloses a pressurized applicatory-liquid feeding and applying apparatus including a pressurizable storage reservoir, a length of flexible feed tubing extending from the reservoir to an applicatory brush means and there being connected to coupling means carried by the brush means and extending thereinto at a location at the forward end of the handle where it joins a rear end of a brush body portion in a position offset from and at one side thereof at a location such as to provide minimum interference with a hand holding the handle and brush for liquid applicatory purposes. A normally closed, finger or thumb operable valve is carried by the brush in the flow path of the coupling means at a location suitable for operation by the holding hand, thus facilitating the easy pressurized feeding and application of paint or other liquid to a surface.

3,503,692
BALLPOINT PEN
Haruo Kubota, Nishinomiya, Ryuichi Ishida, Sakai, Yoshihiko Doi, Tsuneyoshi Amagasaki, and Takeshi Nisikawa, Itami, Japan, assignors to Sumitomo Electric Industries, Ltd., Higashi-ku, Osaka, Japan, a company of Japan
Filed Nov. 17, 1965, Ser. No. 508,227
Claims priority, application Japan, Nov. 21, 1964, 39/65,623
Int. Cl. B43k *7/10*
U.S. Cl. 401—215 **4 Claims**

WC-Co cemented carbides or a cermet are used as the material for point balls in ballpoint pens. In the case of WC-Co cemented carbides, the carbon content is at or below 6.12% with excess tungsten dissolved in the Co-phase or with the *y*-phase appearing in the WC base. In the case of a cermet, one or more carbides from the group Cr_3C_2, TaC, NbC, WC and TiC is added to the cermet and bound together by means of nickel or nickel alloy.

3,503,693
DRAFTING PEN
Edward Bok, Falls Church, Va., assignor to Dike, Inc., Washington, D.C., a corporation of the District of Columbia
Filed Sept. 26, 1968, Ser. No. 762,844
Int. Cl. B43k *1/10*
U.S. Cl. 401—259 **10 Claims**

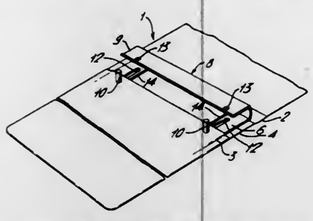


A means for simultaneous ink reservoir vent-control and control of the movements of the used cleaning wire in stylographic drafting pens.

3,503,694
LOOSE LEAF BINDERS
Frank David Walter Whadcoat and Donald Cooper, Harlow, England, assignors to Dorstel Press Limited, Harlow, Essex, England, a British company
Filed Oct. 5, 1967, Ser. No. 673,174
Claims priority, application Great Britain, Oct. 6, 1966, 44,762/66
Int. Cl. B42f *13/12*
U.S. Cl. 402—68 **8 Claims**

A loose leaf binder having a base member on which filing posts for receiving papers are mounted and a retaining member for the papers, the retaining member being slidable towards the base member to hold the papers on the filing posts and away from the base member to permit

removal of the papers from the filing posts, the binder being adapted for use with or without a cover and effective for filing papers of different dimensions and varying quantities.

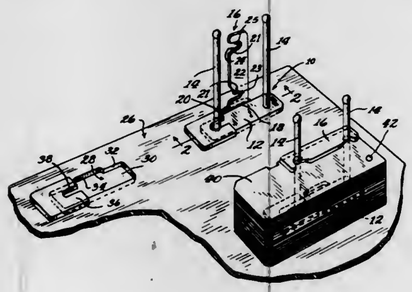


3,503,695

MEANS FOR RETAINING SALES COUNTING TICKETS AND THE LIKE AND FOR LOCKING SAME TOGETHER IN A STACK OR BUNDLE

Joseph F. Giampa, 9551 Lawrence Court, Schiller Park, Ill. 60176

Filed May 11, 1967, Ser. No. 637,755
Int. Cl. B42f 3/04
U.S. Cl. 402—71 7 Claims



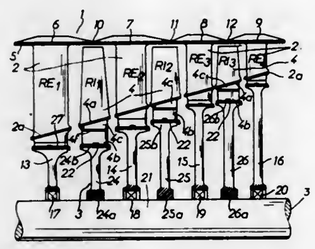
The invention relates to improvements in a holder for retaining sales counting tickets and the like and for locking same together in a stack or bundle. It comprises a holder having a plurality of spaced posts on which the tickets are threaded to retain them in a stack and has means for locking the stacked tickets together to form a self-contained bundle.

3,503,696

AXIAL FLOW TURBOMACHINES COMPRISING TWO INTERLEAVED ROTORS ROTATING IN OPPOSITE DIRECTIONS

Louis Jules Bauger, Vanves, Jean Georges Bouiller, Brunoy, Michel Robert Garnier, Sceaux, and Armand Jean-Baptiste Lacroix, Itteville, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

Filed Feb. 23, 1968, Ser. No. 707,719
Claims priority, application France, Feb. 27, 1967, 96,687
Int. Cl. F04d 19/00; B21k 3/04; B23a 3/00
U.S. Cl. 416—122 4 Claims



An axial flow turbomachine comprising two interleaved rotors rotating in opposite directions, of which the outer rotor forms, with the rows of blades carried by it, a unitary prefabricated block while the inner rotor is constituted by a succession of discs to the outer periphery of each of which are removably secured the blades of a row of blades, each of last-mentioned blades carrying a platform radially spaced from said outer periphery and registering with the inner platforms of the blades forming the rows of blades carried by the outer rotor, whereby the platforms on the blades of both rotors lie on a substantially continuous surface bounding inwardly the stream of fluid passing through the machine.

CHEMICAL

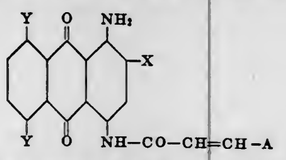
3,503,697

PROCESS FOR DYEING OR PRINTING FIBERS FROM AROMATIC POLYESTERS

Visvanathan Ramanathan, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Continuation-in-part of application Ser. No. 478,757, Aug. 10, 1965. This application Nov. 15, 1967, Ser. No. 683,140
Int. Cl. C09b 1/22; D06p 3/54
U.S. Cl. 8—39 9 Claims

Cinnamoylaminoanthraquinones of the formula



in which A is a phenyl radical, which may be substituted for example by halogen atom, lower alkyl, lower alkoxy or nitro groups X is a hydrogen or halogen atom, or a lower alkyl-, lower alkoxy-, phenoxy-, acyl-, nitro-, cyano-, lower alkyl-mercapto- or phenyl-mercapto-group, one Y is a hydrogen atom and the other Y is a hydrogen atom or a nitro-group yield valuable red to blue dyeings of high-fastness-properties on polyester fibers.

3,503,698

PAD-DYEING AND PRINTING TEXTILE FIBERS

Jacques Zurbuchen, Pratteln, Basel-Land, Ernst Adolf Räuchle, Basel, and Jakob Bindler, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

Continuation-in-part of application Ser. No. 464,263, May 11, 1965, which is a division of application Ser. No. 409,349, Nov. 2, 1964, which in turn is a continuation-in-part of application Ser. No. 333,261, Dec. 23, 1963. This application Feb. 8, 1966, Ser. No. 525,937
Claims priority, application Switzerland, Feb. 8, 1963, 1,594/63; May 21, 1963, 6,325/63; July 22, 1964, 9,566/64; July 24, 1964, 9,705/64
Int. Cl. D06p 5/06; C11d 1/12
U.S. Cl. 8—41 26 Claims

There is disclosed a process for the continuous pad-dyeing of natural and synthetic polyamide and other textile fibers as well as novel dyestuff carriers and dyestuff pastes prepared therefrom. The process involves impregnating the fibers with an aqueous pad-liquor and fixing the dyestuff on the treated goods by a heat treatment in a humid medium, by treating the goods with hot steam and/or passing them through a hot acid bath. The pad-liquor contains a dyestuff carrier, non-cationic dyestuff capable of drawing on the fibers and sufficient additional adjuvants to achieve the proper pH and viscosity range. The dyestuff carrier consists essentially of a mixture of

(A) An unsulfated amide of a member selected from the class consisting of wholly saturated fatty acid of from 8 to 14 carbon atoms, and lower alkanoic acid which is substituted by higher alkyl-phenoxy wherein the higher alkyl moiety has from 8 to 12 carbon atoms, amidified with a member selected from the group consisting of

(a) mono-hydroxy and di-hydroxy substituted mono-alkylamines of from 2 to 4 carbon atoms, having one hydroxyl group in ω-position,
(b) bis-(ω-hydroxyalkyl)-amines of a total of from 4 to 6 carbon atoms,
(c) N-lower alkyl-N-ω-hydroxyalkylamine wherein the hydroxyalkyl group has from 2 to 3 carbon atoms, and
(d) mono-(ω-alkoxy-alkyl)-amine of a total of from 3 to 5 carbon atoms, at least two of which pertain to the "alkyl" moiety;

(B) A member selected from the group consisting of

(i) a sulfated alkanol of from 8 to 14 carbon atoms,
(ii) a sulfated condensation product of an alkanol of from 8 to 14 carbon atoms with ethylene oxide, consensed with each other in a molar ratio of from 1:1 to 1:20,
(iii) a sulfated condensation product of alkylphenol, the alkyl moiety of which has from 8 to 12 carbon atoms, with ethylene oxide, in a molar ratio of from 1:1 to 1:20,
(iv) a sulfated N-hydroxy-lower alkyl-substituted amide of a substantially wholly saturated fatty acid of from 8 to 14 carbon atoms,
(v) a sulfated (higher alkylphenoxy)-substituted lower alkanoic acid N-hydroxy-lower alkyl-substituted amide, wherein the "higher alkyl" group has from 8 to 12 carbon atoms,
(vi) a sulfated (higher alkylphenyl)-2,3-dihydroxy-propyl)-ether the higher alkyl radical of which has from 8 to 12 carbon atoms,
(vii) a sulfated hydroxy-substituted unsaturated fatty acid or a lower alkyl ester thereof, said fatty acid having from 15 to 18 carbon atoms,
(viii) the alkali metal, ammonium, lower alkyl-ammonium and ω-hydroxy-lower alkylammonium salts of (i) to (vii) inclusive; and

(C) Optionally a clarifying agent.

3,503,699

STABLE HIGHLY CONCENTRATED SOLUTIONS OF BASIC DYES

Gerhard Wellenreuther and Hans Burkhardt, Limburgerhof, Pfalz, and Heinz Eilingsfeld, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,466
Claims priority, application Germany, Mar. 2, 1966, 1,619,327
Int. Cl. C09b 67/00
U.S. Cl. 8—93 7 Claims

Highly concentrated stable solutions of basic dyes in cyanohydrins or chlorohydrins.

3,503,700

WET AND DRY STRENGTH AND LIQUID REPELLANCY OF FIBROUS MATERIAL

William H. Griggs, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 3, 1967, Ser. No. 658,038
Int. Cl. D06m 1/22
U.S. Cl. 8—115.6 2 Claims

It has recently been found that fibrous materials such as water laid unsized paper (waterleaf paper) has increased wet and dry strength after being treated with amine oxide solvents or swelling agents such as N-methylmorpholine-N-oxide. The treated material retains its wettability, which may be a disadvantage, but most waterproofing materials interfere with the action of the amine oxides if applied first or result in excessive wetting of the sheet if applied later. The present process provides liquid repellancy by the use of a ketene, such as an alkylketene dimer, which does not interfere with effectiveness of the amine oxide, nor does the latter interfere with the effectiveness of the ketene.

3,503,701

TEXTILE TREATING AGENTS AND METHODS OF PREPARING SAME

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,649
Int. Cl. D06m 13/12, 13/34
U.S. Cl. 8—116.3 3 Claims

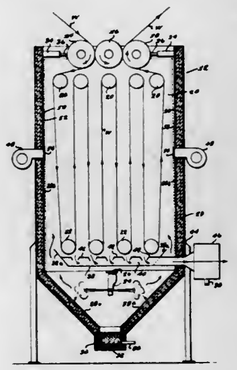
This invention relates to a process for modifying a cellulosic textile which comprises the step of reacting said textile with an alkaline catalyst at temperatures in excess of 80° C. with solutions of aldehyde carbamate ketone condensates.

3,503,702

PROCESS AND APPARATUS FOR FLUID TREATMENT OF SUBSTRATE

William T. Carpenter, Stanley, N.C., assignor to Gaston County Dyeing Machine Company, Stanley, N.C., a corporation of North Carolina

Filed Feb. 2, 1967, Ser. No. 613,651
Int. Cl. D06c 1/04
U.S. Cl. 8—149.2 14 Claims



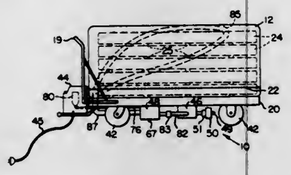
A process and enabling apparatus for applying a fluid treating medium to substrate, particularly textile materials in either web or strand form. Application is accomplished by sonic generation of a lingering dispersion

of the fluid treating medium within a closed chamber while passing the substrate through the chamber for exposure to the dispersion. Results fully comparable to padding are obtained; good control and uniformity of application are provided; and drying rates are much increased, as sonic dispersal allows treating mediums of high solids concentration (i.e., up to about 33%) to be handled effectively.

3,503,703
APPARATUS FOR STERILIZING

Robert L. McDonald, Rochester, and Alvin F. Bernreuther, Macedon, N.Y., assignors, by mesne assignments, to Sybron Corporation, a corporation of New York

Filed Dec. 14, 1964, Ser. No. 417,974
Int. Cl. A61l *3/00, 5/00, 7/00*
U.S. Cl. 21—91 **5 Claims**

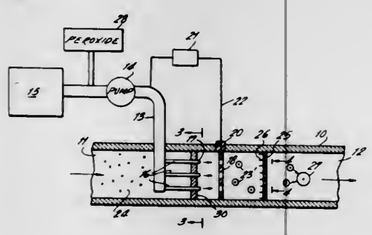


A sterilizing apparatus having a gas impermeable barrier, a completely flexible and collapsible gas impermeable bag having an aperture for receiving articles to be sterilized and adapted to be mounted in gastight connection with the barrier. Suitable means for connecting the bag onto the barrier in gastight relationship and exhaust means for reducing the internal pressure in the bag and for circulating air in the bag and valving and controls for carrying out a sterilizing cycle in the bag.

3,503,704
METHOD AND APPARATUS FOR SUPPRESSING FUMES WITH CHARGED AEROSOLS

Alvin M. Marks, 153—16 10th Ave., Whitestone, N.Y. 11357

Filed Oct. 3, 1966, Ser. No. 583,749
Int. Cl. B03c *3/01, 3/38*
U.S. Cl. 23—2 **9 Claims**



Noxious fumes are neutralized and detoxified as they pass through a conduit by mixing them with a liquid droplet aerosol simultaneously charged and formed by an array of fluid dispensing capillary tubes and a charging electrode spaced down stream of the tubes. The fumes are entrained, absorbed and/or reacted by the minute droplets which may also contain reactants to react with the gas. A discharge electrode neutralizes the charge on the aerosol droplets following which, they coalesce to form larger collectable bodies.

3,503,705
PROCESSING OF OIL SHALE

James E. Tackett, Jr., Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,909
Int. Cl. C01d *11/00;* **C01x** *7/00, 7/04*
U.S. Cl. 23—50 **6 Claims**

Aluminous compounds are extracted from oil shale by contacting the oil shale with an acidic aqueous solution containing a surfactant sufficient to reduce the interfacial tension between kerogen (surrounding dawsonite in the oil shale) and the solution thus permitting the solution to contact and solubilize the dawsonite, and then treating the liquid phase to extract the aluminous compounds therefrom.

3,503,706
PROCESS FOR MANUFACTURING AMMONIUM POLYPHOSPHATE

Casimer C. Legal, Jr., Elkridge, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Continuation-in-part of applications Ser. No. 355,908, Mar. 30, 1964, Ser. No. 483,742, Aug. 30, 1965, and Ser. No. 588,034, Oct. 20, 1966. This application Aug. 5, 1968, Ser. No. 750,138
Int. Cl. C01b *25/38*
U.S. Cl. 23—107 **8 Claims**

An improved method for producing ammonium polyphosphatic material which comprises introducing anhydrous ammonia and wet process phosphoric acid into a pipe line reactor wherein the materials react exothermically and are discharged as a hot anhydrous melt having at least a portion of its P_2O_5 content as non-ortho P_2O_5. The invention is based on the discovery that the act of agitating the hot melt as it emerges from the pipe line reactor and before granulation imparts highly desirable and unexpected properties to the ammonium polyphosphatic product.

3,503,707
SILICA PIGMENTS AND PREPARATION THEREOF

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla. 33304

No Drawing. Continuation-in-part of application Ser. No. 480,184, Aug. 16, 1965. This application May 20, 1968, Ser. No. 730,592
Int. Cl. C01b *33/00, 33/14, 33/18*
U.S. Cl. 23—182 **6 Claims**

Silica pigments are precipitated by the acidulation of aqueous sodium silicate solution with carbon dioxide, and consist of aggregations and flocs of ultimate particles. In prior Patent No. 3,250,594 the sizes of the ultimate particles, the aggregations, and the flocs, are controlled relative to each other, by acidulating with carbon dioxide at different average rates in different ranges during critical stages of the acidulation. One embodiment herein improves that process by interrupting the acidulation with carbon dioxide and aging the aqueous alkali metal silicate at critical stages of the acidulation to permit the formation of precipitating particles while maintaining a constant alkalinity of the partially acidulated solution. In one embodiment the new process is effected in the absence of soluble salt other than that produced by the acidulation.

3,503,708
GRAPHITE YARN

William J. Spry, Lewiston, N.Y., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York

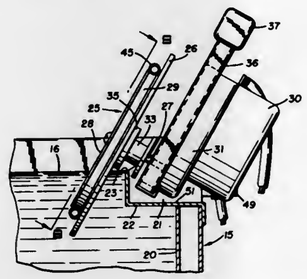
Original application Aug. 26, 1965, Ser. No. 483,395, now Patent No. 3,454,362, dated July 8, 1969. Divided and this application Dec. 27, 1968, Ser. No. 787,356
Claims priority, application Great Britain, Mar. 16, 1965, 11,022/65
Int. Cl. C01b *31/07*
U.S. Cl. 23—209.2 **7 Claims**

A refractory carbonaceous yarn characterized by its high tensile strength and modulus of elasticity is provided. The process for producing such a yarn comprises heating the starting carbonaceous yarn to a temperature sufficient to permit it to undergo plastic flow and longitudinally stretching the heated yarn by subjecting it to a tensional force until an elongation of at least 1% of the original length of the yarn has been obtained while heating the elongated yarn to graphitizing temperatures and cooling the permanently so-elongated yarn.

3,503,709
METHOD AND SYSTEM FOR TESTING BLOOD SAMPLES FOR THROMBUS FORMATION TIME

Donald E. Yochem, 3227 Tremont Road, Columbus, Ohio 43221

Filed Oct. 26, 1967, Ser. No. 678,405
Int. Cl. G01n *11/04, 33/16*
U.S. Cl. 23—230 **13 Claims**



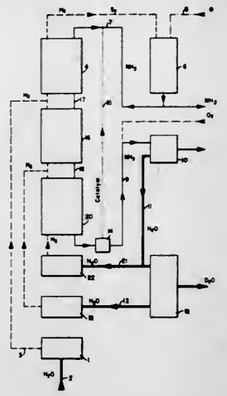
A method and equipment for testing a sample of blood to determine the time it takes for a thrombus to form in the specific sample. The method and equipment are designed to simulate actual conditions in the human body during thrombus formation in regard to the maintaining of body temperature during the test and the provision for a restricted passage, simulating the restricted passage in a blood vessel in the body at the time of thrombus formation, and the movement of blood through the restricted passageway or past an obstruction as in an obstructed blood vessel.

3,503,710
METHOD OF ISOTOPE CONCENTRATION

Theodor Ernst Schunck, Dortmund, Germany, assignor to Friedrich Uhde G.m.b.H., Dortmund, Germany, a German company

Filed Jan. 17, 1962, Ser. No. 166,958
Claims priority, application Germany, Jan. 24, 1961, U 7,745
Int. Cl. C01b *5/02*
U.S. Cl. 23—204 **3 Claims**

1. A multistage process for producing deuterium enriched water comprising, in a preconcentration stage conducting counter current isotope exchange between hydrogen and ammonia in a series of isotope exchange zones, wherein normal deuterium content hydrogen efflux from an intermediate exchange zone is exchanged with ammonia of relatively low deuterium content in the first of said zones, hydrogen efflux of enriched deuterium content from the last of said zones is exchanged in an intermediate zone with ammonia efflux of enriched deuterium content from said first zone, hydrogen of relatively high deuterium content is exchanged in the last of said zones with ammonia efflux of relatively high deuterium content from said intermediate zone; feeding ammonia efflux of highly enriched deuterium content from said last zone into a combustion zone for reaction with oxygen to produce a water product of highly enriched deuterium content, re-



cycling a portion of said water product to said preconcentration stage wherein it is electrolyzed to produce hydrogen of relatively high deuterium content which is fed into the last of said exchange zones, feeding another portion of said water product to a high concentration stage to produce a more concentrated deuterium enriched water, recovering reflux water from said high concentration stage and electrolyzing it to obtain hydrogen enriched deuterium content which is fed into said intermediate zone; and feeding hydrogen efflux of relatively low deuterium content from said first exchange zone into an ammonia synthesis zone for reaction with deuterium-free nitrogen to produce ammonia of relatively low deuterium content which is fed into said first exchange zone.

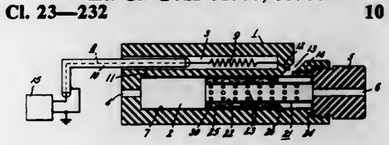
ERRATUM

For Class 23—230 see:
Patent No. 3,504,376

3,503,711
AMMONIA DETECTION APPARATUS AND METHOD

George F. Skala, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 23, 1965, Ser. No. 516,013
Int. Cl. G01n *31/00, 33/00*
U.S. Cl. 23—232 **10 Claims**



An apparatus for detecting the presence of small amounts of ammonia in a gas such as air is disclosed wherein the gas-ammonia mixture is treated with a corona

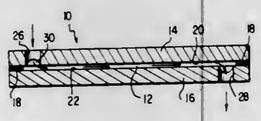
discharge before it is exposed to acid vapor to form ammonium salt condensation nuclei which are then detected and measured, or wherein an ammonia-free gas is treated with a corona discharge and then mixed with the ammonia containing gas before exposure to the acid vapor. The use of the corona treatment increases the sensitivity of the instrument by a factor of ten or more.

3,503,712

APPARATUS FOR EFFECTING INTERACTIONS OF FLUIDS AT EXTENDED SOLID SURFACES

Martin Victor Susman, Lexington, Mass., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York

Filed May 18, 1966, Ser. No. 551,089
Int. Cl. B01j *9/04;* **B01d** *53/00;* **G01n** *31/08*
U.S. Cl. 23—252 **8 Claims**



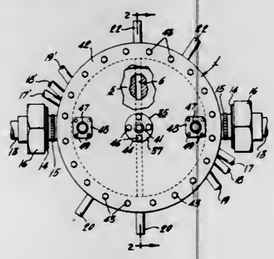
Chemical and physical interaction of fluids is carried out in apparatus including at least one pair of separable members mounted in fixed, spaced parallel relation to define between the opposed surfaces of the separable members a reaction channel with the opposed surfaces forming the channel spaced about .00004 to about .25 inch and having a substantially larger areal dimension. One or both of the opposed surfaces forming the channel may be coated with a solvent or chemical catalyst and fluid inlet and outlet means are provided for directing the fluid or fluids to be separated or modified through the formed channel.

3,503,713

VALVE ARRANGEMENT FOR REACTORS

William B. Hansel, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 26, 1968, Ser. No. 708,326
Int. Cl. B01j *3/02;* **C07c** *11/24*
U.S. Cl. 23—284 **9 Claims**



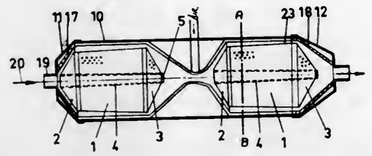
For valving at the center of the length of an elongated shock tube of circular cross section which is arranged for rotation about a central axis transverse to the longitudinal axis of the tube, a hole is drilled through the tube wall along this axis, and a stationary valve stem is mounted in this hole. This stem has a port opening in its outer cylindrical wall which communicates at its inner end with a channel in the stem, and the inner end face of the stem matches the curvature of the shock tube wall.

3,503,714

APPARATUS FOR DECONTAMINATION OF EXHAUST GASES OF INTERNAL COMBUSTION ENGINES

Ludwig Lang, Darmstadt, Germany, assignor to Arno Fitterer & Sohn, Baden-Baden, Germany

Filed Sept. 6, 1966, Ser. No. 577,232
Claims priority, application Germany, Sept. 7, 1965, 1,301,337; June 16, 1966, 1,476,515
Int. Cl. B01j *9/04*
U.S. Cl. 23—288 **7 Claims**



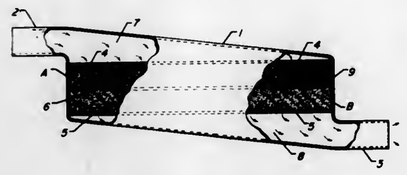
An exhaust gas decontamination device which utilizes two chambers separated by a venturi tube, in which the first chamber has an afterburner device or a catalyst body therein arranged, and in the second chamber a suitable catalyst mass is provided in a permeable housing having an internal flow channel, and in which a fresh air feed is provided forming an operating temperature regulator of an exhaust gas and air mixture in said device and in which a bypass system is provided operable to cause exhaust gas bypass for speed ranges in excess of 60 km./h. while inoperative for speed ranges below 60 km./h.

3,503,715

APPARATUS FOR TREATING AN EXHAUST GAS STREAM WITH DIFFERENT CATALYST BEDS

Vladimir Haensel, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 302,794, Aug. 19, 1963. This application Apr. 5, 1968, Ser. No. 733,200
Int. Cl. F01m *3/14;* **B01d** *53/34;* **B01j** *9/04*
U.S. Cl. 23—288 **5 Claims**



A unitary apparatus for effecting the catalytic oxidation of engine exhaust gases, where there may be both high and low quantities of hydrocarbon emissions with such gases, with one catalyst layer comprising platinized alumina particles and a next adjacent layer comprising platinized alumina particles containing a barium, calcium or strontium component.

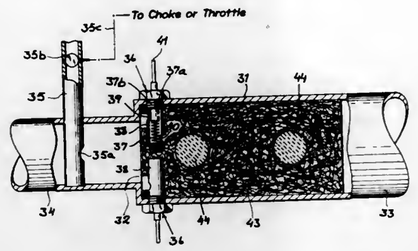
3,503,716

APPARATUS FOR THE CATALYTIC REMOVAL OF NOXIOUS SUBSTANCES FROM ENGINE EXHAUST GASES

Heinz Berger, Triftweg 2, Hoxter, Westphalia, Germany

Filed Oct. 31, 1966, Ser. No. 590,931
Claims priority, application Germany, Oct. 29, 1965, B 84,292
Int. Cl. B01j *9/04;* **F02c** *7/26*
U.S. Cl. 23—288 **1 Claim**

This disclosure relates to an apparatus for the catalytic oxidation of automotive exhaust gas in which the gas is passed initially through a pre-igniting compartment containing a heating element and thence into contact with a catalyst mass together with secondary air for oxidizing combustible components of the exhaust gas.



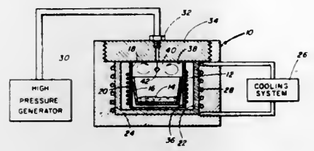
The catalyst chamber is surrounded by a preheating compartment through which the gas is led initially so that the incoming exhaust gas and secondary air is brought to a higher temperature for the catalyst reaction. Temperature-control means regulates the supply of secondary air and/or the operation of the pre-igniting means to maintain the temperature in the catalyst zone within a predetermined range.

3,503,717

CRYSTALLIZATION AT HIGH PRESSURE TO PREVENT SELF DIFFUSION OF MATERIALS

Wayne D. Wilson, 2000 Wallace Ave., Silver Spring, Md. 20902, and Hubert B. Hall, 716 Somerset Place, Hyattsville, Md. 20783

Filed Dec. 22, 1966, Ser. No. 605,513
Int. Cl. B01j *17/30;* **C01b** *9/08;* **B01d** *9/00*
U.S. Cl. 23—294 **7 Claims**



A method of high-pressure crystallizing materials which have a tendency to decompose or self diffuse on heating. The process utilizes a temperature gradient in a high pressure vessel to cause a circulation of the high pressure gas system to deposit vapors from the melt of the material to be crystallized on a seed crystal suspended above the melt.

3,503,718

PHOSPHORUS TRIOXIDE-GROUP III COMPOUNDS

Jean G. Riess, Brentwood, and John R. Van Wazer, Ladue, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,799
Int. Cl. C01b *25/26;* **C07f** *9/02*
U.S. Cl. 23—315 **9 Claims**

The present invention relates to new chemical compounds which embody a phosphorus trioxide moiety P_4O_6, combined with metal compounds. The compounds of the invention are useful as intermediates and as catalysts, such as in the polymerization of olefins.

3,503,719

HETEROLYTIC FISSION OF ELEMENTARY FLUORINE IN THE PREPARATION OF AN ADDUCT OF FLUORINATED LEWIS BASES WITH LEWIS ACIDS

Karl O. Christe, Berkeley, Jacques P. Guertin, Pinole, and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 1, 1967, Ser. No. 619,545
Int. Cl. C01b *27/00, 27/02;* **C06d** *5/00*
U.S. Cl. 23—315 **8 Claims**

The process is the heterolytic fission of elementary fluorine by the co-action of a highly fluorinated Lewis acid and a highly fluorinated Lewis base in the presence of an activation energy source forming an adduct of the three components. Representative of the adducts is the adduct prepared from NF_3, F_2, and AsF_5, namely, tetrafluoronitrogen(V) hexafluoroarsenate(V), represented by the structural formula, $[NF_4^+AsF_6^-]$. The preparation is carried out in the presence of an electric discharge as the activation energy source. The compounds are useful as oxidizing components in rocket propellants, as oxidizers, and as fluorinating agents for organic compounds.

3,503,720

RHENIUM-REFRACTORY METAL ALLOYS

John E. Peters, Wolcott, Conn., assignor to The Chase Brass & Copper Company, Incorporated, Cleveland, Ohio, a corporation of Connecticut

No Drawing. Original application June 24, 1966, Ser. No. 560,098, now Patent No. 3,375,109, dated Mar. 26, 1968. Divided and this application July 26, 1967, Ser. No. 661,494
Int. Cl. B22f *1/00*
U.S. Cl. 29—182 **10 Claims**

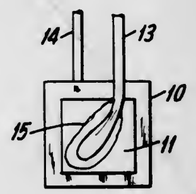
Pre-alloyed metal powders of rhenium-tungsten and rhenium-molybdenum are disclosed, together with sintered slugs of such pre-alloyed metal powders, having unique properties for the preparation of refractory metal alloys useful in the fabrication of various components by powder metallurgy techniques.

3,503,721

ELECTRONIC COMPONENTS JOINED BY TIN-SILVER EUTECTIC SOLDER

David A. Lupfer, Metuchen, N.J., assignor to Nytronics, Inc., Berkeley Heights, N.J., a corporation of New Jersey

Filed Feb. 16, 1967, Ser. No. 616,649
Int. Cl. B32b *15/04*
U.S. Cl. 29—195 **4 Claims**



An article of manufacture is provided in the form of an electronic impedance component comprising a ceramic dielectric member, an electrically conductive thin metal film electrically associated with a surface of the ceramic dielectric member, and a lead connector joined by means of a solder to said electrically conductive thin metal film, the solder consisting essentially of a eutectic composition of tin and silver.

3,503,722
BLENDING SYSTEM

Harry R. Weber, Haddon Township, Camden County, and Donald P. Heath, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Continuation of application Ser. No. 235,060, Nov. 2, 1962. This application Aug. 13, 1968, Ser. No. 755,017
Int. Cl. C10l *1/04*
U.S. Cl. 44—2 5 Claims

A fuel product stream is blended in-line from a plurality of component streams by powering a knock test engine with a sample stream of the fuel product, and generating a signal representative of the knocking propensity of the sample powering the engine. An error signal representative of the deviation of the knocking propensity signal from a predetermined knocking propensity is generated and the relative proportions of the component streams are modified in response to a function of the error signal to reduce the error signal.

3,503,723
CARBURETOR DE-ICING

John D. Newkirk, Downers Grove, and Richard M. Miller, La Grange, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

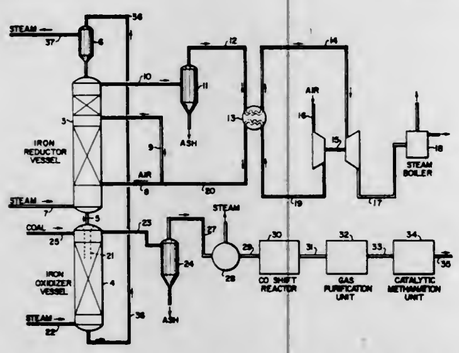
No Drawing. Continuation-in-part of application Ser. No. 509,189, Nov. 22, 1965. This application June 26, 1968, Ser. No. 740,034
Int. Cl. C10l *1/44*
U.S. Cl. 44—63 5 Claims

Carburetor icing of internal combustion engines using volatile hydrocarbon fuels is prevented by treating such fuels with a phosphorylated imidazoline composition.

3,503,724
METHOD AND APPARATUS FOR PRODUCING MIXTURES OF METHANE, CARBON MONOXIDE, AND HYDROGEN

Homer E. Benson, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Continuation of application Ser. No. 598,072, Nov. 30, 1966. This application Apr. 14, 1969, Ser. No. 816,000
Int. Cl. C10j *3/00*; C01b *1/08*
U.S. Cl. 48—73 21 Claims

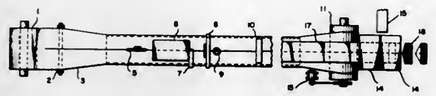


In a continuous steam-iron process wherein finely divided iron oxides are reduced in a reduction zone and the reduced iron oxides are reacted with steam in an oxidation zone to make hydrogen, the improvement whereby high B.t.u. gas may be made from carbonaceous materials which comprises effecting hydrogasification of carbonaceous material in said oxidation zone, and combustion of carbonaceous material in said reduction zone, so that only two zones, instead of the usual four, are required for making high B.t.u. gas by the steam-iron process.

3,503,725
CONTINUOUS METHOD OF MAKING ABRASIVE FINISHING MATERIALS

Forrest P. Leipold, Portage, Mich., assignor to Roto-Finish Company, Kalamazoo, Mich., a corporation of Michigan

Filed Sept. 19, 1967, Ser. No. 668,918
Int. Cl. B24d *3/00, 11/02*; C08g *51/12*
U.S. Cl. 51—298 4 Claims

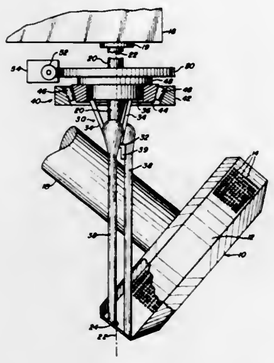


A method of making resin-bonded abrasive finishing material for use in vibratory finishing, tumbling, and the like, comprising the steps of providing a mixture of a particulate abrasive material with a curable resin, the resin being in a fluid state, depositing the mixture onto a movable web contoured to a desired cross-sectional shape, moving the web including the mixture along a predetermined path, partially curing the resin in the mixture during said movement along said predetermined path, separating the partially-cured resin-abrasive mixture at a point in said movement while said mixture is still in a gelatinous or uncured state from the moving web, cutting the partially-cured resin-abrasive mixture into suitable segments while in the uncured or gelatinous state, and curing the individual resin-abrasive segments thus-produced.

3,503,726
METHOD AND APPARATUS FOR DYNAMICALLY DISTRIBUTING MOLTEN MATERIAL ONTO A SPINNER SURFACE

Dieter O. Weck, Wabash, Ind., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,631
Int. Cl. C03b *19/04*
U.S. Cl. 65—15 3 Claims

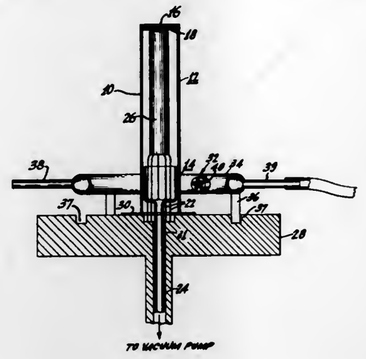


A stream of molten glass is directed into a rotatable distributor which is positioned over the upwardly exposed inner surface of the perforate band of a spinner mounted on an inclined shaft. The distributor divides the glass into a plurality of spaced discrete streamlets which are directed onto said inner surface in a predetermined pattern, and the distributor is continuously rotated about a substantially vertical axis at a relatively low speed to distribute the molten glass across the perforate band of the spinner.

3,503,727
METHOD FOR GLASS TO GLASS SEALING UTILIZING SOFTENED AND RIGID CIRCUMFERENTIAL SEGMENTS

Herbert C. Werner, Lancaster, Pa., assignor to RCA Corporation, a corporation of Delaware

Filed Dec. 12, 1967, Ser. No. 689,904
Int. Cl. C03b *29/02*; C03c *27/06*
U.S. Cl. 65—57 9 Claims

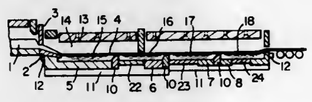


A method of hermetically sealing together the stem and bulb of a glass envelope of an electron tube includes closely fitting the cylindrical stem concentrically inside the open end of the bulb so that the bulb wall overlaps the stem wall in a telescoping fashion. The bulb, with stem in place, is then seated on a vacuum system and evacuated. When the pressure inside the bulb is reduced to a value considerably below normal atmospheric pressure, first circumferential segments of an annular area of the overlapping part of the bulb wall are successively heated to softening temperature so that the gas pressure on the outside of the bulb wall collapses the wall inwardly to contact and fuse with the stem wall. Throughout the heating, second circumferential segments of the annular area remain cool and rigid, so that there is no change in overall dimensions of the bulb.

3,503,728
FLOAT GLASS TANK WITH REPLACEABLE BOTTOM WALL MEANS

Kiyoshi Itakura, Kobe, Japan, assignor to Nippon Sheet Glass Co., Ltd., Osaka, Japan

Filed Feb. 3, 1967, Ser. No. 613,958
Claims priority, application Japan, Feb. 14, 1966, 41/8,401
Int. Cl. C03b *18/00*
U.S. Cl. 65—182 8 Claims

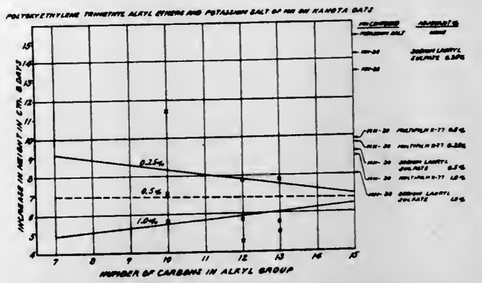


Sheet glass manufacturing apparatus contains a molten metal bath and includes a bottom wall floor being made of refractory material and being provided with external cooling means. The bath is partitioned into two or more zones by means of at least one dam traversing widthwise of the bath. The floor of the bottom wall in at least one of the zones is replaced in part with a member having better thermal conductivity than the other parts of the floor. The result is to achieve transverse temperature uniformity across the width of the molten metal bath.

3,503,729
6-HYDROXY-3-(2H)-PYRIDAZINONES WITH POLYOXYETHYLENE-BRANCHED CHAIN SURFACTANTS AS PLANT GROWTH REGULANTS

Jack P. Corkins, Porterville, Calif., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

Filed Apr. 18, 1966, Ser. No. 543,141
Int. Cl. A01n *5/00, 9/20*
U.S. Cl. 71—76 29 Claims



A phytoactive composition which comprises 6-hydroxy-3-(2H)-pyridazinone or its salts and an adjuvant having the formula $R—(OC_2H_4)_nOH$ wherein R is a saturated branched aliphatic group having from 4 to 30 carbon atoms and *n* is from 6 to 25 and the method of using such compositions as plant growth regulants and phytocides.

3,503,730
SULFITE PRUNING AGENTS

Bogislav von Schmeling, Hamden, Rupert A. Covey, Wolcott, and Charles E. Crittendon, Hamden, Conn., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 22, 1967, Ser. No. 692,656
Int. Cl. A01n *9/14*; C07c *137/00*
U.S. Cl. 71—76 5 Claims

Aliphatic alkynyl and alkenyl sulfites achieve safe chemical regulation of plant growth by selectively killing meristematic tissue without harming matured foliage and stem tissue.

3,503,731
HERBICIDAL 2-(ω,ω-DIETHYLENEOXYURAMIDO) BENZOATE COMPOUNDS AND METHODS

Don L. Hunter, Anaheim, Kiyoshi Kitasaki, Garden Grove, and Cecil W. LeFevre, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Original application Dec. 5, 1966, Ser. No. 598,981. Divided and this application July 19, 1968, Ser. No. 745,999
Int. Cl. A01n *9/12, 9/22*; C07d *87/42*
U.S. Cl. 71—88 15 Claims

A novel class of compounds including 2-(ω,ω-diethyleneoxyuramido)benzoic acid, its esters, phytotoxic salts, and the thio analogues thereof are provided. The compounds are useful as herbicides and are especially useful for controlling wild oats in the presence of desirable crops.

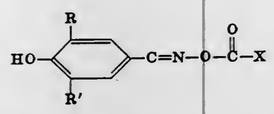
3,503,732
COMBATING WEEDS WITH O-ACYL-3,5-DIALKYL-4-HYDROXYBENZALDOXIMES

Roger P. Cahoy, Merriam, Kans., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,809
Int. Cl. A01n *9/20*; C07c *131/00*
U.S. Cl. 71—121 5 Claims

In a variety of crops, including broadleaf species such as tomatoes and soybeans, as well as corn and small

grains, particularly rice and wheat, control of noxious grasses, including crabgrass, wild oats, foxtail and shattercane is obtained by preemergent application of compounds having the structural formula



in which R and R' are non-primary alkyl or cycloalkyl substituents having at least 3 carbon atoms and X is an electronegative substituent, for example, dichloromethyl, or a hydrocarbon structure such as phenyl or cyclopropyl.

3,503,733

METHOD OF INHIBITING NITRIFICATION OF NITROGENOUS FERTILIZERS

Irvin J. Belasco and Norman R. Kouba, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 27, 1967, Ser. No. 626,210
Int. Cl. A01n *9/20*
U.S. Cl. 71—125 **2 Claims**

This invention relates to methods and compositions whereby the nitrification of nitrogenous fertilizers is inhibited utilizing compounds of the 3,3'-hydrocarbonylene bis(tetrahydro-1,3,5-thiadiazine-2-thione) series (symmetrical and unsymmetrical). These nitrification inhibiting compounds may be admixed with nitrogenous fertilizers or later applied to the soil. Typical preferred inhibitors are 3,3' - ethylenebis(tetrahydro - 4,6 - dimethyl - 2H - 1,3,5 - thiadiazine - 2 - thione) and 3,3' - ethylenebis-(tetrahydro - 5 - methyl - 2H - 1,3,5 - thiadiazine - 2 - thione).

3,503,734

BENEFICIATION OF NICKEL-CONTAINING LATERITIC ORES

James Alexander Evert Bell, Toronto, Ontario, Canada, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1967, Ser. No. 688,317
Claims priority, application Canada, Mar. 6, 1967, 984,486
Int. Cl. C21b *1/10*
U.S. Cl. 75—1 **18 Claims**

Ores containing a metal value at least as reducible as iron oxide are formed into oxide pellets containing the metal value and the pellets are then heated to above their softening but below about 1400° C. in a reducing atmosphere in the presence of a non-fluxing refractory oxide to coalesce the metal values into recoverable forms and to form on the surfaces of the oxide pellets an oxide solid solution which has a higher softening point than the oxide pellets and which minimizes sticking of the oxide pellets.

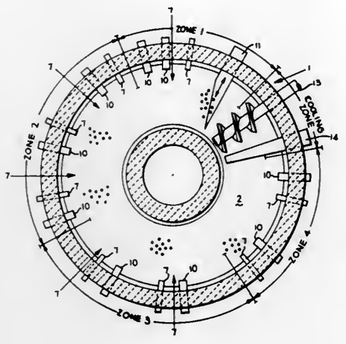
3,503,735

PROCESS OF RECOVERING METALLIC NICKEL FROM NICKELIFEROUS LATERITIC ORES

Donald Beggs, Toledo, Fred H. Bunge, Bay Village, and Dmitri N. Vedensky, Cleveland, Ohio, assignors to The Hanna Mining Company, Cleveland, Ohio, a corporation of Delaware

Filed May 19, 1966, Ser. No. 551,381
Int. Cl. B22b *23/06, 23/04*
U.S. Cl. 75—31 **14 Claims**

A process is disclosed for recovering nickel from lateritic ores wherein a charge of the ore and a fixed amount of a carbonaceous reducing agent are heated by radiant heat to reduce all of the nickel and a portion of the iron. Following reduction the charge is rapidly heated to a temperature of at least 2500° F. to promote migration and coalescence of the metallized portions. Then the product is magnetically concentrated to recover an enriched nickel concentrate.

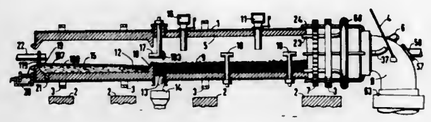


3,503,736

DIRECT IRON AND STEELMAKING PROCESS

William Lyon Sherwood, P.O. Box 2161, Vancouver 3, British Columbia, Canada

Continuation-in-part of applications Ser. No. 262,078, Mar. 1, 1963, and Ser. No. 330,895, Dec. 16, 1963. This application Sept. 23, 1964, Ser. No. 398,625
Int. Cl. C21b *13/08, 13/14, 13/00*
U.S. Cl. 75—39 **17 Claims**



Liquid iron and steel are produced directly from pellets of iron ore concentrate by means of rotary furnace apparatus. The pellets are reduced to metallic iron by heating in admixture with solid reductant and sulphur-absorbent material in a gas-solid reaction zone, followed by a screening step for removal of excess reductant, ash and sulphur-absorbent material. Fluxes and alloys are added into the charge and advanced with retained reduced pellets and melted in a rotary gas-solid -liquid reaction zone by direct heating from a fuel burner to form liquid metal and slag which is advanced and refined in an independently heated rotary refining zone prior to discharge and casting into molds.

3,503,737

PROCESS FOR THE SEPARATION OF Al AND Si

Gilbert S. Layne and James O. Huml, Midland, Mich., and Richard D. Smith, Madison, Conn., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 24, 1967, Ser. No. 618,348
Int. Cl. C22b *21/06, 5/04*
U.S. Cl. 75—63 **7 Claims**

A process for the separation of aluminum and silicon from one another by contacting the mixture with Al_2S_3 at a temperature sufficient to produce gaseous SiS and removing the SiS from the molten aluminum. Likewise silicon or aluminum may be separated from the usual impurities contained therein by reacting the aluminum or silicon with Al_2S_3 at a temperature sufficient to form gaseous Al_2S or SiS which are removed leaving the impurities as a residue.

3,503,738

METALLURGICAL PROCESS FOR THE PREPARATION OF ALUMINUM-BORON ALLOYS

Hugh S. Cooper, 16401 S. Woodland Road, Shaker Heights, Ohio 44120

No Drawing. Filed Sept. 15, 1967, Ser. No. 668,192
Int. Cl. C22c *21/00*
U.S. Cl. 75—135 **10 Claims**

The preparation of an aluminum alloy containing boron as an essential alloying element in various amounts comprising mixing potassium fluoborate with finely divided aluminum particles in which the latter is present in an amount sufficient to react with the potassium fluoborate to release boron, compacting the mixture and heating the mixture to elevated temperature above the temperature for molten aluminum for reaction to release the boron and alloying the boron as it is released with molten aluminum to form the aluminum-boron alloy.

3,503,739

PHOTOCONDUCTIVE LAYERS AND THEIR APPLICATION TO ELECTROPHOTOGRAPHY

Jean-Pierre Camille Dubose, Bernard Antony Schnuriger, and Roger Paul Gaston Thiebaut, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 3, 1966, Ser. No. 528,886
Int. Cl. G03g *5/06, 7/00*
U.S. Cl. 96—1.5 **9 Claims**

Electrophotographic elements containing photoconductors comprising the macromolecular product obtained by polycondensation of a dialdehyde with either a hydrazine or a diprimary organic diamine are described.

3,503,740

PHOTOCONDUCTIVE ELEMENTS CONTAINING ORGANIC PHOTOCONDUCTORS AND SENSITIZERS

Roy C. De Selms and Charles V. Wilson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 18, 1967, Ser. No. 654,092
Int. Cl. G03g *5/00, 7/00*
U.S. Cl. 96—1.5 **11 Claims**

Photoconductive compositions and elements containing organic photoconductors and salts of certain substituted cycloheptenyl compounds are described. The salts are used as sensitizers for the organic photoconductors.

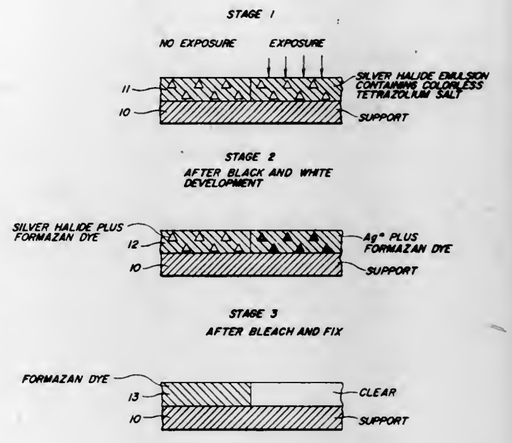
3,503,741

SILVER-DYE-BLEACH PROCESS UTILIZING FORMAZAN DYES

Ransford B. Wilson and John V. Williams, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 4, 1966, Ser. No. 592,094
Int. Cl. G03c *5/52*
U.S. Cl. 96—20 **13 Claims**

Formazan dyes, chelated formazan dyes and certain colorless formazan dye formers are useful as image-forming constituents in photographic elements designed to produce colored dye images by the silver-dye-bleach process since they provide such elements with improved spectral properties and thereby promote the formation of improved colored dye images by means of the silver-dye-bleach process.



3,503,742

DESENSITIZATION OF PHOTOSENSITIVE MATERIALS BY SUBJECTING THE NON-IMAGE AREAS TO AMMONIA

Yoshikazu Yamada, Sierra Madre, and Thomas H. Garland, El Monte, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of applications Ser. No. 278,050 and Ser. No. 278,419, both May 6, 1963, and Ser. No. 481,759, Aug. 23, 1965. This application Nov. 17, 1965, Ser. No. 508,390
Int. Cl. G03c *5/24*
U.S. Cl. 96—48 **11 Claims**

A process for stabilizing a photographic image formed by image-wise exposure to actinic light of a photosensitive combination of an organic halogen compound and a nitrogen atom-containing compound, whereby areas of the image not light-struck by the exposure are subjected to ammonia.

3,503,743

PROTECTION OF HYDROPHILIC FILMS, LAYERS, AND PRODUCTS THEREOF

Jaromir V. Kosar, Beechurst, N.Y., assignor to Diagravure Film Mfg. Corp., Brooklyn, N.Y., a corporation of New York

No Drawing. Filed May 26, 1966, Ser. No. 553,055
Int. Cl. G03c *1/76, 1/68*
U.S. Cl. 96—67 **2 Claims**

A protective coating for moisture-sensitive layers or hydrophilic films is described, comprising water-soluble and organic solvent-soluble binder having fine, solid, water-insoluble and organic solvent-insoluble particles of an anti-tack agent uniformly dispersed in the coating.

The particles are unreactive with respect to the moisture-sensitive layer and with the binder. The weight ratio of anti-tack agent to binder is less than one to one.

3,503,744

PHOTOGRAPHIC BLEACHING OUT OF AZOMETHINE AND AZOANILINE DYES

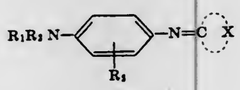
Kohei Itano, Masashi Nakano, and Shoichiro Hoshino, Tokyo, Japan, assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 16, 1967, Ser. No. 616,503

Int. Cl. G03c *1/72, 5/24*

U.S. Cl. 96—89 8 Claims

Material for preparing permanent photocopies comprises a color modifier and an organic halogen-containing compound capable of producing free radicals upon exposure to light to react with said color modifier to produce a color change, said color modifier being an azoaniline or azomethine dye of the general formula



wherein

R_1 and R_2 are alkyl or hydroxyalkyl;
R_3 is hydrogen, alkyl, amino, or substituted amino;



is a keto-methylene group, pyrazolone group, or a nucleus having an active hydrogen-containing coupler component.

Imagewise exposure of the material to light provides a like distribution of reactive halogen free radicals which have a bleaching effect on the color modifier and results in image formation. The image may be fixed by heating acidic anhydrides incorporated in the material or by washing the material to remove at least one of the color modifier or organic halogen compounds.

3,503,745

DYE SENSITIZATION OF LIGHT SENSITIVE SYSTEMS

Yoshikazu Yamada, Sierra Madre, and Thomas H. Garland, El Monte, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Continuation-in-part of applications Ser. No. 481,759, Aug. 23, 1965, and Ser. No. 352,625, Mar. 17, 1964, in which both applications are continuations-in-part of application Ser. No. 278,050, May 6, 1963. This application Jan. 28, 1966, Ser. No. 523,705

Int. Cl. G03c *1/52*

U.S. Cl. 96—90 18 Claims

A photosensitive composition and method for preparation thereof, in which an aryl amine or N-vinyl compound and organic halogen compound are dispersed in a normally hydrophilic continuous phase, and there is added a photographic sensitizing dye material, separate and distinct from the other components and which effects a photosensitive spectral response to the composition which is different from the spectral response of each of the other components or the combination thereof.

3,503,746

USE OF AN ENZYME INHIBITOR TO RETARD THE DEGRADATION OF GELATIN

James A. McClintock, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 3, 1967, Ser. No. 635,646

Int. Cl. G03c *1/06*

U.S. Cl. 96—94 14 Claims

Aqeous solutions of gelatin and photographic gelatino-silver halide emulsions containing L-1-tosylamido-2-phenethyl-chloromethyl-ketone to control enzyme activity and decelerate bacterial growth and reproduction. A phenolic biostat may optionally be added for improved results.

3,503,747

POTATO CHIPS

Elizabeth Marie Young, Doodletown Road, Ancram, N.Y. 12502

No Drawing. Filed Feb. 16, 1967, Ser. No. 618,267

Int. Cl. A23l *1/12*; A23b *1/04*

U.S. Cl. 99—100 8 Claims

A process for producing potato chips by means of which the potato chips have a leaf-like configuration with speckled colors, and with a smoky flavor and taste.

3,503,748

LIGHT-SENSITIVE PHOTOGRAPHIC SILVER HALIDE LAYER FOR THE COLOR DEVELOPING PROCESS

Alfred Froehlich, Marly-le-Grand, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Continuation-in-part of application Ser. No. 301,626, Aug. 12, 1963. This application Dec. 12, 1967, Ser. No. 692,282

Claims priority, application Switzerland, Aug. 31, 1962, 10,399/62

Int. Cl. G03c *1/40*

U.S. Cl. 96—100 6 Claims

The present invention relates to a light-sensitive photographic silver halide layer for the color developing process. This layer contains as a color-former for the yellow dyestuff a sulfonic acid of an acetylaminobenzene compound. The color-formers are diffusion-resistant, fast-coupling, soluble in water and yield processed coatings of complete transparency.

3,503,749

LIGHT-SENSITIVE SILVER HALIDE EMULSIONS CONTAINING SOLUBLE GOLD SALTS

Bernhard Hippoliet Tavernier, Edegem, and Alfons Jozef De Meyer, Schelle, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,584

Claims priority, application Great Britain, Dec. 29, 1965, 55,043/65; Dec. 14, 1966, 55,996/66

Int. Cl. G03c *1/28*

U.S. Cl. 96—107 6 Claims

Photographic light-sensitive silver halide emulsions comprising as a sensitizer at least one water-soluble gold (I) salt of a mercapto compound comprising a sulphonic acid group in an acid or salt form is described. The sensitizers do not give rise to an increase of the sensitivity to red light when used in combination with sensitizers having a labile sulphur atom as is the case with most gold (I) sensitizers.

3,503,750

METHOD OF MAKING AND PRESCORING SHAPED FOOD PRODUCTS

Thomas F. Oeth and Leslie C. Riggs, Dubuque, Iowa, assignors to Dubuque Packing Company, a corporation of Iowa

Filed Aug. 5, 1966, Ser. No. 570,613

Int. Cl. A23b *1/04*

U.S. Cl. 99—1 7 Claims

Open-top generally imperforate containers are filled with a fluent proteinaceous substance having sufficient tackiness so as not to drop out of the container when it is inverted. The container is inverted and heated causing the proteinaceous substance to coagulate and drop downwardly onto the surface supporting the container. The entire outer surface of the formed substance can be subjected to the action of a preserving medium.

3,503,751

CATTLE FEED

Ralph M. Durham, 2607 22nd St., Lubbock, Tex. 79410

No Drawing. Continuation-in-part of application Ser. No. 380,053, July 2, 1964. This application Mar. 9, 1965, Ser. No. 438,382

Int. Cl. A23k *1/00*

U.S. Cl. 99—2 3 Claims

A crude protein supplement made by feeding bovines a special diet of grain and protein supplement, which diet is free of fiber. Thus the bovines produce a special manure which is substantially free of fiber which provides a suitable protein supplement to be mixed with grain for feeding to cattle, swine, and chickens.

3,503,752

PROCESS FOR ENRICHING MILK WITH PROTEINS

Nils I. Arne Emneus, Uppsala, and Arne O. Sten, Bergsbrunna, Sweden, assignors to Pharmacia Fine Chemicals AB, Uppsala, Sweden, a company of Sweden

Filed June 20, 1967, Ser. No. 647,519

Claims priority, application Sweden, June 22, 1966, 8,590/66

Int. Cl. A23c *9/14*

U.S. Cl. 99—54 16 Claims

A process for enriching milk with proteins comprises dividing skimmed milk, i.e. milk wholly or substantially free of fat, or partially evaporated skimmed milk, by gel filtration, into a first fraction containing proteins and 10–90 percent, by weight, of the low molecular weight substances of the skimmed milk such as sugars and salts, and a second essentially protein-free fraction containing the balance of the low molecular weight substances; mixing the protein containing fraction with whole milk and/or with skimmed milk and wherein this fraction prior to the mixing operation and/or the mixture obtained after this operation is subjected to an evaporation process.

3,503,753

COLOR STABILIZATION IN WHEAT PRODUCTS

Leland K. Dahle, Minneapolis, Minn., assignor to Peavey Company, Minneapolis, Minn., a corporation of Minnesota

No Drawing. Filed July 7, 1966, Ser. No. 563,379

Int. Cl. A23l *1/10, 1/16*

U.S. Cl. 99—80 7 Claims

Disclosed are milled wheat products and alimentary paste food products having golden yellow color and containing effective color-stabilizing amounts of citric acid alone or of citric acid in combination with ascorbic acid. Methods of making such color-stabilized products are also disclosed.

3,503,754

PROCESS FOR AIR CLASSIFICATION OF CEREAL GRAINS

William A. Weiss, St. Joseph, Mo., assignor to Krause Milling Company, Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,265

Int. Cl. A23l *1/10*

U.S. Cl. 99—93 11 Claims

An improvement is achieved in the products of air classification of dehulled and degerminated cereal grains by treating the cereal grains with SO_2 prior to air classification processing.

ERRATUM

For Class 99—100 see:
Patent No. 3,503,747

3,503,755

METHOD OF PREPARING A POULTRY PRODUCT

Robert G. McGowan, St. Louis, Mo., assignor to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,702

Int. Cl. A22c *21/00*

U.S. Cl. 99—107 3 Claims

The method of preparing a poultry product including the step of incising the dark poultry meat pieces to form slits through the muscle sheaf thereon and mixing the incised dark poultry meat pieces with a binder matrix. The slits in the dark poultry meat pieces being effective to permit the matrix to be imbedded therein to insure that the muscle sheaf on the dark poultry meat pieces does not prevent binding between the dark poultry meat pieces and matrix. The mixture is then formed into a product which upon cooking is capable of being sliced into integral slices and of retaining its integrity at normal and heated temperatures.

3,503,756

METHOD OF PRODUCING SAUSAGE PRODUCTS

Hugo E. Wistreich, Chicago, Ill., assignor to B. Heller & Company, a corporation of Illinois

No Drawing. Filed Oct. 18, 1966, Ser. No. 587,400

Int. Cl. A22c *11/00*; B02c *18/00*

U.S. Cl. 99—109 5 Claims

The method of this invention deals with the formation of meat emulsions into products such as skinless frankfurters without the use of casings by extruding the meat emulsion in a manner giving it an appropriate shape and contacting the extrudate while it is without physical support at least initially, with a hot edible aqueous acid solution to form a cohesive surface layer.

3,503,757

METHOD OF PRODUCING A GASIFIED FROZEN CONFECTION

Irving Rubenstein, Owings Mills, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland

Filed Mar. 29, 1966, Ser. No. 538,381

Int. Cl. A23g *5/00*

U.S. Cl. 99—136 5 Claims

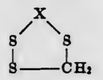
A conventional chilled ice cream mix is first prepared and then passed in the form of a stream through a treatment zone. Gas with which the mix is to be gasified is then introduced into the stream in finely divided form in the same direction in which the stream flows. The gasified mix is discharged into containers which are subsequently subjected to freezing temperatures.

3,503,758
FLAVORING COMPOSITION

Shyozo Wada, Mino, Hiromi Nakatani, Kobe, and Jun Toda, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,628
Claims priority, application Japan, Oct. 14, 1965, 40/63,139; Feb. 8, 1966, 41/7,547; May 19, 1966, 41/32,256
Int. Cl. A23l *1/22, 1/26*
U.S. Cl. 99—140 2 Claims

A flavoring composition for foodstuffs composed of a flavor enhancing amount (about 0.002 to 2.09% by weight) of a compound of the formula:



wherein X may be —CH_2—S—, —S—CH_2—,

—CH_2—S—CH_2—

or —S—CH_2—S— and a major amount of an edible carrier for such compound.

3,503,759
BAG FOR TRIANGULAR CUT SANDWICH AND THE LIKE

Peter Wilton, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

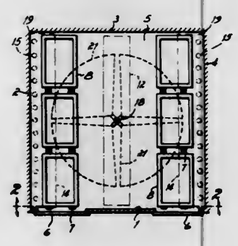
Filed Feb. 3, 1967, Ser. No. 613,950
Int. Cl. B65b *25/18*
U.S. Cl. 99—173 4 Claims

A bag for triangular cut sandwiches composed of two flat square walls of thin flexible sheet material, the walls being joined at all outer edges and one wall having a slit extending diagonally between two corners to provide two open pockets. One half of sandwich is placed into one pocket, the other half is placed on top of first half of sandwich outside of pocket and the other pocket is folded over the entire sandwich to close the bag.

3,503,760
METHOD OF SMOKING A COMESTIBLE PRODUCT

William M. Allen, Cincinnati, Ohio, assignor to Development Consultants, Inc., Cincinnati, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 702,233, Feb. 1, 1968, which is a continuation-in-part of application Ser. No. 595,355, Nov. 18, 1966. This application May 26, 1969, Ser. No. 830,919
Int. Cl. A23b *1/04, 3/04*
U.S. Cl. 99—229 4 Claims



A method of utilizing nebulized liquid smoke for smoking a comestible product comprising the steps of (a) nebulizing the liquid smoke to form a cloud of the liquid smoke, and (b) exposing the comestible product to the cloud of liquid smoke.

3,503,761
AEROSOL SHOE POLISH

Francis J. Schumacher, Elgin, Ill., assignor to Leo J. Fregeau, La Grange, Ill.

No Drawing. Filed May 25, 1967, Ser. No. 641,137
Int. Cl. C08h *9/00;* C09f; C09g
U.S. Cl. 106—8 4 Claims

This invention provides an aerosol wax polish composition consisting of a non-aqueous solution of wax concentrate in a chlorinated hydrocarbon solvent, said solution of concentrate being dispersed in a liquefied dichlorodifluoromethane propellant, the ratio of concentrate to propellant being from about 35:65 to about 65:35 percent by weight and the concentrate including a mixture of a montan derivative wax and a de-oiled lanolin derivative in a ratio of about 1:3 to about 2:5 percent, respectively by weight, said concentrate also including a dye component solution in the same chlorinated hydrocarbon solvent; said dye solution being about 2% by weight and said dye component being present in the concentrate in an amount ranging from .1% to .3% by weight of total concentrate and said chlorinated solvent being present in a range of 95% to 98% by weight of total concentrate. A novel method of producing the aerosol wax composition also is provided comprising the steps of first melting the wax-lanolin derivative mixture and step-wise addition of chlorinated solvent with agitation to form a concentrate solution, said dye component solution being added with the addition of the solvent subsequent to filtration of the dye component solution, the total amount of solvent being calculated from both the wax-lanolin derivative solution and the dye solution, with solvent lost by evaporation during the mixing stage being added to bring the total solvent to the desired proportional amount. The thus prepared concentrate solution is dispersed in the liquefied propellant under pressure and packaged in pressurized packages by means of conventional aerosol packaging technique.

3,503,762
INK COMPRISING LIGNIN-BASED COLORANTS

Robert K. Remer, Evanston, Ill., assignor to Inca Inks, Inc., Evanston, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 251,006, Jan. 14, 1963. This application Mar. 14, 1966, Ser. No. 536,564
Int. Cl. C09d *11/00, 11/02;* C07g *1/00*
U.S. Cl. 106—23 4 Claims

An alkali-dispersible ink which includes, as a color constituent thereof, the reaction product formed by chemically reacting a lignin with an insolubilizing metal salt and a tannin, filtering and drying said reaction product and combining the same with an emulsifying base.

3,503,763
CREPTALLIZABLE LEAD BOROSILICATE COMPOSITIONS FOR USE AS LOW THERMAL EXPANSION, DEVITRIFYING SOLDER GLASSES OR COATINGS

Walter H. Mills, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

No Drawing. Filed Dec. 6, 1966, Ser. No. 599,394
Int. Cl. C04b *35/14;* C03c *3/08, 17/00*
U.S. Cl. 106—53 6 Claims

Devitrifying glass compositions for use as solder glasses or coatings, including about 13–23 wt. percent PbO, 4–11% B_2O_3, 4–6% Li_2O, 14–19% Al_2O_3 and 39–50% SiO_2. A nucleating agent may also be included. When crystallized the compositions have coefficients of thermal expansion in the range of about -5 to $+30\times10^{-7}$/° C., and contain lithia-alumina-silicate crystals (beta spodumene or beta-eucryptite) as the primary type, with no lead silicate or zinc silicate crystals present.

3,503,764
CORE GLASS FOR FIBER-OPTIC STRUCTURES HAVING HIGH INDEX OF REFRACTION

John C. Young, Portuguese Bend, Calif., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Jan. 20, 1967, Ser. No. 610,501
Int. Cl. C03c *3/30, 13/00;* G02b *5/16*
U.S. Cl. 106—54 1 Claim

Glass compositions having refractive indices in the range from about 1.83 to about 1.90 and having other physical and thermal properties rendering them highly useful as core glass for fiber-optic structures consist essentially of from 5% to 20% by weight of Nb_2O_5, from 0 to 10% by weight of Ta_2O_5 the amount of Ta_2O_5 not exceeding 50% by weight of the amount of Nb_2O_5, from 15% to 45% by weight of BaO, from 15 to 30% by weight of La_2O_3, from 5% to 20% by weight of TiO_2, from 15% to 30% by weight of at least one oxide selected from the group consisting of SiO_2 and B_2O_3 at least 40% of the aggregate of said oxides being SiO_2, from 0 to 10% by weight of an oxide selected from the group consisting of CaO and SnO, from 0 to 15% by weight of an oxide selected from the group consisting of ZnO and CdO and from 0 to 5% of an oxide selected from the group consisting of Na_2O, K_2O and Li_2O.

3,503,765
HIGH TEMPERATURE ALUMINA-SILICA FIBERS AND METHOD OF MANUFACTURE

Joseph E. Blaze, Jr., Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 527,105, Feb. 14, 1966. This application Feb. 15, 1968, Ser. No. 705,611
Int. Cl. C04b *35/18*
U.S. Cl. 106—65 9 Claims

A high temperature fiber formed of alumina and silica having a predominant mullite crystalline phase and containing modifying metal oxides from the group B_2O_3, P_2O_5 and TiO_2. The crystals are formed from a mother liquid containing the base materials at generally atmospheric temperature and subsequently treated to form the oxides of the finished fiber.

3,503,766
CYANAMIDE ADDITIVES FOR CEMENT COMPOSITIONS

Francesco De Maria, Wilton, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 365,496, May 6, 1964. This application Jan. 27, 1967, Ser. No. 612,093
Int. Cl. C04b *13/22, 13/26, 7/02*
U.S. Cl. 106—89 9 Claims

Portland cement compositions exhibit increased strength when they contain from 0.5 to 15%, based on total weight, of an additive selected from the group: cyanamide, cyanamide dimer, alkali and alkaline earth metal salts of cyanamide dimer, and mixtures thereof.

3,503,767
CEMENTITIOUS COMPOSITIONS HAVING INHIBITED SHRINKAGE AND METHOD FOR PRODUCING SAME

Robert W. Gaines, Darien, and Henry Nash Babcock, Old Greenwich, Conn., assignors to U.S. Grout Corporation, Old Greenwich, Conn., a corporation of Connecticut

No Drawing. Filed July 21, 1967, Ser. No. 655,007
Int. Cl. C04b *7/02, 7/12*
U.S. Cl. 106—89 10 Claims

The shrinkage of aqueous hydraulic cement mixtures is eliminated by incorporating therein a fluid coke with a particle size predominately finer than 100 mesh. The amount of fluid coke that may be used to eliminate the shrinkage is less than 10% based on the weight of the cement in the mixture.

3,503,768
DIALDEHYDE STARCH HYDRAULIC CEMENT COMPOSITION ADDITIVE

Robert W. Previte, Lawrence, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Mar. 22, 1967, Ser. No. 632,490
Int. Cl. C04b *13/24, 7/00*
U.S. Cl. 106—92 5 Claims

The setting time of cement compositions is retarded by the addition of the product of periodic acid oxidation of starch.

3,503,769
METHOD OF MODIFYING ALKYLENE GLYCOL ALGINATES

Richard Henry McDowell, London, England, assignor to Alginate Industries Limited, London, England, a British company

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,627
Claims priority, application Great Britain, Sept. 8, 1966, 40,235/66
Int. Cl. C08b *25/00*
U.S. Cl. 106—208 5 Claims

The invention is a method of modifying aqueous solutions of alkylene glycol alginates such as propylene glycol alginate by a mild alkali treatment. Under controlled conditions of treatment the viscosity of the solution can be increased and in some instances visco-elastic solutions or even gels are produced. The alkylene glycol alginate may be used alone or in admixture with other polymeric materials such as starch and polyvinyl alcohol. The modified solutions are useful for the production of suspensions such as fruit squashes and as binding or coating agents such as in the production of fish foods and the coating of paper respectively.

3,503,770
HYDROCARBON WAX COATINGS AND THEIR PROCESS OF PREPARATION

James E. Guillet, Toronto, Ontario, Canada, and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 309,391, Sept. 17, 1963. This application Aug. 7, 1967, Ser. No. 658,946
The portion of the term of the patent subsequent to Oct. 8, 1980, has been disclaimed and dedicated to the Public
Int. Cl. C08h *9/00*
U.S. Cl. 106—270 11 Claims

Hydrocarbon waxes capable of forming wax coated substrates. These waxes have improved tack time and find particular use in curtain coating operations.

3,503,771
SYNTHETIC AGGREGATE MATERIAL AND A PROCESS FOR PRODUCING SAME

Karl Kristian Kobs Kroyer, Vestre Kongevej 80, Viby, Jutland, Denmark

No Drawing. Filed July 18, 1967, Ser. No. 654,094
Int. Cl. C08h *17/04, 17/68*
U.S. Cl. 106—288 6 Claims

A synthetic aggregate material useful in rod surface coatings comprises nodules of small bodies of devitrified glass, hydraulically set cement and a pigment. The aggregate material is produced by adding a mixture of cement and pigment to moistened small bodies of devitrified glass

while stirring after which the resultant mixture is placed on a moving surface to produce nodules which are removed upon reaching a predetermined size.

3,503,772

SiO_2-ZnO TREATED TiO_2 PIGMENTS FOR PAPER LAMINATES

David P. Fields, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 565,389, July 15, 1966. This application Dec. 27, 1966, Ser. No. 604,581

Int. Cl. C08h *17/00;* C08j *1/36;* C09c *1/36*

U.S. Cl. 106—300 10 Claims

Rutile TiO_2 pigments coated with from about 2% to 25% of SiO_2 and 0.1 to 3.0% of ZnO, and containing from 0.5 to 10% of a water-soluble (alkali metal) carboxymethyl cellulose, said amounts being by weight and based on the TiO_2.

3,503,773

PROCESS FOR THE PRODUCTION OF A CASTING LAYER FOR THE MANUFACTURE OF FILMS AND SHEETS

Johan Heinrich Bisschops, Berchem-Antwerp, Eduard Marius Steffens, Wilrijk, Antwerp, and André Alfons Boulonne, Londerzeel, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,775

Claims priority, application Great Britain, Jan. 21, 1966, 2,847/66

Int. Cl. B28b *7/38;* B44d *1/34*

U.S. Cl. 117—5.3 4 Claims

A process for producing a casting layer for casting films of film-forming polymers wherein a known superficially hydrolyzed cellulose acetate layer applied to a metal support is treated with a solution in an organic solvent or a mixture of water and a water-miscible organic solvent of a Werner chromium complex salt to produce a thin coating of such salt on the layer surface, the coating being then heated to about 50° C. to firmly bond the coating to the layer surface.

3,503,774

METHOD OF CLEANING OIL-CONTAMINATED PARTICULATE MATERIALS

Norman Frederick Weymouth, Basset, Southampton, England, assignor to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,571

Claims priority, application Great Britain, Apr. 25, 1967, 18,924/67

Int. Cl. B08b *17/04;* B44d *1/02*

U.S. Cl. 117—6 12 Claims

A process for the treatment of particulate masses, particularly sandy beaches, prior to contamination by fuel oil, in which a natural or synthetic rubber latex is sprayed on to the mass to form a coherent impregnation-retarding surface layer whereby, on contamination, the surface layer retards and at least partly absorbs the oil, the contaminated coherent layer together with any supernatant oil being subsequently removed.

3,503,775

METHOD OF PREPARING METAL COATED METALLIC SUBSTRATES

Lowell W. Austin, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware

No Drawing. Filed Apr. 12, 1966, Ser. No. 545,788

Int. Cl. B05b *5/02;* B44d *1/092, 1/44*

U.S. Cl. 117—17 18 Claims

Finely divided coating metals are electrostatically deposited on metallic substrates. Thereafter the metal particles in the electrostatically deposited coating are agglomerated, and the agglomerated particulate metal coating is compacted by rolling under pressure to produce a substantially continuous layer of the coating metal on the substrate. The rolled substrate is subjected to an elevated temperature until a coherent and adherent substantially continuous layer of the coating metal is produced thereon.

3,503,776

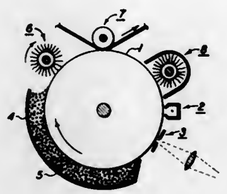
XEROGRAPHIC DEVELOPMENT

Robert W. Gundlach, Victor, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 21, 1966, Ser. No. 528,846

Int. Cl. G03g *13/00*

U.S. Cl. 117—17.5 13 Claims



Images are formed by transporting an electrostatic latent image bearing surface in a generally ascending arcuate path, and contacting only the imaging surface in a contact zone with a bath of developer material supported in a concave chamber adjacent the lower face of the imaging surface as the imaging surface is transported in the arcuate path, the contact zone extending from about the lowermost point of the arcuate path and terminating below the uppermost point of the arcuate path whereby frictional contact between the developer and the imaging surface along the contact zone circulates the developer in the bath.

3,503,777

BACKING FOR CARPETS AND PROCESS FOR PRODUCING SAME

George Kappas, Champaign, and Alfred B. Zimmerman, Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

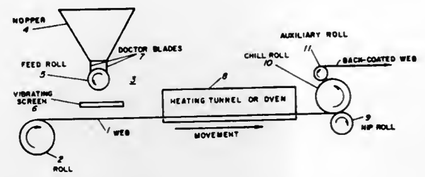
Filed Mar. 21, 1966, Ser. No. 536,045

Int. Cl. C08g *45/04;* B44d *1/44*

U.S. Cl. 117—21 13 Claims

Process of coating a fiber bundle web comprising applying thereto a high molecular weight polyolefin and a low molecular weight polyolefin and then applying pressure to the web while the polyolefins are in the molten stage, the pressure causing the molten polyolefins to penetrate through said web, said polyolefins being cooled and thereby solidifying at least the low molecular weight polyolefin

completely penetrates the fiber bundle of the web. A carpet comprising a fiber bundle substrate penetrated and



bonded with the polyolefins as defined above is also claimed.

3,503,778

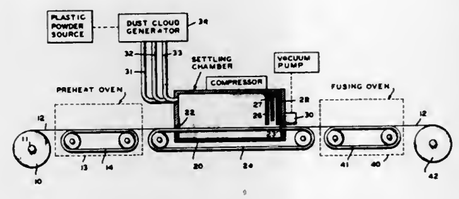
METHOD OF COATING A SUBSTRATE WITH A PLASTIC MATERIAL

Herbert O. Corbett, Cincinnati, Ohio, and John J. Quackenbush, Monroe, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Continuation-in-part of application Ser. No. 542,040, Apr. 12, 1966. This application Oct. 30, 1967, Ser. No. 679,073

Int. Cl. B44d *1/092, 1/094*

U.S. Cl. 117—21 4 Claims



A substrate is coated by a process comprising generating a dust cloud of very finely divided plastic powder, preheating the substrate, causing the dust cloud to settle under quasi-equilibrium conditions onto the substrate and further heating the coated substrate to effect fusion of the plastic powder.

3,503,779

SUBSTRATES COATED WITH POLYMERIC ULTRAVIOLET LIGHT BARRIER COATINGS

Raymond H. Young, Jr., East Longmeadow, Saul M. Cohen, Springfield, Albert H. Markhart, Wilbraham, and Irving Serlin, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application July 8, 1965, Ser. No. 470,572, now Patent No. 3,444,129, dated May 13, 1969. Divided and this application Nov. 20, 1968, Ser. No. 777,471

Int. Cl. C08g *17/02;* G03c *11/10*

U.S. Cl. 117—33.3 19 Claims

Disclosed herein are substrates which are coated with rearrangeable polyesters which are the polymeric reaction product of (1) an aromatic dihydric compound such as the ester derivatives of 4,4-bis(4'-hydroxyphenyl)pentanoic acid wherein there is at least one unsubstituted position ortho to the aromatic hydroxyl groups and (2) an aromatic dicarboxyl compound. The outer exposed surface of the polyester coatings rearrange under the influence of ultraviolet light to afford excellent ultraviolet light protection to the coated substrate.

3,503,780

FLUX SUBSTANCE AND METHOD FOR COATING WITH FLUORESCENT SUBSTANCES

Shigeru Kamiya, Hirakata-shi, Osaka, Japan, assignor to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Continuation of application Ser. No. 158,039, Dec. 8, 1961, which is a continuation-in-part of application Ser. No. 60,724, Oct. 5, 1960. This application Sept. 26, 1966, Ser. No. 582,163

Claims priority, application Japan, Dec. 10, 1960, 35/48,927

Int. Cl. H01j *61/35*

U.S. Cl. 117—33.5 8 Claims

A compound having the general formula:

$$m\mathrm{CaO}\cdot n\mathrm{BaO}\cdot 2\mathrm{B_2O_3}$$

wherein $m+n$ is 1 and m is 0.2 to 0.8, an improved method for coating an inner glass wall of an electric gas discharge lamp by applying thereto a suspension of a fluorescent substance and said compound as a flux in an organic medium, drying and heating until the fluorescent layer is strongly bonded to the glass wall, and electric gas discharge lamps so produced.

3,503,781

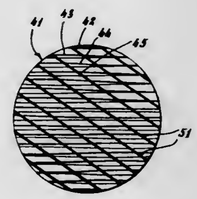
SURFACE FINISHING APPARATUS AND METHOD

Paul F. Forman, Ridgefield, Conn., and Edward L. Bonacci, Briar Cliff, N.Y., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Dec. 29, 1965, Ser. No. 517,303

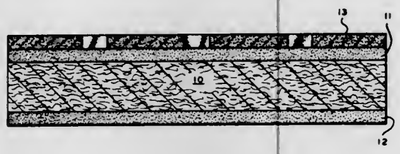
Int. Cl. B44d *1/52;* C23c *13/08*

U.S. Cl. 117—38 7 Claims



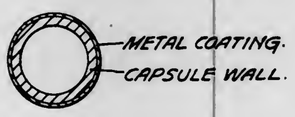
A technique and apparatus for finishing a surface to a desired contour by depositing on the surface a single layer of material whose thickness is non-uniform and controlled. First, an interferogram is made of the surface to determine its existing contour. The interferogram is then compared with an interferogram of the surface as it should appear when finished so as to determine the location, shape and depth of any errors. Using this information, a mask is prepared whose over-all size and shape correspond to the size and shape of the surface and which contains a plurality of slots individually sized so that the width of any slot at any point through its length is directly proportional to the error in depth at the corresponding location on the surface. Material is then deposited by evaporation through the mask onto the surface.

3,503,782
DIFFERENTIAL RELEASE PAPER
Elwyn C. Ayres, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 602,841, Dec. 19, 1966. This application May 29, 1967, Ser. No. 642,086
Int. Cl. D21h 1/10; B44d 1/14
U.S. Cl. 117—45 13 Claims



A differential release paper having an initial coating of a first release agent and a coating of second release agent applied over a portion of the initial coat; the release agents having different release characteristics.

3,503,783
PROCESS OF FORMING METAL COATING ON FILLED MICROCAPSULES
Roger L. Evans, Mendota Heights, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,020
Int. Cl. B05c 3/00; B44d 1/34
U.S. Cl. 117—47 5 Claims



Microcapsules each having an organic shell containing fill which is capable of permeating the shell and a continuous outer coating of metal which reduces the permeability of the shell by the fill by at least 50 percent. The outer metallic layer is formed on the microcapsules by treating them successively with particular catalytic aqueous solutions containing stannous, silver and palladium ions and then with a metal coating aqueous solution containing the ion of the metal to be coated and a reducing agent therefor. Also disclosed are copysheets comprising an electrically conductive backing and a layer of the metalcoated microcapsules.

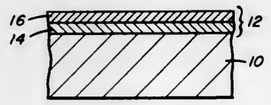
3,503,784
SMOOTH SURFACED SHEET MATERIALS AND METHOD OF MANUFACTURING THE SAME
Eiichi Morita, Okayama, and Osamu Fukushima, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan
No Drawing. Filed Sept. 29, 1966, Ser. No. 583,060
Claims priority, application Japan, Oct. 15, 1965, 40/63,436
Int. Cl. B44d 1/14
U.S. Cl. 117—62.2 2 Claims

A flexible leather-sheet material having a very smooth surface, a high cold-proof and a grain break like a natural leather produced by the combination of the steps of: (1) applying a surface of the fibrous base substratum composed of a needle-punched synthetic fiber mat, with a dispersion of fine particles in a polymer solution, to impregnate said polymer solution into the fibrous base substratum and to deposit the fine particles on the surface of the fibrous base substratum; (2) coating the surface of the deposited layer of the fine particles with a polyurethane elastomeric solution; (3) treating the resultant sheet matrial with water or an aqueous solution of the solvent for the polyurethane elastomeric solution to coagulate the impregnated polymer solution and the coated polyurethane elastomeric solution; and (4) then drying said sheet material.

3,503,785
PROCESS OF FORMING A POLYETHYLENE COATING USING A VANADIUM COMPOUND AS THE CATALYST
Uno Kruse, Neptune, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 15, 1967, Ser. No. 683,124
Int. Cl. B44d 1/14; C03c 25/04
U.S. Cl. 117—62.2 8 Claims

This invention concerns a method for polymerizing ethylene monomer to completely and individually encase particles, fibers or filaments of substrate material. Vanadium tetrachloride (VCl_4) is added to a substrate slurry, is then reduced by ethylene to vanadium trichloride (VCl_3) which is homogeneously precipitated onto the substrate surfaces. An organometallic reagent is then reacted with the VCl_3 treated substrate to complete the formation of the active catalyst sites on the substrate surfaces for subsequent polymerization of ethylene monomer thereon.

3,503,786
MULTILAYER FILMS FOR OVERWRAPPING AND PROCESS FOR PRODUCING SAME
Herbert S. Barbehenn, Billy R. Dotson, and Robert F. Williams, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 17, 1967, Ser. No. 653,924
Int. Cl. B44d 1/14
U.S. Cl. 117—76 14 Claims

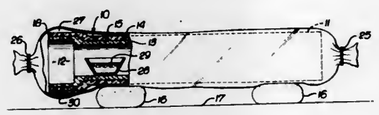


This invention provides multilayer films composed of a base of a polymer film, an interlayer of a modified thermally-degraded polyethylene and a surface of poly(vinyl acetate); said multilayer films being produced by a process comprising the steps of: coating at least one surface of a polymer film with a modified polyethylene-solvent composition composed of a modified thermally-degraded polyethylene dissolved in xylol or toluol; drying the modified polyethylene-solvent composition; fusing the dried modified polyethylene-solvent composition to the surface of the polymer film to thereby form a fused modified polyethylene layer; overcoating this latter layer with a poly(vinyl acetate) resin solution or emulsion; drying the overcoated poly(vinyl acetate) resin solution or emulsion; and curing the dried overcoating of poly(vinyl acetate).

3,503,787
METHOD OF MAKING REFRACTORY ALUMINUM NITRIDE COATINGS
Deodatta Raghunath Pendse, Thames Ditton, Surrey, England, assignor to United States Borax & Chemical Corporation, Los Angeles, Calif.
Filed Jan. 31, 1967, Ser. No. 613,010
Claims priority, application Great Britain, Feb. 11, 1966, 6,040/66
Int. Cl. C23c 11/14, 11/10; C21d 1/74
U.S. Cl. 117—93.1 7 Claims

A method of applying an aluminum nitride coating on a substrate which comprises plasma flame spraying aluminum onto the substrate using a nitrogen gas plasma whereby a mixed coating of aluminum and aluminum nitride is formed. The coating is then nitrided by heat treatment in nitrogen in the presence of a catalyst such as lithium fluoride.

3,503,788
COCOON CURING OF CONCRETE
Matthew J. Franklin and Carl W. Needham, Plainview, Tex., assignors to Raymond International, Inc., New York, N.Y., a corporation of New Jersey
Filed Feb. 3, 1967, Ser. No. 613,845
Int. Cl. B05b 13/06; F16l 9/14
U.S. Cl. 117—94 10 Claims

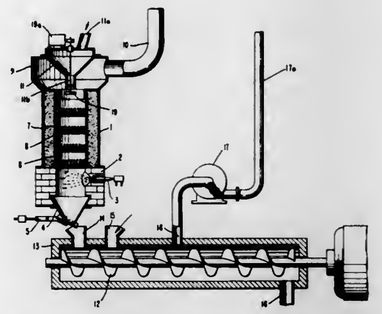


Curing a mortar coating on a prestressed concrete pipe by enclosing the pipe in a loosely draped cocoon of moisture impermeable film. A body of liquid water is provided inside the sealed cocoon during the cure to insure the maintenance of high humidity conditions.

3,503,789
METHOD OF MAKING A DYNAMIC SOLUTE-REJECTING MEMBRANE
James S. Johnson and Kurt A. Kraus, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 5, 1967, Ser. No. 637,878
Int. Cl. B44d 1/44; B01d 13/04
U.S. Cl. 117—98 3 Claims

A method of making a dynamic permeable membrane capable of rejecting solutes from an aqueous solution comprising forming said membrane in a charged state by contacting a permeable substrate having pores with diameters in the range of 30 A. to 5 microns with an aqueous phase containing a finely dispersed polymer comprising a weakly ionizable electrolyte and having a pH at a level such that said polymer exists in a charged state, thereby depositing a charged membrane of said polymer on said substrate, and after said membrane is formed adjusting the pH of the solution in contact with it to convert it toward a neutral form, thereby modifying the solute-rejection properties of said membrane.

3,503,790
METHOD OF MAKING SILICA BONDED TO SODIUM METASILICATE
Michel Gringras, Bonel, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Dec. 15, 1966, Ser. No. 601,907
Claims priority, application France, Dec. 27, 1965, 43,817
Int. Cl. C03c 17/22, 3/04
U.S. Cl. 117—100 14 Claims



A new component for making silicate glass and certain silicates is disclosed together with a novel method of making them and novel apparatus. Silica coated with sodium metasilicate is exemplary of the novel product. These products contribute superiority to new methods of glass-making, which are also described.

3,503,791
PROCESS OF FORMING AN ALUMINO-SILICIDE LAYER ON A METAL PART
Marcel Armand, Michel Charveriat, and Michel Salmon, Albertville, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France
No Drawing. Filed Aug. 23, 1966, Ser. No. 574,312
Claims priority, application France, Aug. 30, 1965, 29,795
Int. Cl. C23f 7/00; C23c 1/00
U.S. Cl. 117—114 9 Claims

A process is provided for coating a part which is formed from one of the metals zirconium, titanium, hafnium, niobium, tantalum, vanadium or alloys thereof by forming a layer of an alumino-silicide of said metal on the part. The process includes immersing the part in a liquid bath which is maintained at a temperature between 575 and 1000° C. The bath is composed of aluminum, 1 to 40% by weight silicon and a sufficient quantity of said metal such that the bath is in equilibrium with a solid phase having a composition corresponding to the layer which is deposited.

3,503,792
METHOD OF PREVENTING THE RAPID OXIDATION OF REFRACTORY ALLOYS IN HIGH-TEMPERATURE, LOW-PRESSURE OXIDIZING ENVIRONMENTS
Willi A. Baginski, Bellevue, Carol A. Krier, Renton, and Richard E. Regan, Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
No Drawing. Filed June 23, 1966, Ser. No. 559,731
Int. Cl. B44d 1/094; C23c 11/06
U.S. Cl. 117—135.1 6 Claims

A method for preventing the rapid oxidization of refractory metal alloys when exposed to high temperature

and reduced pressure environments comprising coating the refractory metal alloys with a modified disilicide alloy consisting essentially of a first component selected from the group of columbium, molybdenum, tantalum and tungsten; a second component of silicon; a third component selected from the group consisting of titanium, tantalum, and vanadium; and a fourth component selected from the group consisting of boron, hafnium and aluminum.

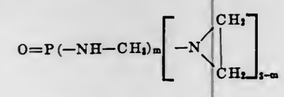
3,503,793

CELLULOSIC FIBROUS MATERIALS

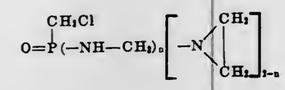
Hans Brandeis, Limburgerhof, Pfalz, Klaus Pfleger, Ludwigshafen (Rhine), and Heinz Bille, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 5, 1967, Ser. No. 673,015
Claims priority, application Germany, Oct. 8, 1966, 1,594,915
Int. Cl. C09d *5/18*
U.S. Cl. 117—136 **3 Claims**

Fireproofing cellulosic fibrous material with compounds having the formulae



and



in which *m* denotes a value from 2.7 to 1.0 and *n* denotes a value from 1.8 to 1.0, and cellulosic material fireproofed therewith.

3,503,794

SIZING OF TEXTILE FILAMENT AND YARN WITH MIXTURE OF HYDROXY POLYMER AND HYDROLYZED STARCH

Donald D. Donermeyer, Springfield, and Robert A. Isaksen, East Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 25, 1967, Ser. No. 633,367
Int. Cl. D06m *11/00*
U.S. Cl. 117—139.5 **4 Claims**

The application describes the sizing of textile filaments and yarns with a hydroxy-containing polymer system containing up to about 75 weight percent of a non-crystalline starch hydrolyze having a dextrose equivalent of from about 13 to about 38. The sized filaments and yarns exhibit improved processing and weaving efficiency.

3,503,795

DURABLE RESINOUS ANTISTATIC TEXTILE FINISH

Tsai Hsiang Chao, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 4, 1967, Ser. No. 635,999
Int. Cl. D06m *11/00*
U.S. Cl. 117—139.5 **9 Claims**

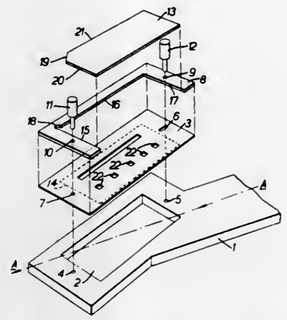
This invention relates to a durable antistatic textile finish produced by reacting a condensate of a polyamine with a halohydrin ether of a polyalkylene polyhydric alcohol with N,N'-methylenebis(acrylamide) and to the process of applying the finish to a synthetic hydrophobic textile material and to the textile material prepared by said application.

3,503,796

THIN FILM CIRCUITS

John C. Maddison, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Mar. 17, 1967, Ser. No. 623,922
Claims priority, application Great Britain, Mar. 31, 1966, 14,400; Apr. 7, 1966, 15,584
Int. Cl. B44d *1/18;* **B05c** *11/12*
U.S. Cl. 117—212 **2 Claims**



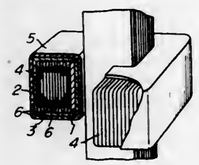
A method of locating a thin film circuit substrate relative to a mask. The substrate is caused to move by centrifugal force to a datum position at which it is correctly located with respect to the mask. A thin film circuit is deposited upon the positioned substrate through the mask.

3,503,797

INSULATING METHOD FOR ELECTRICAL MACHINERY AND APPARATUS

Hiroshi Hagiwara, Osaka, Teijiro Murakami, Kawanishi-shi, and Koichi Hirakawa, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Sept. 20, 1966, Ser. No. 580,788
Claims priority, application Japan, Sept. 27, 1965, 40/59,249; Nov. 19, 1966, 41/2,925; May 12, 1966, 41/31,045
Int. Cl. B44d *1/44*
U.S. Cl. 117—215 **5 Claims**



A method of electrically insulating a member involving the formation thereon of a porous layer of insulating material and the subsequent impregnation of same with an impregnating insulating material.

3,503,798

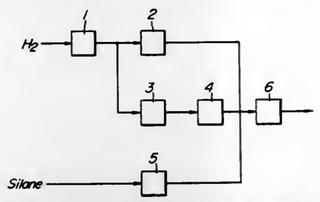
SILICON NITRIDE FILM DEPOSITION METHOD

Satoshi Yoshioka, Nishinomiya-shi, and Shigetoshi Takayanagi, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Oct. 23, 1967, Ser. No. 677,147
Claims priority, application Japan, Oct. 28, 1966, 41/71,595
Int. Cl. B44d *1/18*
U.S. Cl. 117—215 **6 Claims**

A method of depositing a silicon nitride film on the surface of a semiconductor substrate by maintaining the surface of the semiconductor substrate at a

temperature of 550° to 850° C. and acting on said heated surface a reactant gas consisting of a mixture of silane (SiH_4), hydrazine (N_2H_4) and a carrier gas. The present invention establishes the conditions such as the temperature of the semiconductor substrate in a reaction tube, and the concentrations each of and the concentration ratio between silane and hydrazine in the reaction tube, and thereby enables a silicon nitride film to be deposited on said substrate industrially.



3,503,799

METHOD OF PREPARING AN ELECTRODE COATED WITH A PLATINUM METAL

Kiyoshi Aoki, Tokyo, and Seiichi Ishikawa, Kiyomi Nagaike, Shiro Honda, and Minoru Watanabe, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed May 12, 1967, Ser. No. 637,918
Claims priority, application Japan, May 19, 1966, 41/31,919
Int. Cl. B44d *1/18, 1/02*
U.S. Cl. 117—217 **9 Claims**

An anode for brine electrolysis having low chlorine overvoltage is prepared by coating titanium with an alloy of a platinum metal with a less noble metal (typically Cu, Ni, Fe, Ag, Pb, Mn, Co), dissolving the less noble metal from the alloy layer, and coating the substrate so produced with a surface layer of platinum metal. The loss of platinum metal under otherwise comparable conditions during brine electrolysis is lower than from otherwise similar conventional anodes coated with platinum metals.

3,503,800

PROTECTED INSULATED ELECTRICAL CONDUIT

William R. Eddy, Kansas City, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,465
Int. Cl. H01b *17/62, 17/36;* **B44d** *1/42*
U.S. Cl. 117—218 **5 Claims**

Materials subject to physical damage and rodent attack, particularly buried electrical cables, are protected by surrounding same with structurally stable foam having rodent repellent dispersed throughout.

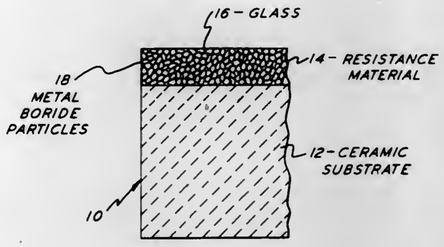
3,503,801

VITREOUS ENAMEL RESISTANCE MATERIAL AND RESISTOR MADE THEREFROM

Cornelius Y. D. Huang, Bala Cynwyd, and Kenneth M. Merz, Malvern, Pa., assignors to TRW Inc., a corporation of Ohio

Filed Nov. 29, 1967, Ser. No. 686,592
Int. Cl. H01c *7/00*
U.S. Cl. 117—221 **2 Claims**

A vitreous enamel resistance material comprising a mixture of a vitreous glass frit and fine particles of a metal boride of the transition elements of Groups IV, V and VI of the periodic chart. The metal boride may be chromium boride (CrB_2), zirconium boride (ZrB_2), molybdenum boride (MoB_2), tantalum boride (TaB_2) or titanium boride (TiB_2). The metal boride is present in the vitreous enamel resistance material in the proportions of, by weight, 10% to 35% for chromium boride, 20% to 50% for zirconium boride, 20% to 50% for molybdenum boride, 35% to 65% for tantalum boride and 20% to 50% for titanium boride. An electrical resistor is made with the vitreous enamel resistor material of the present invention by coating a ceramic substrate with the vitreous enamel resistance material and firing the coated substrate at a temperature sufficient to melt the glass frit of the vitreous enamel resistance material. Upon cooling, the glass hardens so that the resultant resistor comprises the substrate having on the surface thereof a film of glass with the metal boride particles embedded in and dispersed throughout the glass film.



3,503,802

HIGH SPEED MANUFACTURING OF RESIN COATED WIRE

Tsunemi Yoshida, Tokyo, Masao Azumi, Katsuei Handa, Toshio Saito, and Shigeyasu Shimizu, Yokohama-shi, Nobuji Ito, Tokyo, Koji Yanagisawa, Toshio Matsui, and Takayoshi Maesawa, Ichihara-shi, and Morikuni Hasebe and Hiroshi Yatabe, Yokohama-shi, Japan, assignors to The Furukawa Electric Co., Ltd., Tokyo, Japan, a corporation of Japan

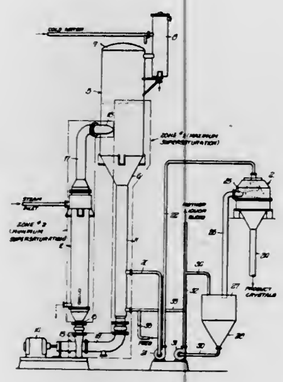
Filed Apr. 15, 1966, Ser. No. 542,833
Claims priority, application Japan, Apr. 19, 1965, 40/23,097, 40/23,099; Apr. 2, 1965, 40/23,333; Apr. 24, 1965, 40/24,214; July 15, 1965, 40/42,252; Sept. 22, 1965, 40/57,986; Oct. 7, 1965, 40/61,476
Int. Cl. B44d *1/42*
U.S. Cl. 117—232 **12 Claims**

Method and apparatus of producing resin coated electric conducting wires is disclosed wherein the conductor is coated with a synthetic resin solution, dried while being cooled at a temperature below the clouding point of the resin solution, and heated in a furnace to foam the resin coating. The invention is characterized by a series of steps in which, while being run at a speed of more than 100 meters/min., the conductor is preheated to a temperature 10° to 40° C. lower than that of a crystalline synthetic resin solution, coated with said resin solution, led into an accumulator where it is wound into a plurality of turns under a tension, 10% to 40% of its tensile strength at yielding point, and dried at such temperature as will not deteriorate the resin coating, while being cooled at a temperature below the clouding point of the resin solution, so as to precipitate crystalline resin particles out of the solution.

3,503,803
CONTINUOUS PRODUCTION OF CRYSTALLINE SUCROSE

Richard C. Bennett, Park Forest, Ill., and Harold B. Caldwell, Sarasota, Fla., assignors to Whiting Corporation, a corporation of Illinois

Continuation-in-part of application Ser. No. 335,597, Jan. 3, 1964. This application Mar. 22, 1968, Ser. No. 723,641
Int. Cl. C13f *1/02;* B01d *9/00;* C13k *1/10*
U.S. Cl. 127—16 21 Claims

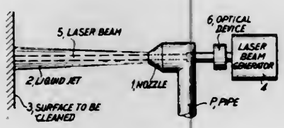


A process and apparatus for continuous production of crystalline sucrose wherein nucleating means is employed to produce a sufficient number of nuclei in the system sired size range, for example, a sugar product which falls within the size range of commercial granulated sugar. In a preferred embodiment, the nucleation means include the circulation pump for the system and an additional energy input device such as, for example, a rotating saw blade, which imparts the desired rate of nucleation to the supersaturated sucrose slurry without necessiating an increase in the speed at which the circulation pump is operated.

3,503,804
METHOD AND APPARATUS FOR THE PRODUCTION OF SONIC OR ULTRASONIC WAVES ON A SURFACE

Hellmut Schneider, Jacob-Steffan-Strasse 14, Mainz (Rhine), Germany

Filed Apr. 25, 1967, Ser. No. 633,498
Int. Cl. B08b *7/04;* B05b *17/04*
U.S. Cl. 134—1 5 Claims

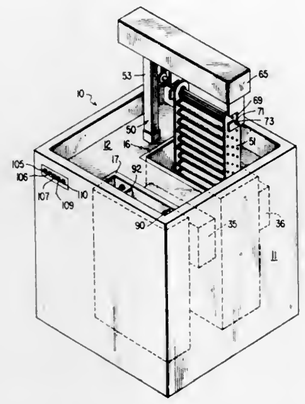


A method and device for producing energy on a surface together with a jet of water for example to clean the surface, there being provided a nozzle for generating a liquid jet and a device such as a laser generator for producing a laser beam coaxially with the liquid jet, so that when the liquid jet and laser beam strike the surface to be cleaned, there is a combined action between the jet and the energy of the laser beam.

3,503,805
METHOD AND APPARATUS FOR CLEANING ROLLER ASSEMBLIES

Howard R. Denyes, 47 Woodland Road, Poquoson, Va. 23362

Filed Jan. 10, 1967, Ser. No. 608,400
Int. Cl. B08b *7/02*
U.S. Cl. 134—1 9 Claims

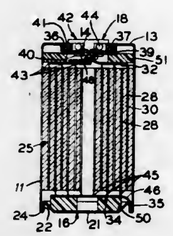


An ultrasonic cleaning apparatus and method of using the same to accomplish the cleaning of multiple roller assemblies which may be constructed so as to preclude effective hand cleaning or cleaning by other prior art methods.

3,503,806
RECHARGEABLE BATTERY OF THE SPIRAL WOUND PLATE TYPE

Raymond K. Sugalski, Gainesville, Fla., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 597,914, Nov. 30, 1966. This application Sept. 1, 1967, Ser. No. 665,707
Int. Cl. H01m *35/16, 21/00*
U.S. Cl. 136—13 6 Claims



A cell construction is utilized in which the negative plate edges extend longitudinally beyond the positive plate edges in one direction and the positive plate edges extend longitudinally beyond the negative plate edges in the opposite direction. Terminal straps are attached to the extending edges of the plates at a plurality of points. The plates may be spirally wound and the negative plate connected to a conductive casing through one terminal strap and the positive plate connected to terminal rivet through the remaining terminal strap. As a separate or combined feature a resilient washer having a durometer rating the range of from 15 to 95 may be positioned adjacent either or both ends of the plates.

3,503,807
STORAGE BATTERY HAVING TUBULAR TYPE PLATES AND UNITARY COVER THEREFOR

Erik Gustav Sundberg, Osbacken, Nol, Sweden, assignor to Aktiebolaget Tudor, Stockholm, Sweden, a corporation of Sweden

Filed July 14, 1967, Ser. No. 653,379
Claims priority, application Sweden, Mar. 14, 1967, 3,485/67; Apr. 21, 1967, 5,617/67
Int. Cl. H01m *35/04, 3/00*
U.S. Cl. 136—43 13 Claims

An electric storage battery having positive tubular plates consisting of a plurality of electrically conductive rods in contact with active material and the active material being surrounded with a unitary cover of electrically insulating material. The cover for all the rods comprising at least two layers secured together of a material that is resistant to acid and to the reactions in the battery.

3,503,808
METHOD FOR REGENERATING MOLTEN METAL FUEL CELL REACTANTS

Bernard Agruss, Earl H. Hietbrink, and Tibor F. Nagey, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 17, 1965, Ser. No. 508,351
Int. Cl. H01m *27/00, 27/26, 27/30*
U.S. Cl. 136—83 3 Claims

A method for regenerating the reactants of a fuel cell wherein molten metal reactants are fed into a container or settling pot that is cooled in order to separate the reactants. The separated reactants are individually heated and returned to the fuel cell through separate conduits.

3,503,809
ELECTRICAL DEVICE INCLUDING NICKEL-CONTAINING STABILIZED ZIRCONIA ELECTRODE

Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 407,641, Oct. 30, 1964. This application Nov. 2, 1967, Ser. No. 680,245
Int. Cl. H01v *27/04*
U.S. Cl. 136—86 5 Claims

Electrode-electrolyte construction for a high temperature electrical device, such as a fuel cell, is described wherein a porous layer containing a mixture of nickel or cobalt particles providing a continuous electrical path in the porous layer and small particles of stabilized zirconia present as a discontinuous phase is firmly bonded to a substrate of stabilized zirconia. The structural interrelationship of the particles in the porous layer wherein the metallic component is the major constituent is responsible for the capability of this particular electrode construction to remain porous during operation at high temperatures for extended periods of time.

3,503,810
METHOD OF PREPARING AN ANODE COMPOSITION

Irwin J. Groce, Canoga Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

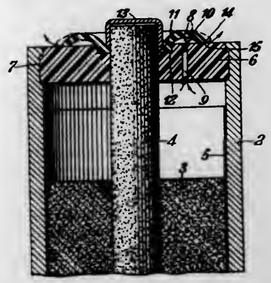
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,351
Int. Cl. H01m *13/04, 13/00*
U.S. Cl. 136—120 12 Claims

An anode composition for a solid electrolyte power cell is prepared by blending a compound of silver, preferably Ag_2O, with carbon and with a solid electrolyte material. The resulting blend is then heated to reduce the silver compound and give finely divided silver metal powder in a matrix of carbon and electrolyte.

3,503,811
DRY CELL WITH NOVEL VENTING MEANS

Lewis F. Urry, North Olmsted, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed June 21, 1968, Ser. No. 738,934
Int. Cl. H01m *1/02, 1/06*
U.S. Cl. 136—178 6 Claims



A novel valve vent is provided for a dry cell employing a cylindrical cupped anode, a central cathode rod protruding through the open end of the cupped anode and a flat, annular, insulating closure disc surrounding the cathode rod within the open end of the cupped anode, wherein an annular, arcuate shape, resilient seal member is fixed at its innermost peripheral edge on top of the closure disc around the cathode rod and overlying a venting aperture provided in the disc, the outer peripheral edge of the seal member being biased in resilient pressure sealing contact with the flat surfaces of the closure disc forming a seal around the venting aperture. Upon the development of a predetermined gas pressure within the cell, the arcuate shape resilient seal member is deflectable at its outer peripheral edge in a direction away from the closure disc momentarily breaking the seal around the venting aperture and allowing gas to escape from inside the cell.

3,503,812
ELECTROLUMINESCENT CELL AND METHOD OF MAKING THE SAME

Jerome S. Prener and Jack D. Kingsley, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 341,702, Jan. 31, 1964. This application Nov. 18, 1966, Ser. No. 595,467
Int. Cl. H01l *3/00;* H05b *33/14*
U.S. Cl. 148—33 4 Claims

A material having semiconducting and electroluminescent properties and a method of preparing such material is described as comprising a crystal of cadmium fluoride containing yttrium in an amount ranging from a small but finite quantity up to the maximum of approximately 10 mole percent. The impure cadmium fluoride crystal is made semiconductive by placing it in an evacuated enclosure with sufficient cadmium metal to saturate the enclosure with cadmium vapor and by heating the crystal to a temperature until the crystal is equilibrated with the vapor. A layer of insulating cadmium fluoride containing a manganese activator produces an electroluminescent device. A process for making the electroluminescent device comprises melting and crystallizing a powder comprising an appropriate mixture of cadmium fluoride and manganese fluoride, placing a powder containing an appropriate mixture of cadmium fluoride and yttrium fluoride on the surface of the resultant crystal, melting the powder and a small portion of the crystal, crystallizing the melt as a continuation of the first crystal and equilibrating the two-layer crystal with saturated cadmium metal vapor at a temperature approximately in the range of 300° C. to 1000° C.

3,503,813
METHOD OF MAKING A SEMICONDUCTOR DEVICE

Masayuki Yamamoto, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Dec. 13, 1966, Ser. No. 601,407
Claims priority, application Japan, Dec. 15, 1965, 40/76,695
Int. Cl. H01l *7/44*
U.S. Cl. 148—187 17 Claims

A method of making semiconductor devices wherein a major surface portion of a semiconductor body, such as silicon, having a diffused region is chemically etched to remove a thin portion of said major surface by exposing the body to an etchant including, for example, nitric acid and hydrofluoric acid thereby removing thermal distortions, unnecessary impurity atoms or metal ions in the major surface portion of said body, and whereafter an insulating film is deposited on the etched surface of the body at a temperature sufficiently low to preclude rediffusion of impurities in the semiconductor body.

3,503,814
PYROTECHNIC COMPOSITION CONTAINING NICKEL AND ALUMINUM

Horace H. Helms, Jr., Silver Spring, and Alexander G. Rozner, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy

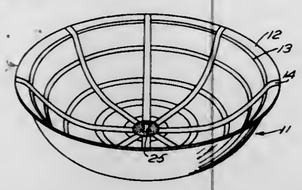
No Drawing. Filed May 3, 1968, Ser. No. 726,548
Int. Cl. C06d *1/00*
U.S. Cl. 149—109 5 Claims

A pyrotechnic composition containing nickel and aluminum which may contain in addition magnesium, ferric oxide or bismuth, a pyrotechnic article made from the pyrotechnic composition and a method of preparing the pyrotechnic article by compaction of the appropriate metal powders or by rolling, swaging, drawing or plating to form composite configurations.

3,503,815
METHOD OF PRODUCING A MULTI-COLORED METAL DESIGN ON AN ARCUATE METAL BASE

Robert M. Johnson, 265 Benefit St., Providence, R.I. 02903

Continuation-in-part of application Ser. No. 418,726, Dec. 16, 1964. This application May 27, 1968, Ser. No. 732,139
Int. Cl. C23f *1/02*; B29c *17/10*; B23b *25/00*
U.S. Cl. 156—6 6 Claims



The method of producing a multi-colored metal design on an arcuate surface by superimposing different metals in substantially flat planes, making the design and then curving the metal so formed into a desired shape.

3,503,816
CHEMICAL ENGRAVING OF ALUMINUM

Walter G. Zelley, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

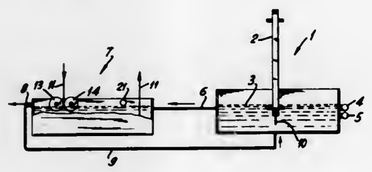
No Drawing. Filed Jan. 18, 1967, Ser. No. 610,034
Int. Cl. C23f *1/02*; B41c *1/00*
U.S. Cl. 156—14 4 Claims

Aluminum may be chemically engraved by a powderless etching method in which an aluminum plate is etched by a heated aqueous alkaline solution containing lithium hydroxide, another alkali metal hydroxide, and dissolved aluminum. The method is useful for producing photoengraved aluminum printing plates. As an example, in producing such plates the alkaline solution is impinged on a resist coated aluminum surface at a temperature above 150° F., and contains 8 to 60 grams per liter of lithium hydroxide, 10 to 50 grams per liter of sodium hydroxide, and 2 to 8 grams per liter of dissolved aluminum.

3,503,817
PROCESS FOR CONTROLLING METAL ETCHING OPERATION

Kenneth J. Radimer, Little Falls, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 24, 1966, Ser. No. 522,694
Int. Cl. C23b *3/12*; C23f *1/02*
U.S. Cl. 156—19 7 Claims

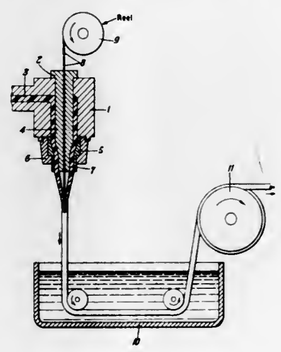


A method for controlling the rate of the solution of a metal in a commercial metal etching operation which comprises having a sample test bath of composition the same as the operating bath and in communication with it sampling the operating bath continuously and circulating the sample through the sample bath and continuously etching a continuously moving test metal sample in the test bath and optically measuring the rate of dissolution of said metal article and maintaining the end of solution of metal within two optically indicated points.

3,503,818
POLYARYLENE POLYETHER INSULATED CONDUCTORS AND PROCESS FOR MAKING SAME

John J. Helbling and Charles Neale Merriam, Martinsville, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 1, 1966, Ser. No. 598,245
Int. Cl. H01b *13/14*
U.S. Cl. 156—51 9 Claims

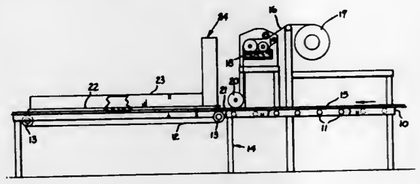


Electrical conductors such as wire insulated with molecular oriented thermoplastic polyarylene polyether amorphous polymers and an extrusion-stretching process for making the insulated conductors.

3,503,819
PROCESS FOR APPLYING A MEMBRANE FACING TO A SURFACE

Theodore Richard Rohweder, Toledo, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Oct. 4, 1966, Ser. No. 584,212
Int. Cl. B32b *17/04*
U.S. Cl. 156—178 10 Claims

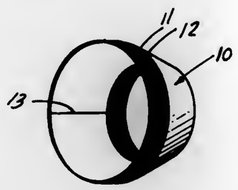


The continuous adherence of highly pliable facing material, such as thin plastic film, to a discontinuous and open surface of very low density and resilient fibrous body substrates with the attainment of visually flat and uniform plane facing surfaces, comprising applying adhesive to the facing material and joining the facing material to the surface of such fibrous substrates and transversely moving the resulting assemblage of the facing material superimposed on the surface of the fibrous substrate, under heat and light pressure applied in a uniform plane until the adhesive is substantially set by a contact with a uniformly flat plane surface of a glass fiber reinforced resin platen.

3,503,820
METHOD OF MANUFACTURING CONICAL LAMINATE ELEMENTS

Anthony T. Galbato, Jamestown, N.Y., assignor to TRW, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 17, 1967, Ser. No. 661,400
Int. Cl. B65h *81/00*; F16c *25/06*
U.S. Cl. 156—189 5 Claims

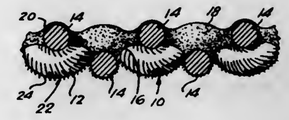


A method of manufacturing hollow-frusto-conical laminated bearings including coating an elastomer to a planar sheet of bearing material, blanking the coated sheet into a number of curved shims, rolling each shim around a mandrel loader and retaining it thereon by an attractive force, inserting the loader into a holder having a conical end wall and cylindrical side walls, releasing the rolled shim from the loader, repeating the process with a desired number of additional shims, and molding the resultant stack to bond the shims together.

3,503,821
METHOD FOR REINFORCING TEXTILE GARMENTS AND THE GARMENTS MANUFACTURED THEREBY

Clayton E. Conklin, El Paso, Tex., assignor to Mann Manufacturing, Inc., El Paso, Tex., a corporation of Texas

Original application Sept. 22, 1967, Ser. No. 669,904, now Patent No. 3,394,405. Divided and this application Feb. 23, 1968, Ser. No. 707,674
Int. Cl. C03c *25/02*; D06n *7/06*
U.S. Cl. 156—228 9 Claims



An improved textile garment whose woven fabric is reinforced at locations subjected to more than normal wear. The reinforcement consists of a coalescence of thermoplastic film and fabric fibers at said garment locations. The film partially encapsulates the fibers of the fabric.

The film is first adhered to the surface fibers on one surface of the fabric by heat and pressure, cooled, and the fabric is then baked in an oven to soften the film, polymerize a resin which impregnates the fabric and form the coalescence. The softened film adheres to and partially encapsulates the fibers, is prevented from peeling, and leaves the fabric porous through its interstices. Because of the partial encapsulation, the film is not visible from the outer surface of the garment fabric. The film also locks the fibers in place and to each other, and increases their wear resistance.

3,503,822
RESIN IMPREGNATING OF FOAMED POLYURETHANE

William Turkewitsch, Toronto, Ontario, Canada, assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

Filed Dec. 20, 1965, Ser. No. 515,044
Int. Cl. B29b *3/00*; B44d *1/44*, *1/22*
U.S. Cl. 156—242 5 Claims

An open celled polyurethane foam is impregnated with a gellable dispersion of a thermoplastic resin, the dispersion is gelled within the interstices of the foam. A dispersion of a thermoplastic resin is applied onto the impregnated foam. Then fusing and cooling the impregnant and said layer so as to provide a continuous wear resistant layer of thermoplastic resin securely bonded to the foam.

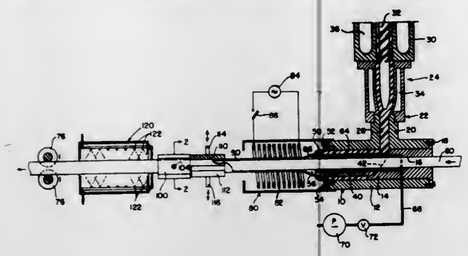
3,503,823
METHOD FOR COATING METAL SUBSTRATES WITH THERMOPLASTIC RESINS

Douglas S. Richart and Fritz J. Nagel, Reading, Pa., assignors to The Polymer Corporation, a corporation of Pennsylvania

Filed Apr. 4, 1966, Ser. No. 539,940
Int. Cl. B32b *31/30*
U.S. Cl. 156—244 7 Claims

Adhesion of thermoplastic coatings to metal strip, wire and pipe is improved by extruding the coating material onto the metal and heat treating the interface between the coating and the metal at a temperature well above

that at which the extrusion is done. The interface may be heated by induction methods, as well as others, and

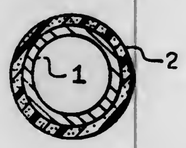


the outer surface of the coating may be concurrently cooled.

3,503,824
ION LINKED COPOLYMER FOR EXTRUSION COATING
Richard David Nelson, Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 19, 1967, Ser. No. 631,891
Int. Cl. C08f *3/34*
U.S. Cl. 156—244 **1 Claim**

An ion cross linked copolymer of alpha olefin and alpha,beta-ethylenically unsaturated carboxylic acid containing behenamide suitable for use as an extrusion coating resin.

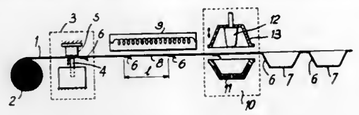
3,503,825
METHOD OF MAKING LIGHT-WEIGHT ARTICLES
Alvin Edward Moore, 916 Beach Blvd., Waveland, Miss. 39576
Filed Mar. 3, 1966, Ser. No. 531,564
Int. Cl. B22d *27/14;* **B29d** *3/00*
U.S. Cl. 156—245 **32 Claims**



A method of making sealed, hollow, gas-containing plastic or metal articles, having especially important use in the manufacture of such articles of dense materials of high melting points—for example, aluminum, copper or glass. Molten material, collected around the head of a blowing tube, is gas-blown into a plastic bubble and forced off the tube and into a cooled mold or chamber which may contain a mold. Preferably the gas is lighter than air, and the consequent buoyancy of the bubble aids in discharging it from the tube and into the cooling receptacle. The quick cooling adds strength to the thin walls.

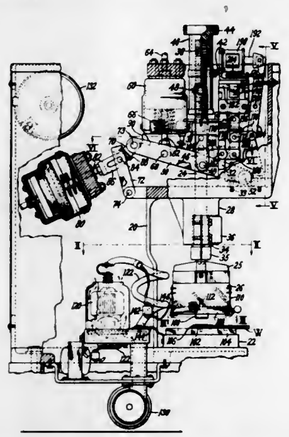
3,503,826
PROCESS FOR LABELLING HOLLOW OBJECTS
Jean Roger Nasica, Paris, France, assignor to Societe Anonyme dite: ERCA, Bagneux, France, a French society
Filed Jan. 17, 1968, Ser. No. 698,581
Claims priority, application France, Jan. 18, 1967, 91,514
Int. Cl. B29b; B29c *19/00*
U.S. Cl. 156—245 **5 Claims**

Process for labeling hollow objects wherein a label is fixed by at least a portion of one of its sides to the exterior portion of a film of thermoplastic to be formed. The fixed side of this label extends in a direction which is perpendicular to that in which the plastic flows when the object is formed and is fixed to the zone wherein the smallest flow of the thermoplastic with respect to the



other points of the label occurs. The portion of the film which is to be formed into the object is heated. The heated portion of the film with its attached label is then placed over a mold and deformed in such a manner that it takes the internal form of the mold.

3,503,827
APPARATUS FOR TREATING PLASTIC WITH HEAT AND PRESSURE
Melvin Clamp, North Andover, and Ralph E. Karcher, Jr., Magnolia, Mass., assignors to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 19, 1966, Ser. No. 587,795
Int. Cl. B29c *19/02*
U.S. Cl. 156—380 **7 Claims**

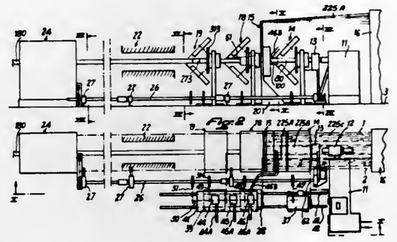


A dielectric welding cutting press having relatively movable presser members and electrodes for dielectrically heating a workpiece. An adjustable stop is provided to prevent the electrodes from creeping too close to one another when the work is under pressure, and a pair of air motors cause relative movement of the presser members, the one motor providing the final heavy pressure having a greater mechanical advantage than the other.

3,503,828
APPARATUS FOR MANUFACTURING HERMETIC PLASTICS TUBES HAVING A BINDING
Jacques Walter, 14 Rue Crespin, Geneva, Switzerland
Filed June 15, 1966, Ser. No. 557,737
Claims priority, application France, June 19, 1965, 21,545; Sept. 6, 1965, 30,487; Sept. 9, 1965, 30,859; Sept. 25, 1965, 32,721; Nov. 17, 1965, 38,726; Nov. 20, 1965, 39,189
Int. Cl. B32b *31/30, 31/12*
U.S. Cl. 156—382 **22 Claims**

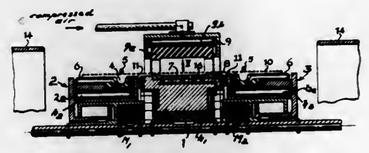
Apparatus for forming hermetic plastics tubes having a reinforcing binding comprises means for fabricating a relatively thin plastic sheath and an inner tubular cylindrical sizing mandrel having an external diameter equal

to the internal diameter of the sheath and over which sheath extracting means move the sheath as it is fabricated. The diameter of the mandrel is less than the diameter of the fabricated sheath except at the exit of an extruder, below means for placing reinforcing filaments or tapes on the sheath, and in a zone associated with a stationary gasket for retaining sheath pressurizing fluid. Downstream of the sheath extracting means there are provided means for placing reinforcing filaments, fibers, or tapes, in dry condition, on the sheath and means for in-



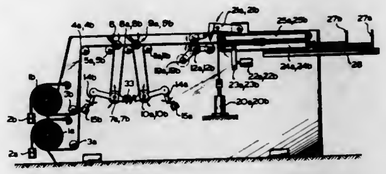
jecting a curable plastic, in the fluid state, into intimate relation with the reinforcing elements. A curing arrangement follows the plastic injection arrangement and is, in turn, followed by a second extracting means for the completed tube. During application of the reinforcing materials and the curable resins, the sheath is maintained under super atmospheric pressure by means closing the downstream end of the sheath. The upstream end of the sheath, adjacent the first extracting means, is maintained in communication with the atmosphere.

3,503,829
PNEUMATIC TIRE BUILDING MACHINE
Hans Menell, Ahlem, Günter Johannes, Hannover, Heinrich Nädler, Hagen, and Walter Scheithauer, Meyenfeld, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Aug. 24, 1966, Ser. No. 574,603
Claims priority, application Germany, Aug. 25, 1965, C 36,729
Int. Cl. B29h *17/12, 17/22, 17/11*
U.S. Cl. 156—401 **8 Claims**



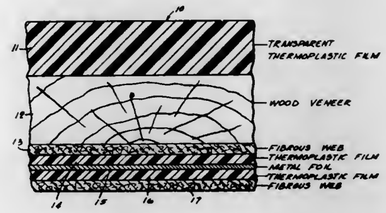
A tire building drum including a central section and two marginal end sections provided with inflatable bodies adapted to roll in axial direction such that all three sections are variable in diameter and the two end sections primarily are rotatable though axially movable relative to the central section. Bead cores of an unvulcanized tire casing are adapted directly to hold fabric plies collectively in annular laterally recessed grooves exclusively in the end sections. Changeable diameter clamping holds the fabric plies only as to the central section while rotating of the end sections to which fabric plies are held by the bead cores results in substantially right angled displacement of the fabric thread direction relative to circumferential direction of the plies about the central section.

3,503,830
TWIN-LINE HEAT-SEALING MACHINE FOR TUBING WEBS OR TWO-PLY FOLDED SHEETING WEBS OF PLASTICS MATERIAL
August Schwarzkopf, Lengerich, Germany, assignor to Windmoller & Holscher, Lengerich, Germany
Filed Dec. 27, 1966, Ser. No. 604,881
Claims priority, application Germany, Jan. 28, 1966, W 40,826
Int. Cl. B32b *31/08, 31/18*
U.S. Cl. 156—515 **8 Claims**



A twin-line machine for producing transverse heat seals on intermittently advanced tubing webs or two ply, folded sheet webs of plastic material and for severing such webs, which machine is adapted to selectively process two standard webs moving one beside the other or a web having a width which is wider than the standard web. The two processing lines have mutually independent drive means and advancing rolls and movable tool carriers which can be selectively associated with one or both of the processing lines so that the machine is capable of producing products of different lengths.

3,503,831
LAMINATED SHEET INCLUDING OUTER TRANSPARENT FILM AND A METAL FOIL ENCASED BETWEEN TWO THERMOPLASTIC FILMS
Kanematsu Oyama, 6–29 Minamisenju-machi, Arakawa-ku, Tokyo, Japan
Filed June 30, 1966, Ser. No. 561,920
Int. Cl. B32b *31/10*
U.S. Cl. 161—6 **10 Claims**

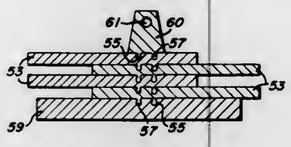


Laminated sheet material having an outermost film of a transparent thermoplastic resin, a sheet of wood veneer under the thermoplastic film, a sheet of fibrous web bonded to the underside of the wood veneer, a thermoplastic film bonded to the fibrous web, a metal foil bonded on one side to the first-named thermoplastic film and to a second thermoplastic film on the other side, and a fibrous web bonded to said second thermoplastic film.

3,503,832
REPETITIVE UNIT SCULPTURING APPARATUS
Frederick W. Umminger, Jr., Apt. 4FW, 334 E. 82nd St., New York, N.Y. 10028
Filed Apr. 7, 1965, Ser. No. 446,300
Int. Cl. B44c *3/06;* **B44b** *1/00*
U.S. Cl. 161—7 **1 Claim**

A sculptured figure includes a plurality of units of predetermined configuration and arranged in adjacent stacked

relation. Each unit is freely rotatable relative to an adjacent unit on an axis eccentric to its geometric center



to provide for creating a large variety of sculptured figures, and the units are retained in the stacked relation to provide for conveniently moving a created figure.

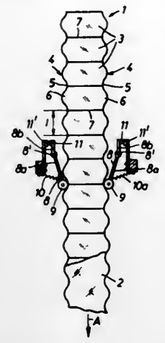
3,503,833
LAMINATED PANEL CONSTRUCTION AND METHOD OF MAKING SAME
Roland O. Carlson, 17850 High Road, Sonoma, Calif. 95476
Filed Apr. 12, 1967, Ser. No. 630,332
Int. Cl. B32b *3/18*
U.S. Cl. 161—36 **5 Claims**



A method of fabricating laminated panels comprising the steps of: cutting each of a plurality of planks of substantially equal thickness longitudinally in a plane transverse to its thickness dimension so that it is comprised of a pair of unconnected opposed mating sections; assembling the planks in side by side relationship while maintaining the opposed sections in mating relationship to define a pair of superimposed layers, each of which layers is made up of a plurality of the sections disposed edge to edge; applying a lamina to the outer surface of each of the layers to secure its sections in edge to edge relationship; and, separating the layers to define a pair of panels. The panels thus formed are faced by the cut surfaces of the planks and comprise mirror-like impressions of each other, as defined by the cut surfaces.

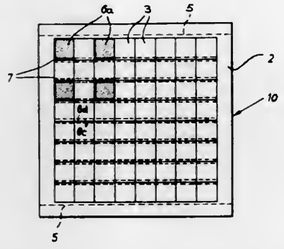
3,503,834
SHAPED LABEL STRIP FOR USE IN LABEL PRINTING APPARATUS
Carl Schröter, Rommelshausen, Germany, assignor to Meto-Gesellschaft Oscar Kind KG., Hirschhorn (Neckar), Germany
Filed Aug. 10, 1965, Ser. No. 478,605
Claims priority, application Germany, Aug. 11, 1964, H 53,502
Int. Cl. B32b *3/16*
U.S. Cl. 161—38 **4 Claims**

The invention consists of a strip of shaped labels, said strip having at least one sinusoidal longitudinal edge for sensory engagement with a label printing apparatus. Each individual label in the strip has a pair of long edges transverse to the strip and a pair of shorter edges forming segments of the longitudinal edges of the strip, at least one of said shorter edges of each label having one arcuately curved projection. The label strip has a carrier web, and several strips may be formed adjacently on the same carrier web. The individual labels are generally rectangular,



except for the sinusoidal edges, and may be in the shape of parallelograms, trapezoids, or other shapes.

3,503,835
COLLECTING SHEET FOR ALBUMS, SCRAPBOOKS AND THE LIKE
Werner Hermann, Stuttgart-Hohenheim, Germany, assignor to Firma Heinrich Hermann, Stuttgart-Wangen, Germany, a German corporation
Filed June 27, 1966, Ser. No. 560,540
Claims priority, application Germany, June 26, 1965, H 56,419
Int. Cl. B32b *3/14*
U.S. Cl. 161—38 **5 Claims**

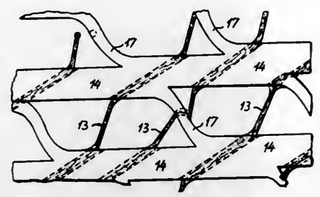


A collecting sheet for albums, scrapbooks and the like in which a support sheet is provided with a layer of pressure sensitive adhesive in an array of strips with adhesive-free narrow strips between them. A frame surrounds the window of the sheet through which the adhesive can be exposed and is connected to a plurality of strips of masking material by readily rupturable webs. Narrow webs also connect the sections together. The junctions between two edges lies along a median line of the adhesive-free strip to facilitate removal of the latter.

3,503,836
SPLIT FIBROUS SHEET AND METHOD FOR MAKING THE SAME
Ole-Bendt Rasmussen, 14 Gyvelbakken, Birkerod, Denmark
Filed Aug. 7, 1964, Ser. No. 388,213
Claims priority, application Great Britain, Aug. 10, 1963, 31,676/63
Int. Cl. D04h *13/00;* **B32b** *3/10, 5/12*
U.S. Cl. 161—109 **5 Claims**

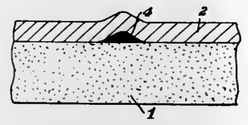
A sheet-like array of integrally interconnected split fibers of a synthetic polymer are additionally interconnected by integrally formed embedded fibrils of a second and chemically different polymer stretching between the

split fibers at an angle to their length. This product is obtained by modifying a known process in which an extruded sheet of split-fiber forming synthetic polymer is stretched in two directions, one of which is inclined with respect to the first, to expand the sheet into an open



array of interconnected split fibers by introducing into the extruded sheet during its extrusion elongated fibrils of a second polymer which is resistant to split-fiber formation with the fibrils extending at an angle to the first stretching direction.

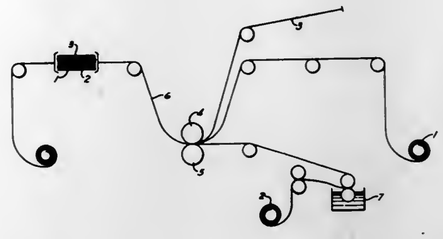
3,503,837
REINFORCED BITUMEN COVERING WITH SHEET-METAL PROTECTION
Pierre Louis Cheval, Courbevoie, France, assignor to Societe Nouvelle Siplast, Paris, France
Filed Mar. 24, 1964, Ser. No. 354,324
Claims priority, application France, Apr. 12, 1963, 931,444
Int. Cl. B32b *3/00*
U.S. Cl. 161—116 **2 Claims**



A roof-covering material comprising in association an unbroken strip or band of metal of high coefficient of expansion, e.g. aluminium, and a layer of bitumen, wherein at selected spaced intervals the band or strip of the material is formed with transverse zones or lines of weakness of the metal, or of its connection to the bitumen layer, in order to facilitate the release of stresses of the metal in relation to the bitumen covering when the material expands.

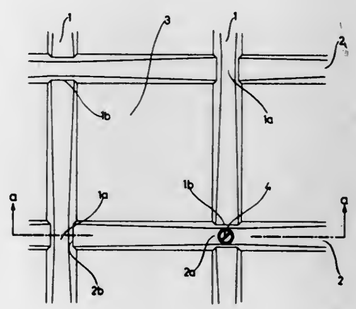
3,503,838
LAMINATED FOAM PLASTIC ARTICLE AND METHOD FOR MAKING THE SAME
Irving L. Marshack, La Jolla, Calif., assignor, by mesne assignments, to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 369,491, Sept. 15, 1964. This application Apr. 22, 1965, Ser. No. 449,973
Int. Cl. B32b *31/06*
U.S. Cl. 161—120 **15 Claims**

New articles of manufacture such as, for example, an article of upholstery, are prepared by a method wherein a plastisol containing a compatible resin is interposed between coextensive surfaces of a polyurethane foam and a self-sustaining thermoplastic film, pressing and heating the assembly to fuse the resin and heat-laminating the surfaces together while avoiding substance distortion of the self-sustaining film, covering at least the coated surface of the product with a self-sustaining thermoplastic



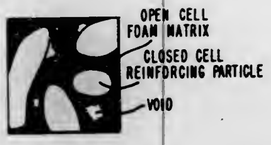
film and pressing the assembly with an electronically energized die until the thermoplastic films are fused together along the die surface.

3,503,839
DECORATIVE SHEETS MADE OF PLASTICS
Heinz Breitwieser and Otto Heinz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany
Filed Dec. 2, 1965, Ser. No. 511,070
Int. Cl. B32b *3/30*
U.S. Cl. 161—130 **10 Claims**



An article of manufacture has been provided which is a decorative wall covering of a plastic material of substantially the same thickness having a front surface and a back surface, each of the surfaces defining a complementary surface of the other, the front surface having geometrical lands and grooves, each of the lands being surrounded by grooves which are at different depth in respect to each other of at least one of the groove intersections surrounding the same land, the depth and width of each of the grooves accommodating heat expansion and contraction of said plastic under varying temperature conditions without distorting the lands of the wall covering and the intersections of the grooves at different heights providing for unconstrained transmission of heat expansion in said wall covering. Grooveless wall coverings where adjacent lands intersect each other below and above the surfaces of each have also been provided which similarly absorb the heat expansion and transmit this expansion throughout the panel.

3,503,840
COMPOSITE CELLULAR CUSHIONING STRUCTURES
Robert Guy Parrish, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 559,838, June 23, 1966. This application Apr. 24, 1968, Ser. No. 723,823
Int. Cl. B32b *5/18*
U.S. Cl. 161—159 21 Claims



Cushioning structures composed of a resilient open-celled polymeric foam matrix and dispersed resilient reinforcing particles of closed-cell gas-inflated polymeric cellular material, said reinforcing particles having polyhedral-shaped cells defined by film-like cell walls less than two microns thick, said cells containing an inflatant.

3,503,841
FOAMED POLYSTYRENE BONDED TO FIBER FILLED POLYVINYL CHLORIDE SHEET
Robert W. Sterrett, Chicago, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed May 13, 1966, Ser. No. 549,802
Int. Cl. B32b *5/18, 17/10, 27/30*
U.S. Cl. 161—161 7 Claims

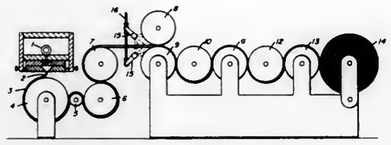
A lightweight sandwich structure having a low density core such as foamed polystyrene is constructed by the application, on one or both sides of the core, of a skin comprising a polyvinyl chloride sheet which is filled with asbestos fibers or mixtures of asbestos fibers with other fibers such as glass fibers.

3,503,842
ORIENTED POLYPROPYLENE-POLYETHYLENE FILM LAMINATE HAVING A VINYL ESTER COPOLYMER COATING
Harry A. Kahn, Monroe, Conn., assignor to National Distiller and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 12, 1964, Ser. No. 374,831
Int. Cl. B32b *5/16, 27/32, 27/08*
U.S. Cl. 161—162 4 Claims

A plastic film laminate having increased stiffness and improved heat sealability comprising an oriented polypropylene-polyethylene film laminate having the exposed surface of the polyethylene film coated with a copolymer of a vinylester and an ethylenically unsaturated organic acid having up to six carbon atoms.

3,503,843
TRANSPARENT POLYOLEFIN FILMS OF HIGH MODULUS AND CLARITY
Robert F. Williams, Jr., Webster, and Richard H. Jenks, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Application July 14, 1966, Ser. No. 565,305, which is a continuation-in-part of application Ser. No. 197,217, May 7, 1962, which in turn, is a continuation-in-part of application Ser. No. 9,567, Feb. 18, 1960. Divided and this application Oct. 16, 1967, Ser. No. 683,064
Int. Cl. B32b *27/32*
U.S. Cl. 161—165 7 Claims

Increased stiffness and better clarity of polymeric films can be obtained by compression rolling relatively thick films of the polymers, provided that the films are coated (at the juncture of the rolls with the film) with enough liquid "lubricant" to form a "hydrodynamic wedge" in the nip area. Films having higher modulus and greater



clarity (than could otherwise be produced) can be manufactured by this process. Polyolefin films having such higher modulus plus excellent clarity (less than 3% haze) are claimed.

3,503,844
CORD FOR COATING BY BLOWPIPE PROJECTION
René Clement, Suze-la-Rousse, France, assignor to Commissariat a l'Energie Atomique and Societe de Fabrication d'Elements Catalytiques (SFEC), both of Paris, France
Filed Mar. 3, 1966, Ser. No. 531,393
Claims priority, application France, Mar. 11, 1965, 8,778; Feb. 24, 1966, 51,023
Int. Cl, B29d *1/10*
U.S. Cl. 161—175 15 Claims

A flexible cord used in a spray gun to project powdered mineral substances to form a coating, said cord comprising a core consisting of a first paste containing powdered mineral substances, 0.5% to 8% by weight of at least one binder, and at least one plasticizer and/or diluent and a second paste forming an organic film covering to protect the core, is disclosed. The cord is formed by conjugate extrusion of the pastes.

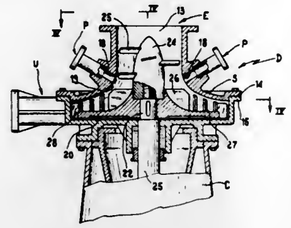
3,503,845
POLYESTER TEXTILE TO RUBBER LAMINATE AND METHOD OF MAKING SAME
Richard G. Hollatz, Detroit, and Allan R. Williams, Grosse Pointe Park, Mich., assignors to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,808
Int. Cl. B32b *27/38*
U.S. Cl. 161—184 17 Claims

Bonding polyester textiles, containing the dried deposit of an epoxy resin and a blocked isocyanate, to a rubber, containing a methylolated nitroalkane and a resorcinol-type methylene acceptor, by applying the rubber as a calendered solid to the textile material. The assembly is then heated to vulcanize the rubber into a permanent bonded relationship with the polyester textile.

3,503,846
APPARATUS FOR BLEACHING WOOD PULP
Franco Nardi, Torviscosa, Italy, assignor to S.A.I.C.I. Società Agricola Industriale per la Cellulosa Italiana S.p.A., Milan, Italy
Filed July 25, 1966, Ser. No. 567,561
Claims priority, application Italy, Oct. 25, 1965, 23,815/65
Int. Cl. D21c *7/00*
U.S. Cl. 162—236 6 Claims

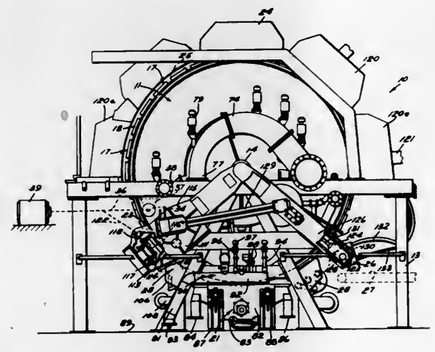
An apparatus for bleaching a thick semi-chemical pulp having a concentration higher than 35–49% of dry matter by the use of chemicals having an oxidizing action only having a stationary casing with one inlet for the thick pulp and at least one inlet for the chemicals. A chamber wherein the reaction is brought to completion

has an outlet. A rotor is supported for rotation in the casing and has an impeller-like structure comprising two concentric sections, of which the inner one is fitted with centrifugating blades, while the outer section is fitted with a plurality of spaced pins of projections, designed to intercept the flow of air which is centrifugated by said blades. The maximum diameter of the outer section is at least one and a half times greater than the maxi-



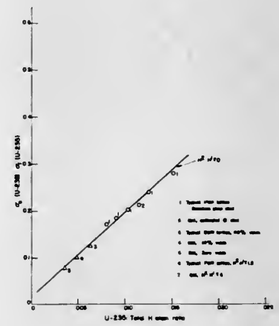
mum diameter of the inner section. The chemical inlet opens into the chamber adjacent to the inner section of the rotor. The rotor is vertically journalled and the chamber is formed with an inlet flared axial port. A feeding unit is coaxially secured to the rotor and extends partly into the axial port and is fitted with helical blades to obtain a first coarse fragmentation and a uniform feeding of thick pulp into the chamber.

3,503,847
PULP MOLDING MACHINE
Charles W. Modersohn, Lewis A. Burnham, Joseph Melter, and John D. Crain, Beloit, Wis., assignors to Beliot Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Apr. 9, 1965, Ser. No. 447,024
Int. Cl. D21j *3/00*
U.S. Cl. 162—392 2 Claims



A drum or turret is provided having a plurality of circumferentially spaced mold stations including suction boxes formed thereon at the periphery of the drum for receiving a plurality of foraminous mold members. A hollow support tube and a hollow siphon tube communicates with each suction box to a first vacuum chamber and a second vacuum chamber respectively. Vacuum control is provided for the first vacuum chamber by adjustable valve plates. Swingable arms are mounted on the shaft of the drum, extending radially beyond the periphery of the drum carrying mold pressure members and mold extraction members pivotally connected to the arms. A cam arrangement is disclosed for rocking the mold members about the pivots.

3,503,848
METHOD FOR THE CONCENTRATION OF U-236 IN ENRICHED URANIUM FUELS AND FOR MORE EFFICIENT UTILIZATION THEREOF
Jackson Arthur Ransohoff, Bethesda, Md., and Phillip McKenzie Wood, Pittsburgh, Pa., assignors to Neutron Products Inc., Washington, D.C., a corporation of Delaware
Continuation-in-part of application Ser. No. 247,339, Dec. 26, 1962. This application Nov. 9, 1964, Ser. No. 409,922
Int. Cl. G21g *1/00;* G21c *19/20*
U.S. Cl. 176—16 11 Claims

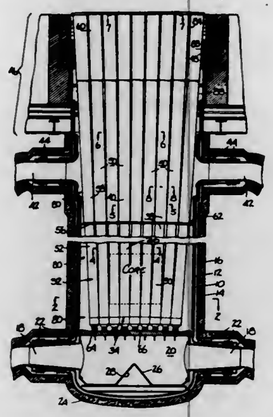


1. A process for concentrating U–236 in U–235 containing nuclear reactor fuels and for preparing Np–237 which comprises:
(1) irradiating in a nuclear reactor fuel elements containing uranium fuel highly enriched in U–235, thereby increasing the U–236 content of said fuel;
(2) subjecting said irradiated fuel to further processing to provide a fuel with a higher ratio of U–236 to total uranium fuel atoms;
(3) recycling the fuel so enriched in U–236 for further irradiation in a nuclear reactor having a neutron spectrum more epithermal than that provided by a U–235:H ratio of .01; and
(4) recovering the Np–237 produced during the latter irradiation and any subsequent irradiations.

3,503,849
METHOD OF REPLACING SUBASSEMBLIES IN NUCLEAR REACTORS
John G. Yevick, Rockville, Md., and Edward F. Brill, Oconomowoc, Wis., assignors, by direct and mesne assignments, to Atomic Power Development Associates, Incorporated, Detroit, Mich., a corporation of New York
Original application Jan. 7, 1966, Ser. No. 519,235. Divided and this application Oct. 30, 1967, Ser. No. 708,448
Int. Cl. G21c *19/20*
U.S. Cl. 176—30 4 Claims

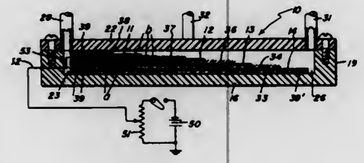
A method of replacing a subassembly in a nuclear reactor including: positioning a subassembly handling mechanism on top of the main plug and aligning it with a preselected liner tube, removing a small top plug from

engagement with the top of the main plug with a gripper cable mechanism and positioning same within the subassembly handling mechanism, and lowering a new subassembly into the liner tube. The next steps are: retaining the new subassembly inside the liner tube in a decay region, removing a hot subassembly from the core of the reactor and placing it in the decay region adjacent



the new subassembly, and thence placing the new subassembly in the reactor core, and removing a decayed subassembly which has been retained in the decay region since the last refueling operation, then returning the small plug from the subassembly handling mechanism to its engaged position on top of the main plug, and removing the subassembly handling mechanism.

3,503,850
BLOOD OXYGENATOR
Norman R. Dibelius, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1967, Ser. No. 686,432
Int. Cl. A61m *1/03*; C12k *9/00*
U.S. Cl. 195—1.8 **3 Claims**

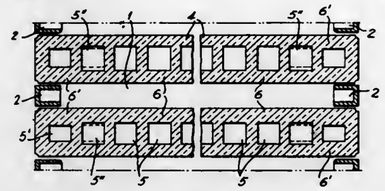


Blood oxygenator of the membrane type including an electrically-conductive foraminous spacer in the flow path on the blood side of the membrane. Means are provided for imposing a negative electrical potential on the foraminous spacer for the purposes of reducing damage to the red blood cells.

3,503,851
PROCESS FOR PROMOTING BACTERIAL SPORULATION
Vadake R. Srinivasan, Baton Rouge, La., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed Nov. 23, 1966, Ser. No. 596,428
Int. Cl. C12k *3/00*
U.S. Cl. 195—96 **5 Claims**

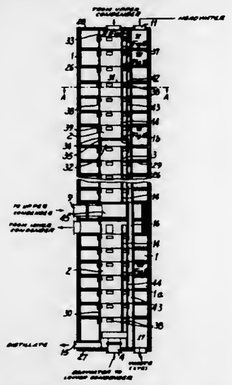
The sporulation of *B. popilliae* is promoted by growing the organism in a liquid nutrient medium under aerobic conditions in the presence of a chloroaliphatic compound.

3,503,852
HORIZONTAL COKE OVEN HAVING THICKENED EXTREME ENDS FIRING CHANNEL WALLS
Nikolai Konstantinovich Kulakov, Ul. Danilevskogo 14, kv. 21, Kharkov, U.S.S.R.
Filed Oct. 12, 1967, Ser. No. 674,793
Int. Cl. C10b *5/02*
U.S. Cl. 202—139 **2 Claims**



A horizontal coke oven with firing partitions having vertical firing channels on both sides of the coking oven, the extreme channels having heavier walls than the remaining channels to withstand stresses.

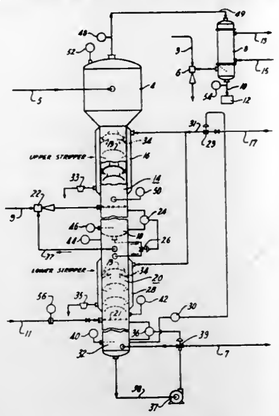
3,503,853
MULTI-STAGE FLASH EVAPORATION PLANT
Günter J. Taubert, Hermannsburg 32, Bremen-Huchting, Germany; and Hermann Rumphorst, Hegemannstrasse 2; and Klaus O. Wangnick, Hohentorsheerstrasse 120/124, both of Bremen, Germany
Filed Nov. 29, 1966, Ser. No. 597,749
Int. Cl. B01d *1/26*
U.S. Cl. 202—173 **9 Claims**



A multi-stage, flash-off evaporator arranged as a cylindrical column having a vertical core of successive condensation chambers and annularly arranged thereabout a vertical series of vapor or flash-off chambers. Sea water passes downwardly vertically through stages during evaporation through holes in the vapor chambers of such dimension as to seal one chamber from the other from passage of vapor by the downward flow of liquid. Condenser tubes extend through the separating walls of the condensation chambers with annular slots intermediate the tubes and separating walls through which at least a part of the distillate passes.

3,503,854
DUAL STAGE STEAM STRIPPING OF VEGETABLE OILS AT DUAL PRESSURES
Robert D. Good, Pittsburgh, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,503
Int. Cl. B01d *3/10, 3/42*
U.S. Cl. 203—79 **2 Claims**

This invention essentially comprises a two-stage stripping system for removing residual solvent from solvent-extracted oil in which both stages are operated at subatmospheric pressure, the first stage being at relatively higher pressure (e.g. 200–400 mm. Hg absolute) and the

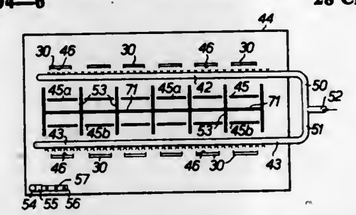


second stage at relatively lower pressure (e.g. 50–100 mm. Hg absolute), in which the stripping gas or vapor from the second (high vacuum stage) is compressed and reused in the first (low vacuum) stage.

3,503,855
ELECTROSENSITIVE RECORDING MEDIA
Floyd W. Shor, Vero Beach, and Herbert E. Hellwege, Winter Park, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Sept. 14, 1964, Ser. No. 396,106
Int. Cl. B41m *5/20, 5/18*
U.S. Cl. 204—2 **2 Claims**

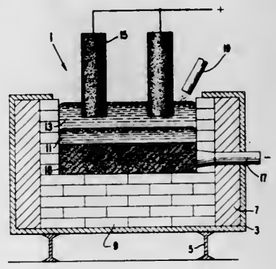
An electrosensitive recording medium having a support of electrically conductive material, a semiconductive coating superimposed on the support, the coating being a mixture of 16.6% titanium dioxide pigment, 0.33% dye precursor, 11% polyvinyl acetate binder, 0.033% tetrasodium pyro phosphite, 55.3% ethylene glycol monoethyl ether solvent and 16.6% water. The coating thickness is less than 0.5 mil.

3,503,856
PROCESS FOR CONTROLLING ELECTRODEPOSITION
Roy Clifford Blackmore, Esher, England, assignor to Rotary Plates Limited, London, England, a British company
Continuation-in-part of application Ser. No. 472,772, July 19, 1965. This application July 10, 1968, Ser. No. 743,899
Claims priority, application Canada, Jan. 30, 1968, 11,066
Int. Cl. B41c *3/08*; C23b *7/00*
U.S. Cl. 204—6 **28 Claims**



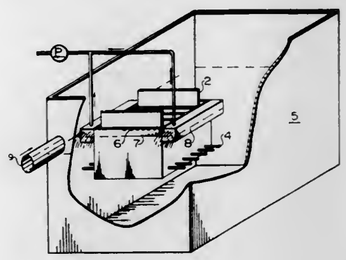
Electrodeposition of a metal or alloy is effected from solution on workpieces, particularly electrotypes moulds or shells, whilst jets of the solution are impinged on the workpiece and one anode is shaded from another anode. A box is provided for carrying an electrotype mould or shell, the box having recesses in which edges of the mould or shell are received so as to mitigate treeing. A plating tank comprises a bank of anodes in spaced, edge-to-edge relationship, shading means between adjacent anodes, and apertured pipework on each side of the anode array to direct jets of electrolyte solution upon workpieces.

3,503,857
METHOD FOR PRODUCING MAGNESIUM FERROSILICON
Robert A. Hard, Lewiston, James E. Wells III, Kenmore, and Donald J. Hansen, Lewiston, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 24, 1967, Ser. No. 632,971
Int. Cl. C22d *3/20, 3/08*
U.S. Cl. 204—71 **5 Claims**



Method for preparing magnesium-containing ferrosilicon by electrolyzing magnesium oxide which is suspended in a fused electrolyte which floats on cathodically energized molten ferrosilicon. Magnesium liberated during electrolysis is attracted to the cathodic molten ferrosilicon and dissolved therein.

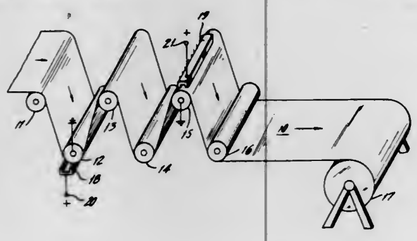
3,503,858
CONTINUOUS ELECTROLYTIC CELL PROCESS
George J. Crane, Islington, Ontario, Canada, assignor to Huron Nassau Limited, Nassau, Bahama Islands, a corporation of the Bahama Islands
Filed Apr. 5, 1965, Ser. No. 445,463
Claims priority, application Canada, Nov. 26, 1964, 917,312
Int. Cl. C01b *11/18*; B01k *1/00*
U.S. Cl. 204—82 **3 Claims**



The operation of multipolar electrolytic cells in the production of an alkali metal chlorate or perchlorate, particularly sodium chlorate or perchlorate, by the electrolysis of an electrolyte comprising an aqueous solution

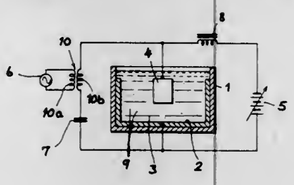
of an alkali metal chloride on a continuous basis. In the continuous operation, the electrolyte is continuously recirculated through the cell from a cell tank to effect electrolysis, a small proportion of the recirculating volume of the electrolyte being continuously withdrawn from the cell tank and fresh electrolyte being continuously fed to the cell tank. By the improved operation of the multipolar cell according to the present invention, the overall efficiency of the process for the production of the alkali metal chlorate or perchlorate is substantially increased.

3,503,859
CORONA DISCHARGE TREATMENT OF POLYMER FILM TO INCREASE THE ADHESION CHARACTERISTICS THEREOF
Askolds A. Goncarovs, Milford, Herbert O. Corbett, Bridgeport, and John J. Quackenbush, Monroe, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed May 2, 1967, Ser. No. 635,604
Int. Cl. B44d *1/092*
U.S. Cl. 204—165 **2 Claims**



A plastic film or sheet treating apparatus having a plurality of rollers through which a plastic web travels. Alternate rollers are movable from a plane on one side of the web to a position on the other side of the web. The web is threaded straight between the fixed rollers and the lowered movable rollers. The movable rollers are then moved upwardly to obtain the desired looped arrangement of the web with appropriate wrap of the web, and web tension being obtained around the roller or rollers adjacent one or more treating electrodes.

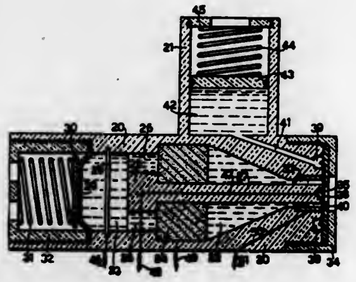
3,503,860
LOW-TEMPERATURE DIFFUSION PROCESS
Kiyoshi Inoue, Tokyo, Japan
(100 Sakato, Kawasaki, Kanagawa, Japan)
Continuation-in-part of applications Ser. No. 399,243, Sept. 25, 1964, and Ser. No. 405,051, Oct. 20, 1964. This application May 7, 1968, Ser. No. 727,196
Claims priority, application Japan, May 15, 1967, 42/30,726; May 17, 1967, Ser. No. 42/31,366
Int. Cl. C23b *13/00, 5/52, 5/50*
U.S. Cl. 204—181 **10 Claims**



A process for the low-temperature ionic diffusion of a substance deposited upon a metallic substrate in an electrolyte in which the substrate is spacedly juxtaposed with a counterelectrode and the applied electric current and voltage is established at a level to maintain a surface temperature between 100° C. and 300° C. Scaling is prevented by generating spark discharge along the surface of the substrate which may be masked at selected portions with polyethylene film to localize the diffusion and pattern the surface. The electric discharge occurs in the form of a sheet with an intensity less than that at which pitting occurs.

The current applied is disclosed as being predominantly undirectional with a superimposed high-frequency component having a frequency of 100 kHz. to the order of several mHz. The electrolyte disclosed may be either ionic or non-ionic. The substance is suspended in the electrolyte and migrates to the substrate where the described current causes the substance to ionically diffuse into the substrate. The substance includes powders of B, Ta, Al_2O_3, Cu, Au, Ti, C, Va, Nb, P, As, Cr, Mo; carbides of W, Ti, Nb and Ta, and MoS_2.

3,503,861
APPARATUS FOR ELECTROCHEMICAL ANALYSES
Emilio Volpe, Viale Caldara 15, Milan, Italy
Filed Mar. 16, 1967, Ser. No. 623,641
Claims priority, application Italy, Mar. 21, 1966, 6,321/66
Int. Cl. B01k *3/10*
U.S. Cl. 204—195 **13 Claims**

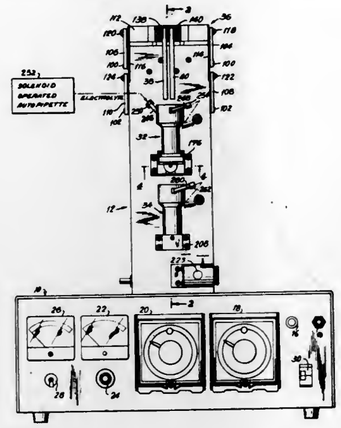


Apparatus for electrochemical analyses, particularly polarographic cell, which comprises in a closed container at least a measurement electrode near a diffusion diaphragm and a reference electrode fixedly spaced. The container is filled with an electrolyte and there are provided means for pressurizing said electrolyte. The container can be also provided with a guard electrode and a regeneration electrode, all the said electrodes being electrically connected to a measurement circuit.

3,503,862
ANODIC DISSOLUTION PROCESS AND APPARATUS THEREFOR
Silvio Barabas, Pierrefonds, Quebec, Canada, and Jack Isreeli, Mamaroneck, and Milton H. Pelavin, White Plains, N.Y., and Nelson G. Kling, Passaic, N.J., assignors to Technicon Corporation, a corporation of New York
Filed Oct. 14, 1966, Ser. No. 586,818
Int. Cl. B01k *3/00;* **C23b** *5/72*
U.S. Cl. 204—225 **6 Claims**

A system for analyzing a particular constituent of a metallic sample, or a plurality of successive metallic samples, includes structure for electrolytically dissolving in controlled fashion, a predetermined quantity of the sample in en electrolyte, which applies a blending action to the dissolved sample. A predetermined amount of the

sample-containing electrolyte is directed as a flowing stream to automatic analysis equipment. Provisions made

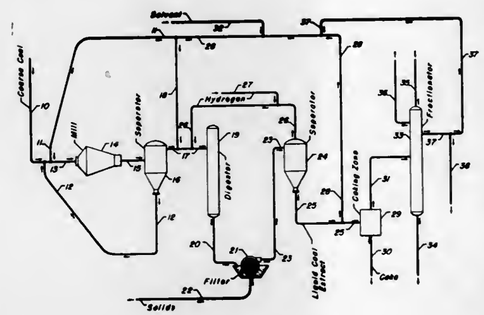


to wash the system between successive samples so as to prevent contamination.

3,503,863
COAL LIQUEFACTION PROCESS
John G. Gatsis, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Mar. 29, 1968, Ser. No. 717,433
Int. Cl. C10g *1/04*
U.S. Cl. 208—8 **7 Claims**

Process for liquefying coal which comprises contacting coal and solvent in the presence of hydrogen sulfide and recovering valuable liquid hydrocarbon products from the resulting liquid coal extract.

3,503,864
COAL LIQUEFACTION METHOD
Edwin F. Nelson, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,522
Int. Cl. C10g *1/04, 1/06*
U.S. Cl. 208—10 **3 Claims**

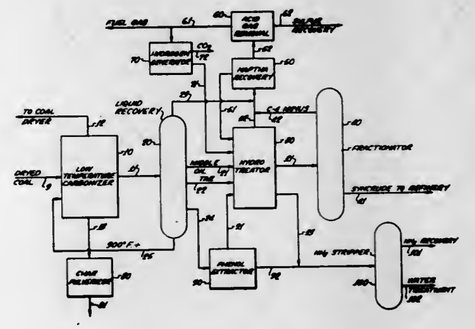


Method for the liquefaction of coal via solvent extraction. The method contacts pulverized coal with a solvent, passes the coal-solvent into a digestion zone, preferably, in the presence of hydrogen and a hydrogenation catalyst, and subsequently passes the liquid coal extract into a coking zone for the production of valuable liquid hydrocarbons. The recovered hydrocarbons are useful as fuel and/or chemicals.

3,503,865
COAL LIQUEFACTION PROCESS
Richard D. Stone, La Grange Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 28, 1968, Ser. No. 708,771
Int. Cl. C10g *1/00, 1/04*
U.S. Cl. 208—10 **6 Claims**

Process for liquefying coal by subjecting bituminous coal particles to microwave energy and recovering valuable liquid hydrocarbon products from the resulting liquid coal extract.

3,503,866
PROCESS AND SYSTEM FOR PRODUCING SYNTHETIC CRUDE FROM COAL
Milan Skripek, Anaheim, Leslie L. Ludlam, Garden Grove, and Kenneth E. Whitehead, Fullerton, Calif., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 24, 1968, Ser. No. 723,717
Int. Cl. C10g *1/00*
U.S. Cl. 208—10 **3 Claims**

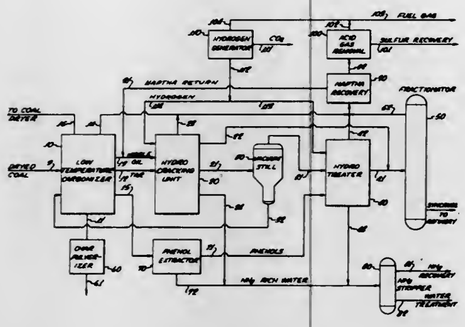


A process is disclosed for producing synthetic petroleum crude from coal, for use in a petroleum refining system, which includes low temperature carbonization of dried pulverized coal, liquid recovery and recarbonization of solid and heavy volatile materials, hydrotreating of the recovered liquid, fractionation of the hydrotreated liquid, and recovery of naphtha fractions from the foregoing steps for recirculation into the hydrotreating step.

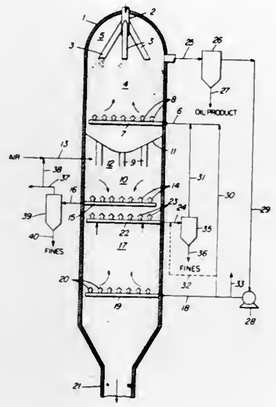
3,503,867
PROCESS AND SYSTEM FOR PRODUCING SYNTHETIC CRUDE FROM COAL
Leslie L. Ludlam, Garden Grove, Milan Skripek, Anaheim, and Kenneth E. Whitehead, Fullerton, Calif., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 4, 1968, Ser. No. 710,036
Int. Cl. C10g *1/00*
U.S. Cl. 208—10 **8 Claims**

A process is disclosed for producing synthetic petroleum crude from coal, for use in a petroleum refining system, which includes low temperature carbonization of dried pulverized coal, hydrocracking of the combination of middle oil, tar and naphtha, vacuum distillation and secondary hydroheating of the low volatility components

derived from the hydrocracking process and fractionation of the high volatility hydrocarbons from the hydrocracking unit and the secondarily hydrogenated low volatility components derived from the hydrocracking process.



products prior to contracting the spent shale with upwardly moving recycle gas. Recycle gas is heated by the spent shale from the combustion zone and is directed from the shale cooling zone to the retorting zone without passing through the combustion zone.



3,503,868
METHOD OF EXTRACTING AND CONVERTING PETROLEUM FROM OIL SHALE

Carl D. Shields, 1301 Shipley Road, Wilmington, Del. 19803

No Drawing. Continuation-in-part of application Ser. No. 651,362, July 6, 1967. This application Nov. 6, 1967, Ser. No. 680,982
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 9 Claims

Solid hydrocarbon material known as "kerogen" is recovered from its geological matrix by impregnating crushed matrix with a hydrogen-containing solvent for the kerogen, charging the impregnated matrix into a rotatable pressure reactor equipped with crusher balls, rotating and heating the reactor and its contents under pressure to promote thermal cracking and solubilization of the kerogen, and suddenly releasing the accumulated pressure from the reactor into a fractionating tower, thereby pulverizing the matrix and helping to release the kerogen from the matrix. Subsequently, a reactive chemical agent may be charged into the reactor with additional solvent, and heating and rotating of the closed reactor is continued while pressure again builds up in the reactor and the agent reacts with kerogen components at a cracking temperature. Pressure is again released suddenly. The latter steps are repeated as desired. The latter reaction step also can be carried out in the presence of radio frequency electrical wave energy. In a preferred embodiment, the solvent used is one having a high hydrogen atom content, such as a hydrocarbon liquid, which will crack sufficiently at the temperature used to react with the kerogen.

3,503,869
PROCESS FOR IMPROVING THERMAL EFFICIENCY OF GAS COMBUSTION SHALE RETORTING

James H. Haddad, Dobbs Ferry, and John G. Mitchell, Larchmont, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

Filed Feb. 23, 1967, Ser. No. 618,195
Int. Cl. C10g *1/02;* C10b *53/06*
U.S. Cl. 208—11 4 Claims

Gas temperature in a shale combustion zone is regulated by passing combustion air concurrently with downwardly moving shale and removing gaseous combustion

3,503,870
DEWAXING SOLVENT

Jack Walker, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 28, 1967, Ser. No. 656,697
Int. Cl. C10g *43/08*
U.S. Cl. 208—33 12 Claims

The invention relates to the dewaxing of lubricating oils. More particularly, it relates to the formation of low pour point lube oils which may be utilized in cold climates. These lube oils are produced when wax is removed from the lube oil by means of an autorefrigerative dewaxing solvent combining an olefin and a polar electron acceptor. The removal of waxes by means of these compounds results in the creation of a lube oil which has a low pour point.

3,503,871
HYDROCRACKING HYDROCARBONS WITH A PLATINUM GROUP METAL CONTAINING LARGE PORE MOLECULAR SIEVE

Elroy M. Gladrow, Edison Township, Middlesex County, N.J., and Paul Thomas Parker, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 6, 1961, Ser. No. 122,089
Int. Cl. C10g *13/10*
U.S. Cl. 208—111 13 Claims

1. An improved process for hydrocracking hydrocarbon streams to obtain products boiling lower than said hydrocarbon streams which comprises subjecting said hydrocarbons to hydrocracking conditions in the presence of added hydrogen and a catalyst comprising a platinum group metal composited with a crystalline metallo aluminosilicate zeolite having uniform pore openings between about 6 and 15 angstrom units, said zeolite being characterized by a SiO_2/Al_2O_3 mol ratio of between about 4 and 5.5 and containing no more than 10% sodium calculated as Na_2O.

3,503,872
HYDROCRACKING OF COAL TAR

Richard A. Flinn, Emmaus, and Mehmet Orhan Tarhan, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware

No Drawing. Filed Feb. 2, 1968, Ser. No. 702,540
Int. Cl. C10g *13/02*
U.S. Cl. 208—112 10 Claims

In a process for upgrading coal tar, the tar is hydrocracked by reacting it in the presence of hydrogen and a cobalt-molybdate on alumina catalyst at elevated temperature and pressure. A major portion of the reaction product comprises components boiling below 300° C., and these components are separated from the remainder of the reaction product by distillation. Components boiling above 300° C. are recycled to the hydrocracking zone to convert, ultimately, the entire feed to components boiling below 300° C.

3,503,873
PREPARATION OF HYDROCARBON CONVERSION CATALYSTS

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 3, 1967, Ser. No. 680,314
Int. Cl. C10g *11/02;* B01i *11/40*
U.S. Cl. 208—120 19 Claims

A method of catalyst preparation. The catalyst is a crystalline aluminosilicate dispersed in a silica matrix. A finely divided crystalline alkali metal aluminosilicate is dispersed in a silica sol which is thereafter gelled, slurried with a solution comprising ammonium ions and spray-dried.

3,503,874
HYDROCARBON CONVERSION CATALYST

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 3, 1967, Ser. No. 680,353
Int. Cl. C10g *11/02;* B01j *11/40*
U.S. Cl. 208—120 19 Claims

A catalyst composition, method of manufacture, and process for the ultilization of said catayst. The catalyst is a crystalline aluminosilicate dispersed in an amorphous silica matrix. The catalyst is manufactured by adding the crystalline aluminosilicate dispersed in its mother liquor to a silica sol and effecting gelation. The product is slurried with a solution comprising ammonium ions and spray dried. The cataylst is particularly effective in the catalytic cracking of hydrocarbon charge stocks.

3,503,875
SOLVENT EXTRACTION OF AROMATIC HYDROCARBONS WITH ε-CAPROLACTAM

Doru Grigoriu, Str. Nordului, bloc 14; Stefan Despa, Str. Eminescu 22; Rodica Ilie, Str. Gloriei 3; Ion Farcas, Str. Republicii 130; and Ion Zirna and Dumitru Iorga, both of Str. Eminescu 22, all of Ploesti, Rumania

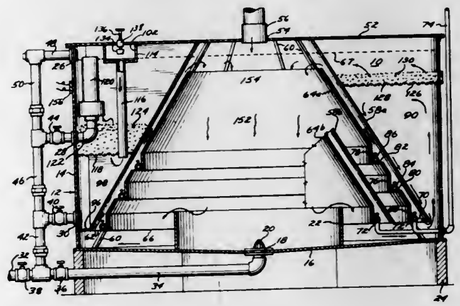
No Drawing. Filed Dec. 5, 1967, Ser. No. 687,991
Claims priority, application Rumania, Dec. 6, 1966, 52,677/66
Int. Cl. C10g *21/20*
U.S. Cl. 208—326 12 Claims

Process for the solvent extraction of liquid petroleum fractions distilling at temperatures between 10° C. and 600° C. to recover aromatics therefrom wherein the extraction is carried out in a multi-stage extractor, e.g., rotary-disk contactor, at temperatures between 0° C. and 200° C. (preferably 10° C. to 100° C.) with a solvent consisting at least 50% by weight of ε-caprolactam, the balance being water (e.g. 15 to 35% by weight) and/or polar organic solvents, such as glycols, pyrrolidones, nitriles or sulfolane, the solvent ratio being 0.25:1 to 20:1 (preferably 1:1 to 15:1).

3,503,876
DOMESTIC SEWAGE TREATMENT METHOD AND APPARATUS

James S. Stone, Wheat Ridge, Colo., assignor to The Sanitary Disposal Systems, Inc., Wheat Ridge, Colo., a corporation of Colorado

Continuation of application Ser. No. 711,453, Mar. 7, 1968. This application Oct. 29, 1968, Ser. No. 771,672
Int. Cl. C02c *1/12*
U.S. Cl. 210—7 30 Claims

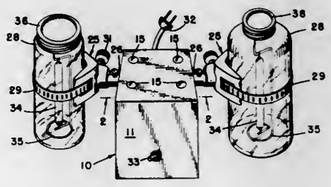


A tertiary treatment domestic sewage treatment plant effecting particle size reduction by hydraulic action, utilizing extended aeration and adiabatic cooling of the surface of the treating bath to enhance oxygen absorption and being provided with a living filter.

3,503,877
DIALYZER AGITATOR

William J. Berry, 1021 Green St., Durham, N.C. 27701

Filed Apr. 9, 1965, Ser. No. 447,034
Int. Cl. B01d *35/20*
U.S. Cl. 210—19 14 Claims



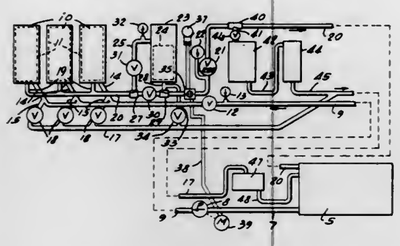
A process and apparatus for performing accelerated or mechanical dialysis wherein a solution-containing membranous container is suspended within a surrounding solute or dialyzing medium and the solution and solute are then oscillated to accelerate the diffusion of dissolved substances from the solution through the membrane of the container into the surrounding solute.

3,503,878

DRY CLEANING FLUID CONDITIONING PROCESS

Larry L. Durr, Lebanon, Ind., assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed May 4, 1966, Ser. No. 547,564
Int. Cl. B01d 15/06
U.S. Cl. 210—26 4 Claims



A dry cleaning fluid is circulated through at least one filter tower having a replaceable filter cartridge and back to the dry cleaning machine. The pressure of the fluid downstream of the tower is regulated to maintain constant pressure drop across the filter during its useful life.

3,503,879

METHODS AND COMPOSITIONS FOR REMOVING ALLUVIUM AND OTHER DEPOSITS IN WATER SYSTEMS

Theodore W. Zierden, Oakdale, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,337
Int. Cl. C02b 1/20
U.S. Cl. 210—57 8 Claims

1. The method of removing and preventing alluvium deposits in water systems which comprises adding to such systems insoluble potassium metaphosphate and a solubilizing agent therefor.

3,503,880

YARN

George A. McMicken, Hixson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 485,926, Sept. 8, 1965. This application Oct. 14, 1966, Ser. No. 586,658
Int. Cl. D06m 13/16, 13/20, 13/28
U.S. Cl. 252—8.75 4 Claims

A polyamide or polyester textile yarn lubricating composition comprising a glyceryl triester, a sulfated glyceryl triester, a salt of a partial phosphate ester and a salt of a higher fatty acid. This composition is particularly useful for imparting exceptionally high level drawing characteristics to the polyamides or polyesters.

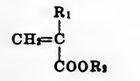
3,503,881

LIQUID DEVELOPER FOR ELECTROPHOTOGRAPHY

Isao Shinohara, Eishun Tsuchida, Toshinao Goto, Zenjiro Okuno, Isao Tashiro, Eiichi Kawamura, and Makoto Nakamura, Tokyo, and Kenkichi Muto, Yokohama, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 20, 1967, Ser. No. 650,565
Int. Cl. G03g 9/06
U.S. Cl. 252—62.1 2 Claims

The invention relates to a liquid developer for use in electrophotography comprising a dispersion into a paraffinic hydrocarbon solvent of a particulated developing agent composed of a reaction product produced by the graft-polymerization to carbon black of acrylate ester having the formula



wherein R_1 is H, CH_3 or C_2H_5, and R_2 is C_6H_{13}, C_8H_{17}, $C_{10}H_{21}$, $C_{12}H_{25}$ or $C_{14}H_{29}$.

3,503,882

PAINT COMPOSITION

Arthur Richard Fitch, Philadelphia, Pa., assignor to Turco Paint & Varnish Co., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,183
Int. Cl. H01j 1/26; C09k 3/00
U.S. Cl. 252—62.54 13 Claims

Paint composed of an intimate mixture of an iron powder and an epoxy ester resin with an emulsifiable polyethylene wax and an organophilic alkyl ammonium bentonite dispersed in a paint hydrocarbon solvent provides, when applied to a substrate and dried, a surface to which magnetic symbols will adhere and which will accept chalk and from which chalk markings may be readily erased.

3,503,883

METAL SURFACE PROTECTING PREPARATIONS

Ian Alastair Moncrieff Ford, West Hagley, Bernard Carlton Cox, Great Glen, and James Coward Thornton, Mountsorrel, England, assignors to J. Goddard and Sons Limited

No Drawing. Continuation-in-part of application Ser. No. 481,071, Aug. 19, 1965. This application June 19, 1967, Ser. No. 647,187
Claims priority, application Great Britain, Aug. 19, 1964, 33,864/64
Int. Cl. C23f 11/02
U.S. Cl. 252—89 6 Claims

Surfaces of silver, copper and nickel and alloys thereof are protected against tarnish by application of a silver cleaning and/or polishing protective preparation containing a dialkyl disulphide of the formula RSSR, wherein R is an alkyl group having from 8 to 22 carbon atoms. The preparation may be, inter alia, in liquid, paste, cream, dip or solid form or, can be applied to the surface to be protected by impregnating a suitable material such as cloth with the preparation and then wiping the surface with the cloth. The amount of dialkyl disulphide ranges from 0.1% to 50% by weight; amounts as low as 0.5% by weight have been found to be particularly advantageous. The cleaning and/or polishing preparation can contain any of the usual ingredients including descaling, etching, abrasive and polishing agents.

3,503,884

SCOURING CLEANSER COMPOSITION

William Chirash, New Providence, and Robert Henry Trimmer, Edison, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,906
Int. Cl. C11d 7/54; D06l 3/00
U.S. Cl. 252 —95 6 Claims

An abrasive, scouring cleanser consisting essentially of a water-insoluble, inorganic, siliceous, abrasive material, chlorinated trisodium phosphate, inorganic detergent compound, a water-soluble bromide salt and a buffering agent in amounts sufficient to impart to the composition, in aqueous media, a pH within the range of from about 8.5 to about 10.5.

3,503,885

COLOR STABLE WASHING, RINSING AND CLEANING COMPOSITION

Hans Wedell, Langenfeld, Germany, assignor to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,409
Claims priority, application Germany, Nov. 27, 1965, H 57,793
Int. Cl. C11d 3/04, 3/48; B08b 3/08
U.S. Cl. 252—105 8 Claims

Color stable cleaning agent comprising at least one anionic and/or non-ionic surfactant, at least one organic disinfectant and at least one water-soluble reducing agent.

3,503,886

ANTISEPTIC COMPOSITIONS

Robert E. Casely, Chicago, Ill.; and Darwin R. Noel, deceased, late of Chicago, Ill., by Mary C. Noel, administratrix, Chicago, Ill., assignors, by mesne assignments, to Armour-Dial, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 446,143, Apr. 5, 1965. This application Oct. 27, 1967, Ser. No. 679,293
The portion of the term of the patent subsequent to Apr. 6, 1982, has been disclaimed
Int. Cl. C11d 9/50; A61l 21/00
U.S. Cl. 252—107 11 Claims

Soap compositions containing a synergistic germicidal combination of hexachlorophene and certain substituted carbanilides. The ratio of the hexachlorophene to the carbanilide being 1:1.

3,503,887

EMULSIONS OF TUNG OIL STABILIZED BY A SODIUM SOAP OF A VEGETABLE OIL

Claude E. Beebe, 320 SE. 29th Terrace, Ocala, Fla. 32670

No Drawing. Filed Sept. 27, 1967, Ser. No. 671,152
Int. Cl. C11b 5/00, 9/26; C11d 9/50
U.S. Cl. 252—108 4 Claims

Stable emulsion of raw tung oil in an aqueous solution of vegetable oil soap suitable for lotions and shampoos which have cleansing, skin conditioning properties and aid in preventing and controlling skin lesions and skin ectoparasites of dogs and other animals. The vegetable oil soap serves to stabilize the glyceral α elaeostearate against conversion to the insoluble β form.

3,503,888

SYNTHETIC DETERGENT BAR

Robert O. Miller and Leonard A. Mattano, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,202
Int. Cl. C11d 1/24, 1/37, 9/46
U.S. Cl. 252—117 2 Claims

A toilet bar which comprises as the essential and major ingredients 80 to 25% by weight of a salt of at least one fatty acid ester of a sulfonated phenol, said ester moiety being derived from a mixture of fatty acids having from 8 to 18 carbon atoms and said mixture having an average chain length of from 11 to 15 carbon atoms in the alkyl portion, 10 to 35% by weight of a mixture of a salt of said mixture of fatty acids and free fatty acid and 10 to 55% by weight of a salt of said sulfonated phenol.

3,503,889

DETERGENT TABLETS

Robert Paul Davis, Cincinnati, and Frank Joseph Mueller, Delhi Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Mar. 9, 1965, Ser. No. 438,376. Divided and this application Nov. 16, 1967, Ser. No. 683,484
Int. Cl. C11d 3/06, 17/00
U.S. Cl. 252—138 11 Claims

Detergent tablets which contain about 5% to about 30% by weight of a water-soluble synthetic detergent and uniformly distributed granules of sodium tripolyphosphate (STP), which granules are either (1) encapsulated with 2–15 mole percent of STP hexahydrate or (2) intimately intermixed with 0.1–0.5% calcium oxide. The tablets dissolve rapidly in cool (100° F.) water, even after having been allowed to stand in unagitated water.

3,503,890

DRAIN CLEANER

Marian C. Davisson, Clinton, Ind., and Robert L. Kraudel, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed July 29, 1966, Ser. No. 568,757
Int. Cl. C11d 1/18, 1/38, 1/50, 3/26, 7/32
U.S. Cl. 252—152 9 Claims

A method for alleviating sluggish or clogged drain conditions arising from the accumulation of household wastes in the drain lines by adding to the drain line effective quantities of a non-metal corrosive cationic quaternary ammonium salt surface-active agent.

3,503,891

DIETHANOLAMIDES

Richard F. Schimbor, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,486
Int. Cl. C07c 103/00; C11d 3/32; C10m 1/36
U.S. Cl. 252—152 4 Claims

Diethanolamides of alkanoic acids of from 12 to 15 carbon atoms having α-alkyl branching are liquid at substantially lower temperatures than are diethanolamides of corresponding straight-chain alkanoic acids.

3,503,892

OPACIFIER LATICES

Philip L. Weyna, Crystal Lake, Douglas Woodruff, Marengo, and Volney P. Thuma, Woodstock, Ill., assignors to Morton International, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,829
Int. Cl. C11d 3/20; C08f 19/12
U.S. Cl. 252—161 3 Claims

A novel aqueous base copolymer latex containing a major proportion of styrene and/or methylated styrene and a minor proportion of the reaction product of polyalkylene glycol and maleic anhydride for use as an opacifier, the process of preparing said aqueous base copolymer latex, and a stabilized opacified detergent composition comprising a surface active agent and said aqueous base copolymer latex.

3,503,893
PROCESS FOR PRODUCING CHEMILUMINESCENCE BY REDUCTION OF METAL CHELATES
David M. Hercules, Arlington, and Fred E. Lytle, Cambridge, Mass., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 13, 1967, Ser. No. 609,719
Int. Cl. C09k *1/02*; C09c
U.S. Cl. 252—188.3 3 Claims

A chemiluminescence process useful as an emergency light source wherein light is produced as the result of the reaction between certain metal chelates and strong bases.

3,503,894
EUROPIUM-ACTIVATED SILICA-ALUMINA PHOSPHOR AND METHOD
Anselm Wachtel, Sayreville, Parlin, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1966, Ser. No. 600,867
Int. Cl. C09k *1/54, 1/68*; H01l *61/44*
U.S. Cl. 252—301.4 12 Claims

Matrix of amorphous silica plus crystalline aluminosilicate is activated by europium. A gel precipitation method preferably is used to prepare the phosphor raw mix.

3,503,895
READILY DISPERSIBLE, WATER-SOLUBLE GUM COMPOSITIONS CONTAINING DIOCTYL SODIUM SULFOSUCCINATE AND PREPARATION THEREOF
Kenneth Whelan, Suffern, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 416,135, Dec. 4, 1964. This application Dec. 13, 1967, Ser. No. 690,066
Int. Cl. C08b *29/36*
U.S. Cl. 252—363.5 13 Claims

Readily dispersible, water-soluble gum compositions in finely divided form are provided containing from 0.001 to 1.0% by weight dioctyl sodium sulfosuccinate. Exemplary of these gum compositions is a mixture of finely divided hydroxypropyl methylcellulose and 0.4% dioctyl sodium sulfosuccinate, based on the weight of the cellulose. The gum compositions are prepared by adding to the gum a solvent solution containing the desired amount of dioctyl sodium sulfosuccinate and then drying off the solvent prior to dissolution of the gum composition in an aqueous medium. The gum compositions are useful as viscosity building agents, particularly in foodstuffs.

3,503,896
COMPOSITIONS CONTAINING SOAPS OF MONOUNSATURATED FATTY ACIDS DERIVED BY SELECTIVE HYDROGENATION OF POLYUNSATURATED FATTY ACID SOAPS
Adolph E. Fishman, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 30, 1966, Ser. No. 575,963
Int. Cl. C07c *57/02, 5/06*; C11d *13/00*
U.S. Cl. 252—367 15 Claims

Soaps of monounsaturated fatty acids are prepared by reacting fatty alcohols of the C_{12} to C_{22} range with caustic alkali at elevated temperatures to form a mixture of soaps of varied degrees of unsaturation and liberate hydrogen, the reaction being carried out in the presence of soaps of polyunsaturated acids so that at least part of the liberated hydrogen selectively saturates the latter soaps to produce the desired soaps of monounsaturated acids.

3,503,897
PREPARATION OF ALFIN CATALYST
William R. Birchall, Cincinnati, Ohio, and Leo H. Broering, Fort Wright, Ky., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 31, 1967, Ser. No. 664,613
Int. Cl. C08f *29/12, 3/02*; C08d *3/14*
U.S. Cl. 252—429 8 Claims

A process for preparing alfin catalysts is provided wherein the formation of agglomerates or balls of sodium metal during the reaction is avoided by maintaining the concentration of free sodium in the catalyst reaction mixture at not more than about 1.5% by weight.

3,503,898
CATIONIC POLYMERIZATION CATALYST
James J. Harris, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Feb. 16, 1968, Ser. No. 705,924
Int. Cl. B01f *13/00*; C08g *23/14*
U.S. Cl. 252—429 1 Claim

Cationic polymerization catalysts are formed by the reaction of about one to twenty mole parts of a cyclic ether such as propylene oxide with one mole part of antimony pentafluoride in the presence of a solvent resistant to oxidation or fluorination. The catalysts exist as oily or greasy compositions and are useful in numerous cationic polymerization reactions.

3,503,899
CATALYTICALLY ACTIVE COMPOSITION AND PROCESS UTILIZING THE SAME
William L. Hergenrother, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,392
Int. Cl. B01j *11/32, 11/82*; C08g *17/003*
U.S. Cl. 252—430 7 Claims

This invention relates to a catalytically active composition, including a poly-amine terminated compound, e.g. an amine-ended poly(epsilon-caprolactam), and a catalytically active metallic compound, for example antimony trioxide or zinc acetate. The invention also relates to a polymerization process which utilizes a unique coaction discovered to exist between these agents to yield higher molecular weight polyester polymers and polyester polymers having better heat stability. The catalytically active composition is particularly useful in the production of poly(ethylene terephthalate) having a molecular weight above about 16,000 and having an improved heat stability.

3,503,900
FLUID CATALYST AND PREPARATION THEREOF
Walter L. Haden, Jr., Metuchen, and Frank J. Dzierzanowski, Somerset, N.J., assignors to Engelhard Minerals & Chemicals Company, Woodbridge, N.J., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 527,744, Feb. 16, 1966, and Ser. No. 530,064, Feb. 25, 1966, which are continuations-in-part of application Ser. No. 343,952, Feb. 11, 1964. This application Jan. 17, 1968, Ser. No. 698,400
Int. Cl. B01j *11/40*; C01b *33/28*
U.S. Cl. 252—455 12 Claims

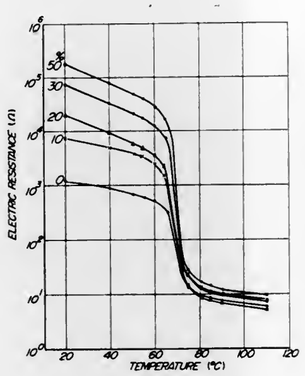
A zeolitic molecular sieve catalyst is prepared in the form of finely divided, substantially spherical particles by slurrying a mixture of raw (uncalcined) kaolin clay, calcined kaolin clays and sodium silicate solution. The slurry is spray dried and the resulting microspheres are impregnated with a sodium hydroxide solution while the sodium hydroxide solution is mixed with a hydrocarbon liquid. The sodium hydroxide solution is reacted with

constituents in the microspheres by maintaining the impregnated microspheres under hydrothermal conditions without dehydration until a zeolitic molecular sieve crystallizes. The crystallized microspheres are base-exchanged to reduce the sodium content and the exchanged particles are thermally activated.

3,503,901
CHEMICAL REACTION CATALYST AND ITS PREPARATION
Paul E. Pickert, North Tonawanda, N.Y., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 419,561, Dec. 18, 1964, which is a continuation-in-part of application Ser. No. 241,494, Dec. 3, 1962. This application Jan. 13, 1969, Ser. No. 790,874
Int. Cl. B01j *11/40*; C10g *11/02*
U.S. Cl. 252—455 7 Claims

Zeolitic molecular sieve catalysts suitable for hydrocarbon conversion processes and having greatly improved stability are prepared from conventional crystalline zeolites by initially exchanging the monovalent metal cations of the zeolite with non-metallic cations to a degree such that less than about 20 equivalent percent of the original cation sites are occupied by monovalent metal cations, back exchanging the non-metallic cations with divalent metal cations so that the zeolite contains at least 25 equivalent percent divalent metal cations and thereafter heating the zeolite to about 350° C.

3,503,902
METHOD FOR PRODUCING TEMPERATURE SENSITIVE RESISTOR COMPRISING VANADIUM OXIDE
Takeshi Shimoda, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 12, 1967, Ser. No. 667,179
Claims priority, application Japan, Sept. 14, 1966, 41/60,356
Int. Cl. H01b *1/08*; H01c *7/04*
U.S. Cl. 252—517 20 Claims



A method for fabricating a temperature sensitive resistor having a high negative temperature coefficient of resistance across a particular temperature range comprising the steps of: heating a first mixture including V_2O_5 and other oxide such as P_2O_5, SrO, PbO etc., in a reducing atmosphere to reduce V_2O_5 at about 400° C. to low valence vanadium oxide; adding a second material of vanadium oxide and another oxide such as P_2O_5, SrO, PbO, etc., or merely said other oxide to said reduced first mixture; forming the resulting mixture into a desired shape; and sintering the shaped material at a temperature of from 900–1,300° C. in an inert atmosphere.

3,503,903
POLYMERS OF IMPROVED PERFORMANCE CAPABILITIES AND PROCESSES THEREFOR
Richard G. Shaw, New Brunswick, Ying L. Yeh, Highland Park, and Joseph W. Lewis, Middlesex, N.J., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 445,256, Apr. 2, 1965. This application Jan. 13, 1969, Ser. No. 793,230
Int. Cl. C08f *13/02*
U.S. Cl. 260—2 9 Claims

The performance capabilities of p-xylylene polymers are improved by terminating the reactive residual radicals found in freshly vapor deposited p-xylylene polymers with radicals having a more rapid reactivity with p-xylylene radicals than oxygen for a period of time sufficient to cause the electron spin resonance spectrum of the polymer to disappear.

3,503,904
SUB REMOVAL FROM POLYESTER SCRAP
Herbert J. Dietz, Webster, and Ronald E. Freese, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 568,105, July 27, 1966. This application May 28, 1968, Ser. No. 732,504
Int. Cl. C08g *53/22*
U.S. Cl. 260—2.3 11 Claims

It has been found that certain "subs" can be removed from polyester film scrap in the form of discreet, readily filterable particles if the scrap is treated with hot, alkaline glycol such as ethylene glycol. Temperature, concentration of alkaline materials, and the ratio of scrap to hot glycol are some of the important elements in these processes.

3,503,905
MOLDING COMPOSITIONS FOR THE PRODUCTION OF FOAM ARTICLES
Ludwig Zuern, Bad Durkheim, Pfalz, Erhard Stahnecker, Ziegelhausen, and Johannes Grohmann and Karl Buchholz, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Jan. 5, 1967, Ser. No. 607,393
Claims priority, application Germany, Jan. 15, 1966, B 85,424
Int. Cl. C08f *47/10, 33/08*
U.S. Cl. 260—2.5 4 Claims

Molding compositions for the production of foam articles consisting essentially of a mixture of a styrene polymer and a brominated polymer of a 1,3-diene.

3,503,906
CROSS-LINKABLE COMPOSITIONS AND METHOD OF CROSSLINKING SAID COMPOSITIONS
Karl Brack, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 584,118, Oct. 4, 1966. This application Aug. 3, 1967, Ser. No. 660,166
Int. Cl. C08f *29/02, 29/34, 29/00*
U.S. Cl. 260—2.5 14 Claims

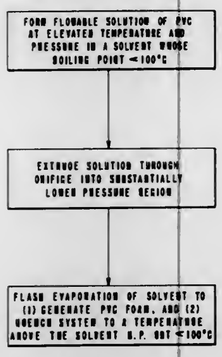
A cross-linkable polymer composition is obtained by admixing an unsaturated polymer, a precursor of a polyfunctional nitrile N-oxide of a specified formula, and material that provides upon contact with water at least one alkaline reactant that reacts with the precursor to form the corresponding polyfunctional nitrile N-oxide which in turn cross-links the unsaturated polymer.

3,503,907

POLYVINYL CHLORIDE FOAM STRUCTURE

Willard Hallam Bonner, Jr., Gordon Heights, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 22, 1967, Ser. No. 669,875
Int. Cl. C08d *13/10*; C08f *47/10*; C08j *1/18*
U.S. Cl. 260—2.5 **4 Claims**



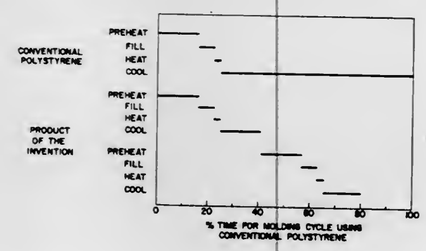
A flexible, low-denity polyvinyl chloride foam having closed polyhedral cells and very thin cell walls of uniform thickness, suitable for use as cushioning material. Load bearing ability of foam is due to gas confined in cells. Polymer molecules in walls are super-packed; thus gas retention in the cells, consequently cushioning properties of the foam, are good. Foam is made by flash extruding a solution of the polymer in a solvent. Extrusion conditions are such that the temperature of the product immediately after extrusion is above the B.P. of the solvent, but below the stability temperature of the foam.

3,503,908

METHOD OF MAKING EXPANDABLE POLYMERS

Alvin R. Ingram and Harold A. Wright, Murrsville, Pa. (both % Koppers Company Inc., 440 College Park Drive, Monroeville, Pa. 15146)

Continuation of application Ser. No. 657,360, July 31, 1967. This application Feb. 28, 1969, Ser. No. 805,997
Int. Cl. C08d *13/10*; C08j *1/26*
U.S. Cl. 260—2.5 **7 Claims**



Carrying out the impregnation of blowing agents such as n-pentane into styrene polymer particles, which are suspended in water, in the presence of polyoxyethylene mono-ethers and mono-esters such as polyoxyethylene sorbitan monolaurate reduces the mold cooling time required when the particles are molded into a foamed structural unit.

3,503,909

LACQUER COMPOSITIONS CONTAINING NITROCELLULOSE, AN ETHYLENE/VINYL ACETATE COPOLYMER AND AN ESTER COMPONENT

Warren Bowman, Wilmington, Del., Dennis M. Roberts, Cincinnati, Ohio, and Paul G. Sellger, Pittsburgh, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,108
The portion of the term of the patent subsequent to Nov. 4, 1986, has been disclaimed
Int. Cl. C09d *3/16*
U.S. Cl. 260—17 **3 Claims**

This invention relates to nitrocellulose lacquers. More particularly, the invention relates to lacquers prepared from nitrocellulose, selected ethylene/vinyl acetate copolymers and sucrose acetate isobutyrate which provide coatings having high impact strengths.

3,503,910

ELASTOMERIC POLY(EPIHALOHYDRIN) COMPOSITIONS OF IMPROVED PROCESSABILITY

Lyle O. Amberg, Landenberg, Pa., and William D. Willis, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 237,319, Nov. 13, 1962. This application Jan. 5, 1967, Ser. No. 607,405
Int. Cl. C08g *43/02, 51/34, 51/36*
U.S. Cl. 260—18 **11 Claims**

An elastomeric composition of an epihalohydrin polymer containing a small amount of an aliphatic antisticking agent to overcome sticking during compounding. The useful antisticking agents contain at least 6 carbon atoms in their aliphatic chain, have a melting point below 300° F., are substantially nonvolatile at a temperature below 250° F. and are selected from the group consisting of the alkyl primary monoamines; mono- and di-fatty acid esters of poly(hydroxy) alcohols; glyceryl trieleostearate; or a mixture of two or more of these agents.

3,503,911

ADHESIVE FOR POLYETHYLENE AND PROCESS FOR ITS PREPARATION AND APPLICATION

Neuman Goldemberg, Cal. Grivitei 163; Emilia Simionescu, Cal. Rahovei 148; Mihaela Mateescu, Str. Liveni 47; and Maria Canahai, Cal. Calarasi 38, all of Bucharest, Rumania

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,460
Int. Cl. C09j *3/12, 3/26*
U.S. Cl. 260—23 **5 Claims**

An adhesive for polyethylene which does not require vulcanization and consists essentially of an isobutylene-isoprene copolymer containing 95% to 98% isobutylene and 2 to 5% isoprene which also includes 8 to 20% resinous natural rosin, fillers and plasticizers.

3,503,912

TRIS (2-HEXOXYETHYL) PHOSPHATE LEVELING AGENT IN EMULSION FLOOR POLISH

Charles Andrew Lynch, Jr., Severna Park, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 7, 1967, Ser. No. 629,070
Int. Cl. C09g *1/10*
U.S. Cl. 260—28.5 **2 Claims**

This application discloses the use of tris(2-hexoxyethyl) phosphate as a superior leveling agent for polymer emulsion floor polishes. The use of from ¼ to 2% of tris(2-hexoxyethyl) phosphate as a leveling agent in emulsion floor polishes will cause polishes that would otherwise be splotchy, uneven, or puddled to flow out to smooth, glossy, uniform films. The tris(2-hexoxyethyl) phosphate confers excellent appearance and high gloss, and additionally has satisfactory plasticizing action for the polymer components in the emulsion floor polish composition.

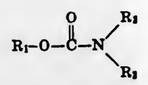
3,503,913

CARBAMATE LEVELING AGENTS IN EMULSION FLOOR POLISH

Charles A. Lynch, Jr., Severna Park, and Henry G. Wagner, Baltimore, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1967, Ser. No. 634,109
Int. Cl. C09g *1/10*
U.S. Cl. 260—28.5 **3 Claims**

This application discloses that carbamates of the formula:



in which R_1 is an unsubstituted alkyl radical of 6 to 10 carbon atoms and mixtures thereof and R_2 and R_3 are independently selected from the group consisting of hydrogen, unsubstituted lower alkyl radicals containing 1 to 4 carbon atoms and monohydroxy substituted lower alkyl radicals containing 1–2 carbon atoms, perform the function of a leveling agent for emulsion floor polishes. The use of from ¼ to 2% of these carbamates as a leveling agent in emulsion floor polishes will cause polishes that would otherwise be splotchy, uneven or puddled to flow out to smooth, glossy, uniform films.

3,503,914

PETROLEUM WAX COMPOSITIONS CONTAINING ETHYLENE COPOLYMERS AND HIGH MOLECULAR WEIGHT POLYPROPYLENE

Leo W. Tyran, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 306,634, Sept. 4, 1963. This application July 3, 1967, Ser. No. 650,642
Int. Cl. C08f *45/52*
U.S. Cl. 260—28.5 **6 Claims**

Petroleum wax compositions containing copolymers of ethylene/vinyl acetate, ethylene/ethyl acrylate, or ethylene/methyl methacrylate and high molecular weight polypropylene are provided. These compositions display improved heat-seal bond strength characteristics.

3,503,915

FABRIC TREATING COMPOSITION AND TREATED FABRIC

Richard L. Peterson, Hudson, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 575,572, Aug. 29, 1966. This application Sept. 5, 1967, Ser. No. 665,253
Int. Cl. D06m *15/32, 15/36, 15/72*
U.S. Cl. 260—29.2 **10 Claims**

A composition for treatment of washable fabrics to render same oil repellent comprising an admixture of an oleophobic fluorine containing polymer having limited affinity for hydrocarbon and a water insoluble, fluorine free, hydrophilic, polar organic polymer.

3,503,916

SOLUTIONS OF ALKALI-SOLUBLE COPOLYMERS

Henry Warson, Solihull, and George A. Reed, Thingwall, England, assignors to Dunlop Rubber Company Limited, London, England, a British company

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,699
Claims priority, application Great Britain, Aug. 13, 1965, 34,677/65
Int. Cl. C08f *45/22, 15/40*
U.S. Cl. 260—29.6 **19 Claims**

An emulsion of an alkali-soluble terpolymer comprising a vinyl ester in which the carbon atom alpha to the carboxyl group is a tertiary atom, a vinyl ester of a lower saturated carboxylic acid and a polymerizable unsaturated carboxylic acid in an amount of at least 5% by weight. Polymers prepared by emulsion polymerization at a pH of less than 7. The aqueous emulsions are rendered water-soluble by bases or organic amines, and the solutions can be used for coating and other purposes.

3,503,917

AQUEOUS LATICES OF HIGH POLYMER COMPOSITIONS AND PROCESSES FOR PRODUCING SAME

Oliver W. Burke, Jr., Fort Lauderdale, Fla. (P.O. Box 1266, Pompano Beach, Fla. 33061)

Filed Mar. 9, 1967, Ser. No. 621,997
Int. Cl. C08d *7/00, 7/18*
U.S. Cl. 260—29.6 **20 Claims**

The preparation of aqueous latices from solvent dispersions of elastomers and other high polymer compositions has presented problems including foaming and coagulation which have produce losses and increased costs. Herein combinations of steps are disclosed which reduce or eliminate various of these problems; enable the preparation of latices from high solids, high viscosity cements; enable preparation of latices of filler extended and filler reinforced elastomers; and enable the preparation of latices both dilute and of high solids continent, which are useful for example for adhesive and film forming purposes.

3,503,918

AQUEOUS DISPERSION OF THERMOSETTABLE ACRYLONITRILE COPOLYMERS AND ARTICLES COATED THEREWITH

Stanley Le Sota, Horsham, and Bjorn E. Larsson, Rushland, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,213
Int. Cl. C08f *29/56*
U.S. Cl. 260—29.7 **10 Claims**

An aqueous thermosettable composition adapted to coat various substrates, especially electric wires, containing dispersed therein, a water-insoluble emulsion copolymer, having an apparent second order transition temperature of about 35° to 55° C., of (1) about 50 to 80% by weight of acrylonitrile, methacrylonitrile, or a mixture thereof, (2) about 2 to 8% by weight of at least one amide selected from N-methylolacrylamide, N-methylolmethacrylamide, N-methoxymethylacrylamide and N-methoxy methylmethacrylamide, (3) 0 to about 3% by weight of a monoethylenically unsaturated carboxylic acid, (4) 3 to 6% by weight of a copolymerizable monomer containing at least two non-conjugated groups of the formula $H_2C{=}C<$ and (5) the balance, to make 100%, of at least one ester of acrylic acid or methacrylic acid with a saturated aliphatic alcohol having 1 to 8 carbon atoms.

3,503,919

MOLDING MATERIALS FOR THE PRODUCTION OF PLASTIC ARTICLES

Anton Cadus, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,723
Claims priority, application Germany, Oct. 28, 1965, 1,544,661
Int. Cl. C08f *45/10;* C08g *51/10*
U.S. Cl. 260—37 5 Claims

A molding composition for the production of plastic articles having a smooth surface resembling metal comprising a synthetic plastics material, a lamelliform pigment, and a fibrous material having a length of 2–2000 microns.

3,503,920

PROCESS FOR INCREASING VISCOSITY OF UNCURED ALKYD COPOLYMER RESINOUS MIXTURES AND PRODUCT

Syuiti Takagi, Suita, Makoto Yokoo, Toyonaka, and Yoshihiro Hatanaka, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 12, 1967, Ser. No. 667,058
Claims priority, application Japan, Sept. 12, 1966, 41/60,506
Int. Cl. C08g *51/04;* C08f *45/04*
U.S. Cl. 260—40 7 Claims

The viscosity of uncured alkyd resin is increased by intimately admixing the resin with calcined basic magnesium carbonate (MgO: 82 to 96%; CO_2: 2 to 8%; H_2O: 2 to 11%), and allowing the mixture to stand until the desired viscosity has been obtained. Pre-preg impregnated with thus-treated composition is tack-free and is stable to storage and transportation.

3,503,921

POLYESTER PREMIX CONTAINING POLYSTYRENE AND MONOMERIC STYRENE

Alfred Souza, Jr., and Albert R. Kurkowski, Dover, N.J., and Austin M. Thornton, Jr., Dallas, Tex., assignors, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Oct. 18, 1967, Ser. No. 676,125
Int. Cl. C08g *51/06, 51/10;* C08k *1/14*
U.S. Cl. 260—40 6 Claims

A polyester resin suitable for molding prepared from a mixture of:

(1) an unsaturated polyester such as diethylene dipropylene maleate and a vinyl monomer such as monostyrene; and
(2) a blend of a vinyl monomer such as monostyrene and a styrene based polymer such as polystyrene.

The resin is catalyzed with per catalysts such as benzoyl peroxide and T-butyl perbenzoate. It also contains lubricants, pigments, and fillers such as calcium carbonate, asbestos, and glass fibers.

3,503,922

PROCESS FOR PRODUCING DISPERSIONS OF FINELY-DIVIDED SOLIDS IN ISOTACTIC POLYPROPYLENE

Edwin B. Carton, Newtonville, Mass., assignor, by mesne assignments, to Polymer Dispersions, Inc., New York, N.Y., a corporation of Ohio

No Drawing. Filed July 15, 1965, Ser. No. 472,349
Int. Cl. C08f *47/00, 45/08, 29/12*
U.S. Cl. 260—41 3 Claims

An improved method of dispersing particulate solids in isotactic polypropylene comprising dispersing the finely divided solid into polymeric material chosen from the group consisting of polyethylene, atactic polypropylene, polystyrene, polybutene, ethylene/vinyl acetate copolymer, ethylene/propylene copolymers, and mixtures thereof to provide a super-concentrate comprising at least 20 percent of the solid and reducing the super-concentrate by admixing therewith sufficient isotactic polypropylene to provide a dispersion comprising between 0.1 and 55 weight percent of the solid.

3,503,923

VINYLIDENE FLUORIDE POLYMER COMPOSITIONS HAVING HIGH THERMAL STABILITY

Robert Gabriel Petrella, Philadelphia, and Edward Joseph Bartoszek, Norristown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 20, 1967, Ser. No. 684,546
Int. Cl. C08k *1/06, 1/16, 45/56*
U.S. Cl. 260—41 2 Claims

Vinylidene fluoride polymer compositions having high thermal stability are comprised of a blend of 55 to 94% of polyvinylidene fluoride, 5 to 44% of a filler selected from the group consisting of carbon black and chromic oxide and 1 to 15% of zinc oxide. The compositions are suitable for molding into various shapes by conventional plastics processing operations.

3,503,924

LESSENING EARLY DISCOLORATION OF POLYVINYL CHLORIDE RESINS WHEN HEATED AND COMPOSITIONS THEREFOR

Mark W. Pollock, Teaneck, N.J., assignor to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 417,513, Dec. 10, 1964, which is a continuation-in-part of application Ser. No. 336,887, Jan. 10, 1964. This application Dec. 7, 1967, Ser. No. 688,694
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.75 16 Claims

There is provided a homogeneous liquid polyvinyl chloride resin stabilizer composition containing a diorganotin mercaptide and a minor amount of an alpha-mercapto acid; the alpha-mercapto acid serves to improve the appearance of the resin during the earlier stages of heating. There is also provided a polyvinyl chloride resin composition containing the above stabilizer composition.

3,503,925

SILOXANE RESINS

Philip A. Griffin, Glamorgan, Wales, assignor to Midland Silicones Limited, Reading, Berkshire, England

No Drawing. Filed Apr. 4, 1968, Ser. No. 718,900
Claims priority, application Great Britain, Apr. 12, 1967, 16,725/67
Int. Cl. C08f *11/04*
U.S. Cl. 260—46.5 8 Claims

Quaternary ammonium silanolates and quaternary phosphonium silanolates are used as curing catalysts for organopolysiloxane resins which are soluble in organic solvents and which contain less than 0.25 percent by weight of silanol groups. The catalysed organopolysiloxane resins are useful in the preparation of void-free laminates and encapsulating materials.

3,503,926

SOLID LUBRICANT COMPOSITION

John C. Saylor, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 17, 1968, Ser. No. 729,887
Int. Cl. C08g *31/20;* C10m *7/48*
U.S. Cl. 260—46.5 3 Claims

Organosiloxane copolymers of perfluoroalkylsiloxane units and diphenylsiloxane units are disclosed. An illustrative example is a copolymer of 50 mol percent diphenylsiloxane units and 50 mol percent 3,3,3-trifluoropropylmethylsiloxane units which has utility as a solid lubricant.

3,503,927

THERMOPLASTIC POLYURETHANE ELASTOMERS

Eugene Yue Chieh Chang and Samuel Kaizerman, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 7, 1968, Ser. No. 735,201
Int. Cl. C08g *22/04, 22/08*
U.S. Cl. 260—47 6 Claims

An improved thermoplastic polyurethane elastomer containing a cross-linked network structure wherein the cross-linking is labile to heat. The cross-linking is provided by reaction between a diol having a phenolic substituent and isocyanate groups present in the polyurethane prepolymer.

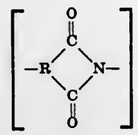
3,503,928

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYIMIDES FROM AMMONIUM DICARBOXYLIC ACID ANHYDRIDE COMPOUNDS

Heinrich Glich, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 17, 1968, Ser. No. 745,401
Claims priority, application Germany, July 26, 1967, F 53,059
Int. Cl. C08g *20/32*
U.S. Cl. 260—47 7 Claims

High molecular weight polyimides consisting essentially of recurring structural units of the formula



wherein R represents an aromatic radical in which the two C=O-groups are attached to two adjacent carbon atoms, and the process for the production of these polyimides by polycondensing an aromatic compound which contains an ammonium group and a cyclic carboxylic acid anhydride group in a polar organic solvent in the presence of an organic base to give a polyamidocarboxylate and heating said polyamidocarboxylate at temperatures from 120 to 300°C.

3,503,929

POLYIMIDAZOQUINAZOLINES AND POLYAMIDOBENZIMIDAZOLES

Basil L. Loudas, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,198
Int. Cl. C08g *20/00*
U.S. Cl. 260—47 9 Claims

Di-(aminoaryl) bibenzimidazoles are reacted with aromatic, heterocyclic or aliphatic dicarboxylic acid halides to form first stage polyamidobenzimidazoles which are soluble in certain solvents and can be fabricated into structures, and the first stage polymers are condensed by elimination of water, e.g. by heating, to form strong, high temperature resistant polybenzimidazoquinazolines. The first stgae polymers are soluble in e.g. dimethylformamide, dimethylacetamide, N-methylpyrrolidone and the like, while the second stage polymers are substantially insoluble, infusible materials. The polymers can also be formed by melt polymerization of a mixture of an aromatic tetramine and an ester of N,N'-di-(o-carboxyphenyl) aromatic or aliphatic dicarboxylic acid amide.

Films, fibers and molded articles can be made from the resulting polymers, which have good dielectric properties and are resistant to high temperatures.

3,503,930

MERCAPTAN POLYMERS

Lester Morris and Irvin P. Seegman, Encino, and Ron E. Thompson, Northridge, Calif., assignors to Products Research & Chemical Corporation, Burbank, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 443,699, Mar. 29, 1965. This application Mar. 20, 1968, Ser. No. 714,460
The portion of the term of the patent subsequent to Mar. 4, 1986, has been disclaimed
Int. Cl. C08g *23/00, 23/20*
U.S. Cl. 260—48 3 Claims

Mercaptan terminated liquid polyethers having the general formula $R—[A—O—B(SH)_{m-1}]_n$, wherein R is lower alkyl having from 2 to 6 carbon atoms, A is polyalkylene oxide or a mixture of polyalkylene oxides having alkyl radicals ranging from 2 to 4 carbon atoms, the number of repeating alkylene units ranging from about 2 to 200, B is an organic radical having an olefinic double bond alpha to the oxygen atom, *m* is an integer ranging from 2 to 4 and *n* is an integer ranging from 2 to 4. Halogenated terminated polyethers having the formula $R[A—O—B(X)_{m-1}]_n$, wherein R, A, B, *m* and *n* have the same meanings as designated above and X is halogen. A method for producing such polymers which includes (1) reacting a polyalkylene oxide having from 2 to 4 primary or secondary hydroxyl groups with an alkali metal or alkali metal hydride, (2) reacting the thus formed metal alkoxide with an organic compound containing from 2 to 4 halogen atoms, at least one of the halogen atoms being located alpha to an olefinic double bond, (3) reacting the product of (2) with a sulfur containing compound, and, if necessary, (4) hydrolyzing the product of (3) with an alkaline compound and neutralizing the excess alkalinity.

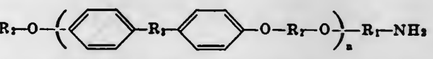
3,503,931

HIGH MOLECULAR WEIGHT AROMATIC POLYAMIDES CONTAINING ETHER GROUPS

Eduard Radlmann, Eckart Reese, and Gunther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

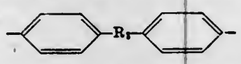
No Drawing. Filed Aug. 8, 1968, Ser. No. 751,043
Claims priority, application Germany, Aug. 17, 1967, F 53,260
Int. Cl. C08g *20/20*
U.S. Cl. 260—49 2 Claims

High molecular weight aromatic polyamides that are soluble in polar organic solvents by polycondensation of aromatic dicarboxylic acid dihalides with aromatic polyether diamines of the general formula



may be substituted or not, R_2 represents an arylene radical selected from the group consisting of a phenylene,

a naphthylene, a diphenylene radical which may be substituted or not and a radical of the formula



wherein R_3 represents a sulphoxide, sulphonyl, carbonyl, lower alkylene, cycloalkylene or arylalkylene radical and *n* represents an integer from 2 to 20.

3,503,932

PROCESS FOR THE MANUFACTURE OF POLYURETHANES THAT CAN BE PROCESSED THERMOPLASTICALLY AND THAT ARE STABLE TO HYDROLYSIS

Franz Gottfried Reuter, Lemforde, Germany, assignor to Firma Elastomer AG, Chur, Switzerland

No Drawing. Filed Apr. 21, 1966, Ser. No. 545,530
Claims priority, application Germany, May 8, 1965, 1,595,236
Int. Cl. C08g *22/04, 22/10*
U.S. Cl. 260—75 **7 Claims**

Polyurethanes are prepared by reacting a hydroxy terminated polyester prepared by esterification of a dicarboxylic acid and a glycol, an organic diisocyanate and a low molecular weight glycol, said polyester on said low molecular weight glycol containing a dodecylene grouping.

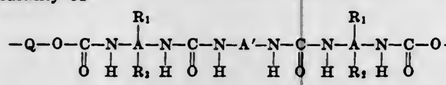
3,503,933

LOW MELTING POLYURETHANE UREA AND METHOD FOR MANUFACTURE

Samuel Kaizerman, New Brunswick, Eugene Yue Chieh Chang, Bridgewater Township, Somerset County, and John Henry Butler, Piscataway, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,693
Int. Cl. C08g *22/02, 22/18*
U.S. Cl. 260—75 **9 Claims**

An essentially linear thermoplastic polyurethaneurea having a melt-flow temperature in the range of 100–180° C. and being capable of repeated shaping, comprising a plurality of



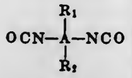
units, said polyurethane-urea being produced by reacting an amine of which at least 90% is a diamine of the formula

$$H_2N—CH_2—(A'')_n—CH_2—NH_2$$

with an isocyanate-terminated prepolymer containing less than about 1% free diisocyanate, produced by reacting a hydroxyl-terminated polyester or polyether of molecular weight of about 500 to about 5,000 and having the formula

$$HO—Q—OH$$

with an isocyanate of which at least 90% is a diisocyanate of the structure



wherein the reactivity of one isocyanate group toward the hydroxyl group of said polyester or polyether is at least five times the reactivity of the other isocyanate group, the amount of said diamine being from about 1.005 to about 1.1 equivalents per equivalent of isocyanate, wherein:

Q is the residue on removal of the terminal hydroxyl groups from said polyester or polyether;

A is an aromatic ring;

R_1 and R_2 are hydrogen, alkyl of 1–6 carbon atoms, chloro or methoxy, provided at least one of R_1 and R_2 is other than hydrogen; and

A' is $—CH_2—(A'')_n—CH_2—$

where A'' is alkylene of up to about 10 carbon atoms or a monocarbocyclic ring and *n* is 0 or 1.

3,503,934

MANUFACTURE OF POLYURETHANE SOLUTIONS

Kenneth William Chilvers, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 4, 1966, Ser. No. 584,110
Claims priority, application Great Britain, Oct. 6, 1965, 42,418/65
Int. Cl. C08g *22/08, 22/18*
U.S. Cl. 260—75 **7 Claims**

A process for the manufacture of a solution of a polyurethane in an inert solvent which comprises the steps of (1) interacting in said solvent one molar portion of hydroxyl terminated polyester or polyesteramide, between 1.2 and 2.5 molar portions of organic diisocyanate and between 0.25 and 1.0 molar proportions of a mixture of water and polyhydric alcohol of molecular weight at most 250 having at least 25 molar percent of water, and, when the viscosity of the solution is between 1 and 1500 poises measured at 25° C.; (2) adding an isocyanate-reactive compound in molar amount at least substantially equal to the molar amount of isocyanate groups unreacted at the end of step (1).

3,503,935

AQUEOUS-SOLUBLE POLYURETHANES

Heinz Ziemann, Leichlingen, and Wolfgang Lehmann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 22, 1966, Ser. No. 567,068
Claims priority, application Germany, July 30, 1965, F 46,754
Int. Cl. C08g *22/04, 41/00*
U.S. Cl. 260—77.5 **11 Claims**

Aqueous-soluble polyurethanes are prepared by reacting a water-soluble chloroformic acid ester having at least two functional groups with an aqueous solution of a polyfunctional amine, the pH of the solution being at least 6.

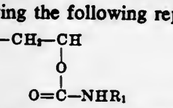
3,503,936

FOG STABILIZED PHOTOGRAPHIC EMULSION FROM A URETHANE POLYMER

Louis M. Minsk, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

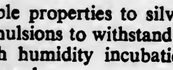
No Drawing. Original application Dec. 21, 1964, Ser. No. 420,202, now Patent No. 3,449,126, dated June 10, 1969. Divided and this application Dec. 30, 1968, Ser. No. 810,881
Int. Cl. C08f *27/10;* **G03c** *1/34*
U.S. Cl. 260—77.5 **1 Claim**

New polymers having the following repeating units



wherein R_1 i selected from the group consisting of

$—CH_2COOH$; $—CH(COOH)_2$; $—CH—CH_2(COOH)$ and



and imparting desirable properties to silver halide emulsions enabling said emulsions to withstand prolonged high temperature and high humidity incubation without fog development are disclosed.

3,503,937

VISCOSITY CONTROL FOR CONTINUOUS PREPARATION OF POLYMER

Eugene S. Allen, Richmond, Va., and Benjamin F. Coe, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 11, 1966, Ser. No. 571,743
Int. Cl. C08g *20/20*
U.S. Cl. 260—78 **1 Claim**

A process for the preparation of condensation polymers wherein the viscosity is controlled by regulating pressure in a vessel through which the molten polymer is moved and the means for controlling the pressure in the vessel is actuated by a signal generated by a first viscosity probe which has a signal actuated adjustable set point. The improvement includes the steps of continuously detecting viscosity downstream of the first probe by means of a second probe spaced from the first probe and generating a second signal proportional to variations in downstream viscosity from a fixed set point, adjusting the magnitude of the second signal when the polymer temperature in the region of the second probe varies from a preselected value and feeding the second signal to the first probe to vary its set point.

3,503,938

MANUFACTURE OF POLYAMIDES BY CONDENSING VAPORS OF POLYAMIDE FORMING INGREDIENTS ON A POLISHED SURFACE

Sydney Edward Blurton, Ernest Haworth, and John Norman Minford, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,737
Claims priority, application Great Britain, Sept. 28, 1965, 41,200/65
Int. Cl. C08g *20/20*
U.S. Cl. 260—78 **6 Claims**

A method for manufacturing nylon wherein the polymerization of the nylon-forming ingredients is effected in a closed pressure vessel having a polished interior surface, particularly the surface above the liquid level of the polymerizing ingredients, thereby reducing the adhesion of decomposition products to the vessel walls and correspondingly reducing the frequency of cleaning said vessel. In a preferred embodiment, the interior surfaces above the liquid polymerizing level is also preferably controlled to a temperature below the heat supply regions, e.g., below the liquid level, of said vessel.

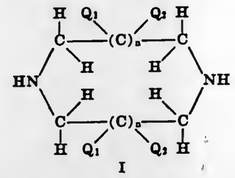
3,503,939

POLYAMIDES FROM HETEROCYCLIC DIAMINES

Meurig Wyn Williams, Old Colonial Village, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 29, 1967, Ser. No. 626,710
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **2 Claims**

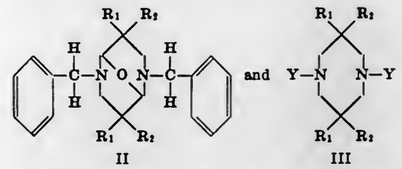
Novel high-melting, thermally- and photolytically-stable, fiber- and film-forming polyamides, polyureas and polyurethanes are prepared by reacting heterocyclic secondary diamines corresponding to the formula



I

wherein *n* is a cardinal number from 1 to 10, and Q_1 and Q_2 are hydrogen, lower alkyl or phenyl, with appropriate difunctional reactants.

Certain novel heterocyclic diamines whose structures may be represented by the formulas



II and III

wherein R_1 and R_2 are lower alkyl radicals or phenyl radicals, and Y is hydrogen, lower alkyl or aralkyl (e.g., benzyl) are also provided.

3,503,940

POLYMERIZATION OF UNSATURATED MERCAPTANS TO POLYTHIOETHERS

Alexis A. Oswald, Mountainside, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,385
Int. Cl. C08f *3/84, 11/00*
U.S. Cl. 260—79.7 **13 Claims**

Allyl and methallyl mercaptans or the dimer of allyl and methallyl mercaptans are reacted under free radical polymerization conditions to alpha-mercapto-omega-allyl-polytrimethylenethioethers.

3,503,941

PRODUCTION OF ACRYLIC POLYMERS

William Lile Fleetwood, Warren, N.J., assignor to Colloids, Inc., Newark, N.J., a corporation of New Jersey

Filed May 20, 1968, Ser. No. 730,248
Int. Cl. C08f *15/00, 3/90;* **B28d** *1/32*
U.S. Cl. 260—80 **6 Claims**

Dry acrylic polymers, such as polyacrylic acid are produced in a fibrous crystalline form which may be readily broken up for shipping and use by rapid solution in water. The polymers are produced by the sequential steps of polymerizing an aqueous solution of acrylic acid containing more than 65% by weight of monomer in a pressurized and heated reaction zone, extruding the polymer and stretching the extruded polymer to yield a fibrous brittle ribbon of reduced cross section.

3,503,942

HYDROPHILIC PLASTIC CONTACT LENS

Maurice Seiderman, 3306 Deronda Drive, Los Angeles, Calif. 90028

Filed Oct. 23, 1965, Ser. No. 503,636
Int. Cl. C08f *15/40*
U.S. Cl. 260—80.75 **8 Claims**

A hydrophilic polymer of from about 50 to about 95% by weight of an hydroxyalkyl acrylate or methacrylate, a minor amount up to about 35% by weight of an alkyl acrylate or methacrylate and from about 1 to about 50% by weight of a cross-linking monomer and a contact lens formed therefrom.

3,503,943

SILANE MODIFIED ETHYLENE-PROPYLENE TERPOLYMER

Edward N. Kresge, Elizabeth, and Charles P. O'Farrell, Roselle, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,176
Int. Cl. C08f *27/00*
U.S. Cl. 260—80.78 **14 Claims**

Moisture curable compositions and method of making same which comprises grafting a silane onto an ethylene, propylene, non-conjugated diene polymer.

3,503,944
POLYMERIZATION OF ETHYLENE

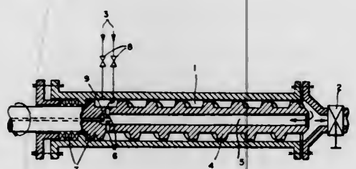
Karl Wisseroth, Ludwigshafen (Rhine), Hans Georg Trieschmann, Hambach, Weinstrasse, Heinrich Mohr, Frankenthal, Pfalz, Lothar Reuter, Ludwigshafen (Rhine), and Richard Scholl, Gruenstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

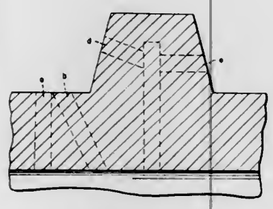
Continuation-in-part of application Ser. No. 314,032, Oct. 4, 1963. This application May 16, 1967, Ser. No. 642,642

Claims priority, application Germany, Oct. 6, 1962, B 69,124

Int. Cl. C08f *1/66, 1/06*

U.S. Cl. 260—88.2 **3 Claims**





Polymerization of ethylene at pressures of 5 to 100 atmospheres and temperatures of 130° to 230° C. while bringing the ethylene into contact with a mechanically agitated melt of polyethylene in which a catalyst containing chromium trioxide is dispersed. The process gives a particularly high yield of polyethylene with reference to the amount of catalyst used.

3,503,945
FLUOROETHYLENE COMPOUNDS

Yung Ki Kim, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 571,408, Aug. 10, 1966. This application Dec. 2, 1966, Ser. No. 598,604

Int. Cl. C08f *3/62, 3/90, 3/74*

U.S. Cl. 260—89.3 **4 Claims**

Fluorocompounds of the formula

$$CH_2{=}CH(CH_2CH_2)_nR_fX$$

where X is carboxyl, carboalkoxy, amido or cyano group and polymers of these monomers prepared by polymerization of the monomers with free radical catalyst.

An example of a monomer is

$$CH_2{=}CH(CF_2)_6COOC_2H_5$$

and of a polymer

$$\left(\begin{array}{l}-CH_2CH-\\ \quad\quad|\\ \quad(CH_2CH_2)_2(CF_2)_2COOH\end{array}\right)_x$$

3,503,946
PROCESS FOR THE MANUFACTURE OF CATIONIC POLYACRYLAMIDE

Clyde Stephen Scanley and Hans Peter Panzer, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 14, 1967, Ser. No. 653,348

Int. Cl. C08f *3/90;* **C10m** *1/36, 3/30*

U.S. Cl. 260—89.7 **9 Claims**

Polyacrylamide is heated with a water-soluble polyamine having not more than one amide-reactive substituent at least until the polyacrylamide has become cationic. The resulting cationic polyacrylamide may be purified of any unreacted amine and solvent present, and is useful as flocculating agent for suspended matter in aqueous suspension. It may be quaternized to effect still further improvement.

3,503,947
CATALYTIC PRODUCTION OF HIGH MOLECULAR WEIGHT POLYETHYLENE

Yujiro Kosaka, Momoto Obara, Taiji Shibata, and Yoshihiro Fujita, Yamaguchi-ken, Japan, assignors to Toyo Soda Mfg. Co., Ltd., Yamaguchi-ken, Japan

No Drawing. Filed May 27, 1965, Ser. No. 459,441

Claims priority, application Japan, June 15, 1964, 39/34,244

Int. Cl. C08f *1/42, 1/40, 1/56*

U.S. Cl. 260—94.9 **12 Claims**

In the polymerization of ethylene to polyethylene in the presence of a polymerization catalyst, the improvement in which the catalyst is a catalytic mixture of (a) the product of the reaction of a mercaptide of the formula M—SR wherein M is sodium or potassium and R is alkyl, with titanium tetrachloride, (b) trialkyl aluminum, and (c) titanium tetraalkoxide.

3,503,948
SPHERICAL POLYMER PARTICLES

Harold A. Walters, Beverton, and Donald S. Morehouse, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,918

Int. Cl. C08f *3/02, 7/02;* **C08d** *3/04*

U.S. Cl. 260—94.9 **8 Claims**

Small spherical beads of thermoplastic material, such as polyethylene, are made by heating chopped fibers of plastic above its melting point while suspended in a nonsolvent liquid.

3,503,949
PROCESS FOR POLYMERIZING GASEOUS ETHYLENE UTILIZING A CONSTANT DIAMETER REACTOR WITH VARYING SURFACE AREA/VOLUME RATIO

Raffaele Gaspari, Milan, Italy, assignor to Società Italiana Resine S.p.A., Milan, Italy

Filed July 7, 1966, Ser. No. 563,480

Claims priority, application Italy, July 9, 1965, 15,509/65

Int. Cl. C08f *1/06, 1/60, 3/04*

U.S. Cl. 260—94.9 **6 Claims**

Process for the continuous free radical high-pressure polymerization of gaseous ethylene comprising passing ethylene and a polymerization catalyst at super atmospheric pressure through a heated tubular reactor of uniform cross-sectional area, the reactor containing an elongated filling material adapted to provide a large reflective ratio of the inner surface area to the volume of the reactor in the discharge portion of the reactor.

3,503,950
LIPOLYTIC PEPTIDE AND PROCESS FOR PRODUCTION

Choh Hao Li, Berkeley, Calif., assignor to The Regents of the University of California, Berkeley, Calif., a corporation of California

Continuation-in-part of application Ser. No. 409,296, Nov. 5, 1964. This application June 25, 1968, Ser. No. 739,609

Int. Cl. C08h *1/00*

U.S. Cl. 260—112 **4 Claims**

Mammalian pituitary gland, especially the anterior lobe, provides a source for an acidic lipolytic peptide identified by its amino acid composition, terminal amino acid content, related physico-chemical characteristics, and substantial freedom from ACTH activity.

The process comprises chromatographing an extract of the gland on carboxymethyl cellulose. Fractional elution to provide the peptide hormone of high lipolytic action in animal fat pads is achieved with ammonium acetate of varying molarity and pH.

3,503,951
COMPLEXES OF A.C.T.H. PEPTIDES WITH POLYGLUTAMIC AND POLYASPARTIC ACID

Beat Iselin, Riehen, and Leo Geller, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,188

Claims priority, application Switzerland, June 15, 1965, 8,313/65, 8,314/65; Mar. 25, 1966, 4,369/66

Int. Cl. C07c *103/52;* **A61k** *27/00*

U.S. Cl. 260—112.5 **8 Claims**

Process for the manufacture of adrenocorticotropically active preparations containing peptides that have an adrenocorticotropic activity, or their salts or derivatives, in conjunction with polymers (preferably polyglutamic and polyaspartic acid polymers) or copolymers of amino acids containing a predominant share of acid α-amino acids and the products produced thereby (preferably copolymers of glutamic and aspartic acids). The products have significantly prolonged activity and good compatibility.

3,503,952
AZOXYBIS[2-PHENYLACRYLIC ACID, 3-TROPANYL ESTERS]

Henry C. Caldwell, Ambler, and William G. Groves, Norristown, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 5, 1967, Ser. No. 643,371

Int. Cl. C07c *105/00;* **A61k** *27/00*

U.S. Cl. 260—143 **9 Claims**

Substituted azoxydiphenylbis[2-phenylacrylic acid, 3-tropanyl esters] having gastrointestinal spasmolytic activity. The substituent on the 3 carbon atom of the 2-phenylacrylic acid derivatives being hydrogen, phenyl, furyl, thienyl and pyridyl and the diphenyl substituents optionally being halogen, lower alkyl, lower alkoxy and hydroxy. Method of preparation comprises reacting the properly substituted nitrophenylacetic acid with paraformaldehyde or an aromatic aldehyde, treating the formed acid with tropine or thiotropine and converting the resulting ester to the final azoxy derivative by reducing with platinum on carbon.

3,503,953
FIBER REACTIVE DYES CONTAINING AT LEAST ONE METHYLOLATED, ALKOXYMETHYLOLATED OR ACYLOXYMETHYLOLATED IMINOBIS PROPIONAMIDE GROUP

Frank Fred Loffelman, Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 420,448, Dec. 22, 1964. This application Dec. 27, 1967, Ser. No. 693,720

Int. Cl. C09b *62/74, 62/72;* **D06p** *3/60*

U.S. Cl. 260—153 **11 Claims**

A class of reactive dyes is prepared which is capable of forming a covalent linkage with an active hydrogen-containing substrate, notably cellulose, thereby affording a dyeing of greatly improved fastness properties. These dyes are characterized by the presence of at least one methylolated, alkoxymethylolated or acyloxymethylolated iminobis (propionamide) residue attached to the chromophoric portion of the molecule by an appropriate bridging group. The reaction with the substrate is effected by heat in the presence of an acid catalyst.

3,503,954
WATER-INSOLUBLE MONOAZO DYESTUFFS

Helmut Gies, Hofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

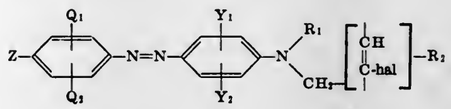
No Drawing. Filed July 13, 1966, Ser. No. 564,757

Claims priority, application Germany, July 23, 1965, F 46,701

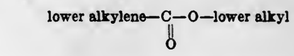
Int. Cl. C07c *107/06;* **C09b** *29/26*

U.S. Cl. 260—205 **6 Claims**

A water-insoluble monoazo dyestuff of the formula



wherein Z represents chlorine, bromine, nitro, cyano, carbalkoxy or lower alkyl or trifluorinated methyl group, Q_1 and Q_2 stand for hydrogen, chlorine, bromine, cyano, nitro —COO—alkyl, lower alkyl, lower alkoxy or trifluorinated methyl group, Y_1 represents hydrogen or lower alkoxy, Y_2 stands for hydrogen, or lower alkyl, chlorine, formylamino, R_1 represents hydrogen, lower alkyl, lower alkylene-OH, lower alkylene-CN, lower alkylene-O-lower alkylene-CN, lower alkylene-O-acyl, lower alkylene-NH—SO_2-lower alkyl,



monochlorinated lower alkenyl, monobrominated lower alkenyl, lower alkylene-SO_2-lower alkyl or lower alkylene—COO—phenyl and R_2 represents hydrogen or lower alkyl.

3,503,955
PHENYL-AZO-PHENYL DYESTUFFS

Guido R. Genta, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 567,862, July 26, 1966. This application June 13, 1967, Ser. No. 645,626

Int. Cl. C09b *24/26*

U.S. Cl. 260—207 **7 Claims**

Monazo dyestuffs are prepared by coupling a diazotized arylamine, such as 2,4 - dinitro-6-bromoaniline, into a tertiary amine coupling component derived from a N,N-dihydroxyalkylacetanilide, such as 3-N,N-dihydroxyethylacetanilide. The hydroxyalkyl groups of the coupling component are modified by reaction either before or after the coupling reaction both with (1) a mono- or di-lower alkylformamide or acetamide and (2) a strong acid i.e. an alkylchlorocarbonate, acylhalide, sulfonylchloride or thionylchloride. The dyestuffs prepared by the method of the invention produce dyeings in polyester fibers having excellent substantivity and sublimation fastness and good light fastness.

3,503,956
NEUTRALIZATION AND STABILIZATION TREATMENT OF WATER-SOLUBLE CELLULOSICS

Martin Eugene Rowley and Walter Dieter Slowig, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,286

Int. Cl. C08b *3/22, 3/30*

U.S. Cl. 260—215 **10 Claims**

The hazardous and costly organic solvent washing deacidification steps required in the conventional production of water-soluble cellulosics (for example, monovalent metal cellulose acylate sulfates) are eliminated by treating water-soluble cellulosics with ammonia or a gaseous amine in order to eliminate the residual acidity present in the product and stabilize the cellulosic material against decomposition.

3,503,957
6-AMINOALKYL MORPHANTHRIDINE DERIVATIVES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 430,754, Feb. 5, 1965. This application May 9, 1967, Ser. No. 637,099

Int. Cl. C07d *41/00;* **A61k** *27/00*

U.S. Cl. 260—239 **5 Claims**

The compounds are 6-aminoalkyl morphanthridines which are useful as pharmaceutical agents, especially antitremorine or anti-Parkinsonism type agents. A species disclosed is 6-(3-N-methylamino-1-propyl)morphanthridine.

3,503,958
MOLECULAR REARRANGEMENT OF OXIMES

Phillip S. Landis, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,552

Int. Cl. C07c *103/00;* **C07d** *41/06*

U.S. Cl. 260—239.3 **5 Claims**

This invention relates to the molecular rearrangement of oximes in the presence of an alumino-silicate having unique catalytic activity and, in particular to rearrangement of oximes to form amides, lactams, and derivatives thereof in the presence of such catalysts.

3,503,959
3-AMINO STEROIDS

Robert G. Christiansen, Schodack, and John W. Dean, Sand Lake, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

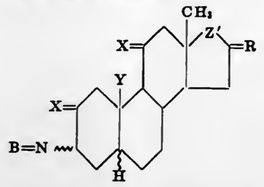
No Drawing. Continuation-in-part of application Ser. No. 183,737, Mar. 30, 1962. This application Mar. 17, 1964, Ser. No. 352,663

Claims priority, application Great Britain, Mar. 28, 1963, 12,292/63

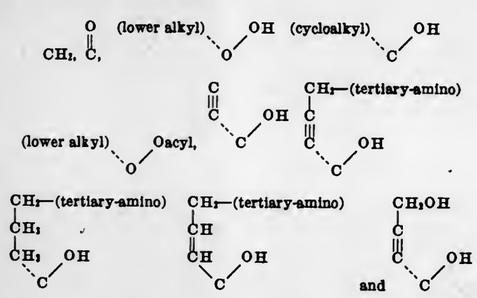
Int. Cl. C07c *173/10, 169/20*

U.S. Cl. 260—239.5 **41 Claims**

1. A compound selected from the group consisting of (A) compounds of the formula



wherein B=N is a member of the group consisting of lower - alkylamino, cycloalkylamino, lower - alkanoylamino, carbamylamino, N,N - di - lower - alkylcarbamylamino, N-(lower-alkanoyl)-lower-alkylamino, N-carbamyl) - lower - alkylamino, 2 - lower - alkanoyl - 1 - hydrazino, morphalino - lower - alkylamino, piperadino - lower-alkylamino, di-lower-alkylamino-lower-alkylamino, tertiaryamino and tertiary-amino N-oxide, tertiary-amino in each instance being basic and having a molecular weight less than 200; X is a member of the group consisting of H_2, (H)(OH), (H)(OAcyl) and O; Y is a member of the group consisting of H and CH_3; and Z is a member of the group consisting of



tertiary-amino in each instance being basic and having a molecular weight less than 200, and Acyl in each instance having from one to ten carbon atoms and a molecular weight less than 200; (B) compounds of the above formula having a double bond in one of the 7,8-, 8,9-, 8,14-, 9,11-, 11,12-, 14,15- and 15,16-positions; (C) compounds of the above formula having a methyl group in one of the 1-, 2-, 4-, 5-, 6-, 7- and 16-positions; (D) compounds of the above formula having a hydroxy group in one of the 6-, 7- and 12-positions; (E) acid-addition salts thereof; and (F) quaternary ammonium salts thereof, where B=N is tertiary-amino; tertiary-amino in each instance being a member of the group consisting of di-lower-alkylamino, dicycloalkylamino in which the cycloalkyl has from 5 to 6 ring members, N-(cycloalkyl)-lower-alkylamino in which the cycloalkyl has from 5 to 6 ring members, polymethylenimino having from 5 to 7 ring members and lower-alkylated derivatives thereof, 3-hydroxy-1-piperidyl, 4-hydroxy-1-piperidyl, 4-morpholinyl, 1-piperazinyl, 4-hydrocarbon substituted-1-piperazinyl in which the hydrocarbon substituent has from 1 to 10 carbon atoms, 4-carbo-lower-alkoxy-1-piperazinyl, 4-hydroxyethyl-1-piperazinyl, 1-homopiperazinyl and lower-alkylated derivatives thereof, di-(phenyl-lower-alkyl) amino, N-phenyl-lower-alkyl)-lower-alkylamino, and N-lower-alkyl-N-(di-lower-alkylamino-lower-alkyl)amino.

3,503,960
2 - CYANO - 3 - AMINO - 19 - NOR - PREGNA-1,3,5(10)-TRIENES AND A METHOD FOR THEIR PREPARATION

Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy

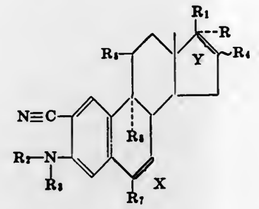
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,784

Claims priority, application Italy, Aug. 23, 1965, 18,857/65

Int. Cl. C07c *173/00, 169/26*

U.S. Cl. 260—239.5 **4 Claims**

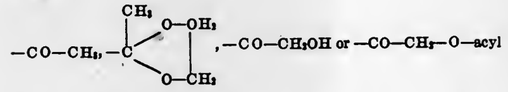
Compounds of the formula:



where:

R is hydrogen, hydroxy, 2'-tetrahydropyranyloxy or acyloxy;

R_1 is



R and R_1 together may be 17,20:20,21-bismethylenedioxy;

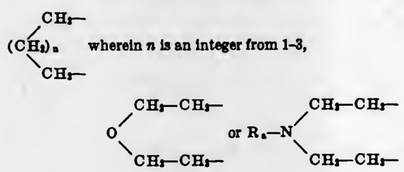
R_2 is hydrogen, 2'-tetrahydropyranyl, lower alkyl, phenyl, benzyl, methoxycarbonyl or ethoxycarbonyl;

R_3 is hydrogen, lower alkyl or acyl;

R_2 and R_3 together may be

C_6H_5—CH<, p-nitro—C_6H_4—CH<,

p-amino- or p-dimethylamino-C_6H_4—CH<,



wherein R_8 is hydrogen or lower alkyl;

R_4 is hydrogen, chloro, bromo, iodo, hydroxy or methyl;

R_5 is hydrogen, (α or β) hydroxy or keto;

R_6 is hydrogen, chloro or fluoro;

R_7 is hydrogen, methyl, chloro or fluoro; and X and Y are a single or double bond.

These compounds have therapeutic activity as cortical, hypocholesterolemic and hypophysis-blocking drugs.

3,503,961
PROCESS FOR THE MANUFACTURE OF 17α,20;20,21-BISMETHYLENEDIOXY-STEROIDS

Charles Meystre, Reinach, Basel-Land, Switzerland, assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware

No Drawing. Filed Aug. 13, 1968, Ser. No. 752,163

Claims priority, application Switzerland, Sept. 4, 1967, 12,330/67

Int. Cl. C07c *167/00*

U.S. Cl. 260—239.55 **12 Claims**

The new process consists in reacting a 17α,21-dihydroxy-20-keto-steroid with formaldehyde or a formaldehyde polymer and anhydrous hydrogen fluoride preferably in the presence of an aprotic solvent, such as dimethylformamide or dimethylsulfoxide. Any fluoromethoxy group formed in the compounds obtained is then selectively hydrolyzed to the free hydroxy group by means of an acid.

3,503,962
ISOINDOLINO-SULFONYLUREA DERIVATIVES

Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jacques Duhault, Chatou, France, assignors to Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a society of France

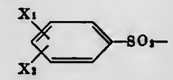
No Drawing. Filed June 27, 1966, Ser. No. 560,809

Claims priority, application Great Britain, July 14, 1965, 29,841/65

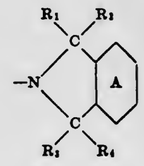
Int. Cl. C07d *49/22, 51/44, 85/46, 91/36*

U.S. Cl. 260—239.6 **17 Claims**

Urea N-substituted by



wherein X_1 and X_2 are hydrogen, halogen, lower-alkyl or lower-alkoxy up to C_5 inclusive, amino, acetylamino, or nitro, and N'-substituted by



wherein R_1, R_2, R_3 and R_4 are hydrogen or phenyl and A is a six-membered saturated or unsaturated cyclic hydrocarbon ring which may also have certain substituents.

These compounds possess blood sugar lowering activity.

3,503,963
N,N'-DI-[PYRMIDYL-(4)-AMINOALKYL]-DIAZACYCLOALKANES

Ernst Schweizer, Basel, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 577,600, Sept. 7, 1966. This application Nov. 30, 1966, Ser. No. 597,870

Claims priority, application Switzerland, Oct. 22, 1965, 14,630/65; Aug. 5, 1966, 11,330/66

Int. Cl. C07d *51/70*

U.S. Cl. 260—239.65 **9 Claims**

N,N' - di - [pyrimidyl - (4)-aminoalkyl]-diazacycloalkanes in which the alklene radicals separate the nitrogen atoms bound to them by at least 2 carbon atoms in each case, and their N-oxides. The compounds are useful as antibacterial, tumor-inhibiting and anti-inflammatory agents.

3,503,964

PROCESS FOR THE MANUFACTURE OF ESTERS OF 7-AMINOCEPHALOSPORANIC ACID

Bruno Fechtig, Binningen, Ernst Vischer, Basel, Hans Bickel, Binningen, Rolf Bosshardt, Arlesheim, and Jakob Urech, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 346,398, Feb. 21, 1964. This application Nov. 29, 1966, Ser. No. 597,578

Int. Cl. C07d *99/24*

U.S. Cl. 260—243 13 Claims

Process for the provision of esters of 7-ACA, which comprises permitting a diester of cephalosporin C whose amino group is free, is allowed to remain for some days diluted in an inert organic solvent immiscible with water in the presence of an acid having a pK-value from 2 to 6, more especially 3 to 5, as catalyst, or without that catalyst.

3,503,965

DERIVATIVES OF 1,4-BENZOTHIAZINE

André L. Langis, St. Laurent, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 518,774, Jan. 5, 1966. This application Dec. 1, 1967, Ser. No. 687,098

Int. Cl. C07d *93/12;* A61k *27/00*

U.S. Cl. 260—243 5 Claims

There are disclosed herein 4-(p-chlorobenzoyl)-, 4-(p-fluorobenzoyl)-, 4 - (3,4,5 - trimethoxybenzoyl-, and 4-phenylcyclopropanecarbonyl - 2,3 - dihydro - 1,4 - benzothiazin-3-one-2-acetate. The compounds possess tranquilizing activity and exceptionally low toxicity, and methods for their preparation and use are also disclosed.

3,503,966

4-ARYL-3,1-BENZOTHIAZIN-2-ONE AND 4-ARYL-3,1-BENZOTHIAZINE-2-THIONE

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 445,248, Apr. 2, 1965. This application Sept. 6, 1967, Ser. No. 665,715

Int. Cl. C07d *93/40, 93/08;* A61k *27/00*

U.S. Cl. 260—243 10 Claims

4-phenyl substituted-3,1-benzothiazin-2-ones and 4-phenyl substituted-3,1-benzothiazine-2-thiones. Such compounds are intermediates in the preparation of 5-phenyl substituted 4,1-benzothiazepin-2(1H)-ones, compounds having choleretic and antidepressant activities.

3,503,967

PROCESS FOR THE PREPARATION OF 7-[α-(4-PYRIDYLTHIO)ACETAMIDO]CEPHALOSPORANIC ACID

Herbert Horatius Silvestri, Syracuse, and David Aaron Johnson, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1968, Ser. No. 755,444

Int. Cl. C07d *99/24*

U.S. Cl. 260—243 1 Claim

7-[α-(4-pyridylthio)acetamido]cephalosporanic acid and related compounds having the same side chain and the pharmaceutically acceptable salts thereof are valuable antibacterial agents for use in mammals, including man. This disclosure relates to a new and improved process for the preparation of such compounds, an example of which comprises reacting 7-aminocephalosporanic acid with 4-pyridylmercaptoacetyl chloride hydrochloride.

3,503,968

2-N-MORPHOLINO ALKYL INDOLE CARBOXAMIDES

William Blythe Wright, Jr., Woodcliff Lake, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 542,758, Apr. 15, 1966. This application Sept. 9, 1968, Ser. No. 758,620

Int. Cl. C07d *87/42*

U.S. Cl. 260—247.2 10 Claims

The preparation of morpholinoalkylene-2-indole carboxamides from an indole carboxylic acid by reaction with a halogenating agent and subsequently with a substituted alkylenediamine, is described. Other methods are described. For example, by the preparation of a reactive indole-2-carboxamide which is reacted with a substituted alkylenediamine. The morpholinoalkylene-2-indole carboxamides are useful for their anti-depressant properties.

3,503,969

TETRAMERS OF SUBSTITUTED ARYLISOCYANATES

Allen John Wysocki, Norridge, Ill., assignor to Armour-Dial, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 634,845, May 1, 1967. This application Jan. 15, 1969, Ser. No. 791,493

Int. Cl. C07d *85/04;* A61k *27/00;* C11d *9/50*

U.S. Cl. 260—249.5 6 Claims

Tetramers of substituted arylisocyanates, particularly exemplified by the tetramer of N-(3,4-dichlorophenyl)-isocyanate. The compounds are of the class of polymers of isocyanate and are useful as bacteriostatic agents.

3,503,970

INTEGRATED PROCESS FOR PRODUCING UREA AND MELAMINE

Kazumichi Kanai, Fujisawa, Masatoshi Yakabe, Mobara, and Shigeru Inoue, Kamakura, Japan, assignors to Mitsui Toatsu Chemicals Incorporated, Tokyo, Japan, a corporation of Japan

Filed June 26, 1968, Ser. No. 740,115

Claims priority, application Japan, July 19, 1967, 42/46,104

Int. Cl. C07c *127/04;* C07d *55/28*

U.S. Cl. 260—249.7 4 Claims

An integrated process for producing urea and melamine wherein urea is produced from ammonia and carbon dioxide, melamine is produced from at least a part of the urea and a gaseous mixture of ammonia and carbon dioxide by-produced in the melamine production is utilized for the urea production without the decrease in urea synthesis ratio.

3,503,971

TRIAZINE HERBICIDES

Ralph P. Neighbors, Olathe, and Lee V. Phillips, Overland Park, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Original application June 27, 1966, Ser. No. 560,906, now Patent No. 3,451,802, dated June 24, 1969. Divided and this application Aug. 12, 1968, Ser. No. 777,519

Int. Cl. C07d *55/48;* A01n *9/22*

U.S. Cl. 260—249.8 6 Claims

New 2-chloro-4,6-diamino-s-triazines in which at least one of the amino groups bears a cyclopropyl or methylcyclopropyl substituent are unusually effective as postemergent herbicides and are particularly useful in combating weeds in corn (*Zea mays*). A preferred compound for this use is 2-chloro-4-cyclopropylamino-6-isopropylamino-s-triazine.

3,503,972

ALKYL N-AMIDINO (OR GUANIDINO)-PYRAZINIMIDATES

Peter I. Pollak, Scotch Plains, and Roger J. Tull, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 574,921, Aug. 25, 1966. This application Nov. 4, 1968, Ser. No. 774,586

Int. Cl. C07d *51/66*

U.S. Cl. 260—250 12 Claims

A process is described for the preparation of 3-amino-5-amino (or substituted amino)-6-halopyrazinoylguanidines and corresponding pyrazinamidoguanidines which comprises amidation of an alkyl pyrazinoate, dehydration to the pyrazinonitrile, alcoholysis to the alkyl pyrazinimidate, further alcoholysis to the ortho ester, conversion to the alkyl N-amidino- or N-guanidinopyrazinimidate by treatment with guanidine or aminoguanidine, respectively, and finally hydrolysis to the pyrazinoylguanidine or pyrazinamidoguanidine. The final products are effective diuretics and natriuretics. The intermediate alkyl pyrazinimidates, ortho esters and alkyl N-amidino and N-guanidinopyrazinimidates are new compounds.

3,503,973

PROCESS FOR PREPARATION OF PYRAZINOYLGUANIDINES

Edward J. Cragoe, Jr., and Norman P. Gould, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 7, 1967, Ser. No. 681,098

Int. Cl. C07d *51/76*

U.S. Cl. 260—250 8 Claims

A process is described for the preparation of pyrazinoylguanidines which comprises the reaction of the very reactive 2,5-dioxo-1-pyrrolidinyl 3-aminopyrazinoates with guanidines. The reactive intermediates are prepared from a pyrazinoic acid and N-hydroxysuccinimide through the influence of carbodiimide condensing agents. The products of the process of this invention are useful as diuretic and saluretic agents.

3,503,974

2-CHLOROMETHYL-4-CYCLOALKYL-QUINAZOLINE-3-OXIDES

Leo Berger, Montclair, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Application Apr. 5, 1967, Ser. No. 628,528, now Patent No. 3,389,176, which is a division of application Ser. No. 137,047, Sept. 11, 1961, now Patent No. 3,338,886. Divided and this application Feb. 8, 1968, Ser. No. 703,909

Int. Cl. C07d *51/48*

U.S. Cl. 260—251 2 Claims

This invention relates to novel 2-chloromethyl-4-cycloalkyl quinazoline-3-oxides which are chemical intermediates in the preparation of novel benzodiazepin compounds selected from the grouping consisting of 5-cycloalkyl-3H-1,4-benzodiazepin-2(1H)-ones, pharmaceutically acceptable acid-addition salts thereof, 2-lower alkylamino-5-cycloalkyl-3H-1,4-benzodiazepines 4-oxides and pharmaceutically acceptable acid-addition salts thereof. Preferred are those benzodiazepine compounds of the above group wherein the 7-position is either unsubstituted or substituted by a halogen or nitro group. The novel benzodiazepine compounds are useful as tranquilizers, and anticonvulsant agents.

3,503,975

SUBSTITUTED 4-PHENYL QUINAZOLINE AND 4-PHENYL QUINAZOLINE 3-OXIDE AND PREPARATION THEREOF

George Francis Field, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Dec. 3, 1964, Ser. No. 415,793, now Patent No. 3,398,139, dated Aug. 20, 1968. Divided and this application Apr. 9, 1968, Ser. No. 735,475

Int. Cl. C07d *51/48;* A61k *27/00*

U.S. Cl. 260—251 15 Claims

Novel substituted 1,2-dihydro-4-phenyl quinazoline 3-oxides (A) prepared by reacting 2-amino-benzophenone-β-oximes with aldehydes or ketones, and then deoxygenating the so formed 1,2-dihydro-quinazoline 3-oxides to yield 1,2-dihydro-4-phenyl quinazolines (B). (A) are useful as intermediates in the preparation of known pharmaceutically valuable benzodiazepine derivatives while (B) are themselves useful as anticonvulsant and anoretic agents.

3,503,976

PRODUCTION OF PYRIMIDINES BEARING HALOGEN AS SUBSTITUENT IN THE 5-POSITION

Franz Reicheneder, Karl-Ludwig Hock, and August Amann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 14, 1967, Ser. No. 630,829

Claims priority, application Germany, Apr. 20, 1966, 1,670,069, 1,670,070, 1,670,072

Int. Cl. C07d *51/38*

U.S. Cl. 260—256.4 14 Claims

The production of pyrimidines bearing halogen as substituents in the 5-position and other substituents in the 2- and 4-positions in which in a first stage acrylic acid derivatives or propionic acid derivatives are reacted with amidines to form 2-substituted 4-hydroxy-5-halopyrimidines, then by a known method in a second stage the 4-hydroxy-5-halopyrimidines thus obtained are reacted with phosgene, halides of trivalent or pentavalent phosphorus, oxychlorides or oxybromides of pentavalent phosphorus, tetravalent or hexavalent sulfur to form 2-substituted 4,5-dihalopyrimidines, and in a third stage these 4,5-dihalopyrimidines are reacted with ammonia, amines, heterocycles which still contain a hydrogen atom on nitrogen, hydrazines or their corresponding alkali metal compounds or alkaline earth metal compounds, and the new 5-halopyrimidines bearing in the 2-position an aryl radical and bearing in the 4-position an amino radical, substituted amino radical, hydrazino radical, substituted hydrazino radical or a heterocyclic radical attached via a nitrogen atom. The new and known products of the process are analgesic and antiphlogistic and may be used as intermediates for the production of pharmaceuticals and plant protection agents.

3,503,977

N,N'-DI-[2-PYRAMIDINYL-AMINOALKYL]-DIAZACYCLOALKANES

Ernst Schweizer, Basel, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1967, Ser. No. 652,679

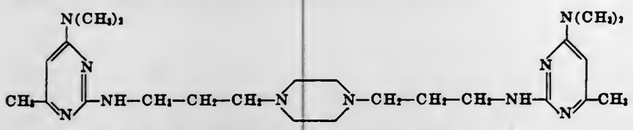
Claims priority, application Switzerland, July 28, 1966, 10,967/66; June 13, 1967, 8,370/67

Int. Cl. C07d *51/00*

U.S. Cl. 260—256.5 13 Claims

N,N'-di-[Py-aminoalkyl]-diazacycloalkanes in which the alkylene radicals separate the nitrogen atoms connected by them by at least 2 carbon atoms in each case,

Py represents a pyrimidyl-2-residue, which has in the 4-position an amino group and in the 6-position a hydrogen atom, an amino group, a hydrocarbon residue of aromatic or aliphatic character in which the carbon chain can be interrupted by an oxygen, nitrogen or sulfur atom or a free or etherified hydroxyl or mercapto group, their N-oxides and salts, such as N,N'-di-[γ-dimethylamino-6-methyl-pyrimidyl-2-aminopropyl]-piperazine of formula



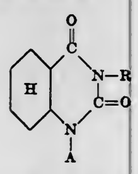
show antibacterial, antiprotozoal e.g. antiplasmodial activity and display anti-inflammatory effects.

3,503,978
SUBSTITUTED, 2,4-DIOXODECAHYDROQUINAZOLINES

Adolf Zeidler, Ludwigshafen, Adolf Fischer, Mutterstadt, Franz Reicheneder, Ludwigshafen, and Walter Himmele, Walldorf, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 27, 1968, Ser. No. 787,612
Claims priority, application Germany, Dec. 27, 1967, 1,670,298
Int. Cl. C07d *51/48*
U.S. Cl. 260—260 **3 Claims**

New and valuable substituted 2,4-di-oxodecahydroquinazolines and their use for controlling unwanted plants, and having the formula



where R denotes an alkyl radical having from two to four carbon atoms and A denotes the radical

$$—CO—(R^1)_n—COOR^2$$

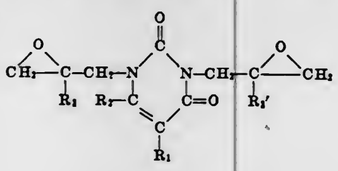
where R^1 denotes a linear or branched alkylene or alkylene group, a cycloalkylene group or an arylene group which may bear halogen atoms or nitro, alkyl or alkoxy groups as substituents, R^2 denotes an alkyl, cycloalkyl or aryl radical and *n* denotes zero or 1.

3,503,979
HETEROCYCLIC N,N'-DIGLYCIDYL COMPOUNDS

Juergen Habermeier, Allschwil, and Daniel Porret, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Jan. 14, 1969, Ser. No. 791,146
Claims priority, application Switzerland, Jan. 17, 1968, 676/68
Int. Cl. C07d *51/30, 51/28*
U.S. Cl. 260—260 **6 Claims**

New heterocyclic N,N'-diglycidyl compounds of formula



wherein R_1 and R_2 independently of each other denotes a hydrogen atom or an aliphatic, cycloaliphatic, araliphatic or aromatic hydrocarbon residue such as especially a lower alkyl residue having 1 to 4 carbon atoms and R_3 as well as R_3' each denotes a hydrogen atom or the methyl group are resin precursors.

3,503,980
TETRAHYDROAZACYCLOALKANO[1,2-a] PYRIDAZINES

Alberto Rossi, Oberwil, Basel, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 2, 1966, Ser. No. 576,834
Claims priority, application Switzerland, Oct. 4, 1965, 13,645/65; Aug. 19, 1966, 12,031/65
Int. Cl. C07d *57/22*
U.S. Cl. 260—268 **16 Claims**

Tetrahydro-azacycloalkano[1,2-a]pyrazines comprising the ring skeleton of the formula



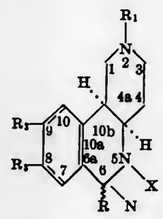
which contain in position 1 an oxo group, in position 3 a hydrogen atom and an aryl radical, and in position 4 hydrogen aryl, aryl-lower alkyl and/or lower alkyl radicals, and their salts. The compounds are useful as sedatives, antiepileptics and muscle relaxants.

3,503,981
HYDRO BENZO[c][1,6]NAPHTHYRIDINES

Rudolf Süess, Bettingen, and Adolf Lindenmann, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Oct. 5, 1967, Ser. No. 672,972
Claims priority, application Switzerland, Oct. 7, 1966, 14,515/66; Dec. 28, 1966, 18,628/66; May 31, 1967, 7,704/67; July 19, 1967, 10,252/67
Int. Cl. C07d *35/10*
U.S. Cl. 260—288 **8 Claims**

The invention provides a naphthyridine derivative of formula:



wherein R_1 is lower alkyl of 1 to 3 carbon atoms, R_2 is hydrogen or methyl, each of the two symbols R_3 is lower alkoxy of 1 to 4 carbon atoms, or together the two symbols R_3 are methylenedioxy, and each of the two symbols X is hydrogen, or together the two symbols X are a second bond between the carbon and the nitrogen atom, and a pharmaceutically acceptable acid addition salt thereof.

The compounds and their pharmaceutically acceptable salts are indicated for use in medicaments, especially in the treatment of pains of various origins.

3,503,982
2,2-DIMETHYL-6,6 DISUBSTITUTED-4-SUBSTITUTED AMINOPIPERIDINE-1-OXIDES

Keisuke Murayama, Syoji Morimura, Toshimasa Toda, and Tomizi Tsuzi, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,755
Claims priority, application Japan, Aug. 24, 1966, 41/55,972
Int. Cl. C07d *29/26*
U.S. Cl. 260—293 **13 Claims**

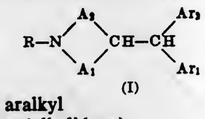
Novel piperidine N-oxides exhibiting a stabilizing effect against photo deterioration of polyolefins.

3,503,983
3-BENZHYDRYL-AZACYCLOALKANES

Renat Herbert Mizzoni, Long Valley, and Robert Paul Mull, Florham Park, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 392,930, Aug. 28, 1964. This application Feb. 10, 1967, Ser. No. 615,055
Int. Cl. C07d *27/04, 29/28*
U.S. Cl. 260—293 **6 Claims**

New 3-benzhydryl-azacycloalkanes of the Formula I



(I)

R=H, alkyl or aralkyl
A_1=n,n-alkylene (alkylidene)
A_2=alkylene with 2–3 ring-C
$Ar_{1,2}$=carbocyclic aryl

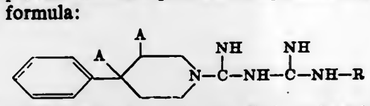
the N-oxide,quaternaries and acid addition salts thereof, particularly the 3-[di-(4-diethylaminophenyl)-methyl]-piperidine trihydrochloride, are useful diuretics.

3,503,984
4-PHENYLPIPERIDINE BIGUANIDES

Erhard Schenker, Basel, and Klaus Hasspacher, Riehen, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Feb. 15, 1968, Ser. No. 705,596
Claims priority, application Switzerland, Feb. 20, 1967, 2,437/67; July 12, 1967, 9,955/67; July 27, 1967, 10,182/67
Int. Cl. C07d *29/26, 27/32;* **A61k** *27/00*
U.S. Cl. 260—293 **6 Claims**

The present invention provides compounds represented by the formula:



wherein R is hydrogen or lower alkyl, and each of the two symbols A are hydrogen, or together they are a second bond, and pharmaceutically acceptable acid addition salts thereof.

The compounds exhibit useful blood sugar lowering properties in warm-blooded animals.

3,503,985
LOWER ALKYL, PHENYL OR PYRIDYL-2-THIOCYANOPHENYL KETONES

Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Application Dec. 14, 1964, Ser. No. 417,855, now Patent No. 3,362,962, dated Jan. 9, 1968, which is a continuation-in-part of application Ser. No. 339,910, Jan. 24, 1964. Divided and this application Nov. 22, 1967, Ser. No. 684,929
Int. Cl. C07c *161/02;* **C07d** *29/34, 93/40*
U.S. Cl. 260—294.8 **8 Claims**

Phenyl (or lower alkyl or pyridyl)-2-thiocyano phenyl ketones (A). (A) is prepared by reacting corresponding 2-amino phenyl ketone with nitrous acid in excess of strong mineral acid and treating the resulting mixture with fluoroboric acid salt to yield corresponding diazonium compound. Diazonium compound treated with metal thiocyanate to form (A). (A) is convertible into 1,4-benzothiazepines, useful as muscle relaxants and anticonvulsants.

3,503,986
N-ARYL-3-CYANO-4,6-DIMETHYLPYRID-2-ONES

Michael C. Seidel, Levittown, Kenneth L. Viste, Warminster, and Roy Y. Yih, Doylestown, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 16, 1968, Ser. No. 698,106
Int. Cl. C07d *29/42;* **A01n** *9/22*
U.S. Cl. 260—294.9 **3 Claims**

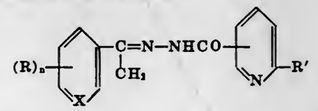
Novel compounds belonging to the class of N-aryl-pyrid-2-one-4,6-dimethyl-3-carboxylic acids and their amides, esters and salts. These compounds possess biological activity and in particular are plant growth regulators. Novel N - aryl-3-cyano-4,6-dimethylpyrid-2-ones are also disclosed.

3,503,987
CERTAIN SUBSTITUTED PICOLINOYL, NICOTINOYL AND ISONICOTINOYL HYDRAZONES

Masazi Kawai, deceased, late of Nishinomiya, Japan, by Yasuko Kawai, heir, Nishinomiya, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan, a corporation of Japan

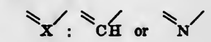
No Drawing. Filed Mar. 22, 1967, Ser. No. 625,271
Claims priority, application Japan, Mar. 23, 1966, 41/18,086
Int. Cl. A61k *27/00;* **C07d** *31/34, 31/40*
U.S. Cl. 260—295 **12 Claims**

Compounds of the formula



wherein

R=methyl, ethyl, methoxy, halogen, amino, acetylamino, acetyl, nitro, hydroxyl, ethoxycarbonyl, carboxyl, carbamoyl, carbamoyloxy;
R'=H or methyl;



and

n=0, 1, 2 or 3,

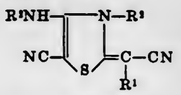
have sedative action and muscle relaxing activity, as well as low acute toxicity.

3,503,988
DERIVATIVES OF 5-CYANO-4-THIAZOLINE-$\Delta^{2,c}$-ACETONITRILES

Real Laliberte, Laval, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 13, 1967, Ser. No. 690,107
Int. Cl. C07d *91/26*
U.S. Cl. 260—306.7 **7 Claims**

Compounds characterized by antifungal and trichomonacidal activities of the formula



wherein R^1 is selected from the group which consists of lower - alkoxycarbonyl, lower - monoalkylaminocar-

bonyl, lower dialkylaminocarbonyl, 1-pyrrolidinylcarbonyl and anilinocarbonyl; and R^2 is selected from the group which consists of lower alkyl containing from one to two carbon atoms, allyl, phenyl, halo-substituted phenyl and nitro-substituted phenyl. These compounds are prepared by reacting a suitably substituted isothiocyanate with a suitably substituted methyl or ethyl cyanoacetate to obtain the correspondingly substituted 2-cyano-3-mercaptoacrylic acid methyl or ethyl ester as intermediate; and treating said latter intermediate with iodine in pyridine or triethylamine.

3,503,989

N-CHLORO-ALIPHATIC - N'-(5-NITROTHIAZOLYL)-UREAS AND CYCLIZED COMPOUNDS THEREOF

Paul Schmidt, Therwil, Max Wilhelm, Allschwil, and Kurt Eichenberger, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 564,536, July 12, 1966. This application Nov. 15, 1966, Ser. No. 594,403

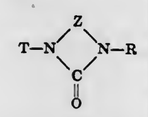
Claims priority, application Switzerland, May 30, 1962, 6,604/62; Apr. 23, 1963, 5,056/63; Aug. 30, 1963, 10,800/63; Apr. 24, 1964, 5,395/64; July 8, 1964, 8,961/64; Sept. 3, 1964, 11,534/64; Mar. 3, 1965, 2,949/65; Mar. 31, 1965, 4,423/65; July 20, 1965, 10,198/65

The portion of the term of the patent subsequent to Apr. 13, 1982, has been disclaimed

Int. Cl. C07d *91/34*

U.S. Cl. 260—306.8 **6 Claims**

Antiparasitic and antibacterial 2-oxo-1,3-diaza-cycloalkanes of the formula



in which T represents a 5-nitrothiazolyl-2-radical; Z stands for a lower alkylene radical which separates the two nitrogen atoms by 2 to 5, preferably by 3 or 4 but above all by 2, carbon atoms and which may be substituted by one or several, possibly substituted, hydrocarbon radicals, and R represents a hydrogen atom, an acyl radical or an unsubstituted or substituted hydrocarbon radical of aliphatic character, above all a lower alkyl radical which is unsubstituted or substituted by a hydroxyl group or by a free or substituted amino group, or a lower alkenyl or an araliphatic radical and, as the case may be, their salts prepared by cyclization of the corresponding N-chloro-aliphatic-N'-(5-nitrothiazolyl)-ureas.

3,503,990

6-ARYL-4,5,6,7-TETRAHYDRO-4-OXOINDOLE DERIVATIVES

Karl Schoen, Kew Gardens, and Irwin J. Pachter, Woodbury, N.Y., assignors to Endo Laboratories, Inc., Garden City, N.Y., a corporation of New York

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,795

Int. Cl. C07d *27/56, 29/00, 51/00*

U.S. Cl. 260—326.12 **11 Claims**

There are provided novel 1-aminoalkyl-6-aryl-4,5,6,7-tetrahydro-4-oxoindoles which are useful as analgetics and anti-tussives. There are also provided methods of preparing these compounds and novel intermediates therefor.

3,503,991

SYNTHESIS OF PARA-DITHIANES

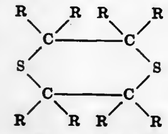
Wolfgang T. Eisfeld, Troisdorf, Germany, and Edward D. Weil, Yonkers, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,642

Int. Cl. C07d *73/00*

U.S. Cl. 260—327 **8 Claims**

Process for the simultaneous preparation of dithianes of the formula:



and tertiary alkyl halides of the formula:



wherein R is hydrogen or alkyl containing from about 1–8 carbon atoms, R_1 is lower alkyl, X is halogen and all R's and R_1's may be the same or different; by heating a corresponding tertiary-alkyl 2-haloalkyl sulfide to a temperature of from about 150° C. to about 300° C. in the presence of a catalyst such as alumina, silica, an alumina-silica, clay or phosphoric acid. It is preferred to conduct this reaction in the vapor phase.

3,503,992

3,4-DISUBSTITUTED TETRAHYDROTHIOPHENE-1,1-DIOXIDE

Henry E. Fritz, Charleston, and William E. Maycock, St. Albans, W. Va., and Robert P. Yunick, Schenectady, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,387

Int. Cl. C07d *63/04*

U.S. Cl. 260—332.1 **9 Claims**

This invention relates to 3,4-disubstituted tetrahydrothiophene-1,1-dioxides and to a method for their production. More particularly, this invention relates to 3,4-diethers and dithioethers of tetrahydrothiophene-1,1-dioxide and to a method for their production via the base-catalyzed reaction of an aliphatic alcohol or mercaptan with a 3,4-dihalotetrahydrothiophene-1,1-dioxide.

3,503,993

4-KETO-1,3-DIOXANES

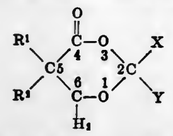
Roe C. Blume, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,443

Int. Cl. C07d *15/04*

U.S. Cl. 260—340.2 **4 Claims**

Novel 4-keto-1,3-dioxanes conforming to the formula



wherein R^1 and R^2 are selected from the group consisting of hydrogen, monocyclic aryl and lower alkyl and halogenated and phenoxy-derivatives thereof; R^1 and R^2 taken together with the carbon atom to which they are attached may form a nonaromatic cyclic structure of up to twelve carbon atoms; and X and Y are selected from the group consisting of hydrogen, lower alkyl, monocyclic aryl, and lower alkoxy-substituted monocyclic aryl, and lower alkoxy; X and Y taken together with the carbon atom to which they are attached may form a non-

aromatic cyclic structure of up to twelve carbon atoms are useful for the preparation of β-lactones and as hygroscopic agents.

3,503,994

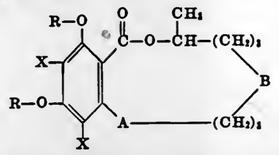
MACROCYCLIC LACTONES

Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed June 29, 1966, Ser. No. 561,394

Int. Cl. C07d *9/00*

U.S. Cl. 260—343.2 **5 Claims**



where R is selected from the group consisting of hydrogen, lower alkyl and benzyl; X is selected from the group consisting of hydrogen, halomercuri- and —AsO(OH)₂, with the proviso that not more than one X is hydrogen; A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2—, and B is a radical selected from the group consisting of >C=O, >CHOH and >CH_2 with the proviso that A is —CH_2—CH_2— when B is >CH_2.

3,503,995

PREPARATION OF ALPHA-AMINONITRILES

Ellis K. Fields, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Apr. 30, 1965, Ser. No. 452,331. Divided and this application Nov. 30, 1966, Ser. No. 620,571

Int. Cl. C07c *121/04*

U.S. Cl. 260—343.2 **3 Claims**

Alpha-aminonitriles are obtained from the ozonolysis of an organic compound containing at least one non-aromatic carbon to carbon double bond in the presence of hydrogen cyanide and ammonia in a liquid reaction medium.

3,503,996

7-HYDROXYCOUMARIN PREPARATION

Hans Dressler, Monroeville, and Kenneth G. Reabe, Delmont, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 17, 1967, Ser. No. 653,649

Int. Cl. C07d *7/28*

U.S. Cl. 260—343.2 **5 Claims**

Consistent improvement in the preparation of 7-hydroxycoumarin by the condensation of resorcinol and malic acid is achieved by a process wherein nitrobenzene or nitrotoluene is added to the condensation mixture. The presence of the nitro-aromatic hydrocarbon during the condensation reaction results in improved and reproducible yields and removes the need for adherence to stringent process conditions throughout the reaction. The 7-hydroxycoumarin is useful in preparing optical bleaches and as an intermediate in chemical processes.

3,503,997

ALPHA-HYDROXYNITRILE PRODUCTION

Ellis K. Fields, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Continuation of application Ser. No. 452,331, Apr. 30, 1965. This application Feb. 7, 1969, Ser. No. 800,349

Int. Cl. C07c *121/04*

U.S. Cl. 260—343.2 **4 Claims**

Alpha-hydroxy nitriles are obtained from the ozonolysis of an organic compound containing at least one non-aromatic carbon-to-carbon double bond in the presence of hydrogen cyanide in a basic liquid reaction medium.

3,503,998

REACTION PRODUCTS OF DIAMINES AND THE MONOACID CHLORIDE OF MALEOPIMARIC ACID

Walter H. Schuller and Ray V. Lawrence, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Dec. 2, 1966, Ser No. 599,346. Divided and this application Nov. 13, 1968, Ser. No. 794,450

Int. Cl. C07d *5/46*

U.S. Cl. 260—346.3 **3 Claims**

The invention disclosed herein relates to new amide compounds and the hydrochloride salts thereof. The new amide compounds are prepared by reacting diamines and the monoacid chloride of maleopimaric acid in mole ratios of one to one and one to two, respectively.

3,503,999

PROCESS FOR THE MANUFACTURE OF CITRACONIC ACID ANHYDRIDE

Helmut Pichler, Lussstrasse 31, Karlsruhe-Durlach, Germany, and Fritz Obenaus, Lipper Weg 195, Marl, Germany

No Drawing. Filed July 21, 1967, Ser. No. 654,978

Claims priority, application Germany, July 29, 1966, P 40,083

Int. Cl. C07d *5/10*

U.S. Cl. 260—346.8 **12 Claims**

A process for economically producing citraconic acid anhydride by conversion of gases containing isoprene in mixture with oxygen or oxygen containing gases at temperatures between 200° C. and 500° C. in the presence of a V_2O_5-catalyst or a SnO_2 and V_2O_5 containing catalyst.

3,504,000

FLUORINATED GLYCIDYL ETHERS

Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Dec. 24, 1964, Ser. No. 421,128, now Patent No. 3,361,685. Divided and this application July 26, 1967, Ser. No. 666,530

Int. Cl. C07d *1/18*

U.S. Cl. 260—348 **4 Claims**

Glycidyl ethers which contain fluorine on the non-glycidyl moiety are prepared by reacting a ketone with an alkali metal fluoride, and then reacting the resulting fluorocarbinolate intermediate with an epihalohydrin. Typically, the ketone is hexafluoroacetone whereby the end product is heptafluoroisopropyl glycidyl ether. The glycidyl ethers are useful, in monomeric and especially polymeric form, for imparting water- and oil-repellency to textiles.

3,504,001

SYNTHESIS OF MALONONITRILES AND DIMALONONITRILES AND COMPOUNDS PRODUCED THEREIN

Elmore L. Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 16, 1965, Ser. No. 514,385

Int. Cl. C07c *49/62, 49/68, 121/22*

U.S. Cl. 260—396 **16 Claims**

Organic nitriles with α-methylene groups can be reacted with an organic carbonate and alkali or alkaline earth metal alkoxide to yield metal derivatives of cyanoesters. Reaction of the metal derivative with a cyanogen halide followed by hydrolysis and decarboxylation gives substituted malononitrile derivatives, which are useful as chemical intermediates. α,α,α',α'-Tetracyanoarylenebis-

acetate esters which can be made by the above process are useful as photographic developers.

3,504,002
SELECTED 6-DIFLUOROMETHYLENE STEROIDS OF THE PREGNANE SERIES
George Albert Boswell, Jr., Green Acres, Wilmington, Del., and Eugene A. La Lancette, Lansdowne, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 29, 1967, Ser. No. 663,945
Int. Cl. C07c *169/34;* A61k *17/06*
U.S. Cl. 260—397.3 13 Claims

This application describes and claims 6-difluoromethylene steroids of the pregnane series prepared by reacting a 3β-acyloxy-5α-fluoro-6-keto pregnane with at least equimolar amounts of tributylphosphine and sodium chlorodifluoroacetate relative to the steroid starting material at a temperature in the range 150–200° C. The 6-difluoromethylene pregnanes of this invention possess anti-androgenic, anti-estrogenic and anti-gonadotropic activity and are especially useful as orally active progestational hormones and inhibitors of ovulation.

3,504,003
A-NOR-B-HOMOSTEROIDS
Oskar Jeger, Zollikerberg, Zurich, and Kurt Schaffner, Zurich, Switzerland, assignors to Ciba Coporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 266,524, Mar. 20, 1963. This application July 14, 1964, Ser. No. 382,643
Claims priority, application Switzerland Mar. 23, 1962, 3,533/62; Aug. 17, 1962, 9,844/62; Dec. 7, 1962, 14,422/62; Mar. 7, 1963, 2,880/63; July 19, 1963, 9,018/63; Feb. 7, 1964, 1,503/64; June 5, 1964, 7,334/64; June 12, 1964, 7,669/64
Int. Cl. C07c *171/02*
U.S. Cl. 260—410 22 Claims

A-nor-B-homosteroids obtained in a novel and simpler manner by irradiating 3-oxo-4:5-oxidosteroids with ultraviolet light and, if desired, converting the resulting 3:6-dioxo-A-nor-B-homosteroids into their functional derivatives and/or metal salts, or by hydrogenating resulting Δ^5-3-oxo-6-acyloxy-A-nor-B-homosteroids. The products obtained are useful as anabolic agents, progestative agents, anti-inflammatory agents and/or as intermediates.

3,504,004
FERRIC HYDROCARBON-AMMONIUM SALTS AND THEIR PREPARATION
Leo Roos, New Shrewsbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 2, 1967, Ser. No. 680,013
Int. Cl. C07f *15/02;* G03c *1/64*
U.S. Cl. 260—439 5 Claims

Tris (hydrocarbons-ammonium) iron (III) oxalates, citrates and tartrates are produced by reacting suitable metal carboxylates with alkyl or aryl ammonium halides. Very pure complexes are obtained which are light-sensitive and may form useful images.

3,504,005
ORGANOANTIMONY AND -BISMUTH COMPOUNDS
Kurt Moedritzer, Webster Groves, John R. Van Wazer, Ladue, and Harold I. Weingarten, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Jan. 3, 1966, Ser. No. 518,014
Int. Cl. C07f *9/90*
U.S. Cl. 260—446 9 Claims

The present invention relates to organometallic antimony or bismuth compounds, $R_{3-n}MX_{n-m}Y_m$ in which R_3 is selected from the group of hydrocarbyl radicals having from 1 to 20 carbon atoms; M is antimony or bismuth; and X and Y are different members of the group of halogen, alkoxyl, thioalkyl, dialkylamino, cyano, cyanate, thiocyanate, azide, and acetylide radicals; n is 2 or 3, m is 1 or 2, with the requirement that m be less than n.

The compounds of the invention have utility as functional fluids, dielectric materials, insecticides and as additives to polymers.

3,504,006
PROCESS FOR PREPARING 1,3,5,7-TETRAMETHYL-1,3,5,7-TETRAHYDROCYCLOTETRASILOXANE
Frank J. Modic, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed July 29, 1964, Ser. No. 386,049
Int. Cl. C07d *103/04*
U.S. Cl. 260—448.2 1 Claim

The compound 1,3,5,7 - tetramethyl - 1,3,5,7-tetrahydroxycyclotetrasiloxane which is useful as a cross-linking agent for silicone compositions is prepared by reacting 1,3,5,7-tetramethyl-1,3,5,7 - tetrahydrocyclotetrasiloxane with water in contact with a platinum catalyst.

3,504,007
PROCESS FOR PREPARING AMINOSILANES
William John Owen, Penarth, Glamorgan, and Bryan Ewart Cooper, Bridgend, Glamorgan, Wales, assignors to Midland Silicones Limited, Reading, Berkshire, England
No Drawing. Filed May 17, 1967, Ser. No. 644,427
Claims priority, application Great Britain, May 23, 1966, 22,921/66
Int. Cl. C07f *7/10*
U.S. Cl. 260—448.2 6 Claims

A haloalkylorganosilane is reacted with an alkali metal organoamide to produce an organosilane having organofunctional groups bonded to silicon.

3,504,008
CARBOXAMIDOOXYALKANOIC ACIDS
Ralph P. Neighbors, Olathe, Kans., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Application May 26, 1967, Ser. No. 641,487, now Patent No. 3,449,113, dated June 10, 1969, which is a continuation-in-part of application Ser. No. 374,813, June 12, 1964. Divided and this application Nov. 6, 1968, Ser. No. 798,521
Int. Cl. C07c *101/00*
U.S. Cl. 260—453 4 Claims

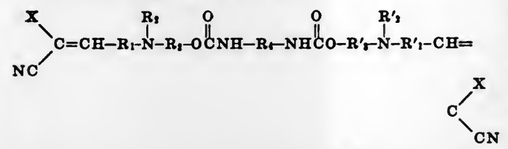
Carboxamidooxyacetic and propionic acids which are useful as selective herbicides are prepared by formation of the amides of aminooxyacetic and aminooxypropionic acids with other monocarboxylic and dicarboxylic acids.

3,504,009
PREPARATION OF THIOLCARBOXYLATES
Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed May 8, 1967, Ser. No. 636,624
Int. Cl. C07c *153/07*
U.S. Cl. 260—455 8 Claims

Thiolcarboxylates, and particularly aralkyl thiolcarboxylates are prepared by treating an arakyl mercaptan with an alkyl alcohol and a dialkyl sufoxide in an aqueous alkali medium at an elevated temperature and pressure to prepare an arylalkyl thiolcarboxylate.

3,504,010
BIS(CYANOMETHYLIDENE AROMATIC AMINOALKYLCARBAMATE) COMPOUNDS
James M. Straley and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 27, 1966, Ser. No. 545,546
Int. Cl. C07c *121/60, 121/66*
U.S. Cl. 260—465 4 Claims

Compounds having the formula



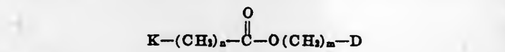
wherein X is a cyano, carbamoyl, carbalkoxy or alkylsulfonyl radical, R_1 and R'_1 are each arylene, R_2 and R'_2 are each hydrogen, alkyl, or aryl, R_3 and R'_3 are each alkylene, and R_4 is alkylene, cycloalkylene, arylene, arylenedialkylene, alkylenediarylene or cyclohexylenedialkylene. The disclosed compounds produce fast yellow shades on hydrophobic textile materials such as polyester fibers.

3,504,011
PROCESS FOR PREPARING NITRILOTRIACETONITRILE
Anil N. Gandhi, Laurel, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Aug. 7, 1967, Ser. No. 658,635
Int. Cl. C07c *121/42*
U.S. Cl. 260—465.5 7 Claims

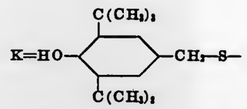
This invention is directed to a process for preparing nitrilotriacetonitrile by reacting hexamethylenetetramine, formaldehyde, and hydrogen cyanide in an aqueous medium, said aqueous medium analyzing about 3–11 percent H_2SO_4 by weight while maintaining the temperature of the reacting system within the range of about 60–95° C. and recovering the resulting nitrilotriacetonitrile, all as described hereinafter.

3,504,012
HYDROXYETHYL-β-(3,5-DI-T-BUTYL-4-HYDROXY BENZYLTHIO) ALKANOATE
Harry Braus, Springdale, and Jay R. Woltermann, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Apr. 7, 1967, Ser. No. 629,121
Int. Cl. C07c *143/52*
U.S. Cl. 260—470 2 Claims

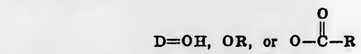
Organic materials can be stabilized with a compound having the formula



where



n is a positive integer between 1 and 8; m is a positive integer between 2 and 10; n and m may be equal to each other or not; and



where R is an alkyl group having from 1 to 22 carbon atoms.

3,504,013
N-SUBSTITUTED GLYCINE DERIVATIVES
Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Original application Oct. 1, 1964, Ser. No. 400,891, now Patent No. 3,317,518, dated May 2, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,141
Int. Cl. C07c *101/44, 103/22*
U.S. Cl. 260—471 5 Claims

Novel N-substituted glycine derivatives are prepared from the corresponding substituted benzophenones. These novel glycine derivatives are useful as intermediates in the preparation of known pharmaceutically valuable benzodiazepine derivatives.

3,504,014
N-(2-AROYLPHENYL)GLYCINE OXIME DERIVATIVES
Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Original application Oct. 1, 1964, Ser. No. 400,891, now Patent No. 3,317,518, dated May 2, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,142
Int. Cl. C07c *101/44, 103/28;* C07d *31/44*
U.S. Cl. 260—471 7 Claims

N-(2-benzoyl-4-phenyl)glycine oximes and derivatives are useful precursors in preparing novel benzodiazepines having anti-convulsant activity.

3,504,015
N-(2-AROYLPHENYL)GLYCINE DERIVATIVES
Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Original application Oct. 1, 1964, Ser. No. 400,891, now Patent No. 3,317,518, dated May 2, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,148
Int. Cl. C07c *101/44, 121/52;* C07d *31/42*
U.S. Cl. 260—471 8 Claims

Novel N-(2-aroylphenyl)glycine derivatives are prepared from the corresponding substituted benzophenones. These novel compounds are useful intermediates in the preparation of known, pharmaceutically valuable benzodiazepine derivatives.

3,504,016
FLUORINATED POLYESTERS
Kenneth C. Smeltz, Graylyn Crest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application July 26, 1967, Ser. No. 656,076. Divided and this application Feb. 28, 1969, Ser. No. 803,455
Int. Cl. C07c *69/76*
U.S. Cl. 260—475 5 Claims

Polyesters prepared by the condensation of perfluoroalkyl-terminated alkyl-1,3-propanediols of the formula $(R_f—R')_aCH_{2-a}(CH_2OH)_2$ with complementary dibasic acids including malonic acids of the formula

$$(R_f—R')_aCH_{2-a}(COOR)_2$$

and, optionally, other diols; and polyesters prepared from such malonic acids and other diols. The polymers are in general useful as fabric coatings to impart oil- and water-repellency thereto.

3,504,017
POLYFUNCTIONAL CARBONYL NITRILE OXIDES
David S. Breslow, Madelyn Gardens, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 4, 1966, Ser. No. 584,113
Int. Cl. C07c *101/04*
U.S. Cl. 260—482 2 Claims

The disclosed compounds are polyfunctional carbonyl nitrile oxides and their polyfunctional carbonylhydroximoyl halide and carbonyl nitrolic acid precursors. A representative compound is 4,4′-oxy-bis(benzoyl carbonitrile N-oxide), which may be generated from 4,4′-oxy-bis-(phenylglyoxylohydroximoyl chloride), melting point 189–190° C. The compounds are useful as cross-linking agents for unsaturated polymers.

3,504,018
PROCESS FOR PREPARING PHOSPHONIC ACIDS
Riyad R. Irani, St. Louis, Mo., and Robert E. Mesmer, Oak Ridge, Tenn., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,547
Int. Cl. C07d *105/02*; C07f *9/02*
U.S. Cl. 260—502.4 1 Claim

A process for preparing 1-hydroxy, lower alkylidene-1, 1-diphosphonic acid which comprises reacting a lower aliphatic monocarboxylic acid such as acetic acid and condensed phosphorous acid such as orthophosphorous acid in a molar ratio of at least 1:1 and at a temperature below 200° C. whereby a normally solid anhydrous reaction product is formed and thereafter recovering said diphosphonic acid from the anhydrous product. In this process substantially no acetyl chloride is produced as a by-product.

3,504,019
PROSTAGLANDIN PURIFICATION PROCESS
Milton Lapidus, Rosemont, Norman H. Grant, Wynnewood, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 20, 1967, Ser. No. 617,061
Int. Cl. C07c *61/36*
U.S. Cl. 260—514 13 Claims

Biologically active crude prostaglandins are isolated and purified by an improved process comprising dialyzing the prostaglandins through a semi-permeable membrane, leaving impurities behind. The process is applicable to prostaglandins isolated from animal materials and to those enzymatically biosynthesized from fatty acids. Prostaglandin E_2 is useful as a bronchodilator.

3,504,020
PROSTAGLANDIN THIOSEMICARBAZONES, 1-ESTER AND 1-CARBINOL DERIVATIVES THEREOF
Milton Lapidus, Rosemont, Norman H. Grant, Wynnewood, Marvin E. Rosenthale, Havertown, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 4, 1967, Ser. No. 672,697
Int. Cl. C07c *159/00, 59/18*; A61k *27/00*
U.S. Cl. 260—514 2 Claims

Novel thiosemicarbazones of prostaglandins, 1 - esters and 1 - carbinols thereof (I) are prepared by treating prostaglandins and their 1-ester and 1-carbinol derivatives (II) with a thiosemicarbazide (III). Compounds (I) have valuable pharmacological properties, especially as bronchodilators.

3,504,021
PROCESS FOR THE PREPARATION OF ABSCISIN II
Donald L. Roberts, Robert A. Heckman, and Bonita P. Hege, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
No Drawing. Filed Nov. 2, 1966, Ser. No. 591,428
Int. Cl. C07c *51/00*
U.S. Cl. 260—514 4 Claims

Synthesis of the plant abscission hormone, abscisin II, by treating α-ionylideneacetate esters with a tertiary alkyl chromate oxidizing agent followed by saponification.

3,504,022
OXIDATION OF ARALKYL COMPOUNDS
Clarence R. Bresson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,666
Int. Cl. C07c *63/02*
U.S. Cl. 260—524 9 Claims

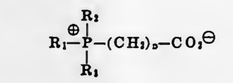
Oxidation of aliphatic side chains on aromatic sulfides and sulfoxides in the presence of cobalt-bromine-carboxylic acid catalysts to produce acid and ketone derivatives having utility as plasticizers and cross-linking agents.

3,504,023
PURIFICATION OF TRIMESIC ACID
John L. Ellingboe, Jr., Findlay, Ohio, and John H. Runnels, Fort Collins, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Sept. 8, 1965, Ser. No. 485,883
Int. Cl. C07c *51/42*
U.S. Cl. 260—525 7 Claims

The present invention comprises a process for the separation of trimesic acid from mixtures comprising trimesic acid and at least one of the following: uvitic acid, mesitylenic acid, the alkali metal salts of said acids, and mixtures of said acids with alkali metal salts of said acids, said process comprising in combination the steps of adjusting the water content of the mixture to at least 50% by weight of water based on the weight of the mixture, at a temperature of from about 32 to about 160° F., lowering the pH of the mixture to from about 5.5 to 3.0 and removing the mono-alkali metal salt of trimesic acid thus precipitated, and thereafter converting said mono-sodium salt of trimesic acid to free trimesic acid and recovering said acid.

3,504,024
PHOSPHONIO CARBOXYLATES
Francis L. Diehl and Howard F. Drew, Wyoming, and Robert G. Laughlin, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 23, 1966, Ser. No. 574,470
Int. Cl. C07f *9/54*
U.S. Cl. 260—526 2 Claims

Phosphonio carboxylates are disclosed having effective detergency in cool water laundering and the following general formula:



R_1 is C_{10}–C_{18} alkyl; R_2 and R_3 are each C_1–C_4 alkyl or hydroxyalkyl; n ranges from 3 to 5.

3,504,025
PROCESS FOR PREPARING ORGANIC THIOPHOSPHORUS COMPOUNDS
Ludwig Maier, Zurich, Switzerland, assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,227
Claims priority, application Switzerland, Dec. 1, 1962, 14,134/62
Int. Cl. C07f *9/42*
U.S. Cl. 260—543 19 Claims

Process for preparing arylated thiophosphorus compounds of the formula $Ar_mR_nP(S)X_{3-m-n}$ by reacting a compound of the formula $R_nP(S)X_{3-n}$ with an aromatic compound ArH in the presence of a Friedel-Crafts catalyst at a temperature at which hydrogen halide is given off.

3,504,026
BENZENESULFONYL-UREAS
Walter Aumuller, Kelkheim, Taunus, Helmut Weber and Rudi Weyer, Frankfurt am Main, Karl Muth, Kelkheim, Taunus, and Erich Fauland, Mannheim-Waldhof, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Sept. 7, 1966, Ser. No. 577,619
Claims priority, application Germany, Sept. 10, 1965, F 47,142
Int. Cl. C07c *127/16*
U.S. Cl. 260—553 6 Claims

Nortricyclyl- and adamantyl-substituted acylamidobenzene sulfonyl ureas having hypoglycemic activity are disclosed.

3,504,027
NOVEL DIBENZOCYCLOHEPTENE-5-CARBONYL-UREA AND INTERMEDIATES THEREOF
Martin A. Davis and Dusan M. Dvornik, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 31, 1967, Ser. No. 612,779
Int. Cl. C07c *127/14*
U.S. Cl. 260—553 1 Claim

There are disclosed herein 10,11-dihydro-5H-dibenzo-[a,d]cycloheptene-5-carbonylurea as well as a process for preparing that compound via the intermediates, 2-(10,11-dihydro-5H-dibenzo[a,d]cyclohepten - 5 - ylidene)-oxabolidine-4,5-dione and 10,11-dihydro-5H-dibenzo[a,d]cycloheptene-5-carbonyl isocyanate which are also described. The compound of this invention is useful as an anticonvulsant and antibacterial agent, and formulations for its use are also given.

3,504,028
PRIMARY AMIDES
Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jean-Claude Le Douarec, Suresnes, France, assignors to Societe en nom Collectif Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society
No Drawing. Filed Feb. 27, 1967, Ser. No. 619,006
Claims priority, application Great Britain, Mar. 11, 1966, 10,815/66
Int. Cl. C07c *103/10, 103/20*
U.S. Cl. 260—557 8 Claims

Primary trifluoromethylphenyl isopropyl amides, substituted (1) optionally on the nitrogen atom by lower-alkyl of up to 5 carbon atoms, and (2) on the carbonyl radical by lower-alkyl, lower-cycloalkyl, lower-alkenyl, lower-alkynyl, or carbocyclic aryl. The compounds possess anorexigenic, analgesic, anticonvulsivent, antidepressant, and lipid metabolism-regulating activity.

3,504,029
FLUOROACYLAMINO-TRICHLOROMETHYL-METHANE DERIVATIVES
Christa Fest, Wuppertal-Elberfeld, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 24, 1967, Ser. No. 611,227
Claims priority, application Germany, Feb. 2, 1966, F 48,316
Int. Cl. C07c *97/10*
U.S. Cl. 260—562 3 Claims

The disclosure concerns reacting fluoroacetylamino-trichloromethyl-chloromethane with a substituted mercaptan or mercaptide (M—S—R where M is hydrogen or alkali metal) to form the corresponding 1-(R)-mercapto-1-fluoroacetylamino-2,2,2-trichloro-ethane in which R is nitrile, guanyl, alkoxy-carbonyl, alkoxythiocarbonyl, dialkylamino thiocarbonyl, acyl, alkyl, aryl, substituted aryl, or heterocyclic, or to form the corresponding hydrogen chloride salt, which possess insecticidal and acaricidal properties.

3,504,030
AMINO BICYCLO[6.1.0]NONANES
Berthold Richard Vogt, King of Prussia, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 10, 1967, Ser. No. 622,075
Int. Cl. C07c *85/00, 87/00*
U.S. Cl. 260—563 8 Claims

Bicyclo[6.1.0]nonanes, substituted at the 9-position with an amino, aminomethyl, or α-aminoethyl group, are prepared from the 9-carboxylic acid. The compounds are active against influenza infections.

3,504,031
1-AMINOALKYL-1-PHENYLINDENE PROCESS AND INTERMEDIATE THEREFOR
James M. Berdahl and Robert F. Majewski, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
No Drawing. Filed May 24, 1966, Ser. No. 552,407
Int. Cl. C07c *87/28, 85/02*
U.S. Cl. 260—570.8 11 Claims

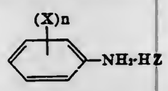
A process for the preparation of a 1-aminoalkyl-1-arylindene which comprises reacting a dimetallo salt of a 3-arylindan-1-ol with one molecular proportion of an aminoalkyl ester in an inert reaction solvent in contact with a reaction inert atmosphere at a temperature of from about room temperature to about —60° C. under anhydrous conditions and thereafter neutralizing or or hydrolyzing the resulting salt of the 3-aminoalkyl-3-arylindan-1-ol and then dehydrating said indanol.

3,504,032
N - ISOBUTYL - N′ - SEC - (OCTYL OR NONYL)-PHENYLENEDIAMINES
Elmar R. Altwicker, Somerville, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 25, 1966, Ser. No. 574,949
Int. Cl. C07c *87/58*; C08f *45/60*
U.S. Cl. 260—577 5 Claims

N-isobutyl-N′-sec-octyl-phenylenediamines and N-isobutyl-N-′-sec-nonyl-phenylenediamines are useful stabilizing additives for rubbery polymers and other compositions normally subject to deterioration by oxygen or ozone.

3,504,033
PROCESS FOR PREPARING N-TERTIARY-ALKYLANILINES AND THEIR HYDROHALIDE SALTS
David Edgar Ailman, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Sept. 8, 1967, Ser. No. 666,489
Int. Cl. C07c 85/06; A01n 9/20
U.S. Cl. 260—577 6 Claims

N-tertiary alkylated aniline compounds and their corresponding acid salts are prepared by reacting one mole of an aniline acid salt of the formula:



where X may be lower alkyl, chloro or bromo, (n=0–2) and where HZ is a hydrohalogen acid, with 1 to 1.5 moles of a tri-lower alkyl carbinol in the presence of at least about 1 mole of the aniline oil corresponding to the above acid salt at 120–220° C.

3,504,034
NITROSOANILINONITROALKANES WITH IMPROVED THERMAL STABILITY
Robert Lee Wright, Nitro, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 8, 1967, Ser. No. 681,569
Int. Cl. C07c 87/60
U.S. Cl. 260—577 10 Claims

The thermal stability of nitrosoanilinonitroalkanes is greatly improved by washing the compounds with an aqueous solution of either an alkali metal hydroxide or an alkaline salt of an alkali metal and drying the base containing products. Nitrosoanilinonitroalkanes are useful to promote the reaction of vulcanizable elastomers and a reinforcing pigment.

3,504,035
PROCESS FOR PREPARING AROMATIC AMINES FROM AROMATIC NITRO COMPOUNDS
Leon Myron Polinski, North Plainfield, N.J., and Ernest Albert Harvey, Franklin, Va., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 1, 1966, Ser. No. 562,099
Int. Cl. C07c 85/10
U.S. Cl. 260—580 9 Claims

Aromatic nitro compounds are converted to corresponding aromatic amine compounds by contacting, under defined reaction conditions, a reaction mixture consisting of vaporized aromatic nitro compound, water vapor and a lower gaseous alkane, with a catalyst consisting of an intimate mixture of reforming and hydrogenation catalysts. A specific example is the conversion of nitrobenzene to aniline using a catalyst consisting of (a) 20% nickel on silica as reforming catalyst and (b) 12% copper on silica as hydrogenation catalyst.

3,504,036
PROCESS FOR THE PRODUCTION OF CYCLOALKANE-1,3-DIONES
Hans Schick, Gerhard Lehmann, and Gunter Hilgetag, Berlin, Germany, assignors to Deutsche Akademie der Wissenschaften zu Berlin, Berlin-Adlershof, Germany
No Drawing. Filed Jan. 19, 1967, Ser. No. 610,223
Int. Cl. C07c 49/28
U.S. Cl. 260—586 4 Claims

Process for the production of cycloalkane-1,3-diones useful as starting materials for the manufacture of steroids by the reaction of monocarboxylic acids or their active derivatives such as their halides or anhydrides with dicarboxylic acids or their active derivatives such as defined above in the presence of Friedel-Crafts catalysts, whereby in the case where the free acids are used as starting materials the mixture of the acids is activated by the addition of thionyl chloride or bromide prior to the addition of the catalyst.

3,504,037
ADDUCTS OF FLUORO-KETONES
Julianne H. Prager, Arden Hills Village, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 520,853, Jan. 17, 1966. This application Nov. 16, 1967, Ser. No. 683,471
Int. Cl. C07c 49/04
U.S. Cl. 260—593 9 Claims

Adducts of highly fluorinated ketones and metal hydroxides are formed by treating the ketone with a dilute aqueous solution of the base, or with solid base. The resulting adducts are stable and the lower members of the series have herbicidal properties.

3,504,038
OZONIZATION OF VEGETABLE OILS IN AN IMPROVED AQUEOUS MEDIUM
Robert E. Beal, Elmwood, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 24, 1966, Ser. No. 560,961
Int. Cl. C07c 49/50
U.S. Cl. 260—601 3 Claims

Formation of a tenacious creamlike phase that limits the ozonizaton of a polyunsaturated vegetable oil in an aqueous medium and wastes costly ozone is prevented by the prior addition of a C_8–C_9 aldehyde or dimethyl acetal thereof and whereby aldehydic products are obtained.

3,504,039
ADDUCTS OF NITROGEN DIOXIDE AND 1,1-DIOXYTETRACHLOROCYCLOPENTADIENES
Richard M. Scribner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,989
Int. Cl. C07c 43/30
U.S. Cl. 260—611 1 Claim

Described and claimed are selected dinitro-1,1-dialkoxy- and dinitro - 1,1 - alkylenedioxy - 2,3,4,5 - tetrachlorocyclopentenes, a process for their preparation from the corresponding 1,1-dialkoxy- and 1,1-alkylenedioxy-2,3,4,5-tetrachlorocyclopentadienes and their application as fungicides.

3,504,040
2,4,6-TRIS(LOWER ALKOXYMETHYL) RESORCINOLS
Alfred J. Kolka, Pittsburgh,, Wun T. Tai, Monroeville, and Roy H. Moult, Murrysville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 565,380, July 15, 1966. This application Feb. 7, 1969, Ser. No. 797,656
Int. Cl. C07c 39/08
U.S. Cl. 260—611 2 Claims

Novel tris-substituted resorcinol compounds such as tris(methoxymethyl) resorcinol are described that act as curing agents and provide reinforcement for rubber compositions and increase the adhesion of fabrics to such rubber compositions.

3,504,041
NONIONIC CONDENSATION PRODUCTS HAVING ENHANCED ACTIVITY
Eugene A. Weipert, Allen Park, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,109
Int. Cl. C07c 43/02; C08g 30/00, 45/00
U.S. Cl. 260—615 3 Claims

Nonionic condensation products having enhanced activity are prepared by the condensation of an essentially linear primary aliphatic alcohol having from 10 to 18 carbon atoms in the aliphatic chain or a mixture of such alcohols with certain critical amounts of a mixture of ethylene oxide and propylene oxide. The products are a cogeneric mixture of compounds represented by the formula:

R—O(A)H

wherein R is an essentially linear alkyl group having from 10 to 18 carbon atoms, with the proviso that at least 70 weight percent of said compounds in said mixture have an R of from 12 to 16 carbon atoms, and A is a mixture of oxypropylene and oxyethylene groups, said oxypropylene and oxyethylene groups being from 55% to 80% of the total weight of the compounds, the oxypropylene to oxyethylene ratio of said total weight being from 0.85:1 to 2.75:1.

3,504,042
PROCESS FOR PRODUCING 2,2-DIMETHYL-1,3-PROPANEDIOL
Yasuo Shimono, Minoo-shi, and Tokuo Yamaguchi, Kyoto, Japan, assignors to Japan Gas-Chemical Company, Inc., Tokyo, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 409,606, Nov. 6, 1964. This application Mar. 21, 1968, Ser. No. 714,897
Claims priority, application Japan, Nov. 6, 1963, 38/59,921
Int. Cl. C07c 31/18; C08g 17/12
U.S. Cl. 260—635 1 Claim

2,2,-dimethyl-1,3-propanediol is prepared from isobutyraldehyde and formaldehyde by first selectively effecting the aldol condensation reaction at a temperature of 10° to 50° C. while maintaining the pH of the reaction mixture between 7.0 and 11.5 and then effecting the crossed Cannizzaro reaction between the intermediately produced oxypivalaldehyde (2,2-dimethyl-3-oxypropanol-(1)) and formaldehyde at a temperature higher than 50° C. and lower than 80° C. while adding portionwise a metal hydroxide to the reaction mixture to maintain the pH of the reaction mixture between 7.0 and 11.5 until the crossed Cannizzaro reaction is substantially completed.

3,504,043
METHOD FOR PRODUCING 1,2-DICHLOROETHANE AND VINYL CHLORIDE FROM ETHYLENE AND HYDROGEN CHLORIDE AND OXYGEN
Naoya Kominami, Yoshiaki Yamasaki, Tokio Sakurai, and Kusuo Kawarazaki, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Oct. 6, 1964, Ser. No. 401,985
Claims priority, application Japan, Oct. 7, 1963, 38/52,463; Oct. 8, 1963, 38/52,532; Apr. 8, 1964, 39/19,479
Int. Cl. C07c 21/02, 17/02, 17/10
U.S. Cl. 260—656 4 Claims

1. A method for producing 1,2-dichloroethane and vinyl chloride comprising contacting a gaseous mixture of ethylene, hydrogen chloride and oxygen with a catalyst supported upon an active carbon carrier at a temperature of from 80° C. to 300° C., the said catalyst consisting of at least one member of the group consisting of gold chlorides, metallic gold, gold oxides, gold hydroxides, gold fluorides, gold bromides, gold iodides, gold cyanides, gold sulfides, gold sulfates, gold nitrates, platinum chlorides, platinum metal, platinum oxides, platinum hydroxides and hydrochloroplatinous acid, platinum ammonium chorides, platinum fluorides, platinum bromides, platinum iodides, platinum sulfates, platinum sulfides, and platinic nitrate; and at least one member selected from the group consisting of copper chlorides, metallic copper, copper oxides, copper hydroxides and copper acetates, copper sulfides, cuprous formate, cuprous iodide, cupric bromide, cupric carbonate, cupric chlorate, cupric phosphate, cupric sulfate and cupric oxalate.

3,504,044
PROCESS FOR SYNTHESIZING TRUXENE
William L. Harper, Wartburg, and Wesley E. Smith, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 9, 1968, Ser. No. 758,381
Int. Cl. C07c 15/20
U.S. Cl. 260—668 2 Claims

This invention relates to a method for making truxene isomers which comprises reacting indene with an aromatic paradicarbonyl compound and a catalytic quantity of an aliphatic tertiary amine under reflux conditions while removing water as a reaction by-product, and thereafter isolating the resultant truxene isomer.

3,504,045
ISOMERIZATION OF ALPHA ISOPROPYL NAPHTHALENE TO BETA ISOPROPYL NAPHTHALENE
Edward Jonathan Scharf, Somerville, and Herbert Rudolph Kemme, Flemington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 724,625, Apr. 26, 1968. This application June 3, 1969, Ser. No. 830,145
Int. Cl. C07c 15/24, 5/24
U.S. Cl. 260—668 2 Claims

The ratio of beta to alpha isomer content in a mixture of alpha and beta isopropyl naphthalenes is substantially increased by contacting the mixture with a solid phosphoric acid catalyst at a temperature above about 275° C.

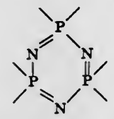
3,504,046
ALKYLATION OF NAPHTHALENE WITH PROPYLENE IN THE PRESENCE OF PHOSPHORIC ACID CATALYST
Edward Jonathan Scharf, Somerville, and Herbert Rudolph Kemme, Piscataway, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 26, 1968, Ser. No. 724,626
Int. Cl. C07c 3/54
U.S. Cl. 260—671 2 Claims

The alkylation of naphthalene with propylene in the presence of solid phosphoric acid catalysts is conducted at temperatures above about 300° C., whereby the ratio of beta- to alpha-isopropyl naphthalene in the product is substantially increased.

3,504,047
MULTISTAGE PROCESS FOR THE SEPARATION OF HYDROCARBONS
John Norman Haresnape, Sunningdale, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England
Filed Apr. 25, 1967, Ser. No. 633,441
Claims priority, application Great Britain, Apr. 27, 1966, 18,386/66
Int. Cl. C07c 7/14
U.S. Cl. 260—674 29 Claims

Mixtures of any of C_8 and C_9 alkyl-aromatic and alkenyl-aromatic hydrocarbons are separated by a multi-

stage process including, in any order, one or more fractional crystallisation steps, one or more optional distillation steps and one or more sorption steps in each of which a liquid or vapour feedstock is contacted with a compound having the basic nuclear structure:



to form a complex with one or more of the components, and recovering the mixture depleted in these components, and the components from the complex.

3,504,048

HYDROCARBON SEPARATION PROCESS

Armand J. de Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 5, 1968, Ser. No. 719,245
Int. Cl. C07c *7/02*
U.S. Cl. 260—674 **6 Claims**

A membrane permeation separation process which involves the separation of para- and meta-xylene isomers. A mixture of para- and meta-xylene is contacted with a selected polymer membrane which through selective permeation enriches the material passing through the membrane in para-xylene.

3,504,049

PURIFICATION OF DETERGENT ALKYLATES

William A. Wentworth, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Sept. 12, 1968, Ser. No. 759,491
Int. Cl. C07c *139/14, 7/00, 25/00*
U.S. Cl. 260—674 **10 Claims**

Hydrocarbon compounds having the general formula C_nH_{2n-8}, where n is an integer from about 10 to 24, are removed from detergent alkylates by selectively halogenating the C_nH_{2n-8} type hydrocarbon compounds present in the detergent alkylate. The halogenated C_nH_{2n-8} type hydrocarbon compounds can then be separated from the detergent alkylate.

3,504,050

ALKYLENE SULFIDE BLOCK INTERPOLYMERS

Riad H. Gobran, Levittown, and Stephen W. Osborn, Yardley, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 165,034, Jan. 8, 1962. This application July 5, 1966, Ser. No. 562,524
The portion of the term of the patent subsequent to Jan. 23, 1985, has been disclaimed
Int. Cl. C08g *23/00*
U.S. Cl. 260—823 **8 Claims**

Disclosed herein are block interpolymers formed from alkylene sulfide monomers and processes for the preparation for such interpolymers. For example, propylene sulfide is added to a bottle containing a catalyst in solution and allowed to stand at room temperature for 3 hours by the end of which time the system became somewhat viscous. Ethylene sulfide was then charged into the bottle which was then capped and it and its contents were allowed to stand overnight under nitrogen at a temperature of approximately 27° C. A white rubbery solid powder was obtained after removal of the solvent and unreacted monomeric materials by drying overnight at 32° C./1 mm. Hg. The copolymer started to melt at 145° C. and at 184° C. had melted completely to form a clear liquid.

3,504,051

CASTABLE SILOXANE BLOCK COPOLYMERS

Donald E. McVannel, Hemlock, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 24, 1967, Ser. No. 655,268
Int. Cl. C08g *47/06*
U.S. Cl. 260—825 **5 Claims**

A castable siloxane block copolymer, curable at room temperature and useful to make molded elastomeric products, coat fabric and encase electrical equipment is composed of a block copolymer of diorganosiloxane blocks of 100 to 1000 units of

$$R_nSiO_{\frac{4-n}{2}}$$

where n is 1.90 to 2.00 and R is methyl, phenyl and vinyl, 90 mol percent being $(CH_3)_2SiO$ units and siloxane blocks of units of

$$(CH_3CH_2O)_mSiO_{\frac{4-m}{2}}$$

where m is 0.5–2.00 and the diorganosiloxane blocks are present in an amount of 50 to 95 mol percent.

3,504,052

ORGANOMETALLIC POLYMERS

Eberhard W. Neuse, Santa Monica, and Edward Quo, Inglewood, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Oct. 6, 1964, Ser. No. 402,005
Int. Cl. C08g *1/18, 15/00, 45/06*
U.S. Cl. 260—836 **14 Claims**

This invention is directed to the provision of a novel class of polymers containing ruthenocene or osmocene units, which are interlinked to form polymeric products of high heat stability and having a variety of other advantageous properties, by reacting a mixture of a metallocene selected from the class consisting of ruthenocene and osmocene, with an aldehyde or a ketone in the melt phase and in the presence of a Lewis acid catalyst.

3,504,053

GRAFT COPOLYMERIZATION OF METHYL METHACRYLATE ONTO POLYVINYL CHLORIDE

George D. Williams, Houston, Tex., assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Oct. 9, 1967, Ser. No. 673,980
Int. Cl. C08f *15/26, 3/30*
U.S. Cl. 260—884 **11 Claims**

A copolymer containing up to 5.5%, by weight, of polymethyl methacrylate grafted onto a PVC backbone polymer exhibits improved processing characteristics by comparison to unmodified PVC homopolymer. This graft copolymer is prepared by contacting the PVC polymer in aqueous suspension with methyl methacrylate monomer in the presence of a free-radical catalyst. The backbone polymer is likewise produced in aqueous suspension, utilizing as catalyst, a combination of lauroyl peroxide and t-butyl peroxypivalate.

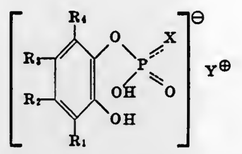
3,504,054

PYROCATECHOL ESTER OF PHOSPHORIC AND THIOPHOSPHORIC ACIDS AND PROCESS FOR MAKING SAME

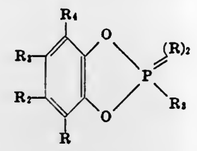
Henning Clerpka, Frankfurt am Main, Germany, assignor to The Battelle Development Corporation, Columbus, Ohio

No Drawing. Filed Mar. 3, 1967, Ser. No. 620,236
Claims priority, application Germany, Mar. 4, 1966, B 86,074
Int. Cl. C07f *9/12, 9/18;* **A01n** *9/36*
U.S. Cl. 260—924 **2 Claims**

Substituted pyrocatechol esters of phosphoric and thiophosphoric acids having the formula:



wherein not more than three of the groups R_1 to R_4 are hydrogen and wherein at least one of said groups may be halogen, nitro groups, sulfonic acid groups, sulfonamide groups and alkyl groups or wherein at R_2 and R_3 a benzene ring or a naphthalene ring is condensed onto the benzene nucleus of the pyrocatechol; X is oxygen or sulfur and Y is hydrogen or an alkali metal, ammonium or lower alkyl substituted ammonium cation have been found to have fungicidal properties. The esters are prepared by reacting at a temperature below 100° C. a cyclic pyrocatechyl phosphorus compound of the formula:



wherein R_1 to R_4 have the same meaning as above, R is sulfur, oxygen or halogen and R_5 is halogen or an acid anhydride radical with a compound of the formula $Y_n(X—H)_m$, wherein X and Y have the same meaning as above and n and m are integers from 1 to 3.

3,504,055

NEUTRAL PRIMARY TERTIARALKYL AMINE SALTS OF TRIPOLYPHOSPHORIC ACID AND PHOSPHORIC ACID ALKYL ESTERS

Harry J. Andress, Jr., and Julius Capowski, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application Sept. 11, 1964, Ser. No. 395,933. Divided and this application Oct. 6, 1967, Ser. No. 673,309
Int. Cl. C07f *9/08;* **C07c** *101/02;* **C10l** *1/26*
U.S. Cl. 260—924 **2 Claims**

Alkylamine salts, suitable for use as stabilizers for liquid hydrocarbons are provided, containing alkyl substituent groups and being salts of either phosphoric acids, phosphoric acid alkyl esters, boric acid, carbonic acid, aminocarboxylic or hydroxyethyl aminocarboxylic acids.

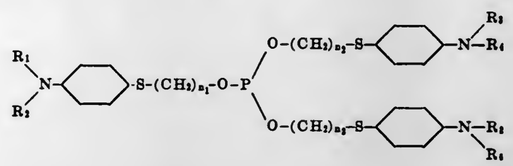
3,504,056

TRI(DIALKYLAMINOPHENYL THIOALKYLENE)PHOSPHITES

Hans Z. Lecher, Plainfield, N.J., and Harry Braus, Springdale, and Jay R. Woltermann, Cincinnati, Ohio, assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,261
Int. Cl. C07f *9/08;* **C08f** *45/58*
U.S. Cl. 260—945 **2 Claims**

Tri(dialkylaminophenyl thioalkylene)phosphites are provided which have the formula:



in which n_1, n_2 and n_3 are integers from two to about six; and R_1, R_2, R_3, R_4, R_5 and R_6 are alkyl having from one to about four carbon atoms.

In addition, stabilizer combinations useful in enhancing resistance of olefin polymers to heat deterioration are provided consisting essentially of the tri(dialkylaminophenyl thioalkylene) phosphites, in combination with carbon black and/or a hindered phenol.

Olefin polymer compositions are also provided having an enhanced resistance to heat deterioration due to the presence therein of a tri(dialkylaminophenyl thioalkylene) phosphite, alone or in combination with carbon black and/or a hindered phenol.

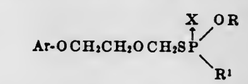
3,504,057

O,O-DIALKYL-S-ARYLOXY-ETHOXYMETHYL PHOSPHATES AND PHOSPHONATES

Llewellyn W. Fancher, Orinda, and Reed A. Gray, Saratoga, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 427,500, Jan. 22, 1965. This application Sept. 11, 1967, Ser. No. 666,992
Int. Cl. C07f *9/16, 9/40;* **A01n** *9/36*
U.S. Cl. 260—951 **7 Claims**

Compounds corresponding to the formula



in which X is oxygen or sulfur, R is lower alkyl, R^1 is lower alkyl or lower alkoxy, and Ar is a nuclear polychlorinated phenyl or naphthyl. The polychlorination is from 2 to 5 chlorine atoms. The naphthyl nuclei are bonded through either the α or β nuclear carbon atoms. The above compounds are effective herbicides, particularly for the control of grasses and broadleaf plants with both pre-emergence and post-emergence activity. Representative compounds are: 2,4-dichlorophenoxyethyl-oxymethyl-O,O-diethyl phosphorodithioate, β-naphthoxyethyloxymethyl - O,O - dimethylphosphorodithioate, 2,4,5 - trichlorophenoxyethyloxymethyl - O,O - diethylphosphorothiolate, 2,4,5 - trichlorophenoxyethyl-O-ethylmethylphosphonodithioate.

3,504,058
PROCESS FOR MANUFACTURING SINTERED PELLETS OF NUCLEAR FUEL

Yves J. M. Masselot, Manosque, France, assignor to Commissariat a l'Energie Atomique, Paris, France

No Drawing. Filed Feb. 2, 1968, Ser. No. 702,507
Claims priority, application France, Feb. 13, 1967, 94,722
Int. Cl. G21c *21/00*
U.S. Cl. 264—.5 **4 Claims**

For manufacturing sintered pellets of nuclear oxide fuel, a sintering inhibitor, preferably zinc behenate or zinc stearate is added to powder of uranium, plutonium and/or thorium dioxide, the mixture is cold pressed into bodies, the bodies are broken into granules and the granules are coated with the sintering inhibitor, cold pressed into pellets and sintered in a reducing atmosphere at a temperature equal to or higher than 1500° C.

3,504,059
METHOD AND APPARATUS FOR MAKING THREE DIMENSIONAL PICTURES

William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

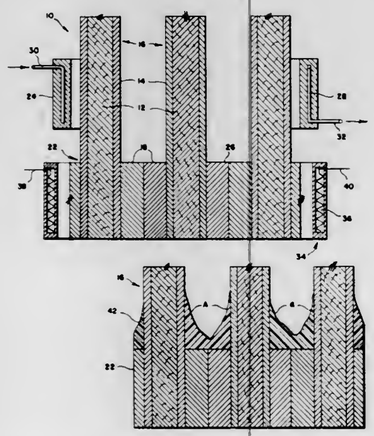
Filed Oct. 12, 1965, Ser. No. 495,276
Int. Cl. B29d *11/00*; G02b *17/06*; G03c *9/00*
U.S. Cl. 264—1 **4 Claims**

The present invention relates to an improved method and apparatus for making three dimensional lenticular pictures and particularly color pictures of this type.

3,504,060
METHOD OF STRENGTHENING FLEXIBLE FIBER BUNDLES

William L. Gardner, Wellesley, Mass., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 489,678, Sept. 23, 1965. This application Mar. 10, 1969, Ser. No. 813,396
Int. Cl. B29d *11/00*; B32b *31/06*
U.S. Cl. 264—1 **9 Claims**

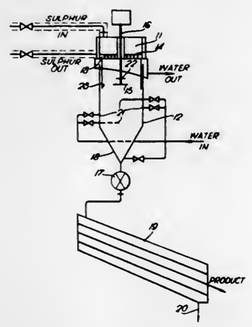


A flexible fiber optical bundle composed of a plurality of fibers orientated in spaced apart generally parallel relation and terminating in at least one rigid end is strengthened at the interface between the fibers and the rigid end by establishing a temperature gradient parallel to and along the longitudinal axes of the fibers of the bundle in a zone including said rigid end and the fibers adjacent thereto with the higher temperature of such established gradient being at the rigid end. With such temperature gradient established a hardenable fluid, which when hardened is solid at room temperature, is flowed as a liquid generally radially into the bundle adjacent the rigid end so that it flows from the outside of the bundle into the center with substantially little flow along the longitudinal axes of the fibers. The temperature gradient ensures the correct distribution of the liquid which is then permitted to cure or set.

3,504,061
METHOD OF PREPARING SULPHUR PELLETS

Herbert James Elliott, Bradford-on-Avon, England, assignor to Elliott Associated Developments Limited, London, England, a corporation of the United Kingdom

Continuation of application Ser. No. 488,039, Sept. 17, 1965. This application Nov. 18, 1968, Ser. No. 776,830
Int. Cl. B22d *23/08*; B29c *23/00*
U.S. Cl. 264—9 **9 Claims**



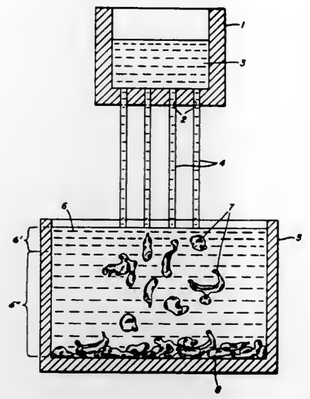
A method for making sulphur pellets by delivering molten sulphur into a body of water which is agitated, and which may also contain a surface-active polymeric agent to prevent the resulting globules of sulphur from reuniting before cooling sufficiently to prevent mutual adhesion. The molten sulphur can be introduced into the water by streams entering a free-air space separated from the water surface, preferably from above. The pellets resulting have hard rounded surfaces and contain less than 1% locked-in moisture.

3,504,062
METHOD OF PRODUCING ALUMINUM PARTICLES

Ronald Bachowski, Monroeville, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1968, Ser. No. 707,094
Int. Cl. B22d *23/08*
U.S. Cl. 264—13 **2 Claims**

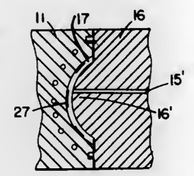
A mass of solid individual irregular-shaped aluminum particles each particle having a length of between 0.3 and 2.2 inches, a length to minimum width ratio of 4:1 to 30:1, and a length to maximum width ratio of 1.1:1 to 4:1 which mass tends to pack loosely together in any space occupied by a mass of the particles. Producing a mass of these aluminum particles by conducting a $\frac{5}{32}$ to $\frac{9}{32}$ of an inch, in diameter, stream of molten aluminum at a velocity of 7.5 to 30 feet/second into a liquid quenching medium; initially solidifying the conducted stream in a first heat extraction zone into discrete partially solidified irregular-shaped particles having a solid shell surrounding a core or molten metal; and further effecting solidification of the partially solidified particles in a second heat extraction zone to produce the desired particles.



3,504,063
ARTICLE DECORATION APPARATUS AND METHOD

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 734,340, May 9, 1958, now Patent No. 3,173,175. This application Dec. 29, 1964, Ser. No. 421,897
Int. Cl. B29c *9/00*; B29f *5/00, 1/10*
U.S. Cl. 264—24 **16 Claims**



The provision of an apparatus and method for selectively depositing a particulate material against one or more selected areas of the surface of a mold, retaining said material against the areas on which it is deposited, and solidifying the deposited material either prior to or immediately after disposing a molding material in the mold in a manner to fuse the deposited material to the molding material so as to form a unitary and integral structure of the two.

3,504,064
METHOD OF COMPRESSING AND SUBSEQUENTLY RE-EXPANDING UREA-FORMALDEHYDE FOAM

William H. Bauer, Medway, Mass., assignor to Floral Development Corp., Holliston, Mass., a corporation of Massachusetts

Filed Feb. 26, 1968, Ser. No. 708,396
Int. Cl. B29d *27/00*; B29h *7/20*; B29g *7/02*
U.S. Cl. 264—28 **8 Claims**

A method of compressing foam plastic articles to permit subsequent re-forming for shipment and use respectively is provided. Preferably a urea-formaldehyde foam, shaped article having a first form is compressed while wet with the use of heat and pressure, after which the

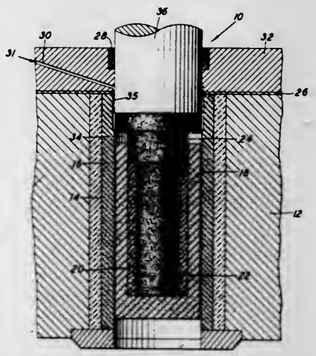


article is cooled to harden the foam in the compressed form. Subsequently, the foam article can be heated to restore the foam to substantially the first form.

3,504,065
METHOD FOR SUPPRESSING THE ESCAPE OF VOLATILES WHILE PRESSURE BAKING CARBON ARTICLES

Theodore Edstrom, Parkview, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Continuation of application Ser. No. 572,573, Aug. 15, 1966. This application May 1, 1969, Ser. No. 824,361
Int. Cl. B29c *25/00*; C01b *31/00*
U.S. Cl. 264—29 **3 Claims**



An improved method for making a formed carbon article is provided. The method includes the simultaneous application of a mechanical and pneumatic pressure while heating a carbonaceous charge to a carbonization temperature. The charge is initially provided with a high binder content which together with the use of a pneumatic pressure which suppresses the escape of volatiles from the charge enables a strong, highly dense article to be produced.

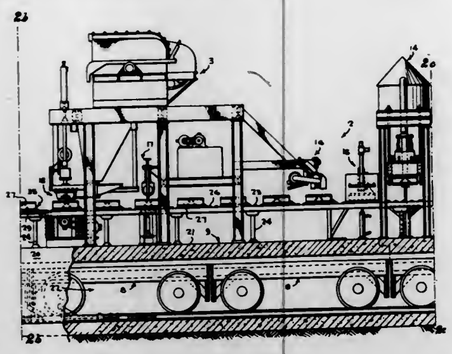
3,504,066
METHOD OF FORMING PRESTRESSED CONCRETE ARTICLES

Robert S. Baker, Temple Terrace, Fla., assignor, by mesne assignments, to American Concrete Crosstie Corporation, Tampa, Fla., a corporation of Florida

Application Feb. 27, 1967, Ser. No. 618,743, now Patent No. 3,384,939, dated May 28, 1968, which is a division of application Ser. No. 344,095, Feb. 11, 1964, now Patent No. 3,305,907, dated Feb. 28, 1967. Divided and this application Feb. 26, 1968, Ser. No. 708,135
The portion of the term of the patent subsequent to Feb. 28, 1984, has been disclaimed
Int. Cl. B28d *1/08, 21/60*
U.S. Cl. 264—39 **3 Claims**

A method of forming prestressed concrete articles in inverted position in a pallet wherein the pallet is moved along a path to a plurality of stations where the pallet is cleaned, oiled, stressing cables laid across the pallet, the cables stressed and held stressed by the pallets. The

pallet is then moved to a molding position where the concrete is poured, compressed and vibrated. The pallet with the formed article is removed from the path for curing,

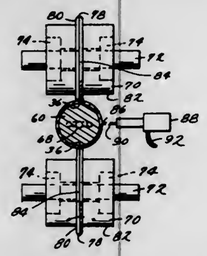


then returned and the article removed and turned to proper position. Apparatus for performing the method is disclosed generally.

3,504,067
METHOD AND APPARATUS FOR MANUFACTURING COLLAPSIBLE FLEXIBLE PLASTIC CONTAINER TUBES

Louis J. Trecek, Metuchen, N.J., assignor, by mesne assignments, to Dart Industries Inc., a corporation of Delaware

Original application Nov. 10, 1965, Ser. No. 507,108, now Patent No. 3,353,714, dated Nov. 21, 1967. Divided and this application Aug. 15, 1967, Ser. No. 669,337
Int. Cl. B29c *15/00;* **B29d** *23/20*
U.S. Cl. 264—40 **5 Claims**



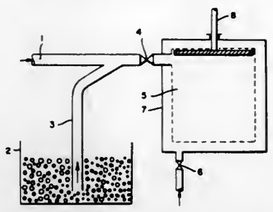
Diametrically opposed relatively narrow, longitudinally extending, sharply defined regions of thickness discontinuity are provided in the sidewall of a collapsible, flexible plastic container tube. Sensing the location of a contrast spot on the tube permits accurate, uniform placement of the two discontinuity regions on the tube, and of the tube end.

3,504,068
PROCESS FOR MOLDING COMPLETELY EXPANDED POLYOLEFIN PARTICLES

Johann Zizlsperger, Frankenthal, Pfalz, and Fritz Stastny, Gilbert Beck, and Hermann Tatzel, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Dec. 13, 1967, Ser. No. 690,215
Claims priority, application Germany, Dec. 16, 1966, 1,629,316
Int. Cl. B29d *27/08*
U.S. Cl. 264—41 **4 Claims**

A process for the production of expanded plastics moldings in which heated particles of a completely expanded olefin polymer are introduced into a mold, the gas pressure in the mold is then increased, the volume of the cavity is decreased to 90 to 40% of the original bulk volume of the particles introduced, and then the

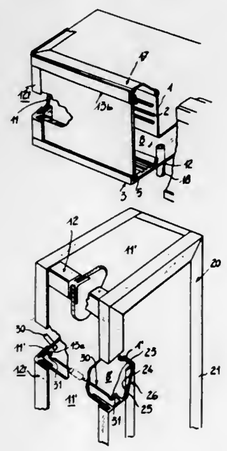


pressure in the mold is decreased, to cause the particles to bond together. The surface of the particles may be coated with a curable binder prior to the molding process.

3,504,069
METHOD FOR MANUFACTURING THERMALLY-INSULATED CABINETS FOR REFRIGERATORS AND THE LIKE

Giovanni Borghi, Comerio, Varese, Italy

Filed May 16, 1966, Ser. No. 550,384
Int. Cl. B29h *12/00*
U.S. Cl. 264—45 **4 Claims**



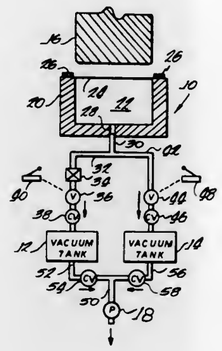
A thermally-insulated cabinet particularly suitable for refrigerators, freezers, and the like, and a method for manufacturing such a cabinet. The cabinet has an external casing and an internal casing defining with the external casing a space which is filled with polyurethane foam or the like. The external casing is composed of a number of panels and a plurality of extrusions situated along edge and corner regions of the external casing and formed with grooves which initially loosely receive the edges of the panels to form therewith the external casing which initially is composed only of the loosely assembled panels and extrusions. This latter external casing together with the internal casing are placed in a suitable mold or the like where their positions with respect to each other are maintained, and then the foamable plastic, such as polyurethane, is introduced into the space between the casings to set and harden therein. This plastic filling not only acts as a thermal insulation, but in addition it acts to fixedly assemble the internal casing and the components of the external casing to each other in a substantially rigid manner preventing movement of any of the components of

the casings, one with respect to the other, so that in this way the filling serves as a connecting and holding structure as well as an insulation material. Thus, the cabinet includes an outer casing composed of panels and grooved extrusion members and the like and an inner casing all held together by the insulating plastic which fills the gap between the external and internal casings.

3,504,070
VACUUM FORMING METHOD AND APPARATUS

Zigmund J. Zaharski, Chicago, Ill., assignor to Comet Industries, Inc., Bensenville, Ill., a corporation of Illinois

Filed Feb. 19, 1968, Ser. No. 706,559
Int. Cl. B29c *17/04*
U.S. Cl. 264—89 **12 Claims**

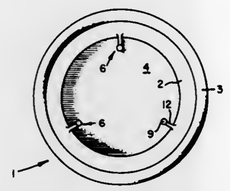


As the male die presses the heated plastic sheet into the female die, a vacuum is applied to the internal cavity of the female die from a first vacuum chamber communicating therewith and, when the plastic sheet is close to the shaping surface of the female die, a vacuum is applied to the internal cavity of the female die from a second vacuum chamber. Both vacuum chambers are evacuated by a single pump.

3,504,071
METHOD OF MAKING STACKABLE CONTAINERS AND APPARATUS FOR THEIR MANUFACTURE

Gaylord W. Brown, Beaverton, Mich., assignor to Brown Machine Company of Michigan, Inc., a corporation of Michigan

Filed June 27, 1966, Ser. No. 560,534
Int. Cl. B29c *17/04*
U.S. Cl. 264—92 **2 Claims**



Differential pressure forming of a stackable container wherein a sheet of heated, thermoplastic material is deformed into a mold cavity having pins upstanding from the bottom of a cavity and spaced from the inner wall thereof so as to interrupt movement of portions of the plastic sheet toward the cavity bottom and form upstanding protuberances at the bottom of a container. The portions of the plastic sheet adjacent the interrupted portions continue to move during the molding process so as to surround the upstanding pins and form confronting, double thickness walls which extend radially outwardly from the projections.

3,504,072
METHOD OF PREPARING OPAQUE SHEET MATERIAL

Theodor Ploetz, Hosel, Kreis Mettmann, Germany, assignor to Feldmuhle Aktiengesellschaft, Dusseldorf, Germany

No Drawing. Continuation of application Ser. No. 311,976, Sept. 27, 1963. This application Aug. 26, 1966, Ser. No. 575,931
Claims priority, application Germany, Sept. 28, 1962, F 37,911
Int. Cl. C08d *13/16;* **B32b** *31/12*
U.S. Cl. 264—112 **9 Claims**

Extremely light, but fully opaque writing or printing paper is produced by impregnating a light, porous, fibrous web with a solution of a synthetic resin in a low-boiling organic solvent containing enough of a less volatile, but still low-boiling non-solvent for the resin to cause precipitation of resin particles on and between the substrate fibers when the solvent is evaporated well below the fusion temperature of the resin, and the non-solvent is evaporated thereafter without fusing the resin. Self-supporting opaque films are similarly produced on an impervious substrate.

3,504,073
METHOD OF PREPARING FIBER BOARDS

John F. Rakszawski, Somerset, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

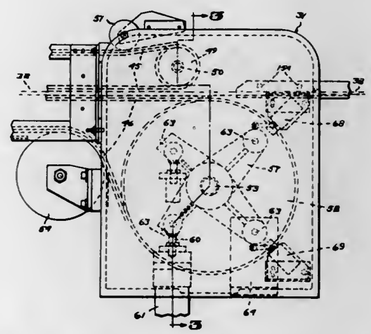
No Drawing. Filed Oct. 23, 1967, Ser. No. 677,019
Int. Cl. D04h *1/16;* **B29j** *5/00*
U.S. Cl. 264—113 **9 Claims**

Low to medium density fiber boards with smooth, hard finished surfaces ready for printing are prepared by cold prepressing a fiber board mat with an outer pith layer at low pressures and then hot pressing the mat at higher pressures.

3,504,074
CONTINUOUS PRODUCTION OF ARTICLES FROM A ROLL OF THERMOPLASTIC MATERIAL

Gerald A. Snow, Cumberland Foreside, Maine, assignor to United Industrial Syndicate, Inc., Portland, Maine, a corporation of New York

Filed July 17, 1967, Ser. No. 653,886
Int. Cl. B29c *17/08*
U.S. Cl. 264—153 **11 Claims**



Method of and apparatus for continuously forming articles from a roll of thermoplastic material with equal lengths of the sheet material from the roll being advanced

step-by-step through heating, forming, and blanking stations with the sheet material marginally held until sufficiently cooled to permit the articles to be blanked without warping and with article printing while they are cooling, with a cooled article being clamped to position the leading article to be blanked and with the punching of the clamped article.

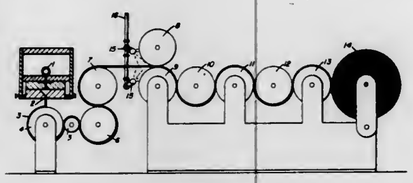
3,504,075
METHOD OF MANUFACTURING HIGH-GLOSS POLYMERIC FILMS

Robert F. Williams, Jr., Webster, and Richard H. Jenks, Rome, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 9,567, Feb. 18, 1960. This application Oct. 26, 1967, Ser. No. 678,303

Int. Cl. B29d *7/14*

U.S. Cl. 264—175 **16 Claims**



Increased stiffness and better clarity of polymeric films can be obtained by (cold) compression rolling relatively thick films of the polymers, provided the films are coated with enough liquid "lubricant" to form a "hydrodynamic wedge" at the juncture of the rolls with the film. Films having higher modulus and greater clarity (than could otherwise be produced) can be manufactured by this process.

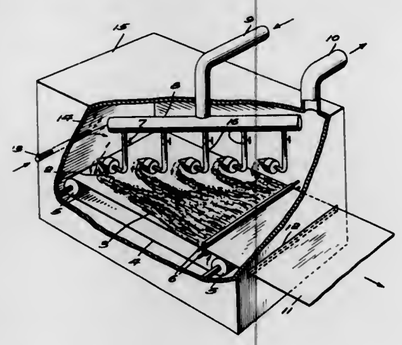
3,504,076
COOLING OF FLASH SPINNING CELL ATMOSPHERE

Chi Chang Lee, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 6, 1967, Ser. No. 628,869

Int. Cl. D01d *5/04;* **D01f** *7/02;* **B29d** *27/00*

U.S. Cl. 264—205 **4 Claims**



The properties of a nonwoven plexifilamentary web of polyethylene are improved by utilizing a closed spin-cell in which the gaseous atmosphere is maintained at temperatures of from about 34° C. to about 60° C. Cooling of the atmosphere may be effected by injecting therein fine droplets of a volatile liquid which has a normal boiling point below the desired cell temperature.

3,504,077
STRETCH-STRAIGHTENING OF ORIENTED POLYAMIDE STRAPPING

William Henry Sloan, Vienna, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 23, 1967, Ser. No. 648,235

Int. Cl. D01d *5/00*

U.S. Cl. 264—210 **5 Claims**

A process for reducing internal differential strain in elongated highly oriented, crystalline, polyamide strapping which comprises subjecting such strapping to tension at a temperature at least 50° C. below the melting point, according to ASTM method D2117–64, of the polyamide resin.

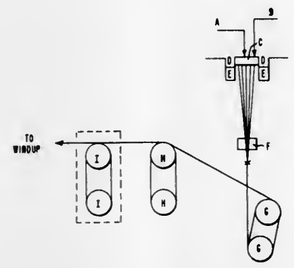
3,504,078
MELT SPINNING PROCESS

Tin Yam Au, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 29, 1967, Ser. No. 671,832

Int. Cl. D01d *5/12*

U.S. Cl. 264—210 **1 Claim**



This invention provides a high speed, melt-spinning process for producing mixed shrinkage yarn of enhanced differential filament length.

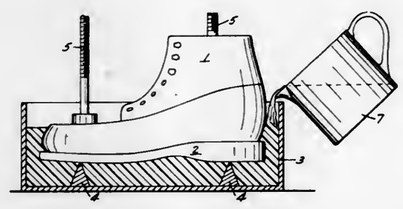
3,504,079
PROCESS OF FORMING MOLDS AND SHOE SOLES IN SITU

Myron W. Hall, Sunfish Lake, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application July 28, 1965, Ser. No. 475,334. Divided and this application Mar. 28, 1968, Ser. No. 721,553

Int. Cl. B29h *7/08*

U.S. Cl. 264—225 **6 Claims**



Method for forming molds and shoe soles in situ in which a mold formed from a single cast elastomeric polyurethane piece having an opening on one side with an

inwardly projecting lip encircling the opening to support a shoe upper placed over the mold, liquid polyurethane-forming reaction mixture being cast into the cavity, hardened at a low temperature and then stripped from the mold, encircling lip being sufficiently flexible to permit stripping of shoe from mold without tearing away of sole.

3,504,080
METHOD OF PRODUCING DIMENSIONALLY-STABLE INJECTION MOLDED POLYESTERS

Erhard Siggel, Laudenbach (Main), Germany, Hilmar Roedel, Therwil, Switzerland, and Walter Rein, Obernburg (Main), Germany, assignors to Glanzstoff AG, Wuppertal, Germany

No Drawing. Original application July 19, 1963, Ser. No. 296,380, now Patent No. 3,361,848, dated Jan. 2, 1968. Divided and this application Oct. 12, 1967, Ser. No. 674,713

Claims priority, application Germany, July 27, 1962, V 22,843

Int. Cl. B29f *1/00;* **B29c** *25/00*

U.S. Cl. 264—235 **9 Claims**

Method of producing injection molded polyesters of aromatic dicarboxylic acids and saturated diols, especially polyethylene terephthalate, which have improved properties of dimensional stability at elevated temperatures, by intimately mixing with the polyester up to 10% by weight of a high molecular weight polyolefin of 3 to 6 carbon atom monoolefins, injection molding the resulting mixture into a molded article, and then heat-setting the molded article at a temperature of at least about the second order transition point of the polyester. Polypropylene and poly-4-methylpentene-1 are preferred polyolefin modifiers. The resulting heat-set molded articles are useful under conditions where dimensions must be maintained at elevated temperatures.

3,504,081
LUBRICANTS

Erwin Aron, Clifton, N.J., assignor to Technical Processing, Inc., Paterson, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 13, 1967, Ser. No. 667,350

Int. Cl. B28b *7/36, 7/38*

U.S. Cl. 264—338 **16 Claims**

Lubricants which are particularly useful as parting agents in the molding of rubber articles comprise a mixture of from 3 to 25 parts by weight of a dialkyl phthalate, and/or a dibenzoate of dipropylene glycol or tripropylene glycol; 15 to 35 weight percent of a mono-alkylphenyl ether of a lower polyethylene glycol; and from about 40 to about 80 weight percent of higher polyethylene glycols and/or their alkylphenyl mono-ethers.

3,504,082
MEDICAMENT ENTERIC-COATED WITH ACETONE-SOLUBLE METHYL CELLULOSE DICARBOXYLATES

Carl J. Malm, John W. Mench, Brazelton Fulkerson, and John Emerson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application July 24, 1963, Ser. No. 297,205. Divided and this application May 4, 1967, Ser. No. 647,580

Int. Cl. A61j *3/06, 3/07;* **A61k** *9/04*

U.S. Cl. 424—35 **3 Claims**

It has been discovered that dicarboxylic acid esters of methyl cellulose (such as, for example, methyl cellulose phthalate) are valuable as enteric coatings for medicaments, wherein the coated medicament is insoluble in stomach secretions but is soluble in alkaline intestinal fluids. This application is specifically directed to medicaments coated with the valuable dicarboxylic acid esters of methyl cellulose.

3,504,083
ANTI-PLASMIN MEANS AND METHOD

Van B. Philpot, Jr., P.O. Box 312, Houston, Miss. 38851

No Drawing. Continuation-in-part of application Ser. No. 318,076, Oct. 22, 1963. This application Mar. 21, 1967, Ser. No. 624,724

Int. Cl. A61k *23/00*

U.S. Cl. 424—101 **3 Claims**

A means and method of preventing or inhibiting fibrinolysis caused by materials normally occurring in living organisms is provided by the use of snake serum.

3,504,084
PLACENTAL EXTRACT AND METHOD OF PRODUCING THE SAME FROM HUMAN PLACENTA FOR USE IN RELIEVING RHEUMATIC DISEASES

Eugene F. Traut, Oak Park, Ill., assignor of one-half to Michael G. Mulinos, Westfield, N.J.

No Drawing. Continuation-in-part of application Ser. No. 373,847, June 9, 1964. This application Apr. 25, 1967, Ser. No. 633,379

Int. Cl. A61k *17/06*

U.S. Cl. 424—105 **1 Claim**

A placental extract and method of producing a water soluble human placental extract free of steroid hormones for treatment of rheumatic diseases of human beings which comprises removing membranes, blood clots and blood from freshly expelled human placenta, cutting the placenta into small pieces, adding a saline solution to the pieces, homogenizing the saline mixture in a blender, filtering the homogenate, centrifuging the filtrate, after which the filtrate is bottled, sterilized and quick frozen.

3,504,085
PROCESS FOR PREPARATION OF AN ANTI-EDEMATIC COMPOSITION

Peter Wilhelm Patt and Günther Karl Wilhelm Vogel, Cologne, Germany, assignors to Dr. Madaus & Co., Cologne, Germany

No Drawing. Filed May 3, 1966, Ser. No. 553,686

Claims priority, application Germany, May 28, 1965, M 65,393

Int. Cl. A61k *27/14*

U.S. Cl. 424—195 **4 Claims**

An anti-edematic preparation is obtained by disintegrating citrus peels in water to form a paste, separating and concentrating a clear solution from the paste, precipitating the concentrate with an aqueous ammonium sulfate solution and drying and pulverizing the precipitate.

3,504,086
PROCESS FOR KILLING NEMATODES USING SULFENYL PHOSPHORYL AMIDATES

Paul C. Aichenegg, Prairie Village, Kans., assignor to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,534

Int. Cl. A01n *9/36*

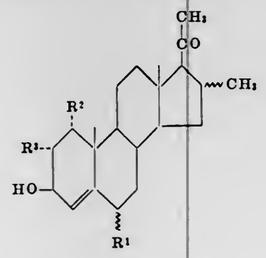
U.S. Cl. 424—219 **10 Claims**

Trihaloethyl sulfenyl phosphor bis-amidates and dihalovinyl sulfenyl phosphor bis-amidates are prepared by reaction of the corresponding trihaloethyl sulfenyl phosphoryl dichloride or dihalovinyl sulfenyl phosphoryl di-

chloride with a primary or secondary aryl or alkyl amine or with aziridine. The amidates formed are useful as nematocides and fungicides. The preferred compound is 2,2-dichlorovinyl sulfenyl phosphor-N-monoisopropyl bisamidate. The compounds of the present invention are prepared by starting with the trihaloethyl or dihalovinyl sulfenyl phosphoryl dihalides prepared in Aichenegg et al. application Ser. No. 553,022, filed May 26, 1966 now U.S. Patent No. 3,454,679.

3,504,087
6-SUBSTITUTED DERIVATIVES OF 16-METHYL-4-PREGNENE-3β-OL-ONE
Klaus Irmscher, Karl-Heinz Bork, Hans-Gunther Kraft, and Hartmut Kieser, Darmstadt, Germany, assignors to E. Merck AG., Darmstadt, Germany
No Drawing. Filed July 27, 1967, Ser. No. 656,352
Claims priority, application Germany, Aug. 6, 1966, M 70,493; Aug. 12, 1966, M 70,554; Feb. 9, 1967, M 72,705; Mar. 3, 1967, M 73,009; May 20, 1967, M 74,052
Int. Cl. A61k *17/00*
U.S. Cl. 424—243 **8 Claims**

Steroids and the $\Delta^{6(7)}$ derivatives thereof of the formula:



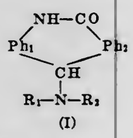
wherein

R^1 is F, Cl, Br, CH_3 or CF_3; and
R^2 and R^3 each represents hydrogen or together represent $—CH_2—$,

such species possess gestagenic, ovulation-inhibiting, cycle-influencing, antiandrogenic, antiestrogenic, antifertility, and gonadotropin-influencing activities.

3,504,088
PHARMACEUTICAL COMPOSITION CONTAINING 11-AMINO-6-MORPHANTHRIDONES
Gordon Northrup Walker, Morristown, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 598,979, Dec. 5, 1966. This application Mar. 13, 1967, Ser. No. 622,407
Int. Cl. A61k *27/00*
U.S. Cl. 424—244 **1 Claim**

11-amino-5,6-dihydro-6-morphanthridones of the Formula I



$Ph_{1,2}$=a 1,2-phenylene
R_1=H or lower alkyl or alkcnyl
R_2=aza-, oxa- or thia-alkyl, -aralkyl or -cycloalkyl-alkyl
R_1+R_2=aza-, oxa- or thia-alkylene or -aralkylene

acyl derivatives, iminoethers, salts and quaternaries thereof, particularly the 2-chloro-11-(4-methyl-piperazino)-5,6-dihydro-6-morphanthridone, inhibit gastric secretion.

3,504,089
3,4,5-TRIARYLCYCLOHEXYLAMINE COMPOSITIONS
Michael Mullen Robison, Watchung, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 549,180, May 11, 1966. This application Apr. 20, 1967, Ser. No. 632,215
Int. Cl. A61k *27/00*
U.S. Cl. 424—246 **3 Claims**

Pharmaceutical compositions comprising essentially:

(1) a 3,4,5-triaryl-cyclohexylamine,
(2) a 3,4 - dihydro - 1,2,4 - benzothiadiazine-1,1-dioxide and, if desired,
(3) a hypotensive agent, are useful diuretics.

3,504,090
1 - HYDROXYETHYL - 4,5 - DIPHENYLIMIDAZOLE ANTI - PHLOGISTIC AND ANTI-HISTAMINIC COMPOSITION
Iwao Kawakami, 609 Kugayama Heim, 492–7 2-chome, Kugayama, Suginami-ku, Tokyo, Japan
Continuation-in-part of applications Ser. No. 362,910, Apr. 27, 1964, and Ser. No. 410,043, Oct. 20, 1964. This application Dec. 29, 1966, Ser. No. 605,813
Int. Cl. A61k *5/00, 27/00*
U.S. Cl. 424—273 **3 Claims**

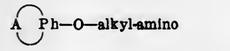
The addition of 1-hydroxyethyl-4,5-diphenylimidazole to cosmetics prevents or reduces the possibility of skin irritations or allergic reactions to cosmetic components. The compound has been found to have anti-phlogistic and anti-histaminic properties as well as the property of causing alternate dilating and contracting of peripheral blood vessels decreasing in intensity until normal pressure conditions appear.

3,504,091
METHOD OF COMBATTING FUNGI WITH N,N DI-ALKYL SUBSTITUTED DITHIOCYANOANILINES
Stig Hjalmar Johannes Akerstrom, Bofors, Sweden, and Albert Tempel, Van Houtenlaan, Weesp, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 6, 1965, Ser. No. 493,567
Int. Cl. A01n *9/18*
U.S. Cl. 424—302 **3 Claims**

Dialkylamino-dithiocyanoanilines as fungicides. An example is N,N-dimethyl-2,4-dithiocyano-aniline.

3,504,092
1,2-DIARYL-6-TERTIARY AMINO LOWER ALKOXY-3,4-DIHYDRO NAPHTHALENES AS HYPOCHOLESTEREMIC AGENTS
William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,933
Int. Cl. A61k *27/00*
U.S. Cl. 424—330 **2 Claims**

Pharmaceutical compositions comprising the basically etherified bicyclic phenol of the formula

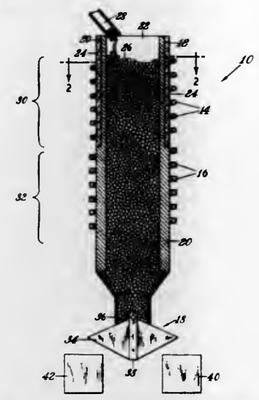


A=lower aliphatic or araliphatic radical forming with Ph a 6–7 membered ring
Ph=a 1,2-phenylene

N-oxides, quaternaries or salts thereof, and a pharmaceutical excipient are hypocholesterolemic agents.

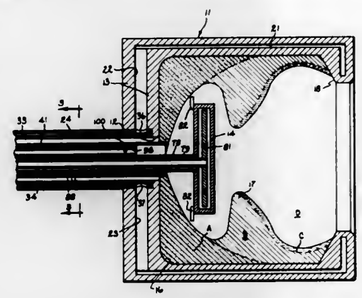
ELECTRICAL

3,504,093
INDUCTION FURNACE APPARATUS FOR THE MANUFACTURE OF METAL CARBIDE
John A. Persson, Kenmore, N.Y., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Nov. 1, 1968, Ser. No. 772,705
Int. Cl. H05b *5/00;* **C22d** *7/08*
U.S. Cl. 13—26 **11 Claims**



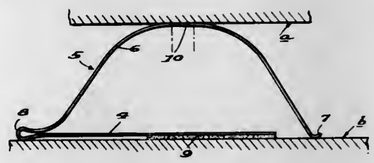
An apparatus for the continuous production of metal carbide products is provided. The apparatus is characterized by a columnar furnace having a hollow shaft into which the reactant materials are fed, and a cooling zone positioned immediately adjacent a heating zone along the shaft. A temperature drop in excess of 1000° C. is experienced from the upper part of the shaft to the lower part of the shaft with this construction, thereby enabling metal carbide products to be continuously produced and removed from the furnace without adverse effects due to oxidation.

3,504,094
METHOD AND APPARATUS FOR FEEDING PARTICULATE MATERIAL TO A ROTATING VACUUM VAPORIZATION CRUCIBLE
Charles d'A. Hunt and Harold A. Peterson, Orinda, Calif., assignors, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,656
Int. Cl. H05b *7/18*
U.S. Cl. 13—31 **16 Claims**



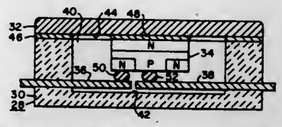
A method and apparatus for feeding particulate material into a rotating vapor source crucible in a vacuum deposition system is described. The material is introduced through an axial conduit in the crucible. The material disposed along the cylindrical wall of the crucible is melted and vaporized by an electron beam. A vapor barrier is positioned near the opening of the conduit into the crucible to prevent vapor from entering the conduit. The barrier may be comprised of a shield and an annular projection formed in the material itself.

3,504,095
SHIELDING GASKETS
James Harvey Roberson and Edward B. Price, West Caldwell, N.J., assignors to Instrument Specialties Company, Inc., West Paterson, N.J., a corporation of New Jersey
Filed Jan. 30, 1968, Ser. No. 701,784
Int. Cl. F16j *15/08;* **H05k** *9/00*
U.S. Cl. 174—35 **7 Claims**



A shielding gasket to be mounted in a door or joint of electical apparatus for the purpose of isolating the electromagnetic environments between the mating surfaces. The gasket is formed of sheet metal of electrical conducting material having an adhesively coated longitudinal attaching section which supports one end of transverse fingers, the fingers being bent backward over the attaching section with a bridging section which makes contact at both ends and the middle with the mounting surface and the mating surface of the joint, respectively.

3,504,096
SEMICONDUCTOR DEVICE AND METHOD
Fred I. Nagel, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1968, Ser. No. 701,984
Int. Cl. H05k *5/02*
U.S. Cl. 174—52 **3 Claims**

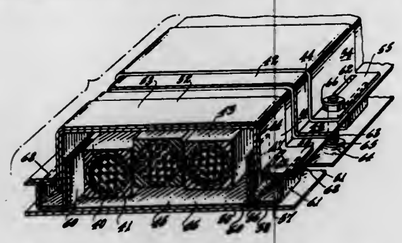


A semiconductor device including a semiconductor wafer within a dielectric case, the wafer being bonded on one side to electric leads extending through the case and on the other side to a metal cover, and the cover being bonded to the case.

3,504,097
ELECTRICAL CONDUIT
Elmer T. Carlson, Center Valley, Pa., assignor to Broadhill Development Corporation, Granby, Conn., a corporation of Connecticut
Filed Oct. 22, 1968, Ser. No. 769,485
Int. Cl. H01b *7/36*
U.S. Cl. 174—68 **23 Claims**

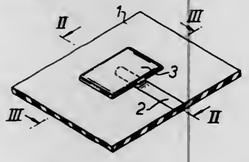
A conduit for multiple electric conductors, including sections of discrete length through which are threaded multiple conductors of indefinite length. The housing has

an expanded position for threading the conductors through the conduit and a contracted position. In the contracted position rectangular walls of insulation are in direct contact with the housing. The housing conductors are stranded and flexible, and the insulation is rectangular to engage



the inside of the conduit wall. The conductors may be rectangular to conform to the shape of the insulation. Members must be displaced or bent to contract the housing in the preferred form. The insulation on the conductors may be joined by adhesive to form cables.

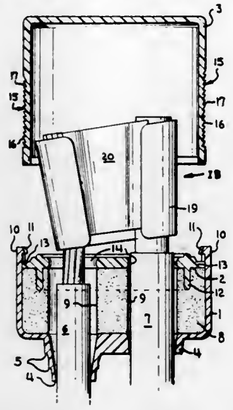
3,504,098
PRINTED CIRCUIT PANEL
Geoffrey William Clark, Bramcote, Beeston, England, assignor, by mesne assignments, to Resources and Facilities Corporation, New York, N.Y.
Original application Mar. 1, 1965, Ser. No. 435,997. Divided and this application Jan. 7, 1969, Ser. No. 789,547
Claims priority, application Great Britain, Feb. 3, 1965, 4,648/65
The portion of the term of the patent subsequent to June 21, 1983, has been disclaimed
Int. Cl. H05k *1/02*
U.S. Cl. 174—68.5 **4 Claims**



A printed circuit panel having a panel of insulating material and a conductive circuit which partly covers a portion of one surface of the panel is provided with a flat wafer, stator, contact, or pad which is superimposed on the one panel surface, and whose edge penetrates into the panel material. The flat superimposed element is conductively connected with the circuit by mechanical engagement or by soldering. It is attached to the panel by pressing the edge portions into the panel while the element is superimposed on the panel surface.

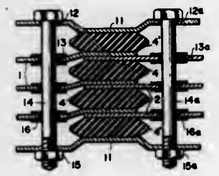
3,504,099
ELECTRICAL CONNECTIONS AND INSULATING BOOT THEREFOR
Ernest Lloyd Beinhaur, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 1, 1968, Ser. No. 749,490
Int. Cl. H02g *3/02*
U.S. Cl. 174—72 **22 Claims**

An insulation boot for an electrical connection comprises a housing into which conductor means extends through an opening thereof for connection with a connector to form the electrical connection, a flowable sealing compound in the housing and having a piston for engagement therewith, a cover latchably mateable with the housing so that when the housing and cover are forcefully moved into latchable engagement the electrical connection drives the piston into engagement with the sealing compound causing the sealing compound to sealingly en-



gage the conductor means and provide a seal at the opening and between the housing and the cover.

3,504,100
PRESSURE CONNECTIONS BETWEEN OVERLAPPING BUS BAR ENDS
Hiroshi Yatabe and Takaji Takei, Yokohama-shi, and Keiji Ohshima and Hiroshi Mitome, Hiratsuka-shi, Japan, assignors to Furukawa Denki Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Aug. 13, 1968, Ser. No. 752,311
Claims priority, application Japan, Aug. 19, 1967, 42/70,978; Mar. 22, 1968, 43/22,321; Apr. 5, 1968, 43/27,275
Int. Cl. H02g *15/08*
U.S. Cl. 174—88 **9 Claims**

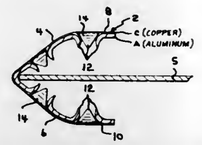


Each of bus bars of a first section thereof is brought into contact with the corresponding bus bar of a second section by overlapping or butting. The contacting portions of the bus bars are spaced from one another by means of insulating spacers. A resilient fastening plate is provided over each of the outermost contacting portions with interposition of an insulating spacer. Clamping bolts extend through openings in the bus bars and the fastening plates at positions on either side of and apart from the contacting portions to tighten the bus bars and insulating spacers as a unit, with the aid of nuts threaded thereover.

3,504,101
ELECTRIC CONNECTOR FOR ALUMINUM FOIL
Anthony Falcon Muto, Winston-Salem, N.C., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 30, 1968, Ser. No. 763,888
Int. Cl. H02g *15/08*
U.S. Cl. 174—94 **7 Claims**

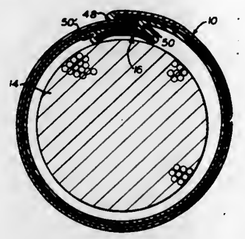
An electrical connector adapted to be mechanically and electrically secured to conductive metal strip such as aluminum. The connector has two opposing surfaces which are hinged together at one side. Each surface is slightly bowed and has tang means thereon with the

pointed ends of the tangs directed towards each other. Some of the tangs grip and hold certain portions of the conductive strip at the start of the connector securing process, and others of the tangs grip and hold other portions of the conductive strip during the final stages of the process. The tangs pierce and stretch certain por-



tions of the strip thereby scraping oxides and providing a good mechanical/electrical connection. The connector is made of a base metal such as aluminum which is electrically conductive, and is clad on one side with a secondary electrically conductive metal such as copper. The electrically conductive base metal intimately engages the conductive aluminum metal strip whereas the secondary metal engages an associate copper electrical component.

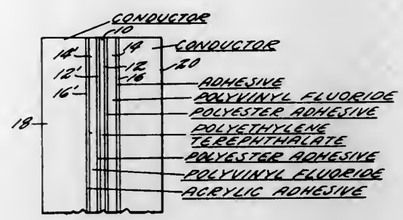
3,504,102
LAMINATED CABLE JACKET WITH SEALED AND REINFORCED SEAM
Fred F. Polizzano, Allendale, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed May 28, 1968, Ser. No. 732,755
Int. Cl. H01b *7/28, 11/06*
U.S. Cl. 174—107 **10 Claims**



This disclosure includes an electric cable with a lap seam of a laminated cable jacket, and a method of making the cable. The cable jacket is a tape folded longitudinally around the core of the cable; and the tape is a lamination of a very thin strip of metal, such as aluminum or copper, which serves as a vapor barrier, and a coating on both sides of the metal of much greater thickness than the metal and bonded directly to the metal, preferably by a "chemical bond." The lap seam is preferably reinforced by a longitudinally extending plastic-metal laminate tape under the seam as a "bridging strip" with plastic coating and the confronting faces of the seam are heat-softened and pressed together to bond the edge portions of the seam together.

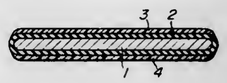
3,504,103
MULTILAYER ELECTRICAL CONDUCTOR ASSEMBLY
Paul L. Anderson, Vernon, Benjamin J. Randall, Danielson, and Michael F. Iosue, Dayville, Conn., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 538,724, Mar. 30, 1966. This application June 28, 1968, Ser. No. 741,077
Int. Cl. C09j *7/00;* **H01b** *7/08*
U.S. Cl. 174—117 **8 Claims**

A laminated insulator comprised of at least two plastic films, one of such films having a dielectric constant in excess of six and another of said films having a dielectric strength in excess of 1000 volts per mil and having high hot "burst-through" resistance and resistance to penetration.



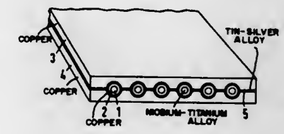
The plastic film having the high dielectric constant may, for example, be polyvinyl fluoride while the material having the high dielectric strength may be polyethylene terephthalate.

3,504,104
SELF-BONDING, SURFACE-INSULATED FOIL CONDUCTORS
Takashi Suzuki, Toyonaka-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 13, 1968, Ser. No. 783,588
Int. Cl. H01b *7/08;* **H01f** *27/30*
U.S. Cl. 174—120 **2 Claims**



A surface-insulated flat foil conductor has placed on one surface a resin and on the other surface a hardener for the resin. After the foil is wound into a coil form, the coil is heated to cause the hardener and resin to react to bond adjacent turns of the coil.

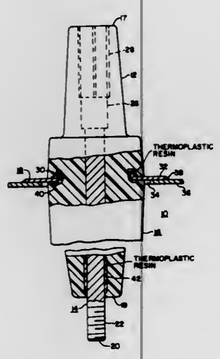
3,504,105
ELECTRICALLY CONDUCTIVE TAPE OF NORMALLY CONDUCTIVE METAL WITH A SUPERCONDUCTOR THEREIN
Gunther Bogner and Richard Maier, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed June 20, 1968, Ser. No. 738,594
Claims priority, application Germany, June 24, 1967, S 61,470
Int. Cl. H01b *5/00*
U.S. Cl. 174—126 **11 Claims**



An electrically conductive tape of normally conductive metal in which a superconductor is situated. The tape has a pair of tape portions of normally conductive metal respectively provided with faces directed toward each other. These faces are respectively formed with aligned longitudinally extending grooves which receive an elongated

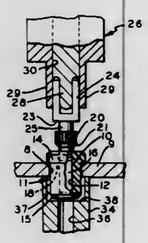
superconductor which is itself coated with a metal of normal conductivity. A solder metal of low melting point is situated between the tape portions at their faces which are directed toward each other and serves to solder the tape portions to each other and to the superconductor.

3,504,106
ELECTRICAL BUSHINGS
August I. Keto, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 2, 1969, Ser. No. 821,371
Int. Cl. H01b *17/26*
U.S. Cl. 174—152 **29 Claims**



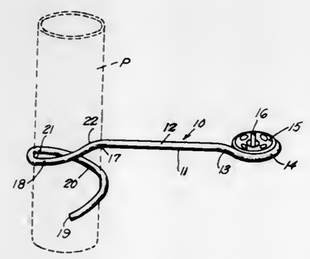
An electrical bushing assembly having an electrical conductor embedded in a cast solid insulating material, and a mounting flange. A thermoplastic insulating material is used to provide self healing, fluid seals between the electrical conductor and solid insulating material, and between metallic mounting flanges and the solid insulating material. A thermoplastic insulating material is also used to mount bushings in sealed, assembled relation with a casing, by disposing the thermoplastic material on the mounting flange, if metallic, or on the casing, and then heating the thermoplastic coating to a softening temperature while the parts to be joined are pressed together.

3,504,107
INSULATED TWO-PIECE TERMINAL
James Iantorno, Mamaroneck, and John Wagner, Pleasantville, N.Y., assignors to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Oct. 29, 1968, Ser. No. 771,433
Int. Cl. H01b *17/26*
U.S. Cl. 174—153 **4 Claims**



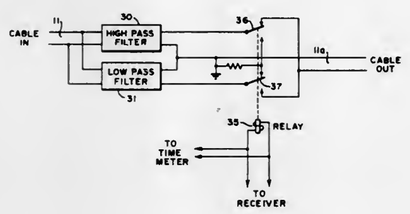
A two piece terminal, and method of installing it, to be secured in a hole within a panel and comprising a resilient bushing insulator with a flange at its upper end, a conductive pin positioned within the bushing and having a shank and an enlarged non-smooth section above the shank, and a barb-like annular flange between the ends of the shank so that when the assembly is placed in said hole, and the lower end of the insulator is supported against substantial movement, and the non-smooth section is driven into the area of the bushing enclosed by the panel, the portion of the bushing lying below the panel will increase in diameter.

3,504,108
WIRE STAND-OFF
Joseph Kihs, Hamilton, Ontario, Canada, assignor to Rohn Manufacturing Co., Peoria, Ill., a corporation of Illinois
Filed Nov. 7, 1968, Ser. No. 774,045
Int. Cl. H01b *17/14, 17/16*
U.S. Cl. 174—154 **2 Claims**



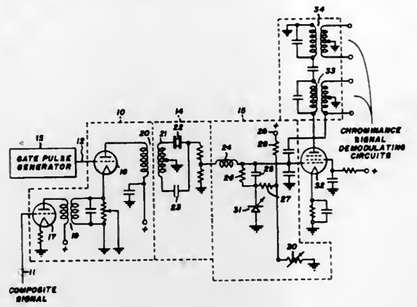
A wire stand-off for electrical wire which has one end adapted to be attached to a cylindrical pole such as a pipe and the other end adapted to carry an insulator for receiving the electrical wire. The end adapted to be attached to the cylindrical pole has a substantially spirally wound wire section formed so as to encircle the pipe and springly engage it at four predetermined points spaced around the circumference of the pipe.

3,504,109
METERING SYSTEM FOR PAY TV
Donald Spencer, Cambridge, Mass., assignor to Spencer-Kennedy Laboratories, Inc., Boston, Mass., a corporation of Massachusetts
Filed Apr. 23, 1968, Ser. No. 723,509
Int. Cl. H04n *1/44*
U.S. Cl. 178—5.1 **5 Claims**



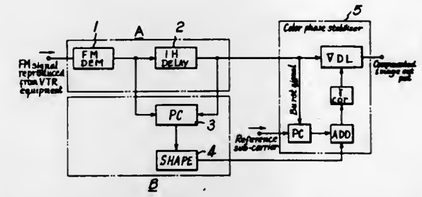
A control and metering system for pay television distribution over a cable network. A control and metering unit is located on the cable at a point removed from the receiver. A switch in the control unit controls a set of filters to either receive a pay or free channel at the receiver. This switch also actuates a timing meter in the control unit.

3,504,110
VARACTOR HUE CONTROL
Theodor M. Wagner, Garland, Tex., assignor to General Electric Company, a corporation of New York
Filed Aug. 30, 1966, Ser. No. 576,138
Int. Cl. H04n *5/44*
U.S. Cl. 178—5.4 **6 Claims**



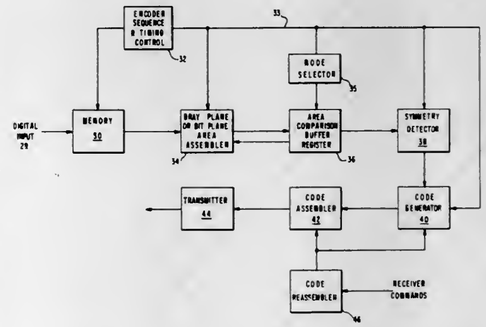
Improved hue control means for a color television receiver. The control means comprises an oscillator for generating a color reference signal having the same frequency and phase as repetitive bursts of oscillations transmitted as a component part of the color television signal. The color reference signal generating oscillator is coupled to a phase shifting circuit which can vary the phase of the generated color reference signal relative to the repetitive burst. The phase shifting circuit includes a semiconductor device or varactor having a capacitance that is proportional to the magnitude of a reverse biasing voltage applied across it by a D-C voltage source and a variable resistor for varying the magnitude of the applied D-C voltage whereby the capacitance of the semiconductor device and, thus the phase of the oscillator generated color reference signal, can be varied.

3,504,111
COMPENSATING SYSTEM FOR COLOR PHASE DEVIATION OF VTR-REPRODUCED SIGNAL
Yoji Sumida and Toshihide Habutsu, Tokyo, Japan, assignors to Japan Broadcasting Corporation, Tokyo, Japan
Filed Oct. 24, 1966, Ser. No. 588,874
Claims priority, application Japan, Nov. 16, 1965, 40/70,079
Int. Cl. H04n *5/38, 5/44*
U.S. Cl. 178—5.4 **5 Claims**



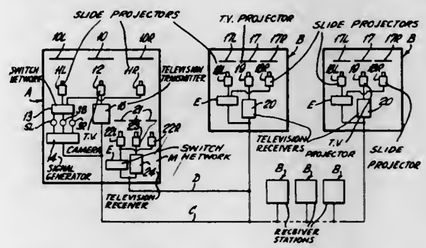
A compensating system for a color phase deviation of a NTSC color television signal reproduced from a video tape recorder, by controlling the delay time of a variable delay circuit by means of a compensating signal. The compensating signal is a superposed signal of a zero-order hold type compensating signal and a linear interpolator type compensating signal. The zero-order hold type compensating signal is formed by a comparison of phase of each burst signal included in the reproduced signal with that of a reference subcarrier wave and holding the detected phase difference for a horizontal scanning period. The linear interpolator type compensating signal is formed by a comparison between phases of adjacent burst signals in the reproduced signal. The system of the invention has a means to prevent a production of any erroneous compensating signal even at a discontinuous point of the reproduced composite signal caused by a switching of each of the reproducing equipment.

3,504,112
TWO-DIMENSIONAL IMAGE DATA ENCODING AND DECODING
Elliot L. Gruenberg, Hartsdale, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 20, 1966, Ser. No. 521,951
Int. Cl. H04n *7/12*
U.S. Cl. 178—6 **10 Claims**



A method of encoding and decoding a coded image wherein symmetry comparisons are made of the data. This achieves simultaneous two-dimensional compression. The image is subdivided into elemental areas and data representative of each elemental area is generated. Superposition, by folding or sliding groupings of said areas over each other, is followed by comparisons to determine the positional symmetry of corresponding data.

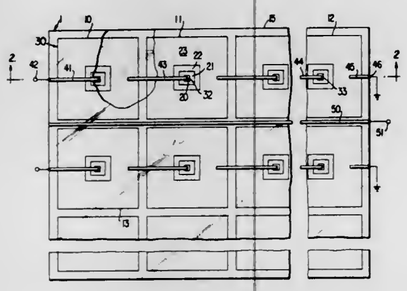
3,504,113
VISUAL COORDINATING COMMUNICATION NETWORK
Robert F. White, New York, N.Y., assignor to TNT Communications Inc., New York, N.Y., a corporation of New York
Filed Mar. 6, 1967, Ser. No. 620,700
Int. Cl. H04n *7/10, 7/18, 7/02*
U.S. Cl. 178—6 **12 Claims**



A television transmitter, and a remote control network for generating a plurality of different pairs of audio frequency signals are located at a transmitter station and

connected to a plurality of remote receiver stations. Located at each receiver station are three side by side screens, a television receiver projecting a picture on the middle screen, and a pair of automatic slide changing optical projectors focused on the side screens, the corresponding projectors at the receiver stations having the same slide sequences. Switch networks selectively responsive to respective signal pairs simultaneously control corresponding projectors at all receiver stations.

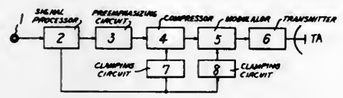
3,504,114
PHOTOSENSITIVE IMAGE SYSTEM
Edgar L. Irwin, Glen Burnie, and Pieter de Wit, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1969, Ser. No. 801,503
Int. Cl. H04n 3/14
U.S. Cl. 178—6 **12 Claims**



In an array of photosensitive bistable switching elements, the elements of each row are connected for successively switching from a non-conductive to a conductive state in response to a read-out pulse applied to the row, and upon switching of the next preceding element. The rows are read-out in sequence. A common output circuit for all elements of the array receives an output pulse upon switching of each element, the amplitude of which is an inverse function of the illumination incident on that element. A display system sequentially scans through a plurality of displaced scan lines at a rate corresponding to the propagation rate of the read-out pulse through the elements of corresponding rows of the array and responds to the output pulses of the array in timed relationship to the scanning rate for reproducing and displaying an image corresponding to the pattern of illumination incident on the array.

3,504,115
FM TELEVISION SIGNAL TRANSMISSION SYSTEM
Keiji Suzuki, Tokyo, Kozo Hayashi, Zushi, and Hiroshi Tanimura, Tokyo, Japan, assignors to Japan Broadcasting Corporation, Tokyo, Japan
Filed July 26, 1965, Ser. No. 474,805
Claims priority, application Japan, Mar. 25, 1965, 40/16,899
Int. Cl. H04n 7/00, 5/38, 5/04
U.S. Cl. 178—6 **19 Claims**

A television transmission and receiving system for broadcasting television signals over a limited band via a satellite in orbit is shown. The system includes a transmission system in which video and synchronizing signals are given the same polarity, a transponder in the satellite, and a receiver system in which means are provided for separating the synchronizing signal and the video signals and replacing the separating synchronizing signal with one having an opposite polarity with respect to the polarity of the video signal. The system may be provided with means

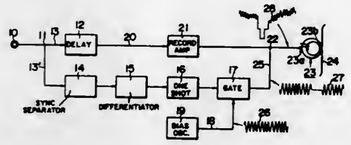


to transmit and means to receive audio signals together with the television signals.

ERRATUM

For Class 178—6.5 see:
Patent No. 3,504,122

3,504,116
MAGNETIC RECORDING SYSTEM WITH A DISABLED BIAS OSCILLATOR DURING THE VERTICAL SYNCHRONIZATION INTERVAL
Fujio Sato, Motonori Fukatsu, and Katsuyuki Iwai, Tokyo, Japan, assignors to Akai Electric Company Limited, Tokyo, Japan
Filed Aug. 18, 1966, Ser. No. 573,410
Claims priority, application Japan, Feb. 25, 1966, 41/11,433
Int. Cl. H04n 5/78, 5/04
U.S. Cl. 178—6.6 **4 Claims**

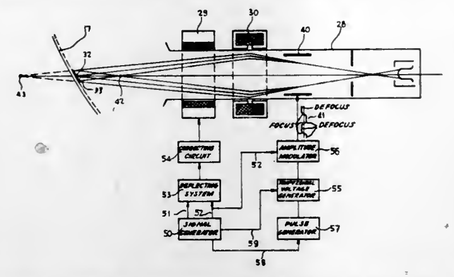


A magnetic recording system for making direct magnetic recordings of television signals is disclosed. The system employs a high frequency bias signal which is reduced to negligible proportions during the regular blanking periods in the television signal. This is accomplished by means of a gate which normally passes the bias signal to the recording head or a separate bias head. A sync separator and a monostable multivibrator detect the sync pulses in the television signal and disable the gate during the blanking periods.

3,504,117
LIGHT VALVE IMAGE PROJECTION WITH TRAPEZOIDAL WAVE FOCUS-DEFOCUS BEAM CONTROL FOR FLOOD EFFECT
Heinrich Dueringer, Watt-Regensdorf, Switzerland, assignor to Eidophor AG, Glarus, Switzerland
Filed Jan. 6, 1967, Ser. No. 607,817
Claims priority, application Switzerland, Nov. 16, 1966, 16,440/66
Int. Cl. H04n 3/16
U.S. Cl. 178—7.5 **4 Claims**

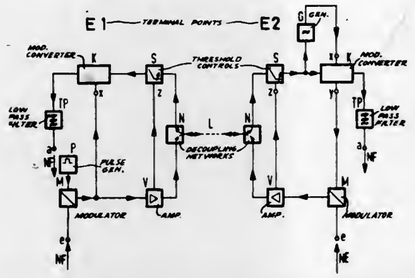
This invention concerns the use of a schlieren-optical system for projecting on a large screen a reproduction of an image which is formed by an electron beam directed

at a deformable surface, such as an oil film. With images which comprise a sequence of image points disposed randomly in time and place, the beam does not produce a complete scanning raster and there is, therefore, no background electrostatic charge to give persistence to image points. The invention therefore provides a secondary elec-



trostatic charge around each image point to give the desired persistence.

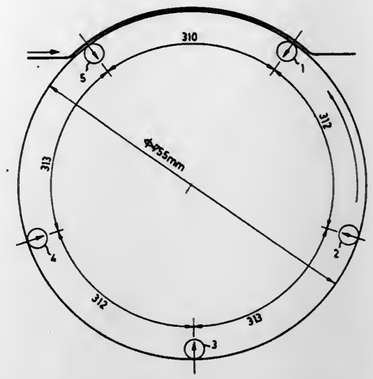
3,504,118
METHOD AND APPARATUS FOR THE ADDITIONAL TRANSMISSION OF COMMUNICATIONS OVER LINES
Hans-Martin Christiansen, Munich-Solln, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 19, 1966, Ser. No. 573,714
Claims priority, application Germany, Aug. 20, 1965, S 98,945
Int. Cl. H04l 5/14
U.S. Cl. 178—58 **16 Claims**



Method and apparatus for providing additional communication transmissions with pulse modulation over lines, in which the pulse transmissions from a first station, received at a second station are utilized to derive a pulse transmission in the opposite direction, with an impulse or impulse group being received at the first station before the latter transmits a new impulse or impulse group subsequent to that from which the returned impulse or impulse group was derived.

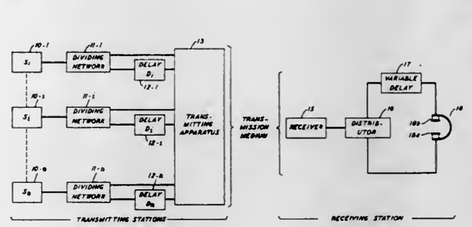
3,504,119
APPARATUS FOR REPRODUCING VIDEO TAPE RECORDINGS IN SLOW MOTION
John Lewis Edward Baldwin, Croydon, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 578,065
Claims priority, application Great Britain, Sept. 10, 1965, 38,854/65
Int. Cl. H04n 1/28, 1/24
U.S. Cl. 178—6.6 **7 Claims**

Video tape reproducing apparatus for producing slow motion pictures from recorded video tape using an assembly of *n* reproducing heads staggered along a helical path or a rotor having a larger diameter than the recording rotor, where the tape passes over the rotor at an angle de-



pending on the ratio of the angular speeds of rotation of the recording and reproducing rotors.

3,504,120
BINAURAL FUSION LISTENING SYSTEM
Harry Levitt, East Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a coporation of New York
Filed May 27, 1966, Ser. No. 553,555
Int. Cl. H04v 5/00
U.S. Cl. 179—1 **9 Claims**

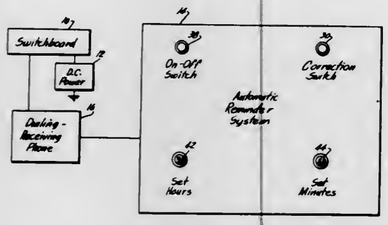


A system is disclosed for selectively listening to one of a number of different audible messages which are presented together to the operator through earphones. A delay is introduced into each message signal reaching one ear, the delay being different for each signal. A particular message signal is selected by delaying the total signal reaching the other ear by the same delay as that of the selected message signal. To the operator the selected message signal will binaurally "focus" in the center of his head and thus stand out from the other signals which become background noise.

3,504,121
MUTUALLY SETTABLE AUTOMATIC REMINDER SYSTEM
Joseph B. Riley, 260 Melissa Drive, Titusville, Fla. 32780
Continuation-in-part of application Ser. No. 253,469, Jan. 23, 1963. This application Apr. 22, 1968, Ser. No. 733,185
Int. Cl. H04m 17/10
U.S. Cl. 179—6 **9 Claims**

This application contains a technical disclosure of an automatic reminder system for use with telephone systems, in the form of a unit attachable to dial telephone

equipment and circuitry, intended for use by motels and hotels, whereby occupants thereof may manually actuate such units and open the telephone circuits, after which the dial of the telephone instrument may be utilized to set into the unit a call back time, at which time the occupant will be signaled. There is further disclosed the manner

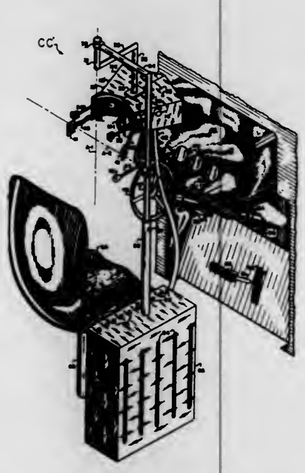


by which the uints are provided with switching means whereby occupants may not only manually activate and deactivate the reminder system, but may also cancel or correct an earlier call back setting, and the manner whereby the units are further provided with indicating lights for assisting the occupant in operation of the units.

3,504,122
STEREOSCOPIC TELEVISION SYSTEMS WITH MEANS TO CONTROL THE CAMERA MOVEMENT FROM A REMOTE LOCATION

Harvey L. Ratliff, Jr., 3701 46th St., Lubbock, Tex. 79413

Filed Mar. 16, 1965, Ser. No. 440,110
Int. Cl. H04n 9/54
U.S. Cl. 178—6.5 6 Claims

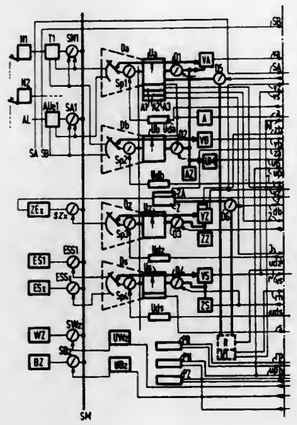


There is disclosed an improvement in the taking system of a remotely controlled remote viewing system combined with a remote mobile unit which employs fisheye lenses to enable a wider angle of stereo view to be recorded upon the same area of record media and to enable distortion-free and astigmatic-free stereo re-creation when simple oculars, that due to their simplicity introduce pincushion distortion at wide angles of view, are used and which diverge the optical axes of the taking lenses to enable the recorded angle of stereo view to be still further increased by an amount equal to substantially the angle between the optical axes of the two taking lenses.

3,504,123
TIME MULTIPLEX EXCHANGE SYSTEM TO PERMIT STATIONS PARTICIPATING IN EXISTING CONNECTIONS TO ESTABLISH A FURTHER CONNECTION

Kurt Fischer, Albert Fisch, and Horst Honold, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed Jan. 27, 1965, Ser. No. 428,361
Claims priority, application Germany, Jan. 28, 1964, S 89,253
Int. Cl. H04j 3/02
U.S. Cl. 179—15 12 Claims

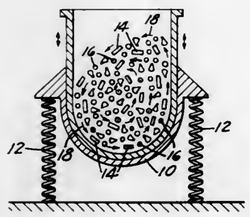


Time multiplex PABX which overcomes blocking problem in call transfer caused by requirement that transferee share common time slot with original parties. Problem is overcome by allowing remaining party of original parties to retain original time slot, assigning new party some random time slot, and storing energy in energy storage device during time interval between conversing time slots.

3,504,124
METHOD FOR BARREL OR VIBRATORY FINISHING AND SOFT METALS WITH FLEXIBLE ORGANIC POLYMERIC FINISHING MEDIA

John B. Kittredge and Richard L. Larson, White Bear Lake, Minn., assignors, by mesne assignments, to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,666
Int. Cl. B24b 1/00, 31/02
U.S. Cl. 51—314 5 Claims



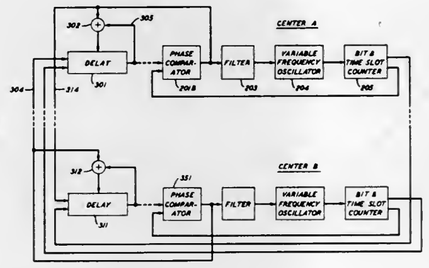
A method for mechanical barrel or vibratory finishing of soft metals and plastics employing a finishing media consisting of discrete flexible polymeric shapes having a Shore D hardness of 45 to 80 at room temperature, the hardness of said shapes being inversely variable with

temperature, preferably formed from a resilient polyester resin containing finely divided abrasive having particle diameters below 30 microns, the said method including the steps of first agitating in the presence of media at a low temperature whereby increased hardness of media increases metal cut rate and subsequently raising the temperature whereby the metal cut rate is decreased but the surface smoothness produced on articles is greatly increased, plastics being finished in cold water to increase cut rate and minimize softening and swelling.

3,504,125
NETWORK SYNCHRONIZATION IN A TIME DIVISION SWITCHING SYSTEM

Hiroshi Inose, Hiroya Fujisaki, and Tadao Saito, Tokyo, Japan, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed July 19, 1967, Ser. No. 654,483
Claims priority, application Japan, Feb. 10, 1967, 42/8,197
Int. Cl. H04j 3/06
U.S. Cl. 179—15 11 Claims



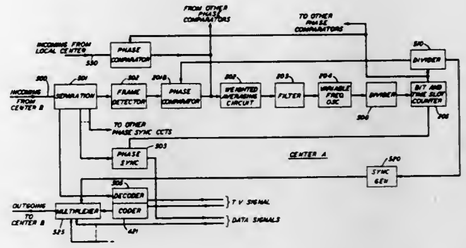
Mutual synchronization of operations performed in locations remote from one another is disclosed in the environment of a communication system having switching centers interconnected on a time division multiplex basis for transmission of coded information. The phases of synchronization signals received from other centers at a fixed frame rate are compared individually with the locally generated signal and the comparison resultants utilized to correct the frequency and phase of the local generator. Phase deviations due to transmission delays between two widely separated centers are overcome by adjusting the delay at the input of each of the two centers in accordance with the sum of the phase comparison resultants for the two centers.

3,504,126
NETWORK SYNCHRONIZATION IN A TIME DIVISION SWITCHING SYSTEM

Hiroshi Inose and Tadao Saito, Tokyo, Japan, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Jan. 3, 1968, Ser. No. 695,426
Claims priority, application Japan, May 22, 1967, 42/32,102, 42/32,103
Int. Cl. H04j 3/06
U.S. Cl. 179—15 6 Claims

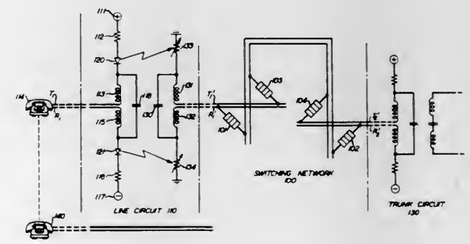
Mutual synchronization of operations performed in scattered locations remote from one another is disclosed in the environment of a communication system having switching centers interconnected on a time division multiplex basis for transmission of coded information. The phases of synchronization signals received from other centers at a fixed frame rate are compared individually with locally generated signals and the comparison resultants utilized to correct the frequency and phase of the local generator. Phase deviations due to transmission delays between centers are overcome by transmitting synchronization signals at different frequencies dependent upon the relative distances between centers.



3,504,127
DIRECT CURRENT COMPENSATION CIRCUIT FOR TRANSFORMER COUPLINGS

Matthew F. Slana, Naperville, Ill., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 2, 1967, Ser. No. 635,423
Int. Cl. H04m 3/08
U.S. Cl. 179—16 9 Claims



An optical, direct current compensation circuit in the line repeat coils of a telephone system which utilizes a holding current in the switching network talking paths. Photons generated by the line loop holding current establish the level of holding current in the corresponding network loop via a photo-sensitive resistance element.

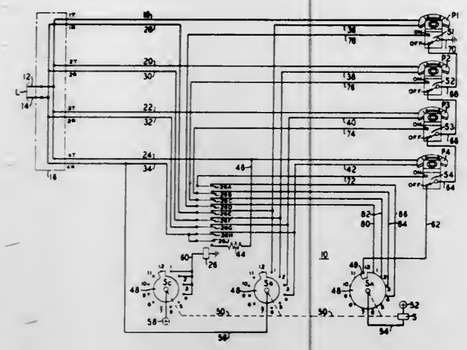
3,504,128
TELEPHONE EXCLUSION CIRCUIT

Charles Steinman, 105 Stevens Ave. 10550, and Harvey Cohen, 211 Lorraine Ave. 10552, both of Mount Vernon, N.Y.

Filed Sept. 26, 1966, Ser. No. 582,028
Int. Cl. H04m 3/16
U.S. Cl. 179—17 10 Claims

A telephone exclusion circuit operative to exclusively connect a selected one of a plurality of extension telephones to a telephone line. Each extension telephone has a disabling switch serially connected in the lead connecting said extension telephone to the telephone line. The disabling switches are operative simultaneously in response to actuation of control means which is also

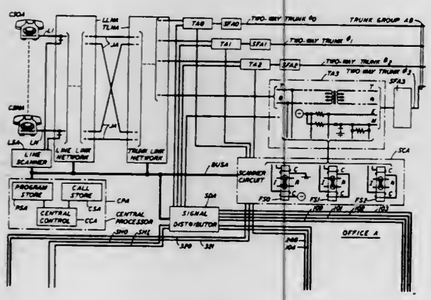
operative to actuate the connect switch in parallel with the disabling switch in each extension line, so as to disconnect all of the extension telephones from the telephone line, except the selected telephone in use.



3,504,129
TRUNK SELECTION ARRANGEMENT

James C. Ewin, Holmdel, Andrew A. Hood, Red Bank, and Edward W. Landis, Monmouth Beach, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Jan. 20, 1967, Ser. No. 610,547
Int. Cl. H04q *3/68;* H04m *7/10*
U.S. Cl. 179—18 9 Claims



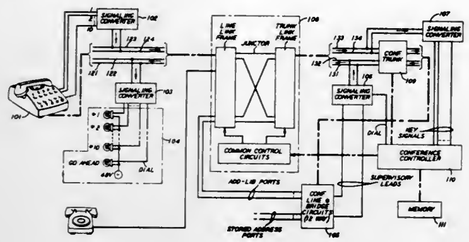
A program controlled telephone switching system is disclosed having trunk selecting apparatus wherein idle two-way trunks are stored in a register and selected according to the length of time a trunk has been idle and according to the direction of the last call over the trunk.

3,504,130
SWITCHING SYSTEM FOR ESTABLISHING CONFERENCE CONNECTIONS

John W. Gorgas, Marlboro Township, Monmouth County, N.J., Nicholas Lazo, Gahanna, Ohio, and Thomas Simpson, Arvada, Colo., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Oct. 24, 1966, Ser. No. 589,013
Int. Cl. H04m *3/56*
U.S. Cl. 179—18 8 Claims

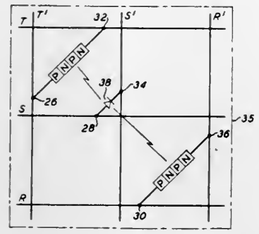
A telephone switching system for establishing conference connections wherein conferees may selectively be chosen by operation of a respective keybutton at the conference originator's telephone as well as by dialing the directory number of any desired conferee not assigned such a keybutton; conferees may be added or removed from the conference connection at any time, all under the control of the conference originator.



3,504,131
SWITCHING NETWORK

Matthew F. Slana, Naperville, Ill., and Herbert A. Waggener, Allentown, Pa., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 2, 1967, Ser. No. 635,497
Int. Cl. H04q *3/49, 3/50*
U.S. Cl. 179—18 1 Claim



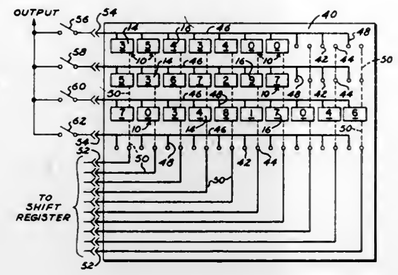
A switching network for a communication system is disclosed which includes an end-marked control network having photo-emissive breakdown devices such as PIN diodes at the crosspoints and a transmission network having photo-sensitive breakdown devices such as PNPN diodes at the crosspoints. A path hunting technique is utilized in establishing the control path through the PIN diodes which in turn establishes the transmission path via the optical coupling at the crosspoints. A holding bias in both control and transmission paths through the switching network maintains the established connections.

3,504,132
MEMORY UNIT FOR REPERTORY DIALLER UTILIZING CODED ENCAPSULATED RESISTORS

Jacob L. Wallace, Jr., Springfield, Va., assignor to The Susquehanna Corporation, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,724
Int. Cl. H04m *1/26*
U.S. Cl. 179—90 4 Claims

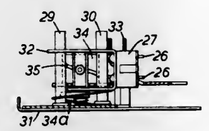
In an illustrative embodiment of the memory unit, an encoded printed circuit board provides the memory for a repertory dialler. The printed circuit board has several rows, each of which contains an encoded telephone number formed by a series of code elements. Each code element has a number formed on its top so that this number is displayed when the code element is plugged into the board. In this manner the encoded telephone numbers can be quickly ascertained by reading each row of numerals. Each code element contains an encapsulated resistor having a discrete resistance value which value is weighted according to the numeral on the code element.



3,504,133
INDEXING MEANS FOR MULTI-TRACK MAGNETIC TAPE REPRODUCING APPARATUS

Frederick Victor Bellis, Carshalton Beeches, England, assignor to Clarke & Smith Manufacturing Company Limited

Filed July 26, 1965, Ser. No. 474,623
Claims priority, application Great Britain, July 24, 1964, 29,794/64
Int. Cl. G11b *5/02*
U.S. Cl. 179—100.2 4 Claims



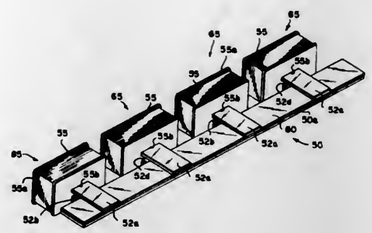
Magnetic tape recording and reproducing apparatus and method for use in connection with multi-track tape at least one track of which is an intelligence track recorded at one effective recording speed, and at least one other track of which is an indexing signal recorded at a higher playback speed, whereby during the high-speed rewind operation, the indexing signal may be utilized to afford an instantaneous indication of the position of the head relative to the tape. The invention is characterized by the provision of cam-operated indexing means for shifting a magnetic playback head transversely of the tape between positions associated with the various tracks, respectively.

3,504,134
MULTIPLE MAGNETIC HEAD WITH A STRIP CORE HAVING A COMMON BASE PORTION

John J. Miyata, Monterey Park, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 13, 1966, Ser. No. 564,912
Int. Cl. G11b *5/16, 5/28, 5/42*
U.S. Cl. 179—100.2 3 Claims

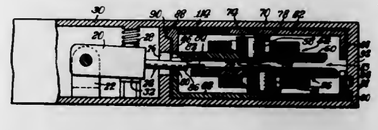
A multiple magnetic head unit including a plurality of strips of a high permeability magnetic alloy material. Each strip is shaped in the general form of a hairpin having a pair of legs closely adjacent to their ends with one of the legs of each pair being sharply bent near its end so as to form an even gap interface. A very thin layer of non-magnetic material is disposed between the closely adjacent ends of each pair of legs and a winding is coupled to at least one of the legs.



3,504,135
MAGAZINE-TYPE MAGNETIC TAPE RECORDER HAVING STEPPED TILTABLE DRIVE SHAFT TO ENGAGE TAPE REEL FLANGES FOR TWO-SPEED TWO-DIRECTION DRIVE

Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Nov. 29, 1966, Ser. No. 597,607
Int. Cl. G11b *5/78*
U.S. Cl. 179—100.2 15 Claims



Tape recording machine having tape wound between two superjacently spaced reels separately journalled to turn on non-coinciding spaced parallel axes and a tiltable motor having a stepped shaft therebetween which is tiltable to selectively locate its larger diametered section in driving engagement with one reel or its smaller diametered section in driving engagement with the other reel to simultaneously change tape direction and speed.

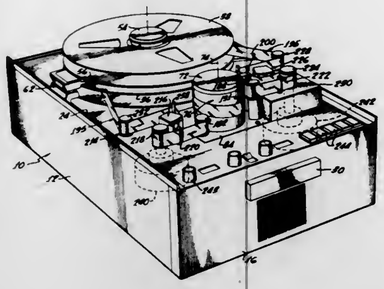
3,504,136
DRUM TYPE VIDEO TAPE RECORDER WITH A TAPE WRAP OF MORE THAN 360°

Alexander R. Maxey, Newark, Calif., assignor, by mesne assignments, to Allan R. Fowler, Orange, Calif., trustee

Continuation-in-part of application Ser. No. 606,510, Dec. 29, 1966. This application Feb. 27, 1967, Ser. No. 625,915
Int. Cl. G11b *5/52, 15/64;* H04n *5/78*
U.S. Cl. 179—100.2 28 Claims

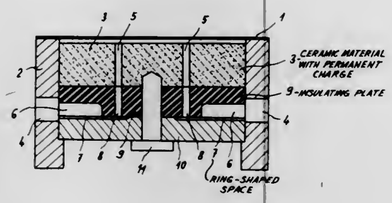
Disclosed is a three member tape supporting drum including a rotatable center member flush with adjacent upper and lower stationary members. The spacing between these members is sufficiently close to form a high resistance restriction to air flow between them. During high speed rotation of the center drum this restriction

helps maintain air lubrication beneath a magnetic tape spiral wrapped on the drum across the center member.



Included are systems for wrapping and unwrapping the tape on the drum in excess of 360° across the center member with adjacent tape edges overlapped.

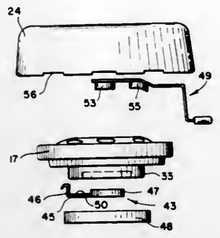
3,504,137
CONDENSER MICROPHONE WITH IMPROVED ACOUSTICAL CIRCUIT
Vera Ptáčková and Miroslav Ptáček, Kladno, Czechoslovakia, assignors to Tesla, narodni podnik, Prague, Czechoslovakia
Filed Dec. 7, 1966, Ser. No. 599,938
Claims priority, application Czechoslovakia, Dec. 10, 1965, 7,431/65
Int. Cl. H04r *23/00*
U.S. Cl. 179—106 **4 Claims**



In a condenser microphone each radial aperture in a casing of the microphone, out of a plurality of such apertures, communicates with a radial groove in an insulating plate within the microphone casing, with each groove of a plurality of grooves leading to an annular space, and axial perforations in the insulating plate and in an electrode fixed within the casing lead from said annular space toward a diaphragm which spacedly faces said fixed electrode.

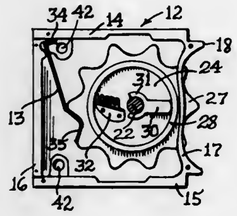
3,504,138
HAND TELEPHONE WITH TRANSMITTER CUTOUT
Bela Bottos, 2306 Greenfield Lane, Knoxville, Tenn. 37917
Filed June 21, 1967, Ser. No. 647,682
Int. Cl. H04m *1/02*
U.S. Cl. 179—167 **4 Claims**

Hand telephone having a disconnecting member attached to the transmitter and brought to a position which disconnects the transmitter but does not affect the receiver by an actuatable member which cooperates with the transmitter and is mounted in a manner that positions



a portion thereof in an accessible location outside the transmitter receptacle.

3,504,139
THUMBWHEEL TYPE SWITCH
Eric L. Long, Highland Park, Ill., assignor to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois
Filed Jan. 24, 1969, Ser. No. 793,846
Int. Cl. H01h *19/58;* **F16d** *1/06*
U.S. Cl. 200—11 **6 Claims**

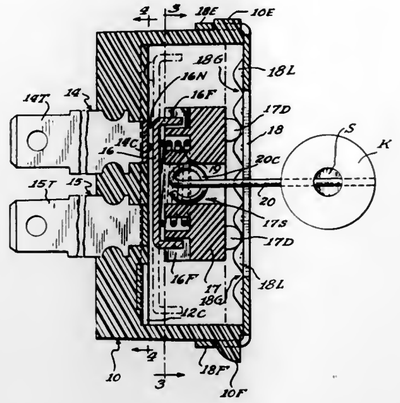


A multiple circuit position switch having a finger actuated rotary switch drum housed in a casing having an opening formed in one wall and through which a portion of the drum projects so the same may be rotated about a horizontal axis in either direction with the drum having a limited surface area visible through the opening to indicate a selected circuit switch position, including a means for rotatably connecting said drum upon an axial shaft within the casing.

3,504,140
HEATER AND AIR CONDITIONING SWITCH
Howard R. Atkinson, Villa Park, Ill., assignor to Standard Kollsman Industries Inc., Melrose Park, Ill., a corporation of Illinois
Filed Nov. 12, 1968, Ser. No. 774,886
Int. Cl. H01h *15/00*
U.S. Cl. 200—16 **10 Claims**

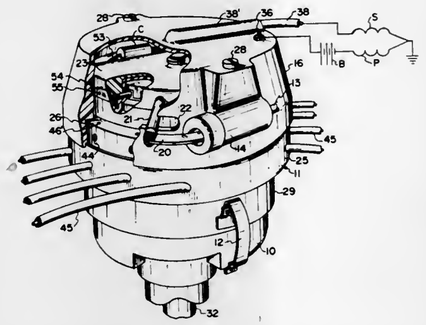
A multi-position electrical selector switch is illustrated wherein one piece copper inserts are molded in situ in the base wall of a box-shaped plastic mounting in a configuration defining a set of four side-by-side treadways. Each treadway is defined in part by contact surface portions of the copper inserts and by insulated guide surface portions of the base wall, all correspondingly rounded and disposed flush and in alignment to define each treadway with a lengthwise uniform profile. A spring wire actuator

arm is engageable with a carrier block and slider assembly to impart snap action movement thereto. A detent plate



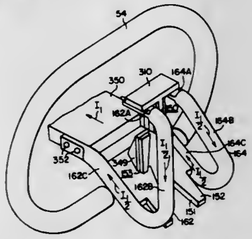
is engageable with the carrier block to determine the various switch positions.

3,504,141
ROTARY DISTRIBUTOR
Millard A. Webster, 633 Regan St., Rockford, Ill. 61107
Filed Mar. 24, 1969, Ser. No. 809,599
Int. Cl. H01r *39/02*
U.S. Cl. 200—25 **18 Claims**



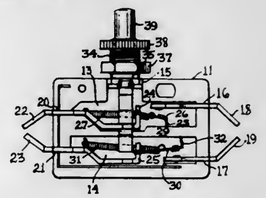
This distribution operates completely on the rotary principle. The rotor operating inside the housing has evenly spaced contacts on the cylindrical upper end thereof that are interconnected by an integral top ring on the top of which a first spring-pressed contact rides while a second spring-pressed contact in diametrically opposed relation rides on the periphery of the contact segments. The two contacts are carried in insulated relationship to one another on a top section of the housing that is ocillatable for spark advance and retard. The last mentioned contact is grounded through a pin extending through the housing to the lower end thereof. This much is all in the primary circuit of a spark coil. A cap on the housing encloses the oscillatable top section of the housing and carries a contact for the secondary circuit of the spark coil and engages a central terminal therebelow which, through an intermediate vertical pin in the center of the rotor and a rotary electrical connection with the terminal in the top of the rotor provides an electrical connection with a spring-pressed contact on one side of the rotor that engages contact segments assembled in the wall of the housing in circumferentially spaced relation. Sparkplug leads are connected with these segments by pins threaded in the housing through holes in the segments and having pointed ends that pierce the leads where they are entered in other holes provided in the housing. A counterweight on the rotor in opposed relation to the last named contact serve both to balance the rotor and by sliding contact with the inside of the housing to keep it central in the housing. A piston working in a cylinder on the outside of the cap is movable in one direction by spring means and in the opposite direction by drop in pressure in the intake manifold of an engine and operates the aforesaid oscillatable top section of the housing through a slot in the cap to advance and retard the spark.

3,504,142
HIGH VOLTAGE ELECTRIC SWITCH
John P. McKinnon, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 673,675
Int. Cl. H01h *31/02;* **H01b** *17/42*
U.S. Cl. 200—48 **7 Claims**



This invention relates to high voltage electric switches and more specifically to high voltage switches which are particularly suitable for use as grounding switches. A switch blade is supported on a rotatable shaft to move between open and closed positions with respect to an associated stationary contact means which is mounted on and between a pair of corona shielding members which form the only current carrying path between the contact means and a terminal means which extends transversely with respect to the blade. The shielding members are shaped so that when current flows therethrough, magnetic fluxes are produced which interact with the current in the switch blade to assist in retaining the switch blade in the closed position with respect to the contact means.

3,504,143
INTERLOCK SWITCH
James U. Dernehl, 1650 Deerfield Road, Highland Park, Ill. 60035
Filed Mar. 24, 1969, Ser. No. 809,538
Int. Cl. H01h *9/26*
U.S. Cl. 200—50 **6 Claims**



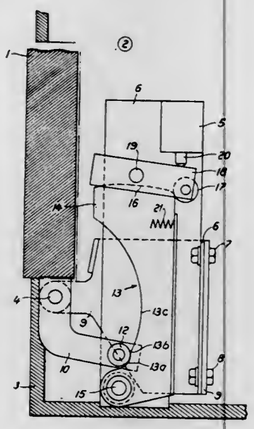
A switch device having a single actuator which when moved in one direction and permitted to be self-restored to its original position will effect momentary actuation of a

switch blade, and upon extended movement of the actuator in an opposite direction will effect a holding actuation of a complementary switch blade, with the latter switch blade being restored when the actuator is forcibly returned to its original position.

ERRATUM

For Class 200—50 see:
Patent No. 3,504,372

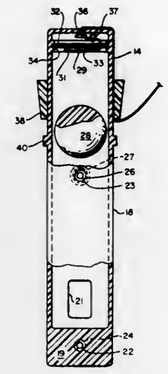
3,504,144
ARRANGEMENT IN SAFETY SWITCHES FOR MICROWAVE STOVES
Bror Alex Horner, Vallingby, Sweden, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 28, 1968, Ser. No. 755,992
Int. Cl. H01h *3/16*
U.S. Cl. 200—61.62 **4 Claims**



A door operated safety switch for a microwave oven comprising a first arm rotatable with the door and having a first cam follower contacting a concave cam guidance surface on a second pivotally mounted arm that actuates the safety switch. The cam guidance surface is shaped so that, with the door closed, the second arm does not actuate the switch, but when the door is initially opened, the cam follower contacts a projecting portion of the guidance surface so that the second arm actuates the safety switch. The cam surface is further shaped so that as the door is opened further, the second arm holds the safety switch in the actuated position. The lever ratio of the second arm is chosen to have a value appreciably greater than one. A second cam guidance system can be interposed between the free end of the second arm and the safety switch.

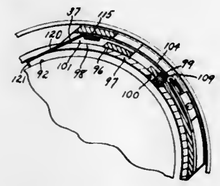
3,504,145
CIRCUIT OPERATING DEVICE FOR SWIMMING POOL ALARM SYSTEM
Francis W. Layher, 713 Henrietta Ave., Sunnyvale, Calif. 94086
Filed May 17, 1967, Ser. No. 639,083
Int. Cl. H01h *35/18*
U.S. Cl. 200—84 **2 Claims**

A swimming pool alarm system includes an elongated buoyant container equipped with a pair of electrical contacts which, when closed, initiate an audible alarm. A buoyant float member contained within the elongated container operates the contacts, and, due to its considerably smaller mass as compared to the mass of the elongated container, the inner float member more readily responds to waves within the pool. Both buoyant members are in open communication with the water of the pool. Waves generated in the pool by objects falling into



it, being of considerably higher frequency than waves generated by the natural elements, such as wind, cause the inside float to quickly rise relative to the container, and actuate the contacts to initiate the alarm. The lower frequency waves serve to elevate both the float and the container with little relative movement therebetween.

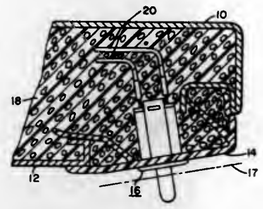
3,504,146
WEAR LIMITING ADJUSTABLE BRUSH MEANS FOR A ROTARY DRUM ENCODER
Peter J. Waznys, Richmond Hill, N.Y., and John A. Garrido, Englishtown, N.J., assignors to Collectron Corporation, New York, N.Y., a corporation of New York
Filed May 28, 1968, Ser. No. 732,581
Int. Cl. H01h *9/08*
U.S. Cl. 200—166 **7 Claims**



A rotary drum type encoder incorporating means for limiting the effect of brush wear with extended usage and for the facilitating of brush replacement when required. A resiliently deformable round wire forms the brush means, the contacting segment of which is disposed perpendicular to the rotary drum. A support member for said brush means is rectilinearly adjustable along an accurate path and slidably adjustable with respect to a housing.

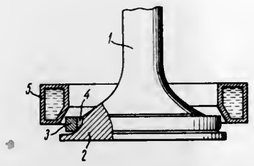
3,504,147
REFRIGERATING DEVICE HAVING IMPROVED SWITCH
Karen E. Christman and Ralph E. Christman, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 22, 1968, Ser. No. 699,592
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 **2 Claims**

Refrigerating device cabinet of the type constructed with expanded, foamed-in-place thermal insulation in the cabinet hollow wall spaces, and using a switch of low cost having an unsealed casing portion immersed in the



expanded foam space, a plastisol film sealing the unsealed casing portion of the switch against intrusion of the foam into the switch.

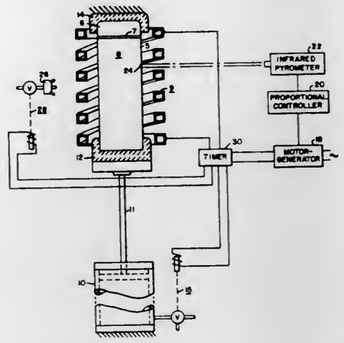
3,504,148
METHOD AND APPARATUS FOR PRODUCING BIMETALLIC ARTICLES BY INDUCTIVE HEATING AND POSITIONING MEANS
Boleslav Ivanovich Maximovich, Bulvar Lesi Ukrianki 2, kv. 52; Daniil Andreevich Dudko, Ulitsa Mechnikova 3, kv. 7; and Vitaly Voitsekhovich Zavodian, Bulvar Ivana Lepse 55, kv. 20, all of Kiev, U.S.S.R.
Filed Sept. 13, 1967, Ser. No. 667,593
Claims priority, application U.S.S.R., Feb. 13, 1967, 1,131,881
Int. Cl. B23k *13/00;* **H05b** *5/00, 9/00*
U.S. Cl. 219—9.5 **6 Claims**



A bimetallic article in the general shape of a solid of revolution such as a valve, is produced by placing a ring of a filler alloy on a base which is to be combined with the material of the ring to form a bimetallic article, thereafter melting the ring by energizing an inductor surrounding the ring, the frequency of the current in the inductor being such as to provide a depth of current penetration in the ring at least over the entire thickness thereof and to electrodynamically maintain the ring in position, and thereafter cooling the article to solidify the material of the ring while the inductor is still energized but at a reduced power.

3,504,149
BRAZING METHOD
Austin Dixon, Manor, and Stanley J. Frohlich, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1967, Ser. No. 686,621
Int. Cl. B23k *13/00*
U.S. Cl. 219—9.5 **6 Claims**

An improved method suited for induction brazing a hardened copper alloy workpiece member to a second refractory metal workpiece member, or other difficult-to-braze metals, wherein: an elongated sandwich assemblage of workpiece members and a preform brazing alloy layer member is induction heated uniformly and simultaneously throughout its length to the fusion temperature of the brazing alloy and to momentarily maintain such temperature as required for diffusion of the molten brazing alloy layer while a considerable squeezing force on the assemblage is delivered by the members to such brazing alloy layer; the rate and degree of induction heating of the assemblage are regulated automatically in response to radiation from an emissivity-stabilized surface of such assemblage to reduce the time required to heat the assemblage to brazing temperature to a matter of seconds while

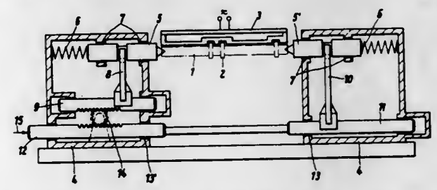


preventing overheating above such temperature; and termination of heat application and forced air cooling of such assemblage for reduction of its temperature is effected automatically within one minute after initiation of its heating.

3,504,150
PROCESS FOR THE INDUCTIVE HEATING OF WORKPIECES HAVING CONTINUOUSLY CHANGING RADII OF CURVATURE
Gerhard Seulen and Friedhelm Reinke, Remscheid, Germany, assignors to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany
No Drawing. Filed Sept. 27, 1967, Ser. No. 672,419
Claims priority, application Germany, Oct. 14, 1966, A 53,770
Int. Cl. H05b *5/08*
U.S. Cl. 219—10.43 **2 Claims**

Metal workpieces which have continuously changing radii of curvature in a peripheral direction, e.g. cams, are inductively heated in a manner to overcome differential heating effects due to assymetrical shape, namely by reducing the frequency of the heating current when the temperature of the surface portion of the smallest radius of curvature has reached the Curie temperature.

3,504,151
APPARATUS AND METHOD OF INDUCTIVELY HEATING ELONGATED WORKPIECES
Friedhelm Reinke, Remscheid, and Edgar Stengel, Wuppertal-Hahnerberg, Germany, assignors to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany
Filed Feb. 19, 1968, Ser. No. 706,397
Claims priority, application Germany, May 20, 1967, A 55,765; Aug. 16, 1967, A 56,503
Int. Cl. H05b *5/00, 9/06*
U.S. Cl. 219—10.57 **7 Claims**



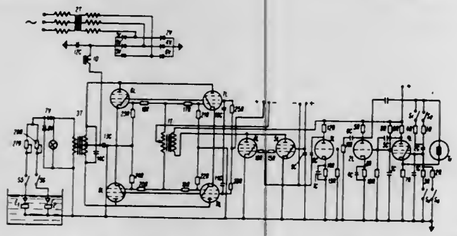
Apparatus for inductively heating elongate workpieces, such as cam shafts, includes holding centres for gripping the opposite ends of the workpiece, the centres being

spring biased toward each other, and inductor means for inductively heating the workpieces. The centres are interconnected by a rack and pinion arrangement which effects simultaneous movement of the centres toward or away from each other. The movement may be differential so that a selected portion of a workpiece may be held stationary even though thermal expansion of the workpiece would otherwise result in axial displacement of that portion.

3,504,152
METHOD FOR HIGH-FREQUENCY ELECTRIC-IMPULSE METAL FINISHING AND AN APPARATUS FOR ACCOMPLISHING THE SAME

Abram Lazarevich Livshits, Arkady Timofeevich, Kravets, and Mikhail Iljich Boorda, Moscow, U.S.S.R., assignors to Experimentalny Nauchno-Issledovatelsky Institute Metallorezhushtchikh Stankov

Filed Aug. 8, 1963, Ser. No. 300,896
Int. Cl. B23p *1/08*
U.S. Cl. 219—69 **6 Claims**

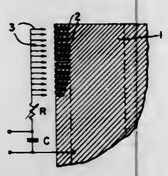


A method for high-frequency electric-impulse metal finishing by an electrode-tool acting as an anode, between which and the work, acting as a cathode, electric impulse discharges are excited by unipolar voltage pulses with an amplitude ranging from 100 to 600 volts, said electric impulse discharges being characterized by a ratio of a single pulse to average energy over a cycle lying within 1 to 5. The method characterized by the above parameters is implemented by the provision of an apparatus comprising an oscillator, a power amplifier, an output transformer, two semiconductor valves and a nonlinear resistance.

3,504,153
METHOD OF SPARK MACHINING STATOR OR ROTOR HAVING LAMINATION SIMULATING CHARACTERISTICS

Hartwig Beyersdorf, Bremen-Arbergen, Germany, assignor to Lloyd Dynamowerke G.m.b.H., Bremen, Germany

Filed Oct. 11, 1966, Ser. No. 585,925
Claims priority, application Germany, Oct. 11, 1965, L 51,848
Int. Cl. B23p *1/08;* **H02k** *1/06, 15/02*
U.S. Cl. 219—69 **7 Claims**

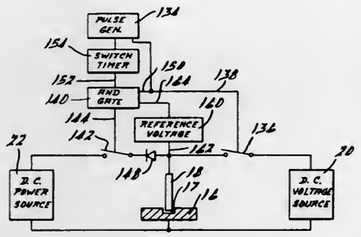


A method of making a stator or rotor of a D.C. excited motor generator, which stator or rotor is made of massive, magnetic material and has a portion simulating a comparable stator or rotor made of laminations which are separated by interspaces or by layers of insulation. The method comprises the step of applying spark discharges to the stator or rotor for eroding material thereof to form slits which simulate the interspaces or layers of insulation between laminations. The slits have a width which is no greater than of the order of approximately 0.2 mm. and a depth no greater than of the order of approximate 10 mm., and are spaced apart a distance no greater than of the order of approximately 0.8 mm.

3,504,154
EDM POWER SUPPLY WITH SEPARATE SOURCES OF GAP IONIZING POTENTIAL AND MATERIAL ERODING ENERGY

Victor H. Marcolini, 3216 S. 54th Ave., Cicero, Ill. 60650

Filed Aug. 3, 1966, Ser. No. 618,548
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 **15 Claims**



An electrical discharge machining power supply for eroding material from a conductive workpiece by passing successive pulses through an ionizable gap defined between an electrode tool and the workpiece, in which separate sources of gap ionizing potential and material eroding energy, which have internal impedance characteristics selected to approximate the impedance characteristics of the gap in its unionized and ionized states, respectively, are selectively coupled across the gap through respective electronic switches. A pair of high voltage switches are provided for coupling the source of gap ionizing potential across the gap. One of the high voltage switches is operated by a differentiated version of the control pulse and, therefore, has a very fast response time, so that a burst of gap ionizing potential is applied across the gap at the very outset of each control pulse to thereby charge the gap capacitance and at least initiate the gap ionizing process. The other of the high voltage switches has a slower response time, but maintains the gap ionizing potential across the gap for any period up to the full duration of the control pulse and, therefore, assures full ionization of the gap at some time during most all control pulses under normal machining conditions. Also, undervoltage and overcurrent cut-off circuits, both of which are gencrally responsive on a per-pulse basis, though the former is relatively slow acting while the latter is relatively fast acting, are provided to interrupt the machining process in the event that the voltage across the gap drops below some predetermined level or the current therethrough rises above some predetermined level.

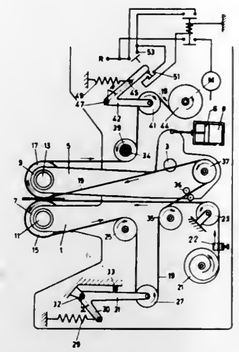
3,504,155
SEMIAUTOMATIC WELDING MACHINE

Paul Opprecht, Im hintern Bernold, and Hans Byland, Bernold 252, both of Bergdietikon, Switzerland

Filed Sept. 8, 1967, Ser. No. 666,271
Claims priority, application Switzerland, Sept. 12, 1966, 13,151/66
Int. Cl. B23k *11/06*
U.S. Cl. 219—81 **8 Claims**

In a welding machine for welding tinned or galvanized sheet metal, a wire-shaped and driven electrode is passed over two adjacent movable rolls between which the sheet

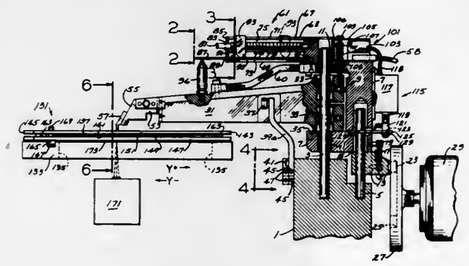
metal is introduced in contact with the wire-shaped electrode. In order to control loops formed in the wire-shaped electrode during welding, several spring-loaded wire tensioners and two feed devices coupled one to the other, one of them comprising a free-wheel clutch, are provided.



3,504,156
BONDING APPARATUS

Marvin M. Bonner, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,424
Int. Cl. B23k *9/28, 11/10*
U.S. Cl. 219—87 **17 Claims**



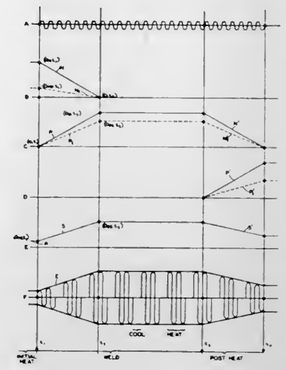
During a cycle of operation each of several electrodes is moved into electrical contact with a workpiece and then is forced against it with a predetermined force. The contact force or pressure applied to the workpieces by each of the electrodes is independently governed by a separate force-setting device for each electrode. The apparatus senses when each electrode is exerting the predetermined force and, when this condition is sensed, welding current is applied to the electrodes. Operation of the apparatus is controlled by coding on a program card.

3,504,157
SLOPE CONTROL FOR RESISTANCE WELDING

Peter W. Vanderhelst, Livonia, Mich., assignor to Robotron Corporation, Detroit, Mich., a corporation of Michigan

Filed May 25, 1966, Ser. No. 552,943
Int. Cl. B23k *11/24*
U.S. Cl. 219—110 **25 Claims**

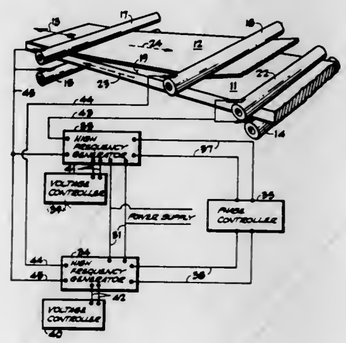
A method and apparatus for changing at a linear rate the weld heat applied to a workpiece. A first linear ramp signal is generated. A second linear ramp signal opposite in polarity of slope from the first ramp signal is generated from the first ramp signal. The first and second ramp signals are added to provide a sloped linear reference signal. The weld heat is made to follow the reference signal.



3,504,158
WELDING MATERIALS HAVING DIFFERENT CHARACTERISTICS

Paul Bliven, 344 Cayuga St., Salinas, Calif. 93901

Filed Aug. 5, 1966, Ser. No. 575,917
Int. Cl. B23k *9/00, 11/00, 11/16*
U.S. Cl. 219—117 **12 Claims**

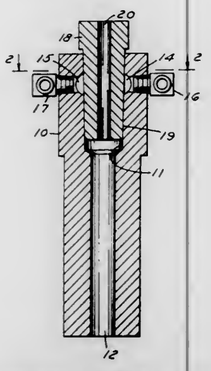


The present disclosure relates to apparatus and process for welding together two metals having different characteristics such as specific heats, conductivities, masses, or configurations; whereby each of the two requires an amount of heat different than the other to achieve their welding together. One of the two metals is moved along one leg and the other metal is moved along the other leg of a vee to meet and be welded together at the apex of such vee. Heating of the opposed surfaces of the metals prior to contact and welding at the apex is had by passing a high frequency current along each leg of the metal so that each current evidences the skin effect and between the current legs there is evidenced the proximity effect. The voltage of each current leg is different relative to the other to effect such differential heating of the two metals, one with respect to the other.

3,504,159
ELECTRIC RESISTANCE WELDING ELECTRODE HOLDER HAVING COOLANT CIRCULATION MEANS FOR ELECTRODES HAVING APERTURES

Robert B. Width, Rochester, Mich., assignor to Tuffaloy Products, Inc., Detroit, Mich., a corporation of Michigan

Filed June 4, 1968, Ser. No. 734,496
Int. Cl. B23k *9/24*
U.S. Cl. 219—120 **1 Claim**

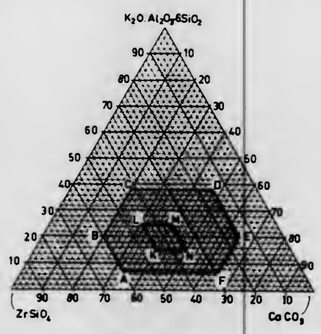


An electric resistance welding electrode holder having a tapered socket equipped with an internal peripheral groove constituting a coolant fluid circulation between connecting orifices in conjunction with an electrode having a tapered shank seated in the holder tapered socket in sealing relationship therewith above and below the channel so that coolant circulated in the channel between the orifices is in direct contact with the electrode shank to directly cool the electrode.

3,504,160
FILLED WELDING WIRE FOR THE ELECTRIC ARC WELDING IN A PROTECTIVE GAS ATMOSPHERE

Wilhelmus Gerardus Essers, Gerardus Jelmorini, and Gerrit Willem Tichelaar, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 9, 1968, Ser. No. 758,459
Claims priority, application Netherlands, Sept. 12, 1967, 6712434
Int. Cl. B23k *35/22*
U.S. Cl. 219—146 **5 Claims**

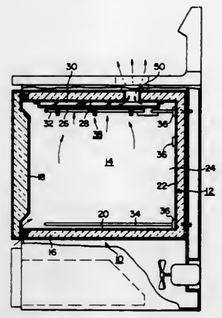


The invention relates to a welding wire for electric arc welding of steel in a protective gas atmosphere, which welding wire consists of a metal sheath and a filling which contains 6–10% by weight of slag forming ingredients, which ingredients mainly constitute by weight of the slag-forming ingredients, 0–40% zirconium dioxide, 15–60% zirconium silicate, 7–38% potash feldspar and 20–65% calcium carbonate.

3,504,161
OVEN

John C. Kastovich, Franklin Township, Elmont, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 521,932, Jan. 20, 1966. This application Apr. 26, 1966, Ser. No. 552,663
Int. Cl. A21b *1/22*
U.S. Cl. 219—393 **7 Claims**

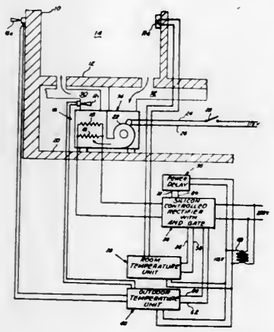


A cooking oven of the heat-cleaning type in which substantially all of the heat for cleaning is supplied by the upper (i.e., broiler) heating element energized to rapidly raise the oven cavity temperature into a heat-cleaning range, the broiler heating element also serving to eliminate smoke and fumes during heat cleaning by virtue of a venting system associated with the broiler element causing the smoke and fumes exiting from the oven cavity to flow closely by the element in passing into small apertures arrayed closely above the element.

3,504,162
CONTROL SYSTEM FOR ELECTRIC POWER

John T. Beeston, Jr., Des Moines, Iowa, assignor of thirty-three and one-third each to Frank L. Green and Morton S. Adler, both of Des Moines, Iowa

Continuation-in-part of application Ser. No. 557,691, June 15, 1966. This application Dec. 14, 1967, Ser. No. 690,675
Int. Cl. H01h *37/00*
U.S. Cl. 219—491 **13 Claims**



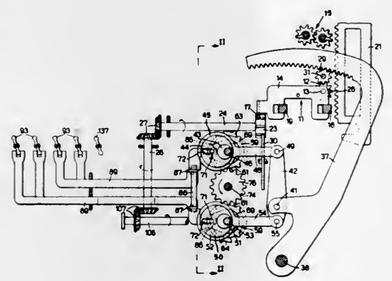
An automatic control circuit for an electric heating system utilizing a silicon controlled rectifier unit operated in response to trigger signals received from a controlled oscillator. The generation of oscillations and the frequency of the same are controlled by a logic circuit including an AND gate having a plurality of inputs.

Numerous sensing or input units are provided which include a room temperature unit, an outdoor unit, a plenum unit and a power restoration unit monitoring the presence of power at the source. The oscillator operates to trigger the silicon control rectifier switch unit to apply power to an electric heat producing load only when all three signals from the various sensing units are present and fed into the AND gate.

3,504,163
SERIAL SETUP DEVICE FOR A CALCULATING, ACCOUNTING OR SIMILAR MACHINE

Nicolo Giolitti, Ivrea, Torino, and Adriano Zambolin, Borgofranco, Torino, Italy, assignors to Ing. C. Olivetti & Co., S.p.A., Ivrea, Torino, Italy, a corporation of Italy

Filed Oct. 9, 1967, Ser. No. 673,771
Claims priority, application Italy, Oct. 10, 1966, 55,617/66
Int. Cl. G06c *7/00, 9/00*
U.S. Cl. 235—60 **12 Claims**



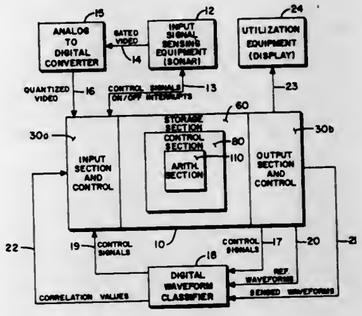
A serial setup device for accounting machine comprises a storing device provided in each order with a pinion individually settable in a position corresponding to the figure to be set up, and a toothed drum adapted to sequentially assume a position corresponding to the various figures of an amount to be setup under the control of a selecting device. The actuator engages simultaneously all pinions not yet setup so as to locate same in the position corresponding to said last setup figure, whereas the storing device is transversely displaced step by step to disengage the engaged pinion of the highest order from the actuator.

3,504,164
DATA PROCESSING SYSTEM FOR CLASSIFYING UNKNOWN WAVEFORM

Edward J. Farrell and Richard R. Lachenmayer, St. Paul, and George F. Marette, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1964, Ser. No. 358,918
Int. Cl. G06f *15/34;* **G06g** *7/19;* **G06k** *9/00*
U.S. Cl. 235—150 **19 Claims**

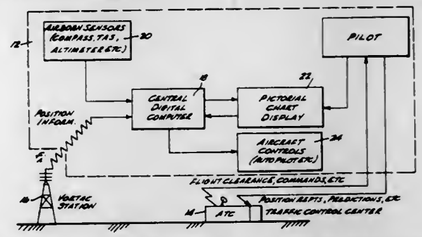
A system utilizing digital data processing techniques for classifying unknown wave forms, which have been quantized, by comparison to a class of known or reference wave forms, and determining the identification of the unknown wave forms by the correlation factors generated by the digital circuitry as a result of the comparison.



3,504,165
NAVIGATION STATION IDENTIFICATION

Donald W. Richardson, Woodland Hills, Stanley N. Roscoe, Los Angeles, and Elliot P. Hechtman, Santa Monica, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 27, 1967, Ser. No. 626,324
Int. Cl. G06f *15/48*
U.S. Cl. 235—150.23 **7 Claims**



A navigation direction system in which dead reckoning aircraft position information is cyclically determined in response to aircraft flight sensor information wherein the dead reckoning information is up-dated every *n* cycles with radio aid navigational information by a digital system that includes a memory for storing transmitter frequency, latitude, longitude, magnetic deviation and altitude information related to a plurality of radio aid stations comparator means for comparing the frequency of received radio aid signals with the stored radio frequencies for matching and identifying the received radio aid station and then comparing the latitude and longitude of the identified station with the aircraft's determined latitude and longitude and rejecting the stored information corresponding to the matched frequency information if the radio aid station is beyond the predetermined range or utilizing the stored information if the radio aid station is within a predetermined range.

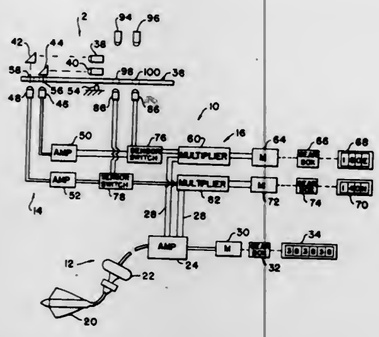
3,504,166
POSITION INDICATING APPARATUS

James M. Spencer, Jr., 2515 Mercedes Drive, Fort Lauderdale, Fla. 33316

Filed Oct. 12, 1964, Ser. No. 403,090
Int. Cl. G06f *15/50;* **G06g** *7/22, 7/28*
U.S. Cl. 235—150.271 **5 Claims**

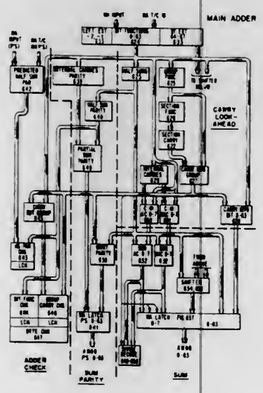
Structure is disclosed for indicating the latitude and longitude of a vehicle, such as a boat continuously. In

accordance with the invention a disc having transparent portions is combined with light sources and photoelectric cells to produce electric signals varying in magnitude in accordance with the east and west and the north and south components of a direction of travel. Separate and distinct means are provided for developing a signal having a magnitude varying with speed. The east and west and north and south signal components are then multi-



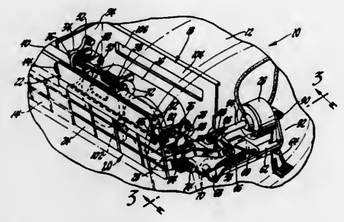
plied by the speed signal in multiplying circuits to provide output signals, the integrated magnitude of which give an indication of distance travelled which is displayed as latitude and longitude position. Means are provided in conjunction with the disc for reversing the algebraic sign of the east and west and north and south signal components to provide north and south and east and west movement differentiation.

3,504,167
CARRY SELECT DIVIDE DECODE
Clark Kurtz, Highland, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 445,310, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,250
Int. Cl. G06f *7/38*
U.S. Cl. 235—164 **4 Claims**



The specification discloses an illustrative embodiment of a data processing system and includes a divide decoder which generates multiples in a carry-select fashion. Included in the system is a main adder which is made faster by having the highest ordered 8 bits operate in a carry-select fashion using propagate carry look-ahead factors applied thereto from the remaining, lower-order bits of the adder. In order to speed up the divide operation such that one divide iteration can be done in each machine cycle, duplicate divide decoders are provided, one generating multiples based upon the assumption that there will be a carry into this high-order byte, the other generating multiples under the assumption that there will not be a carry into the high-order byte. When the carry is available, it selects the correct set of multiples, whereby all of the circuit delay times for the divide decoder are expanded in overlap fashion with the operation of the adder.

3,504,168
HEADLAMP DOOR ASSEMBLY
Roy E. Johnson, Southfield, Joseph F. Loeffler, East Detroit, and Donald F. Urban, Troy, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,694
Int. Cl. B60g *1/04*
U.S. Cl. 240—7.1 **6 Claims**



A vehicle is provided with a headlamp assembly mounted within a body recess. A pair of doors are mounted for pivotal movement between positions closing the recess and positions opening the recess to reveal the headlamps. One of the doors is connected to an actuator for movement between the open and closed positions. Controls are provided for sequentially moving the other door in response to movement of the one door. In one embodiment, the controls take the form of a toggle linkage. In another embodiment, the doors are independent and the controls take the form of abutments on the doors which are inter-engageable upon movement of the actuated door to move the other door.

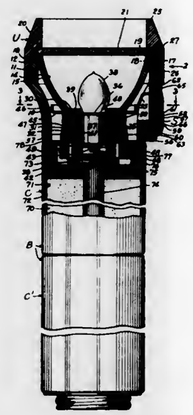
3,504,169
ELECTRIC LIGHT STRING KIT
Barron H. Freeburger, 6637 24th Place, West Hyattsville, Md. 20782
Filed Oct. 17, 1967, Ser. No. 675,813
Int. Cl. A47g *33/16;* **F21p** *1/02*
U.S. Cl. 240—10 **2 Claims**



A sectionalized string of lights consisting of a supply line section, a plurality of socket sections, and extension

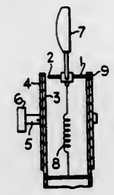
sections for increasing the spacing between adjacent socket sections. Each socket section has a base member with two pairs of terminal wires extending in opposite directions therefrom. The terminal wires have complementary connector elements on the ends thereof for electrically connecting the socket section to an adjacent socket section or extension section. The extension section is made up of a pair of wires having complementary connector elements at each end thereof for electrically connecting the extension section to an adjoining socket section or extension section. The supply line section has a pair of wires with complementary connector elements on one end thereof for electrically connecting the supply line section to a socket section or extension section, and a plug on the other end which is connected to a power supply. The various sections are electrically connected in parallel with each other and can easily be interchanged, removed or added at any point along the string without effecting the voltage supplied across the sections of the string.

3,504,170
COMBINED LAMP AND SWITCH UNIT FOR PORTABLE CASELESS FLASHLIGHTS
William C. Thompson, P.O. Box 271, Desert Hot Springs, Calif. 92240
Filed Dec. 1, 1967, Ser. No. 687,314
Int. Cl. F21l *1/00, 7/00*
U.S. Cl. 240—10.61 **7 Claims**



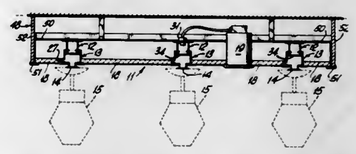
A combined flashlight lamp and switch unit capable of being rigidly attached to dry cell units. The dry cell unit may be replaced when it becomes exhausted. The lamp and switch unit has an open ended tubular body of electrical insulating material. A reflector of non-conducting material provided with a central opening is supported in the body member. A transparent cover closes the front end of the reflector. A metal collar is fixed in the opening of the reflector. A contact member receives the inner end of the reflector and is secured to the metal collar. The contact member has an insulating battery-attaching collar provided with screw threads for securing the flashlight lamp and switch unit to a dry cell unit. A cup shaped lamp holder of electrically insulating material has a contact sleeve engaging the metal collar to secure the lamp holder to the reflector. A spring contact is mounted within the lamp holder for engagement with the positive electrode of a dry cell unit. A switch member is mounted in the body for opening and closing the lamp circuit.

3,504,171
VEHICLE LAMP MOUNTINGS
Frederick R. P. Martin, Kent, England, assignor to Rotadipper Limited, Kent, England, a British company
Continuation-in-part of application Ser. No. 527,196, Feb. 14, 1966. This application Sept. 13, 1967, Ser. No. 667,590
Claims priority, application Great Britain, Feb. 3, 1966, 4,851/66; Sept. 19, 1966, 41,761/66; Aug. 18, 1967, 38,237/67
Int. Cl. B60q *1/12*
U.S. Cl. 240—62.52 **36 Claims**



A vehicle lamp mounting connected with the steering mechanism of the vehicle for rotation and tilting movement in response to movement of the steering mechanism. A releasable coupling is provided between the lamp mounting and the steering mechanism so that obstruction of the lamp movement will not hinder the steering of the vehicle. The member for connecting the drive mechanism with the lamp mounting is provided with a ball and socket joint at one end and a pivot joint at the opposite end, the axis of the pivot joint being aligned with the ball and socket joint for dampening out vibrations from the wheels before they reach the lamps. One embodiment of the lamp mounting consists of a first tubular member having a transversely extending pivotally mounted arm at one end. The lamp is mounted on the arm. The first tubular member has a slot through which the end of the arm extends. A second tubular member surrounds the first tubular member and has a cam surface on which the end of the arm rests. The second tubular member is stationarily mounted and the first tubular member rotates in response to movement of the vehicle steering mechanism. A second embodiment provides a rectangular enclosure, the upper side of the lamp being suspended from the upper surface of the enclosure. The lower side of the lamp is connected with the steering mechanism and is moved forwardly or rearwardly in response to movement of the steering mechanism.

3,504,172
LIGHTING FIXTURE SUPPORTING AND WIRING CHANNELS
Milton Liberman, 65 Sewane Road, East Rockaway, N.Y. 11518
Filed June 15, 1967, Ser. No. 646,379
Int. Cl. F21s *1/06, 3/06*
U.S. Cl. 240—78 **10 Claims**



A wiring channel member for supporting light fixtures consists of two integrally formed coextensive wiring channels disposed one above the other. The upper channel ac-

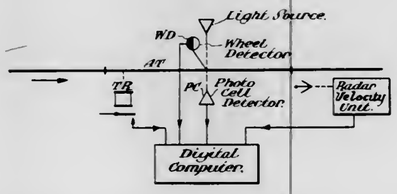
commodates wiring for energizing a plurality of electric outlets while the lower channel accommodates the wiring of the fixtures supported by the channel. An elongated plate is removably supported by the side walls and separates the upper and lower channels while providing a positive retaining force to prevent spreading of the side walls. Inwardly extending flanges at the bottom of the lower channel support a plurality of elongated closure elements and pendant lighting fixtures while outwardly extending flanges are provided for supporting ceiling tiles.

3,504,173

MEASUREMENT OF PHYSICAL PARAMETERS OF FREIGHT CARS IN CLASSIFICATION YARD OPERATIONS

Emil F. Brinker, Blackridge, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1968, Ser. No. 712,738
Int. Cl. B61l *25/02*
U.S. Cl. 246—122 **13 Claims**



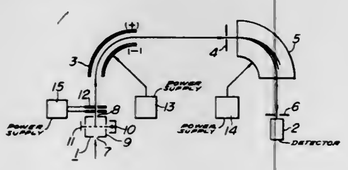
A photocell detector and a wheel detector are collocated along a stretch of track to detect the passage, respectively, of the leading and trailing couplers and each axle of each car traversing that track, whether in single- or multi-car cuts. Detection of the lead coupler of a cut actuates a digital computer arrangement to count doppler pulses supplied from radar apparatus measuring cut motion. Since each pulse is equivalent to a fixed amount of motion, the total count at any instant is indicative of the length of that part of the cut already passed the detectors. Count samples taken when each axle passes a point are used in computations to determine the number of axles on each car and the length of each single- or multi-car cut.

3,504,174

PRECISION MASS SPECTROMETER APPARATUS

Koji Nisiwaki, Yasuo Nakajima, and Yasuhide Hisamoto, Katsuta-shi, and Yukichi Ueno, Mito-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 28, 1967, Ser. No. 634,655
Claims priority, application Japan, May 2, 1966, 41/27,566
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **12 Claims**



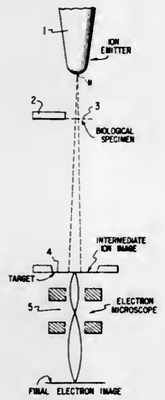
A precision mass spectrometer having means for ionizing sample molecules, dispersing the ions according to their mass after they are accelerated and for detecting the dispersed ions, and means for displaying peaks of the mass spectrum on a cathode-ray tube, bringing two known peaks spaced apart one or several mass units into coincidence with index lines on the cathode-ray tube, causing to luminesce an unknown sub-peak existing in the neighborhood of the known peaks, and then bringing the luminant sub-peak into coincidence with one of the two known peaks.

3,504,175

FIELD ION SHADOW PROJECTION MICROSCOPE

Erwin W. Mueller, State College, Pa., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York

Filed Sept. 19, 1966, Ser. No. 580,532
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **5 Claims**



A field ion shadow projection microscope. A single atom or molecule, adhered to the tip of an emitter, functions as an ion source. The effective diameter of the ion source is approximately 2.5 angstroms. Ions from the source travel in straight paths to a biological specimen, some being deflected others passing to a target. No lenses are required to focus the ions. Secondary electrons are produced when the ions strike the target, and the final image is formed from the electrons.

3,504,176

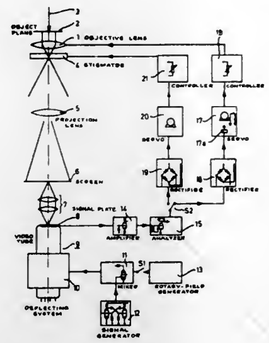
METHOD AND APPARATUS FOR FOCUSING THE OBJECTIVE LENS OF A PARTICLE BEAM MICROSCOPE

Friedrich Thon, Berlin, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed July 12, 1967, Ser. No. 652,840
Claims priority, application Germany, July 13, 1966, S 104,764
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **14 Claims**

In an electron or ion microscope the objective lens is electrically focused by producing with the aid of that lens an image of an object on the signal plate of a video tube and scanning the image with the electron beam of the tube to obtain a signal voltage whose frequencies (time frequencies) correspond to the space frequencies of the object, i.e. to the spatial distribution of the internal potential in the object. The signal voltage is analyzed to detect the occurrence of given frequencies, and the field excita-

tion of the objective lens is varied until such occurrence is brought about. The scanning and frequency selective



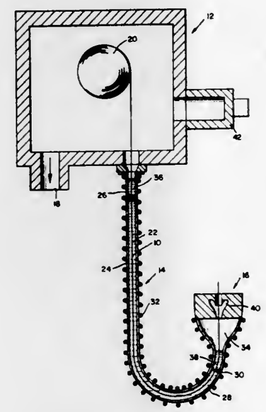
process is also used for adjusting a stigmator for correction of astigmatism.

3,504,177

PRESSURE-SEAL FOR TRANSFER OF CONTINUOUS MATERIAL

Richard A. Walker and William E. McKee, Woodland Hills, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 16, 1968, Ser. No. 721,771
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **4 Claims**



A J-seal is provided for the continuous transfer of continuous material between zones of different pressure. The J-seal contains a high density liquid, preferably a metal, which liquefies at a fairly low temperature. In addition, a coating liquid is provided on top of the high density liquid. This coating liquid coats the continuous material passing through the seal to prevent the high density liquid from adhering to the continuous material. In a special case, the temperature of the liquefied high density material is used to cause a temperature responsive reaction in the continuous material passing through the seal. Wiper means are provided at the outlet of the J-seal whereby to remove excess liquid from the continuous material.

3,504,178

METHOD FOR DETERMINING CRYSTALLOGRAPHIC ORIENTATION

Anthony N. Mariano, Marlboro, Mass., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Original application May 14, 1965, Ser. No. 455,716. Divided and this application May 28, 1968, Ser. No. 738,763
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **4 Claims**

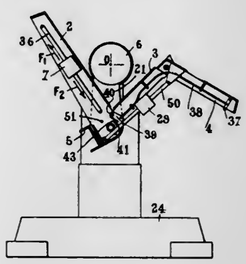
Crystal orientation is determined using a single Laue photograph which is employed to determine the orientation of the crystal for scanning on an X-ray diffractometer.

3,504,179

DIAGNOSTIC X-RAY TABLE HAVING A TILTABLE SURFACE MADE OF A PLURALITY OF CONNECTED SECTIONS

Marcel Hainault, Romainville, France, assignor to Alexandre & Cie, Societe Anonyme, Romainville, France

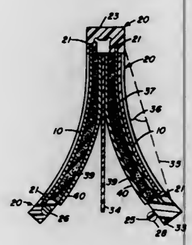
Filed Oct. 6, 1964, Ser. No. 401,799
Claims priority, application France, Oct. 8, 1963, 949,911
Int. Cl. G01n *23/00;* **H01j** *37/20*
U.S. Cl. 250—55 **1 Claim**



1. A table for X-ray diagnostic and stereotaxic surgery comprising a vertical stand having a telescopic pintle, a plurality of inclinable, X-ray pervious plate elements hingedly inter-connected in succession, means for locking the hinge means of the endmost plate elements and comprising a flexible cable housed under said plate elements, a locking pawl controlled by said cable and a plurality of studs carried by the hinge means of intermediate plate elements and engageable by said locking pawl, a bracket rigid with one of said plate elements, said bracket having an upturned end, a drum rigid with the upturned end of said bracket, a spindle secured in the horizontal position to the top of said telescopic pintle and substantially in line with the center of gravity of the loaded table, a bearing mounted on the outer end of said spindle and rigidly carrying the upturned end of said bracket, an electromagnetic brake mounted on said spindle in the vicinity of said drum and a push-button electrical switch control for energizing said brake, having its push-button disposed in the vicinity of the hinge means of said intermediate plate elements so as to be concealed by said plate elements in the aligned position thereof, at least two balance-weights slidably mounted along the sides of said plate elements for balancing the table, an X-ray generator tube, two rods for supporting said generator tube, an X-ray cassette mounted on the opposite ends of said two rods, a yoke having said two rods pivotally mounted at its two ends, a pivot pin carried by the top of said yoke, and a bracket rigidly

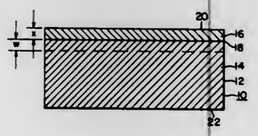
mounted on the endmost plate element at the head of the table and carrying a bearing for said pivot pin.

3,504,180
X-RAY FILM PACKAGE
Frederick F. Tone, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 24, 1967, Ser. No. 625,829
Int. Cl. G03b *17/26*
U.S. Cl. 250—68 **5 Claims**



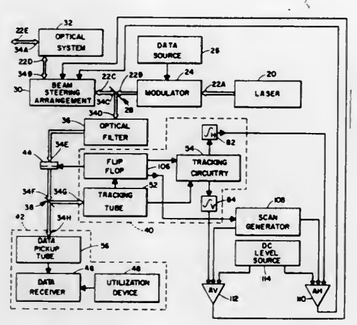
A package for holding X-ray films during exposure wherein the intensifying screens are pressed uniformly against the X-ray sensitive surfaces upon closing the package. The screens are mounted on opposed convexly curved panel surfaces and are pressed against the X-ray film first along one longitudinal edge of the film and progressively in increments to the opposite edge as the curved panels are pressed together to form a flat cassette.

3,504,181
SILICON CARBIDE SOLID STATE ULTRAVIOLET RADIATION DETECTOR
Hung Chi Chang, Robert B. Campbell, and Marvin L. Crull, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 6, 1966, Ser. No. 584,797
Int. Cl. G01t *1/16;* **H01j** *39/00, 39/12*
U.S. Cl. 250—83.3 **9 Claims**



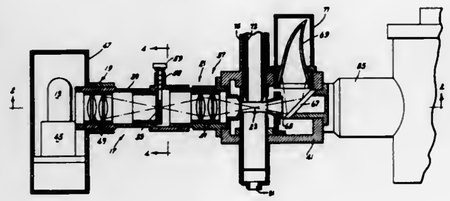
An ultraviolet radiation detection system comprising a body of silicon carbide semiconductor material having a top surface and a bottom surface. The silicon carbide body has at least one region of a first type semiconductivity, at least one region of a second type semiconductivity, and a p-n junction formed by the interface of each pair of regions of different type semiconductivity. At least a portion of the p-n junction closest to the top surface of the body is no greater than 10 microns from the top surface whereby that portion is sensitive only to a predetermined wavelength within the ultraviolet radiation portion of the spectrum when the top surface of the device is exposed to a source of radiation.

3,504,182
OPTICAL COMMUNICATION SYSTEM
Vito F. Pizzurro, Villa Park, Harvey E. Fiala, Downey, Louis A. De Bottari, Torrance, and Shiro A. Uchizono, Gardena, Calif., and Lowell M. Rubin, Brooklyn, N.Y., assignors to North American Rockwell Corporation
Filed Oct. 14, 1966, Ser. No. 586,697
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **48 Claims**



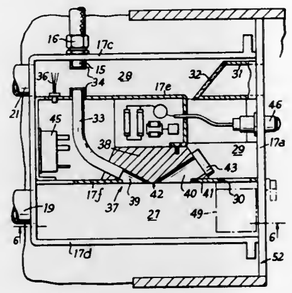
This invention relates to a communication system; and more particularly to a communication system using a light-beam as the information-carrying medium.

3,504,183
PARTICLE COUNTER USING A VARIABLE TEST VOLUME
Martin J. Salkowski, Downers Grove, and Alvin Lieberman, Morton Grove, Ill., assignors to IIT Research Institute, Chicago, Ill., a nonprofit corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 578,844
Int. Cl. G01n *21/36*
U.S. Cl. 250—218 **3 Claims**



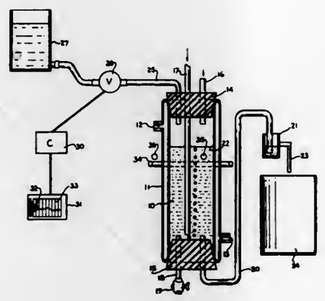
The concentration of particles suspended within a flowable medium is determined by projecting a light beam into the medium to define an illuminated volume therewithin. A reflected volume is also defined in the medium which intersects a portion of the illuminated volume to thereby define a coincident volume containing the portion of the medium to be sampled. The reflected light from the coincident volume is sensed to provide an output signal indicative of the particle concentration. The size of the coincident volume within the medium is selectively altered so that a predetermined number of particles are present, statistically, therewithin at rates which permit maximum statistical validity for the particle concentration determination provided by the sensing of the reflected light.

3,504,184
RADIATION SENSITIVE SMOKE DETECTOR USING LIGHT CONDUCTING MEANS
Colin Ashton Eaton, West Drayton, Middlesex, and William Walter Cozens, Harrow, Middlesex, England, assignors to Walter Kidde & Company, Incorporated, Belleville, N.J., a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,320
Int. Cl. G01n *21/00, 21/26*
U.S. Cl. 250—218 **2 Claims**



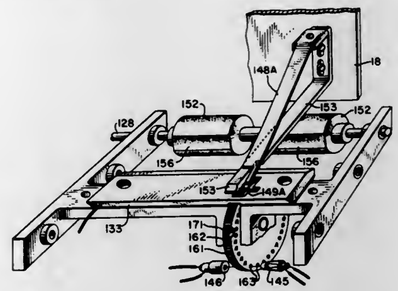
Smoke detection apparatus including a visual smoke detector comprising a dark chamber providing an air path, a light-carrying rod, such as a glass fibre light guide, for conveying light from a light source and for causing this to pass along a light path through the air path, and a window through which the light path may be viewed.

3,504,185
APPARATUS FOR MEASURING AND CONTROLLING CELL POPULATION DENSITY IN A LIQUID MEDIUM
Gunter Zweig, Syracuse, Robert E. Pipher, Cortland, and Joan E. Hitt, Syracuse, N.Y., assignors to Syracuse University Research Corporation, Syracuse, N.Y., a corporation of New York
Filed May 9, 1968, Ser. No. 727,910
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **5 Claims**



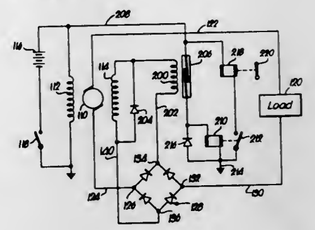
A glass chamber for cell growth in a liquid medium has means for adding medium controlled by a solenoid valve. One photocell faces a light source through the medium and another photocell faces the source directly. The photocells are connected with resistances in a Wheatstone bridge whose midpoints are connected to a voltage comparator whose output operates the valve for diluting the medium when cell growth causes increased turbidity in the chamber and changes voltage in the bridge. A strip chart recorder potentiometer connected across the bridge records changes in voltage in the bridge.

3,504,186
DATA CARD TRANSMITTER WITH CARD CONTROLLED GATING MEANS
Newton L. Feld, New York, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Mar. 28, 1966, Ser. No. 538,008
Int. Cl. G01n *21/30;* **G01d** *5/36*
U.S. Cl. 250—219 **14 Claims**



A card reader for a stack of punched or sense-marked data cards, or for such cards intermixed, or for cards having both punch marks and sense marks therein, all read by means utilizing reading probe pulses at accurate card travel distances, and adapted for various card lengths.

3,504,187
ELECTRIC GENERATOR AND SPEED CONTROL SYSTEM THEREFOR
Arthur Laudel, Jr., Leawood, Kans., assignor, by mesne assignments, to Alternac, Prairie Village, Kans., a partnership
Original application Dec. 8, 1965, Ser. No. 512,502, now Patent No. 3,435,325, dated Mar. 25, 1969. Divided and this application Nov. 1, 1968, Ser. No. 772,657
Int. Cl. F02n *11/06*
U.S. Cl. 290—40 **2 Claims**

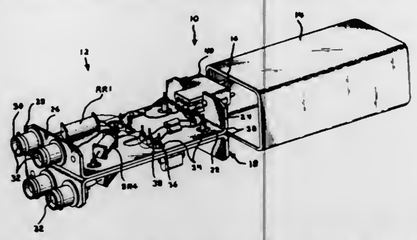


The armature of an alternator is driven by the engine of a motor vehicle which, when the vehicle is stationary, is normally at an idling speed. Control circuitry responsive to the current demands of an external load is provided for actuating the throttle of the engine to increase the throttle setting in accordance with such demands, thereby increasing the speed of the armature so that the alternator will be capable of handling the load.

3,504,188
SHIELDED VIDEO 2 x 2 SWITCH
Manfred Karl Ficker, Reesers Summit, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 13, 1967, Ser. No. 667,426
Int. Cl. H02j *1/10*
U.S. Cl. 307—18 **9 Claims**

A switch structure is disclosed having an arrangement of shielding and circuit paths to provide isolation between high frequency signal channels. The switch struc-

ture is in a 2 x 2 configuration and includes dry reed relays connected to be selectively switched by a control

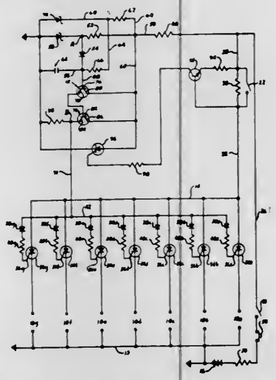


circuit to connect two 75 ohm video input signals onto two 75 ohm output paths.

3,504,189
SEQUENCE TIMING CIRCUIT

Garl McHenry, New Carlisle, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio

Continuation of application Ser. No. 599,259, Dec. 5, 1966. This application Nov. 13, 1968, Ser. No. 776,856
Int. Cl. H03k *17/00*
U.S. Cl. 307—41 14 Claims



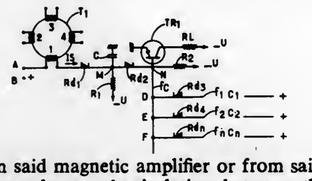
Apparatus for sequentially activating a plurality of loads comprises a plurality of switchable devices each having an output circuit switchable from a nonconductive to a conductive state, circuitry to connect the output circuit of each switchable device in series with a source of voltage and a corresponding one of said loads, a control circuit for each said switchable device, means to produce a control voltage which increases in magnitude with time and which is applied to all of said control circuits, each of said control circuits switching its switchable device to a conductive state at a different magnitude of said control voltage whereby said loads are sequentially energized by said source of voltage as the magnitude of said control voltage increases.

3,504,190
LOGICAL MAGNETOSTATIC ELEMENT WITH MIXED INPUT

Michel Arnoux, Verrieres-le-Buisson, France, assignor to C.I.T.—Compagnie Industrielle des Telecommunications, Paris, France

Filed Dec. 21, 1966, Ser. No. 603,675
Claims priority, application France, Dec. 24, 1965, 43,713
Int. Cl. H01f *27/42*
U.S. Cl. 307—88 13 Claims

This disclosure provides a magnetic amplifier connected to the control electrode of a transistor through a pair of serially connected diodes with separate control lines also being connected to the control electrode of said transistor so that said transistor can be controlled

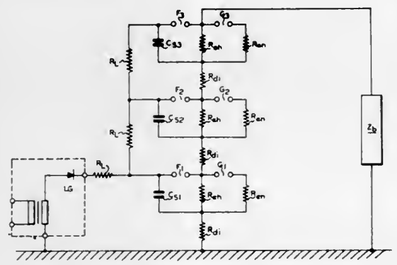


either from said magnetic amplifier or from said separate control lines, due to the isolation between the control functions provided by the diodes.

3,504,191
CIRCUIT ARRANGEMENT FOR CHARGING AND DISCHARGING MULTISTAGE PULSE GENERATORS

Arnold Rodewald, Riehen, near Basel, Switzerland, assignor to Emil Haefely & Cie. A.G., Basel, Switzerland, a Swiss company

Filed Apr. 19, 1967, Ser. No. 632,000
Claims priority, application Switzerland, Apr. 22, 1966, 5,844/66
Int. Cl. H02n *3/18*
U.S. Cl. 307—110 8 Claims

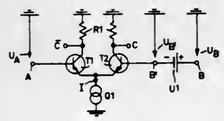


A multistage pulse generator wherein a plurality of capacitors are charged-up in parallel via resistors and are discharged in series via spark gaps which may be ball or rod elements. The discharge circuit resistor of each stage consists of two parallel branches. The first branch is formed by a high-value resistor and the second branch is formed by the series combination of a low-value resistor and an auxiliary discharge device.

3,504,192
EMITTER-COUPLED LOGIC CIRCUIT

Herbert Stopper, Litzelstetten, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed June 30, 1967, Ser. No. 650,300
Claims priority, application Germany, July 30, 1966, T 31,738
Int. Cl. H03k *19/08*
U.S. Cl. 307—203 8 Claims

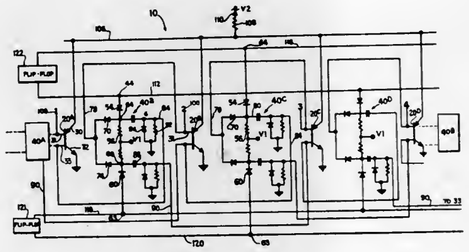


Emitter-coupled logic circuits which comprise two transistors are so designated that, if the logic signal controlling the one transistor is designated by B and the logic signal controlling the other transistor is designated by A, the output signal C is formed by the functions $C=A+\overline{B}$ and $\overline{C}=\overline{A}.B$, in contrast to known ECL-circuits wherein the output signal C corresponds to the function $C=A$ and $\overline{C}=\overline{A}$.

3,504,193
BIDIRECTIONAL COUNTERS HAVING POSITIVE TURN-ON AND TURN-OFF OF COUNTING DEVICES

Arthur F. Cake, Orange, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 21, 1966, Ser. No. 603,603
Int. Cl. H03k *21/00, 23/08*
U.S. Cl. 307—222 14 Claims

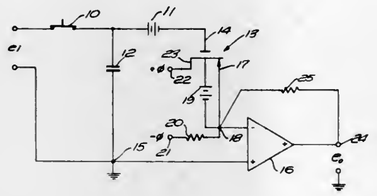


An electronic counter including a plurality of semiconductor devices, each having a turn-on electrode and a turn-off electrode and having an input circuit coupled to all turn-on and turn-off electrodes. When an input pulse is applied, it positively turns off the device which was ON and positively turns on the next device in the series. The circuit operates in this way in either forward or reverse directions.

3,504,194
SAMPLE AND HOLD CIRCUIT

Robert E. Eastman, Raynham, and Yaw Kuen Chen, Norwood, Mass., assignors to Epsco Incorporated, Westwood, Mass., a corporation of Massachusetts

Filed Sept. 29, 1967, Ser. No. 671,636
Int. Cl. H03k *19/00*
U.S. Cl. 307—238 2 Claims

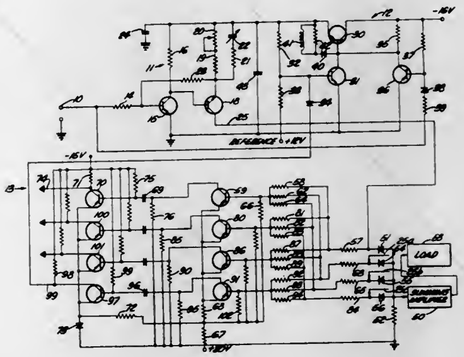


A sample and hold circuit is described which samples an amplitude modulated periodic waveform and provides an output of that same waveform at an amplitude corresponding to the amplitude of the input signal at the time of sampling. Two reference signals, displaced in phase by 180° and of the same frequency as the input signal are coupled to the summing junction of an operational amplifier. An insulated gate field effect transistor couples one of the reference signals to the summing junction. The insulated gate transistor is controlled by the charge in a storage capacitor across which the input signal is intermittently impressed by a sampling switch.

3,504,195
AMPLIFIER CONTROL CIRCUIT

James L. Kimball, La Mesa, and William R. Tompkins, San Diego, Calif., assignors to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware

Filed May 4, 1965, Ser. No. 453,167
Int. Cl. H03k *17/00*
U.S. Cl. 307—243 19 Claims

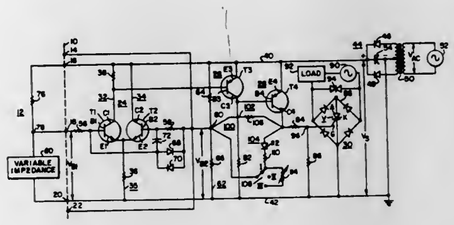


An amplifier powered by a voltage regulator whose series regulating device is rendered non-conducting to de-energize the amplifier when no input is applied thereto or when logic circuitry produces a signal indicating another amplifier feeding a common load is energized.

3,504,196
AMPLIFYING APPARATUS OPERABLE TO TWO STABLE OUTPUT STATES

Francis T. Thompson, Verona, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 16, 1967, Ser. No. 646,672
Int. Cl. H03k *17/00*
U.S. Cl. 307—248 22 Claims



In the amplifier apparatus shown, a first electronic amplifier selectively operable in mutually exclusive first and second modes in response to respective mutually exclusive first and second operating conditions, drives a second electronic amplifier that is operable in either of two modes depending on the mode of the first amplifier.

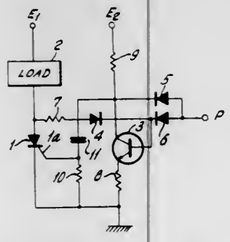
The second amplifier, depending on its mode, drives a switch to one or the other of two states. The amplifiers switch from the first mode to the second mode in response to an input signal having a first predetermined requirement, and back to the first normal mode in response to an input signal with a second predetermined requirement separated from the first predetermined minimum requirement by hysteresis. To accelerate the change from first to second modes, regenerative feedback is supplied from the second amplifier to the first amplifier through two parallel paths, one bidirectional, the other unidirectional and poled to pass regenerative feedback current and to block current in the direction which would tend to alter the value of the first predetermined requirement. Resistance of the unidirectional path may be varied to vary the second predetermined requirement and hysteresis independently of the first requirement. The first and second modes of the amplifiers correspond, by way of example, to "dropped out" and "picked up" modes of an electromagnetic relay. These modes may also be termed "reset" and "set" modes or states. Various means are illustrated to supply the input signals with the first and second predetermined requirements to the first amplifier in response to switches and conditions such as voltage, temperature, etc.

3,504,197

GATE CONTROLLED SWITCH AND TRANSISTOR RESPONSIVE TO UNIPOLAR INPUT PULSES

Koji Shibuya, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 17, 1966, Ser. No. 573,024
Claims priority, application Japan, Aug. 20, 1965, 40/50,832
Int. Cl. H03k *3/31*
U.S. Cl. 307—252 **2 Claims**



A semiconductor switching circuit is described wherein the circuit is placed in series with a load and DC power source to control the current through the load. A negative resistance switching element is employed, such as a gate controlled switch which requires opposite polarity control signals to obtain on and off control of the element. The circuit provides the desired control with like polarity input signals applied to a transistor switch which is rendered conducting and nonconducting in respective correspondence with the element by use of a unidirectional current feedback network.

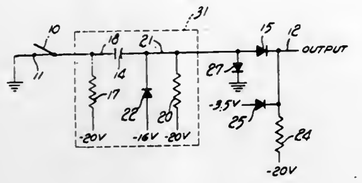
3,504,198

CIRCUIT FOR REJECTION OF CONTACT BOUNCE

James C. Boatman, Santa Maria, Calif., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 12, 1967, Ser. No. 630,439
Int. Cl. H03k *17/28, 17/74*
U.S. Cl. 307—259 **9 Claims**

The circuit produces only one output pulse on an output terminal for each closure of a pair of contacts even though the contacts bounce and have several engagements during closure. The circuit includes a capacitor and a diode serially connected between one of the contacts and the output terminal. The capacitor, the diode, and the



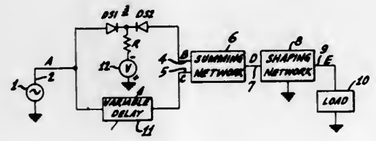
contacts are biased such that upon closure of the contacts, the diode is momentarily rendered conductive only during the first engagement of the contacts to produce an output pulse on the terminal.

3,504,199

SQUARE WAVE GENERATOR COMPRISING BACK-TO-BACK SERIES-CONNECTED CHARGE STORAGE DIODES

Michael Cooperman, Cherry Hill, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Aug. 16, 1966, Ser. No. 572,858
Int. Cl. H03k *5/00, 5/12*
U.S. Cl. 307—261 **9 Claims**



Each period of an alternating signal such as a sine wave is translated to a pair of pulses of opposite polarity, each pulse with a steep lagging edge. The means for translating may include, for example, a pair of back-to-back connected, charge storage diodes. The sine wave may be delayed relatively to the pulses an interval sufficient to make the regions of the sine wave of maximum slope time coincident with the steep lagging edges of the pulses and then summed with the pulses. Alternatively, the pulses may be translated to an alternating signal having faster rise and fall times than the sine wave and this alternating signal summed with the delayed pulses. In both cases, the resultant wave has relatively steep leading and lagging edges and readily may be translated to a square wave.

3,504,200

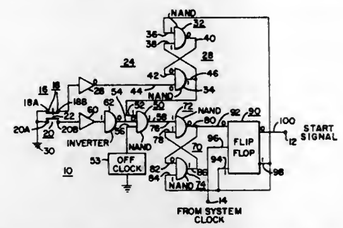
SYNCHRONIZING CIRCUIT

Karl B. Avellar, Ellicott City, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1967, Ser. No. 659,648
Int. Cl. H03k *5/00*
U.S. Cl. 307—269 **10 Claims**

A synchronizing circuit for selectively initiating one or more functions in a digital system controlled by a system clock. The synchronizing circuit provides a single

pulse, in synchronism with the system clock, in response to the actuation of a push buttton, and then automatically



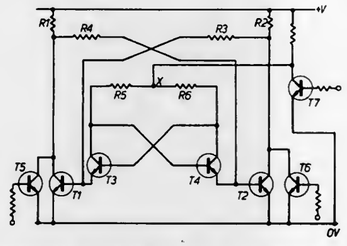
resets the circuit to await the next actuation of a push button.

3,504,201

TRANSISTOR FLIP-FLOP CIRCUIT ARRANGEMENTS

Allan Richardson, Overstone, Northampton, England, assignor to The Plessey Company, Limited, Ilford, England, a British company

Filed Aug. 16, 1966, Ser. No. 572,795
Claims priority, application Great Britain, Aug. 18, 1965, 35,390/65
Int. Cl. H03k *3/26*
U.S. Cl. 307—292 **4 Claims**



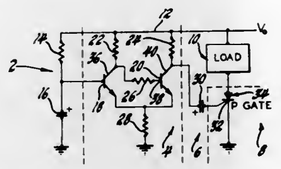
A transistor flip-flop circuit arrangement defining a binary counter comprising a pair of transistors connected as a principal bistable element and a second pair of transistors connected as detector and subsidiary bistable memory elements, said second pair of transistors acting to detect the state of said principal bistable element by differential emitter potential and said second pair having their collector electrodes cross-coupled to opposite bases to achieve a subsidiary bistable memory function so that the transistors of the second pair are conditioned in response to the state of the transistors of the principal element.

3,504,202

SILICON GATED RECTIFIER CONTROL CIRCUIT

Albert D. Rittmann and Robert E. Knolinski, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 16, 1967, Ser. No. 638,778
Int. Cl. H03k *17/26*
U.S. Cl. 307—293 **1 Claim**



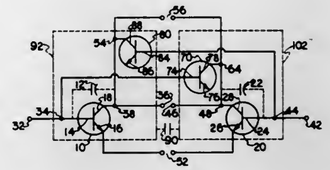
A temperature and power variation insensitive solid state control system utilizing a silicon controlled rectifier for switching a load.

3,504,203

TRANSISTOR WITH COMPENSATED DEPLETION-LAYER CAPACITANCE

George W. Haines, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed May 19, 1966, Ser. No. 551,341
Int. Cl. H03k *19/08*
U.S. Cl. 307—299 **12 Claims**



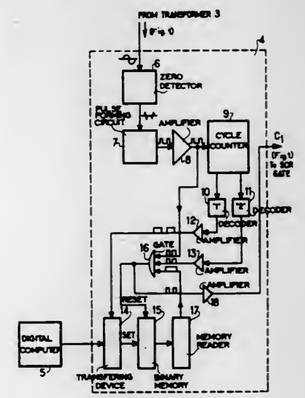
A P-N junction having substantially the same depletion-layer capacitance as that of one transistor is connected in a back to back arrangement between the base of the one transistor and the collector of another so as to compensate for the depletion-layer capacitance of the one transistor.

3,504,204

DEVICE TO REGULATE CURRENT FROM NUMERICAL SIGNALS

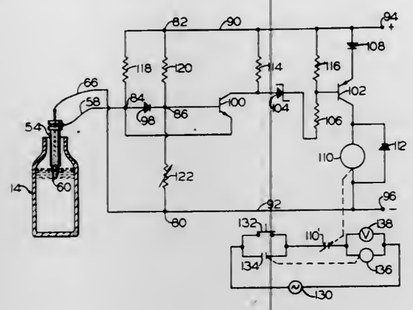
François Carrive, Blevres, France, assignor to Compagnie Generale d'Automatisme, Paris, France

Filed Apr. 26, 1966, Ser. No. 545,400
Claims priority, application France, May 4, 1965, 15,698
Int. Cl. H03k *19/08*
U.S. Cl. 307—305 **5 Claims**



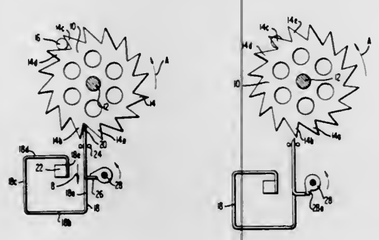
Control system for controlling the current supplied to an electrical load including thyratron means connected with the electrical load to be supplied in a source of alternating current for supplying to the load a preprogrammed number of integral half-cycles of electric current, a control circuit operatively coupled to the control electrode of the thyratron means for applying gating on control signals thereto at appropriate low voltage points in the alternating current supply potential cycle including means for adjustably pre-setting the control circuit to cause it to supply gating on control signals to the thyratron means for any desired number of integral half-cycles of the alternating current supply.

3,504,205
LIQUID LEVEL SENSING APPARATUS
Lyle D. Sheckler, Toledo, Ohio, assignor to The Sinclair Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 3, 1967, Ser. No. 628,033
Int. Cl. H03k *1/00*
U.S. Cl. 307—308 9 Claims



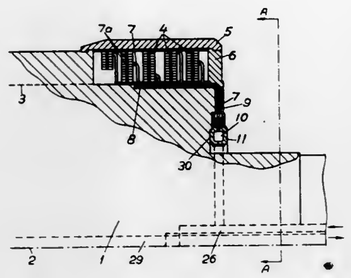
A fluent material handling apparatus having an element of control which operates in response to a condition in the fluent material receiver to terminate the flow of the fluent material to the said receiver.

3,504,206
INDEXING MECHANISM
Daniel Fritsch, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 27, 1968, Ser. No. 755,687
Int. Cl. H02k *7/06*
U.S. Cl. 310—21 12 Claims



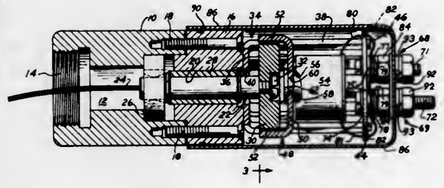
The indexing mechanism includes a toothed ferromagnetic index wheel having a permanent magnet in spaced apposition to the teeth, such that its magnetic force positions the wheel with the width of a tooth in direct apposition to the magnet. A spring engages between the teeth and detents the wheel. In this mechanically detented wheel position, the magnet exerts an attractive force on the next tooth of the wheel tending to rotate the wheel. A cam, vibrating reed, or piezoelectric element operates to withdraw the spring from between the teeth to free the wheel for rotation. When the spring is withdrawn, the magnet attracts the next tooth and advances the wheel such that the width of such next tooth lies in direct apposition to the magnet. When the spring is released, it engages a tooth face to advance the index wheel in a like direction, positioning the wheel relative to the magnet such that the magnet lies in apposition between an adjacent pair of teeth and exerts a magnetic attraction on the next wheel tooth.

3,504,207
ROTOR COOLING MEANS FOR WATER-COOLED TURBOGENERATORS
Ove Tjernström, Irsta, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed June 9, 1969, Ser. No. 831,692
Claims priority, application Sweden, June 17, 1968, 8,143/68
Int. Cl. H02k *9/16*
U.S. Cl. 310—54 4 Claims



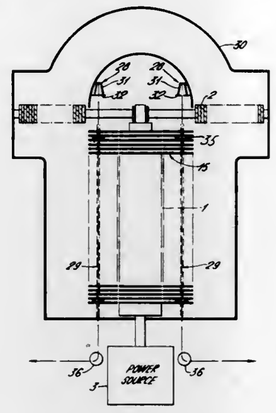
A rotor cooling system for a water-cooled turbogenerator has a plurality of cooling channels arranged in the conductor of the rotor winding and a plurality of metal coolant tubes connected to the coil ends of the winding. These coolant tubes have parts extending radially inward into an annular metallic distribution vessel arranged axially outside the coil ends. Individual electrically insulating intermediate sleeves form a connection between the coolant tubes and the distribution vessel.

3,504,208
MAGNETIC TACHOMETER GENERATOR
John D. Rivers, Morton Grove, Ill., assignor to Sun Electric Corporation, a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,445
Int. Cl. H02k *21/12*; G01p *3/70*
U.S. Cl. 310—156 2 Claims



A magnetic tachometer generator having a pair of stators, each of the stators including a base and a plurality of longitudinally extending fingers. The fingers of one stator extend between the fingers of the other stator and both stators' fingers enclose a rotor having a plurality of poles. The fingers of one stator are connected to a base plate and surround a coil which is located on a core mounted between the base plate and the base of the other stator. When the rotor is rotated by a machine, the speed of which is to be measured, an electrical signal, characterizing the machine speed, is induced in the coil, via the stators and the core, and the induced signal may be conducted through terminals to an indicating device.

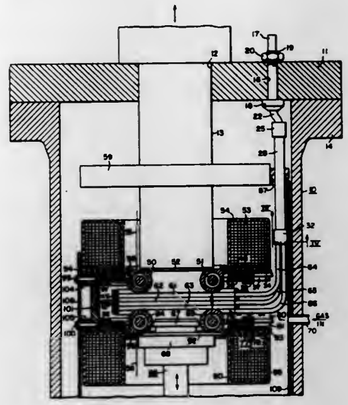
3,504,209
ELECTRIC GENERATORS
Francis Michael Russell, Abingdon, England, assignor to Science Research Council, London, England
Filed Jan. 9, 1967, Ser. No. 607,965
Claims priority, application Great Britain, Jan. 14, 1966, 1,976/66
Int. Cl. H02k *19/24*
U.S. Cl. 310—171 8 Claims



The generator comprises a magnetic rotor and a stator. The rotor comprises a stack of magnetic sections electrically insulated from one another and secured together by adhesive synthetic resin. In order that the torque may be transmitted through the stack and disintegration at high rates of rotation resisted, torque transmitting discs are positioned between each magnet section. Flanges at the periphery of the torque transmitting discs project alternately upwardly and downwardly into the spaces between the protruding magnet poles so that torque transmission through the synthetic resin involves a mainly compressive stress and not a shear stress. The stator has a complementary construction and includes coils in which currents are induced when the rotor rotates, the currents being rectified and used to charge capacitors whose outputs are added to produce the high output voltage.

3,504,210
WATER-COOLED ARC HEATER APPARATUS AND HEAT SHIELD FOR USE THEREIN
Armin M. Bruning, Export, and Charles E. LeRow, Jr., Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 340,220, Jan. 27, 1964. This application Apr. 17, 1967, Ser. No. 631,456
Int. Cl. H01j *1/02, 7/24*
U.S. Cl. 313—19 22 Claims

An arc heater has two spaced annular electrodes with a magnetic field coil near each electrode, the coils being energized in a manner to set up a magnetic field which causes the arc to rotate substantially continuously. Heat shield means comprising coils of conduit composed of a material having high thermal conductivity, through which a cooling fluid flows, prevents direct radiation from the arc between electrodes from falling on any insulating material or any metallic surface which is not fluid cooled. The heat shield means comprises a plurality of discrete sections spaced from each other and electrically insulated from each other. Fluid inlet and fluid outlet means for each section have hydraulic insulators therein. Any current path through the heat shield sections between electrodes has a much higher resistance for arc current than an arc current path directly between electrodes. In addition, the substantial voltage drop which would occur when



an arc strikes a cold surface in effect additionally discourages the arc from striking to one or more heat shield sections.

3,504,211
ELECTRON BEAM CONTROL DEVICE FOR USE WITH A CATHODE RAY TUBE FOR DYNAMIC CORRECTION OF ELECTRON BEAM ASTIGMATISM AND DEFOCUSING
Takeo Takemoto and Masakazu Fukushima, Kokubunjishi, and Kosuke Kitamura, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed May 4, 1966, Ser. No. 547,458
Claims priority, application Japan, May 12, 1965, 40/27,357
Int. Cl. H01j *29/46*
U.S. Cl. 313—84 9 Claims

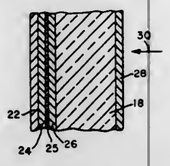


A device for use with a cathode ray tube which comprises at least one electron lens for producing a four-pole field which, for example, deflects electrons inwardly toward the center of the electron beam of the tube in a direction of X-axis and outwardly away from the center of the electron beam in a direction of Y-axis perpendicular to X-axis. Astigmatism of the electron beam is reduced by adjusting the angular position of the electron lens around the electron beam and/or the polarity and intensity of the four-pole field. When a pair of lenses arranged with an angular displacement to each other of about 45° is used the astigmatism is corrected without varying the angular position of the lenses by just varying the polarity and intensity of the four-pole field of each lens.

3,504,212
HIGH CONTRAST DISPLAY DEVICE INCORPORATING A LIGHT ABSORPTION AND SCATTERING LAYER

Robert W. Wollentin, Thousand Oaks, and Michael K. Kilcoyne, Camarillo, Calif., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 20, 1967, Ser. No. 624,406
Int. Cl. H01j *29/18*
U.S. Cl. 313—92 8 Claims

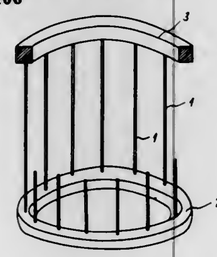


A display device in which a light absorbing and scattering layer of specific material and composition is positioned between the light emitting screen and the viewing window.

3,504,213
NONEMISSIVE CARBIDE ELEMENTS FOR GRIDS FOR POWER TUBES

Petr Hix and Petr Schneider, Prague, Czechoslovakia, assignors to Tesla narodni podnik, Prague, Czechoslovakia

Filed Jan. 16, 1967, Ser. No. 609,649
Claims priority, application Czechoslovakia, Aug. 17, 1966, 5,403/66
Int. Cl. H01j *43/04*
U.S. Cl. 313—106 6 Claims

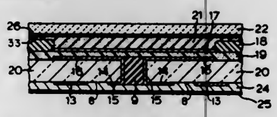


The portion of a cage-type grid in a vacuum tube which is exposed to electron bombardment from the cathode is formed by rods consisting of molybdenum carbide or tungsten carbide, and graphite, unbound in the carbide, in an amount of 0.3% to 40% of the carbon bound in the carbides. The grid performs as a graphite grid mechanically reinforced by the carbide which has similar characteristics as a grid material.

3,504,214
ELECTROLUMINESCENT DISPLAY DEVICE

Royston E. Lake, Dundas, Ontario, and Gary R. Cox and Colin West, Burlington, Ontario, Canada, assignors to Canadian Westinghouse Company Limited, Hamilton, Ontario, Canada

Filed Sept. 28, 1967, Ser. No. 671,273
Claims priority, application Canada, Jan. 13, 1967, 980,247
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—108 6 Claims

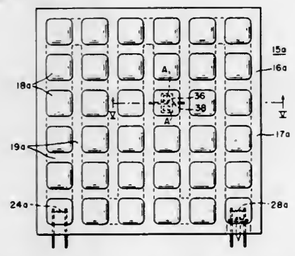


An improved electroluminescent display device comprising a photoconductive optical input and an electroluminescent optical output. One feature is an improved contrast of the display. Electrical connection between the photoconductive layer and electroluminescent layer is provided through apertures in a supporting glass sheet. A second feature is an improved through-hole connection including a conductive coating on the walls of the aperture and an inert filler. A third feature is an improved separating layer provided between the storage electroluminescent layer and the display electroluminescent layer. The separating layer includes a mosaic of reflective, conductive material with an opaque, insulating material of low dielectric constant filling the remaining spaces in the separating layer.

3,504,215
PLANAR FLUORESCENT LAMP WITH INTEGRAL AMALGAM TYPE MERCURY-VAPOR PRESSURE CONTROL COMPONENT

George S. Evans, Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 30, 1967, Ser. No. 686,916
Int. Cl. H01j *1/62*
U.S. Cl. 313—109 5 Claims

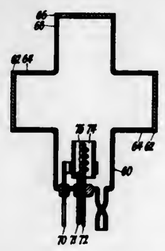


The mercury-vapor pressure in a planar fluorescent lamp is controlled by an amalgam that is retained at a pre-determined location within the lamp by a holder that is spaced from the light-emitting face of the envelope and does not detract from its uniformly lighted appearance. The holder is made from stiff material which can also be foraminous, such as wire mesh, and is attached to the envelope wall or to an interior part of the lamp structure (viz., the stem or one of the lead-in wires of an electrode mount assembly) that is anchored to the envelope.

3,504,216
RESONANCE LAMP FOR ATOMIC ABSORPTION SPECTROSCOPY

Alan Walsh, Brighton, Victoria, and John Vincent Sullivan, Carnegie, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

Filed May 31, 1966, Ser. No. 553,781
Claims priority, application Australia, May 28, 1965, 59,465/65, 59,466/65
Int. Cl. G01j *3/42*; G01n *21/00*; H01j *17/04*
U.S. Cl. 313—209 1 Claim

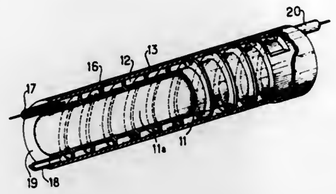


A thermal resonance lamp for use in atomic absorption spectroscopy wherein said lamp is provided with a side arm perpendicular to the main portion of the lamp for allowing re-emitted radiation to be directed out of said lamp.

3,504,217
LASER FLASH TUBES HAVING A HELICOIDAL DISCHARGE PATH OF SPECIFIC DIMENSIONS

Roland Roux and Roger Dumanchin, Orsay, France, assignors to Compagnie Generale d'Electricite, Paris, France

Filed Oct. 9, 1967, Ser. No. 673,765
Claims priority, application France, Oct. 7, 1966, 79,183
Int. Cl. H01j *61/10, 61/34*
U.S. Cl. 313—204 6 Claims

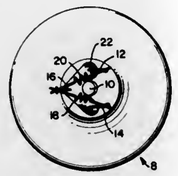


A laser flash tube having a helicoidal conduit formed by a helicoidal strip disposed between and joined to the outer and inner surfaces respectively of inner and outer concentric cylindrical tubes and characterized by specific relative dimensions and an external coating of light diffusing material.

3,504,218
DUAL CATHODE FOR FLUORESCENT LAMPS

Thomas J. Emidy, Morris Plains, Walter H. Simson, Ridgewood, and Luke Thorington, Berkeley Heights, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York

Continuation of application Ser. No. 536,888, Mar. 23, 1966. This application Jan. 3, 1969, Ser. No. 791,863
Int. Cl. H01j *17/06, 61/08*
U.S. Cl. 313—212 12 Claims

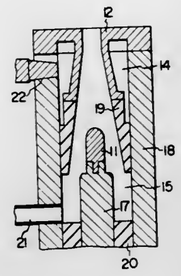


A cathode structure for a fluorescent lamp for use in rapid start and pre-heat type ballast circuits comprising a main and an auxiliary cathode at each end of the envelope in which the main cathode is connected to receive heating current and an arc discharge potential. The main cathodes operate to establish the arc discharge therebetween until substantially exhausted of electron emissive material at which time the arc discharge is transferred to between the auxiliary cathodes. The auxiliary cathodes are connected to receive only the arc discharge potential and when they operate they place electron emissive material onto the main cathodes to permit them to operate again.

3,504,219
NON-CONSUMABLE ELECTRODE FOR PLASMA JET TORCHES

Tetsuo Gejo and Toshikatsu Manabe, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan

Filed June 16, 1966, Ser. No. 558,030
Claims priority, application Japan, June 30, 1965, 40/52,897
Int. Cl. H01j *17/26, 61/28*
U.S. Cl. 313—231 7 Claims

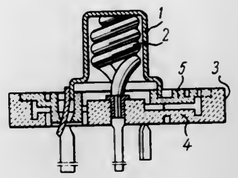


A non-consumable electrode for plasma jet torches effectively operable with use of an oxidizing arc gas which electrode is made of zirconium boride in its entirety or at least in those portions which contact the arc gas.

3,504,220
CATHODE UNIT

Naum Aronovich Iofis, Prospekt Vernadskogo 9/10, kv. 487; and Irina Vasilievna Judinskaya, Izmailovskoe shosse 57, kv. 114, both of Moscow, U.S.S.R.; Leon Vladimirovich Traube, Ul. Glubokaya 13, kv. 6, Lvov, U.S.S.R.; and Vyacheslav Konstantinovich Galkin, Fortunatovskaya ulitsa 31–a, kv. 44, Moscow, U.S.S.R.

Filed Sept. 14, 1967, Ser. No. 667,740
Int. Cl. H01j *1/94, 1/20*
U.S. Cl. 313—270 3 Claims



A cathode unit for electrical vacuum instruments comprises a cathode with a preheater in respective parts of a ceramic insulator which include projections and slots to define heat and current insulative gaps between the regions where the cathode and preheater are secured.

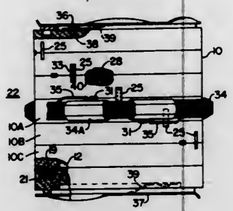
3,504,221
ADJUSTABLE SPARK GAP STRUCTURE WITH PREIONIZING MEANS

Joseph C. Osterhout, Bloomington, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 1, 1969, Ser. No. 811,709
Int. Cl. H01j *7/44, 13/46*
U.S. Cl. 313—325 6 Claims

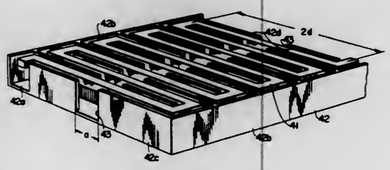
A spark gap assembly for a lightning arrester, the assembly comprising a plurality of stacked insulating

plates with adjacent plates forming respectively therebetween arc chambers with a peripheral wall, a pair of electrodes disposed within each chamber and forming a spark gap near the peripheral wall, an opening in said wall and adjacent said spark gap, a piece of ionizing material inserted through said opening and disposed in



said gap, and an electromagnetic coil disposed outside of the plate stack and around one of the plates for moving an arc struck in said chamber when a voltage of a predetermined magnitude is applied to the arrester.

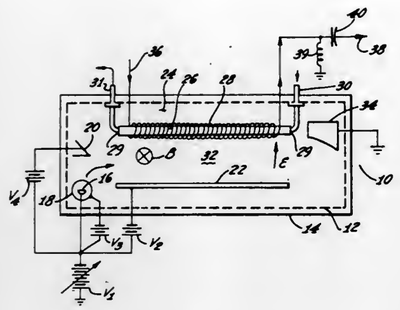
3,504,222
SLOW-WAVE CIRCUIT INCLUDING MEANDER LINE AND SHIELDING THEREFOR
Masakazu Fukushima, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo-to, Japan
Filed Sept. 29, 1967, Ser. No. 671,860
Claims priority, application Japan, Oct. 7, 1966, 41/65,627, 41/65,628
Int. Cl. H01j *29/70, 25/36;* **H03h** *7/30*
U.S. Cl. 315—3 **15 Claims**



A slow-wave circuit for microwave use including a meander line forming the slow-wave circuit shielded by a shield member having partition walls inserted into the respective pitch intervals of the line, whereby the dispersion characteristic of the circuit is improved.

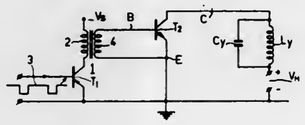
3,504,223
HIGH POWER WIDE BAND CROSS FIELD AMPLIFIER WITH CERAMIC SUPPORTED HELIX
James E. Orr, Atherton, Carl Lawrence Jones, Santa Clara, and Nelson Keith Bickford, Los Altos, Calif., assignors to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,009
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **4 Claims**

A crossed field amplifier is provided in which the slow wave structure contains a helix supported by an elongated ceramic body that extends through the helix center. A hollow passage extends through the ceramic body and permits coolant to be circulated therethrough to permit heat created in the turns of the helix to be efficiently conducted through the ceramic support body and dissipated in the coolant. In addition, the portions of the turns which face the sole electrode are separated from the ceramic support by a small clearance in order to avoid the consequences of sputtering. Additionally, the helix is formed



directly on the ceramic support by a novel method which includes masking, electroforming, milling and etching.

3,504,224
CIRCUIT ARRANGEMENT FOR PRODUCING A SAWTOOTH CURRENT
Johannes Joseph Reichgelt and Wilhelmus Theodorus Hendrikus Hetterscheid, Nijmegen, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,539
Claims priority, application Netherlands, Sept. 17, 1965, 6512106
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **12 Claims**

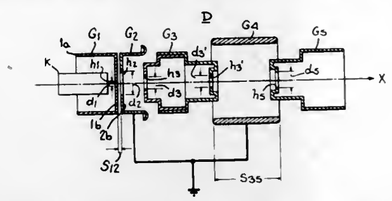


A deflection circuit that includes a unidirectional transistor having its collector connected to the deflection coil. Inductive coupling means are provided between the base and emitter for applying a switching signal thereto. The switching signal cuts off the transistor for a period that is longer than the flyback period whereby the deflection coil reverses polarity to forward bias the base-collector junction of the transistor which allows a reverse current to flow in the deflection coil via said base-collector junction to initiate the forward stroke of the deflection current. The amplitude of the transistor supply voltage is at least ten times the peak-to-peak amplitude of the switching signal.

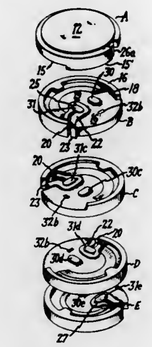
3,504,225
ELECTRON GUN
Satoshi Shimada, Akio Ohkoshi, and Senri Miyaoka, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Apr. 21, 1966, Ser. No. 544,268
Claims priority, application Japan, Apr. 26, 1965, 40/24,937
Int. Cl. H01j *29/56*
U.S. Cl. 315—31 **5 Claims**

In an electron gun for generating and focusing an electron beam having at least a cathode and at least first, second, third and fourth electrodes successively axially arranged in the advance direction of the electron beam

emitted from the cathode, the second electrode has an aperture therein with a diameter at least twice the diameter of an aperture in the first elecrode, and the second electrode is maintained at ground potential and the fourth electrode is maintained substantially at ground potential.



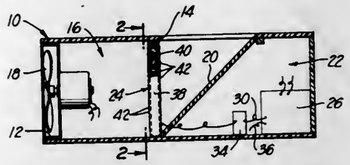
3,504,226
SPARK GAP ASSEMBLY FOR CURRENT LIMITING LIGHTNING ARRESTERS OR LIKE ARTICLES
Earl W. Stetson, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Feb. 20, 1968, Ser. No. 706,911
Int. Cl. H02h *1/04*
U.S. Cl. 315—36 **20 Claims**



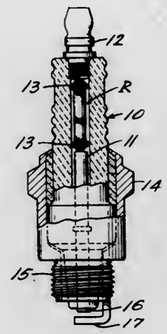
A spark gap assembly for a current limiting lightning arrester or like article. The assembly operates to rapidly and substantially limit power follow current through the assembly. The current limiting operation may be effected with or without the use of supplementary solenoid means to aid in increasing arc resistance. Characteristic features of the assembly include; matched pairs of electrodes arranged in overlapping relationship, mechanically simple means for readily and inexpensively securing main spark gap electrodes in precise predetermined position within the spark gap assembly, and preionizing means that afford reliable and inexpensive main spark gap preionization in a porous arc chamber.

3,504,227
ION GENERATOR DEVICE HAVING IMPROVED NEGATIVE ION EMISSION
Thomas C. Wooton, San Gabriel, and William F. Mangold, West Covina, Calif., assignors to Adolf Schoepe, Fullerton, Calif.
Filed Nov. 17, 1967, Ser. No. 683,981
Int. Cl. H01j *7/24;* **H05b** *31/26*
U.S. Cl. 315—111 **2 Claims**

A negative ion emitter discharges negative ions into an airstream passing therethrough. A direct current flow of negative electricity is fed into the negative ion emitter, but there is no ground connection other than through the airstream. The negative ion emitter has a series of spaced, wire-like projections electrically interconnected, such as a multiplicity of open wire ends of a metal wool mass, or a multiplicity of wire whiskers projecting from each of a series of spaced, parallel wires, or a multiplicity of wire whiskers projecting inwardly from each of a series of ring mounted conductors, in each case providing a multiplicity of negative ion discharge surfaces.



3,504,228
SPARK PLUG WITH AN INTERNAL RESISTOR
Robert G. Morris, Toledo, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,235
Int. Cl. H01t *13/02*
U.S. Cl. 315—58 **4 Claims**

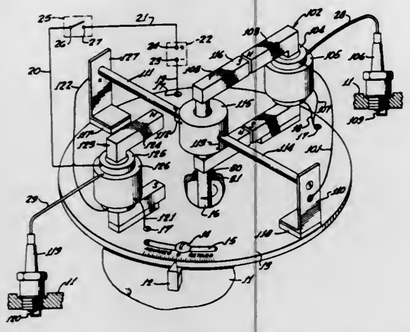


A spark plug including a suppressor resistor mounted within its ceramic insulator to reduce undesirable radio frequency emanations. The internally mounted resistor is held within the axial bore of the insulator between a pair of resilient coil springs having a minimum effective inductance when compressed to secure the resistor in place. The spring is wound from a resilient conductor of rectangular cross-section with the major dimension of the wire cross-section parallel to the axis of the spring. Successive turns in a major portion of the spring are of reduced diameter so that these adjacent turns, when the spring is compressed, engage one another in electrically conductive contact to effectively form a single turn or sleeve, thus reducing the effective inductance to a minimum, thereby reducing to a minimum any undesirable radio frequency emanations due to resonance of the inductance of the spring and capacitance inherent in the spark plug.

3,504,229
MAGNETIC IGNITION SYSTEM
Martin E. Gerry, 13452 Winthrop St., Santa Ana, Calif. 92705
Continuation-in-part of application Ser. No. 473,082, July 19, 1965. This application Oct. 31, 1966, Ser. No. 599,335
Int. Cl. F02p *1/08*
U.S. Cl. 315—209 **7 Claims**

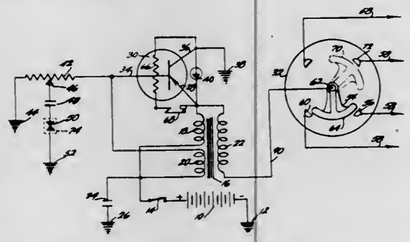
A magnetic ignition system is provided for an internal combustion engine comprising a rotatable shaft driven by the internal combustion engine and having a

discontinuous magnetic core with magnetic poles of opposite magnetic polarities at the ends of the discontinuous magnetic core for providing a magnetic flux in the core and in the discontinuity. A coil is wound on the magnetic core. A rotatable member is attached to the shaft and adapted for rotation by the shaft past the magnetic poles for periodically varying the magnitude of the magnetic flux thereby inducing a voltage



in the coil. The rotatable member has surfaces which are magnetically polarized opposite to the magnetic polarization of the magnetic poles of the magnetic core thereby providing additional magnetic flux to the magnetic core for increasing the magnitude of the voltage. Variations of this system include additional permanent magnets in the rotatable member to assist in the rapid collapse of the flux in the magnetic core.

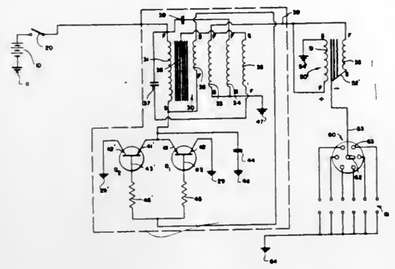
3,504,230
SOLID-STATE IONIZING IGNITION SYSTEM
Edward D. Gaddes, 3717 Crestview Drive, Nashville, Tenn. 37215
Continuation-in-part of application Ser. No. 362,219, Apr. 24, 1964. This application Dec. 22, 1966, Ser. No. 613,371
Int. Cl. H05b *37/02, 41/36, 41/13*
U.S. Cl. 315—209 **7 Claims**



The solid-state ignition system having ionization and corona discharges to complete burning of combustion mixtures by use of a circuit.

3,504,231
BREAKERLESS OSCILLATOR IGNITION SYSTEM
Oscar F. Tibbs, Ripley, Tenn., assignor, by mesne assignments, to Andrews Manufacturing Company, a corporation of Tennessee
Continuation-in-part of application Ser. No. 580,795, Sept. 20, 1966. This application June 26, 1967, Ser. No. 648,903
Int. Cl. H05b *37/02, 39/04*
U.S. Cl. 315—212 **12 Claims**

A transistorized ignition system for a multi-cylinder engine which employs no breaker points and no mechanical moving parts and provides a constant voltage which is harmlessly absorbed by the system when the spark plugs are not firing, but which is ideal for an efficient

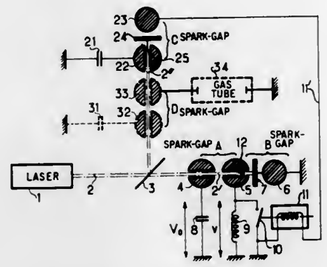


ignition of the combustible gases in the cylinder when the spark plugs are firing.

ERRATUM

For Class 315—218 see:
Patent No. 3,504,373

3,504,232
LASER CONTROLLED SPARK-GAP MEANS FOR A CIRCUIT FOR PROVIDING A MAGNETIC FIELD
Spartacus H. Barbini, Chaville, France, assignor to Compagnie Generale d'Electricite, Paris, France
Filed Apr. 25, 1967, Ser. No. 633,489
Claims priority, application France, Apr. 29, 1966, 59,771
Int. Cl. H05b *37/00*
U.S. Cl. 315—238 **10 Claims**

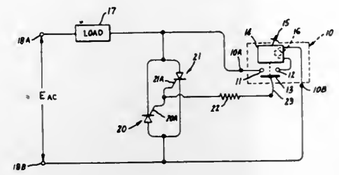


Device for supplying a coil with a current of extremely high intensity comprising three spark-gaps fired by a laser beam, a first main-spark-gap in series with a condenser bank, a second auxiliary spark-gap in parallel with said coil, a third spark gap utilized to feed a current into a winding driving a switch for short-circuiting said second spark-gap, with succeeding stages of operation occurring accordingly to delays which are determined by the thicknesses of two dielectric screens introduced into said first and third spark-gaps, respectively.

3,504,233
ELECTRIC CIRCUIT INTERRUPTING DEVICE WITH SOLID STATE SHUNTING MEANS
Ralph L. Hurtle, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed June 20, 1967, Ser. No. 647,428
Int. Cl. H02h *7/22;* **H01h** *9/30*
U.S. Cl. 317—11 **6 Claims**

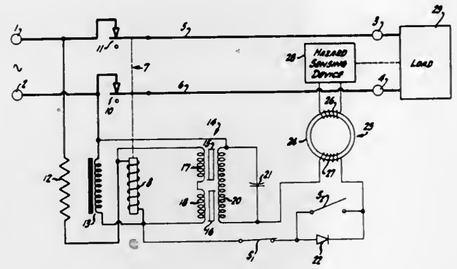
An electric circuit breaker of the type including a pair of stationary contacts and a movable bridging contact

member has a pair of parallel-connected oppositely conducting controlled rectifiers connected in parallel therewith; manual or automatic opening of the bridging contact member causes a triggering voltage to appear on both the controlled rectifiers, one of which fires (depending on the instantaneous polarity) by-passing current around



the contacts momentarily. Since the bridging contact member is connected to the trigger electrodes, and is disconnected from the stationary contacts when the breaker opens, no conduction occurs on the reverse half-cycle, since there is no triggering voltage. In a modified form, a current limiting device is included in series relation with the controlled rectifiers.

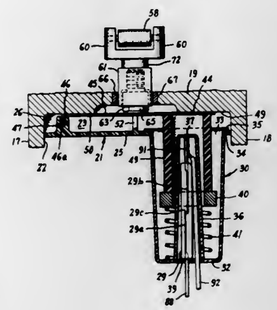
3,504,234
ELECTRIC CONTROL SYSTEM
Alan S. Fitzgerald, Mill Valley, Calif. (1400 Geary Blvd., San Francisco, Calif. 94109)
Continuation-in-part of application Ser. No. 532,962, Mar. 9, 1966. This application Oct. 14, 1968, Ser. No. 767,322
Int. Cl. H02h *3/28, 7/00*
U.S. Cl. 317—27 **7 Claims**



This invention provides a fail-safe protective circuit incorporating the control winding of a magnetic amplifier in series with a semiconductor device and signal generator across an alternating-current power supply. Gate windings of the amplifier control operation of protection means so that a generated signal, or semiconductor failure, operates the protection means.

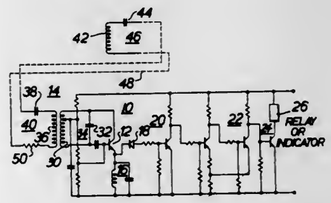
3,504,235
SOLID STATE LIMIT SWITCH
Art Lee, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed Nov. 19, 1968, Ser. No. 777,110
Int. Cl. H02b *1/04;* **H01h** *9/00, 19/00*
U.S. Cl. 317—112 **15 Claims**

A solid state limit switch for controlling energization of a load from a current supply includes a housing with a base and sidewalls defining a cavity and a barrier in the cavity upstanding from the base and extending across the cavity to divide the cavity into first and second isolated compartments. A magnetic reed switch is positioned in the first compartment and magnetic field producing means is located in the second compartment for movement relative to the reed switch for operating the reed switch. Operating means is positioned in the second compartment for effecting movement of the magnetic field producing means and actuating means is mounted on the exterior of the housing for actuating the operating



means through an opening of the housing which opens into the second compartment. The first compartment also contains electrical circuit means including a semiconductive switch responsive to operation of the reed switch and electrical conductors which are connected to the circuit means extend through a second opening of the housing opening into the first compartment. An insulating potting compound substantially completely fills the first compartment to embed the reed switch and the electrical circuit means.

3,504,236
PROXIMITY SWITCH
Takesi Miyagawa and Masayuki Oyagi, Kyoto, Japan, assignors to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan
Filed Nov. 23, 1966, Ser. No. 596,621
Claims priority, application Japan, Nov. 23, 1965, 40/71,848
Int. Cl. H01h *47/12, 47/32*
U.S. Cl. 317—146 **4 Claims**

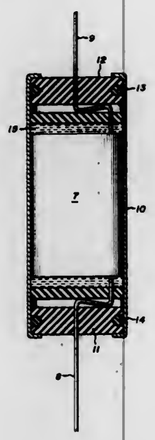


A proximity detector which has a proximity sensing circuit coupled with the tank circuit of an oscillator and tuned for series resonance so that the effective capacitance of the cable connecting the sensor to the oscillator unit does not affect the resonant frequency. Thus the circuit constants need not be adjusted when different lengths of cable are used to connect the remote sensor to the oscillator.

3,504,237
ELECTROLYTIC CAPACITOR AND ELECTROLYTE THEREFOR

Henry M. Stahr, Richmond, Va., assignor to General Electric Company, a corporation of New York

Filed Oct. 26, 1967, Ser. No. 678,322
Int. Cl. H01g 9/00, 9/02
U.S. Cl. 317—230 11 Claims

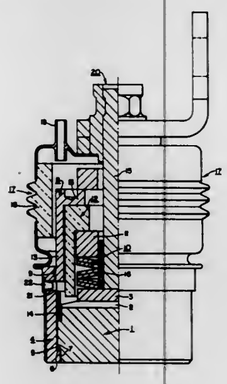


An electrolyte for an electrolyte capacitor comprising an ammonium salt, a solvent and tetra-methyl-guanidine.

3,504,238
SOLDER FREE VARIABLE PRESSURE CONTACTED SEMICONDUCTOR DEVICE

Victor J. Carter, London, England, assignor to Westinghouse Brake English Electric Semi-Conductors Limited, London, England, a corporation of Great Britain

Filed Oct. 19, 1967, Ser. No. 676,459
Claims priority, application Great Britain, Dec. 16, 1966, 56,381/66
Int. Cl. H01l 3/00, 5/00, 9/00
U.S. Cl. 317—234 3 Claims

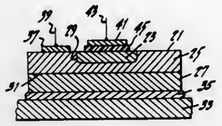


This invention is concerned with a semiconductor device in which a semiconductor element is held in electrical and thermal contact with electrical contacts solely by the use of a compressive force and without any solder.

3,504,239
TRANSISTOR WITH DISTRIBUTED RESISTOR BETWEEN EMITTER LEAD AND EMITTER REGION

Edward O. Johnson and William M. Webster, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Jan. 31, 1964, Ser. No. 341,558
Int. Cl. H01l 1/24
U.S. Cl. 317—235 9 Claims



1. In a semiconductor device comprising:
a semiconductive body having a first region of one conductivity type, said first region being immediately adjacent one surface of said body;
a second region of the other conductivity type in said body adjacent said first region;
a first p-n junction between said first and second regions;
a third region of said one conductivity type in said body adjacent said second region;
a second p-n junction between said second and third regions;
a first electrical contact to said first region, a second electrical contact to said second region, and a third electrical contact to said third region; and,
the improvement comprising a layer of resistive material between said first region and said first electrical contact, said layer having a sheet resistivity of about 0.1 to 10 ohms per square.

9. In a power transistor having a surface, the combination comprising:
a collector region having a first conductivity type;
a base region adjacent said collector region having a conductivity type opposite to said collector region and extending to said surface;
an emitter region within and adjacent said base region having the same conductivity type as said collector region and extending to said surface;
an emitter contact;
an insulating layer covering said surface except a portion of the emitter region which extends to said surface and is adjacent to said base region, whereby a portion of said emitter region extending to the surface is exposed; and,
a distributed resistor film formed over said insulating layer electrically connected between said emitter region and said emitter contact, said film being sufficiently distributed over said insulating layer so that hot spot formation is controlled and damage to said transistor is prevented.

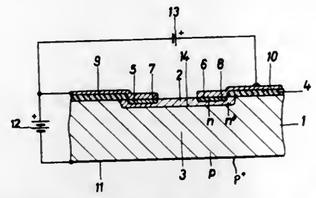
3,504,240
SEMICONDUCTOR DEVICE UTILIZING HEAT INJECTION OF MAJORITY CARRIERS

Reinhard Dahlberg, Heilbronn-Bockingen, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Dec. 28, 1966, Ser. No. 605,341
Claims priority, application Germany, Dec. 30, 1965, T 30,179
Int. Cl. H01l 11/00, 15/00
U.S. Cl. 317—235 21 Claims

Two spaced electrodes are joined in a nonrectifying

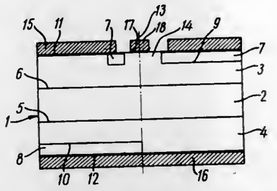
manner to one side of a pn-junction in a semiconductor body, and a voltage is applied between the spaced electrodes to control the current flow across the pn-junction by heat injection of majority carriers.



3,504,241
SEMICONDUCTOR BIDIRECTIONAL SWITCH

Anatoly Nikolaevich Dumanevich, Ul. Ostrovskogo 24, kv. 1, Ramensky raion p/o Udelnaya, Moskovskaya oblast, U.S.S.R.; Jury Alexeevich Evseev, Ul. Rubinshteina 4, kv. 14, Leningrad, U.S.S.R.; Valentina Stefanovna Vasilenko, Ul. Sovetskaya 33, kv. 14, Saransk, U.S.S.R.; and Vladimir Maximovich Tuchkevich, Ul. Lenina 25, kv. 6, and Valentin Evgenievich Chelnokov, Ul. Karpinskogo 40, korp. 8, kv. 80, both of Leningrad, U.S.S.R.

Filed Mar. 6, 1967, Ser. No. 620,961
Int. Cl. H01l 11/00, 15/00
U.S. Cl. 317—235 6 Claims

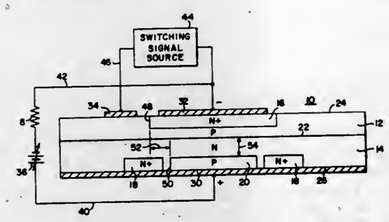


Semiconductor bidirectional switches are intended to be used in different converters of electrical energy, namely, in rectifiers with reversals of current, converters of electrical power for reversable electrodrives, and similar uses, and they comprise a semiconductor multi-layer structure preferably N-P-N°-P-N type conductivity with shunts of the emitter junctions with only one superposed area of the shunts.

3,504,242
SWITCHING POWER TRANSISTOR WITH THYRISTOR OVERLOAD CAPACITY

Elden D. Wolley, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 11, 1967, Ser. No. 660,103
Int. Cl. H01l 11/00, 7/00, 3/00
U.S. Cl. 317—235 5 Claims

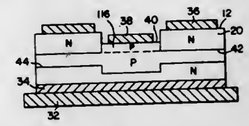


A switching transistor comprising a semiconductor body with two outer surfaces; the body having five regions of alternately different type conductivity, three p-n junctions and one n+-n junction between the regions; and three electrodes, to enhance the switching capability, the "on" voltage of a conventional transistor, while having overload protection of a thyristor.

3,504,243
LOW SATURATION VOLTAGE TRANSISTOR WITH SYMMETRICAL STRUCTURE

Thorndike C. New and Paul M. Kisinko, Greenburg, and Frederick G. Ernick, Youngwood, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 669,460, Sept. 21, 1967. This application July 7, 1969, Ser. No. 842,805
Int. Cl. H01l 5/00, 11/00
U.S. Cl. 317—235 3 Claims



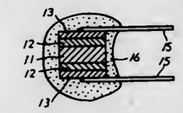
This invention provides a transistor capable of operating at a moderately high current and with an extremely low saturation voltage.

The low saturation voltage is achieved as a result of the emitter and collector having symmetrical doping profiles, and being substantially identical in shape. In addition, the base region is divided into two regions of the same type of semiconductivity. The portion to which the base contact is affixed being more heavily doped than the remainder of the base region.

3,504,244
CERAMIC CAPACITOR AND METHOD OF MANUFACTURE

Minoru Chiba, Yukio Fujimoto, and Koichi Mitsui, Kyoto, Japan, assignors to Nichicon Capacitor Ltd., Kyoto, Japan, a company of Japan

Filed May 3, 1968, Ser. No. 726,328
Claims priority, application Japan, June 17, 1967, 42/38,699, 42/51,800
Int. Cl. H01g 1/00; H02b 1/04, 9/00
U.S. Cl. 317—258 8 Claims



A ceramic capacitor having a ceramic dielectric, silver layers formed on said dielectric and at least one of said layers having an outer layer of a metal having negligible affinity for silver and a low contact resistance, and a method of manufacturing such a capacitor wherein the substrate and overlying metal layers are severed into smaller bodies to provide micro-miniaturized capacitors.

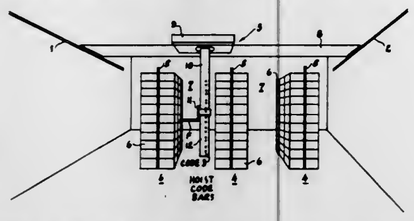
3,504,245
AUTOMATIC STORAGE AND RETRIEVAL SYSTEM

Ronald K. Cotton, Rockledge, Fla., and Barney O. Rae, Shorewood, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,326
Int. Cl. G05b 15/02
U.S. Cl. 318—18 11 Claims

An automatic warehouse system which allows an operator to sit at a fixed station and by placing punched cards into card readers and pressing a "GO" button can cause a fork to take one article from a pickup station into storage and to retrieve any other article from storage on its return trip and bring it to a selected set-down station

and then return to the starting point. Depending upon the information punched on the card, it can skip either the storage or the retrieval operation and perfo n the other or it can cause the fork to move an article from any rack in the warehouse to any other rack without re-

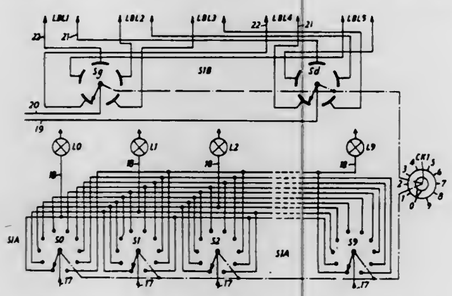


turning to the pickup or set-down stations. In performing these movements in three dimensions, the system is provided with apparatus which recalculates the position of the fork every step of the way so as to eliminate any error that may occur.

3,504,246
POSITIONAL DISPLACEMENT TRANSDUCER ARRANGEMENTS

Alexander Russell and Leslie James Coates, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British corporation

Filed Oct. 3, 1967, Ser. No. 672,624
Claims priority, application Great Britain, Oct. 5, 1966, 44,488/66; Nov. 23, 1966, 53,180/66
Int. Cl. G05b *11/01*
U.S. Cl. 318—18 **10 Claims**



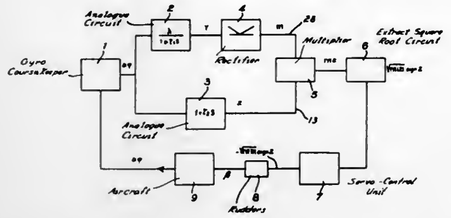
Arrangement for providing digital indication of the position of a movable object along a predetermined movement path which comprises a plurality of multi-section commutators and associated contact brushes coupled through reduction gearing and to the movable object, groups of digital indicator lamps controlled by each commutator and adjustable switching means for altering the connections between said commutators and the lamps controlled thereby to permit zero setting of the digital indication at any position of the object.

3,504,247
NON-LINEAR SERVO-CONTROL

Bernard Maurice Hamel, Paris, France, assignor to Societe Francaise d'Equipments pour la Navigation Aerienne, Neuilly-sur-Seine, Hauts-de-Seine, France, a joint-stock company of France

Filed Feb. 17, 1967, Ser. No. 616,866
Claims priority, application France, Feb. 23, 1966, 50,831
Int. Cl. G05b *13/02*
U.S. Cl. 318—18 **5 Claims**

A non-linear servo-control device, for which the equation of operation defining the variations of the controlled output magnitude β as a function of the input variable or deviation α is not a linear differential equation, characterized by the fact that it comprises, in its direct chain, operational analogue circuits which produce linear transfer functions $x, y, z \ldots$ of the input variable or deviation α, and a group of analogue circuits for con-



stituting from the said transfer functions a linear intermediate variable of the type

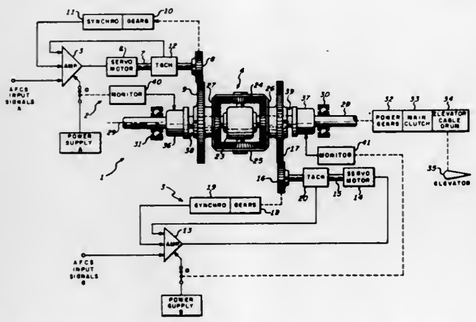
$$\alpha' = \sqrt[m]{|x^n||y^o||z^p|}\ \text{sign}\ z$$

and such that the controlled output magnitude β is a linear function of the said variable α'.

3,504,248
DUAL CHANNEL SERVO SYSTEM HAVING TORQUE EQUALIZATION

Harry Miller, Scottsdale, Ariz., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed May 10, 1967, Ser. No. 637,462
Int. Cl. H02p *7/68*
U.S. Cl. 318—18 **9 Claims**



Apparatus for controlling a common load member in which two substantially identical first and second parallel servo channels provide first and second outputs to a differential gear means disposed at a reversible point in the control system. Position and rate feedback means responsive to the movement of the differential gear means provide position and rate feedback signals to the first and second servo channels to provide for combining, equalizing and transferring the torque loads between the servo channels.

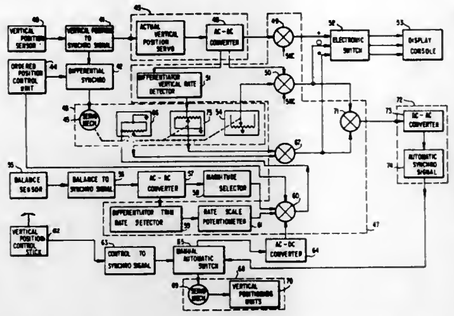
3,504,249
NON-LINEAR QUICKENED MONITOR AND CONTROLLER

George R. Simoneau, Norwich, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Original application Sept. 17, 1964, Ser. No. 397,125. Divided and this application May 16, 1968, Ser. No. 729,658
Int. Cl. G05b *15/02*
U.S. Cl. 318—18 **8 Claims**

A control arrangement for positioning a dynamic system is provided by generating signals representative of

the actual position of the dynamic system, generating signals representative of the ordered position of the dynamic system, differentiating the actual position signal,

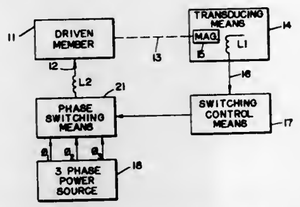


and utilizing the combination of the differentiated signal and the error signal to control the operation of the dynamic system.

3,504,250
THREE PHASE ELECTROMECHANICAL DRIVE SYSTEM

Brooks Stevens, Jr., Concord, Mass., and Derwin H. Stevens, Stone Ridge, N.Y., assignors to Riggs & Lombard Incorporated, Lowell, Mass., a corporation of Massachusetts

Filed Sept. 14, 1967, Ser. No. 667,680
Int. Cl. H02k *33/00*; H02p *1/00*
U.S. Cl. 318—128 **9 Claims**



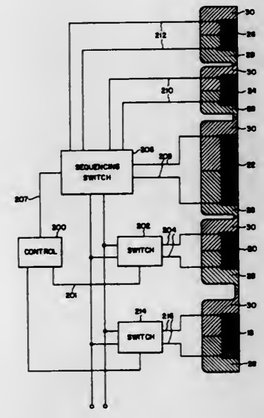
An electrically driven system, such as a doffer comb, resonant near the fundamental power frequency, is electrically driven by means including a winding that is in series with all three phases of a three-phase power source. Respective silicon controlled rectifiers are in series with the winding and a respective one of the three phases and rendered conductive at times determined by the instantaneous position of the vibrating mechanical member in such a manner that power is supplied in such electrical phase as to develop a corresponding mechanical force that aids the movement of the vibrating member so as to sustain vibrations substantially at the electromechanical resonant frequency of the system, even though this frequency differs slightly from that of the three phase driving power.

3,504,251
LINEAR MOTION DEVICE AND CONTROL SYSTEM

Donald G. Sherwood, Pittsburgh, and Thomas F. Widmer, King of Prussia, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 5, 1965, Ser. No. 445,539
Int. Cl. H02k *41/00*
U.S. Cl. 318—135 **11 Claims**

11. In a linear motion device, an elongated tubular housing, an elongated movable element positioned coaxially in said housing in spaced relationship therewith and for axial movement relative thereto, a pair of axially spaced stop members fixedly positioned in said housing in the space between said housing and said movable element, of tandemly disposed armatures disposed in said last-mentioned space and positioned between said stop members, biasing means for spacing said armatures away from one another and away from one of said stop members, a plurality of nested tubular members of varying lengths mounted in said space and secured respectively to said armatures, each of said tubular members extending between said element and said one stop member, said one stop member forming a shoulder on a circumferential surface thereof facing a direction remote from the other of said stop means, and each of said tubular members having a lip formed thereon overlying said shoulder, said



subular members being sized to maintain the spacing respectively between said armatures and said one stop member, a latching mechanism positioned between said other stop means and the adjacent one of said armatures, said supporting members and said armatures being formed from magnetic material, a first coil means mounted on said housing for moving said supporting means axially toward each other, a second coil means mounted on said housing and positioned adjacent the adjacent ones of said armatures and supporting members to move said adjacent supporting member toward said adjacent armatures and additional coil means mounted on said housing adjacent each of the axial spaces respectively between said one stop member and said armatures means for energizing said coil means to close said axial spaces against the forces of said biasing means.

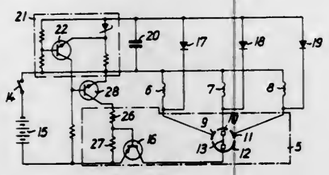
3,504,252
SPEED-CONTROLLED D.C. MOTOR HAVING A MECHANICAL OR ELECTRICAL COMMUTATOR

Helmut Moczala, Oldenburg, and Willi Otzipka, Berlin, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed June 5, 1967, Ser. No. 643,586
Claims priority, application Germany, June 9, 1966, L 53,808
Int. Cl. H02p *7/28*
U.S. Cl. 318—138 **3 Claims**

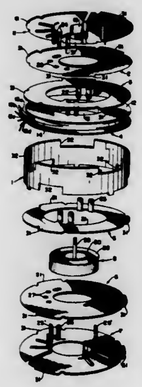
In a direct current motor including a stator having a plurality of stator windings and a permanent-magnet rotor, a current control circuit is coupled to the stator windings for applying direct current thereto, a commutator receptacle is provided for receiving an electronic or mechanical commutator and for electrically connecting the com-

mutator between the current control circuit and the stator windings, an electronic or mechanical commutator is mounted on the commutator receptacle and is electrically connected to the stator windings, and a tachometer circuit



is coupled by means of diodes between the stator windings and the current control circuit to control the current applied to the stator windings as a function of the rotor speed, thereby controlling the speed of the motor.

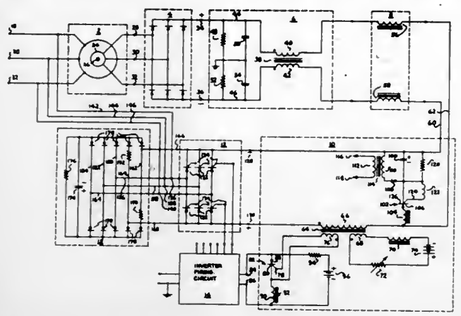
3,504,253
ROTARY STEPPING MOTOR HAVING A D-C WINDING AND A PULSED WINDING
Richard J. Kavanaugh, Bristol, Conn., assignor to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 461,368, June 4, 1965. This application Dec. 9, 1968, Ser. No. 782,213
Int. Cl. H02p 1/18; H02k 37/00
U.S. Cl. 318—138 **9 Claims**



A stepper motor having a permanent magnet rotor and a clawtooth stator with two coils or coil sections, one coil supplied continuously with direct current and the other coil with current pulses to produce in the stator a magnetic field that more than overcomes the field produced by the direct current to cause the motor to step forward each time one of the pulses is applied.

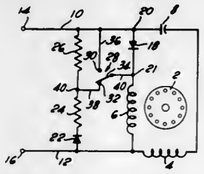
3,504,254
ADJUSTABLE SPEED INDUCTION SYSTEM
George M. Rosenberry, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,707
Int. Cl. H02p 7/36
U.S. Cl. 318—197 **3 Claims**

A line-commutated polyphase inverter bridge includes a capacitance in the D-C input thereof which is reversely charged during normal operation and abruptly connected in shunt with the input to rapidly commutate all conducting inverter devices, at any desired instant in the inverter's cycle of operation. The inverter is particularly adapted for



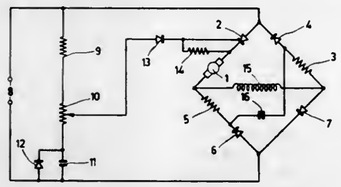
use in a polyphase wound rotor induction motor to achieve adjustable speed operation.

3,504,255
SPEED CONTROL FOR INDUCTION MOTORS
Joseph O. L'Esperance, Norwood, Mass., assignor to Holtzer-Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,306
Int. Cl. H02p 7/62
U.S. Cl. 318—227 **12 Claims**



A speed control system for an induction motor utilizes a rectifier means serially connected with a field winding for energization on alternate half cycles and a second rectifier in shunt with the winding for providing flyback for the motor. A voltage derived from the flyback rectifier is applied to the motor winding during other half cycles.

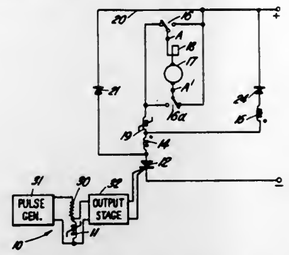
3,504,256
MOTOR SPEED CONTROL CIRCUIT ARRANGEMENT
John Gilbert Metcalfe, Wallington, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,178
Claims priority, application Great Britain, June 14, 1966, 26,497/66
Int. Cl. H02p 7/00
U.S. Cl. 318—246 **6 Claims**



An arrangement for controlling the speed of a motor in accordance with back E.M.F. generated by the motor armature providing a bridge circuit, one arm of which includes a controllable rectifier and the motor armature, and the other arms of which include further rectifiers. The

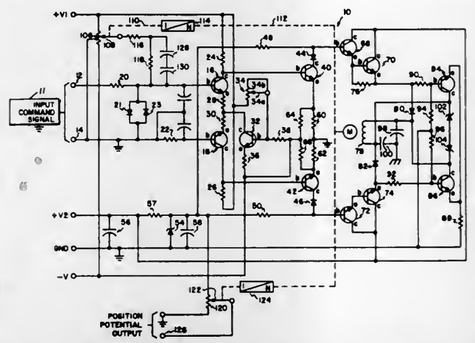
motor field winding is connected across the diagonal of the bridge. The rectifiers are arranged such that current will always flow through the field winding in the same direction on both positive and negative cycles of applied voltage.

3,504,257
CONTROL SYSTEMS FOR ELECTRIC MOTORS
Patrick Smith, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed Nov. 27, 1967, Ser. No. 685,793
Claims priority, application Great Britain, Nov. 28, 1966, 53,133/66
Int. Cl. H20p 3/10
U.S. Cl. 318—252 **10 Claims**



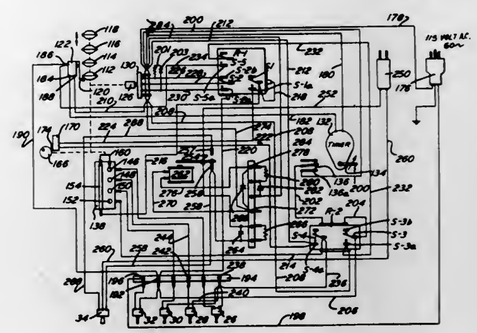
A pulse controlled electric motor has two series field windings wound in opposite senses on the main poles. Current flow (during normal energisation of the motor), through one of the windings is prevented by a diode, the direction of rotation of the motor's armature being selected by a switch in series between the respective winding and a thyristor which is triggered at intervals to provide current flow through the motor. When the motor is reversed, current flow through both windings occurs and the resultant field flux is low. The armature-induced electromotive force is reduced and the consequent braking effort is not violent. An alternative circuit, in which the armature terminals are interchanged when braking is required, is also disclosed.

3,504,258
REVERSIBLE CURRENT CONTROL APPARATUS
Nathan Stern, Flushing, N.Y., and Edward J. Rapoza, Butler, N.J., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 27, 1966, Ser. No. 568,160
Int. Cl. H02p 1/18
U.S. Cl. 318—257 **1 Claim**



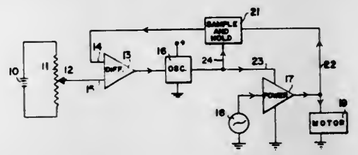
A control circuit responsive to an input signal for directing current through a two-terminal control element in one direction while said input signal is positive and for directing current through the control element in the other direction while said input signal is negative.

3,504,259
AUTOMATIC POSITIONER FOR TESTING SAMPLES
Robert J. Dalton, Haddonfield, N.J., assignor to Arthur H. Thomas Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1966, Ser. No. 541,583
Int. Cl. H02p 1/22
U.S. Cl. 318—265 **4 Claims**



A cell positioner for automatically and successively advancing a plurality of samples into the light beam of a spectrophotometer at predetermined time intervals which may be selectively varied in order to obtain the measurements of the characteristics of the samples. A recorder may be controlled by the movement of the samples.

3,504,260
MOTION SYSTEM ELECTRICAL CONTROLS
Lynn A. Staples, Greene, N.Y., assignor to Singer-General Precision Inc., a corporation of Delaware
Filed Apr. 19, 1967, Ser. No. 631,997
Int. Cl. H02p 5/40
U.S. Cl. 318—331 **3 Claims**

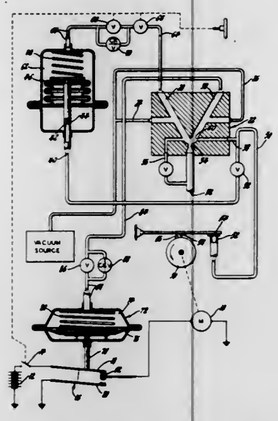


This disclosure describes an electronic control system for electrical motor drive means. An electrical motor is supplied with power through any of several types of solid-state electronic valves. The amount of conduction through the valves is determined by the frequency of oscillation of a controllable oscillator whose frequency is determined by the control input. In order to stabilize this system and to render it under the complete control of the single controlling input without undue interference, without external transients, without hunting and the like, the motor energization is periodically turned off, and, while coasting during a portion of the operating cycle, its reverse EMF is sampled and used as a feedback to one input of a differential amplifier wherein it is differentially combined with the control input which is also applied to the differential amplifier.

3,504,261
PULSE CONTROLLED WIPER

David L. Jones, Jr., Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,913
Int. Cl. H02p 1/04, 5/00
U.S. Cl. 318—444 4 Claims

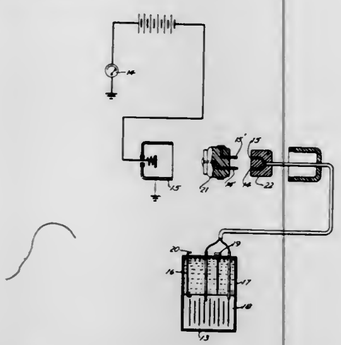


This disclosure concerns pulse type windshield wiping mechanisms wherein an electric motor is utilized to power the windshield wiper arm and blade assembly and wherein a vacuum powered fluid amplifier selectively directs a negative pressure in a controllable manner to various portions of the system to start the electric motor, allow a single speed wipe cycle, brake the electric motor at the end of one wipe cycle, and which delays the beginning of another wipe cycle in response to the amount of bleed allowed by a controllable valve to one leg of the fluid amplifier.

3,504,262
SYSTEM FOR CHARGING THE BATTERY WHICH OPERATES THE STARTER MOTOR OF AN INTERNAL COMBUSTION ENGINE

Tomohiko Sada, Noriyuki Tsuchiya, and Toru Nishi, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Nov. 16, 1966, Ser. No. 594,802
Claims priority, application Japan, Nov. 17, 1965, 40/70,690
Int. Cl. H01m 45/04
U.S. Cl. 320—6 4 Claims

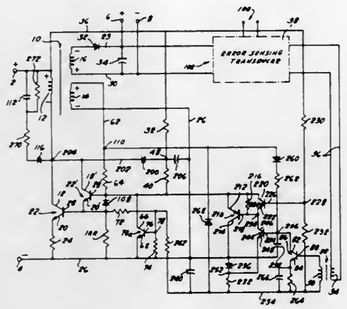


If the regular automobile battery is discharged to a point where it is unable to energize the starter motor, an inexpensive source is used to charge the battery sufficiently to enable it to energize the starter. The source comprises a deferred action type battery which has a low capacity and a high discharge rate.

3,504,263
SELF-OSCILLATING SWITCHING TYPE POWER SUPPLY

Johannes M. Schaefer, Grossweier, Germany, assignor to Technipower Incorporated, Ridgefield, Conn., a corporation of Connecticut

Filed Dec. 4, 1967, Ser. No. 687,901
Int. Cl. H02m 3/32
U.S. Cl. 321—2 14 Claims

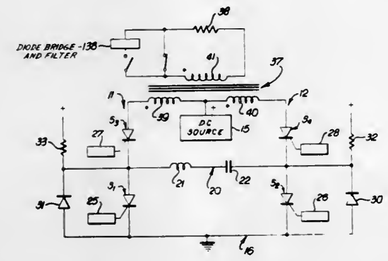


A switching type power supply in which the control for the switching is feed-back connected to the output so as to produce a system which is inherently oscillatory between switch-on and switch-off conditions, improved by including the provision of separate feed-back bypass transistors respectively for voltage control and output current limiting, novel circuitry for controlling the operation of bypass transistors, novel circuitry for improving the stability of operation at light load, a new and simplified starting circuit, and circuitry for reliably linearizing the current limiting features, particularly at low loads.

3,504,264
VARIABLE DUTY CYCLE SWITCHING APPARATUS

Larry R. Suelzle, Menlo Park, Calif., assignor to The J. C. Carter Company, Costa Mesa, Calif., a corporation of California

Continuation of application Ser. No. 603,018, Dec. 19, 1966. This application Nov. 8, 1968, Ser. No. 774,543
Int. Cl. H02m 3/22, 5/40
U.S. Cl. 321—2 8 Claims

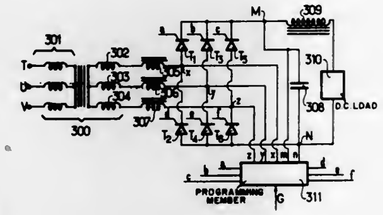


The invention concerns improvements in switching control of power or voltage into a load. Switches such as gate controlled semiconductor devices are controlled in such manner that load current can be turned off from a load-carrying switch without requiring control or commutation current to flow through that switch. This mode of operation is enabled by using the load carrying switch in series with a second switch through which commutation current flows. Variable duty cycle apparatus is thereby provided, with the capability of being varied between zero and unity duty cycle.

3,504,265
DEVICE FOR CONVERSION OF ELECTRICAL ENERGY FROM AC TO DC AND VICE VERSA

Jacques Toulemonde, Versailles, France, assignor to Compagnie Generale d'Electricite, Paris, France, a French corporation

Filed Nov. 21, 1967, Ser. No. 684,808
Claims priority, application France, Nov. 21, 1966, 84,374
Int. Cl. H02m 7/04
U.S. Cl. 321—5 12 Claims

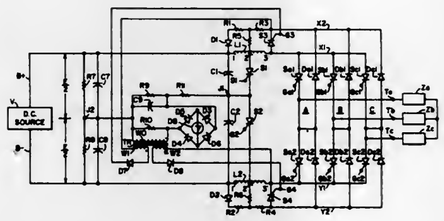


Converter device for converting electrical energy from A.C. to D.C. or conversely, with a cos φ nearly equal to one, comprising solid state controlled rectifiers energized by triggering pulses, wherein said pulses are delayed from the appearance of an alternating tension in the conducting direction by a period which is automatically adjusted according to a given value, by means of a program device.

3,504,266
INVERTER APPARATUS OPERATIVE WITH VARIABLE INPUT SOURCES

Leland A. Schlabach, Pittsburgh, Pa., and Laban E. Lesster, Crofton, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1968, Ser. No. 714,936
Int. Cl. H02m 7/44
U.S. Cl. 321—5 9 Claims

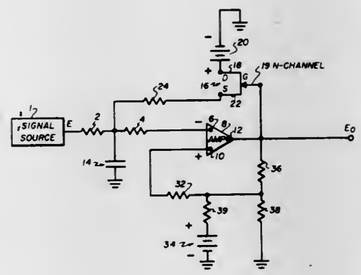


An inverter commutating circuit is provided including commutating control switching devices and inductive and capacitive elements to commutate the plurality of controlled switching devices. When activated the commutation controlled switching device provides a discharge path for the capacitive elements through said inductance elements with the capacitance elements resonantly charging to selected voltage levels. A clamping circuit is employed including a clamping controlled switching device, and a sensing circuit is utilized to sense when the desired voltage is reacted and in response thereto activate the clamping controlled switching device to thereby clamp the commutating capacitive elements at the selected voltage level which is required for proper operation of the commutating circuit.

3,504,267
VOLTAGE TO FREQUENCY CONVERTER

Robert L. James, Bloomfield, and Edward O. Friedman, Oradell, N.J., assignors to The Bendix Corporation, a corporation of Delaware

Filed Feb. 20, 1968, Ser. No. 706,834
Int. Cl. H02m 7/42
U.S. Cl. 321—8 6 Claims



Apparatus for providing pulses at a frequency which varies linearly with a direct current signal and including an amplifier initially saturated in one sense and becoming saturated in another sense when the signal is above a predetermined threshold. A switching device is thereupon rendered conductive for applying a constant level voltage to switch the amplifier back to saturation in the one sense. The pulses are provided as the amplifier is alternately switched to saturation in the one and the other sense. Means are provided for varying the threshold of the amplifier and for varying the linearity range of the pulses.

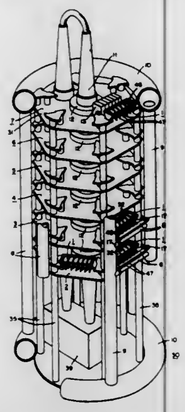
3,504,268
HIGH VOLTAGE CONVERTER HAVING COOLING CONDUITS WHICH GRADE VOLTAGE STRESS

Manfred Hoffmann, Stettiner Str. 34; Paul Fries, Rudelweiher Str. 41; and Karl F. Leowald, Masurenweg 3, all of Erlangen, Germany, and Friedrich Scherbaum, Unertl Str. 31, Munich, Germany

Filed Sept. 11, 1967, Ser. No. 666,895
Claims priority, application Germany, Sept. 15, 1966, S 105,884
Int. Cl. H02m 1/18
U.S. Cl. 321—11 5 Claims

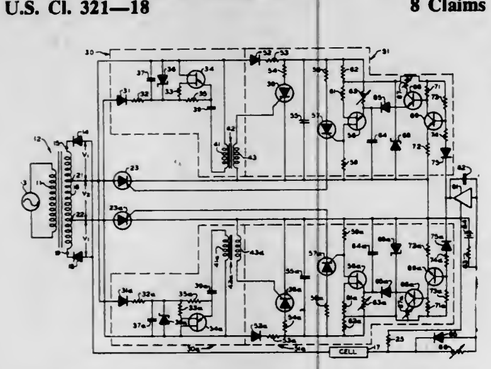
A high voltage electrical converter having a plurality of parallel spaced tiers disposed on a common axis. Each tier has a plurality of stacks of serially connected, fluid cooled, semiconductor devices, arranged in a substantially polygonal configuration. The conduit means for distributing and collecting the cooling medium for the stacks of semiconductor devices are arranged at the periphery of its associated tier, and are electrically connected to its associated stack, to effectively provide segmental electrical stress grading rings about each tier. The main headers for the cooling fluid, which supply and collect the

fluid for the individual conduit means associated with each stack, are metallic tubular members which are disposed at the axial ends of the converter, to provide electrical stress grading rings through capacitive relationships.



3,504,269
CONSTANT CURRENT POWER SUPPLY
Richard A. Hallahan, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 21, 1968, Ser. No. 707,125
Int. Cl. H02m *1/08*
U.S. Cl. 321—18 **8 Claims**

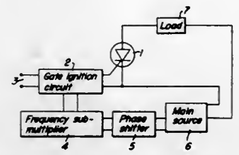


One terminal of an electrochemical cell, which has a variable resistance under load, is connected through rectifiers to the end terminals of the secondary coil of a transformer. The other terminal of the cell is connected through silicon controlled rectifiers to two intermediate terminals on the transformer secondary coil. Each silicon controlled rectifier is provided with a triggering circuit and a synchronizing circuit. The triggering circuits are actuated at a point during a cycle, the time of the point being variable over 360° by a controller responsive to a measurement of the current through the cell.

3,504,270
IGNITION CONTROL OF CONTROLLED RECTIFYING DEVICES
Kosuke Harada, 1 Surugadani, Fukuoka-shi, Japan

Filed Aug. 5, 1964, Ser. No. 387,704
Int. Cl. G05f *1/40*
U.S. Cl. 323—22 **1 Claim**

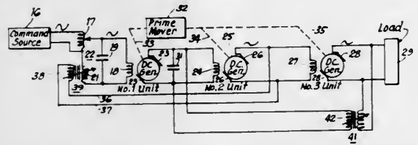
An ignition controlling system for a voltage controlled rectifier connected to a source of A.C. voltage wherein an ignition control device, which may be a magnetic amplifier, is connected to the control electrode of the rectifier for controlling the firing thereof in response to an applied



control signal and an A.C. supply voltage derived from the source of A.C. voltage and reduced in frequency to a submultiple of the frequency of the source.

3,504,271
GENERATION OF CONSTANT FREQUENCY ELECTRIC POWER AT VARIABLE SPEEDS
Ulises A. Sanabria, Wilmette, and Robert J. Corbett, Chicago, Ill., assignors to National Energy Corporation, Chicago, Ill., a corporation of Illinois

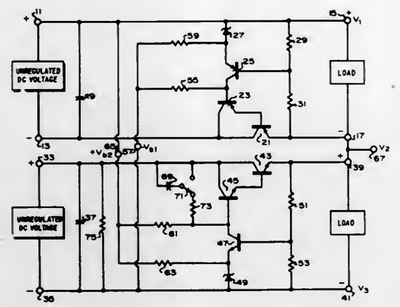
Filed May 9, 1968, Ser. No. 727,918
Int. Cl. H02p *9/14*
U.S. Cl. 322—61 **7 Claims**



An alternating current generating system consisting of plural generators, with a source of alternating current exciting the field of one generator and the output of that generator employed to excite the field of the other generator. Feedback from the output of the second generator is applied to the field of the first generator.

3,504,272
POWER SUPPLY HAVING INTERCONNECTED VOLTAGE REGULATORS PROVIDING MULTIPLE OUTPUTS
George C. Kenney II, Santa Clara, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed May 31, 1968, Ser. No. 733,717
Int. Cl. G05f *1/58*
U.S. Cl. 323—22 **8 Claims**

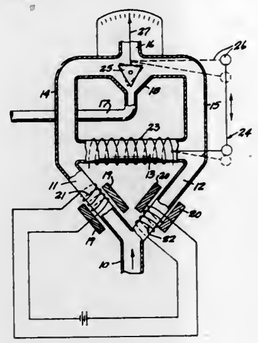


A plurality of voltage regulators are sequentially interconnected so that the bias voltage required by one voltage regulator is provided by the regulated output of the immediately preceding voltage regulator. The output voltages of the regulators have low ripple components. When the output voltage of any one of the regulators falls below its regulated value, all of the voltage regulators are disabled, thereby protecting them from overload conditions.

ERRATUM
For Class 323—22 see:
Patent No. 3,504,270

3,504,273
FLUID BRIDGE METHOD AND MEANS OF DETECTING GASES HAVING MAGNETIC SUSCEPTIBILITY
Harold E. Eller and Hubert Dreckmann, Michigan City, Ind., assignors to The Hays Corporation, Michigan City, Ind.

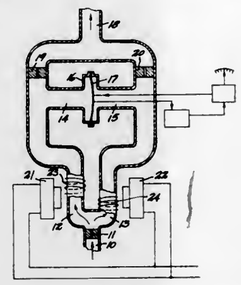
Filed Jan. 9, 1968, Ser. No. 696,527
Int. Cl. G01r *33/00;* **G01n** *27/72*
U.S. Cl. 324—36 **7 Claims**



A method and means for detecting a gas having magnetic susceptibility wherein magnetic winds of the same magnitude but acting in opposite directions are created by the conjoint action of magnets and heating means upon two similar streams of a sample gas so as to create a pressure difference in said streams which is detected by sensing gas flow between said streams. A second gas is introduced into said streams downstream from said detecting point in proportions determined by the gas flow between said streams.

3,504,274
METHOD AND MEANS OF DETECTING GASES HAVING MAGNETIC SUSCEPTIBILITY AND INCLUDING A FLUID BRIDGE
Harold E. Eller and Hubert Dreckmann, Michigan City, Ind., assignors to The Hays Corporation, Michigan City, Ind.

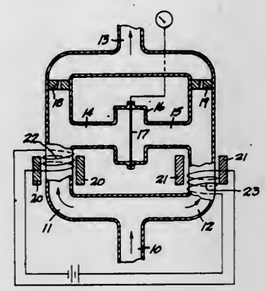
Filed Jan. 9, 1968, Ser. No. 696,568
Int. Cl. G01r *33/00;* **G01n** *27/72*
U.S. Cl. 324—36 **8 Claims**



A method and means for detecting a gas having magnetic susceptibility wherein magnetic wind pulses of the same magnitude but acting in opposite directions are generated by the conjoint action of an electromagnet energized by alternating current and heating means upon two similar streams of a sample gas, so as to create in said streams simultaneous pulses of different pressures which are measured by differential pressure sensing means.

3,504,275
FLUID BRIDGE METHOD AND MEANS OF DETECTING GASES HAVING MAGNETIC SUSCEPTIBILITY
Harold E. Eller and Hubert Dreckmann, Michigan City, Ind., assignors to The Hays Corporation, Michigan City, Ind.

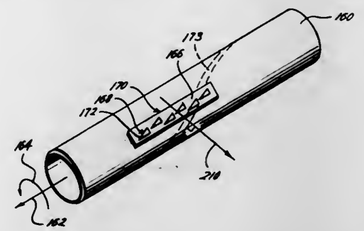
Filed Jan. 9, 1968, Ser. No. 696,569
Int. Cl. G01r *33/00;* **G01n** *27/72*
U.S. Cl. 324—36 **9 Claims**



A method and means for detecting a gas having magnetic susceptibility wherein magnetic winds of the same magnitude but acting in opposite directions are generated by the conjoint action of magnets and heating means upon two similar streams of a sample gas so as to create a pressure difference in said streams which is detected by differential pressure sensing means.

3,504,276
PRINTED CIRCUIT COILS FOR USE IN MAGNETIC FLUX LEAKAGE FLOW DETECTION
Noel B. Proctor, Alfred E. Crouch, Ruby C. Beaver, and Richard S. Demecs, Houston, Tex., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 19, 1967, Ser. No. 632,003
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **5 Claims**



The present invention pertains to methods of making improved search coil suitable for detecting variations in flux and to the resulting improved apparatus thereby produced. Basically, coils of simple and complex coil-loop configurations are made by printed circuit techniques that in the various embodiments described have one or more of the following characteristics: encompass precise areas,

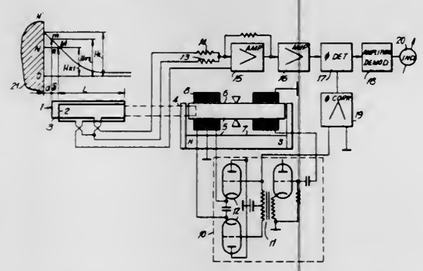
have precise side and angle dimensions, are precisely disposed and connected with respect to each other and are precisely maintained with respect to the edges of the board or boards to which they are attached for uniform detection. The specific coil structures that are described include matched coil pairs (both wired series-aiding and series-opposed), stacked multi-turn coils on a series of separate boards, coil or coils mounted together with exemplary functionally related components, and coils of angularly disposed sides for maximum sensitivity for detecting flux disturbances that may occur in two predominantly predetermined directions. One method of making a stacked coil configuration includes forming substantially identical coils on separate boards and having progressively offset ends brought out to respective edges and recessed for making convenient connections.

3,504,277

VIBRATION MAGNETOMETER FOR MEASURING THE TANGENTIAL COMPONENT OF A FIELD ON SURFACES OF FERROMAGNETIC SPECIMENS UTILIZING A MAGNETOSTRICTIVE AUTOOSCILLATOR

Vitaly Moritsevich Mogilevsky, Ul. Gogolya 49, kv. 39, Novosibirsk, U.S.S.R.

Filed Sept. 13, 1967, Ser. No. 667,404
Int. Cl. G01r *33/02*
U.S. Cl. 324—43 **2 Claims**



A vibration magnetometer for measuring the tangential component of a stationary and magnetic field acting on the flat surface of a ferromagnetic specimen, by means of measuring coil vibrating in a plane normal to the direction of the tangential component of the field. The measuring coil is imparted oscillatory motion by a magnetostrictive autooscillator, with whose oscillating rod said coil is rigidly connected. For the purpose of improving stability and the precision of measurements, the amplifier of said autooscillator employs cathode followers with a step-up transformer for interstage coupling. The measuring coil is made of two sections connected in series opposition, in which sections there are induced signals converted by an operational amplifier into a signal proportional to the field acting on the surface of the specimen. Amplitude-modulated signals, induced in the measuring coil when measuring alternating fields, are demodulated by an amplitude demodulator.

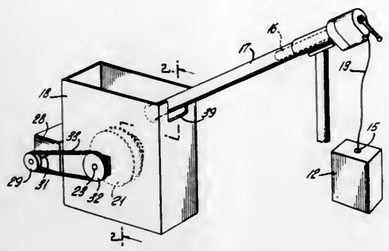
3,504,278

BATHYTHERMOGRAPH TESTING APPARATUS

John A. Lyons, Scituate, Mass., assignor to Buzzards Corporation, Marion, Mass., a corporation of Massachusetts

Filed Mar. 12, 1968, Ser. No. 712,544
Int. Cl. G01r *31/12*
U.S. Cl. 324—54 **10 Claims**

The probe and wire of a bathythermograph system to be tested are immersed in water in a test tank. The wire is mounted on a wire takeup reel in the tank and is maintained at a determined tension by a motor. The electrical indicator of the bathythermograph provides an



indication which indicates a break in the wire, damage of the wire or a loss of insulation on part of the wire.

ERRATUM

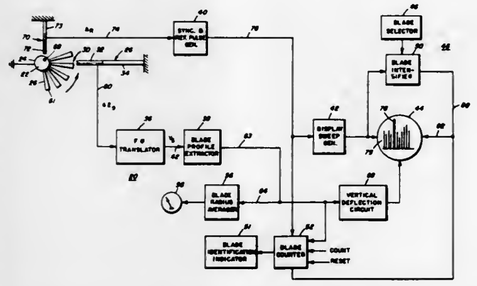
For Class 324—58 see:
Patent No. 3,504,374

3,504,279

NONCONTACT INTERRUPTED SURFACE INSPECTION APPARATUS PROVIDING AN ELECTRICAL ANALOG OF THE SURFACE PROFILE

George B. Foster, Worthington, and Eugene R. Lucka, Columbus, Ohio, assignors to Reliance Electric and Engineering Co., Columbus, Ohio, a corporation of Ohio

Filed Sept. 27, 1967, Ser. No. 670,975
Int. Cl. G01r *27/26;* **G01m** *1/16*
U.S. Cl. 324—61 **60 Claims**



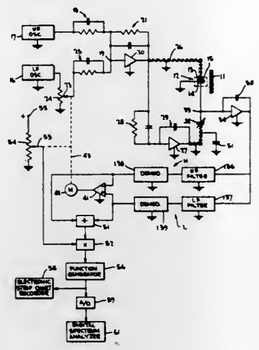
A system is described for the noncontact inspection of a rotating interrupted surface, including pickup sensitive to distance dependent energy variations, signal processing circuitry, and display means to provide a visual analog of the profile of the surface under inspection. System operation is based on a comparison of the object under inspection with a pre-established standard obtained by measurement of the properties of a production piece of known dimension or reference analog designed to accurately simulate the characteristics of the object under inspection. For inspection of a multiple stage rotor for a jet aircraft engine, an embodiment is shown including the above-described features and also permitting a stage-by-stage inspection and identification of any blade in the display profile by the employment of a cathode ray tube for display purposes, means for selectively intensifying the portion of the display corresponding to the desired blade and means for automatically counting the number of blades between a pre-established reference circumferential position blade and that corresponding to the intensified portion of the display.

3,504,280

DUAL FREQUENCY ADMITTANCE GAUGE HAVING IMPROVED FREQUENCY RESPONSE UNRELATED TO FEEDBACK RESPONSE TIME

Robert V. Byrd, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Apr. 29, 1968, Ser. No. 725,029
Int. Cl. G01n *27/22, 27/26;* **G01r** *17/06*
U.S. Cl. 324—61 **13 Claims**



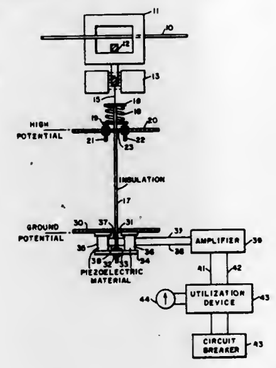
A capacitance moisture measuring gauge is responsive to sources of high and low frequency oscillations. The responses of the gauge to the high and low frequency sources are detected; the voltage of one of the sources is adjusted so that the high and low frequency gauge responses are equalized by an electromechanical servomechanism. The electromechanism servomechanism output is combined with indications of the gauge high and low frequency responses to eliminate the lag inherent in the servomechanism and enable high frequency parameters sensed by the gauge to be ascertained with a spectrum analyzer.

3,504,281

CURRENT RESPONSIVE APPARATUS FOR A HIGH VOLTAGE CONDUCTOR WHEREIN DISPLACEMENTS RESPONSIVE TO CURRENT VARIATIONS ARE TRANSFORMED INTO FORCES WHICH ARE TRANSMITTED TO A REMOTE POINT AND FORCE TRANSDUCER APPARATUS

Charles F. Cromer, Trafford, Pa., and Robert R. Circle, Fairfax, Va., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 14, 1964, Ser. No. 403,808
Int. Cl. G01r *19/06*
U.S. Cl. 324—127 **6 Claims**



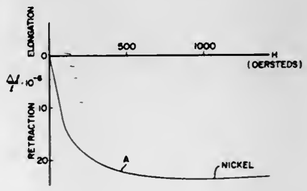
Magnetic means at the conductor include means tending to normally create displacements in a displaceable element which vary with variations in the current in the conductor, the displaceable element being coupled to a rod having a carefully selected stiffness, and spring damping means near the conductor coupled to the rod and the displaceable element for transforming displacing forces on the displaceable element into forces on the rod. At the receiving end a piezoelectric element or elements connected to have their signals additive have variable forces applied thereto by the end of the rod adjacent thereto, which undergoes no substantial displacement. Utilization circuit means may include a current indicator and amplifier means, or circuit interrupting means.

3,504,282

MAGNETOSTRICTIVE CURRENT RESPONSIVE MEANS AND TRANSDUCER MEANS UTILIZING CHANGES IN DIMENSIONS OF THE MAGNETOSTRICTIVE MEANS TO PRODUCE A VARIABLE SIGNAL WHICH VARIES WITH CURRENT VARIATIONS

Einar P. Opsahl, Suldal, Norway, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 14, 1964, Ser. No. 403,816
Int. Cl. G01r *19/16*
U.S. Cl. 324—127 **8 Claims**



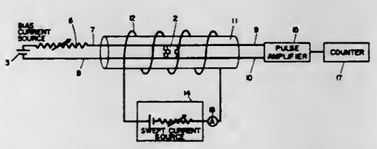
Magnetic circuit forming means including a portion of magnetostrictive material is disposed around a high voltage conductor, the magnetostrictive portion changing in length with changes in intensity of the magnetic field applied thereto resulting from changes in the value of current in the conductor. Transducer means which may be magnetic, piezoelectric, or magnetostrictive is located at a remote point. Insulating means connects the magnetostrictive portion at the conductor to the transducer means to utilize variations in length to provide a signal which varies with variations in current.

3,504,283

FLUX QUANTIZATION MEASURING DEVICE

Robert H. Meservey, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 13, 1967, Ser. No. 690,145
Int. Cl. G01r *19/08, 33/02;* **H03k** *3/38*
U.S. Cl. 324—127 **17 Claims**



A very accurate ammeter having an annular thin-film superconductor with a dimensionally stable central opening of accurately known area and a coil of exactly known dimensions coaxially disposed about the superconductor. The superconductor has a pair of effectively reduced

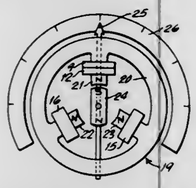
cross-dimension portions which, when an electric current at the critical level is established at these portions and a magnetic field is presented axially to the central opening thereof, provide changes in potential thereacross which varies periodically with the magnetic field, having a maximum each time the value of the flux inside the annulus changes one flux quantum from another maximum. The number and fractional number of flux quanta (or fluxons) are counted to determine the flux contained in the known area of the annular superconductor and related to the current in the coil necessary to produce the magnetic field found to exist. By providing a device in which all the critical dimensions can be determined with great accuracy, and maintained within tolerable limits, an ammeter having an accuracy to 1 part in 10^6 is provided.

3,504,284

ELECTRICAL MEASURING APPARATUS INCLUDING A BRIDGE CIRCUIT AND A METER HAVING A ROTOR AND THREE POLE STATOR

Alexander J. Grant, Central Islip, N.Y., assignor, by mesne assignments, to Simmonds Precision Products, Inc., a corporation of New York

Filed Aug. 29, 1963, Ser. No. 305,388
Int. Cl. G01r *7/00, 17/10, 27/02*
U.S. Cl. 324—140 **15 Claims**



Electrical measuring apparatus including an indicator having a rotor which has north and south poles. A stator having three circumferentially spaced poles is included with windings thereon that are part of a bridge circuit. A first winding on a first one of the stator poles is connected in the bridge circuit so as to be energized under all conditions of balance or unbalance of the bridge circuit. A second or bucking winding on the first stator pole opposes the first winding and is energized in the same sense under either condition of unbalance of the bridge circuit. Third and fourth windings are respectively included on the second and third stator poles and connected in the bridge circuit so that one of the windings is energized only upon unbalance of the bridge in one of its opposed senses and the other winding is energized only upon unbalance of the bridge in the other of its opposed senses.

The energization of the windings may be achieved by employing a bridge circuit having a variable resistor to unbalance the bridge in which the first winding is in a common leg and continuously energized regardless of unbalance of the bridge. The second winding is included in a common leg of a diode network in which the third and fourth windings form legs including diodes therein to limit the flow of current so that only one of the third and fourth windings is energized when the bridge is unbalanced.

Various diode networks may be employed with diode configurations so as to provide the required current flow through the windings.

The second or bucking winding may be formed from two separate windings, one of which is energized upon unbalance of the bridge in one sense, and the other of which is energized upon unbalance of the bridge in the other of its senses.

The second and third stator poles may respectively include fifth and sixth additional windings thereon. The third and fourth windings on these stator poles are energized alternatively as described above. Additionally, the fifth winding on the second stator pole is energized when the current through the fourth winding on the third stator pole exceeds a certain amount; likewise the sixth winding on the third stator pole is energized when the current through the third winding on the second stator pole exceeds a certain amount. The alternative flows of currents through the fifth and sixth windings, dependent upon the flows of current respectively through the fourth and third stator windings, may be controlled by transistors or diodes, for example.

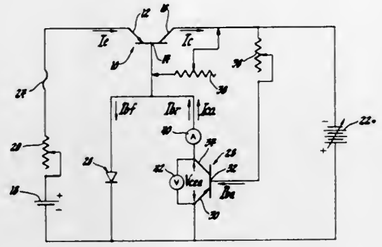
Electrical measuring apparatus including a bridge circuit that has two output terminals connected by an output network having two current paths between the output terminals. Each current path has a diode and an output winding therein, the diode in one path being connected with its polarity opposite to that of the diode in the other path with respect to the output terminals.

3,504,285

TRANSISTOR PROTECTIVE CIRCUIT

William T. Lemen, Frankfort, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 22, 1968, Ser. No. 715,431
Int. Cl. G01r *31/22*
U.S. Cl. 324—158 **6 Claims**



A transistor test circuit incorporating a circuit for protecting the test transistor from damage due to thermal runaway by limiting the rate of increase in the reverse base current of the test transistor so as to permit a conventional circuit breaker to operate and terminate the thermal runaway before the test transistor is damaged. The protective circuit includes an auxiliary transistor that provides an impedance which increases as the reverse base current of the test transistor increases.

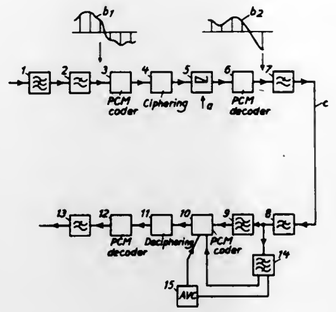
3,504,286

METHOD OF TRANSMITTING SPEECH IN CIPHERED FORM AND ARRANGEMENT FOR CARRYING OUT THE METHOD

Anton Christian Jacobaeus, Stockholm, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed May 29, 1968, Ser. No. 732,994
Claims priority, application Sweden, June 21, 1967, 8,919/67
Int. Cl. H04k *1/04*
U.S. Cl. 325—32 **11 Claims**

A method for transmitting speech signals in ciphered form from a transmitter to a receiver comprises the steps of converting the speech signals to pulse code modulated signals, enciphering the pulse code modulated signals and converting the enciphering pulse code modulated signals back to scrambled audio signals which are then transmitted to the receiver. The receiver converts the scrambled audio signals to pulse code modulated signals which are deciphered and thereafter converted to speech signals.

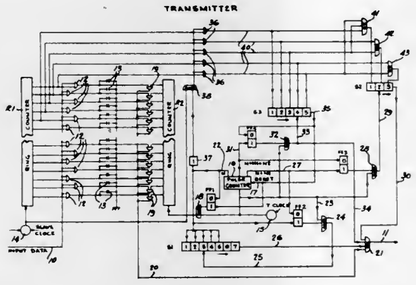


3,504,287

CIRCUITS FOR STUFFING SYNCH, FILL AND DEVIATION WORDS TO ENSURE DATA LINK OPERATION AT DESIGNED BIT RATE

Jacques V. Deregnaucourt, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed May 8, 1967, Ser. No. 636,741
Claims priority, application Canada, Oct. 28, 1966, 974,312
Int. Cl. H04b *1/00, 7/00*
U.S. Cl. 325—38 **4 Claims**



A system for transmitting data at a first bit rate on a data link having a second bit rate is disclosed in which a synchronization word, a deviation word, and a fill word are added to each block of data from the data source prior to transmission. The synchronization word, deviation word and fill word are then extracted at the receiver before the data is transmitted.

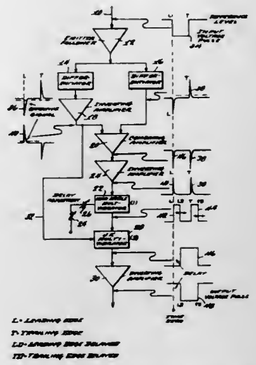
3,504,288

ADJUSTABLE PULSE DELAY CIRCUITRY

John D. Ross, Dollard des Ormeaux, Quebec, Canada, assignor to Central Dynamics, Ltd., Montreal, Quebec, Canada, a body corporate and politic

Filed Mar. 27, 1967, Ser. No. 626,192
Int. Cl. H03k *1/00, 3/04*
U.S. Cl. 328—63 **1 Claim**

This invention employs digital circuits to delay a pulse signal by a continuously variable amount while insuring that the pulse width of the delayed signal remains unchanged. The constant pulse width is accomplished by employing a single monostable multivibrator circuit to generate the pulses which determine the leading and trailing edges of the delayed pulse.

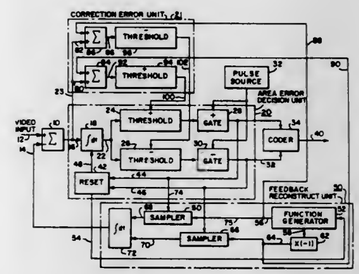


3,504,289

SIGNAL PROCESSING AND RECONSTRUCTING APPARATUS

Erich A. Pfeiffer, Little Rock, Ark., and Harold B. Shutterly, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 31, 1966, Ser. No. 590,610
Int. Cl. H03b *1/04;* **H03k** *5/01*
U.S. Cl. 328—164 **10 Claims**



A system for processing input signals (e.g., video signals) and for reconstructing these wherein one or more criteria are used to control the operation. One of the criteria used is that a change in the reconstructed output is brought about when the error signal (difference between input and reconstructed signals) equals a function generated within the system. Additionally in combination with the above, a change is made whenever the integral of the error signal exceeds a predetermined value.

3,504,290

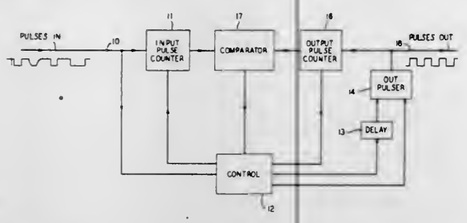
PULSE CORRECTOR

Harold W. Earle, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a coporation of New York

Filed Dec. 13, 1967, Ser. No. 690,219
Int. Cl. H03k *5/13*
U.S. Cl. 328—164 **7 Claims**

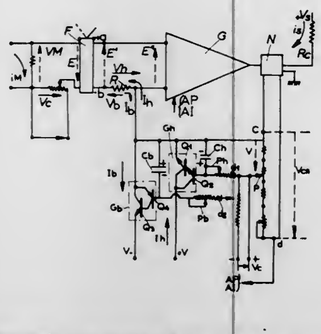
In a pulse corrector, a free-running output pulse generator is turned ON a predetermined time after receipt

of the first pulse of an input pulse train. The number of pulses received and the number generated are counted in separate counters. When the number of pulses generated



catches up with the number received, the generator is turned OFF and the counters reset in preparation for the next pulse train.

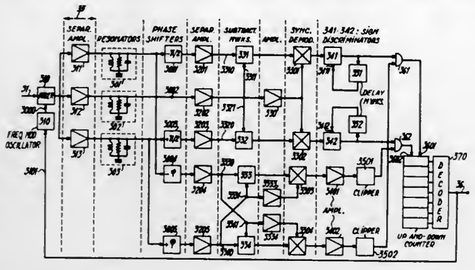
3,504,291
ELECTRONIC PROPORTIONAL AND INTEGRAL CONTROLLER WITH LIMITED SATURATION OF THE INTEGRAL ACTION
Robert Gineste, Vitry-sur-Seine, France, assignor to Arca Premoncontrole, Gentilly, Val-de-Marne, France, a company of France
Filed Mar. 13, 1967, Ser. No. 622,564
Claims priority, application France, Mar. 21, 1966, 54,309
Int. Cl. G05b *11/14;* **H03k** *5/08*
U.S. Cl. 328—171 **1 Claim**



An electronic proportional and integral controller is compensated for signal input excursions beyond set limits by two threshold amplifiers fed with a portion of the output signal and each injecting a bucking component into the controller input when the upper or lower set limit is exceeded.

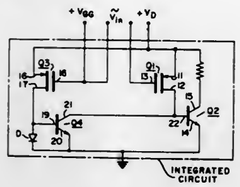
3,504,292
DEMODULATOR FOR LOW-LEVEL FREQUENCY-MODULATED WAVES USING SHORT-TERM MULTIPLE RESONATOR SPECIAL ANALYZER
Gerard Pierre Adolphe Battail, 30 Boulevard du Temple, Paris 11, France, and Pierre Claude Brossard, 9 Rue des Fleurs, 78 Montigny-le-Bretonneux, France
Filed Sept. 28, 1967, Ser. No. 671,285
Claims priority, application France, Oct. 10, 1966, 79,351
Int. Cl. G01r *23/16;* **H03d** *3/04*
U.S. Cl. 329—112 **8 Claims**

A low-noise demodulator for a received frequency-modulated wave, of the type including a short-term analyzer roughly measuring the instantaneous frequency and delivering an estimated modulating signal approximating the true modulation of said wave, in which another wave from a local oscillator is frequency-modulated by said estimated signal and is combined with the delayed received wave, and in which the combined wave is finally demodulated to obtain the true modulation of said received wave, said analyzer using two or three damped resonators across which response signals are developed, characterized by an arrangement of said analyzer comprising a mixer circuit fed from the received wave and



an auxiliary oscillator and feeding said resonators, means for combining pairs of said response signals into difference signals, further means for combining each of said difference signals with one of said response signals to obtain further signals, and means for combining said further signals into said estimated modulating signal which in turn frequency-modulates said auxiliary oscillator.

3,504,293
AMPLIFIER APPARATUS INCLUDING FIELD EFFECT AND BIPOLAR TRANSISTORS SUITABLE FOR INTEGRATION
Hung Chang Lin, Silver Spring, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 29, 1968, Ser. No. 709,343
Int. Cl. H03f *3/18*
U.S. Cl. 330—35 **6 Claims**

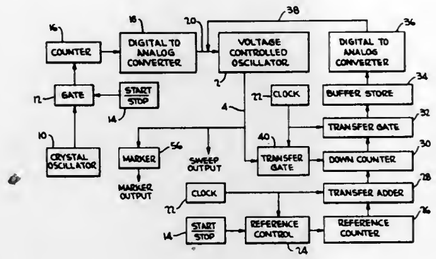


An amplifier having a field effect input stage and a bipolar output stage is provided with means acting as a current sink for DC drain current including another field effect transistor having matching characteristics, including drain current, to the first and a bipolar transistor having unity gain that draws the drain current so that its collector current matches the drain current. All the essential elements of the circuit may be provided within a unitary body of semiconductive material.

3,504,294
SWEEP OSCILLATOR UNIT EMPLOYING DIGITAL FEEDBACK
Francis C. Martin, Jr., San Diego, Calif., assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 678,946
Int. Cl. H03b *3/04*
U.S. Cl. 331—4 **10 Claims**

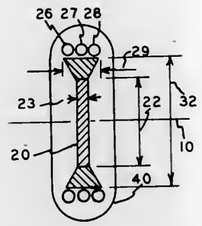
A sweep oscillator unit employing digital feedback to correct the linearity of a swept frequency output and the frequency value of a constant frequency output. A controlled oscillator means is provided for generating a

train of output signals having a frequency dependent upon the magnitude of an input or control signal. The input or control signal is such that the controlled oscillator means selectively generates a linear ramp frequency output signal or a constant frequency "rest" output signal. These output signals are periodically sampled and are applied to a counter means such that the counter means counts down from selected preset reference counts



therein. Any remaining count in the counter means subsequent to each sampling period is utilized to provide a correcting error or control input signal to the controlled oscillator means. Periodic sampling of the output signals and subsequent correction takes place throughout the operative period of the oscillator to thus dynamically correct the linearity of the swept frequency output and the frequency value of the constant frequency output.

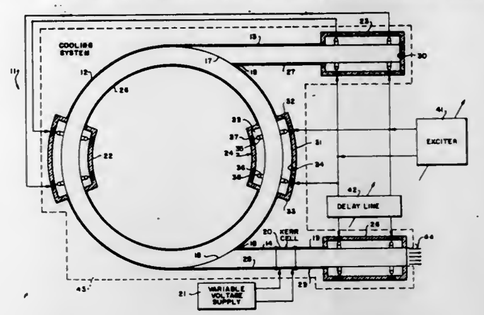
3,504,295
OPTICALLY CLAD LASER
Joseph P. Chernoch, Scotia, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 15, 1966, Ser. No. 602,458
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **7 Claims**



The invention disclosed in this application relates to a technique of immersion of a laser material in a cladding material that is particularly designed to enhance the ability of pumped light to reach a disk type laser to provide edge pumping.

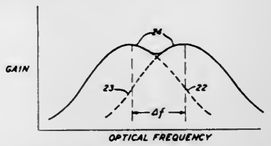
3,504,296
LIGHT SYNCHROTRON
Norman P. Huffnagle, Box B–4, 607 W. 11th St., Panama City, Fla. 32401
Filed Oct. 20, 1965, Ser. No. 499,106
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **14 Claims**

1. A light synchrotron comprising in combination:
a circular laser rod,
a straight laser rod joined to said circular laser rod at the periphery thereof along a line tangent thereto, means coated upon predetermined portions of the external curved surfaces of asid circular and straight laser rods for reflecting light energy therewithin, and



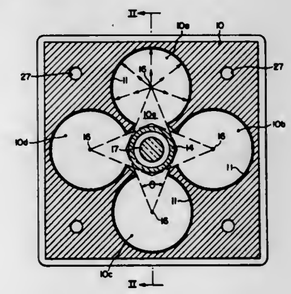
pumping means contiguously disposed about uncoated surface portions of said circular and straight laser rods for the energization thereof.

3,504,297
BROAD BAND MASER DEVICES
Edward F. Labuda, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 4, 1966, Ser. No. 539,893
Int. Cl. H01s *3/22*
U.S. Cl. 331—94.5 **6 Claims**



The bandwidth of a gas optical maser is increased by using as the gaseous active medium equal parts of a plurality of isotopes of the same material. For example, in a helium-neon maser, equal parts of neon^{20} and neon^{22} are used; in an argon maser, equal parts of argon^{36}, argon^{38}, and argon^{40} are used.

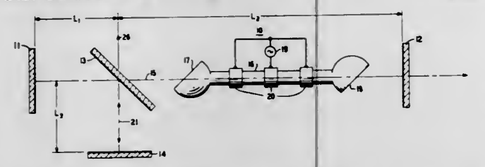
3,504,298
CATHODOLUMINESCENT LASER PUMP
Charles W. Baugh, Jr., Severna Park, Md., Gene R. Feaster, Elmira, N.Y., and Jon W. Ogland, Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,777
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **9 Claims**



Cathodoluminescent stimulated emission of radiation apparatus is described in which a hollow cavity anode of

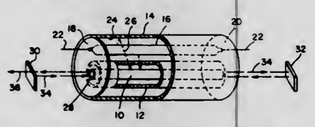
four-leaf clover configuration cross-section has its inner walls coated with a phosphor layer. Filamentary thermal field emission cathodes in center of the cylindrical flutes of the cavity constitutes the source of high energy electrons to excite the phosphor. The negative temperature medium is supported centrally of the foliated cavity structure to receive the optical radiation from the phosphor. Preferably the emission spectrum of the phosphor matches the absorption spectrum of the medium.

3,504,299
OPTICAL MASER MODE SELECTOR
Arthur G. Fox, Rumson, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 23, 1965, Ser. No. 466,365
Int. Cl. H01s *1/00; 3/05*
U.S. Cl. 331—94.5 **3 Claims**



In the optical maser disclosed, mode selection is achieved through use of primary and secondary resonators coupled in a non-collinear arrangement by an oblique beam splitter. The secondary resonator includes end reflectors disposed with respect to the beam splitter to exclude the active medium from the secondary resonator. The secondary resonator can then be made arbitrarily small with a correspondingly high axial-mode-frequency spacing and discrimination against all but one axial mode of the primary resonator.

3,504,300
FLUORAPATITE LASER MATERIAL DOPED WITH NEODYMIUM AND MANGANESE
Robert Mazelsky, Monroeville, and Robert C. Ohlmann, Churchill, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 3, 1966, Ser. No. 583,760
Int. Cl. H01s *3/16*
U.S. Cl. 331—94.5 **5 Claims**



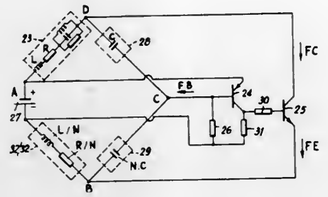
A crystalline laser material having the formula

$$Ca_5(PO_4)_3F$$

doped with both neodymium and manganese as partial substitutes for minor portions of the calcium. The material may also be doped with other elements such as selected rare earths, vanadium, titanium, and charge compensators.

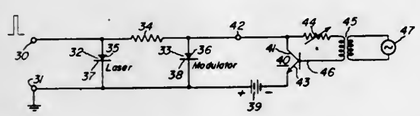
3,504,301
MECHANICAL OSCILLATOR
Max Hetzel, Bienne, Switzerland, assignor to Centre Electronique Horloger S.A., Neuchatel, Switzerland, a Swiss company
Filed Jan. 30, 1968, Ser. No. 701,724
Claims priority, application Switzerland, Jan. 31, 1967, 1,424/67
Int. Cl. H03b *5/30*
U.S. Cl. 331—116 **6 Claims**

An electromechanical oscillator comprises a mechanical resonator controlled by a driving coil, a compensating impedence connected in series with the driving coil by a voltage source, two capacitances connected in series, means connecting the driving coil and the compensating impedance and the two capacitances to form a bridge circuit, an amplifier having output means to bridge the interconnection between the driving coil and one of the capacitances, the output means further including means to bridge



the interconnection between the compensating impedance and the other of the two capacitances, means connecting the other interconnections of the bridge to an input terminal of the amplifier whereby the compensating impedance forms a negative feedback loop between the input terminal and the output means of the amplifier in order to compensate for voltage induced by driving currents of the driving coil.

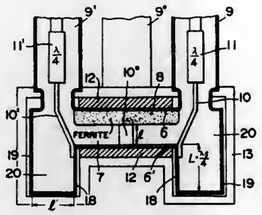
3,504,302
FREQUENCY CONTROLLED SEMICONDUCTOR JUNCTION LASER
Gunther E. Fenner, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 24, 1964, Ser. No. 399,053
Int. Cl. H01s *3/18;* **H04b** *9/00*
U.S. Cl. 332—7.51 **4 Claims**



A semiconductor laser device having a continuous p-n junction region which receives forward bias at a first location and reverse bias at a second location spaced apart from the first location in the direction of energy propagation. The first location establishes oscillation between a pair of parallel reflecting faces which define a resonant cavity. Energization of the second location with a modulating signal produces corresponding frequency variations in the emitted coherent rediation while allowing intensity of the emitted radiation to remain essentially unaffected.

3,504,303
REENTRANT CAVITY TYPE CIRCULATOR
Yoshihiro Konishi, Sagamihara City, Japan, assignor to Japan Broadcasting Corporation, Tokyo, Japan
Filed Apr. 22, 1968, Ser. No. 723,112
Claims priority, application Japan, May 4, 1967, 42/28,028
Int. Cl. H01p *1/32*
U.S. Cl. 333—1.1 **6 Claims**

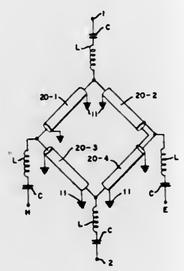
A circulator utilizing the anisotropic feature of a ferrite body, under application of a DC magnetic field, to act as a non-reversible circulator, and comprising a reentrant cavity resonator. A ferrite element is inserted at a narrow space of the reentrant cavity resonator, to which coaxial feeding lines are coupled. According to a novel feature of the circulator of the invention, the circulator is very suitable for use in applying high power in the UHF band, such as more than 5 kw. or more particularly 5 to 30 kw., especially since good heat dissipation is achieved while maintaining a complete circulator performance.



ERRATUM

For Class 333—6 see:
Patent No. 3,504,317

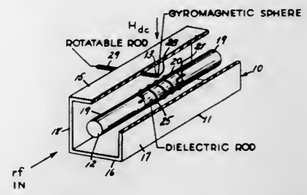
3,504,304
WIDEBAND HYBRID RING NETWORK
Joseph D. Cappucci, Fort Lee, N.J., assignor to Merrimac Research and Development, Inc., West Caldwell, N.J., a corporation of New York
Filed Mar. 2, 1967, Ser. No. 619,972
Int. Cl. H01p *5/12*
U.S. Cl. 333—11 **10 Claims**



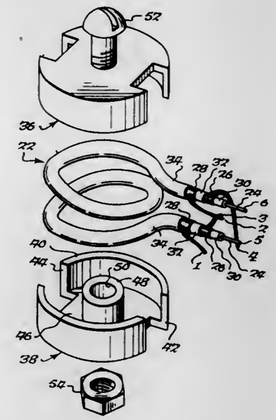
A hybrid ring electrical network in which circuits are connected to junctions of the network to provide compensation to increase the operating efficiency of the network.

3,504,305
COAXIAL BAND REJECTION FILTER WITH HELICAL LINE CENTER
Morris Cohen, Oceanside, N.Y., assignor to Loral Corporation, Scarsdale, N.Y.
Continuation-in-part of application Ser. No. 541,415, Mar. 4, 1966. This application Oct. 4, 1968, Ser. No. 765,139
Int. Cl. H03h *7/10;* **H01p** *1/32*
U.S. Cl. 333—24.1 **4 Claims**

A non-reciprocal coaxial band rejection filter including a hollow outer conductor member, an inner conductor member disposed coaxially within said outer conductor member, said inner conductor member including a non-conductive dielectric rod, a pair of conductive segments interconnected coaxially at the ends of said non-conductive rod, a helical coil of conductive wire interconnecting said conductive segments and wound about said non-conductive rod, and a sphere of gyromagnetic material positioned in the area of said helical coil.

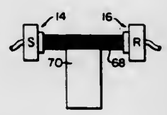


3,504,306
TRIAXIAL BALUN FOR BROADBAND PUSH-PULL POWER AMPLIFIER
George H. Kam, Tonawanda, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 2, 1969, Ser. No. 829,688
Int. Cl. H01p *1/00*
U.S. Cl. 333—26 **6 Claims**



A transformer packaging arrangement comprising the combination of a reversing transformer and a step-up transformer, both of which are coaxial line sections, into a single triaxial section cup core assembly.

3,504,307
THIN SAMPLE ULTRASONIC DELAY LINE
Isadore L. Gelles, Acton, Mass., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed July 6, 1966, Ser. No. 563,194
Int. Cl. H03h *7/30*
U.S. Cl. 333—30 **8 Claims**



The apparatus disclosed herein employs a delay line which is characterized by a normalized thickness times frequency product in the order of 0.1 or less so that

ultrasonic energy coupled thereto is transmitted only in the desired mode thereby to preserve the fidelity of the transmitted impulses.

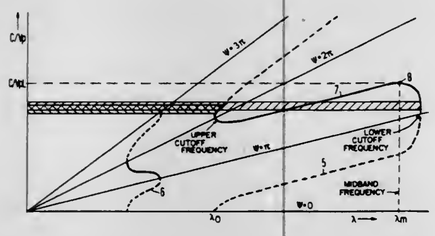
ERRATUM

For Class 333—31 see:
Patent No. 3,504,375

3,504,308
TRAVELING WAVE AMPLIFIER TUBE OF THE HIGHER POWER TYPE WITH A DELAY LINE OF SPACED STRUCTURAL CONFIGURATION

Erich Mayerhofer, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Sept. 29, 1966, Ser. No. 582,982
Claims priority, application Germany, Sept. 29, 1965, S 99,764
Int. Cl. H03h *7/30*
U.S. Cl. 333—31 **7 Claims**

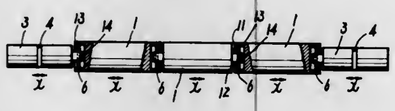


A delay line structure for a traveling wave tube comprises a plurality of transverse walls equidistantly spaced apart within a hollow conductor, each of the transverse walls including a coupling opening which is eccentric with respect to the longitudinal axis of the conductor to provide a delay line having a dispersion characteristic which prevents self-oscillation during the time when the line voltage is increasing up to the required operating level.

3,504,309
MECHANICAL FILTER

Shoji Okawa and Keiichi Yoshizaki, Tokyo, Japan, assignors to Oki Electric Industry Company Limited, Tokyo, Japan

Filed Apr. 18, 1967, Ser. No. 631,684
Claims priority, application Japan, Apr. 28, 1966, 41/26,613, 41/26,614
Int. Cl. H03h *9/26*
U.S. Cl. 333—72 **10 Claims**

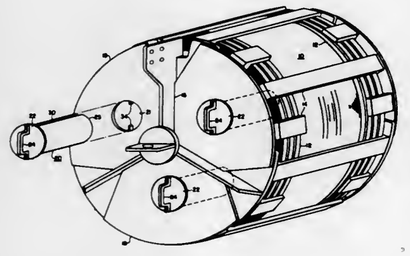


A neck-type mechanical band filter including plural resonator elements mechanically connected in end-to-end relation to each other and to terminating transducer elements including radially extending flexible coupling members mechanically interconnecting the ends of adjacent elements of the filter. Each coupling member includes a relatively small diameter central portion rigid with the end of one adjacent element and a relatively large diameter peripheral portion rigid with the end of the other adjacent element. Radially extending flexible coupling means interconnect the central and annular portions. In one embodiment, these radially extending coupling means comprise wires and, in another embodiment, they comprise thin flexible disks which may be apertured.

3,504,310
ACCESSIBLE LINE TRAP TUNING UNIT

James J. McNally, Bloomington, Ind., Jimmie L. Snyder, Jackson, Mich., and John P. Cage, Ellettesville, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 16, 1967, Ser. No. 623,768
Int. Cl. H01h *7/10;* **H03h** *7/10*
U.S. Cl. 333—76 **6 Claims**



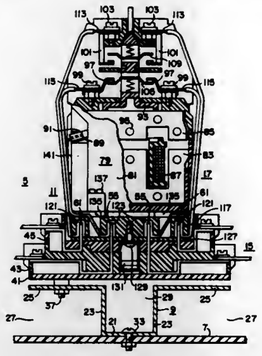
A line trap tuner design to be manually inserted into and removed from an insulated end plate covering an opening formed by the main, cylindrically shaped power current coil forming part of a line trap device. The tuner comprises a molded base structure formed with structures for receiving and holding capacitors, resistors and/or inductors in an upright, open and accessible manner for effecting quick capacitor or connection changes, such changes being methods for tuning the line trap. The end cover plate is provided with at least one opening for receiving the tuner. In one embodiment of the invention, two terminal blades are provided in the opening and behind the cover plate for engaging corresponding resilient terminal means attached to a molded base when the tuner is inserted into the opening in the cover plate. In another embodiment of the invention, terminal brackets are attached to the outside of the cover plate for receiving corresponding terminal bearing pins attached to the molded base of the tuner. The terminal brackets support the tuner as well as providing electrical terminals for connecting the tuner components to the power coil. The exposed (outside) surface of the molded base may be provided with a handle or other suitable means for effecting the manual insertion and removal of the tuner.

3,504,311
PLUG-IN RELAY AND SUPPORT THEREFOR

John H. Mullen, Beaver, and Zelko J. Kruzic, New Brighton, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1967, Ser. No. 630,879
Int. Cl. H01h *67/02*
U.S. Cl. 335—132 **20 Claims**

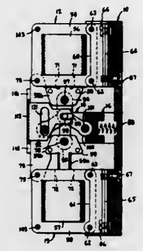
A plug-in relay having a plug-in base for plug-in connection between the relay and base. The relay comprises female-type or clip-on type terminals and the base comprises male-type or stab-type terminals that cooperate with the base. The relay comprises a plurality of elongated conductors that extend on the outside of the relay housing to a support at the back of the relay housing and that are formed to provide female-type clip-on terminals at the back parts thereof to cooperate with stab terminals on the base. A support is constructed to support the base and to provide wiring channels for receiving wires that are connected to the base at an installation.



3,504,312
ELECTROMAGNETIC CONTACTOR

Christian De Visser, Clinton, and Donald O. Myers, Normal, Ill., assignors to General Electric Company, a corporation of New York

Filed Oct. 16, 1968, Ser. No. 768,083
Int. Cl. H01h *67/02*
U.S. Cl. 335—136 **20 Claims**



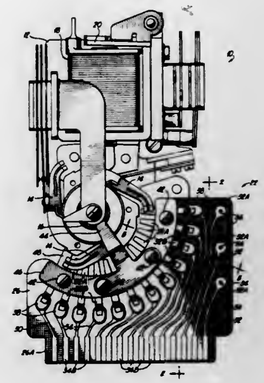
An electromagnetic contactor includes a pair of spaced solenoids having axially aligned magnetic plungers movable in axial directions in response to energization of associated windings. The plungers and a movable contact carrier are interconnected by an overcenter linkage so as to effect reciprocating translatory movement of the carrier along an axis perpendicular to the axis of alignment of the plungers relative to fixed contact means in response to energization of the windings. A pair of cutout switches each is connected in circuit with a separate winding for actuation in response to movement of either plunger to its full extent to deenergize the associated winding. The carrier is mechanically latched by the linkage in the position it assumes in response to movement of either plunger to its full extent subsequent to deenergization of the associated winding whose energization resulted in such plunger movement. Separate auxiliary switches for customer usage are also actuated in response to movement of each plunger to its full extent.

3,504,313
QUICK DETACHABLE STEPPING SWITCH

Joseph M. Jans, Skokie, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 13, 1967, Ser. No. 690,165
Int. Cl. H01h *51/08*
U.S. Cl. 335—138 **8 Claims**

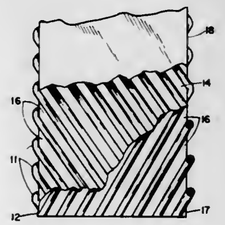
A stepping switch for quick connection to or removal from an associated circuit includes a number of wipers advanced over bank level contacts by an electromagnetically actuated step drive mechanism. The bank levels are formed in sub-assemblies of one printed circuit panel with one edge interposed between the insulating supports for two levels of bank contacts. The free ends of the bank contacts are offset from the plane of the contacts toward the panel and soldered to the conductive layers on the opposite sides of the panel. These conductive layers extend to an edge of the board to provide an edge connection that is inserted into a conventional edge receptacle to physically mount and electrically connect the switch in a quick detachable manner.



3,504,314
COMPOSITE SUPERCONDUCTIVE CONDUCTOR

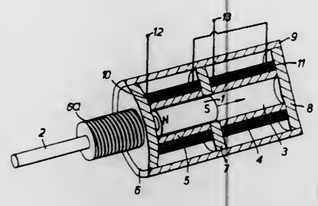
Glenn A. Anderson, Nashua, N.H., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Feb. 20, 1968, Ser. No. 706,840
Int. Cl. H01f *7/22*
U.S. Cl. 335—216 **5 Claims**



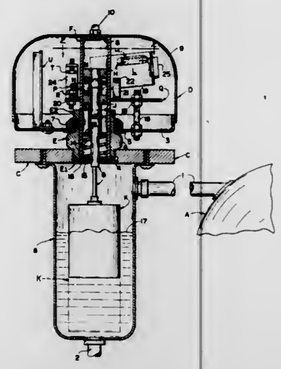
A ribbon type multilayer composite superconductive conductor having a large surface area including internal surfaces exposed to the coolant. The internal passages are formed by winding a superconductive conductor on a first ribbon of conductive material disposed between and separating two outer ribbons of conductive material whereby in combination with said ribbons the space between adjacent turns of the superconductive conductor defines passages on both sides of said inner ribbon, the passages on one side preferably being disposed at an angle to the passages on the other side of the inner ribbon and the normal material intermediate the turns of the superconductive conductor providing a low resistance shunt path in the event one or more turns are driven into the normal state.

3,504,315
ELECTRICAL SOLENOID DEVICES
Peter Stanwell, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 5, 1967, Ser. No. 688,093
Int. Cl. H01f *7/08*
U.S. Cl. 335—234 **3 Claims**



A D.C. polarised linear solenoid includes a permanently longitudinally magnetised armature cooperating with a reversibly magnetisable core structure provided with a magnetising winding and with two pole members spaced longitudinally by a distance equal to twice the mutual distance of the two poles of the armature, the core structure also having a third pole member positioned half way between the two longitudinally spaced pole members to provide a closed magnetic circuit when the armature is in one of the other of its end positions.

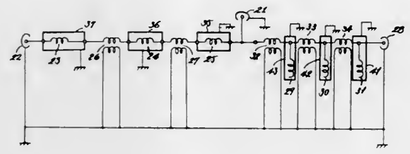
3,504,316
RECIPROCATING MAGNETIC MEANS FOR OPERATING SNAP ACTION MERCURY SWITCH
Martin Bekedam, Orinda, Calif.
(1231 16th Ave., Oakland, Calif. 94606)
Filed Nov. 13, 1967, Ser. No. 682,222
Int. Cl. H01f *7/02*
U.S. Cl. 335—306 **5 Claims**



My device uses two spaced apart disc-shaped holding magnets mounted on a stem that can be moved in the direction of its length. One face of each magnet is of one polarity and the other face is of opposite polarity. A semi-circular magnet is pivotally mounted between these two disc magnets and the magnetic field of this magnet always lies between the magnetic fields of the two holding magnets. Magnetizable stop pins limit the swinging movement of the semi-circular magnet and cause a snap action operation by this magnet.

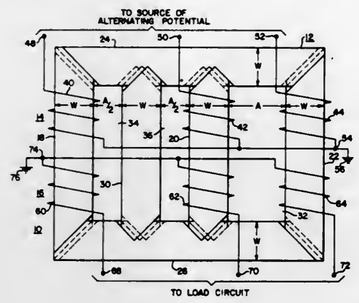
A modified form of the device includes a central disc magnet mounted on the stem and between the two holding magnets. The semi-circular pivoted magnet will have its magnetic field placed between the magnetic fields of one holding disc magnet and the central disc magnet when in one position; and will have its magnetic field lie between the fields of the other holding disc magnet and the central disc magnet when it is in its other position. The pivoted magnet will have a snap action between these two positions.

3,504,317
BRANCHING FILTER COMPRISING A BAND-PASS FILTER AND A BAND-REJECTION FILTER
Risaburo Sato, 50 Nakajima-cho, Sendai-shi, Miyagi-ken, Japan, and Senji Yokokawa, Bangaichi, Oguni-machi, Kami-hanazawa, Yonezawa-shi, Yamagata-ken, Japan
Filed June 19, 1967, Ser. No. 647,133
Int. Cl. H01p *5/12*
U.S. Cl. 333—6 **5 Claims**



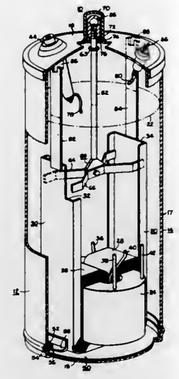
A branching filter comprising a band-pass filter and a band-rejection filter connected in parallel at the input, the former being formed of shielded coils and bifilar coils connected in series, the latter being formed of shielded coils open at one end and shunted from bifilar coils, the bifilar coils in both filters severing as phase shifters.

3,504,318
THREE-PHASE TRANSFORMER WITH FOUR LEGGED MAGNETIC CORE
Garlington C. Wilburn and Gerald J. Hattrup, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 686,988, Nov. 30, 1967. This application May 7, 1969, Ser. No. 824,376
Int. Cl. H01f *33/00, 27/24*
U.S. Cl. 336—12 **10 Claims**



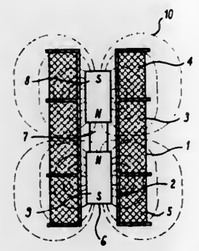
A three-phase transformer of the core-form type including wye-wye connected primary and secondary windings having grounded neutrals, and having a new and improved four-legged magnetic core. Three of the legs of the magnetic core are winding legs for receiving the primary and secondary phase windings of the three electrical phases, and the remaining leg, which is disposed between two of the winding legs, functions during unbalanced load conditions to provide a path for zero sequence fluxes.

3,504,319
ELECTRICAL TRANSFORMER
Merrill G. Leonard, Fowler, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 25, 1968, Ser. No. 770,487
Int. Cl. H01f *15/02, 27/06*
U.S. Cl. 336—68 **12 Claims**



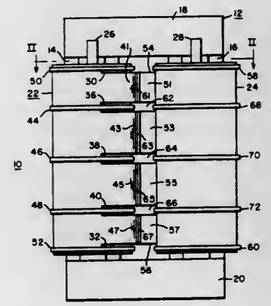
An electrical transformer having a magnetic core-winding assembly disposed within a non-metallic casing, which includes a tank and cover. The bottom portion of the tank includes a metallic liner which reinforces the tank, and which also secures the magnetic core-winding assembly within the tank. Lifting means is mechanically connected to the magnetic core-winding assembly, which extends through a seal in the cover. The seal allows relative motion between the lifting means and the cover, enabling the transformer to be lifted without creating stress concentrations in the casing.

3,504,320
LINEARLY ACTING CURRENT FORCE TRANSDUCER
Jean Engdahl and Raymond Huguenin, Neuchatel, Switzerland, assignors to Ebauches S.A., Neuchatel, Switzerland, a Swiss company
Filed Nov. 19, 1968, Ser. No. 777,058
Claims priority, application Switzerland, Nov. 30, 1967, 16,878/67
Int. Cl. H01f *21/00, 21/06, 7/08*
U.S. Cl. 336—110 **3 Claims**



Current-force transducer acting linearly between an electric current and a core characterized by the fact that on the one hand the current passes in a composite coil comprising a main coil flanked at each end by a recovery coil, these two recovery coils being connected in series but in opposition, with the main coil and that on the other hand the core is also complex and has a central cross beam flanked at each end by a permanent magnet, these two magnets having opposite poles and being located approximately perpendicularly to separations between the main coil and the recovery coils.

3,504,321
COILS OF SHEET CONDUCTORS HAVING SLOTTED ENDS
Frank W. Benke, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1968, Ser. No. 773,469
Int. Cl. H01f *27/28, 15/10, 7/06*
U.S. Cl. 336—184 **14 Claims**



Electrical inductive apparatus including first and second electrical coils formed of sheet conductor. The outer end of the sheet conductor of each coil is slotted to provide terminal means integral with the sheet conductor. The first and second electrical coils are banded at the location of the slots, to maintain their integrity while allowing the terminal means to extend outwardly from the coils. The first and second electrical coils are connected in series by interconnecting the terminal means of the two coils. New and improved methods for constructing the electrical inductive apparatus, and for slotting the sheet conductors to provide the terminal means, are also disclosed.

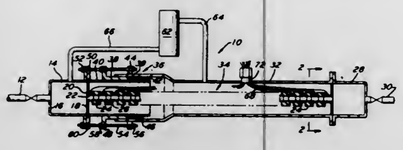
3,504,322
ELECTRIC CARTRIDGE FUSE FOR SMALL CURRENT INTENSITIES
Richard A. Belcher, Hampton Falls, N.H., and Paul C. Hitchcock, Haverhill, Mass., assignors to The Chase-Shawmut Company, Newburyport, Mass.
Filed Jan. 21, 1969, Ser. No. 792,414
Int. Cl. H01h *85/04, 71/20*
U.S. Cl. 337—164 **5 Claims**



A fuse for small current intensities—i.e. a fuse having current ratings ranging from a fraction of an ampere to a few amperes—capable of achieving substantial time-lags on occurrence of overload currents by means of a spring-biased solder pot joint not requiring any heater winding, and capable of rapidly interrupting short-circuit currents,

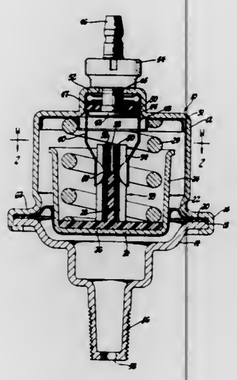
is made up of fewer and less expensive parts than prior art fuses having comparable performance characteristics. The short-circuit current interrupting capacity is achieved without resorting to a pulverulent arc-quenching filler.

3,504,323
CORROSION TEST APPARATUS
John J. Meany, Jr., Rosemont, Pa., assignor to A. V. Smith Engineering Company, Narberth, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1968, Ser. No. 703,733
Int. Cl. H01c 7/00; G01r 27/02; G01n 17/00
U.S. Cl. 338—13 9 Claims



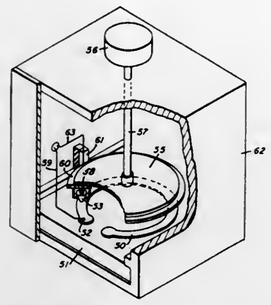
Corrosion test apparatus for determining the corrosion rate of tubing and particularly heat exchanger tubing under realistic operating conditions. A heat exchanger tube is separated into various segments which segments are electrically insulated from one another. A corrosive fluid is introduced into the apparatus under specified controlled conditions. The rate of corrosion of the tubing can be calculated by Faraday's Law in order to determine the corrosion rate of the various segments. The various segments of the heat exchanger tube are electrically insulated from one another preferably by fluorocarbon separators and a pressure-equalizing chamber is provided in order to eliminate static pressure across the wall of the segmented heat exchanger tube.

3,504,324
PRESSURE TRANSDUCER
John E. Creager, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,990
Int. Cl. G01l 9/02
U.S. Cl. 338—42 6 Claims



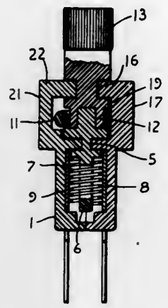
The invention relates to a pressure transducer of the wire resistor type, wherein the relative movement of contacts on two resistive members indicates the sum of the resistance between the contact tips with a minimum travel of the contacts and includes a means of calibration.

3,504,325
β-TUNGSTEN RESISTOR FILMS AND METHOD OF FORMING
John R. Rairden III, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1967, Ser. No. 675,990
Int. Cl. H01c 7/00
U.S. Cl. 338—160 15 Claims



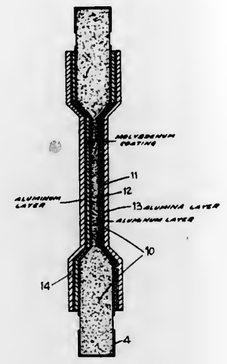
β-Tungsten resistor films having resistances higher than 5000 ohms/sq. and temperature coefficients of resistance smaller than −200 p.p.m./° C. are formed by evaporating a tungsten source in 5×10^{-5} to 1×10^{-3} torr air and depositing the β-tungsten resistor films upon nonmetallic substrates heated to a temperature in excess of 25° C.

3,504,326
POTENTIOMETER WITH FRICTION DRIVE ACTUATION
Dudley H. Campbell, Raleigh, N.C., assignor to Stackpole Components Company, Raleigh, N.C., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,664
Int. Cl. H01c 5/02
U.S. Cl. 338—183 10 Claims



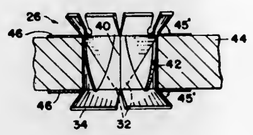
An elongated potentiometer housing has a longitudinal slot in its front, in which is disposed a slide that carries a bridging contact engaging resistance and collector elements inside the housing. In front of the slot is a circular friction member that is rotatably connected with the slide and that tightly engages a friction surface extending lengthwise of the slot. When the friction member is turned, it rolls along the friction surface and thereby moves the slide along the slot.

3,504,327
HEATER ELEMENT
René Clement and Maurice Ducos, Paris, France, assignors to Societe de Fabrication d'Elements Catalytiques, a corporation of France
Continuation of application Ser. No. 557,269, June 13, 1966. This application Nov. 1, 1968, Ser. No. 774,576
Claims priority, application France, June 14, 1965, 20,613
Int. Cl. H01c 1/02
U.S. Cl. 338—262 8 Claims



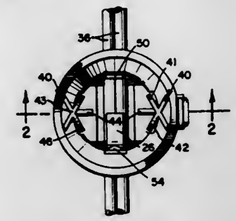
An electrical heater element. This element comprises an electrically conducting core. A purality of superimposed layers cover said cores; the layers are made alternately of refractory compounds and of a metal capable, after melting, of wetting the two adjacent oxide layers. Preferably, the metal has a melting temperature lower than the working temperature of the heater.

3,504,328
CIRCUIT BOARD EYELET
Billy E. Olsson, New Cumberland, Pa., assignor to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 631,992, Apr. 19, 1967. This application Jan. 3, 1968, Ser. No. 712,317
The portion of the term of the patent subsequent to Feb. 6, 1985, has been disclaimed
Int. Cl. H05k 1/10; H01r 9/06, 9/16
U.S. Cl. 339—17 19 Claims



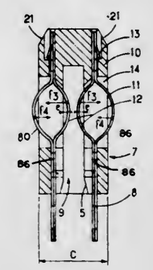
An improved miniature circuit board eyelet for holding a lead wire and for establishing a circuit board through connection. The eyelet includes a number of inwardly converging fingers which grip and hold the wire within the thickness of the circuit board. These fingers are connected to a circumferential flange so that the flange aids in stiffening the fingers while also serving as a lead-in for guiding insertion of lead wires into the body of the eyelet. When the eyelet is solder dipped a reliable electrical connection is established between printed circuit paths on both sides of the circuit board and the lead wire. Stress relief pillars reduce cracking at the solder joint between the eyelet and the printed circuit path on the top of the circuit board.

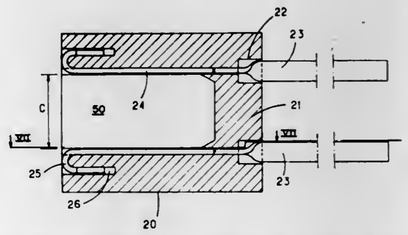
3,504,329
PUSH-IN TYPE OF LIGHT SOCKET
John W. Peterson, Douglaston, and Henry Schick, Commack, N.Y., assignors to Gilbert Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York
Filed June 19, 1967, Ser. No. 647,005
Int. Cl. H01r 25/00, 25/10, 13/54
U.S. Cl. 339—73 17 Claims



A lamp socket for holding a light bulb with a conductive base in which the socket is made of plastic material and formed with unitary deformable bulb holding means on the inner wall of the socket. Upon insertion of a bulb into a socket, the holding means deform toward the socket interior wall and hold the bulb in the socket. Electrical contact means are also provided in the socket to make electrical contact with the conductive base.

3,504,330
ELECTRICAL CONNECTOR
Rene Holzhaeuser, Choisy-le-Roe, France, assignor to C.I.T.-Compagnie Industrielle des Telecommunications, Paris, France
Filed July 18, 1968, Ser. No. 745,762
Claims priority, application France, July 19, 1967, 114,852
Int. Cl. H01r 9/12; H05k 7/10
U.S. Cl. 339—176 10 Claims

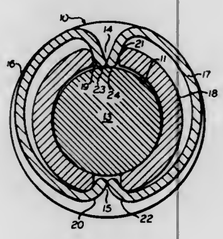




An electrical connector having a socket for the reception of a plug formed with conductive tracks to which individual electrical circuits are to be completed by the con-

nector, comprising male and female insulative bodies providing respective sets of electrical contacts which slide resiliently against one another while maintaining firm contact pressure therebetween when the two bodies are mated together.

3,504,331
SOCKET CONTACT FOR ELECTRICAL CONNECTORS
Franklin T. Anderson, Bernardsville, N.J., assignor to Co-Operative Industries Inc., Chester, N.J., a corporation of New Jersey
Filed Jan. 31, 1968, Ser. No. 702,022
Int. Cl. H01r *11/22*
U.S. Cl. 339—256 **4 Claims**



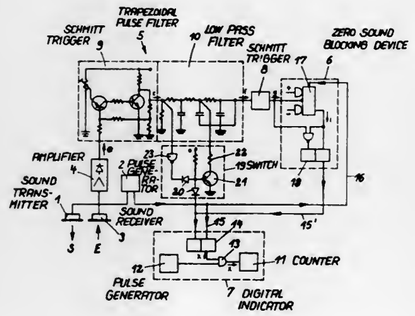
A socket contact has two C-shaped metal spring members which embrace on opposite sides a cylindrical body member within a circumferential channel. Radially, inwardly directed ends of the spring members engage in diametrically opposed longitudinal slots in the body member. The longer ends of the two springs project from the same slot into the axial bore and function to frictionally engage a mating pin.

3,504,332
ELECTRICAL CONNECTOR
James Lenhart Mixon, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 23, 1967, Ser. No. 611,132
Int. Cl. H01r *7/06*
U.S. Cl. 339—273 **4 Claims**



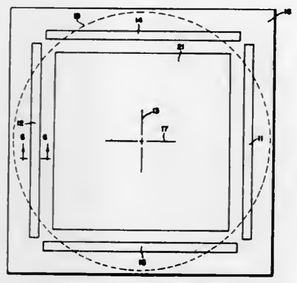
An electrically-conductive body means includes a plurality of portions which define a plurality of pairs of spaced, opposed facing surfaces. Each pair of facing surfaces defines a tapered space therebetween. All of these surfaces are of arcuate cross-sectional configuration. Each tapered space is adapted to receive a correspondingly tapered wedge member. This wedge member has opposite arcuate edge portions. One of the edge portions of the wedge member is adapted to fit against a complementary surface on the body means, while the opposite edge portion of the wedge member is adapted to clamp a bared wire between such opposite edge portion of the wedge member and the other of the respective pair of opposed facing surfaces defined by the body means. The wedge members are fired into operative clamping relationship by an explosive tool, and the wedge members may be removed with the use of the same tool.

3,504,333
ECHO SOUNDING APPARATUS
Walter Grada and Wolfgang Richard Ernst Stedtnitz, Bremen, Germany, assignors to Fried. Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany
Filed Oct. 14, 1968, Ser. No. 767,186
Claims priority, application Germany, Oct. 12, 1967, 1,566,852
Int. Cl. G01s *9/68, 9/70*
U.S. Cl. 340—3 **7 Claims**



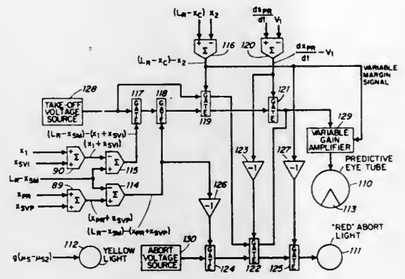
An echo sounding arrangement using amplitude filtering for distinguishing between bottom echoes and echoes from submerged floating objects. This amplitude filter has a high actuating threshold and a low cutoff threshold.

3,504,334
RECTANGULAR COORDINATE INDICATING SYSTEM EMPLOYING CORDLESS STYLUS
Rodger Elmo Turnage, Jr., San Diego, Calif., assignor to Stromberg Datagraphix, Inc., San Diego, Calif., a corporation of Delaware
Filed Oct. 16, 1968, Ser. No. 768,079
Int. Cl. G01s *5/18*
U.S. Cl. 340—16 **12 Claims**



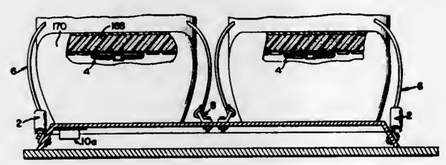
A system is described for indicating the rectangular coordinate location of a hand held cordless stylus or pointer. The stylus emits an energy wave, and the arrival times of the energy wave front at sensors positioned along the X and Y axes are compared. The differences in arrival times are measured to indicate the displacement of the stylus from the X and Y axes.

3,504,335
AIRCRAFT TAKE-OFF MONITORING SYSTEM
Robert L. Hall, Marblehead, Mass., and Roland H. Siebens, Wheaton, Ill., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 14, 1967, Ser. No. 660,282
Int. Cl. G01c *21/00*
U.S. Cl. 340—27 **14 Claims**



A system for monitoring the take-off performance of an aircraft and for providing information to the pilot to aid him in his take-off decision in which a first quantity representing the total distance from the start of take-off to the aircraft's present position on the runway plus the predicted distance required to stop from that position from the aircraft's present velocity and a second quantity representing the total distance from the start of take-off to the aircraft's predicted position at which it will have reached its commitment velocity plus the predicted distance to stop from such velocity are each compared with the total safe runway distance available for take-off. In addition, a third quantity representing the distance from the start of take-off to the aircraft's future position at which it will have reached its take-off velocity is compared with the total runway distance less the minimum aircraft climb-out distance required to clear the end of the runway with a single engine loss. Appropriately displayed information is derived from such comparisons, which are repetitively made with the aid of high speed computers, in order to indicate as early as possible in the take-off run whether the take-off should be continued or discontinued.

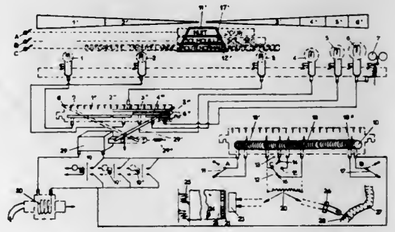
3,504,336
SAFETY SEAT BELT WARNING SYSTEMS FOR PASSENGER SECURITY
Oliver W. Boblitz, 1717 G St. NW., Washington, D.C. 20006
Filed Sept. 2, 1965, Ser. No. 484,655
Int. Cl. B60q *1/26, 5/00*
U.S. Cl. 340—52 **6 Claims**



Safety seat belt systems for vehicles are improved by incorporating an audio and/or visual warning feature that is actuated by lack of adequate snugness in belts of seats occupied by passengers. The warning feature is automatically deactivated for unoccupied seats by a unique design of pressure-sensitive electrical seat switches in the seats.

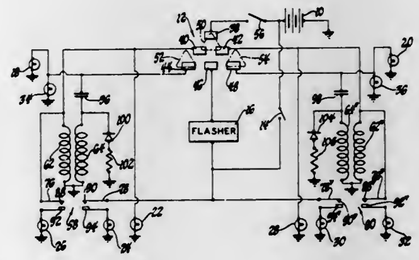
3,504,337
APPARATUS FOR INDICATING SAFE DRIVING
Adolphe Ekman, 4 Rue de Bourgogne, Lille, France
Filed June 20, 1966, Ser. No. 558,772
Claims priority, application France, June 18, 1965, 21,520; Dec. 29, 1965, 44,246
Int. Cl. B06q *1/00, 9/00;* **G08b** *5/22*
U.S. Cl. 340—53 **12 Claims**

An apparatus for indicating the degree of safe driving of an automobile vehicle is described as having at least one indicator lamp and a circuit for turning the lamp on and off, a displaceable switch device with at least one contact corresponding to the lamp, a commutator device and the contact being disposed in the electric circuit; an electromagnet connected to the commutator device for controlling the position of the commutator device in



a manner dependent upon the current supplied to the electromagnet; the supply current being provided by a generator driven at a speed proportional to the speed of the vehicle and means for varying the supply current according to the safety conditions affecting the vehicle.

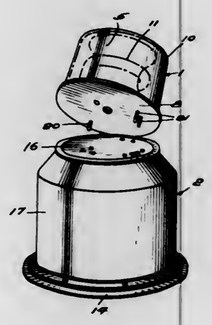
3,504,338
CIRCUIT FOR SEQUENTIALLY ENERGIZING A PLURALITY OF LOADS
Burton W. Breece, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 8, 1967, Ser. No. 689,119
Int. Cl. B06q *1/38;* **H01h** *51/20*
U.S. Cl. 340—67 **4 Claims**



A circuit including a relay which is energized by a flasher and which has a pair of armatures responsive to different flux levels and connected respectively in

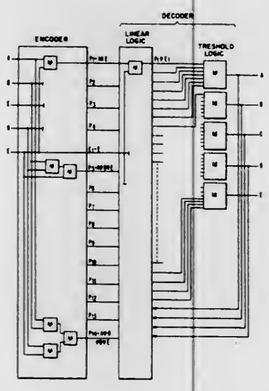
series with a pair of lamps. The relay further includes a pair of parallel connected bifilar wound coils with a capacitor in series with one coil to progressively establish the different flux levels and sequentially attract the armatures.

3,504,339
SIGNAL LAMPS
John J. Bailey, Chicago, Ill., assignor to Safety Products Company, Chicago, Ill., a partnership
Filed Feb. 14, 1967, Ser. No. 616,105
Int. Cl. B60q *1/00*
U.S. Cl. 340—84 7 Claims



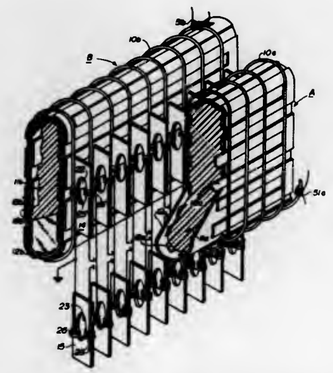
A signal lamp for emitting flashing signals at a desired rate. A parabolic reflector extends about the axis of the lamp with a space discharge tube at the focal point thereof having means for electrical discharge at a desired pulse rate.

3,504,340
TRIPLE ERROR CORRECTION CIRCUIT
Charles A. Allen, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 8, 1967, Ser. No. 636,691
Int. Cl. H03k *13/34*; H04l *1/10*
U.S. Cl. 340—146.1 8 Claims



Error correcting circuit for digital equipment, particularly a circuit operating in a 15, 5, 3 error correcting code (and variations that give 14, 4, 3 and 13, 3, 3 codes). Data is encoded by means of Exclusive OR and is decoded by means of Exclusive OR circuits and majority logic circuits with feedback from outputs of the majority logic circuits to the decoding Exclusive OR circuits.

3,504,341
SHIFT REGISTER COMPARATOR
Richard L. Snyder, New Smyrna Beach, Fla., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 20, 1967, Ser. No. 610,700
Int. Cl. G06f *7/22*; H03k *5/20*
U.S. Cl. 340—146.2 4 Claims

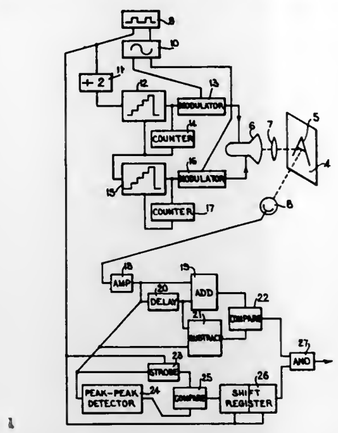


This invention relates to a digital information comparator using a magnetic shift register in which an unknown pattern of digital information is compared with a known or standard pattern. One embodiment comprises two magnetic shift registers between which are placed a plurality of magnetometers which measure like and unlike magnetic fields in corresponding portions of the magnetized wire containing patterns of magnetic domains. A second embodiment comprises a single magnetic shift register with a comparator or pulse difference measuring circuit, a recycling circuit to retain the known or standard pattern and a read-out circuit.

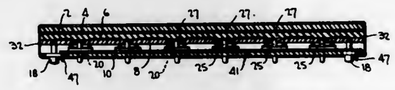
3,504,342
SYSTEMS FOR SENSING AND RECOGNISING OR ANALYSING DATA
Gordon George Scarrott, Wokingham, and Alan Dennis Cook, Steeple Morden, England, assignors to International Computers and Tabulators Limited, London, England, a British company
Filed Feb. 2, 1966, Ser. No. 524,517
Claims priority, application Great Britain, Feb. 3, 1965, 4,588/65
Int. Cl. G06k *9/00*
U.S. Cl. 340—146.3 7 Claims

A data sensing system in which a character on a record medium is scanned by a circular scan pattern with reflected light from the record medium analysed to provide an electrical indication of sensed data. As the centre of the circular scan pattern approaches the centre of a character line segment, first and second electrical signal components having one and two maxima, respectively, are produced. The ratio of the amplitudes of the first and second components is determined and is compared with a signal representative of the optical density at the centre of the character segment. Upon a determination

that the centre-of-segment optical density lies between a predetermined range of values, and the ratio of amplitudes of the first and second signal components exceeds a defined value, an output signal is produced.



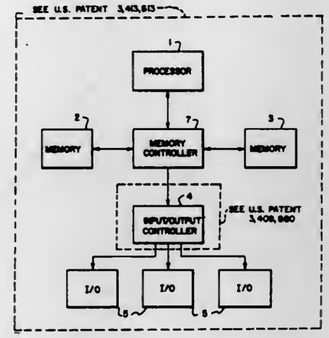
3,504,343
CARD IDENTIFICATION AND VERIFICATION SYSTEM AND DEVICES
Harry G. Ditlow, Camden, N.J., assignor to Ditlow Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1967, Ser. No. 659,068
Int. Cl. H04q *1/00*
U.S. Cl. 340—149 18 Claims



A card idenification and verification system, particularly for credit-card users, wherein the credit-card user is provided with an identification card which contains both a visual indication of his identity as well as an internal personal base code means for providing an incomplete code therein. Selective adjusting means adapted to be operated by the user of the identification card are carried by the identification card and serve to selectively complete the internal base code. A verifying device is provided to validate the internal code of the identification card as completed by the user thereof. The verifying device comprises a modified credit-card imprinting machine containing an identification card holding means and electrical circuitry requiring the holder of the identification card to properly select one of a plurality of code switches before validation of the identification card is initiated.

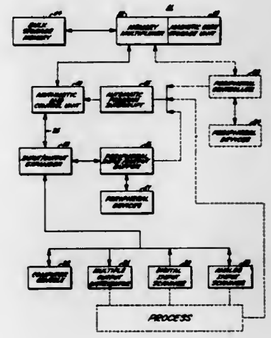
3,504,344
APPARATUS FOR ESTABLISHING INDIRECT COMMUNICATION BETWEEN PROCESSING ELEMENTS IN A COMPUTER SYSTEM
Ernest J. Porcelli and Laszlo L. Rakoczi, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed May 27, 1966, Ser. No. 553,436
Int. Cl. G11c *15/00*
U.S. Cl. 340—172.5 13 Claims

In order to facilitate communications between a processor and an input/output controller of a data processing system and to perform input/output functions without burdening the processor, each input/output controller of the data processing system is assigned a unique "mailbox" or storage cell in a data storage unit associated with a central controller. When a processor is required to communicate with a particular input/output controller to cause the input/output controller or a peripheral subsystem connected thereto to perform a particular operation, the processor transmits a communication set to the appropriate mailbox of the data



storage unit and supplies to the central controller a signal identifying the corresponding input/output controller. In response to this identifying signal, the central controller transmits a notification signal to the input/output controller. The input/output controller responds to the notification signal by retrieving the contents of its "mailbox" and utilizes the information contained in the communication set to perform the appropriate function and to cause an appropriate peripheral subsystem to execute an identified operation.

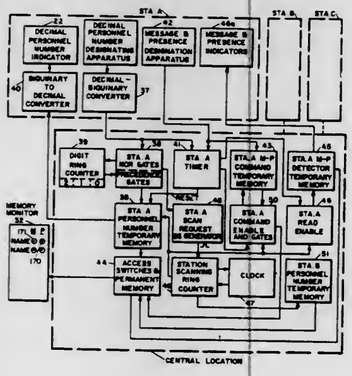
3,504,345
INPUT/OUTPUT CONTROL APPARATUS
Sherril A. Harmon and Emery A. White, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed May 29, 1967, Ser. No. 642,056
Int. Cl. G06f *1/00*; G11b *13/00*
U.S. Cl. 340—172.5 10 Claims



Apparatus in a computer system for selectively controlling the number and size of information bytes in data words being transferred between memory and a peripheral device during information processing and control operations. For each input/output operation between

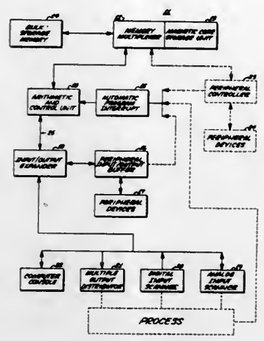
memory and a peripheral device, a control word is provided which contains fields specifying the number of words to be transferred and also the memory location to which or from which information is to be currently transferred. The control word also contains a field specifying the number of information bytes in each word to be transferred and a field specifying the number of bytes of the current word yet to be transferred, the latter field being incremented upon each transfer of an information byte. As each word transfer is completed, the address and word count fields are modified accordingly. When the word count field indicates that the specified number of words have been transferred, use of the control word to direct information transfer is terminated.

3,504,346
PERSONNEL INFORMATION REGISTER SYSTEM
Charles H. Parsons, Stamford, and Bruce A. King, West Redding, Conn., assignors to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut
Filed May 31, 1967, Ser. No. 642,563
Int. Cl. G11b *13/00*; G06f *7/00*
U.S. Cl. 340—172.5 **12 Claims**



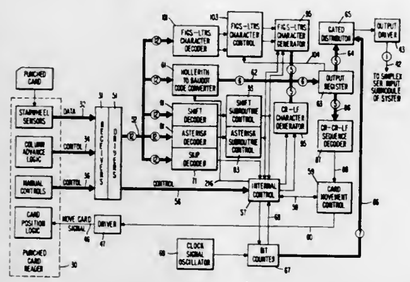
A distinctive multiple digit decimal number is assigned to each person for which information is to be remembered and manually operable buttons are used to designate the decimal number and to designate personnel information at each of a plurality of stations which also have indicator lamps for manifesting a number designated at that station and information stored relative to the designated personnel number. Each digit of each personnel number designated is converted to a biquinary code which provides for selectively energizing either one or two of six wires connecting the station to a central location, dependent upon whether the decimal number designated is odd or even. A temporary memory at the central location stores the information designated for each person until a station scanning ring counter at the central location enables transfer of the information from the temporary memory for that station to a permanent memory that is common to all stations. Access to the permanent memory for readout is obtained by designating the multiple digit decimal number for the person for which information is desired. Information readout of the permanent memory is manifested, along with the corresponding personnel number, for a predetermined time interval after readout, substantially independent of the rate of scan of the ring counter. Thus it is possible to manifest contemporaneously at different stations information pertinent to different personnel.

3,504,347
INTERRUPT MONITOR APPARATUS IN A COMPUTER SYSTEM
Sherril A. Harmon and Edward A. Herrera, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed July 3, 1967, Ser. No. 650,968
Int. Cl. G06f *1/00*
U.S. Cl. 340—172.5 **15 Claims**



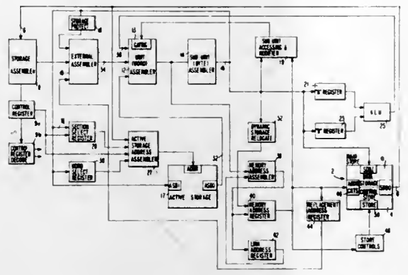
A computer system including a memory, an arithmetic and control unit for executing a main program, apparatus for requesting interruption of execution of the main program and apparatus for receiving such program interrupt requests and selectively permitting interruption of execution of the main program to service the requests. Monitor apparatus is provided to determine whether or not program interrupt requests in the computer system are serviced within predetermined time periods. Detection by the monitor apparatus of a failure of the computer system to properly service an interrupt request results in corrective action initiated by the monitor apparatus.

3,504,348
DATA TRANSFER CONTROLLER
Henry R. Hallman, Norristown, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 3, 1967, Ser. No. 651,015
Int. Cl. G06f *1/00*
U.S. Cl. 340—172.5 **14 Claims**



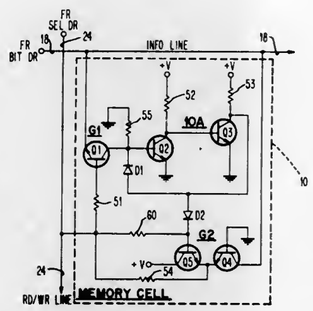
Apparatus for converting and transmitting the output signals of record readers, automatically inserting certain characters or codes into the output when erroneously absent therefrom, and incrementally controlling the advancement of record members therein as data transfer is effected, subject to predetermined overriding control codes and certain character sequences for causing continuous record advancement and for generating preselected output characters or codes.

3,504,349
ADDRESS EXAMINATION MECHANISM FOR USE IN A SYSTEM OPERATING WITH DYNAMIC STORAGE RELOCATION
Donald E. Wallis, Marblehead, Mass., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 27, 1967, Ser. No. 671,063
Int. Cl. G06f *9/20*
U.S. Cl. 340—172.5 **9 Claims**



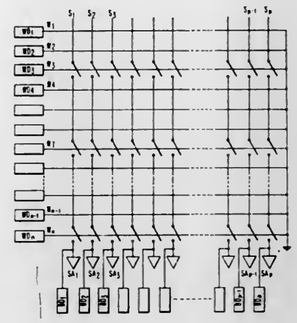
The present invention is directed toward an improved address examining mechanism employing a plurality of registers for maintaining the last address entries for the various levels of addressing in the system. Additionally, a plurality of latches are furnished for indicating the activity in changing and using the addresses located in the address registers. Additional control circuitry interconnects the latches and registers along with the address buses to indicate when the addresses in the registers are suitable for use and when additional addresses need be withdrawn from the main memory.

3,504,350
FLIP-FLOP MEMORY WITH MINIMIZED INTERCONNECTION WIRING
Jack Edward Stone, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 519,936
Int. Cl. G11c *5/06, 11/34*
U.S. Cl. 340—173 **7 Claims**



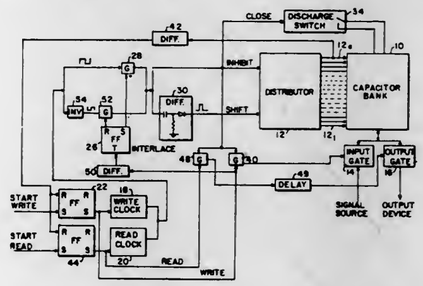
This invention relates to a word organized memory matrix employing active memory cells. Each of the cells includes a pair of transistors connected in a flip-flop configuration, a pair of transistors that operates as a readout gate; and a transistor that operates as a read-in gate. The matrix employs a minimum of drive lines to select memory elements and for reading or writing.

3,504,351
DATA STORE
Peter A. E. Gardner, Winchester, and Michael H. Hallett, Chandlers Ford, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 695,065
Claims priority, application Great Britain, May 11, 1967, 21,920/67
Int. Cl. G11c *5/06*; H03k *23/08*
U.S. Cl. 340—173 **12 Claims**



This specification describes data storage systems that perform logical functions. These data storage systems include bistable data storage cells arranged in a matrix of word lines and sense lines. The arrangement of storage cells, word lines and sense lines is such that a signal produced by interrogation of one storage cell can be used to set, to an information significant state, a second storage cell coupled to the same sense line and conditioned to respond to the signal. The storage cells are designed so that the conditioning of the second storage cell to respond to the signal inhibits the propagation of the signal to other storage cells further along the sense line. This permits a number of different logical functions to be performed with different cells connected to the same sense line.

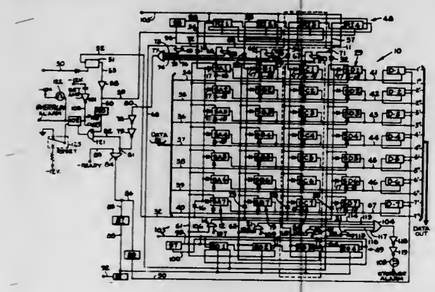
3,504,352
TIME COMPRESSION SYSTEM
Chester E. Stromswold and Barry N. Glass, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 24, 1968, Ser. No. 731,818
Int. Cl. G11c *7/00, 21/00*; H04b
U.S. Cl. 340—173 **13 Claims**



A time compression system storing periodic samples of a signal in an analog memory stores the samples at one rate and then retrieves them from the memory at a faster rate. The timing of the samples is changed from one sampling cycle to the next sampling cycle to avoid

synchronizing the samples with the signal component whose frequency is the first subharmonic of the sampling rate. Also, the stray capacitances in the system are discharged prior to the storage of each sample to ensure that the recorded value of the sample is unaffected by the values of prior samples. For a similar reason, the stray capacitances are discharged prior to the retrieval of each sample from the memory.

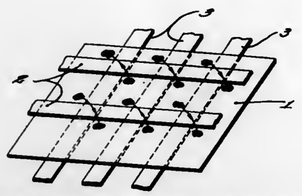
3,504,353
BUFFER MEMORY SYSTEM
John Guzak, Jr., Waukegan, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed July 31, 1967, Ser. No. 657,405
Int. Cl. G11b *5/74*
U.S. Cl. 340—173 **12 Claims**



A buffer constructed in modular form so that any desired storage capacity can be easily and economically provided. Each module of the buffer includes a read-in control device, a read-out control device, a plurality of capacitor storage devices, data inputs to and data outputs from each storage device, and two AND gates. The read-in control devices are arranged and connected to provide a first ring counter and the read-out control devices are also arranged and connected to provide a second ring counter. The read-in control devices are connected to respective storage devices so that data can be stored in successive modules during the occurrence of timing pulses; the termination of each timing pulse advances the first counter. When data is in one of the modules and the receiver is ready to accept data, data registers are set to initial condition, thereafter data is transferred on a first-in-first-out basis from the storage devices of one module to the data registers upon advancing of the second ring counter, and thereafter the receiver is signaled that data is in the data registers. One alarm is provided to indicate when a predetermined number less than the total number of modules contain stored data, and another alarm is provided to indicate when the buffer has been overrun.

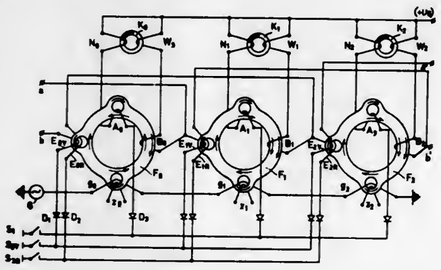
3,504,354
WORD-ORGANIZED SUPERCONDUCTIVE LAYER STORE
Karl Goser, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed July 12, 1967, Ser. No. 652,888
Claims priority, application Germany, July 14, 1966, S 104,784
Int. Cl. G11b *9/02*
U.S. Cl. 340—173.1 **5 Claims**

A word-organized superconductive continuous film store, in which the information is stored as a persistent current at the crossing point of two drive lines (digit and word lines) which are respectively disposed at opposite sides of a superconductive storage layer in the form of a continuous film, in which the thickness of the storage layer has a magnitude, with respect to the penetration depth of the fields of the driving currents, that they coact over the screening currents, and which permits the



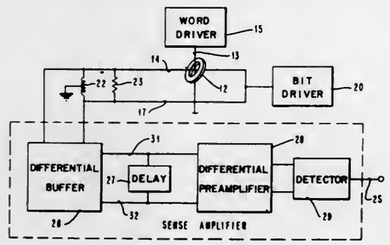
utilization of a simple geometrical configuration with only two lines.

3,504,355
REVERSIBLE TRANSFLUXOR RING COUNTER
Horst Michaelis, Quickborn, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,930
Claims priority, application Germany, Jan. 21, 1965, P 35,914
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **6 Claims**



A series of transfluxors arranged as a ring counter and including an auxiliary ring core for each transfluxor. A first switch sets the ring core associated with the transfluxor storing information and a second set of switches transfer the digit from the storage transfluxor, and simultaneously erase the digit originally stored in the storage transfluxor.

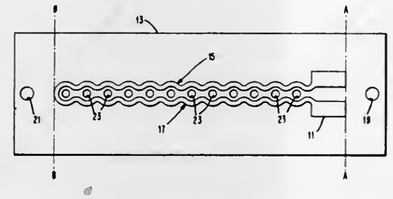
3,504,356
MAGNETIC MEMORY SENSE AMPLIFIER
Arvind M. Patel, Boulder, Colo., and John W. Sumilas, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,183
Int. Cl. G11c *7/06*
U.S. Cl. 340—174 **3 Claims**



In a memory sense amplifier having a delay line connected across balanced sense wires for suppressing noise

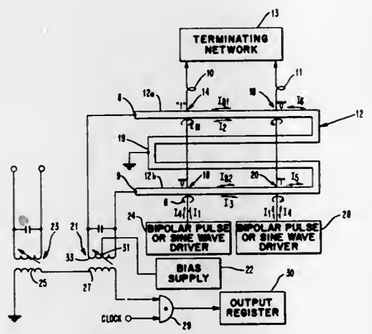
voltages and enhancing signal voltages, a transmission line approximation is made up of discrete elements.

3,504,357
PLATED WIRE MEMORY BASE ASSEMBLY
Gilbert R. Reid, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,164
Int. Cl. G11b *5/00;* **H05k** *1/00*
U.S. Cl. 340—174 **2 Claims**



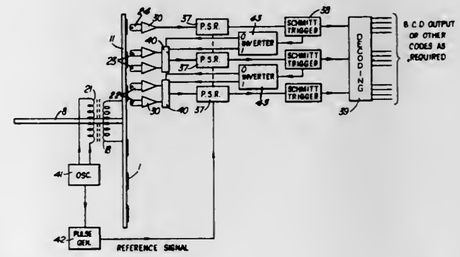
The present structure provides a plurality of word strap laminates, each of which has an electrically non-conductive base with a printed circuit thereon forming an open ended loop. Further the open ended loops are wave-like in their formation and arranged so that the valleys formed by the upper wave lie opposite the valleys formed in the lower wave. In addition, there are apertures lying within the open loop and within the wider areas between the upper and lower waves. These apertures are aligned with one another to provide tunnel like structures into which are inserted plated wire elements, thus creating a memory device. The printed circuits act as word straps in a typical plated wire memory.

3,504,358
SENSING DEVICE
Woo F. Chow, Horsham, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,662
Int. Cl. G11c *11/04, 11/14*
U.S. Cl. 340—174 **9 Claims**



The invention is related to a memory sensing device which produces a differential output signal. A double U-shaped sensor is utilized which is coupled to detect the information simultaneously at two coded memory locations. Binary information is distinguished by the amplitude of the signals across the outside legs of the U-shaped sensor.

3,504,359
POSITION-INPUT ENCODERS
Joseph Bryan Hawksworth, Staffordshire, England, assignor to Cutler-Hammer, Inc., Milwaukee, Wis.
Filed May 10, 1966, Ser. No. 548,895
Claims priority, application Great Britain, May 13, 1965, 20,303/65
Int. Cl. G08c *9/00, 11/00;* **H04l** *3/00*
U.S. Cl. 340—347 **1 Claim**

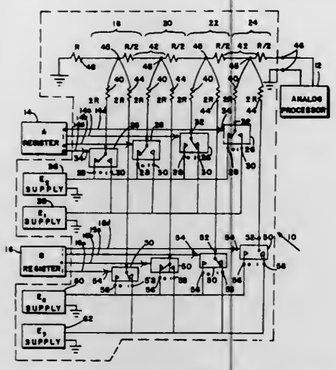


1. An encoder for converting the movement of an input member into a code of digital signals and comprising:
(a) a rotatable disc,
(b) a continuous conductor having three wave patterns of one, ten and one hundred cycles, respectively, concentrically arranged on one face of said disc,
(c) ten detector coils in spaced arrangement along the paths of movement of each of said one and ten wave patterns and with coils associated with each of such patterns paired in V-scan arrangement,
(d) five detector coils in the path of movement of said one hundred cycle pattern and spaced therealong at intervals of $N+\frac{1}{10}$ wave pitch where N is an integer,
(e) means for energizing said conductor with high frequency alternating current,
(f) pluralities of phase sensitive detector for detecting the outputs of said detector coils and producing a predetermined number of pulses for each wave length advance of each wave pattern effected by the rotation of said disc, and
(g) decoding means connected to the output of said phase sensitive detectors and providing output signals in a desired digital code indicative of the rotational position of said disc.

3,504,360
LOGIC CIRCUIT PRODUCING AN ANALOG SIGNAL CORRESPONDING TO AN ADDITIVE COMBINATION OF DIGITAL SIGNALS
Michael K. Vosbury and Everett M. Kittredge, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,657
Int. Cl. H03k *13/04*
U.S. Cl. 340—347 **9 Claims**

An electrical circuit is shown that produces an analog voltage corresponding to the sum or the difference of two or more digital signals. The circuit additively combines all the equal-weight digits in the signals being added in a manner that produces a combined analog voltage for each

digit position. The circuit then sums the weighted functions of these analog voltages for the different digit posi-

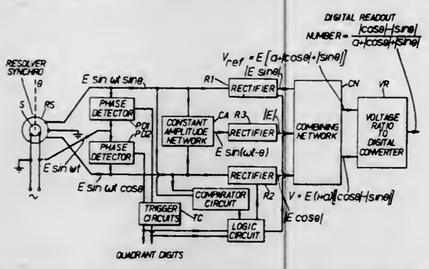


tions to produce an analog signal that corresponds to a selected additive combination of all the digital signals.

3,504,361
SHAFT POSITION INDICATING ARRANGEMENT FOR SYNCHROS AND THE LIKE

Michael Catton, Southampton, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Dec. 10, 1965, Ser. No. 512,955
Claims priority, application Great Britain, Dec. 11, 1964, 50,450/64
Int. Cl. G08c *5/00*
U.S. Cl. 340—347 **5 Claims**



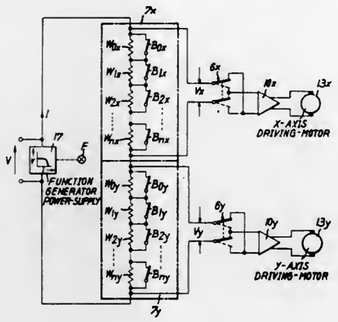
A digital shaft position indicator arrangement suitable for use with a resolver wherein a substantially linear voltage shaft angle ratio is produced by suitably combining the sine and cosine outputs from the resolver to produce a linear ratio which is converted to a digital signal by an analogue to digital converter.

3,504,362
DIGITAL ANALOG CONDITION CONTROL DEVICE

Hans-Helmut Feldmann, Neu Isenburg, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed June 21, 1966, Ser. No. 559,133
Claims priority, application Germany, June 23, 1965, L 50,957; Sept. 16, 1965, L 51,647
Int. Cl. G05b *11/01*
U.S. Cl. 340—347 **14 Claims**

A system for controlling the condition of a controlled member driven by an analog feedback control circuit in accordance with a digital deviation signal representing the difference between the actual and desired condition includes a digital analog converter for each controlled member having an analog output for connection to the reference input of the feedback control circuit, a digital input for receiving the deviation signal, an analog power input, said converter having a transfer function between said analog power input and said analog output whose value is proportional to the value of such deviation signal, power supply means connected to the analog power input for supplying a power signal thereto having a first and a

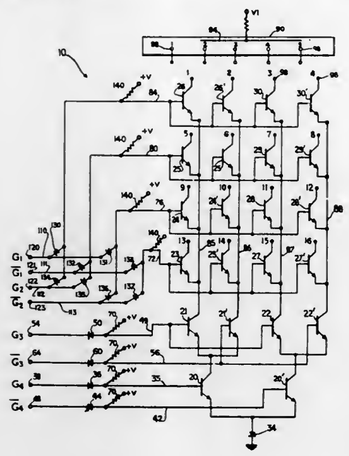


second parameter, said power supply means including function generator means for causing said second parameter to vary in proportion to variations of said converter transfer function and, said first parameter to bear a first functional relationship to said transfer function until said transfer function has reached a predetermined value as a result of such digital deviation signal having decreased to a corresponding predetermined level, and said first parameter to thereafter decrease in proportion to further decreases in the value of such digital deviation signal.

3,504,363
BINARY-CODED DECIMAL SIGNAL CONVERTER

James J. Klinikowski, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 22, 1966, Ser. No. 603,926
Int. Cl. G08c *5/00*
U.S. Cl. 340—347 **3 Claims**



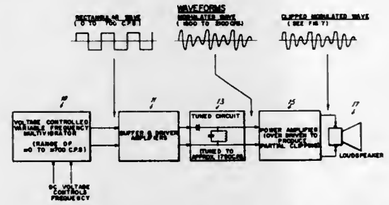
A signal decoder circuit including first and second switching devices, each of which controls two auxiliary switching devices, there thus being four auxiliary switching devices. Each of the auxiliary switching devices controls four display switching devices, there being a total of sixteen display switching devices, and input signal bit sources are coupled through a diode matrix to all of the

switching devices in such a way that, for each combination of signal bits having a meaning in binary-coded decimal code, only one of the display switching devices is operated and represents a corresponding decimal number. The circuit can decode a large number of four-bit binary-coded decimal codes.

3,504,364
ELECTRONIC SIREN

William E. Abel, 3844 SE. Gladstone, Portland, Oreg. 97027

Filed Nov. 7, 1966, Ser. No. 592,496
Int. Cl. G08b *3/00;* **G10k** *7/00*
U.S. Cl. 340—384 **2 Claims**

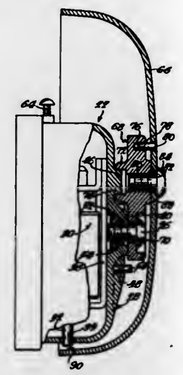


An electric siren for providing an audible acoustic output having a high apparent loudness relative to the electrical power input thereto, including a source of periodic complex waveforms having a fundamental frequency lying in the approximate range of 0–1300 cycles per second and having odd harmonics thereof, a shock excited induced oscillatory network having a resonant frequency higher than the frequency of the complex waveforms for effectively providing in response to said complex waveforms an audio-frequency electrical signal having a substantial degree of intermodulation distortion, an overdriven amplifier responsive to the output of the oscillatory network for harmonically distorting the audio-frequency electrical signal, and a speaker connected to the output of the amplifier for converting the audio-frequency electrical signal into an audible acoustic output.

3,504,365
BELL MECHANISM HAVING PLURAL GONGS ADAPTED TO BE MOUNTED WITHOUT ADJUSTMENT

Earl W. Gosswiller, Chicago, Ill., assignor to Federal Sign and Signal Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 17, 1966, Ser. No. 528,113
Int. Cl. G08b *3/10*
U.S. Cl. 340—396 **15 Claims**

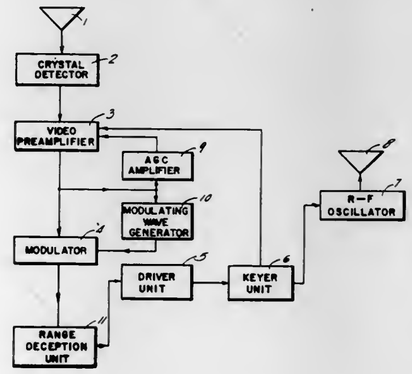


An improved electrically actuated gong or chime bar assembly including accurate locating means for locating a gong or chime bar relative to the striker member of a basic bell mechanism is disclosed. A plurality of gongs or chime bars are provided, each having locating means thereon, and a selected one of the gongs or chime bars is attached interchangeably to a basic bell mechanism without need for further precision adjustment of the mechanism.

3,504,366
MEANS FOR PRODUCING RANGE AND ANGLE DECEPTION OF AUTOMATIC TRACKING RADAR

Walter E. Tolles, Hicksville, and Karl C. Speh, Hempstead, N.Y., and Alan G. Mencher, Zurich, Switzerland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 8, 1955, Ser. No. 545,807
Int. Cl. G01s *9/56, 7/42*
U.S. Cl. 343—6.8 **4 Claims**



Apparatus for deceiving a sequentially lobing automatic tracking radar includes a receiver and detector which determines the amplitude differences in pulses transmitted by the tracking radar. Amplitude modulated pulses out of phase with those received are developed and transmitted, causing the tracking radar to assume a position not in the direction of the true target.

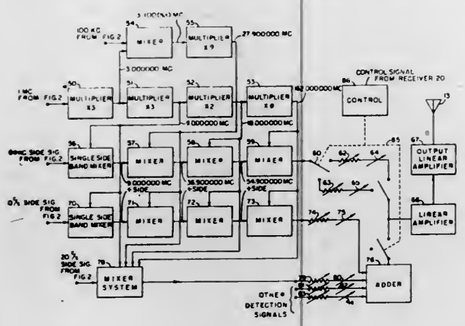
3,504,367
METHOD OF RANGING COMPATIBLE WITH SPACE SURVEILLANCE SYSTEM

Roger L. Easton, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 28, 1963, Ser. No. 261,907
Int. Cl. G01s *9/04*
U.S. Cl. 343—12 **3 Claims**

1. In combination,
   - a signal emission system for continuously emitting energy at a basic frequency, and upon application of a control signal, energy at a plurality of discrete frequencies wherein some frequencies are closer together than others,
   - means for receiving emitted energy reflected by a distant energy return object whose range is to be determined,
   - control signal derivation means connected to said means and to said signal emission system for activating the plural frequency operation of said signal emission system upon receipt of a return signal by the means, and

phase shift measuring means connected to said means for receiving for determining the differential phase shift of the reflected energy responsive to the discrete frequencies, whereby the range of the energy

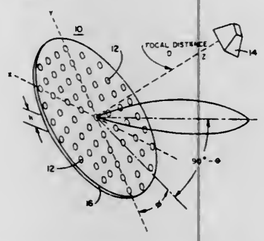


return object is determined with accuracy provided by the differential phase shift in transit of widely separated frequencies, and multiple cycle ambiguity elimination provided by the differential phase shift in transit of closer spaced frequencies.

3,504,368
FRESNEL ZONE BEAM SCANNING ARRAY

Robert W. Ruben, Williamsville, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,692
Int. Cl. H01q 1/36
U.S. Cl. 343—701 **2 Claims**



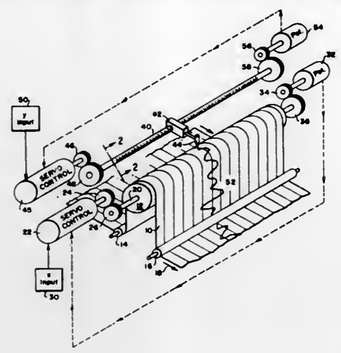
An antenna system having an aperture comprised of a planar array of variable gain amplifier-antenna elements geometrically arranged so that selected Fresnel zone patterns may be formed on the aperture by controlling the distribution of gain among the antenna elements. Each antenna element consists of a spiral antenna having an integrally imbedded tunnel diode amplifier. A primary feed horn is placed at the focal distance from the aperture, and a direct current bias distribution network is used to selectively control the gain of the amplifier-antennas so as to provide beam steering by controlling the formation and variation of Fresnel zone patterns on the aperture.

3,504,369
RECORDER WITH MULTIPLE THREADED LEAD SCREW

Francis A. Kashkin, Jr., Boston, and Henry J. Dumas, Jr., Framingham, Mass., assignors to Mechanics for Electronics, Cambridge, Mass.

Filed Oct. 29, 1968, Ser. No. 771,413
Int. Cl. G01d 9/00
U.S. Cl. 346—32 **5 Claims**

A recording device employs a multiple-thread lead screw to move a correspondingly threaded carriage containing the tracer. The multiple-thread lead screw construction minimizes backlash and yields a higher ratio

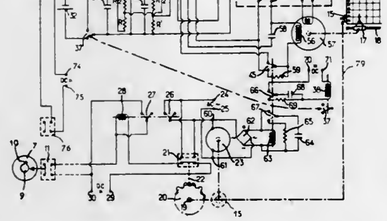


of linear travel of the tracer in proportion to screw rotation, thereby maximizing recorder sensitivity.

3,504,370
APPARATUS FOR MEASURING AND RECORDING THE DEPTH AND PENETRATION SPEED OF A DRILLING BIT

Gaston Rebilly, Paris, France, assignor to Societe Anonyme dite: Geoservices, Paris, France

Filed Feb. 26, 1968, Ser. No. 708,320
Claims priority, application France, Mar. 14, 1967, 98,588
Int. Cl. G01d 9/20; E21b 45/00
U.S. Cl. 346—33 **12 Claims**



Apparatus for measuring and recording the depth and penetration speed of drilling apparatus, including a pen recorder connected to the contact of the conventional movement detector. A timing device generates an electric signal dependent on the elapsed time from the previous actuation of the contacts of the movement detector and this electric signal is fed to the pen recorder on each occasion the contact of the movement detector is actuated. The chart is advanced a fixed distance on each occasion the contact of the movement detector is actuated.

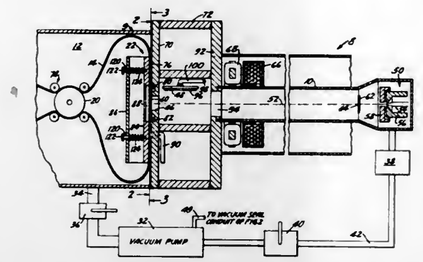
3,504,371
EVACUATABLE CHAMBER SEAL

John W. Reeds, Jr., Thousand Oaks, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 18, 1967, Ser. No. 691,492
Int. Cl. G01d 9/42
U.S. Cl. 346—110 **11 Claims**

An electron beam recorder evacuatable chamber seal is shown for maintaining a seal between one end of a high vacuum treating chamber and a low vacuum chamber enclosing a flexible, elongated strip member having one surface which is to be treated in the high vacuum chamber

wherein the end of the high vacuum treatment chamber is formed of a treating aperture, a pair of rails and a pair of elongated vacuum pumped slots which cooperate with

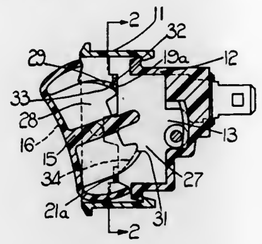


and permit movement of the strip member between the chambers without damaging the one surface to be treated to position the one surface in the treating aperture for treatment in the high vacuum chamber.

3,504,372
ROCKER SWITCH INTERLOCKS WITH HAIRPIN SPRING LATCH MEMBERS

Richard Colin Sharples, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Jan. 18, 1968, Ser. No. 698,792
Claims priority, application Great Britain, Jan. 30, 1967, 4,384/67
Int. Cl. H01h 9/26
U.S. Cl. 200—50 **1 Claim**



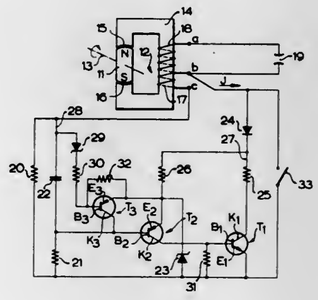
A rocker switch assembly comprises a body supporting first and second rocker switches which are positioned adjacent one another. The body also carries first and second latch members which are associated with the switches respectively, the first latch member being controlled by the first switch to prevent movement of the second switch from its off position to its on position unless the first switch is in its on position, while the second latch member is controlled by the second switch to prevent movement of the first switch from its on position to its off position unless the second switch is in its off position.

3,504,373
BREAKERLESS IGNITION SYSTEM WITH MAGNETO SUPPLY AND TRANSISTOR CONTROLS

Gert Strelow, Stuttgart-Stammheim, Germany, assignor to Robert Bosch, G.m.b.H., Stuttgart, Germany

Filed May 1, 1968, Ser. No. 725,618
Claims priority, application Germany, May 9, 1967, B 92,423
Int. Cl. F02p 1/00, 1/08, 9/00
U.S. Cl. 315—218 **10 Claims**

An ignition arrangement for internal combustion engines in which the ignition coil is mounted upon a ferromagnetic core terminating in two pole pieces. These pole pieces partially surround a permanent magnet which is rotatably driven through the crank shaft of the engine. As a result of the motion of the permanent magnet the amount of flux linking the ignition coil is varied so as to induce periodic impulses in the coil. The spark plug to be fired is applied across the secondary winding of the ignition coil. The primary winding of the coil is connected to an electronic circuit having a plurality of controlled switching elements which may be in the form of transistors. The emitter-collector path of a first one of such transistors is connected in series with the primary winding and serves to interrupt the primary circuit. The

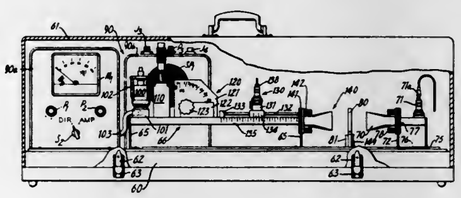


base of this first transistor is connected to the emitter-collector path of a second transistor so that the state of the second transistor determines the control potential of the first transistor. The base of the second transistor is coupled to a resistor-capacitor network which, in turn, is connected to the primary winding of the ignition coil. Through rotation of the permanent magnet, the circuit of the primary winding is periodically interrupted so as to induce voltage impulses in the secondary winding for firing the spark plugs. This interruption of the primary circuit is accomplished without the use of any mechanical or movable switching contacts.

3,504,374
MICROWAVE DEMONSTRATION SYSTEM

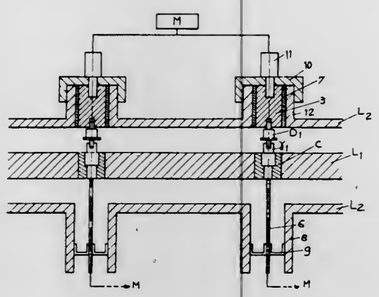
Stanley H. Gartman and Edward F. Meyers, Roslyn Heights, N.Y., assignors to Sargent-Welch Scientific Company, a corporation of Illinois

Continuation-in-part of applications Ser. No. 177,833, and Ser. No. 177,888, Mar. 6, 1962. This application Aug. 20, 1964, Ser. No. 390,919
Int. Cl. G01r 27/04
U.S. Cl. 324—58 **1 Claim**



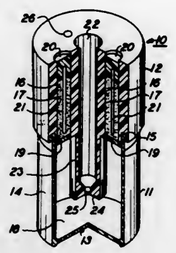
A microwave demonstration system which includes a klystron, or equivalent microwave source, a waveguide and receiver. Various propagation altering means are adapted to be interposed between the microwave source and receiver for intercepting and altering microwave energy transmitted between the microwave source and receiver.

3,504,375
QUANTIZED PHASE-SHIFTER USING COAXIAL LINE SHUNT-LOADED WITH DIODE-CAPACITOR GROUPS, EACH HAVING TUNED STUBS
Claude H. Beaugrand and Bernard P. Robin, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie, Sans Fil, a corporation of France
Filed Jan. 31, 1968, Ser. No. 701,884
Claims priority, application France, Feb. 9, 1967, 94,348
Int. Cl. H03h *7/34, 7/36*
U.S. Cl. 333—31 3 Claims



A quantized phase-shifter for coaxial lines, of the type including diode-capacitor groups, each group comprising a short-circuited coaxial stub in parallel with the line and at least two identical diode-capacitor assemblies. This phase-shifter provides a constant phase-shift within a given ultra-high frequency band.

3,504,376
AUTOMATED CHEMICAL ANALYZER
Thomas F. Bednar, La Canada, George C. Reld, Glendora, and Arthur T. Yahiro, West Covina, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 15, 1966, Ser. No. 602,025
Int. Cl. G01n *33/16, 21/00*
U.S. Cl. 23—230 141 Claims

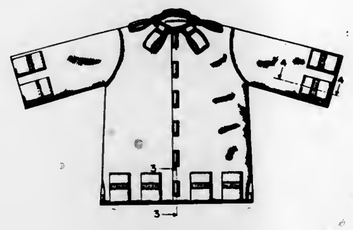


An automated chemical analyzer and method of use having disposable testing containers of specific design passed therethrough. Sufficient reagents to conduct a single test are stored within the disposable testing container and are dispensed from their storage chambers to a reaction compartment as needed during the course of the analytical procedure. In a preferred embodiment, at least a portion of the reaction compartment is optically transparent so the reaction compartment can be utilized as a cuvette for optical analysis. A particularly useful disposable testing container has a plurality of reaction compartments, and associated reagent storage chambers, so that a comparison analysis can be conducted concomitantly with the primary test.

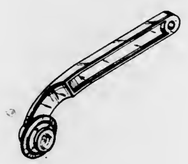
DESIGNS

MARCH 31, 1970

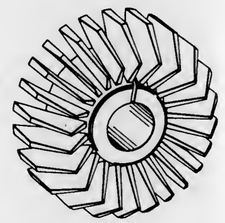
217,050
SHIRT
Elma G. Williams, Takoma Park, Md. (P.O. Box 129, Letterman General Hospital, San Francisco, Calif. 94129)
Filed July 9, 1969, Ser. No. 18,133
Term of patent 7 years
Int. Cl. D2—*01*
U.S. Cl. D2—217



217,051
PATTERN TRACER
Ernest J. Camos, 9078 Villaridge Court, St. Louis, Mo. 63123
Filed May 27, 1969, Ser. No. 17,385
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D3—19



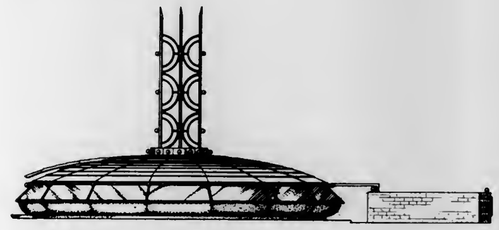
217,052
MOTORCYCLE EXHAUST HEADER CLAMP
Paul R. Jones, Long Beach, Calif., assignor to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Jan. 9, 1969, Ser. No. 15,269
Term of patent 14 years
Int. Cl. D8—*03;* D12—*14*
U.S. Cl. D8—235



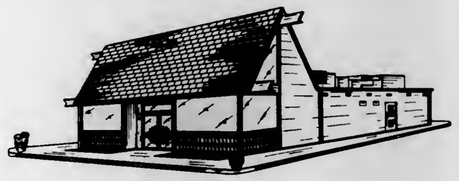
217,053
BUILDING
Mark Feinknopf, Jr., Franklin County, Ohio, assignor to Gilbert Shoe Stores, Inc., Columbus, Ohio, a corporation of Ohio
Filed June 11, 1969, Ser. No. 17,643
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



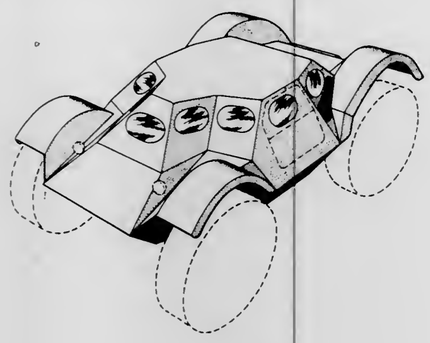
217,054
RESTAURANT BUILDING
John S. Neumeyer, Gretna, La., assignor to Captain Space Burger Corporation, Gretna, La., a corporation of Louisiana
Filed July 16, 1969, Ser. No. 18,222
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



217,055
CARRY OUT RESTAURANT
Tilmon Chamlee, Macon, Ga., assignor to The Shrimp Boats, Inc., Macon, Ga., a corporation of Georgia
Filed Jan. 27, 1969, Ser. No. 15,517
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



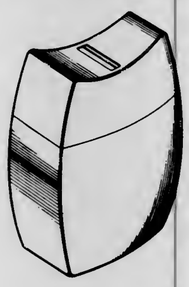
217,056
ARMORED AMPHIBIOUS COMBAT VEHICLE
Roger L. Gamaunt, Los Altos Hills, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 26, 1968, Ser. No. 13,717
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



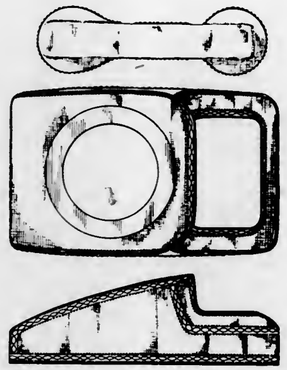
217,057
CART
Howard Hull, Mineola, N.Y., assignor to J. A. Preston Corporation, New York, N.Y., a corporation of New York
Filed May 12, 1969, Ser. No. 17,118
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



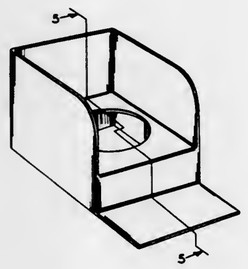
217,058
WATER SOFTENER UNIT
William Jackson Marsh, Garden Grove, Calif., assignor to Robert Marsh Enterprises, Inc.
Filed Feb. 13, 1969, Ser. No. 15,765
Term of patent 14 years
Int. Cl. D23—*01, 04*; D27—*05*
U.S. Cl. D23—3



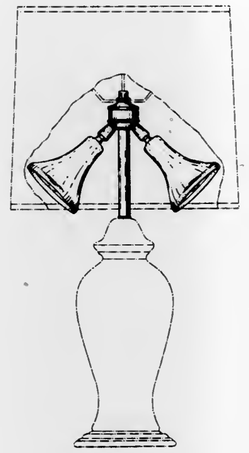
217,059
TELEPHONE SET COVER OR SIMILAR ARTICLE
Bruno Todeschini, 25 Via Giovanni Pascoli Cernusco sul Naviglio, Milan, Italy
Filed Mar. 4, 1969, Ser. No. 16,028
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



217,060
ANIMAL FEEDER
Lawrence A. Wilson, 10068 Sakura Drive, St. Louis, Mo. 63128
Filed Dec. 23, 1968, Ser. No. 15,087
Term of patent 14 years
Int. Cl. D30—*02*
U.S. Cl. D30—16



217,061
LAMP BULB HOLDER
Nathan G. Jagoda, 5920 Lockton Lane, Mission, Kans. 66222
Filed June 9, 1969, Ser. No. 17,587
Term of patent 14 years
Int. Cl. D26—*02, 06*
U.S. Cl. D48—4



217,062
DISPLAY-TYPE LIGHTING FIXTURE FOR INDOOR AND OUTDOOR USE SUCH AS PATIOS AND THE LIKE
Alfred A. Campana, 101 Westminster Ave., Merchantville, N.J. 08109
Filed Aug. 9, 1967, Ser. No. 8,185
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



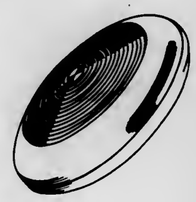
217,063
PORTABLE LAMP
Hiroshi Daito, Ukyoku, Kyoto, Japan, assignor to Blackwell Electronics Ind. Co., Ltd., Kyoto, Japan, a corporation of Japan
Filed Mar. 13, 1969, Ser. No. 16,228
Claims priority, application Japan Sept. 16, 1968
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



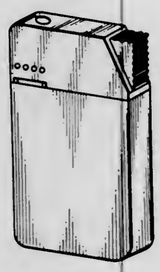
217,064
LAMP BASE
William A. Neumann, 160-20 95th St., Howard Beach, N.Y. 11414
Filed June 25, 1969, Ser. No. 17,873
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



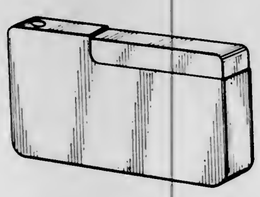
217,065
FLASHLIGHT
Hans Gugelot, Ulm am Hochstraess, and Franz Preisinger, Oberelchingen, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Dec. 5, 1968, Ser. No. 15,008
Claims priority, application Germany June 6, 1968
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



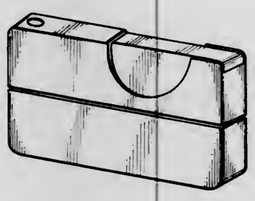
217,066
POCKET LIGHTER OR SIMILAR ARTICLE
Dieter Rams, Konigstein im Taunus, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 19, 1968, Ser. No. 15,051
Claims priority, application Germany July 4, 1968
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



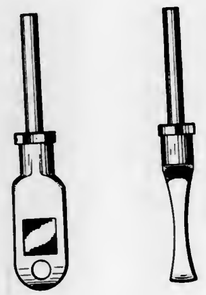
217,067
POCKET LIGHTER OR SIMILAR ARTICLE
Dieter Rams, Konigstein im Taunus, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 19, 1968, Ser. No. 15,055
Claims priority, application Germany July 4, 1968
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



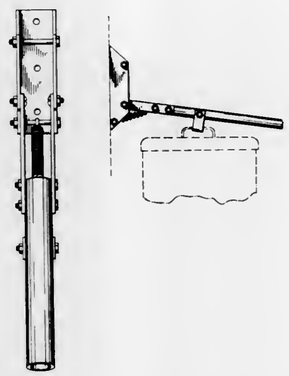
217,068
POCKET LIGHTER OR SIMILAR ARTICLE
Dieter Rams, Konigstein im Taunus, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 19, 1968, Ser. No. 15,067
Claims priority, application Germany July 4, 1968
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



217,069
SPARK PRODUCING BAR FOR IGNITING FIRE MAKING MATERIAL
Vahe Arifian, Livingston, N.J., assignor to Sparky Lite Company, Livingston, N.J., a copartnership of New Jersey
Filed Jan. 21, 1969, Ser. No. 15,430
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



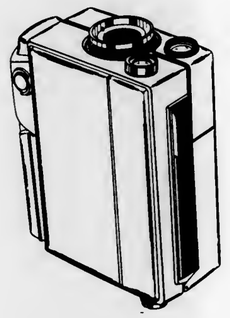
217,070
GARBAGE CAN LID PROTECTOR OR SIMILAR ARTICLE
Arnold J. Larson, 902 W. Washington Ave., Yakima, Wash. 98902
Filed May 7, 1969, Ser. No. 17,090
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D49—35



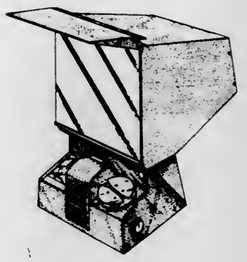
217,071
PAPER NAPKIN
Louis Thomas Volo, New York, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 19, 1969, Ser. No. 17,211
Term of patent 14 years
Int. Cl. D5—*03*
U.S. Cl. D59—2



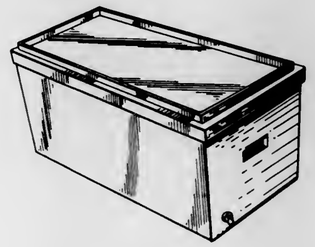
217,072
MOVIE CAMERA OR THE LIKE
David Elwood Hansen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 23, 1968, Ser. No. 13,250
Term of patent 14 years
Int. Cl. D16—*02*
U.S. Cl. D61—1



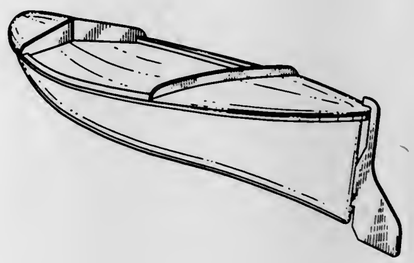
217,073
MICROFILM VIEWER
Warren C. Portman, Peekskill, and Alex J. Weinstein, Croton-on-Hudson, N.Y., assignors to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed Oct. 11, 1968, Ser. No. 13,995
Term of patent 14 years
Int. Cl. D16—*02*
U.S. Cl. D61—1



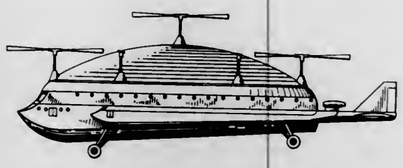
217,074
PORTABLE ICE BOX
Herbert S. Jones, 300 NW. 18th Ave., Miami, Fla. 33125
Filed Mar. 18, 1968, Ser. No. 11,008
Term of patent 14 years
Int. Cl. D15—*11*
U.S. Cl. D67—3



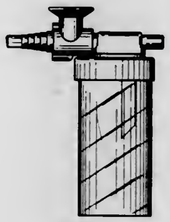
217,075
BOAT
Erik Forsen, Blindern, Oslo, Norway, assignor to Norsk Flyindustri A/S, Fornebu, Fornebu, Norway
Filed Feb. 20, 1969, Ser. No. 15,853
Claims priority, application Norway Aug. 29, 1968
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



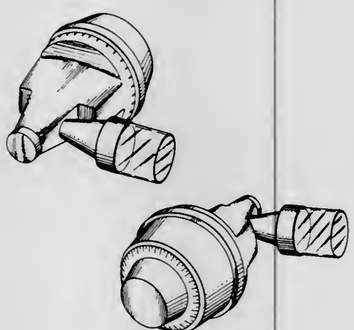
217,076
JET ASSISTED HELICOPTER
Paul P. De Asis, 24 W. 68th St., New York, N.Y. 10023
Filed Feb. 28, 1969, Ser. No. 15,980
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



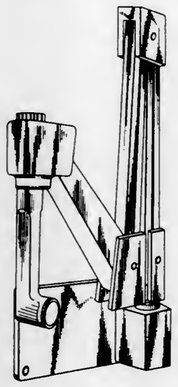
217,077
LIQUID SPECIMEN COLLECTION TRAP
David L. Brodsky and Elliott J. Brodsky, Providence, R.I., assignors to Superior Plastic Products Corp., Providence, R.I., a corporation of Rhode Island
Filed Feb. 3, 1969, Ser. No. 15,610
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



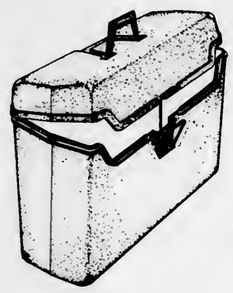
217,078
X-RAY TUBE HOUSING
Cornelius Keith Vandervelden, Arlington Heights, and Theodore Prisland, Evanston, Ill., assignors to Litton Medical Products, Inc., Des Plaines, Ill., a corporation of Delaware
Filed Mar. 28, 1969, Ser. No. 16,502
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



217,079
A WALL MOUNTED FOLDABLE SUPPORT FOR AN X-RAY UNIT
Cornelius Keith Vandervelden, Arlington Heights, and Theodore Prisland, Evanston, Ill., assignors to Litton Medical Products, Inc., Des Plaines, Ill., a corporation of Delaware
Filed Mar. 28, 1969, Ser. No. 16,514
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



217,080
LETTER FILE
Jack Fairchild Fleming, Boonton, N.J., assignor to Sterling Plastics Co., Mountainside, N.J., a corporation of New Jersey
Filed Apr. 11, 1969, Ser. No. 16,690
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—5



217,081
RUNNER FOR FLAT UMBRELLA
Heinz Weber, Hilden, Germany, assignor to Bremshey & Co., Solingen-Ohligs, Germany
Filed Apr. 10, 1968, Ser. No. 11,385
Term of patent 14 years
Int. Cl. D3—*03*
U.S. Cl. D88—3



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Balke, Earl W., to Eaton Yale & Towne, Inc. Monorail brake system. 3,503,471, Cl. 188-057.
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Barabas, Silvio, Isreeli, Jack, Pelavin, Milton H., and Kling, Nelson G., to Technicon Corporation. Anodic dissolution process and apparatus therefor. 3,503,862, Cl. 204-225.
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Cadiou, Jean Georges, to Citroen, Andre, Societe Anonyme. Multiple coupling for fluid conduits. 3,503,634, Cl. 285-137.
Cadus, Anton, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Molding materials for the production of plastic articles. 3,503,919, Cl. 260-037.
Cage, John P.: *See—*
McNally, James J., Snyder, Jimmie L., and Cage, John P. 3,504,310.
Cahoy, Roger P., to Gulf Research & Development Company. Combating weeds with O-acyl-3,5 dialkyl-4- hydroxybenzaldoximes. 3,503,732, Cl. 071-121.
Cake, Arthur F., to Burroughs Corporation. Bi-directional counters having positive turn-on and turn-off counting devices. 3,504,193, Cl. 307-222.
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Zierden, Theodore W., 3,503,879.
Campbell, Dudley H., to Stackpole Components Company. Potentiometer with friction drive actuation. 3,504,326, Cl. 338-183.
Campbell, Robert B.: *See—*
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Carlson, Elmer T., to Broadhill Development Corporation. Electrical conduit. 3,504,097, Cl. 174-068.
Carlson, Norman R., Putman, Richard E. J., and Carleton, James T., to Westinghouse Electric Corporation. Direct sampler for use in basic oxygen furnaces and the like. 3,503,259, Cl. 073-354.
Carlson, Roland O. Laminated panel construction and method of making same. 3,503,833, Cl. 161-036.
Carpenter, William T., to Gaston Country Dyeing Machine Company. Process and apparatus for fluid treatment of substrate. 3,503,702, Cl. 008-149.2
Carrier Corporation: *See—*
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Carrive, Francois, to Compagnie Generale d'Automatisme. Device to regulate current from numerical signals. 3,504,204, Cl. 307-305.
Carter, Andrew P.: *See—*
Aldridge, James E., and Carter, Andrew P. 3,503,325.
Carter, J. C., Company, The: *See—*
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Carter, Stephen Barnaby, to Imperial Chemical Industries Limited. Cell culture slides. 3,503,665, Cl. 350-095.
Carter, Victor J., to Westinghouse Brake-English Electric Semi-Conductors Limited. Solder free variable pressure contacted semiconductor device. 3,504,238, Cl. 317-234.
Carton, Edwin B., to Polymer Dispersions, Inc., mesne. Process for producing dispersions of finely- divided solids in isotactic polypropylene. 3,503,922, Cl. 260-041.
Casely, Robert E., and Noel, Darwin R., deceased (by Noel, Mary C., administratrix), to Armour-Dial, Inc. Antiseptic compositions. 3,503,886, Cl. 252-107.
Casey, Lawrence J., to Appleton Coated Paper Company. Method and means for rewinding pressure-sensitive sheet material. 3,503,567, Cl. 242-067.1
Castellanet, Joseph M. Signature feeder. 3,503,606, Cl. 271-061.
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Updyke, Kenneth W., 3,503,305.
Catton, Michael, to Plessey Company Limited, The. Shaft position indicating arrangement for synchros and the like. 3,504,361, Cl. 340-347.
Caya, Armand: *See—*
Caya, Salbe E., 3,503,613.

Caya, Salbe E., 50% to Caya, Armand. Simulated golfer. 3,503,613, Cl. 273-087.4

Cayuga Machine & Fabrication Co., Inc.: *See—*
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Chang, Eugene Yue, and Kaizerman, Samuel, to American Cyanamid Company. Thermoplastic polyurethane elastomers. 3,503,927, Cl. 260-047.

Chang, Hung Chi, Campbell, Robert B., and Crull, Marvin L., to Westinghouse Electric Corporation. Silicon carbide solid state ultraviolet radiation detector. 3,504,181, Cl. 250-083.3

Chao, Tsai Hsiang, to American Cyanamid Company. Durable resinous antistatic textile finish. 3,503,795, Cl. 117-139.5

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Chiba, Minoru, Fujimoto, Yukio, and Mitsui, Koichi, to Nichicon Capacitor Ltd. Ceramic capacitor and method of manufacture. 3,504,244, Cl. 317-258.

Chicago Bridge & Iron Company: *See—*
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Chilvers, Kenneth William, to Imperial Chemical Industries Limited. Manufacture of polyurethane solutions. 3,503,934, Cl. 260-075.

Chirash, William, and Trimmer, Robert Henry, to Colgate-Palmolive Company. Scouring cleanser composition. 3,503,884, Cl. 252-095.

Chiyoda Kako Kensetsu Kabushiki Kaisha: *See—*
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Chow, Woo F., to Sperry Rand Corporation. Sensing device. 3,504,358, Cl. 340-174.

Christe, Karl O., Guertin, Jacques P., and Pavlath, Attila E., to Stauffer Chemical Company. Heterolytic fission of elementary fluorine in the preparation of an adduct of fluorinated Lewis bases with Lewis acids. 3,503,719, Cl. 023-315.

Christiansen, Hans-Martin, to Siemens Aktiengesellschaft. Method and apparatus for the additional transmission of communications over lines. 3,504,118, Cl. 178-058.

Christiansen, Robert G., and Dean, John W., to Sterling Drug Inc. 3-Amino steroids. 3,503,959, Cl. 260-239.5

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Ciba Corporation: *See—*
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Cierpka, Henning, to Battelle Development Corporation, The. Pyrocatechol ester of phosphoric and thiophosphoric acids and process for making same. 3,504,054, Cl. 260-924.

Cincinnati Butchers' Supply Company: *See—*
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Cincinnati Milling Machine Co., The: *See—*
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C.I.T.-Compagnie Industrielle des Telecommunications: *See—*
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Citroen, Andre, Societe Anonyme: *See—*
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Clark Equipment Company: *See—*
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Clement, Rene, and Ducos, Maurice, to Societe de Fabrication d'Elements Catalytiques. Heater element. 3,504,327, Cl. 338-262.

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Clevite Corporation: *See—*
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Cochran, Roy J.: *See—*
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Cochrum, Kenneth L., and Kenneday, John W., to Esso Production Research Company. Well control during drilling operations. 3,503,445, Cl. 166-244.

Cockerill-Ougree-Providence: *See—*
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Coe, Benjamin F.: *See—*
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Combustion Engineering, Inc.: *See—*
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Comeau, Joseph, Jr., Harvey, Robert J., and Robinson, Thomas C., to Thermo Electron Corporation. Power source. 3,503,304, Cl. 091-336.

Comet Industries, Inc.: *See—*
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Commercial Solvents Corporation: *See—*
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Commonwealth Scientific and Industrial Research Organization: *See—*
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Compagnie General d'Electricite: *See—*
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Coneway, Clara L. Corner brush. 3,503,089, Cl. 015-160.

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Connelly, Earle A., to Russell Hosiery Mills, Inc. Slipper. 3,503,077, Cl. 002-239.

Conova, Fred, to Ingersoll-Rand Company. Control apparatus and method for rotating elements. 3,503,479, Cl. 192-103.

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Coover, Harry W., Jr.: *See—*
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Corbett, Herbert O.: *See—*
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Corbett, Herbert O., and Quackenbush, John J., to National Distillers and Chemical Corporation. Method of coating a substrate with a plastic material. 3,503,778, Cl. 117-021.

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Cornwell, John D., Jr., 50% to Henry, Patrick F. Boat bow plate with bullnose and boom pivot. 3,503,359, Cl. 114-218.

Coshow, Chester L. Spinning reel depth gauging means. 3,503,570, Cl. 242-084.2

Cotton, Richard A., and Hamelin, Donald R., to Millipore Corporation. Filter for gravimetric determinations. 3,503,250, Cl. 073-061.

Cotton, Ronald K., and Rae, Barney O., to Cutler-Hammer, Inc. Automatic storage and retrieval system. 3,504,245, Cl. 318-018.

Cotton, William, Limited: *See—*
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Creager, John E., to General Motors Corporation. Pressure transducer. 3,504,324, Cl. 338-042.

Criscione, John M., and Volk, Herbert F., to Union Carbide Corporation. Oxidation resistant graphite composite article. 3,503,118, Cl. 029-472.9

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Cromer, Charles F., and Circle, Robert R., to Westinghouse Electric Corporation. Current responsive apparatus for a high voltage conductor wherein displacements responsive to current variations are transformed into forces which are transmitted to a remote point and force transducer apparatus. 3,504,281, Cl. 324-127.

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Dahlberg, Reinhard, to Telefunken Patentverwertungsgesellschaft m.b.H. Semiconductor device utilizing heat injection of majority carriers. 3,504,240, Cl. 317-235.

Dahle, Leland K., to Peavey Company. Color stabilization in wheat products. 3,503,753, Cl. 099-080.

Dainippon Screen Seizo Kabushiki Kaisha (Dainippon Screen Manufacturing Company, Limited): *See—*
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Daly, James G., to Westinghouse Air Brake Company. Gyratory rock crusher. 3,503,563, Cl. 241-204.

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Dart Industries Inc.: *See—*
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Davidescu, Grigore. Drill string vibration damper. 3,503,224, Cl. 064-011.

Davis, Alan R., Gurol, I Macit, and Mueller, Robert S., to Eaton Yale & Towne, Inc. Velocity sensing antiskid braking system. 3,503,653, Cl. 303-021.

Davis, Martin A., and Dvornik, Dusan M., to American Home Products Corporation. Novel dibenzocycloheptene-5-carbonylurea and intermediates thereof. 3,504,027, Cl. 260-553.

Davis, Robert Paul, and Mueller, Frank Joseph, to Procter & Gamble Company, The. Detergent tablets. 3,503,889, Cl. 252-138.
Davis, Wallace E. Coin controlled vending machine. 3,503,482, Cl. 194-054.
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Davisson, Marian C., and Kraudel, Robert L., to Staley, A. E., Manufacturing Company. Drain cleaner. 3,503,890, Cl. 252-152.
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Feldmann, Hans-Helmut, to Licentia Patent-Verwaltungs-G.m.b.H. Digital analog condition control device. 3,504,362, Cl. 340-347.

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Fess, Emil, and Schumann, Fritz, to Deutscher Spinnereimaschinenbau Ingolstadt. Process and apparatus for drawing and twisting fibrous slivers. 3,503,197, Cl. 057-036.

Fest, Christa, and Hammann, Ingeborg, to Farbenfabriken Bayer Aktiengesellschaft. Fluoroacylamino-trichloromethyl- methane derivatives. 3,504,029, Cl. 260-562.

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Fleissner, Heinz, to VEPA AG. Method and apparatus for the treatment of gas-permeable and or liquid-permeable materials. 3,503,136, Cl. 034-015.

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Fogarty, Thomas J., Raible, Donald A., and Siposs, George G., said Raible and Siposs assors to American Hospital Supply Corporation, mesne. Atraumatic clamp for vascular surgery. 3,503,398, Cl. 128-346.

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Kurlandsky, Sam, to Aero-Motive Mfg. Co. Chain for supporting flexible conduit. 3,503,579, Cl. 248-051.
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Lowry, Robert D., and Strout, Russell B., to Lowry Development Corporation. Trailer hitch tongue and coupler assembly. 3,503,627, Cl. 280-491.
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Mashio, Fujio, Maruta, Sadatoma, Kawai, Eiichi, Yamamoto, Hiroki, and Tajima, Shigeru, to Sumitomo Chemical Company, Ltd. Deferred curing process for textile fabrics. 3,503,145, Cl. 038-144.
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Michalko, Edward, to Universal Oil Products Company. Hydrocarbon conversion catalyst. 3,503,874, Cl. 208-120.
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Modesti, James N. Disk flying craft. 3,503,573, Cl. 244-012.

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Morita, Eiichi, and Fukushima, Osamu, to Kurashiki Rayon Co., Ltd. Smooth surfaced sheet materials and method of manufacturing the same. 3,503,784, Cl. 117-062.2

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Neighbors, Ralph P., and Phillips, Lee V., to Gulf Research & Development Company. Triazine herbicides. 3,503,971, Cl. 260-249.8

Nelson, Edwin F., to Universal Oil Products Company. Coal liquefaction method. 3,503,864, Cl. 208-010.

Nelson, George L., to Bird Machine Company. Apparatus for promoting dissolving of gas in liquid. 3,503,593, Cl. 261-029.

Nelson, Richard David, to Du Pont de Nemours, E. I., and Company. Ion linked copolymer for extrusion coating. 3,503,824, Cl. 156-244.

Nesbitt-Dufort, Timothy, to Scragg, Ernest, and Sons Limited. Plastic structure reinforced with branched filaments. 3,503,199, Cl. 057-149.

Neumann, Gernot, to Hanning Elektro-Werke Robert Hanning. High and low speed motors connected by torque limiting clutch. 3,503,478, Cl. 192-035.

Neuse, Eberhard W., and Quo, Edward, to McDonnell Douglas Corporation, mesne. Organometallic polymers. 3,504,052, Cl. 260-836.

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Oerman, Orey William, to Deere & Company. Plows having hydraulic trip bottoms. 3,503,454, Cl. 172-265.

Oerman, Orey William, to Deere & Company. Overload trip device. 3,503,455, Cl. 172-271.

Oeth, Thomas F., and Riggs, Leslie C., to Dubuque Packing Company. Method of making and prescoring shaped food products. 3,503,750, Cl. 099-001.

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Opprecht, Paul, and Byland, Hans. Semiautomatic welding machine. 3,504,155, Cl. 219-081.

Opsahl, Einar P., to Westinghouse Electric Corporation. Magnetostrictive current responsive means and transducer means utilizing changes in dimensions of the magnetostrictive means to produce a variable signal which varies with current variations. 3,504,282, Cl. 324-127.

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Peterson, John W., and Schick, Henry, to Gilbert Manufacturing Co., Inc. Push-in type of light socket. 3,504,329, Cl. 339-073.

Peterson, Richard L., to Minnesota Mining and Manufacturing Company. Fabric treating composition and treated fabric. 3,503,915, Cl. 260-029.2

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Peterson, Wesley R., to Singer Company, The. Automatic positioners for electrically driven family sewing machines. 3,503,352, Cl. 112-219.

Petrella, Robert Gabriel, and Bartoszek, Edward Joseph, to Pennsalt Chemicals Corporation. Vinylidene fluoride polymer compositions having high thermal stability. 3,503,923, Cl. 260-041.

Petrucci, Raymond Mark, and De Paola, Theodore Clifford, to American Machine & Foundry Company. Chemical feeding apparatus. 3,503,418, Cl. 137-515.

Petry, Ronald G., and Kronson, Harry, Jr., to General Motors Corporation. Fast response windshield washer. 3,503,091, Cl. 015-250.02

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Pollock, Mark W., to Argus Chemical Corporation. Lessening early discoloration of polyvinyl chloride resins when heated and compositions therefor. 3,503,924, Cl. 260-045.75

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Takemoto, Takeo, Fukushima, Masakazu, and Kitamura, Kosuke, to Hitachi, Ltd. Electron beam control device for use with a cathode ray tube for dynamic correction of electron beam astigmatism and defocusing. 3,504,211, Cl. 313-084.
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Taylor, George Oswald, to British Aluminum Company Limited, The. Construction of tubular frame works. 3,503,639, Cl. 287-020.92
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Toulemonde, Jacques, to Compagnie General d'Electricite. Device for conversion of electrical energy from AC to DC vice versa. 3,504,265, Cl. 321-005.

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217,058	217,079	29 : 217,051	217,080	217,072	53 : 217,070
12 : 217,074	20 : 217,061	217,060	36 : 217,057	217,076	

Defensive Publications Applications

(Notice of Dec. 16, 1969, 869 O.G. 687)

47 : T872,010	47 : T872,012	99 : T872,009	99 : T872,011

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

March 31, 1970 Volume 872 Number 5

TRADEMARKS

NOTICES

Emergency Situation in the U.S. Postal Service

In view of the present emergency situation in U.S. postal service, the U.S. Patent Office is taking the following actions.

In regard to pending applications, the time for taking any action or paying any fee expiring during the period beginning March 16 and ending April 15, 1970, both dates inclusive, is hereby extended for ONE MONTH. However, no extension shall exceed a maximum period for response provided for in the Statutes.

U.S. Department of Commerce Field Offices have been designated, on an emergency basis, as receiving stations for the U.S. Patent Office. All papers should be enclosed in a sealed envelope and deposited in a Field Office. Such papers will be considered as received in the U.S. Patent Office on the day of deposit. The Field Office will date stamp each envelope so deposited, and applicants or their representatives should assure the legibility of the date stamp. Field Offices will place a corresponding date stamp on receipt cards provided by the depositor, which must completely identify the papers deposited.

Field Office deposits should, if possible, be limited to such papers wherein the Patent Statutes do not provide a remedy for failure to obtain a particular date. Examples of these types of papers are: checks in payment of issue fees, new application papers wherein priority dates or statutory bars may be involved, amendments where the six month statutory period for response is about to expire, etc.

The Field Office in New York designated to receive papers for the U.S. Patent Office is located at:

41st Floor, Federal Office Bldg.
26 Federal Plaza, Foley Square
New York, N.Y.

The designated Field Office in Hartford, Connecticut is located at:

Room 610–B, Federal Office Bldg.
450 Main St.
Hartford, Conn.

The addresses of Field Offices in other cities are listed in local directories and are available upon inquiry to the Commissioner of Patents.

RICHARD A. WAHL,
Mar. 19, 1970. *Acting Commissioner of Patents.*

Notice of Daylight Saving Time

The Patent Office will operate on Daylight Saving Time from April 26, 1970 through October 25, 1970.

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	20,085
Date of oldest new application	March 25, 1969
Date of oldest amended application (filing date)	April 28, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	5-13-69	9-8-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	6-6-69	10-20-66
(III) C. R. FOWLER, Classes 19, 21, 23, 26, 31, 34, 35, 36	8-21-69	4-28-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3-25-69	6-15-67
Renewals (All Classes)	1-12-70	----------
Sec. 12(c) Publications (All Classes)	1-12-70	----------

Applications filed during the month of February 1970—2,618

Registrations Issued ---------- 395—No. 888,496 to No. 888,890
Renewals Issued ---------- 110

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

SUBCHAPTER A—GENERAL

PART 1—RULES OF PRACTICE IN PATENT CASES

Delegation of Authority to Render Determination of Petitions

Pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), paragraph (g) of § 1.181, of Title 37, Code of Federal Regulations, is hereby revised as set forth below.

The authority to render determinations on various kinds of petitions may appropriately be delegated to officials in the Patent Office other than the Group Directors, the Solicitor and the Law Examiners previously specified under paragraph (g) of § 1.181. This change is in keeping with the reassignment of responsibilities within the Patent Office organization, as set forth in Department Organization Order 30–3B (34 F.R. 19556, December 11, 1969). Since the change imposes no burden on any person, notice and public procedure thereon are deemed unnecessary.

Effective date. This revision shall become effective upon publication in the Federal Register.

Paragraph (g) of § 1.181 is revised to read as follows:

§ 1.181 *Petition to the Commissioner.*

* * * * *

(g) The Commissioner may delegate to appropriate Patent Office officials the determination of petitions under this section, with the exception of petitions under § 1.183.

RICHARD A. WAHL,
Acting Commissioner of Patents.

Approved: March 3, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70–2826; Filed, Mar. 6, 1970; 8:49 a.m.]

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 273,712. Apex Products Corporation, Dania, Fla. Filed June 13, 1967.

MASCOT

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Purse Secretaries, Wallets, Purses, Passport Cases, Portfolios, Money Clips, Tissue Cases, Jewelry Cases, and Pill Cases (Int. Cl. 18).
First use May 1, 1958.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Lighters and Cigarette Cases (Int. Cl. 34).
First use Jan. 1, 1961.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Door Knockers (Int. Cl. 6).
First use May 15, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

For Flashlights (Int. Cl. 9).
First use May 15, 1951.

Class 22—Games, Toys, and Sporting Goods

For Playing Cards Cases, Playing Card Kits Consisting of Playing Cards, Pencils, a Set of Game Rules, and Score Pads (Int. Cl. 16).
First use May 1, 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pencil Sharpeners (Int. Cl. 16).
First use May 15, 1960.

Class 26—Measuring and Scientific Appliances

For Magnifiers and Eyeglass Cases (Int. Cl. 9).
First use May 1, 1958.

Class 28—Jewelry and Precious-Metal Ware

For Gold-Plated Eyeglass Guard Pins, Bracelets, Necklaces, and Bookmarks (Int. Cl. 14).
First use May 15, 1961.

Class 32—Furniture and Upholstery

For Mirrors and Book Ends (Int. Cls. 16 and 20).
First use June 1, 1964.

Class 37—Paper and Stationery

For Letter Openers, Calendar Holders, Address Books, Memo Pads, Pen and Pencil Sets, Writing Kits Consisting of Stationery, a Pen and an Address Book (Int. Cl. 16).
First use Aug. 24, 1949.

Class 38—Prints and Publications

For Calendars (Int. Cl. 16).
First use May 1, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

For Comb Cases (Int. Cl. 21).
First use May 1, 1961.

SN 299,124. H–S Enterprises, Inc., d.b.a. Isochem Resins Company, Lincoln, R.I. Filed May 27, 1968.

ISOCHEM

Class 1—Raw or Partly Prepared Materials

For Synthetic Resins, Polyurethanes, and Polyether Foams (Int. Cl. 1).

Class 5—Adhesives

For Resin-Based Adhesives for Industrial Use (Int. Cl. 1).

Class 6—Chemicals and Chemical Compositions

For Air Entraining Agents and Viscosity Reducers for Resins, Emulsifiers, Synthetic Glycerine, Synthetic Waxes, and Plasticizers (Int. Cl. 1).

Class 16—Protective and Decorative Coatings

For Resin-Based Protective Coatings for Industrial Use (Int. Cl. 2).

Class 52—Detergents and Soaps

For Stripping Solvent for Disintegrating Resins, Hand-Cleaning Preparations, and Detergents for Industrial Use (Int. Cl. 3).

First use on or about Feb. 1, 1959.

SN 306,983. Aircraft Radio Corporation, Boonton, N.J. Filed Sept. 10, 1968.

ARC

Owner of Reg. No. 760,933.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transmitters, Radio Receivers, Radio Transceivers, Converters, Inverters, Amplifiers, Power Supplies, Electric Motors, Dynamotors, Antennae, and Parts for All of the Foregoing—Namely, Indicators, Connectors, Cable Assemblies, Switches, Electronic Filters, RF Masks, RF Signal Limiters, Beat Frequency Oscillator (BFO) Kits; Capacitors, Coils, Relays, Diodes, Transistors, Resistors, Transformers, Electron Tubes, Crystals, Insulators, Locking Terminals, Bushings, Printed Circuit Assemblies, Insulating Plates, Metal Dust Covers for Electric Housing, Spring Clips for Electrical Connections, Heat Sinks, Fuseholders, Fuses, Condensers, and Brush Assemblies (Int. Cl. 9).
First use at least as early as Mar. 1, 1967.

Class 26—Measuring and Scientific Appliances

For Navigation Systems and Navigation/Communication Systems Comprising Receivers, Transmitters, Transceivers, Converters, Inverters, Control Units, Indicators, Antennae and Connectors; Glide Slope Receivers; Course Indicator Systems Comprising Compass Transmitters, Computer-Amplifiers, Control Units, Gyros, Slaving Meters, Indicators and Connectors; Automatic Direction Finder Systems (ADF) Comprising Receivers, Inverters, Indicators, Antennae and Connectors; Radio Magnetic Indicators (RMI) and Radio Magnetic Indicator (RMI) Converters, and Connectors Therefor; Distance Measuring Equipment (DME); Marker Beacon Receivers Comprising Indicators, Antennae, and Connectors; Transponder Systems Comprising Receiver-Transmitters, Coders, Control Units, Self Test Kits, Antennae and Connectors; Electric Gyro Systems; Autopilot Systems; Signal Generators Comprising Filter Units, Power Units, Cable Assemblies and Connectors; Course Checkers for Checking the Phase-Accuracy of Signal Generators; Turning Meters; Thermistors; and Microammeters (Int. Cl. 9).

First use at least as early as Mar. 1, 1967.

Class 38—Prints and Publications

For Technical Manuals (Int. Cl. 16).

First use at least as early as Feb. 1, 1967.

SN 312,446. Exline, Inc., Salina, Kans. Filed Nov. 18, 1968.

EXLINE

The drawing is lined for the color red.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Repair and Replacement Parts for Engines and Compressors—Namely, Crankshafts, Pistons, Power Rods, Bearings, Cylinder Sleeves, Valves and Valve Cages, and Hydraulic Load Adjusters (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Temperature Sensors and Wear Indicators (Int. Cl. 9).

First use July 1, 1968.

SN 316,325. Metallurgical Services Laboratories Limited, Betchworth, Surrey, England. Filed Jan. 10, 1969.

METASERV

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machines for Grinding Metallographic Specimens and Machines for Polishing Metallographic Specimens (Int. Cl. 7).

Class 32—Furniture and Upholstery

For Cabinets for Storing and Protecting Metallographic Specimens (Int. Cl. 16).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Units for Drying Metallographic Specimens and Metal Quenching Tanks (Int. Cl. 11).

First use in 1962; in commerce October 1968.

SN 316,686. Simonsen Metal Products Corporation, Chicago, Ill. Filed Jan. 15, 1969.

RALLY

Class 2—Receptacles

For Tool Boxes (Int. Cl. 6).

Class 32—Furniture and Upholstery

For Mechanics' Chests, Machinists' Chests, and Mobile Tool Cabinets (Int. Cl. 20).

First use Aug. 12, 1968.

SN 317,565. Hyster Company, Portland, Oreg. Filed Jan. 27, 1969.

HYSTER

Owner of Reg. Nos. 720,296 and 761,243.

Class 100—Miscellaneous

For Materials Handling, Construction, Logging and Hauling Equipment Rental and Leasing Services (Int. Cl. 42).

First use February 1967.

Class 102—Insurance and Financial

For Materials Handling, Construction, Logging and Hauling Equipment Financing Services (Int. Cl. 36).

First use March 1961.

Class 103—Construction and Repair

For Materials Handling, Construction, Logging and Hauling Equipment Maintenance Services (Int. Cl. 37).

First use June 1959.

Class 107—Education and Entertainment

For Customer Service Programs—Namely, Operational Instruction and Safeguard Maintenance Training Services for materials Handling, Construction, Logging and Hauling Equipment (Int. Cl. 41).

First use Mar. 1, 1965.

SN 318,644. Fritz Bracht, Solingen-Wald, Germany. Filed Feb. 7, 1969.

»DOVO«

Owner of German Reg. No. 732,544, dated July 11, 1959.

Class 2—Receptacles

For Cases for Manicure and Pedicure Articles Sold Empty (Int. Cl. 8).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hair Scissors, Household Scissors, Scissors for Thinning Out Hair, Tailor's Scissors, Embroidery Scissors, Buttonhole Scissors, Pocket Scissors, Pinking Shears, Poultry Shears, Stamp Tweezers, and Hair Clippers (Int. Cl. 8).

Class 44—Dental, Medical, and Surgical Appliances

For Manicuring and Nail Scissors, Tweezers and Nail Pullers, Nail Files, and Nail Clippers (Int. Cl. 8).

SN 319,759. Harrel, Incorporated, East Norwalk, Conn. Filed Feb. 24, 1969.

HARREL

Class 26—Measuring and Scientific Appliances

For Temperature Controllers, Temperature Indicators, Temperature Programmers, Temperature Recorders, Temperature Alarms, Temperature Sensors, Pressure Indicators, Pressure Recorders, and Pressure Sensors (Int. Cl. 9).

First use 1959.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Calibration Oil Baths and Other Oil Baths Used for the Maintenance of Specific Temperatures About Objects Enclosed Therein, Temperature Controlled Enclosures—Namely, Ovens for Scientific and Technical Uses, Heaters—Namely, Flat Surface Type Heaters for Scientific and Technical Uses (Int. Cl. 11).

First use 1960.

SN 324,201. Johnson & Johnson, d.b.a. Cel-Fibe, New Brunswick, N.J. Filed Apr. 10, 1969.

TASKMASTER

Class 29—Brooms, Brushes, and Dusters

For Wipes—Namely, Disposable Fabric Wipes and Cloth Wipes (Int. Cl. 21).

Class 37—Paper and Stationery

For Paper Wipes (Int. Cl. 16).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Disposable Fabric (Int. Cl. 24).

First use Oct. 7, 1968.

SN 324,327. Milton Bradley Company, Springfield, Mass. Filed Apr. 14, 1969.

TRU-TONE

Owner of Reg. No. 220,289.

Class 11—Inks and Inking Materials

For Block Printing Inks for Silk Screen and Block Prints; and Ink Reducer for Thinning and Extending (Int. Cl. 2).

First use 1942.

Class 16—Protective and Decorative Coatings

For Poster Paints (Int. Cl. 2).

First use 1957.

SN 325,915. Jostens, Inc., Owatonna, Minn. Filed Apr. 30, 1969.



Class 28—Jewelry and Precious-Metal Ware

For Scholastic Jewelry—Namely, Class Rings and Ornamental Pins (Int. Cl. 14).

Class 38—Prints and Publications

For Scholastic Yearbooks; Scholastic Announcements; Commercial Greeting and Holiday Cards; Executive Business Cards; and Name Cards (Int. Cl. 16).

First use at least as early as 1929.

SN 329,920. Northwestern Refining Co., St. Paul Park, Minn. Filed July 29, 1969.

NORTH STAR

Owner of Reg. No. 123,572.

Class 6—Chemicals and Chemical Compositions

For Antifreeze Radiator Solutions, and De-Icing Preparations.

First use July 1962.

Class 15—Oils and Greases

For Refined Petroleum Products—Namely, Gasoline, Lubricating Oils and Greases, Kerosene, Diesel Fuel, Fuel Oil, and Anti-Freeze Additives Used as Ingredients Incorporated in Gasoline (Int. Cl. 4).

First use Jan. 1, 1900.

Class 103—Construction and Repair

For Gas Station Services—Namely, Automotive Supply, Repair and Maintenance Service, Including Truck and Car Washing and Cleaning Service (Int. Cl. 37).

First use 1949.

SN 331,568. Deere & Company, Moline, Ill. Filed July 2, 1969.

DEERE

The name "Deere" is that of the deceased founder of applicant. Owner of Reg. Nos. 30,580, 725,910, and others.

Class 19—Vehicles

For Trailers and Wagons (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Farm Machinery and Parts Therefor; Wheel and Crawler Tractors and Engines and Parts Therefor; Cranes and Hoisting Machinery; Earth-Moving, Logging, Landshaping and Land-Clearing Machinery; Lawn and Garden Tractors and Attachments and Lawn Mowers; and Fork Lift Trucks (Int. Cls. 7 and 12).

First use about 1847.

SN 331,569. Deere & Company, Moline, Ill. Filed July 2, 1969.

JOHN DEERE

The name "John Deere" is that of the deceased founder of applicant. Owner of Reg. Nos. 30,580, 725,910, and others.

Class 19—Vehicles

For Trailers and Wagons (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Farm Machinery and Parts Therefor; Wheel and Crawler Tractors and Engines and Parts Therefor; Cranes and Hoisting Machinery; Earth-Moving, Logging, Landshaping and Land-Clearing Machinery; Lawn and Garden Tractors and Attachments and Lawn Mowers; and Fork Lift Trucks (Int. Cls. 7 and 12).
First use about 1847.

SN 332,707. Freundlich-Gomez Machinery Corporation, College Point, N.Y. Filed July 16, 1969.

coilLOCK

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mechanism for Cutting and Bending the Ends of Helical Wire Binders of Helical Wire Bound Notebooks (Int. Cl. 7).
First use Apr. 8, 1969.

Class 37—Paper and Stationery

For Helical Wire Bound Notebooks (Int. Cl. 16).
First use Jan. 27, 1969.

SN 334,987. Ocean Spray Cranberries, Inc., Hanson, Mass. Filed Aug. 1, 1969.

Class 45—Soft Drinks and Carbonated Waters

For Cranberry Juice Beverages Containing Water and Flavored in Whole or in Part by Cranberries (Int. Cl. 32).
First use Dec. 1, 1965.

Class 46—Foods and Ingredients of Foods

For Fresh and Frozen Cranberries, and Bread, Cake, Sauces, Jellies, Preserves, Bottled, Canned and Frozen Fruit Juice Concentrates, Relishes, and Condiments Made in Whole or in Part From Cranberries (Int. Cls. 29, 30, 31, and 32).
First use Aug. 24, 1964.

SN 336,508. Yardley of London, Inc., New York, N.Y. Filed Aug. 28, 1969.

LAVENDOMEAL

Class 51—Cosmetics and Toilet Preparations

For Scented Water Softener for Use in the Bath (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use at least as early as 1936.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 288,528. McCreary Industrial Products Co., Indiana, Pa. Filed Jan. 10, 1968.

SCOTHANE

For Plastic Material in Castable or Machinable Form (Int. Cls. 1 and 17).
First use Apr. 4, 1966.

SN 297,714. La Cellophane, Paris, France. Filed May 8, 1968.

TERPHANE

Owner of French Reg. No. 532,338, dated June 9, 1955 (Seine); Natl. Inst. No. 251,251; and French Reg. No. 722,576, dated Apr. 26, 1967.
For Films and Sheeting of Polyester Composition in Roll or Sheet Form for Use in the Industrial Arts (Int. Cl. 17).

SN 312,194. Griffolyn Co., Inc., Houston, Tex. Filed Nov. 14, 1968.

GRIFF-FOAM

Owner of Reg. No. 694,717.
For Expanded Polyethylene Foam Laminated to Nylon Reinforced Plastic Sheeting (Int. Cl. 17).
First use at least as early as Oct. 29, 1968.

SN 314,271. Seal, Incorporated, Derby, Conn. Filed Dec. 11, 1968.

TRANSPARA-FILM

For Plastic Sheets for Encapsulating and Laminating Objects (Int. Cl. 17).
First use Feb. 10, 1959.

SN 316,301. FMC Corporation, Philadelphia, Pa. Filed Jan. 10, 1969.

AVISTAR

Owner of Reg. Nos. 631,527, 715,602, and 822,187.
For Sheets and Films of Plastic Material (Int. Cl. 17).
First use Dec. 19, 1968.

SN 316,708. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

SILASTIC LS-53

Owner of Reg. Nos. 438,195 and 578,636.
For Silicone Rubber (Int. Cl. 17).
First use July 1, 1957.

SN 316,719. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

DOW CORNING 804

Owner of Reg. Nos. 576,946 and 577,889.
For Silicone Resins (Int. Cl. 1).
First use Apr. 25, 1946.

SN 321,903. Carnation Company, Los Angeles, Calif. Filed Mar. 17, 1969.

LITTER BRIGHT

The word "Litter" is disclaimed separate and apart from the mark as a whole, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Cat Litter (Int. Cl. 31).
First use Dec. 30, 1968.

SN 326,227. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed May 2, 1969.

SNOW BALL

For Sheared Process Lamb Skins (Int. Cl. 18).
First use Mar. 10, 1968.

SN 326,229. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed May 2, 1969.

CHINCHI FROST

For Sheared Process Lamb Skins (Int. Cl. 18).
First use Sept. 9, 1968.

SN 326,230. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed May 2, 1969.

SNO BALL

For Sheared Process Lamb Skins (Int. Cl. 18).
First use Mar. 10, 1968.

SN 336,516. Dow Badische Company, Williamsburg, Va. Filed Aug. 28, 1969.

VALENSET

For Synthetic Textile Fiber (Int. Cl. 22).
First use Aug. 21, 1969.

SN 336,518. Dow Badische Company, Williamsburg, Va. Filed Aug. 28, 1969.

NORLIB

For Synthetic Textile Fibers (Int. Cl. 22).
First use Aug. 21, 1969.

Class 2—Receptades

SN 327,178. Sales Builders, Inc., Bronx, N.Y. Filed May 13, 1969.

PICK-A-PAT

For Paper Dispensers for Butter and Margarine Pats (Int. Cl. 21).
First use on or about Apr. 25, 1969.

Class 4—Abrasives and Polishing Materials

SN 312,570. The Drackett Company, Cincinnati, Ohio. Filed Nov. 19, 1968.

ROD & ROAD

For Chrome Polish and Cleaner for Auto, and Car Wax (Int. Cl. 3).
First use Nov. 5, 1968.

Class 5—Adhesives

SN 341,777. Arvey Corporation, Chicago, Ill. Filed Oct. 27, 1969.

TUF-GARD

For Pressure Sensitive Plastic Sheets With Strippable Paper Backing (Int. Cl. 17).
First use Sept. 23, 1969.

Class 6—Chemicals and Chemical Compositions

SN 271,061. Abraham F. Moore, d.b.a. A. F. Moore & Company, Shrewsbury, Mass. Filed May 9, 1967.

MOORE'S

For Liquid Bleach-Disinfectant for Cotton, Linen, Orlon, and Nylon, Fabric Softener and Starch (Int. Cl. 3).
First use 1939, on bleach.

SN 271,062. Abraham F. Moore, d.b.a. A. F. Moore & Company, Shrewsbury, Mass. Filed May 9, 1967.

SNOBOY

The drawing is lined for the colors blue and yellow.
For Liquid Ammonia, Liquid Bleach-Disinfectant for Cotton, Linen, Orlon, and Nylon (Int. Cl. 8).
First use August 1937, on liquid bleach.

SN 289,709. Monogram Industries, Inc., Los Angeles, Calif. Filed Jan. 26, 1968.

MONOCHEM

For Deodorant for Mobile Toilets (Int. Cl. 5).
First use Jan. 26, 1965.

SN 293,056. Schering Aktiengesellschaft, Berlin, Germany. Filed Mar. 12, 1968.

FERVIN

The trademark "Fervin" is fanciful. Priority claimed under Sec. 44(d) on German application, filed Sept. 23, 1967; Reg. No. 848,377, dated Aug. 9, 1968.
For Insecticides (Int. Cl. 5).

SN 302,466. Eaton Allen Corp., Brooklyn, N.Y. Filed July 11, 1968.

PAPER/BLEND

For Correction Fluid for Use on Written, Printed, or Typed Matter (Int. Cl. 16).
First use Apr. 2, 1968.

SN 306,969. W-6 Incorporated, Reno, Nev. Filed Sept. 9, 1968.



For Chemical Additive for Industrial Use in Purifying Bulk Fuels (Int. Cl. 1).
First use May 20, 1968.

SN 310,433. Amchem Products, Inc., Ambler, Pa. Filed Oct. 24, 1968.

GRANOBLACK

For Chemical Compositions for Imparting a Black Color to Phosphated Metal Surfaces (Int. Cl. 1).
First use Dec. 31, 1965.

SN 315,127. Union Carbide Corporation, New York, N.Y. Filed Dec. 23, 1968.

NEUTRA-GEL

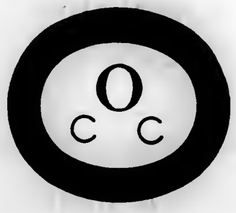
For Microbiological Culture Media Support (Int. Cl. 5).
First use on or about Dec. 16, 1968.

SN 318,567. New England Nuclear Corp., Boston, Mass. Filed Feb. 6, 1969.

OMNISPRAY

For Scintillator Fluor Formulation for Use as an Intensifier for Autoradiography (Int. Cl. 1).
First use Dec. 19, 1968.

SN 321,924. Oxirane Chemical Company, Houston, Tex. Filed Mar. 10, 1969.



For Propylene Oxide, Propylene Glycol and Dipropylene Glycol (Int. Cl. 1).
First use Jan. 27, 1969, on propylene oxide.

SN 323,077. Apter Industries, Inc., McKeesport, Pa. Filed Mar. 28, 1969.



For Chemical Solutions for Use in Making Tests on Shortening (Int. Cl. 1).
First use Jan. 13, 1969.

SN 326,840. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed May 9, 1969.

BUTISAN

Owner of German Reg. No. 723,815, dated Mar. 14, 1958.
For Preparations for Killing Weeds and Destroying Vermin for Agriculture and Forestry (Int. Cl. 5).

SN 331,356. P. R. Dreyer, Inc., New York, N.Y. Filed June 30, 1969.

DREYER

For Essential Oils and Fragrances Used in the Manufacture of Perfumes and Cosmetics (Int. Cl. 3).
First use July 10, 1925.

SN 337,139. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 5, 1969.

ORGANOKROME

For Anti-Corrosive Compound (Int. Cl. 2).
First use Apr. 15, 1969.

SN 337,222. American Photochemicals, Inc., Rutherford, N.J. Filed Sept. 8, 1969.

AMPHOCHEM

For Lithographic Developer, Microfilm Developer, Lithographic Fixer, and Microfilm Fixer (Int. Cl. 1).
First use Apr. 7, 1969.

SN 337,238. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 8, 1969.

KROMABOND

Owner of Reg. Nos. 589,622, 818,961, and 843,092.
For Pigmented Concentrate for Use in Coloring Plastics and Synthetic Fibers (Int. Cl. 2).
First use June 30, 1969.

SN 340,222. McLaughlin Gormley King Company, Minneapolis, Minn. Filed Oct. 9, 1969.

D-TRANS

For Insecticidal Concentrates (Int. Cl. 5).
First use on or about Sept. 19, 1969.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 341,979. Fedtro, Inc., Rockville Centre, N.Y. Filed Oct. 29, 1969.

VISE-O-MATIC

For Suction Mounted Ashtrays (Int. Cl. 34).
First use Oct. 20, 1969.

SN 341,980. Fedtro, Inc., Rockville Centre, N.Y. Filed Oct. 29, 1969.

INSTAMATIC

For Suction Mounted Ashtrays (Int. Cl. 34).
First use Oct. 20, 1969.

Class 11 — Inks and Inking Materials

SN 296,014. Formulabs, Incorporated, Escondido, Calif. Filed Apr. 19, 1968.



The drawing is lined for the color blue.
For Ball Pen Inks, Wire Coding Inks, Chart Recorder Inks, Porous Tip Marker Inks, and Stamp Pad Inks (Int. Cl. 16).
First use Jan. 24, 1968.

SN 312,684. Martin Marietta Corporation, New York, N.Y. Filed Nov. 20, 1968.

SINCLAIR & VALENTINE

For Printing Inks, Die Stamping Inks, Ink Additives, Ink Varnish, Ink Thinners, Ink Lacquers, Ink Dryers, and Ink Pigments (Int. Cls. 1 and 2).
First use at least as early as 1900.

Class 12 — Construction Materials

SN 284,645. L. B. Foster Company, Pittsburgh, Pa. Filed Nov. 13, 1967.



Owner of Reg. Nos. 179,687 and 179,688.
For Construction Materials—Namely, Metal Piling, Rails for Industrial Trackage and for Cranes, Steel Grid Flooring, Bridge and Highway Railings and Guard Rails (Int. Cl. 6).
First use June 1955.

SN 302,461. The Tremco Manufacturing Company, Cleveland, Ohio. Filed July 10, 1968.

POLYDITREMZENE

For Polymeric Ingredient—Namely, a Polyurethane Polyepoxide, Sold as a Component in a Sealant Composition Which Is for Use in the Joints of Concrete and Stone Floor, Plazas, Sidewalks, and the Like (Int. Cl. 19).
First use at least as early as June 5, 1968.

SN 315,111. Sta-Crete, Inc., d.b.a. Black Technical Industries, Inc., San Francisco, Calif. Filed Dec. 23, 1968.

CABLENCAP

For Splice Closure Compound Comprising a Two-Part Catalytic-Action Resin Which Bonds to Cable Insulation and Sheaths for the Protection of Splices (Int. Cl. 17).
First use Apr. 3, 1963.

SN 321,209. The Flintkote Company, White Plains, N.Y. Filed Mar. 10, 1969.

GRAND CANYON

Owner of Reg. Nos. 603,816 and 604,691.
For Pulverized Quicklime, Hydrated Lime and Crushed Lime for Building Purposes (Int. Cl. 19).
First use Apr. 3, 1912.

SN 330,862. Tibbals Flooring Company, Oneida, Tenn. Filed June 24, 1969.

FOAM-TILE

For Cushioned, Wood Parquet Block Panels and Assemblies (Int. Cl. 19).
First use on or about May 7, 1969.

SN 341,279. Jamison Door Company, Hagerstown, Md. Filed Oct. 21, 1969.

JAMISONIC

Owner of Reg. Nos. 660,779, 693,386, and others.
For Sound Reduction Doors (Int. Cl. 19).
First use at least as early as July 2, 1963.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 292,483. Ideal Security Hardware Corporation, Red Bank, N.J. Filed Mar. 5, 1968.

IDEAL Reg. SECURITY HARDWARE

Applicant disclaims the term "Hardware" apart from the mark as shown. The drawing is lined for the color blue but applicant makes no claim for this color as an integral part of its mark. Owner of Reg. No. 747,796.

For Door Latches, Locks, Closers, Hinges, Springs, Chains, Catches, Fasteners, Push Bars, Pulls and Hanger Eyes, Wood, Casement, Transom and Jalousie Window Hardware, Doorstops, Chain Door Guards, and Household Hardware, Such as Hand Rail Brackets, Clothes Pole Sockets, Coat and Hat Hooks, Picture and Shelf Hangers, and Bar Sash Lifts (Int. Cl. 6).

First use Oct. 1, 1967.

SN 329,717. Hartwell Corporation, Los Angeles, Calif. Filed June 11, 1969.

PLUS LATCH

The word "Latch" is disclaimed apart from the mark as shown.

For Fasteners (Int. Cl. 6).

First use Mar. 25, 1969.

SN 332,466. Everingham Brothers Limited, Toronto, Ontario, Canada. Filed July 14, 1969.

CANADIANA

Owner of Canadian Reg. No. N.S. 199/50,536, dated Apr. 15, 1954.

For Aluminum and Stainless Steel Cooking Utensils—Namely, Sauce Pans, Frying Pans, Double Boilers, Roasters, Dutch Ovens, Egg Poaching Racks and Cups, Mixing Bowls, Pie Plates, Serving Trays, Bake Pans, Cups, and Toast Covers (Int. Cl. 21).

SN 333,697. Eisen- und Drahtwerk Erlau Aktiengesellschaft, Aalen, Germany. Filed July 28, 1969.

ERLAU

For Tire Protective Chains, Mud and Cross-Country Chains, and Snow Chains (Int. Cl. 12).

First use on or about July 1936; in commerce on or about September 1964.

SN 334,058. Dart Industries Inc., d.b.a. Tupperware, Los Angeles, Calif. Filed July 31, 1969.

PAR-T-JEL

For Plastic Gelatine Molds (Int. Cl. 21).
First use July 14, 1969.

SN 334,680. Amtec Corporation, Grand Rapids, Mich. Filed Aug. 7, 1969.

TEC-LINE

For Pipe Line Fittings (Int. Cl. 6).
First use on or about June 23, 1969.

SN 334,752. Tech Aero Incorporated, North Hollywood, Calif. Filed Aug. 7, 1969.

TALF

For Connectors for Hydraulic Lines in Aircraft (Int. Cl. 6).
First use Apr. 18, 1969.

SN 334,831. Fiberglass Resources Corporation, Farmingdale, N.Y. Filed Aug. 8, 1969.



For Resin Bonded Glass Fiber Pipe and Pipe Fittings (Int. Cl. 17).
First use November 1968.

SN 335,611. Rusco Industries, Inc., Fullerton, Calif. Filed Aug. 18, 1969.

HILITE

Owner of Reg. Nos. 733,645 and 753,493.
For Jalousie Hardware (Int. Cl. 6).
First use Jan. 22, 1966.

SN 335,618. The Steel Company of Canada, Limited, Hamilton, Ontario, Canada. Filed Aug. 18, 1969.

GRIPLAM

Owner of Canadian Reg. No. 144,490, dated Mar. 18, 1966.
For Nails (Int. Cl. 6).

SN 337,160. Fisher Controls Company, Marshalltown, Iowa. Filed Sept. 5, 1969.

CAVITROL

For Valves and Parts Thereof (Int. Cl. 6).
First use July 28, 1969.

SN 337,263. C & D Valve Mfg. Co., Inc., Oklahoma City, Okla. Filed Sept. 8, 1969.

STINGER

For Refrigerant Line Tapping Service Valves (Int. Cl. 6).
First use Apr. 18, 1968.

SN 340,994. Southern Mechanical Products Company, Greensboro, N.C. Filed Oct. 17, 1969.

SMP

For Hardware for Clip Boards for Paper and Hardware for Mops (Int. Cl. 6).
First use June 1967.

SN 342,598. Henry Soss and Company, Los Angeles, Calif. Filed Nov. 4, 1969.

VANGUARD

For Hinges (Int. Cl. 6).
First use Sept. 1, 1969.

SN 344,085. Turbotec, Inc., South Windsor, Conn. Filed Nov. 20, 1969.

BILOCULINE

For Double Walled Helically Corrugated Tubes (Int. Cl. 6).
First use at least as early as Oct. 1, 1969.

Class 14—Metals and Metal Castings and Forgings

SN 326,789. Paper, Calmenson & Co., St. Paul, Minn. Filed May 8, 1969.

BORALLOY

For Wrought Steel Plates and Steel Sheets (Int. Cl. 6).
First use Apr. 10, 1961.

SN 335,747. Cyclops Corporation, Pittsburgh, Pa. Filed Aug. 20, 1969.

UNITRU

For Alloy Steel Rolls (Int. Cl. 6).
First use Dec. 21, 1967.

SN 342,351. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 3, 1969.

LINE 'N SHINE

For Disposable Aluminum Oven Liner (Int. Cl. 6).
First use Sept. 17, 1969.

SN 343,638. United States Steel Corporation, Pittsburgh, Pa. Filed Nov. 17, 1969.

RIBAND

For Flat Rolled Steel Products—Namely, Steel Slabs (Int. Cl. 6).
First use Oct. 15, 1969.

Class 15—Oils and Greases

SN 307,901. Martin Oil Service, Inc., Blue Island, Ill. Filed Sept. 20, 1968.

MARTIN

For Gasoline, Fuel Oil, Diesel Oil, and Motor Oil (Int. Cl. 4).
First use January 1962.

SN 325,168. The British Petroleum Company Limited, London, England. Filed Apr. 22, 1969.

BP SUPER

Applicant disclaims the word "Super" apart from the mark as shown. Owner of British Reg. No. 759,476, dated Nov. 9, 1956; and U.S. Reg. Nos. 654,019 and 709,230.

For Fuels Derived From Petroleum for Use in Internal Combustion Engines (Int. Cl. 4).

SN 325,170. Marion L. Butzow, Glenview, Ill. Filed Apr. 22, 1969.

SANDELITES

For Paraffin Impregnated Sand Castings Creating a Combination Candle/Candle Holder (Int. Cl. 4).
First use Oct. 14, 1968.

SN 328,360. Stihl Oil, Inc., Sayner, Wis. Filed May 26, 1969.

STIHL OIL

The words "Engine Oil" are disclaimed apart from the mark as shown.

For Lubricating Oil (Int. Cl. 4).
First use Dec. 10, 1968.

SN 328,455. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1969.

BORON HEAT

The designation "Heat" is disclaimed apart from use in the entire mark. Owner of Reg. Nos. 623,891 and 623,892.

For Furnace Oil for Home Heating (Int. Cl. 4).
First use May 2, 1969.

Class 16—Protective and Decorative Coatings

SN 312,812. Seal Bond, Inc., Lubbock, Tex. Filed Nov. 21, 1968.

SE-BO

For Protective Coating—Namely, Paints (Int. Cl. 2).
First use Nov. 15, 1965.

SN 316,203. The Idea House, Inc., Baton Rouge, La. Filed Jan. 9, 1969.



THE IDEA HOUSE

For Decoupage Varnish and Resin Spray Coatings, and Wood Stains (Int. Cl. 2).
First use on or about Jan. 10, 1966.

SN 316,826. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 16, 1969.

DEFLECTITE

For Asphalt Based Aluminum Roof Paint (Int. Cl. 2).
First use on or about Feb. 1, 1951.

SN 326,965. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed May 12, 1969.

FOAM-N-TONE

Owner of Reg. Nos. 674,417 and 770,224.
For Paints in the Form of Stains of Various Colors for Protective and Decorative Coatings (Int. Cl. 2).
First use on or about Oct. 28, 1968.

Class 17—Tobacco Products

SN 314,368. Tabacos Ornelas, S.A., Guadalajara, Jal, Mexico. Filed Dec. 12, 1968.

ORNELAS

For Cigars, Cigarettes, and Chewing Tobacco (Int. Cl. 34).
First use Apr. 8, 1948; in commerce Apr. 10, 1961.

SN 314,701. Compania Insular Tabacalera, S.A. Galicia, Las Palmas de Gran Canaria, Canary Islands. Filed Dec. 17, 1968.



The English translation of the Spanish words "Flor de Canarias" is "flower of Canaries."
For Cigars (Int. Cl. 34).
First use Jan. 12, 1968; in commerce Aug. 8, 1968.

SN 317,819. P. J. Carroll & Company Limited, Dublin, Ireland. Filed Jan. 29, 1969.

CULLODEN

For Cigarettes (Int. Cl. 34).
First use Nov. 5, 1968; in commerce Nov. 5, 1968.

SN 317,820. P. J. Carroll & Company Limited, Dublin, Ireland. Filed Jan. 29, 1969.

HIGH KINGS

Applicant makes no claim to the word "Kings" apart from the mark as shown.
For Cigarettes (Int. Cl. 34).
First use Nov. 5, 1968; in commerce Nov. 5, 1968.

SN 339,932. Poul Petersen Cigar- & Tobaksfabriker, d.b.a. Pete Bros., Horsens, Jutland, Denmark. Filed Oct. 6, 1969.

ESPERANTO

Owner of Danish Reg. No. 68–1929, dated Jan. 19, 1929.
For Smoking Tobacco (Int. Cl. 34).

SN 340,976. American Brands, Inc., New York, N.Y. Filed Oct. 17, 1969.

BALSAM

For Cigarettes (Int. Cl. 34).
First use Oct. 8, 1969.

SN 340,978. American Brands, Inc., New York, N.Y. Filed Oct. 17, 1969.

MESA

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 340,979. American Brands, Inc., New York, N.Y. Filed Oct. 17, 1969.

ORLEANS

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 340,980. American Brands, Inc., New York, N.Y. Filed Oct. 17, 1969.

TANDEM

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 340,981. American Brands, Inc., New York, N.Y. Filed Oct. 17, 1969.

TRIBUNE

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 342,503. Eugene A. Neaderhiser, d.b.a. Contraband Tobacco Co., Parkville, Mo. Filed Nov. 3, 1969.

CONTRABAND

For Smoking Tobacco (Int. Cl. 34).
First use on or about Oct. 4, 1969.

SN 342,632. General Cigar Co., Inc., New York, N.Y. Filed Nov. 4, 1969.

STILETTO

For Cigars (Int. Cl. 34).
First use Oct. 9, 1969.

SN 342,633. Gesty Trading and Manufacturing Corp., New York, N.Y. Filed Nov. 4, 1969.

HANS BRINKERS

For Pipe Tobacco (Int. Cl. 34).
First use Oct. 10, 1969.

SN 342,798. Philip Morris Incorporated, New York, N.Y. Filed Nov. 6, 1969.

SIGMA

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 342,800. Philip Morris Incorporated, New York, N.Y. Filed Nov. 6, 1969.

SIGMA VII

For Cigarettes (Int. Cl. 34).
First use Oct. 6, 1969.

SN 342,890. Philip Morris Incorporated, New York, N.Y. Filed Nov. 6, 1969.

PRINCETON

For Cigarettes (Int. Cl. 34).
First use Oct. 13, 1969.

SN 343,138. Larus & Brother Company, Richmond, Va. Filed Nov. 10, 1969.

CREST

Owner of Reg. No. 582,705.
For Plain End and Filter Tip Cigars (Int. Cl. 34).
First use Sept. 26, 1969; July 1, 1926, in another form.

Class 18—Medicines and Pharmaceutical Preparations

SN 301,358. Rowell Laboratories, Inc., Baudette, Minn. Filed June 25, 1968.

VASITOL

For Tablet for the Treatment of Angina (Int. Cl. 5).
First use May 21, 1968.

SN 305,954. Medco Lab, Inc., Sioux City, Iowa. Filed Aug. 26, 1968.

EMERSAL

For Emulsified Lotion Indicated in the Treatment of Psoriasis of the Scalp, Isolated Psoriatic Lesions, and Seborrheic Dermatitis (Int. Cl. 5).
First use August 1964.

SN 306,228. Drug Industries Company, Detroit, Mich. Filed Aug. 29, 1968.

OLBESE NO. 1

For Capsules for Use as an Aid in the Management of Certain Forms of Obesity (Int. Cl. 5).
First use Jan. 15, 1968.

SN 311,766. Beecham Inc., Clifton, N.J. Filed Nov. 12, 1968.

NALLPEN

For Antibiotic (Int. Cl. 5).
First use Nov. 4, 1968.

SN 312,917. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Nov. 22, 1968.

GOLDEN T

Owner of Reg. Nos. 849,417, 876,305, and others.
For Aspirin and Buffered Aspirin (Int. Cl. 5).
First use Mar. 23, 1968.

SN 314,456. Progress Laboratories, Inc., Los Angeles, Calif. Filed Dec. 13, 1968.

PROGRESS

For Aspirin, Rubbing Alcohol, Terpindex Cough Formula, Tetracycline Syrup, Sulfisoxazole, Quinidine Sulfate, Vitamins, Tetracycline Hydrochloride Capsules, Digoxin, Diphenhydramine Hydrochloride Capsules, Homogenized Liquid Antacid Gel, and Epsom Salt (Int. Cl. 5).
First use Oct. 19, 1968.

SN 317,911. The Granchel Medicine Co., Inc., Sabana Llana, Puerto Rico. Filed Jan. 30, 1969.

EUCALIPTINO

For Rubbing Compound Used as a Rubefacient and Also as an After Shaving Preparation (Int. Cl. 5).
First use Dec. 24, 1941.

SN 319,515. Tilden-Yates Laboratories, Inc., Wayne, N.J. Filed Feb. 18, 1969.

GONIOSOL

For Ophthalmic Preparations (Int. Cl. 5).
First use Feb. 3, 1969.

SN 327,625. Honeggers' & Co., Inc., Fairbury, Ill. Filed May 19, 1969.

TUNE-UP

For Vitamin Supplement for Livestock Feed (Int. Cl. 5).
First use Apr. 18, 1969.

SN 327,678. A. H. Robins Company, Incorporated, Richmond, Va. Filed May 19, 1969.

ENTOLASE

For High Potency Enzyme Preparation (Int. Cl. 5).
First use May 7, 1969.

SN 328,044. Eastwood Pharmacal Co., Inc., Bridgeport, Conn. Filed May 22, 1969.

Q-U

For Cough Syrup (Int. Cl. 5).
First use Apr. 5, 1969.

SN 334,768. Kasar Company, Niles, Ill. Filed Aug. 8, 1969.

PASDIUM

For Medicinal Tablets Useful in the Prophylaxis and Control of Tuberculosis (Int. Cl. 5).
First use July 25, 1969.

SN 335,166. Ingram Pharmaceutical Co., San Francisco, Calif. Filed Aug. 13, 1969.

CANTHARONE

For Preparation Applied to the Skin for the Removal of Warts (Int. Cl. 5).
First use 1960.

SN 342,353. Eli Lilly and Company, Indianapolis, Ind. Filed Nov. 3, 1969.

FERTI-CEPT

For Injectable Hormone Designated for Cattle (Int. Cl. 5).
First use Oct. 2, 1969.

SN 342,604. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Nov. 4, 1969.

SCHEDULIN

Filed Liquid Laxative (Int. Cl. 5).
First use Oct. 29, 1969.

Class 19—Vehicles

SN 295,610. Buckeye Plastics Company, Reynoldsburg, Ohio. Filed Apr. 15, 1968.



Owner of Reg. No. 590,383.
For Children's Furniture, i.e., Car Seats and Infant Carriers (Int. Cl. 20).
First use Mar. 1, 1968.

SN 308,609. Dynaplastics, Inc., Fort Worth, Tex. Filed Oct. 1, 1968.

DYNAPLASTICS

For Molded Plastic Automobile Air Conditioner Cases and Molded Plastic Louvers Therefor (Int. Cl. 11).
First use Dec. 16, 1964.

SN 308,725. Torino of America, Inc., Union, N.J. Filed Oct. 2, 1968.



"Italia" means "Italy" in the Italian language. Applicant disclaims the word "Italia" apart from the mark as shown.
For Automobiles (Int. Cl. 12).
First use Sept. 16, 1968.

SN 326,071. Caveman Campers, Inc., Grants Pass, Oreg. Filed May 1, 1969.



Owner of Reg. Nos. 748,684, 767,035, and others.
For Motor Home and Chassis Mount Campers (Int. Cl. 12).
First use Jan. 10, 1969.

SN 326,627. Cannon Products, Inc., Faribault, Minn. Filed May 7, 1969.

FEATHER LIGHT

For Canoe Paddles (Int. Cl. 12).
First use Feb. 15, 1969.

SN 332,931. Farenwald Enterprises, Inc., Lancaster, Pa. Filed July 18, 1969.

DUTCH CRAFT

For Travel Trailers (Int. Cl. 12).
First use May 6, 1969.

SN 337,036. Gardner, Inc., Bristol, Ind. Filed Sept. 4, 1969.



For Travel Trailers and Pick-Up Campers (Int. Cl. 12).
First use on or before Nov. 4, 1968; on or before Sept. 7, 1966, as to "Amerigo."

SN 338,919. Mark Twain Marine Industries, Inc., Kansas City, Mo. Filed Sept. 25, 1969.

SNOOPY

For Boats (Int. Cl. 12).
First use Sept. 5, 1969.

SN 343,688. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 17, 1969.

ENCHANTRESS

For Bicycles and Structural Parts Thereof (Int. Cl. 12).
First use Aug. 26, 1969.

SN 344,750. Travel-Line Enterprises, Inc., Elkhart, Ind. Filed Nov. 26, 1969.



For Travel Trailers (Int. Cl. 12).
First use November 1967.

SN 344,819. Columbia Yacht Corporation, Costa Mesa, Calif. Filed Nov. 28, 1969.

CORONADO

For Boats (Int. Cl. 12).
First use at least as early as Mar. 31, 1965.

Class 20—Linoleum and Oiled Cloth

SN 334,962. Armstrong Cork Company, Lancaster, Pa. Filed Aug. 11, 1969.

CORRIE MARBLE

For Resilient, Hard Surface Type Covering for Floors, Walls, and Other Surfaces (Int. Cl. 27).
First use July 25, 1968.

SN 334,963. Armstrong Cork Company, Lancaster, Pa. Filed Aug. 11, 1969.

SANTA CRUZ

For Resilient, Hard Surface Type Covering for Floors, Walls, and Other Surfaces (Int. Cl. 27).
First use Sept. 18, 1968.

SN 336,000. Monsanto Company, St. Louis, Mo. Filed Aug. 22, 1969.

TYBLOX

For Rigid Surfacing Material Composed of a Plastic Composite, for Use as a Floor or Wall Covering or Similar Applications Such as Counter Surfacing (Int. Cl. 27).
First use Aug. 7, 1969.

SN 338,114. Armstrong Cork Company, Lancaster, Pa. Filed Sept. 17, 1969.

TERRINA

For Resilient, Hard Surface Type Covering for Floors, Walls, and Other Surfaces (Int. Cl. 27).
First use Dec. 27, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 298,586. Electronic Devices, Inc., Yonkers, N.Y. Filed May 20, 1968.

MINIBRIDGE

For Electrical Rectifier Assemblies Comprised of a Plurality of Rectifiers (Int. Cl. 9).
First use Dec. 14, 1967.

SN 299,958. Arthur R. Andrews, Memphis, Tenn., assignee of Elecmag Corporation, Monette, Ark. Filed June 7, 1968.



The mark consists of the letters "TEM" in capital Letters, joined together, the letter T being a part of the Letter E, the whole being followed by the letters "a" and "g" uncapitalized and representing "TEMag."
For Electronic Magnetos; Ignition Coils; Transistors; and Ignition Conversion Kits Comprising Electronic Magneto, Ignition Coil, Spark Plugs, Spark Plug Wires, Distributor Cap, Distributor Rotor, Safety Switch, and Lead-In Wire (Int. Cls. 7 and 9).
First use Nov. 29, 1967.

SN 307,020. General Electric Company, Owensboro, Ky. Filed Sept. 10, 1968.



The trademark, as shown in the drawing, comprises a fanciful representation of a cathode ray tube superimposed upon which are three independent, non-intersecting circles. The circles are lined for the colors red, green and blue and color is disclaimed except that the combination of colors and the black portions are claimed as an integral feature of the mark. The representation of the tube is disclaimed apart from the mark as a whole.
For Color Television Picture Tubes (Int. Cl. 9).
First use Aug. 2, 1967.

SN 307,785. Winston E. Kock, Ann Arbor, Mich. Filed Sept. 16, 1968.

SYMPHONIC DOOR-TONE

For Electric Door Annunciator Incorporating a Tape Recording Reproducer (Int. Cl. 9).
First use May 29, 1968.

SN 312,734. American Plasticraft Company, Chicago, Ill. Filed Nov. 21, 1968.

STAB-REG

For Voltage Dependent Resistors and Impedance Networks (Int. Cl. 9).
First use May 15, 1968.

SN 314,088. Austin W. La Marche, Des Plaines, Ill. Filed Dec. 10, 1968.

RECHARJER

For Electrical Current Converters for Converting Alternating Current to Direct Current, and Battery Chargers (Int. Cl. 9).
First use prior to 1955.

SN 315,684. Industrial Lighting Products, Inc., Brooklyn, N.Y. Filed Dec. 16, 1968.



The words "Industrial Lighting Products, Inc." and the separate showing of the letters "Inc." are disclaimed apart from the mark as shown.
For Incandescent and Fluorescent Light Bulbs (Int. Cl. 11).
First use Apr. 1, 1967.

SN 319,787. ACS Industries, Inc., Van Nuys, Calif. Filed Feb. 24, 1969.



For Housing for Receiving and Holding Integrated Circuits and for Positioning and Holding Said Circuits in Place for Their Use (Int. Cl. 9).
First use Sept. 10, 1968.

SN 321,489. General Motors Corporation, Detroit, Mich. Filed Mar. 12, 1969.

PACK-CON

For Electrical Terminators and Connectors (Int. Cl. 9).
First use Feb. 13, 1969.

SN 323,842. The Pyle-National Company, Chicago, Ill. Filed Apr. 7, 1969.

STUB-E

For Electrical Connectors and Parts Thereof (Int. Cl. 9).
First use December 1968.

SN 325,064. Motorola, Inc., Franklin Park, Ill. Filed Apr. 21, 1969.

HANDYLAB

For Kits comprising Semiconductors and Cabinets for Storing the Same (Int. Cl. 9).
First use Aug. 3, 1965.

SN 333,931. S. S. Kresge Company, Detroit, Mich. Filed July 30, 1969.



For Voltage Regulators, Insulated Conductive Wire, Trouble Lights, and Extension Cords (Int. Cls. 9 and 11).
First use on or before Mar. 10, 1969.

SN 334,105. Meazzi, Sir.l., Milan, Italy. Filed July 31, 1969.
Owner of Italian Reg. No. 226,293, dated May 8, 1968.

tronicdrum

For Electronic Batteries (Int. Cl. 9).

SN 334,647. Tri-Point Industries, Inc., Commack, N.Y. Filed Aug. 6, 1969.



For Skived Tape and Film as Electrical Insulation (Int. Cl. 17).
First use Aug. 9, 1968.

SN 334,866. Roltec, Inc., River Falls, Wis. Filed Aug. 8, 1969.



For Electric Switches (Int. Cl. 9).
First use May 7, 1969.

SN 335,181. Air Reduction Company, Incorporated, New York, N.Y. Filed Aug. 13, 1969.

SPA

For Conductor Paste (Int. Cl. 9).
First use Aug. 20, 1968.

SN 335,253. Harry O. Petersen, Minneapolis, Minn. Filed Aug. 13, 1969.

PAIGE

Owner of Reg. No. 802,016.
For Storage Batteries (Int. Cl. 9).
First use July 27, 1964.

SN 335,546. Cape Asbestos Insulations (Proprietary) Limited, Benoni South, Transvaal, Republic of South Africa. Filed Aug. 18, 1969.



Owner of South African Reg. No. 60/0496, dated Feb. 10, 1960.
For Electrical Panel Heaters (Int. Cl. 11).

SN 336,310. Borg-Warner Corporation, Chicago, Ill. Filed Aug. 26, 1969.

ACCUPOWER

For Electrical Power Systems and Frequency Changers (Int. Cl. 9).
First use on or prior to Mar. 28, 1968.

SN 336,323. Electronic Research & Development H.K. Limited, Hung Hom, Kowloon, Hong Kong. Filed Aug. 26, 1969.

HOLIDAY

For Radios and Parts Thereof (Int. Cl. 9).
First use July 7, 1969; in commerce July 7, 1969.

SN 336,324. Electronic Research & Development H.K. Limited, Hung Hom, Kowloon, Hong Kong. Filed Aug. 26, 1969.

HUNTER

For Radios and Parts Thereof (Int. Cl. 9).
First use July 7, 1969; in commerce July 7, 1969.

SN 336,431. Emerson Electric Co., St. Louis, Mo. Filed Aug. 27, 1969.

BADGER

For Electric Garbage Disposers (Int. Cl. 7).
First use on or about June 26, 1969.

SN 336,789. Fedtro, Inc., Rockville Centre, N.Y. Filed Sept. 2, 1969.

CONTROL-O-MATIC

For Dry Cell Battery Chargers (Int. Cl. 9).
First use Apr. 11, 1969.

SN 336,802. International Harvester Company, Chicago, Ill. Filed Sept. 2, 1969.

FLEETRITE

For Batteries (Int. Cl. 9).
First use July 3, 1969.

SN 336,872. Shane Industries, Inc., Palo Alto, Calif. Filed Sept. 2, 1969.

MINI-VERTER

For DC-DC Converters (Int. Cl. 9).
First use June 4, 1969.

SN 336,961. Union Oil Company of California, Los Angeles, Calif. Filed Sept. 3, 1969.



For Storage Batteries (Int. Cl. 9).
First use June 17, 1969.

SN 337,556. Magnetics, Inc., East Butler, Pa. Filed Sept. 10, 1969.



Owner of Reg. Nos. 681,070 and 710,186.
For Magnetic Cores, Magnetic Laminations, Magnetic Shields, Saturable Reactors, and Magnetic Amplifiers (Int. Cl. 9).
First use January 1954.

SN 337,563. Motorola, Inc., Franklin Park, Ill. Filed Sept. 10, 1969.

METRO-PAGE

For Radio Transmitters and Radio Receivers (Int. Cl. 9).
First use December 1968.

SN 337,564. Motorola, Inc., Franklin Park, Ill. Filed Sept. 10, 1969.

AUTOMUTE

For Tone Squelch Circuits for Radio Receivers (Int. Cl. 9).
First use June 12, 1967.

SN 342,203. Berkey/Colortran Mfg., Inc., Burbank, Calif. Filed Oct. 31, 1969.

MINI-PRO

For Luminaires for Stage Lighting and for Motion Picture and Television Photography (Int. Cl. 11).
First use Sept. 27, 1969.

SN 342,206. Hotwatt, Inc., Danvers, Mass. Filed Oct. 31, 1969.

GLASROPE

For Flexible Electric Heaters for Use With Electrical Appliances (Int. Cl. 11).
First use Oct. 23, 1969.

SN 342,705. Scientific Advances, Inc., Columbus, Ohio. Filed Nov. 5, 1969.

CONDUCTOMER

For Electrically Conductive Elastomer—Namely, Conductive Elastomer Material Having a Resistance Which Varies According to Its Deformation, and Strain Gauge Elements Comprising Such Elastomer Material To Which Metal Tabs Are Attached as Terminals (Int. Cl. 9).
First use on or about Feb. 15, 1968.

SN 344,286. Fedtro, Inc., Rockville Centre, N.Y. Filed Nov. 24, 1969.

LITE-O-MATIC

For Electric Light Switches Adapted for Use With Doors (Int. Cl. 11).
First use Nov. 14, 1969.

Class 22—Games, Toys, and Sporting Goods

SN 304,505. J. W. Spear & Sons Limited, "Paragon" Works, Enfield, Middlesex, England. Filed Aug. 6, 1968.

SPEAR'S GAMES

No claim of exclusive right is made to "Games" for the goods recited.
For Educational Toys, Dolls, and Equipment Sold as Units for Use in Playing Party Games, Card Games, Action Games, Combination Games, Shooting Games, Puzzles, and Table Tennis, and Parts and Pieces for Use in Playing Such Games; Handicraft Kits and Materials for Use in Restocking Said Kits (Int. Cl. 28).
First use in or prior to 1921; in commerce in or prior to 1924.

SN 318,313. Samuel Lombardo, Palos Verdes Peninsula, Calif. Filed Feb. 4, 1969.



Applicant disclaims the golf ball design apart from the mark.
For Golf Clubs (Int. Cl. 28).
First use Dec. 18, 1968.

SN 326,036. John J. Hildebrandt Corporation, Logansport, Ind. Filed May 1, 1969.

Snagless Sally

Applicant disclaims, without prejudice to its common law rights, the word "Snagless" apart from the mark as shown.
For Artificial Fishing Bait (Int. Cl. 28).
First use Feb. 15, 1959.

SN 330,785. James W. Strader, Fort Lauderdale, Fla. Filed June 23, 1969.

DIAMOND RATTLER

For Artificial Fishing Lures (Int. Cl. 28).
First use June 1968.

SN 331,581. American Distributing Corporation, New York, N.Y. Filed July 2, 1969.

TOPRO

For Golf Balls (Int. Cl. 28).
First use during December 1968.

SN 331,589. Complex (Japan), Ltd., Fukiai-ku, Kobe, Japan. Filed July 2, 1969.

FJORD

For Fishing Rods, Fishing Reels, and Fishing Tackle Accessories—Namely, Artificial Lures, Poppers, Floats, and Harnesses (Int. Cl. 28).
First use Feb. 1, 1969; in commerce Feb. 1, 1969.

SN 339,806. Mattel, Inc., Hawthorne, Calif. Filed Oct. 6, 1969.

BUSY BUILDER

For Toy Construction Set (Int. Cl. 28).
First use July 8, 1969.

SN 340,322. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

BIG THUMB

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Sept. 5, 1969.

SN 340,323. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

WORKING WHEELS

For Toy Trucks (Int. Cl. 28).
First use Sept. 5, 1969.

SN 340,692. Mattel, Inc., Hawthorne, Calif. Filed Oct. 10, 1969.

RITA RYME

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 5, 1969.

SN 340,724. Mattel, Inc., Hawthorne, Calif. Filed Oct. 15, 1969.

FOOZIE WOOZIE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,725. Mattel, Inc., Hawthorne, Calif. Filed Oct. 15, 1969.

SHORT-ORDER

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,887. Mattel, Inc., Hawthorne, Calif. Filed Oct. 16, 1969.

THE HEAVYWEIGHTS

For Toy Trucks (Int. Cl. 28).
First use Aug. 28, 1969.

SN 340,889. Mattel, Inc., Hawthorne, Calif. Filed Oct. 16, 1969.

SPRING CHICKEN

For Equipment Sold as a Unit for Playing a Three Dimensional Action Game (Int. Cl. 28).
First use Sept. 5, 1969.

SN 341,988. Mattel, Inc., Hawthorne, Calif. Filed Oct. 29, 1969.

DAZZLEMS

For Material for Use With a Toy Jewelry Making Kit. (Int. Cl. 28).
First use Sept. 8, 1969.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 282,766. Bearing Headquarters Co., Broadview, Ill. Filed Oct. 18, 1967.



For Machinery Bearings and Parts Thereof, Tools for Removing and Inserting Machinery Bearings and Equipment for the Transmission of Power Mechanically—Namely, Chains, Sprockets, Pulleys, Gears, Gear Racks, Couplings, and Cam Followers (Int. Cls. 7 and 8).
First use February 1960.

SN 291,509. Hall Marine Corporation, Princeton, N.J. Filed Feb. 20, 1968.



For Marine Jet Propulsion Apparatus (Int. Cl. 7).
First use Jan. 11, 1967.

SN 309,095. Rain Jet Corporation, Burbank, Calif. Filed Oct. 7, 1968.

SCULPTURED FLUIDS

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains (Int. Cl. 11).
First use Aug. 13, 1968.

SN 309,096. Rain Jet Corporation, Burbank, Calif. Filed Oct. 7, 1968.

SCULPTURED WATER

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the pump, Sold as a Unit for Producing Ornamental Water Fountains (Int. Cl. 11).
First use Aug. 13, 1968.

SN 312,661. James N. Demetreon, d.b.a. Handi Caddy Company, Kansas City, Mo. Filed Nov. 20, 1968.

HANDI HOT OVEN CADDY

The words "Hot Oven" and the representation of the oven are disclaimed apart from the mark as shown.
For Hot Food Tray Lifters (Int. Cl. 8).
First use on or about Oct. 3, 1968.

SN 312,918. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Nov. 22, 1968.

GOLDEN T

Owner of Reg. Nos. 849,417, 876,305, and others.
For Lawn Mowers (Int. Cl. 7).
First use Jan. 9, 1968.

SN 313,486. Beaconway Stores, Inc., Chelsea, Mass. Filed Dec. 3, 1968.

ROMAXE

Owner of Reg. No. 782,929.
For Scissors (Int. Cl. 8).
First use Mar. 1, 1966.

SN 314,563. Imperial Stamp & Engraving Co., Inc., Mount Prospect, Ill. Filed Dec. 16, 1968.



For Industrial Type Steel Stamping and Marking Equipment—Namely, Metal Marking Hand Stamps, Type Holders and Type, Numbering Heads, Stamp Holders, Embossing and Debossing Dies, Die Inserts, Punch Press Stamps, Knurl or Roll Carriages, and Roller Bearing Cradles (Int. Cl. 7).
First use 1952.

SN 315,069. FMC Corporation, San Jose, Calif. Filed Dec. 23, 1968.

ECONOVAC

For Container Filling Machines (Int. Cl. 7).
First use June 28, 1968.

SN 315,091. The Monarch Marking System Company, Dayton, Ohio. Filed Dec. 23, 1968.

MARKTRONIC 150

For Machines for Marking Price Tickets, Tags and Labels (Int. Cl. 7).
First use July 2, 1968.

SN 316,213. Kabushiki-Kaisha Shikishima Tipton, d.b.a. Shikisima Tipton Mfg. Co., Ltd., Minamiku, Nagoya, Japan. Filed Jan. 9, 1969.

TIPTON

For Metal Surface Finishing Machines—Namely, Tumbling Barrels (Int. Cl. 7).
First use at least as early as May 1968; in commerce at least as early as May 1968.

SN 317,361. New England Carbide Tool Co., Incorporated, Peabody, Mass. Filed Jan. 23, 1969.

BORON-C

For Shaped Parts of Abrasion-Resistant Material—Namely, Crush Rollers for the Dressing of Abrasive Grinding Wheels by Crush Forming (Int. Cl. 7).
First use Mar. 19, 1968.

SN 319,756. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 20, 1969.

FROST ROSE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Dec. 17, 1968.

SN 321,052. Textron, Inc., Erie, Pa. Filed Mar. 7, 1969.

ERIE MASTER

Applicant disclaims the word "Erie" and the representation of the wrench, apart from the mark.
For Cut-Off Saws, Pipe Cutters, Pipe Vises, Swaging Tools, and Pipe Reamers (Int. Cl. 7).
First use Sept. 1, 1968.

SN 324,182. The Duriron Company, Inc., Dayton, Ohio. Filed Apr. 10, 1969.

T-LINE

For Centrifugal Pumps, Particularly for Handling Corrosive Fluids, and Parts Thereof (Int. Cl. 7).
First use Feb. 3, 1969.

SN 326,055. American Graded Sand Co., Des Plaines, Ill., assignee of Agsco Corporation, Des Plaines, Ill. Filed May 1, 1969.

CERAMAGRAIN

For Lithographic Plates (Int. Cl. 7).
First use Mar. 28, 1969.

SN 327,618. Goss Multiple Tools Limited, Wandsworth, London, England. Filed May 16, 1969.

GOSCUT

Owner of British Reg. No. B913,226, dated Aug. 14, 1967.
For Hand Operated Shears for Cutting Sheet Material (Int. Cl. 8).

SN 327,758. Hercules S.A.—Fabrica de Talheres, Porto Alegre, Rio Grande do Sul, Brazil. Filed May 20, 1969.

HERCULES

For Brazilian Reg. No. 366,791, dated Jan. 2, 1968.
For Table Flatware of Non-Precious Metal—Namely, Knives, Forks, and Spoons (Int. Cl. 8).

SN 332,849. Parks Woodworking Machine Company, Cincinnati, Ohio. Filed July 17, 1969.

PARK

The drawing is lined for the color red. No claim is made to the exclusive right to the use of the representation of the band saw blade, separate and apart from the mark as shown.
For Band Saws, Planers, Radial Saws, Combined Planers and Jointers, Panel Saws, Combined Drilling and Sawing Machines (Int. Cl. 7).
First use Apr. 25, 1927.

SN 333,454. Sumitomo Bakelite Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed July 24, 1969.

My-kitchen

For Plastic Chopping Board (Int. Cl. 21).
First use July 1968; in commerce March 1969.

SN 334,624. Richard Sizer Limited, Wilmington, Hull, England. Filed Aug. 6, 1969.

ORBIT

Owner of British Reg. No. 472,430, dated Aug. 21, 1926.
For Machines for Manufacturing Cattle Cakes (Int. Cl. 7).

SN 335,540. Bettcher Industries, Inc., Vermilion, Ohio. Filed Aug. 18, 1969.

LEBO

For Food Pressing Machines (Int. Cl. 7).
First use June 1954.

SN 335,741. Bryant-Poff, Inc., Coatesville, Ind. Filed Aug. 20, 1969.

BP

For Grain Handling and Processing Equipment—Namely, Screw Conveyors; Bucket Elevators; Grain Distributors for Use With Bucket Elevators; Grain Cleaners and Blowers (Int. Cl. 7).
First use May 29, 1969.

SN 335,860. Fisburne Equipment Company, Inc., Arden, N.C. Filed Aug. 21, 1969.



For Hydraulically Operated Tobacco Presses, Hydraulically Operated Baling Presses, and Hydraulic Pump Units (Int. Cl. 7).
First use at least as early as Apr. 1, 1965.

SN 335,869. Imperial International Corp., New York, N.Y. Filed Aug. 21, 1969.

ALGARVE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Aug. 4, 1968.

SN 336,023. Spiral Binding Company, Inc., New York, N.Y. Filed Aug. 22, 1969.

DUET

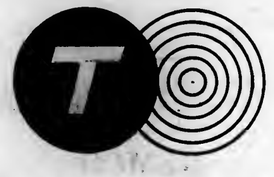
For Punching and Binding Machines for Reports, Books, Catalogs, etc. (Int. Cl. 7).
First use on or about Nov. 25, 1968.

SN 336,345. Northrop Weaving Machinery Limited, Daisyfield, Blackburn, England. Filed Aug. 26, 1969.

SENSAMATIC

Owner of British Reg. No. 931,393, dated Sept. 25, 1968.
For Weaving Looms, Weaving Machines, and Parts Thereof (Int. Cl. 7).

SN 336,855. Tweedy of Burnley Limited, Burnley, England. Filed Aug. 26, 1969.



Owner of British Reg. No. B923,817, dated Apr. 16, 1968.
For Mechanical Conveyors and Mixing and Comminuting Machines for Powdered Materials, Dough Moulding Machines, Panning and Feeding Machines, Bread Slicing Machines, and Parts of All the Foregoing (Int. Cl. 7).

SN 336,587. Morden Machines Company, Portland, Oreg. Filed Aug. 28, 1969.



Owner of Reg. Nos. 720,635 and 854,090.
For Machine for Treating Pulp and Paper Stock (Int. Cl. 7).
First use on or about June 6, 1969.

SN 337,013. Curtis Systems Ltd., Basel, Switzerland. Filed Sept. 4, 1969.

CSM

Priority claimed under Sec. 44(d) on Swiss Reg. No. 238,830, dated May 9, 1969.
For Machines for Manufacturing Woven Labels for the Textile Industry (Int. Cl. 7).

SN 343,046. F. D. Farnam Co., Lyons, Ill. Filed Nov. 10, 1969.

UNIPLATE

Owner of Reg. No. 883,162.
For Laminated Valve Plate Assemblies Used in Automatic Transmissions for Motor Vehicles (Int. Cl. 12).
First use Aug. 6, 1968.

Class 26—Measuring and Scientific Appliances

SN 305,359. Universal Interloc, Inc. (Pennsylvania corporation), Trevose, Pa., assignee of Universal Interloc, Inc. (California corporation), Santa Ana, Calif. Filed Aug. 16, 1968.

UNI-LOC

For Electrical and Electronic Measuring and Control Instruments and Systems for Use With Circulating Water Systems and Process Streams—Namely, pH Probes, Meters and Controllers; Corrosivity Meters, Recorders and Controllers; Conductivity Meters, Recorders and Controllers; Colorimeters and Colorimetric Recorders; and Systems Including Various Combinations of the Foregoing Instruments and Systems (Int. Cl. 9).
First use Mar. 30, 1965.

SN 305,595. Time/Data Corporation, Palo Alto, Calif. Filed Aug. 21, 1968.

TIME/DATA

For Computers (Int. Cl. 9).
First use Oct. 30, 1967.

SN 305,876. Becton, Dickinson and Company, East Rutherford, N.J. Filed Aug. 26, 1968.

I PLATE

For Culture Media Containers—Namely, Petri Dishes (Int. Cl. 9).
First use Jan. 25, 1962.

SN 309,792. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Oct. 16, 1968.

MAGNESCALE

For Magnetic Scales (Int. Cl. 9).
First use June 27, 1968; in commerce June 27, 1968.

SN 313,001. Information International, Inc., Cambridge, Mass. Filed Nov. 25, 1968.



INFORMATION INTERNATIONAL

For Fully Automatic Visual Information Processing Equipment and Systems—Namely, a Programmable Film Reader Which Is a Fully Automatic Computer-Controlled Optical Electronic System Capable of Analyzing Any Information Recorded on Photographic Film or Converting It to a Computer Magnetic Tape Format for Further Processing or Analysis; Automatic Systems Capable of the Analysis of Data Presented in True Natural Form or State Without Prior Recording on Photographic Film; Graphics Terminals or Display Devices Which Enhance Man/Computer Communications (Int. Cl. 9).
First use May 1967.

SN 313,407. Firma G. Reicherter, Beteiligungs- und Verwaltungesellschaft mit beschrankter Haftung, Esslingen am Neckar, Germany. Filed Dec. 2, 1968.

BRIRO

For Hardness Testing and Measuring Machines (Int. Cl. 9).
First use 1938; in commerce 1938.

SN 314,577. Midland International Corporation, North Kansas City, Mo. Filed Dec. 16, 1968.

MEDALLION

For Electric Voltmeters, Ammeters, and Tachometers (Int. Cl. 9).
First use on or about Oct. 25, 1968.

SN 315,681. Elliott Business Machines, Inc., Randolph, Mass. Filed Dec. 17, 1968.

6016

For Addressing Machines Including Programmable Selection and Sorting With Plug Board Control (Int. Cl. 16).
First use October 1966.

SN 316,430. Graymills Corporation, Chicago, Ill. Filed Jan. 13, 1969.

ALCO-GARD

For Automatic Control for Maintaining a Predetermined Percentage of Alcohol in Offset Fountain Solutions Used in Offset Printing Presses (Int. Cl. 9).
First use Aug. 26, 1968.

SN 317,309. Berkey Photo, Inc., New York, N.Y. Filed Jan. 23, 1969.

BERKEYCOLOR

For Photographic Film (Int. Cl. 1).
First use during June 1968.

SN 317,644. Stimulant Products, Inc., Los Angeles, Calif. Filed Jan. 27, 1969.

THE BEAUTY MAKER

For Magnifying Lens for Use With a Mirror (Int. Cl. 9).
First use on or about Jan. 15, 1969.

SN 318,423. Howe Richardson Scale Company, Clifton, N.J. Filed Feb. 5, 1969.

VALVE-PAK

For Combined Weighing and Packaging Machines (Int. Cl. 9).
First use May 9, 1968.

SN 319,390. The Stanley Works, New Britain, Conn. Filed Feb. 17, 1969.

ALL-N-ONE

For Measuring Tool in the Form of a Combination Gauge, Level, Square, Protractor, etc. and Useful in the Building Trades and Crafts (Int. Cl. 9).
First use Nov. 14, 1967.

SN 319,818. Calark, Inc., Little Rock, Ark. Filed Feb. 24, 1969.

SEEDMINDER

For Electrically Operated Seed Planter Feeding Indicator and Counting Machanism and a Circuit Control for Providing a Visual and Numerical Indication of the Passage of Seed Through the Planter Unit (Int. Cl. 9).
First use Jan. 24, 1969.

SN 319,886. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. Filed Feb. 24, 1969.

GEMCO

Owner of Reg. Nos. 793,315, 793,316, and 850,581.
For Cardboard, Paper, Foil, and Combination Paper and Foil Photographic Transparency Slide Binders (Int. Cl. 9).
First use Jan. 2, 1964.

SN 325,331. Automated Environmental Systems, Inc., Woodbury, N.Y. Filed Apr. 23, 1969.



For Water Quality Monitors; Air Pollution Monitors; and Analytical Instrumentation—Namely, Process Analyzers, Continuous Colorimetric Analyzers, and Total Organic Carbon Analyzers (Int. Cl. 9).
First use Feb. 24, 1969, on water quality monitors.

SN 326,880. Information Control Systems, Inc., Ann Arbor, Mich. Filed May 9, 1969.

astrotype

For Computerized Typing and Text Editing Machines (Int. Cl. 9).
First use Oct. 28, 1968.

SN 328,120. General Electric Company, Schenectady, N.Y. Filed May 27, 1969.



Owner of Reg. Nos. 271,399, 821,589, and others.
For Electronic, Nuclear, Industrial and Laboratory Testing, Measuring, Computing and Control Instruments, Apparatus and Systems (Int. Cl. 9).
First use at least as early as 1909.

SN 330,811. American Gage & Machine Company, Chicago, Ill. Filed June 24, 1969.

ACCU-LOG

For Volt-Ohm-Milliammeters (Int. Cl. 9).
First use during March 1969.

SN 331,947. Stimulant Products, Inc., Los Angeles, Calif. Filed July 7, 1969.

THE IMAGE MAKER

For Magnifying Lens for Use With a Mirror (Int. Cl. 9).
First use June 18, 1969.

SN 332,222. Charles Daly, Inc., New York, N.Y. Filed July 10, 1969.

GRAND SLAM

For Rifle Scopes, Telescopes, and Binoculars (Int. Cl. 9).
First use May 16, 1969.

SN 333,254. Eastman Kodak Company, Rochester, N.Y. Filed July 23, 1969.

EKTAPAN

For Sensitized Photographic Film (Int. Cl. 1).
First use May 15, 1969.

SN 333,401. Hach Chemical Company, Ames, Iowa. Filed July 24, 1969.

INCUTROL

For Biochemical Oxidation Measuring Apparatus and Temperature Control Apparatus for Biochemical Oxygen Demand Incubation (Int. Cl. 9).
First use at least as early as August 1968.

SN 334,745. Royal Industries, Inc., Pasadena, Calif. Filed Aug. 7, 1969.

LUM-O-TRON

For Instrument for Electronically Measuring the evenness of Illumination, Particularly Useful in the Photographic Industry for Measuring the Evenness of Illumination at the Emulsion Plane in Cameras (Int. Cl. 9).
First use on or about June 30, 1969.

SN 335,080. Typagraph Corporation, San Diego, Calif. Filed Aug. 11, 1969.

typagraph

For Computer Input and Output Terminals (Int. Cl. 9).
First use Apr. 19, 1969.

SN 340,709. GAF Corporation, New York, N.Y. Filed Oct. 15, 1969.

VIEW-MASTER

Owner of Reg. No. 529,224.
For Stereoscopes, Stereoscopic Projectors, Projectors for Two-Dimensional Views, Stereoscopic Cameras, Film Cutters, Projection Screens, and Parts of the Foregoing Apparatuses; Photographic Transparency Mounts and Transparency Mount Receptacles Designed for Carrying Transparency Mounts (Int. Cl. 9).
First use Mar. 1, 1939.

SN 342,212. Paul Rosenthal, Inc., Great Neck, N.Y. Filed Oct. 31, 1969.

ROMISCOPE

For Metallurgical Opaque Projectors (Int. Cl. 9).
First use Oct. 2, 1969.

SN 342,349. AMBAC Industries, Incorporated, Garden City, N.Y. Filed Nov. 3, 1969.



No exclusive claim to the word "Meter" is made except in the combination shown in the mark. Owner of Reg. No. 804,224.
For Fuel Metering and Fuel Injecting Systems for Diesel Engines, and Parts Thereof (Int. Cl. 9).
First use Oct. 15, 1969; as early as Jan. 28, 1965, as to "Hydra Meter."

Class 27 — Horological Instruments

SN 336,357. Voumard Montres S.A., Hauterive, Neuchatel, Switzerland. Filed Aug. 26, 1969.

EVERSWISS

Owner of Swiss Reg. No. 180,760, dated Feb. 13, 1960.
For Movements of Watches; and Watches of All Kinds, Including Alarm Clocks and Small Clocks (Int. Cl. 14).

Class 28 — Jewelry and Precious-Metal Ware

SN 330,604. Maui Divers of Hawaii Ltd., Honolulu, Hawaii. Filed June 20, 1969.



For Rings, Earrings, Pendants, and Pins (Int. Cl. 14).
First use Jan. 10, 1969, on rings.

Class 29 — Brooms, Brushes, and Dusters

SN 336,582. Lloyd H. Leonard, d.b.a. Leonard Industries, Sherman Oaks, Calif. Filed Aug. 28, 1969.

SHOEMASTER

For Electrically Operated Shoe Cleaning and Polishing Machines (Int. Cl. 7).
First use July 3, 1969.

SN 342,702. Paint Brush Corporation, Melrose Park, Ill. Filed Nov. 5, 1969.

NYREL

For Paint Brushes (Int. Cl. 16).
First use Oct. 13, 1969.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 310,098. Harvestall Industries, Inc., New Hampton, Iowa. Filed Oct. 21, 1968.

VAPORALL

For Liquid Propane Vaporizer for Use With Grain Bin Gas Burners (Int. Cl. 11).
First use Sept. 19, 1968.

SN 312,764. Bangor Punta Operations, Inc., Bangor, Maine. Filed Nov. 21, 1968.

FECO

For Industrial Ovens and Dryers (Int. Cl. 11).
First use on or about May 24, 1968.

SN 315,664. Dunham-Bush, Inc., West Hartford, Conn. Filed Dec. 30, 1968.



Owner of Reg. Nos. 771,880 and 779,813.
For Unit Heaters, Convector Heaters, Finned Pipe Heating Elements and Covers, Heating Coils, Baseboard Radiation Units, Central Station Multi-Zone Air Conditioning Units, Expansion Tanks and Steam Converters for Heating Systems and Air Vents for Steam Systems (Int. Cl. 11).
First use about April 1966; spring of 1965 as to one form of the mark.

SN 335,060. Rotron Incorporated, Woodstock, N.Y. Filed Aug. 11, 1969.

BISCUIT

For Electric Motor Driven Ventilating Fans and Blowers (Int. Cl. 11).
First use on or about July 15, 1969.

SN 335,379. Standard Oil Company of California, San Francisco, Calif. Filed Aug. 14, 1969.



The drawing is lined for the colors red and blue; applicant claims the colors red, white and blue. Owner of Reg. Nos. 825,752 and 819,092.
For Water Heaters (Int. Cl. 11).
First use Aug. 14, 1968.

SN 336,081. Bettcher Manufacturing Corporation, Cleveland, Ohio. Filed Aug. 25, 1969.

ROLL-IN' -RAY

For Portable Infra-Red Heaters (Int. Cl. 11).
First use Aug. 19, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 339,743. Page Belting Company, Concord, N.H. Filed Oct. 3, 1969.

CROWN

Owner of Reg. Nos. 21,924, 514,182, and others.
For Leather Belting and Leather Packing (Int. Cls. 7 and 17).
First use in or about 1901.

SN 342,144. Cordovan Associates, Incorporated, Dayton, Ohio. Filed Oct. 30, 1969.

MULTIGLAS

For Vehicle Tires (Int. Cl. 12).
First use Sept. 5, 1969.

Class 36 — Musical Instruments and Supplies

SN 342,173. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 30, 1969.

HIGHLANDER

For Cassette Containing Magnetic Recording Tape (Int. Cl. 9).
First use Aug. 22, 1969.

Class 37 — Paper and Stationery

SN 278,227. Marsh Stencil Machine Company, Belleville, Ill. Filed Aug. 14, 1967.



MARSH

For Felt-Point Pens (Int. Cl. 16).
First use July 1961.

SN 314,618. The Reynolds and Reynolds Company, Dayton, Ohio. Filed Dec. 16, 1968.

The Reynolds & Reynolds Company

For Business Forms (Int. Cl. 16).
First use in or prior to February 1962.

SN 326,975. Avrick & Company, Inc., Long Island City, N.Y. Filed May 12, 1969.

FingerSeal

For Envelopes (Int. Cl. 16).
First use May 8, 1962.

SN 328,199. Phillips Petroleum Company, Bartlesville, Okla. Filed May 23, 1969.

ELASTO-PAK

For Plastic Film for Packaging (Int. Cl. 16).
First use on or about Nov. 4, 1966.

SN 328,782. The Standard Register Company, Dayton, Ohio. Filed June 2, 1969.

MACHINE MATED

Owner of Reg. No. 791,212.
For Business Forms (Int. Cl. 16).
First use Jan. 30, 1964.

Class 38 — Prints and Publications

SN 302,800. Chronicle Publishing Company, St. Charles, Ill. Filed July 9, 1968.

MINI-GOLD

For Calendars (Int. Cl. 16).
First use May 15, 1968.

SN 302,802. Chronicle Publishing Company, St. Charles, Ill. Filed July 9, 1968.

MINI-DATE

For Calendars (Int. Cl. 16).
First use May 15, 1968.

SN 310,156. Visual Education Association, Inc., Dayton, Ohio. Filed Oct. 21, 1968.

THINK GERMAN

For the purpose of this application only and without waiver of common law rights, applicant makes no claim to the word "German" used apart from the mark as shown.
For Study-Aids for Self-Teaching Language, Comprising Visual Textual Cards and Accompanying Phono-Records (Int. Cl. 16).
First use Aug. 30, 1968.

Class 39 — Clothing

SN 301,445. Phillips-Van Heusen Corporation, New York, N.Y. Filed June 26, 1968.

PEBBLESTONE

For Men's and Boys' Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts and Slacks and Sweaters (Int. Cl. 25).
First use Apr. 25, 1968.

SN 310,589. Ricmel, Inc., Plainfield, N.J. Filed Oct. 25, 1968.

THE FURRY NECK THING

For Fur Scarves (Int. Cl. 25).
First use May 13, 1968.

SN 323,263. The Commercial Electric Company, Toledo, Ohio. Filed Apr. 1, 1969.

MARK ONE

For Men's and Women's Sweaters and Women's Dresses, Suits and Coats (Int. Cl. 25).
First use Mar. 2, 1967.

SN 323,281. Exquisite Form Industries, Inc., New York, N.Y. Filed Apr. 1, 1969.

"FUL-LY"

For Brassieres (Int. Cl. 25).
First use Mar. 21, 1969.

SN 323,542. Eagle Clothes, Inc., New York, N.Y. Filed Apr. 3, 1969.

EAGLE
CARDINAL
CLOTHES

Applicant disclaims the word "Clothes" apart from the mark shown. Owner of Reg. Nos. 350,181, 790,755, and others.
For Men's Coats, Topcoats, and Suits (Int. Cl. 25).
First use Feb. 1, 1969; September 1912 as to "Eagle"; Dec. 1, 1952, as to "Cardinal."

SN 325,569. Auerbach Bath Robe Corp., New York, N.Y. Filed Apr. 25, 1969.

KEEMOE

For Men's and Boys' Bath Robes, Dressing Robes, and Lounging Robes (Int. Cl. 25).
First use on or about Apr. 22, 1969.

SN 327,859. Collins & Aikman Corporation, New York, N.Y. Filed May 21, 1969.

SILQUILT

For Satin Tricot for Women's Wearing Apparel—Namely, Lingerie and Loungewear (Int. Cl. 25).
First use Jan. 31, 1969.

SN 327,862. Continental Alliance Corporation, Denver, Colo. Filed May 21, 1969.

miss Elliette

For Women's Apparel—Namely, Dresses, Suits, and Pants (Int. Cl. 25).
First use on or about June 1, 1953, on dresses.

SN 328,713. Mayflower Dress Co., Inc., New York, N.Y. Filed May 29, 1969.

LINCOLN CORNER

Owner of Reg. No. 860,159.
For Women's, Ladies', and Misses' Dresses, Shifts, Shirts, Blouses, Slacks, Culottes, Jackets, and Skirts (Int. Cl. 25).
First use Apr. 16, 1969.

SN 329,906. Valnit Hosiery, Inc., New York, N.Y. Filed June 12, 1969.

Valnit

For Panty Hose (Int. Cl. 25).
First use May 20, 1969.

SN 334,655. Wembley, Inc., New Orleans, La. Filed Aug. 6, 1969.

Cotton-Flair

For Men's Neckwear (Int. Cl. 25).
First use May 1, 1969.

SN 335,735. Thomas J. Beasley, Jr., Cocoa, Fla. Filed Aug. 20, 1969.

DOGGERS by Beasley

For Sports Apparel—Namely, Swim Trunks, Shirts, and Socks (Int. Cl. 25).
First use Jan. 1, 1964.

SN 336,036. V.F. Corporation, Reading, Pa. Filed Aug. 22, 1969.

VF

Owner of Reg. No. 702,634.
For Brassieres, Slips, Nightgowns, and Negligees (Int. Cl. 25).
First use July 14, 1969.

SN 339,201. Jonathan Logan, Inc., New York, N.Y. Filed Sept. 29, 1969.

BLEEKER STREET

For Dresses (Int. Cl. 25).
First use Aug. 2, 1966.

SN 342,115. E-Z Mills, Inc., New York, N.Y. Filed Oct. 30, 1969.

E-Z

Owner of Reg. No. 766,415.
For Underwear and Sleepwear (Int. Cl. 25).
First use in or before 1965.

SN 342,592. The Lovable Company, Atlanta, Ga. Filed Nov. 4, 1969.

HINDSIGHT

For Women's Foundation Garments (Int. Cl. 25).
First use Oct. 22, 1969.

SN 342,935. Munsingwear, Inc., Minneapolis, Minn. Filed Nov. 7, 1969.

BRA-TIQUES

For Bras, Girdles, and Lingerie (Int. Cl. 25).
First use May 25, 1969.

Class 40—Fancy Goods, Furnishings, and Notions

SN 312,788. Ishmael McCullough, Ltd., New York, N.Y. Filed Nov. 21, 1968.

the easy eye

Applicant disclaims the word "Eye" apart from the mark as shown.
For False Eyelashes Combined With Eyeliner (Int. Cl. 26).
First use May 6, 1968.

SN 341,596. Preferred Fashions, Inc., North Kansas City, Mo. Filed Oct. 24, 1969.

IMPOSTER

For Wigs (Int. Cl. 26).
First use Sept. 2, 1969.

SN 341,597. Preferred Fashions, Inc., North Kansas City, Mo. Filed Oct. 24, 1969.

CHELSEA

For Wigs (Int. Cl. 26).
First use July 23, 1969.

Class 41—Canes, Parasols, and Umbrellas

SN 331,231. Okuda Company New York, Inc., New York, N.Y. Filed June 27, 1969.

oden

For Umbrellas (Int. Cl. 18).
First use May 15, 1969.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 317,002. Dan River Mills, Incorporated, Danville, Va. Filed Jan. 21, 1969.

DANTEX

For Woven and Knitted Apparel Fabrics in the Piece of Cotton, Synthetic Fibers, or Blends Thereof (Int. Cl. 24).
First use Jan. 2, 1969.

SN 318,792. Liberty Fabrics of New York, Inc., New York, N.Y. Filed Feb. 10, 1969.

FASHION MATES

The word "Fashion" is disclaimed apart from the mark as shown.
For Lace Fabrics; Powernet Fabrics; and Tricot Fabrics for Making Into Foundation Garments and Lingerie (Int. Cl. 24).
First use Dec. 16, 1968.

SN 331,515. Kentile Floors Inc., Brooklyn, N.Y. Filed July 1, 1969.

HOMESTAKE

For Rugs and Carpets (Int. Cl. 27).
First use May 21, 1969.

SN 331,543. Scottex Corporation, Brooklyn, N.Y. Filed July 1, 1969.

SCOTTEX

For Knitted Fabrics Made of Artificial or Natural Yarns or Mixtures of the Two (Int. Cl. 24).
First use on or about Apr. 15, 1969.

SN 340,704. Deering Milliken, Inc., New York, N.Y. Filed Oct. 15, 1969.

FLAMBOYANT

Owner of Reg. No. 783,735.
For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).
First use Oct. 9, 1969.

SN 340,717. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Oct. 15, 1969.

"YSL"

Owner of Reg. Nos. 766,417, 842,867, and 855,232.
For Hand Towels, Bath Towels, Wash Cloths, Window Drapes, Bath Rugs, Shower Curtains, Sheets, Pillow Cases, and Bedspreads (Int. Cls. 24 and 27).
First use Aug. 7, 1969.

SN 340,718. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Oct. 15, 1969.

YVES SAINT LAURENT

"Yves Saint Laurent" is the name of a living individual whose consent is of record. Owner of Reg. Nos. 767,211, 853,369, and others.
For Hand Towels, Bath Towels, Wash Cloths, Window Drapes, Bath Rugs, Shower Curtains, Sheets, Pillow Cases, and Bedspreads (Int. Cls. 24 and 27).
First use Aug. 7, 1969.

SN 341,079. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Oct. 15, 1969.

COLOR-SPACE

For Carpets (Int. Cl. 27).
First use June 17, 1968.

Class 43 — Thread and Yarn

SN 338,099. VSC, Inc., Clara City, Minn. Filed Sept. 17, 1969.

High Honor

Owner of Reg. Nos. 716,523 and 732,523.
For Knitting Yarn (Int. Cl. 23).
First use Jan. 1, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 314,532. Corometrics Medical Systems, Inc., North Haven, Conn. Filed Dec. 16, 1968.

COROMETRICS

For Instruments for Measuring and Monitoring Human Body Reactions and in Particular a Heartrate Monitoring System (Int. Cl. 10).
First use on or about Oct. 6, 1968.

SN 319,662. Dow Corning Corporation, Midland, Mich. Filed Feb. 20, 1969.

SILWELD

For Bonded Silicone Coating Sold as a Component Part of Latex Catheters (Int. Cl. 10).
First use Sept. 23, 1968.

SN 322,962. Capilustro S.P.R.L., Brussels, Belgium. Filed Mar. 27, 1969.

CAPIROLA

Priority claimed under Sec. 44(d) on Belgian Reg. No. 116,126, dated Oct. 4, 1968.
For Electrical and Non-Electrical Apparatus for the Setting and Otherwise Curling of Hair and for Keeping the Hair in Curls (Int. Cls. 7 and 9).

SN 323,555. The General Tire & Rubber Company, Akron, Ohio. Filed Apr. 3, 1969.

Mediware

No claim is made to the representation of the caduceus except in connection with the mark as shown.
For Bed Pans, Urinals, Wash Basins, Soap Dishes, Forceps, and Thermometer Jars and Bowls, All for Hospital Use (Int. Cl. 10).
First use Feb. 28, 1969.

SN 325,279. Aurium Research Corp., New York, N.Y. Filed Apr. 23, 1969.

AUROLITE

For Dental Gold (Int. Cl. 5).
First use March 1969.

Class 45 — Soft Drinks and Carbonated Waters

SN 310,870. Peter Eckes, Nieder-Olm, near Mainz, Germany. Filed Oct. 30, 1968.

APLA

Owner of German Reg. No. 846,011, dated Apr. 13, 1968.
For Apple Lemonades and Apple Drinks With Water (Int. Cl. 32).

SN 326,928. Triple "AAA" Company, Oklahoma City, Okla. Filed May 9, 1969.

TACOLA

Owner of Reg. No. 517,719.
For Cola-Type Soft Drink and Syrup Therefor (Int. Cl. 32).
First use Dec. 23, 1968.

SN 332,397. Kings Beverage Co. Inc., Brooklyn, N.Y. Filed July 11, 1969.

Party King K-OLÉ

For Carbonated Soft Drinks (Int. Cl. 32).
First use May 1, 1969.

Class 46 — Foods and Ingredients of Foods

SN 304,715. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Aug. 8, 1968.

INO-ICHIBAN

The English translation of "Ino-Ichiban" is "first and foremost."
For Mixture of Monosodium Glutamate, Disodium Inosinate and Disodium Guanylate for Use as a Food Seasoning (Int. Cl. 30).
First use Oct. 28, 1966; in commerce Oct. 28, 1966.

SN 305,658. Wilbur A. Lee, d.b.a. California "Hi-Lites," Monterey Park, Calif. Filed Aug. 21, 1968.

California "Hi-Lites"

Applicant disclaims all rights in the use of the word "California," apart from the mark as shown.
For Dried Fruit and Shelled Nuts Packaged as a Gift Basket (Int. Cl. 29).
First use June 15, 1967.

SN 307,105. Guestime Products Limited, Scarborough, Ontario, Canada. Filed Sept. 11, 1968.

GUESTIME

Owner of Canadian Reg. No. 157,204, dated June 7, 1968.
For Powdered Cocktail Mix (Int. Cl. 32).

SN 313,079. Dainty Cookies, Inc., Palisades Park, N.J. Filed Nov. 26, 1968.

dainty COOKIES, INC.

For Cookies (Int. Cl. 30).
First use at least as early as 1955.

SN 319,655. Western Alfalfa Corporation, Kansas City, Mo. Filed Feb. 19, 1969.

RufAlfa

For Livestock Feed (Int. Cl. 31).
First use Jan. 4, 1969.

SN 319,696. Conservas de Badajoz S.A., Madrid, Spain. Filed Feb. 20, 1969.

DON ALFONSO

The name "Don Alfonso" is fanciful.
For Canned Tomatoes (Int. Cl. 29).
First use May 8, 1968; in commerce Dec. 7, 1968.

SN 324,681. Blackwell Products, Inc., Montclair, Calif. Filed Apr. 16, 1969.

Sno Cone

The words "Sno Cone" are disclaimed apart from the mark as a whole. Owner of Reg. No. 879,201.
For Flavored Shaved Ice Confections (Int. Cl. 30).
First use Aug. 20, 1967.

SN 324,834. Pola-Rona, Inc., Winter Haven, Fla. Filed Apr. 17, 1969.

Or — Mil

The word "Milk" is disclaimed apart from the mark.
For Drink Mixture of Milk and Orange Juice (Int. Cl. 29).
First use June 27, 1956.

SN 326,983. Beatrice Foods Co., d.b.a. Chocolate Company of America, Chicago, Ill. Filed May 12, 1969.

WOODCHUCKS

For Candy (Int. Cl. 30).
First use Apr. 25, 1969.

SN 326,985. Beatrice Foods Co., d.b.a. Chocolate Company of America, Chicago, Ill. Filed May 12, 1969.

CAMPERS

For Candy (Int. Cl. 30).
First use Apr. 25, 1969.

SN 332,039. National Biscuit Company, New York, N.Y. Filed July 8, 1969.

ZINGS

Owner of Reg. No. 807,001.
For Biscuits and Crackers (Int. Cl. 30).
First use June 25, 1969.

SN 332,580. General Mills, Inc., Minneapolis, Minn. Filed July 15, 1969.

GUARDEX

Owner of Reg. No. 570,725.
For Ready-To-Eat Breakfast Cereal With Sodium Phosphates (Int. Cl. 30).
First use on or about May 21, 1969.

SN 332,582. General Mills, Inc., Minneapolis, Minn. Filed July 15, 1969.

SHAKE-O POOFS

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or about June 10, 1969.

SN 332,583. General Mills, Inc., Minneapolis, Minn. Filed July 15, 1969.

POOFS

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or about June 10, 1969.

SN 335,057. Polyunsaturates, Inc., Garden Grove, Calif. Filed Aug. 11, 1969.

Ace-Saff 60

For Safflower Oil Emulsion To Be Mixed With Skim Milk (Int. Cl. 29).
First use June 21, 1969.

Class 49 — Distilled Alcoholic Liquors

SN 309,850. Distillerie Stock U.S.A., Ltd., Woodside, N.Y. Filed Oct. 17, 1968.

KEGLEVICH

For Vodka (Int. Cl. 33).
First use Sept. 24, 1958.

SN 326,540. Mediterranean Importing Co., Inc., Long Island City, N.Y. Filed May 6, 1969.



No claim is made to the word "Liquore" separately and apart from the mark. The word "Ciao" is translated "hello" and "goodbye." The word "Liquore" is translated "liqueur."
Owner of Reg. Nos. 870,990 and 873,540.
For Liqueurs (Int. Cl. 33).
First use Aug. 23, 1968.

SN 336,266. Jay Lewis Ambrose, d.b.a. Scoresby Distillers Import Company, Santa Monica, Calif. Filed Aug. 13, 1969.

THE DEW OF KILKARREN

No claim is made to words "The Dew of" apart from the mark as shown.
For Scotch Whisky (Int. Cl. 33).
First use Mar. 16, 1968.

SN 340,220. E. Martinoni Co., d.b.a. National Bottlers Ltd., South San Francisco, Calif. Filed Oct. 9, 1969.

SITKA

For Vodka (Int. Cl. 33).
First use November 1965.

SN 340,221. E. Martinoni Co., d.b.a. The Richards Company, San Francisco, Calif. Filed Oct. 9, 1969.

CHATHAM

For Gin (Int. Cl. 33).
First use November 1965.

Class 50 — Merchandise Not Otherwise Classified

SN 298,101. Wallace L. Baker, Burley, Idaho. Filed May 14, 1968.

COW BOSS

For Animal Controlling and Restraining Apparatus (Int. Cl. 7).
First use Apr. 13, 1968.

SN 335,526. Aluminum Company of America, Pittsburgh, Pa. Filed Aug. 18, 1969.

ENCORE

For Closures and Caps for Containers, Such as Bottles, Jars and Cans (Int. Cl. 6).
First use at least as early as June 21, 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 299,776. Laboratoire Lachartre S.A., Paris, France. Filed Nov. 25, 1969.

LABORATOIRE LACHARTRE

The word "Laboratoire" is disclaimed apart from the mark as shown. The word "Laboratoire" is translated "laboratory."
Owner of French Reg. No. 531,209, dated May 12, 1965 (Seine); Natl. Inst. No. 248,285.
For Hair Shampoos (Int. Cl. 3).

SN 310,040. Gerda Spillmann, d.b.a. Gerda Spillmann, Beauty Preparations, Zurich, Switzerland. Filed Oct. 21, 1968.



The portrait and name on the drawing are that of a living individual whose consent is of record. Owner of Swiss Reg. No. 173,824, dated Jan. 13, 1959.
For Cosmetic Preparation, Protection Against Ultra-Violet Rays (Int. Cl. 3).

SN 325,885. The Mitchum Company, d.b.a. Wrisley, Paris, Tenn. Filed Apr. 29, 1969.

BLUE FERN

Without waiving its common law rights herein, applicant makes no claim to the word "Fern" apart from the mark as shown.
For Cologne, Bath Oil, and Bubble Bath Preparation (Int. Cl. 3).
First use Jan. 15, 1959, on cologne.

SN 326,613. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed May 7, 1969.

ALO-V

Without waiving any common law rights and solely for purposes of the registration, applicant disclaims the design of the aloe vera plant apart from the mark as shown.
For Cosmetic Skin Cleanser Cream (Int. Cl. 3).
First use Oct. 9, 1958.

SN 330,077. Vitabath Inc., New York, N.Y. Filed June 16, 1969.

TOUCHSTONE

For Cosmetic Sponges With Abrasive Characteristics (Int. Cl. 3).
First use Mar. 14, 1969.

SN 330,712. John H. Breck, Inc., Wayne, N.J. Filed June 23, 1969.

BRECK SATIN

Owner of Reg. Nos. 529,328, 874,405, and others.
For Hair Conditioner (Int. Cl. 3).
First use June 4, 1969.

SN 332,425. Skyline Ind., Inc., d.b.a. Countess Devere Cosmetic, Charlottesville, Va. Filed July 14, 1969.

PERMA-FACE

For Makeup Finishing Spray (Int. Cl. 3).
First use Mar. 27, 1969.

Class 52 — Detergents and Soaps

SN 308,671. Antonio Puig, S.A., Barcelona, Spain. Filed Oct. 2, 1968.

COSTABRAVA

Owner of Spanish Reg. No. 336,326, dated Apr. 7, 1959.
For Toilet Soap, Shaving Soap, Liquid and Powdered Laundry and General Cleaning Soaps, Laundry and General Cleaning Detergents, and Metal Cleaning Preparations (Int. Cl. 3).

SN 316,614. Caled Products Company, Inc., Brentwood, Md. Filed Jan. 15, 1969.

ZUDS

For Detergent Concentrate for Cleaning Garments in Water, for Sale to Laundry and Dry Cleaning Plants (Int. Cl. 3).
First use January 1954.

SN 321,301. Union Carbide Corporation, New York, N.Y. Filed Mar. 10, 1969.

TUFF STUFF

For Owner of Reg. Nos. 876,205 and 876,206.
For Multi-Purpose Cleaner for Automotive and Home Uses (Int. Cl. 3).
First use on or about Feb. 20, 1969.

SN 322,791. Huntington Laboratories, Inc., Huntington, Ind. Filed Mar. 26, 1969.

QUANTO

For General Purpose Concentrated Cleaner and Deodorizer for Household and Commercial Use (Int. Cl. 8).
First use Feb. 22, 1969.

SN 322,792. Huntington Laboratories, Inc., Huntington, Ind. Filed Mar. 26, 1969.

ZOWIE

For Heavy Duty, General Purpose Commercial Cleaner and Degreaser in Crystal Powdery Form (Int. Cl. 3).
First use Mar. 8, 1969.

SN 324,255. The Valspar Corporation, d.b.a. Degraco, Rockford, Ill. Filed Apr. 10, 1969.

TASK/MASTER

For Cleaner and Detergent Intended Primarily for Cleaning Floors (Int. Cl. 3).
First use About Oct. 1, 1968.

SN 325,163. John H. Breck, Inc., Wayne, N.J. Filed Apr. 22, 1969.

FRESH HAIR

Applicant disclaims any exclusive right to the term "Hair."
For Hair Shampoo (Int. Cl. 3).
First use Apr. 8, 1969.

SN 331,379. The Hy-trous Corporation, Boston, Mass. Filed June 30, 1969.

TERN

For Wool Wash Detergent and Nylon Wash Detergent (Int. Cl. 3).
First use Feb. 28, 1966.

SN 333,631. Lever Brothers Company, New York, N.Y. Filed July 28, 1969.

ENTRE NOUS

The French term "Entre Nous" is translated as meaning "between ourselves."
For Toilet Soap (Int. Cl. 3).
First use July 2, 1969.

SN 336,668. John H. Breck, Inc., Wayne, N.J. Filed Aug. 29, 1969.

BRECK ONE

Owner of Reg. Nos. 521,473, 874,405, and others
For Hair Shampoo (Int. Cl. 3).
First use Aug. 15, 1969.

SN 338,364. John H. Breck, Inc., Wayne, N.J. Filed Sept. 19, 1969.

BRECK AHEAD

Owner of Reg. Nos. 521,473, 821,259, and others.
For Hair Shampoo (Int. Cl. 3).
First use Aug. 28, 1969.

SN 338,365. John H. Breck, Inc., Wayne, N.J. Filed Sept. 19, 1969.

BRECK ONE & ONLY

Owner of Reg. Nos. 521,473, 529,328, and others.
For Hair Shampoo (Int. Cl. 3).
First use Aug. 28, 1969.

SN 338,366. John H. Breck, Inc., Wayne, N.J. Filed Sept. 19, 1969.

BRECK ONE BEAUTIFUL

Owner of Reg. Nos. 521,473, 529,328, and others.
For Hair Shampoo (Int. Cl. 3).
First use Aug. 28, 1969.

SN 342,117. Huntington Laboratories, Inc., Huntington, Ind. Filed Oct. 30, 1969.

RECOUP

For Degreasing Compound (Int. Cl. 3).
First use Oct. 10, 1969.

SN 343,051. Intermountain Appliance Supply Corporation, Salt Lake City, Utah. Filed Nov. 10, 1969.



For Laundry and Dishwashing Detergents (Int. Cl. 3).
First use Jan. 2, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 290,823. CER Geonuclear Corporation, Las Vegas, Nev. Filed Feb. 12, 1968.

GEONUCLEAR CORPORATION

No registration rights are claimed for the word "Corporation" when used properly as a descriptive designation, but applicant waives none of its common law rights in the mark.
For Research, Consultation and Operational Fielding Services in the Area of Promoting, Developing and Conducting Peaceful Uses of Nuclear Explosives (Int. Cl. 42).
First use July 5, 1966.

SN 291,088. Omega-T Systems Incorporated, Richardson, Tex. Filed Feb. 14, 1968.

OMEGA-T

For Engineering System Management, Analysis, Design and Implementation Services in Fields of Electronic Products and Services and, Particularly, Communication Systems and Equipment (Int. Cl. 42).
First use Sept. 12, 1967.

SN 291,089. Omega-T Systems Incorporated, Richardson, Tex. Filed Feb. 14, 1968.



For Engineering System Management, Analysis, Design and Implementation Services in the Fields of Electronic Products and Services and, Particularly, Communication Systems and Equipment (Int. Cl. 42).
First use Sept. 12, 1967.

SN 309,465. The Macke Company, Cheverly, Md. Filed Oct. 11, 1968.

PIK-N-PAY

For Cafeteria Services Including Cafeterias in Which Food is Dispensed Through Vending Machines (Int. Cl. 42).
First use March 1968.

SN 325,558. Smoke Quitters of Greater Philadelphia, Inc., Philadelphia, Pa. Filed Apr. 25, 1969.

SMOKE QUITTERS

For Association Services—Namely, Helping People Conquer Tobacco Addiction and Implementing Said Services Through Instruction and Consultation (Int. Cl. 42).
First use Apr. 9, 1969.

SN 325,559. Smoke Quitters of Greater Philadelphia, Inc., Philadelphia, Pa. Filed Apr. 25, 1969.



Applicant disclaims the representation of the broken cigarette apart from the mark as shown, reserving unto itself all common-law rights which it may have or acquire in said representation.
For Association Services—Namely, Helping People Conquer Tobacco Addiction and Implementing Said Services Through Instruction and Consultation (Int. Cl. 42).
First use Apr. 9, 1969.

SN 325,691. Eddy Arnold's Tennessee Fried Chicken, Inc., Nashville, Tenn. Filed Apr. 28, 1969.

EDDY'S

For Restaurant Services (Int. Cl. 42).
First use Dec. 3, 1968.

SN 333,011. The Twentieth Century Fund, Inc., New York, N.Y. Filed July 18, 1969.



For Undertaking Studies of and Conducting Research Into Political, Social and Economic Institutions and Issues in Furtherance of the Collection and Dissemination of Facts and Knowledge and the Improvement of Educational Methods (Int. Cl. 42).
First use Dec. 15, 1968.

SN 333,184. Rusty's Country Fried Chicken, Inc., Kankakee, Ill. Filed July 22, 1969.

RUSTY'S

For Restaurant Services (Int. Cl. 42).
First use Oct. 1, 1968.
Subj. to Intf. with SN 333,298.

SN 333,298. Rusty's, Inc., Macon, Ga. Filed July 23, 1969.



The drawing is lined for the colors red, blue, yellow, and brown.
For Restaurant Services (Int. Cl. 42).
First use June 23, 1969.
Subj. to Intf. with SN 333,184.

SN 333,338. Hotel Corporation of America, Boston, Mass. Filed July 24, 1969.



For Hotel, Restaurant, and Bar Services (Int. Cl. 42).
First use Mar. 28, 1969.

SN 338,332. Samuel J. Temperato, d.b.a. The Sociables, St. Louis, Mo. Filed Sept. 19, 1969.

THE SOCIABLES

For Social Club Services (Int. Cl. 42).
First use Sept. 15, 1969.

SN 339,661. Angel Foods Systems, Inc., Chicago, Ill. Filed Oct. 3, 1969.

ST. GEORGE AND THE DRAGON

For Restaurant, Catering and Carry-Out Services (Int. Cl. 42).
First use at least as early as Sept. 21, 1969.

SN 343,222. Marriott Corporation, Washington, D.C. Filed Nov. 12, 1969.

GOLDEN ANCHOR

For Serving of Foods and Beverages in Restaurants (Int. Cl. 42).
First use at least as early as Apr. 9, 1969.

SN 343,635. Taco Bell, Inc., Torrance, Calif. Filed Nov. 17, 1969.



Owner of Reg. Nos. 820,073, 846,432, and 856,207.
For Restaurant Services (Int. Cl. 42).
First use on or about Apr. 9, 1969.

Class 101 — Advertising and Business

SN 294,545. Tower Personnel Service, Inc., Fort Wayne, Ind. Filed Mar. 29, 1968.

TOWER

For Employment Agency Services (Int. Cl. 35).
First use June 1, 1953.

SN 309,165. Doane Agricultural Service, Inc., St. Louis, Mo. Filed Oct. 8, 1968.

ELECTRO-COUNT

For Bookkeeping Services (Int. Cl. 35).
First use Aug. 15, 1968.

SN 329,316. Susan Ives Stores, Inc., New York, N.Y. Filed June 6, 1969.

UPS 'N DOWNS

For Retail Clothing Store Services Specializing in Women's and Misses' Apparel (Int. Cl. 35).
First use Apr. 16, 1963.

SN 337,275. Continental Telephone Corporation, St. Louis, Mo. Filed Sept. 8, 1969.

FDS

For Data Processing Services—Namely, Data Processing Services for Financial Institutions (Int. Cl. 35).
First use June 1966.

SN 339,786. Computer Systems Laboratories, Incorporated, Red Bank, N.J. Filed Oct. 6, 1969.

STOCS

For Computer and Automatic Data Processing Services Relating to Stock Brokerage Bookkeeping, Accounting, and Information Analysis and Reporting (Int. Cl. 35).
First use Sept. 10, 1969.

Class 102 — Insurance and Financial

SN 308,362. Century Mutual Insurance Company, Charlotte, Mich. Filed Sept. 27, 1968.



For Underwriting Liability and Property Insurance (Int. Cl. 36).
First use in or about March 1966.

SN 322,520. The College Life Insurance Company of America, Indianapolis, Ind. Filed Mar. 24, 1969.

BENEFACTOR

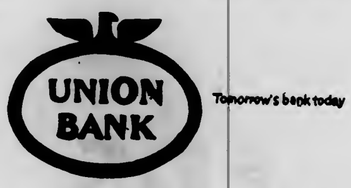
For Underwriting Insurance (Int. Cl. 36).
First use Oct. 2, 1946.

SN 324,810. Family Finance Corporation, Wilmington, Del. Filed Apr. 17, 1969.



For Consumer Finance Services (Int. Cl. 36).
First use on or about Sept. 17, 1968.

SN 341,608. Union Bank, Los Angeles, Calif. Filed Oct. 24, 1969.



The word "Bank" is disclaimed apart from the association shown. Owner of Reg. Nos. 739,199 and 749,805.
For General Banking Services, Such as Loans, Savings and Checking Accounts, Escrow Transactions, Various Trust Services, and the Like (Int. Cl. 36).
First use January 1969.

Class 103 — Construction and Repair

SN 318,589. Springfield Enterprises, Inc., Lubbock, Tex. Filed Feb. 6, 1969.



The drawing is lined for the colors red and blue.
For Automatic Car Washing (Int. Cl. 37).
First use Mar. 1, 1968.

SN 323,247. The British Petroleum Company Limited, London E.C. 2, England. Filed Apr. 1, 1969.

BP

Owner of U.S. Reg. No. 654,019.
For Operation of Automobile Service Stations, Refueling and Supplying Lubricating Oils and Greases to Aircraft and Marine Vessels (Int. Cl. 37).
First use Mar. 11, 1969; in commerce Mar. 11, 1969.

Class 104 — Communication

SN 307,695. WAIT, Chicago, Ill. Filed Sept. 18, 1968.

THE WORLD'S MOST BEAUTIFUL MUSIC

For Radio Broadcasting Services (Int. Cl. 38).
First use at least as early as 1950.

Class 105 — Transportation and Storage

SN 304,381. Pacific Inland Navigation Company, Inc., Seattle, Wash. Filed Aug. 5, 1968.



The mark is lined for the color gold, but that color is not claimed as a feature of the mark.
For Tug, Barge and Over-The-Beach Services—Namely, Providing of Freight Transportation Services by Tugboat, Barge and Amphibious Craft and the Providing of related Services in Loading and Unloading of Freight, Including Lightering by Boat and Amphibious Craft (Int. Cl. 39).
First use Dec. 1, 1967.

SN 323,846. Riss International Corporation, Kansas City, Mo. Filed Apr. 7, 1969.



For Freight Transportation Service by Truck (Int. Cl. 39).
First use September 1968.

SN 332,674. Tourstars Inc., New York, N.Y. Filed July 16, 1969.



For Travel Agency Services—Namely, Planning Vacations, Tours, and Trips; Arranging Travel Accommodations and Reservations; Arranging Car Rentals; Freight Forwarding; Making Hotel and Sleeping Reservations, as Same are Required in Connection With Such Services (Int. Cl. 39).
First use May 7, 1969.

SN 336,058. The Flying Tiger Line Inc., Los Angeles, Calif. Filed Aug. 25, 1969.



The drawing is lined for the colors red and blue, but color is not claimed as a feature of the mark
For Air Transportation of Persons, Property, and Mail by Airplane (Int. Cl. 39).
First use latter part of June 1960.

Class 106 — Material Treatment

SN 300,356. Howard's Photo Laboratories, Inc., Fort Wayne, Ind. Filed June 13, 1968.



For Photo Finishing Services (Int. Cl. 40).
First use Sept. 30, 1966.

SN 320,430. Carhart Photo, Inc., Rochester, N.Y. Filed Mar. 3, 1969.



For Photo-Finishing Services (Int. Cl. 40).
First use July 1, 1968.

Class 107 — Education and Entertainment

SN 290,858. The International Platform Association, Cleveland Heights, Ohio. Filed Feb. 12, 1968.



For Association Services—Namely, Providing Educational Material and Services and Information to its Members in the Platform, Lecture and Entertainment Field (Int. Cl. 41).
First use May 1, 1967.

SN 301,825. Erie Technological Products, Inc., Erie, Pa. Filed July 2, 1968.

EDU PAC

For Supplying Custom Prerecorded Tapes for Individual Salesmen's Automobile Tape Recorder Containing Sales Training and Educational Material (Int. Cl. 41).
First use April 1968.

SN 303,059. Don Maurice, d.b.a. Grooming Dynamics, San Diego, Calif. Filed July 18, 1968.



The word "Grooming" is disclaimed apart from the mark as shown.
For Teaching Men's Hair Styling, Hair Grooming and Personal Grooming Services and Teaching Practitioners and Prospective Practitioners in That Art (Int. Cl. 41).
First use Feb. 15, 1968.

SN 319,280. Cincinnati Reds, Inc., Cincinnati, Ohio. Filed Feb. 17, 1969.

CINCINNATI REDS

For Entertainment Services—Namely, Baseball Contests Rendered Live Through the Media of Radio and Television Broadcasts (Int. Cl. 41).
First use 1884.

SN 324,759. Stefan T. Shmitt, d.b.a. "Stuffy" Shmitt, Milwaukie, Wis. Filed Apr. 16, 1969.

FAIR AND WARMER

For Performances of Contemporary Folk Music (Int. Cl. 41).
First use May 1967.

SN 326,589. The Detroit Hockey Club, Inc., Detroit, Mich. Filed May 7, 1969.

RED WINGS

For Entertainment Services—Namely, Providing Professional Ice Hockey Exhibitions (Int. Cl. 41).
First use 1933.

SN 328,107. Chicago Blackhawk Hockey Team, Inc., Chicago, Ill. Filed May 26, 1969.

BLACK HAWKS

For Entertainment Services in the Nature of Professional Ice Hockey Exhibitions (Int. Cl. 41).
First use Sept. 25, 1926.

SN 328,108. Chicago Blackhawk Hockey Team, Inc., Chicago, Ill. Filed May 26, 1969.



For Entertainment Services in the Nature of Professional Ice Hockey Exhibitions (Int. Cl. 41).
First use not later than 1954.

SN 333,069, Wenner-Gren Foundation for Anthropological Research, Inc., New York, N.Y. Filed July 22, 1969.



For Promoting Anthropological Studies by Awarding Grants and Research Fellowships and Disseminating Anthropological Information by Distributing Literature Relating Thereto, and Promoting Lectures, Seminars, Conferences, Articles, and the Like (Int. Cl. 41).
First use Dec. 1, 1947.

SN 338,327. San Francisco-Oakland Hockey Club, Inc., Oakland, Calif. Filed Sept. 19, 1969.

SEALS

For Entertainment Services in the form of Professional Ice Hockey Contests (Int. Cl. 41).
First use not later than June of 1967.

SN 340,875. Berlitz Schools of Languages of America, Inc., New York, N.Y. Filed Oct. 16, 1969.

BERLITZ

Owner of Reg. Nos. 524,786 and 822,586.
For Foreign Language Instruction (Int. Cl. 41).
First use at least as early at 1878.

SN 341,000. San Francisco Warriors, San Francisco, Calif. Filed Oct. 17, 1969.



For Entertainment Services in the Nature of Basketball Exhibitions (Int. Cl. 41).
First use Oct. 15, 1966.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 307,031. Jesus' Church, Inc., Huntington, W. Va. Filed Sept. 10, 1968.

JESUS' CHURCH

For Indicating membership in applicant.
First use 1946.

CERTIFICATION MARKS

Class A—Goods

SN 342,400. Boating Industry Association, Chicago, Ill. Filed Nov. 3, 1969.



The mark certifies that the goods comply with the standards and engineering recommendations promulgated by applicant.
For Boats, Motors, and Boating Equipment.
First use on or about Sept. 1, 1969.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

888,496. M AND DESIGN. Metallgesellschaft Aktiengesellschaft. MULTIPLE CLASS (Classes 1, 5, 6, 12, 14, and 21). SN 276,335. Pub. 1–13–70. Filed 7–19–67.

888,497. FARBERTITE AND DESIGN. Briggs Bituminous Composition Co. SN 293,799. Pub. 1–13–70. Filed 3–21–68.

888,498. SOLAR-X. Solar Control Products Corp. SN 322,237. Pub. 9–16–69. Filed 3–20–69.

888,499. MISCELLANEOUS DESIGN. Sternco Industries, Inc. SN 323,140. Pub. 1–13–70. Filed 3–28–69.

888,500. CROSS-PLASTICS. Van Leer's Vatenfabrieken N.V. SN 323,609. Pub. 1–13–70. Filed 4–3–69.

888,501. POLYRAPID. GAF Corporation. SN 323,950. Pub. 1–13–70. Filed 4–8–69.

Class 2—Receptacles

888,502. SUPER VUE. Diamond National Corporation. SN 328,006. Pub. 1–13–70. Filed 5–22–69.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

888,503. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,136. Pub. 1–13–70. Filed 11–1–68.

888,504. HORIZON. Camp Trails. SN 318,870. Pub. 1–13–70. Filed 12–12–68.

888,505. V I N T A G E. Stebco Products Corporation. SN 318,993. Pub. 1–13–70. Filed 2–12–69.

Class 4—Abrasives and Polishing Materials

888,506. BENDIX AND DESIGN. The Bendix Corporation. SN 309,657. Pub. 1–13–70. Filed 10–15–68.

888,507. SUPRA. Calgon Corporation. SN 312,751. Pub. 6–24–69. Filed 11–21–68.

888,508. TOP KICK. American Home Products Corporation. SN 336,298. Pub. 1–13–70. Filed 8–26–69.

Class 5—Adhesives

888,496. (See Class 1 for this trademark.)

888,509. HALLEMITE. Sterling Drug Inc. MULTIPLE CLASS (Classes 5, 6, 12, and 16). SN 295,276. Pub. 1–13–70. Filed 4–10–68.

Class 6—Chemicals and Chemical Compositions

888,496. (See Class 1 for this trademark.)

888,509. (See Class 5 for this trademark.)

888,510. BECK AND DESIGN. Beck Distributing Corp. MULTIPLE CLASS (Classes 6, 19, 21, 23, 35, and 39). SN 265,136. Pub. 4–29–69. Filed 2–21–67.

888,511. POSIKEM. RBP Chemical Corporation. MULTIPLE CLASS (Classes 6 and 50). SN 284,939. Pub. 1–13–70. Filed 11–15–67.

888,512. MISCELLANEOUS DESIGN. Hercules Chemical Company. MULTIPLE CLASS (Classes 6, 12, 34, and 52). SN 285,694. Pub. 1–13–70. Filed 11–28–67.

888,513. AZ AND DESIGN. Azoplate Corporation. SN 290,067. Pub. 10–21–69. Filed 2–1–68.

888,514. RED SEAL. Warner-Jenkinson Manufacturing Company. SN 292,145. Pub. 1–13–70. Filed 2–28–68.

888,515. FI-LINE. Fisons Industrial Chemicals Limited. SN 297,400. Pub. 1–13–70. Filed 5–6–1968.

888,516. BRIGEHEAL. Chemical Additives Company. SN 309,746. Pub. 1–13–70. Filed 10–16–68.

888,517. BEX. Chemical Additives Company. SN 309,747. Pub. 1–13–70. Filed 10–16–68.

888,518. HEAL-S. Chemical Additives Company. SN 309,748. Pub. 1–13–70. Filed 10–16–68.

888,519. N E O V A S I N E. Ciba Limited. SN 309,839. Pub. 1-13–70. Filed 10–17–68.

888,520. D U R C A L I T E. Omya S.A. SN 310,585. Pub. 11–18–69. Filed 10–25–68.

888,521. M I C R O K E M. Sun Chemical Corporation. SN 312,343. Pub. 7–22–69. Filed 11–15–68.

888,522. N I T R O K E M. Sun Chemical Corporation. SN 312,345. Pub. 7–22–69. Filed 11–15–68.

888,523. POLYKEM. Sun Chemical Corporation. SN 312,346. Pub. 7–22–69. Filed 11–15–68.

888,524. KEM-WET. Kemin Industries, Inc. SN 313,508. Pub. 12–23–69. Filed 12–3–68.

888,525. PHTALOFIX. Farbenfabriken Bayer Aktiengesellschaft. SN 313,569. Pub. 10–21–69. Filed 12–4–68.

888,526. PERFHEAL. Chemical Additives Company. SN 314,315. Pub. 1–13–70. Filed 12–12–68.

888,527. SPUTOLYSIN. Calbiochem. SN 314,655. Pub. 1–13–70. Filed 12–9–68.

888,528. VIKON. Vikon Chemical Company, Inc. SN 319,094. Pub. 1–13–70. Filed 2–13–69.

888,529. ATLAS. Atlas Supply Company. SN 321,029. Pub. 11–11–69. Filed 3–7–69.

888,530. MIRACLE KILL-ODOR. Miracle Pet Products, Inc. SN 322,892. Pub. 1–13–70. Filed 3–26–69.

888,531. CHEVRON AND DESIGN. Standard Oil Company of California. SN 329,526. Pub. 1–13–70. Filed 6–9–69.

Class 8—Smokers' Articles, Not Including Tobacco Products

888,532. WEDGEFIELD. S. S. Kresge Company. SN 333,143. Pub. 1–13–70. Filed 7–22–69.

Class 9—Explosives, Firearms, Equipments, and Projectiles

888,533. GUARDIAN ANGEL. LFR Sales Corp. SN 327,028. Pub. 1–13–70. Filed 5–12–69.

Class 11—Inks and Inking Materials

888,534. SPRAY-LITE. Roberts & Porter, Inc. SN 328,344. Pub. 1–13–70. Filed 5–26–69.

Class 12—Construction Materials

888,496. (See Class 1 for this trademark.)

888,509. (See Class 5 for this trademark.)

888,512. (See class 6 for this trademark.)

888,535. CRETO PERMANENT AS THE PYRAMIDS AND DESIGN. Walter E. Hanson, d.b.a. United Creto Co. SN 267,039. Pub. 8–6–68. Filed 3–17–67.

888,536. STRATACITE. Alside Aluminum Supply Company, by change of name from Ohio Aluminum Supply Company. SN 283,743. Pub. 1–13–70. Filed 10–30–67.

888,537. TEXWOOD. Textone, Inc. SN 808,409. Pub 6–17–69. Filed 9–27–68.

888,538. CRANE PLASTICS, INC. AND DESIGN. Crane Plastics, Inc. SN 323,798. Pub. 1–13–70. Filed 4–7–69.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

888,539. TF AND DESIGN. Albert Lins. SN 247,937. Pub. 11–12–68. Filed 6–13–66.

888,540. DEFIANCE. Defiance International, Ltd. MULTIPLE CLASS (Classes 13, 23, 27, and 31). SN 249,387. Pub. 1–13–70. Filed 7–1–66.

888,541. INTERNATIONAL AND DESIGN. Everingham Brothers Limited. SN 314,546. Pub. 11–4–69. Filed 12–16–68.

888,542. RAINAWAY. Monsanto Company. SN 319,618. Pub. 1–13–70. Filed 2–19–69.

888,543. INSTANT SET. Emil A. Frank, d.b.a. Frank Pattern & Manufacturing. SN 324,287. Pub. 1–13–70. Filed 4–11–69.

888,544. REVERE WARE AND DESIGN. Revere Copper and Brass Incorporated. SN 329,384. Pub. 1–13–70. Filed 6–6–69.

888,545. KWIK-TITE. I-T-E Imperial Corporation. SN 335,919. Pub. 1–13–70. Filed 8–22–69.

Class 14—Metals and Metal Castings and Forgings

888,496. (See Class 1 for this trademark.)

888,546. DIDI. Bonder & Carnase Studio Inc. SN 303,267. Pub. 1–13–70. Filed 7–22–68.

888,547. FULMOFORM. Dr. Eugen Dürrwachter Doduco. SN 315,402. Pub. 1–13–70. Filed 12–30–68.

888,548. DOEHLER-JARVIS ETC. AND DESIGN. National Lead Company. SN 818,451. Pub. 10–14–69. Filed 2–5–69.

Class 15—Oils and Greases

888,549. C H E M-T R E N D. Chem-Trend Incorporated. SN 302,718. Pub. 1–13–70. Filed 7–15–68.

888,550. SPINESSTIC. Standard Oil Company. SN 309,651. Pub. 1–13–70. Filed 10–15–68.

888,551. EXCALIBUR. Turtle Wax, Inc. SN 330,793. Pub. 1–13–70. Filed 6–23–69.

Class 16—Protective and Decorative Coatings

888,509. (See Class 5 for this trademark.)

888,552. HARRIS MASTERWORK FINISHES AND DESIGN. Harris Paint Company, d.b.a. Harris Standard Paint Company. SN 290,490. Pub. 1–13–70. Filed 2–7–68.

888,553. POLYGUARD. Nee & McNulty, Inc. SN 305,152. Pub. 1–13–70. Filed 8–14–68.

888,554. ALUMA. Fuller Laboratories, Inc. SN 310,076. Pub. 1–13–70. Filed 10–21–68.

888,555. STAN-SEAL. Standard T Chemical Company, Inc. SN 334,795. Pub. 1–13–70. Filed 8–8–69.

Class 18—Medicines and Pharmaceutical Preparations

888,556. C H L O R O P T I C. Allergan Pharmaceuticals, SN 274,114. Pub. 6–18–68. Filed 6–16–67.

888,557. SEDA-SELTZA. The J. B. Williams Company, Inc. SN 297,729. Pub. 1–13–70. Filed 5–8–68.

888,558. AMCILL. Parke, Davis & Company. SN 306,992. Pub. 8–26–69. Filed 9–10–68.

888,559. ISOVEX. Medics Pharmaceutical Corporation. SN 315,847. Pub. 1–13–70. Filed 1–6–69.

888,560. A E R O S E B-H C. Allergan Pharmaceuticals. SN 318,784. Pub. 1–13–70. Filed 2–10–69.

888,561. COBAN-1. Eli Lilly and Company. SN 321,951. Pub. 1–13–70. Filed 3–17–69.

888,562. DIBAN. A. H. Robins Company, Incorporated. SN 322,483. Pub. 1–13–70. Filed 3–21–69.

888,563. FLUIDEX. O'Connor Drug Co. SN 323,120. Pub. 1–13–70. Filed 3–28–69.

888,564. WALGRO. W. R. Grace & Co. SN 325,866. Pub. 1–13–70. Filed 4–29–69.

888,565. KIKIT. Carter-Wallace, Inc. SN 326,029. Pub. 1–13–70. Filed 5–1–69.

888,566. RELAXINOL. Carter-Wallace, Inc. SN 326,030. Pub. 1–13–70. Filed 5–1–69.

888,567. PETTI-PAC. Parke, Davis & Company. SN 328,627. Pub. 1–13–70. Filed 5–29–69.

888,568. MELDANE. Chemagro Corporation. SN 334,168. Pub. 1–13–70. Filed 8–1–69.

888,569. NERVOIDS. British Chemotheutic Products Limited. SN 334,201. Pub. 1–13–70. Filed 8–1–69.

Class 19—Vehicles

888,510. (See Class 6 for this trademark.)

888,570. SAFE-T-LOCK. Raybestos-Manhattan, Inc. SN 273,308. Pub. 1–13–70. Filed 6–7–67.

888,571. STAR. General Dynamics Corporation. SN 306,054. Pub. 11–4–69. Filed 8–27–68.

888,572. COUNTRY WAGON. White Motor Corporation. SN 315,802. Pub. 1–13–70. Filed 1–3–69.

888,573. FIBRE-METAL. The Fibre-Metal Products Company. SN 322,426. Pub. 11–25–69. Filed 3–21–69.

888,574. POLARIS PLAY MATE AND DESIGN. Textron, Inc. SN 328,514. Pub. 1–13–70. Filed 5–28–69.

888,575. SPACEMASTER. Spacemaster, Inc. SN 330,539. Pub. 1–13–70. Filed 6–19–69.

888,576. STREAMLINE. Streamline Trailer Co. SN 332,377. Pub. 1–13–70. Filed 7–11–69.

888,577. GRASSHOPPER AND DESIGN. Grasshopper Airboats, Inc. SN 332,942. Pub. 1–13–70. Filed 7–18–69.

Class 21 — Electrical Apparatus, Machines, and Supplies

888,496. (See Class 1 for this trademark.)

888,510. (See Class 6 for this trademark.)

888,578. ARC AND DESIGN. Ashtabula Rubber Co. MULTIPLE CLASS (Classes 21 and 35). SN 248,008. Pub. 1–13–70. Filed 6–14–66.

888,579. ATES. Ates Componenti Elettronici S.p.A. SN 281,350. Pub. 9–2–69. Filed 9–28–67.

888,580. MISCELLANEOUS DESIGN. Owens-Illinois, Inc. SN 293,946. Pub. 1–13–70. Filed 3–22–68.

888,581. COLMUX. The Western Union Telegraph Company. SN 300,498. Pub. 1–13–70. Filed 6–14–68.

888,582. MITE. Mite Corporation. MULTIPLE CLASS (Classes 21, 26, and 27). SN 302,433. Pub. 1–13–70. Filed 7–10–68.

888,583. VE DESIGN. Wyle Laboratories, Inc. SN 304,025. Pub. 1–13–70. Filed 7–31–68.

888,584. PROTECT-O-MATIC. Fedtro, Inc. SN 306,301. Pub. 7–22–69. Filed 8–30–68.

888,585. FILTECH. Filtech Corporation. SN 307,093. Pub. 1–13–70 Filed 9–11–68.

888,586. JA/Q. Heinemann Electric Company. SN 308,894. Pub. 1–13–70. Filed 10–4–68.

888,587. ECON-O-TAPE AND DESIGN. Engelhard Minerals & Chemicals Corporation. SN 320,806. Pub. 1–13–70. Filed 3–5–69.

888,588. PULSAR. Motorola, Inc. SN 321,256. Pub. 11–18–69. Filed 3–10–69.

888,589. POLY FORCE AND DESIGN. General Battery Corporation, by change of name from General Battery and Ceramic Corp. SN 325,030. Pub. 1–13–70. Filed 4–21–69.

888,590. HOUSE HUGGER, A. B. Chance Company. SN 326,197. Pub. 1–13–70. Filed 5–2–69.

888,591. TRAVELAID. Cory Corporation. SN 326,827. Pub. 1–13–70. Filed 5–9–69.

888,592. ASTRODOT. Marshall Associates, Inc. SN 327,289. Pub. 1–13–70. Filed 5–14–69.

888,593. OXYCON. General Electrodynamics Corporation. SN 328,840. Pub. 1–13–70. Filed 6–2–69.

888,594. STACOSWITCH. Stacoswitch, Inc. SN 329,013. Pub. 1–13–70. Filed 6–3–69.

888,595. WENDELIGHT. Eric Jacksen & Son, Inc. SN 329,477. Pub. 1–13–70. Filed 6–9–69.

888,596. VAC-U-GAS. Continental Sensing, Inc. SN 334,765. Pub. 1–13–70. Filed 8–8–69.

Class 22 — Games, Toys, and Sporting Goods

888,597. ORIGINAL REUTHER SY-REU ETC. AND DESIGN. Spieth-Holztechnik GmbH. SN 292,225. Pub. 1–13–70. Filed 2–29–68.

888,598. POLLY-JOYE AND DESIGN. Modern Artcraft, Inc. SN 299,573. Pub. 1–13–70. Filed 6–3–68.

888,599. LITTLE TYKE. Little Tyke Products Company. MULTIPLE CLASS (Classes 22 and 32). SN 314,928. Pub. 1–13–70. Filed 12–20–68.

888,600. CUSTOM BUILT. Golden State Distributors, Inc. SN 318,775. Pub. 11–11–69. Filed 2–10–69.

888,601. TRICKY RIDER. Kohner Bros., Inc. SN 319,917. Pub. 1–13–70. Filed 2–24–69.

888,602. TRADE THE MARKET. Daniel A. Goldberg. SN 323,886. Pub. 1–13–70. Filed 4–2–69.

888,603. ATM AND DESIGN. All Tech Industries, Inc. SN 324,668. Pub. 1–13–70. Filed 4–16–69.

888,604. CHUCKAROO. Handcraft Co., Inc. SN 324,815. Pub. 1–13–70. Filed 4–17–69.

888,605. AMTRONIC. AMT Corporation. SN 325,680. Pub. 1–13–70. Filed 4–28–69.

888,606. LINE RITE. Eaton Yale & Towne Inc. SN 326,364. Pub. 1–13–70. Filed 5–5–69.

888,607. TRAIL MATE. Textron Inc. SN 329,813. Pub. 1–13–70. Filed 6–12–69.

888,608. UPSIDE-DOWNS. Mattel, Inc. SN 334,179. Pub. 1–13–70. Filed 8–1–69.

888,609. DOWNSYS. Mattel, Inc. SN 334,180. Pub. 1–13–70. Filed 8–1–69.

888,610. UPSYS. Mattel, Inc. SN 334,182. Pub. 1–13–70. Filed 8–1–69.

888,611. JIGGLY-WIGGLY. Mattel, Inc. SN 335,108. Pub. 1–13–70. Filed 8–12–69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

888,510. (See Class 6 for this trademark.)

888,540. (See Class 13 for this trademark.)

888,612. DYNAFLEX. The Warren Rupp Company. SN 284,045. Pub. 4–1–69. Filed 11–2–67.

888,613. BOLT. Bolt Associates, Inc. SN 287,794. Pub. 1–13–70. Filed 12–29–67.

888,614. STRONG ARM. The Carborundum Company. SN 291,835. Pub. 8–19–69. Filed 2–26–68.

888,615. PERMA-DRILL. Otis Engineering Corporation. SN 309,613. Pub. 1–13–70. Filed 10–14–68.

888,616. VERT-A-PARK. Lihap Industries. SN 310,112. Pub. 1–13–70. Filed 10–21–68.

888,617. SPEED SHAPER. The Fellows Gear Shaper Company. SN 313,921. Pub. 1–13–70. Filed 12–9–68.

888,618. SHIELD DESIGN. UTD Corporation (Delaware corporation), assignee of UTD Corporation (Massachusetts corporation). SN 315,844. Pub. 1–13–70. Filed 12–27–68.

888,619. WOODCREST. Oneida Ltd. SN 321,261. Pub. 1–13–70. Filed 3–10–69.

888,620. OMEGA DRIVES AND DESIGN. Twin Disc, Incorporated. SN 323,486. Pub. 1–13–70. Filed 4–2–69.

888,621. TRIM-A-TABLE. Van Mark Products Corporation. SN 323,610. Pub. 1–13–70. Filed 4–3–69.

888,622. CHERRY BOMB. Maremont Corporation. SN 323,715. Pub. 1–13–70. Filed 4–4–69.

888,623. MISCELLANEOUS DESIGN. Torin Corporation, by change of name from The Torrington Manufacturing Company. SN 324,374. Pub. 9–23–69. Filed 4–14–69.

888,624. H EDUCT-O-JET AND DESIGN. Hydro Manufacturing & Sales, Inc. SN 324,593. Pub. 11–4–69. Filed 4–15–69.

888,625. MECCO SAFETY AND DESIGN. M. E. Cunningham Company. SN 324,890. Pub. 1–13–70. Filed 4–18–69.

888,626. LA TOQUE BLANCHE AND DESIGN. David Kamenstein, Inc. SN 326,594. Pub. 1–13–70. Filed 5–7–69.

888,627. GUNCLEAN. Salen & Wicander AB. SN 327,332. Pub. 1–13–70. Filed 5–15–69.

888,628. PINK INSTAMATIC. Eversharp, Inc. SN 327,448. Pub. 1–13–70. Filed 5–16–69.

888,629. PROGRESSIVE. Progressive Steel Rule Die Co. SN 330,414. Pub. 1–13–70. Filed 6–18–69.

888,630. M C AND DESIGN. McNichols Steel Co. SN 330,610. Pub. 1–13–70. Filed 6–20–69.

888,631. BALEWEL. East Chicago Machine Tool Corporation. SN 332,097. Pub. 1–13–70. Filed 7–9–69.

888,632. MINI-COATER AND DESIGN. Electro-Seal Corporation. SN 332,557. Pub. 1–13–70. Filed 6–18–69.

888,633. POURMASTER. International Automation Corporation. SN 332,719. Pub. 1–13–70. Filed 7–16–69.

888,634. DIPLOMAT. Van Brode Milling Co., Inc. SN 333,214. Pub. 1–13–70. Filed 7–22–69.

888,635. DIPLOMAT AND SHIELD DESIGN. Van Brode Milling Co., Inc. SN 333,215. Pub. 1–13–70. Filed 7–22–69.

888,636. SECO JR. Servis Equipment Company, Inc. SN 333,758. Pub. 1–13–70. Filed 7–28–69.

888,637. GEAROLL. Lear Siegler, Inc. SN 333,970. Pub. 1–13–70. Filed 7–29–69.

888,638. PSI. Pneumatic Systems, Inc. SN 334,251. Pub. 1–13–70. Filed 8–1–69.

Class 25 — Locks and Safes

888,639. ABC ETC. AND DESIGN. Slaymaker Lock Company. SN 281,498. Pub. 1–13–70. Filed 9–29–67.

Class 26 — Measuring and Scientific Appliances

888,582. (See Class 21 for this trademark.)

888,640. HEAD OF FRANKLIN (DESIGN). Franklin Optical Company. MULTIPLE CLASS (Classes 26, 44, 100, and 103). SN 305,438. Pub. 1–13–70. Filed 8–19–68.

888,641. NESLAB. Neslab Instruments, Inc. SN 309,285. Pub. 1–13–70. Filed 10–9–68.

888,642. MIDGI-COUNTER. Pinlites Inc. SN 309,291. Pub. 1–13–70. Filed 10–9–68.

888,643. CELAGRAM. Shandon Scientific Company Limited. SN 309,626. Pub. 1–13–70. Filed 10–14–68.

888,644. STERL-TRONIC. Sterling, Inc. SN 310,147. Pub. 1–13–70. Filed 10–21–68.

888,645. FOTOSHROUD. Shumway Optical Instruments Corp. SN 314,272. Pub. 1–13–70. Filed 12–11–68.

888,646. SEE SHELLS. Rossini-Stevens Associates, Inc. SN 316,241. Pub. 1–13–70. Filed 1–9–69.

888,647. LITHOQUICK. Visual Graphics Corp. SN 317,479. Pub. 1–13–70. Filed 1–24–69.

888,648. DIOCHRON. Stewart-Warner Corporation. SN 318,927. Pub. 1–13–70. Filed 2–12–69.

888,649. DIOMETER. American Optical Corporation. SN 319,793. Pub. 1–13–70. Filed 2–24–69.

888,650. VOLRAC. Ethyl Corporation. SN 319,850. Pub. 1–13–70. Filed 2–24–69.

888,651. MERCURY. Viewlex, Inc. SN 321,420. Pub. 1–13–70. Filed 3–11–69.

888,652. ROTECTOR. Electro Sensors, Inc. SN 323,999. Pub. 1–13–70. Filed 4–9–69.

888,653. SENSOLATOR. Flygt Corporation. SN 334,276. Pub. 1–13–70. Filed 8–4–69.

888,654. SOLITE. Athlone Industries, Inc. SN 335,305. Pub. 1–13–70. Filed 8–14–69.

Class 27 — Horological Instruments

888,540. (See Class 13 for this trademark.)

888,582. (See Class 21 for this trademark.)

Class 28 — Jewelry and Precious-Metal Ware

888,655. SWINGER. Brite Industries Inc. SN 315,040. Pub. 1–13–70. Filed 12–23–68.

Class 29 — Brooms, Brushes, and Dusters

888,656. SPRITE. S. M. Arnold, Inc. SN 325,921. Pub. 1–13–70. Filed 4–30–69.

Class 31 — Filters and Refrigerators

888,540. (See Class 13 for this trademark.)

888,657. SENTRY. Walker Manufacturing Company. SN 291,112. Pub. 1–13–70. Filed 2–14–68.

888,658. RRR AND DESIGN. Triple R Manufacturing, Inc. SN 293,602. Pub. 11–25–69. Filed 3–18–68.

888,659. ZERO COLD. Zero Cold, Inc. SN 306,011. Pub. 1–13–70. Filed 8–26–68.

888,660. DELBAG AND DESIGN. Delbag Luftfilter GmbH. SN 313,275. Pub. 1–13–70. Filed 11–29–68.

Class 32 — Furniture and Upholstery

888,599. (See Class 22 for this trademark.)

888,661. FOUR CONTINENTS COLLECTION. Rucker Industries, Incorporated, d.b.a. Rucker Industries. SN 322,529. Pub. 1–13–70. Filed 3–24–69.

888,662. GRACIE SQUARE. W. & J. Sloane, Inc. SN 324,243. Pub. 1–13–70. Filed 4–10–69.

888,663. HAPPY CHAIR. Gantner Industries, Inc. SN 324,910. Pub. 1–13–70. Filed 4–18–69.

888,664. KOOL-LITE. Clear-View Shade Co. SN 325,718. Pub. 1–13–70. Filed 4–28–69.

888,665. PERFECT BLEND. New York Feather Co., Inc. SN 326,116. Pub. 1–13–70. Filed 5–1–69.

888,666. PARKWAY MANOR. Economy Furniture, Inc. SN 328,007. Pub. 1–13–70. Filed 5–22–69.

888,667. EFI. Economy Furniture, Inc. SN 328,010. Pub. 1–13–70. Filed 5–22–69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

888,512. (See Class 6 for this trademark.)

888,668. SEASON AIRE AND DESIGN. McQuay, Inc., by merger and assignment from The Edwin L. Wiegand Company. SN 259,197. Pub. 4–16–68. Filed S.R. 11–21–66; Am. P.R. 1–12–67.

888,669. INSTANT COMFORT. Arvin Industries, Inc. SN 321,148. Pub. 1–13–70. Filed 3–10–69.

888,670. IR AND DESIGN. Inta-Roto, Incorporated, assignee of The Inta-Roto Machine Company, Inc. SN 321,225. Pub. 1–13–70. Filed 3–10–69.

888,671. DUC-WEL. Oil City Iron Works, Inc. SN 322,610. Pub. 1–13–70. Filed 3–24–69.

888,672. MISCELLANEOUS DESIGN. Torin Corporation, by change of name from The Torrington Manufacturing Company. SN 324,375. Pub. 9–16–69. Filed 4–14–69.

888,673. DUTCH TWIST. Dutch Twist Corp. SN 327,606. Pub. 1–13–70. Filed 5–19–69.

888,674. WEATHERWAND. Intertherm, Inc. SN 336,063. Pub. 1–13–70. Filed 8–25–69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

888,510. (See Class 6 for this trademark.)

888,578. (See Class 21 for this trademark.)

888,675. FERRA-BLOCK. Brake Lining Company, Inc. SN 279,049. Pub. 1–13–70. Filed 8–25–67.

888,676. STARMARK. O.K. Tire and Rubber Co., Inc. SN 331,640. Pub. 1–13–70. Filed 7–2–69.

888,677. ORBISTRIP. American Machine & Foundry Company. SN 331,847. Pub. 1–13–70. Filed 7–7–69.

888,678. SSK AND DESIGN. S. S. Kresge Company. SN 333,145. Pub. 1–13–70. Filed 7–22–69.

Class 36 — Musical Instruments and Supplies

888,679. AC DESIGN. Scovill Manufacturing Company, assignee of Auricord Corporation. SN 300,050. Pub. 10–7–69. Filed 6–10–68.

888,680. PACETAPE. The Economy Company. SN 314,541. Pub. 1–13–70. Filed 12–16–68.

888,681. PACER. The Economy Company. SN 314,542. Pub. 1–13–70. Filed 12–16–68.

888,682. COMBO. Tape Services, Inc. SN 318,997. Pub. 11–11–69. Filed 2–12–69.

888,683. PACERECORDER. The Economy Company. SN 320,254. Pub. 1–13–70. Filed 2–27–69.

888,684. MY BOOKS THAT TALK. Kenner Products Company. SN 323,317. Pub. 11–25–69. Filed 4–1–69.

888,685. M&H RECORDS AND DESIGN. Harvey J. House, Jr., d.b.a. M&H Records. SN 328,854. Pub. 1–13–70. Filed 6–2–69.

888,686. CASSETTER. Radiant Corporation. SN 332,366. Pub. 11–25–69. Filed 7–11–69.

888,687. BLUE DOLPHIN AND DESIGN. Michael B. Stack, d.b.a. Blue Dolphin Productions. SN 336,875. Pub. 1–13–70. Filed 9–2–69.

Class 37 — Paper and Stationery

888,688. RISOMASTER. Riso Kagaku Kogyo Kabushiki Kaisha. SN 299,866. Pub. 1–13–70. Filed 6–6–68.

888,689. LEAFSAVERS. Magic Marker Corporation. SN 307,115. Pub. 1–13–70. Filed 9–11–68.

888,690. GLAD RAGS. Rising Paper Company. SN 311,067. Pub. 1–13–70. Filed 10–31–68.

Class 38 — Prints and Publications

888,691. CHICAGO BUYERS' GUIDE. Chicago Association of Commerce and Industry. SN 302,918. Pub. 1–13–70. Filed 7–17–68.

888,692. FAMILY CAMERA YOUR WORLD IN LIVING COLOR. Family Camera Associates, Inc. SN 313,167. Pub. 1–13–70. Filed 11–27–68.

888,693. NATIONAL SOFT-SERV SCHOOL. Clyde A. Harbin. MULTIPLE CLASS (Classes 38 and 107). SN 314,124. Pub. 1–13–70. Filed 12–11–68.

888,694. DDC DEFENSIVE DRIVING COURSE AND AUTO DESIGN. National Safety Council. SN 316,903. Pub. 1–13–70. Filed 1–17–68.

888,695. SNEAKERS. Norcross, Inc. SN 318,219. Pub. 1–13–70. Filed 2–3–69.

888,696. CBI. Crandall, Pierce & Co. SN 321,475. Pub. 1–13–70. Filed 3–12–69.

888,697. LUSTIRPRINT. Multiprint Co. SN 326,543. Pub. 1–13–70. Filed 5–6–69.

888,698. TECH TOPICS AND DESIGN. North Carolina Board of Science and Technology. SN 328,194. Pub. 1–13–70. Filed 5–23–69.

888,699. SCEPTRE. Follett Educational Corporation. SN 328,689. Pub. 1–13–70. Filed 5–29–69.

888,700. LETTERMAN. L. P. Services, Inc., assignee of Paul D. Nyberg. SN 328,885. Pub. 1–13–70. Filed 6–2–69.

888,701. LETTERMAN AND RINGS DESIGN. L P. Services, Inc., assignee of Paul D. Nyberg. SN 328,886. Pub. 1–13–70. Filed 6–2–69.

888,702. JOLLY CHOLLY ETC. AND DESIGN. Vernon Book Sales Corp. SN 329,168. Pub. 1–13–70. Filed 6–4–69.

888,703. KIP'S KEY SYSTEM AND DESIGN. Vernon Book Sales Corp. SN 329,172. Pub. 1–13–70. Filed 6–4–69.

888,704. SHADOGRAF. Basic Products Development Company. SN 329,433. Pub. 1–13–70. Filed 6–9–69.

888,705. SUNBURST. Farrar, Straus & Giroux, Inc. SN 329,613. Pub. 1–13–70. Filed 6–10–69.

888,706. TEENIE WEENIES. Marlin Greeting Cards, Inc. SN 329,875. Pub. 1–13–70. Filed 6–12–69.

888,707. FILMEDIA AND DESIGN. Filmedia, Inc. SN 332,335. Pub. 1–13–70. Filed 7–11–69.

888,708. IOWA BEST STATE IN THE LAND AND DESIGN. Des Moines Register and Tribune Company. SN 332,608. Pub. 1–13–70. Filed 7–15–69.

Class 39 — Clothing

888,510. (See Class 6 for this trademark.)

888,709. DELANDARE FACILE. Gatic S.A.I.C.F.I. SN 277,660. Pub. 1–13–70. Filed 8–7–67.

888,710. NANETTE. Ely & Walker, Inc. SN 289,287. Pub. 10–1–68. Filed 1–22–68.

888,711. MIA MILLI. Mia Milli Limited, Inc. SN 297,079. Pub. 1–13–70. Filed 5–1–68.

888,712. MINI PAK. The James Textile Corp. SN 308,211. Pub. 1–13–70. Filed 9–25–68.

888,713. TALL-B-TWEEN. Lane Bryant, Inc. SN 308,596. Pub. 1–13–70. Filed 10–1–68.

888,714. QUIET WELD. ESB Incorporated. SN 311,850. SN 1–13–70. Filed 11–12–68.

888,715. CORENA. Sox Unlimited, Inc. SN 311,944. Pub. 1–13–70. Filed 11–12–68.

888,716. TRINI AND DESIGN. Yolen, Inc. SN 312,725. Pub. 1–13–70. Filed 11–21–68.

888,717. THOMAS HARRIS. Hughes Hatcher, Inc. SN 313,426. Pub. 1–13–70. Filed 12–2–68.

888,718. CARMIA. Giuseppe Munafo. MULTIPLE CLASS (Classes 39 and 42). SN 313,586. Pub. 1–13–70. Filed 12–4–68.

888,719. LOOP THE LOOP. Burlington Industries, Inc. SN 314,051. Pub. 1–13–70. Filed 12–10–68.

888,720. LOWELL HOUSE. L. W. Foster Sportswear Co., Inc. SN 315,074. Pub. 1–13–70. Filed 12–23–68.

888,721. STALLION AND DESIGN. Standard Knitting Mills, Inc. SN 317,262. Pub. 11–18–69. Filed 1–22–69.

888,722. JONI J AND DESIGN. Hensley-Russell Inc. SN 320,148. Pub. 1–13–70. Pub. 2–26–69.

888,723. FURRAGE. Louis Walter & Company, Inc. SN 323,037. Pub. 1–13–70. Filed 3–27–69.

888,724. TROPIC. Andre Silvain. SN 323,856. Pub. 1–13–70. Filed 4–7–69.

888,725. KAY CAMPBELL'S. Kay Campbell's, Inc. SN 325,648. Pub. 1–13–70. Filed 4–28–69.

888,726. SHAPER'D. Manhattan Industries, Inc. SN 325,980. Pub. 1–13–70. Filed 4–30–69.

888,727. HOT WHEELS. Mattel, Inc. SN 326,721. Pub. 1–13–70. Filed 5–8–69.

888,728. PEPPERMINT TEASE. Golden Gate Sauna. SN 327,815. Pub. 1–13–70. Filed 5–21–69.

888,729. 18 HOUR. International Playtex Corporation. SN 328,302. Pub. 1–13–70. Filed 5–26–69.

888,730. LUV-MATCH. Teenform, Inc. SN 329,774. Pub. 1–13–70. Filed 6–11–69.

888,731. CLINGSKIN. V.F. Corporation. SN 330,026. Pub. 1–13–70. Filed 6–13–69.

888,732. LEMON TWIST. Page Boy Company, Inc. SN 330,180. Pub. 1–13–70. Filed 6–16–69.

888,733. SUZ AND DESIGN. Norman Wiatt Co. SN 331,414. Pub. 1–13–70. Filed 6–30–69.

888,734. VANCROSS. The Alligator Company, Inc. SN 331,707. Pub. 1–13–70. Filed 7–3–69.

888,735. THE LEG SALON. Joseph Bancroft & Sons Company. SN 331,715. Pub. 1–13–70. Filed 7–3–69.

888,736. "THE OUTSIDER." Happy Legs, Inc. SN 332,232. Pub. 1–13–70. Filed 7–10–69.

888,737. TRIM CROWD. Tiny-Town Togs, Inc. SN 332,382. Pub. 1–13–70. Filed 7–11–69.

888,738. RODEO AND DESIGN. Blue Bell, Inc. SN 332,791. Pub. 1–13–70. Filed 7–17–69.

888,739. RANCH HAND. Blue Bell, Inc. SN 332,793. Pub. 1–13–70. Filed 7–17–69.

888,740. HOOT N' TOOT. Ben Cooper, Inc. SN 335,400. Pub. 1–13–70. Filed 8–15–69.

Class 40 — Fancy Goods, Furnishings, and Notions

888,741. QUICK COIF. Leon J. A. Buchheit, Inc. SN 304,885. Pub. 1–13–70. Filed 8–12–68.

888,742. DELBANCO WIGS AND FACE DESIGN. Delbanco Wigs, Inc. SN 310,648. Pub. 1–13–70. Filed 10–28–68.

888,743. SPRITE. David and David, Inc. SN 319,824. Pub. 1–13–70. Filed 3–11–69.

888,744. DESIGNER BOWS. The Governor Fastener Company. SN 326,034. Pub. 1–13–69. Filed 5–1–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

888,718. (See Class 39 for this trademark.)

888,745. COUPE DE VILLE. Klopman Mills, Inc. SN 319,914. Pub. 1–13–70. Filed 2–24–69.

888,746. CIGARETTE. Klopman Mills, Inc. SN 319,916. Pub. 1–13–70. Filed 2–24–69.

888,747. CHIFONATA. Klopman Mills, Inc. SN 320,615. Pub. 1–13–70. Filed 3–3–69.

888,748. H AND DESIGN. Hannah Textiles Inc. SN 326,376. Pub. 1–13–70. Filed 5–5–69.

888,749. DURABLE STRESS. Cone Mills Corporation. SN 331,815. Pub. 1–13–70. Filed 7–7–69.

888,750. FUSIONETTE. Deering Milliken, Inc. SN 332,285. Pub. 1–13–70. Filed 7–11–69.

888,751. FUSION. Deering Milliken, Inc. SN 332,286. Pub. 1–13–70. Filed 7–11–69.

888,752. CRISS CROSS. Deering Milliken, Inc. SN 332,287. Pub. 1–13–70. Filed 7–11–69.

888,753. TURN ON. E. T. Barwick Industries, Inc. SN 334,020. Pub. 1–13–70. Filed 7–31–69.

888,754. WEATHERTEX. E. T. Barwick Industries, Inc. SN 334,022. Pub. 1–13–70. Filed 7–31–69.

888,755. AZOTON. Institute of Textile Technology. SN 334,434. Pub. 1–13–70. Filed 8–5–69.

Class 44 — Dental, Medical, and Surgical Appliances

888,640. (See Class 26 for this trademark.)

888,756. AIRCO. Air Reduction Company, Incorporated. SN 314,167. Pub. 1–13–70. Filed 12–11–68.

888,757. STERI-LOK. Quinton Instrument Co. SN 315,104. Pub. 1–13–70. Filed 12–23–68.

888,758. KOTEX KONTROL. Kimberly-Clark Corporation. SN 336,290. Pub. 1–13–70. Pub. 1–13–70. Filed 7–24–69.

Class 46 — Foods and Ingredients of Foods

888,759. FAIRFIELD FARM KITCHENS. Marriott Corporation, by change of name from Marriott-Hot Shoppes, Inc. SN 283,807. Pub. 1–13–70. Filed 10–31–67.

888,760. PROFESSIONAL. Strong Cobb Arner, Inc. SN 286,387. Pub. 1–13–70. Filed 12–6–67.

888,761. W.B. OLD FASHION. Wilsey-Bennett Co. SN 296,228. Pub. 1–13–70. Filed 4–22–68.

888,762. DINE-MOR AND DESIGN. Dine-Mor Foods, Inc. SN 303,663. Pub. 1–13–70. Filed 7–26–68.

888,763. CALLAWAY'S OLD WORLD BRAND AND DESIGN. Western Meat Packers, Inc. SN 310,041. Pub. 11–4–69. Filed 10–21–68.

888,764. FARMAID. Zenith-Godley Co., Inc. SN 310,954. Pub. 1–13–70. Filed 10–30–68.

888,765. RUM-BA. Jaret Imports, Inc. SN 311,153. Pub. 1–13–70. Filed 11–1–68.

888,766. FROM OUT OF THE PAST AND STOVE DESIGN. Wilke Baking Co., Inc. SN 312,966. Pub. 1–13–70. Filed 11–25–68.

888,767. ZEVO AND DESIGN. Zevo, Inc. SN 313,367. Pub. 1–13–70. Filed 11–29–68.

888,768. OLE PANTRY. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 313,970. Pub. 1–13–70. Filed 12–9–68.

888,769. TIP-TOP. Martha White Foods, Inc., d.b.a. Hay Market Mills. SN 314,743. Pub. 11–25–69. Filed 12–17–68.

888,770. 1.2.3. General Foods Corporation. SN 314,966. Pub. 1–13–70. Filed 12–20–68.

888,771. EGGS-CEPT. Mead Johnson & Company. SN 315,007. Pub. 10–28–69. Filed 12–23–68.

888,772. DiMare Brothers, Inc. SN 315,217. Pub. 1–13–70. Filed 12–26–68.

888,773. GIANT (DESIGN). Green Giant Company. SN 316,806. Pub. 1–13–70. Filed 1–10–69.

888,774. POST KOOKIES AND DESIGN. General Foods Corporation. SN 317,032. Pub. 1–13–70. Filed 1–21–69.

888,775. 'SUGATROL.' Burroughs Wellcome & Co. (U.S.A.) Inc. SN 317,203. Pub. 1–13–70. Filed 1–22–69.

888,776. PIP'N HOTS. National Biscuit Company. SN 317,254. Pub. 1–13–70. Filed 1–22–69.

888,777. PEPPEROLLIES. Taylor Food Products, Inc. SN 319,396. Pub. 1–13–70. Pub. 2–17–69.

888,778. POWER 10. Lehigh Valley Cooperative Farmers, d.b.a. Lehigh Valley Dairy. SN 322,074. Pub. 1–13–70. Filed 3–18–69.

888,779. PATIO SERV. Eskimo Pie Corporation. SN 322,678. Pub. 8–19–69. Filed 3–25–69.

888,780. MANWICH. Hunt-Wesson Foods, Inc. SN 326,099. Pub. 1–13–70. Filed 5–1–69.

888,781. WESSON LIGHT TOUCH. Hunt-Wesson Foods, Inc. SN 326,101. Pub. 1–13–70. Filed 5–1–69.

888,782. NUFORM. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons. SN 326,477. Pub. 1–13–70. Filed 5–6–69.

888,783. BUTCHER SHOP. Perk Foods Co. SN 326,679. Pub. 1–13–70. Filed 5–7–69.

888,784. MAGICRUNCH. General Mills, Inc. SN 328,767. Pub. 10–28–69. Filed 6–2–69.

888,785. NATIONAL NPC AND DESIGN. National Pizza Corporation. SN 333,501. Pub. 1–13–70. Filed 7–25–69.

Class 48 — Malt Beverages and Liquors

888,786. BURGER. The Burger Brewing Company. SN 301,797. Pub. 1–13–70. Filed 6–28–68.

Class 49 — Distilled Alcoholic Liquors

888,787. RED FOX. A. Racke KG. SN 300,109. Pub. 1–13–70. Filed 6–10–68.

Class 50 — Merchandise Not Otherwise Classified

888,511. (See Class 6 for this trademark.)

888,788. ROSE KONE. G.I. Plastics, Inc. SN 301,680. Pub. 10–1–68. Filed 7–1–68.

888,789. INSTANT ARTIST KIT. Sally Hunter. SN 303,168. Pub. 1–13–70. Filed 7–19–68.

888,790. THRIFT. Western Litho Plate & Supply Co. SN 323,983. Pub. 11–25–69. Filed 4–8–69.

Class 51 — Cosmetics and Toilet Preparations

888,791. EYE VEIL. KLM Cosmetic Co., Inc. SN 309,051. Pub. 1–13–70. Filed 10–7–68.

888,792. COMPELLING. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 310,169. Pub. 1–13–70. Filed 10–22–68.

888,793. EARTHFLOWER. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 310,171. Pub. 1–13–70. Filed 10–22–68.

888,794. PROPHECY. Chesebrough-Pond's Inc. SN 323,761. Pub. 1–13–70. Filed 4–7–69.

888,795. HALF TYME. United Chemical Company. SN 323,864. Pub. 10–21–69. Filed 4–7–69.

888,796. MOMENT IN SPAIN. Colgate-Palmolive Company. SN 325,547. Pub. 11–18–69. Filed 4–25–69.

888,797. MISCELLANEOUS DESIGN. Estee Lauder, Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 326,945. Pub. 1–13–70. Filed 5–12–69.

888,798. AVONESQUE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,557. Pub. 1–13–70. Filed 6–10–69.

888,799. SUCCESS BY NIGHT. Chas. Pfizer & Co., Inc. SN 329,668. Pub. 1–13–70. Filed 6–11–69.

888,800. THAT-CURL. Paula Payne Products Company, Inc. SN 330,183. Pub. 1–13–70. Filed 6–16–69.

888,801. IDIOM. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 332,644. Pub. 1–13–70. Filed 7–16–69.

888,802. PIROUETTE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,034. Pub. 1–13–70. Filed 7–22–69.

888,803. WHAM. Carter-Wallace, Inc. SN 334,166. Pub. 1–13–70. Filed 8–1–69.

888,804. KOTEX MISTY. Kimberly-Clark Corporation. SN 336,291. Pub. 1–13–70. Filed 7–24–69.

Class 52 — Detergents and Soaps

888,512. (See Class 6 for this trademark.)

888,792. (See Class 51 for this trademark.)

888,793. (See Class 51 for this trademark.)

888,797. (See Class 51 for this trademark.)

888,798. (See Class 51 for this trademark.)

888,801. (See Class 51 for this trademark.)

888,802. (See Class 51 for this trademark.)

888,805. MARS. Lever Brothers Company. SN 305,612. Pub. 11–4–69. Filed 8–21–68.

888,806. DAIRI-BRITE. Malco Products, Inc. SN 315,424. Pub. 11–25–69. Filed 12–30–68.

888,807. LENS - LUSTRE. Foremost - McKesson, Inc. SN 323,287. Pub. 1–13–70. Filed 4–1–69.

Service Marks

Class 100 — Miscellaneous

888,640. (See Class 26 for this trademark.)

888,808. ECON - O₂ - TROL. The Hays Corporation. SN 284,371. Pub. 10–21–69. Filed 11–8–67.

888,809. SHARE RESEARCH. Share Research Corporation. SN 288,870. Pub. 10–14–69. Filed 1–15–68.

888,810. HEXAGON DESIGN. Plant Bros. Corp. MULTIPLE CLASS (Classes 100 and 103). SN 304,810. Pub. 1–13–70. Filed 8–9–68.

888,811. RD AND DESIGN. R.D. Products, Inc. SN 309,397. Pub. 1–13–70. Filed 10–10–68.

888,812. HAS HOUSING ACTION SYSTEM. Barry Jackson, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 311,599. Pub. 1–13–70. Filed 11–7–68.

888,813. GREYHOUND. The Greyhound Corporation. SN 311,868. Pub. 1–13–70. Filed 11–12–68.

888,814. COLONY VILLAGE RESTAURANT AND DESIGN. Colony Village Corporation. SN 313,263. Pub. 1–13–70. Filed 11–29–68.

888,815. BIG STEER. The Big Steer. SN 314,516. Pub. 1–13–70. Filed 12–16–68.

888,816. THE DEVIL'S FORK. Rhode Island Catering Co., Inc. SN 324,507. Pub. 1–13–70. Filed 4–14–69.

888,817. FLAMING FORK DESIGN. Rhode Island Catering Co., Inc. SN 324,508. Pub. 1–13–70. Filed 4–14–69.

888,818. ROYAL COACH. Royal Coach Incorporated. SN 326,319. Pub. 1–13–70. Filed 5–5–69.

888,819. CAFE GALERIE. Longchamps, Inc. SN 328,932. Pub. 1–13–70. Filed 6–3–69.

888,820. SAKI'S. Saki's Ltd. SN 330,334. Pub. 1–13–70. Filed 6–18–69.

888,821. FAMOUS FROM ROAST TO ROAST. Oxford's Shoppes, Ltd. SN 332,591. Pub. 1–13–70. Filed 7–15–69.

888,822. LIFECARD. Medical Evaluation Data, Inc. SN 333,500. Pub. 1–13–70. Filed 7–25–69.

888,823. MICKEY MANTLE'S COUNTRY COOKIN'. Mickey Mantle's Country Cookin', Inc. SN 335,174. Pub. 1–13–70. Filed 8–13–69.

888,824. MICKEY MANTLE'S. Mickey Mantle's Country Cookin', Inc. SN 335,175. Pub. 1–13–70. Filed 8–13–69.

Class 101 — Advertising and Business

888,812. (See Class 100 for this trademark.)

888,825. MR (DESIGN). The Morning Report Investor Services, Inc. SN 284,220. Pub. 1–13–70. Filed 11–6–67.

888,826. MORNING REPORT. The Morning Report Investor Services, Inc. SN 284,221. Pub. 1–13–70. Filed 11–6–67.

888,827. SPEED KEEPING AND DESIGN. Computer Utility Enterprises, Inc., assignee of Sanders, Boswell & Kinser, d.b.a. PACS. SN 286,723. Pub. 1–13–70. Filed 12–11–67.

888,828. QUIZMATIC PROMOTIONS AND DESIGN. Froelich Summers, Inc. SN 292,687. Pub. 1–13–70. Filed 3–7–68.

888,829. BAR-MART AND DESIGN. Si-Ep Associates, Inc. SN 292,819. Pub. 1–13–70. Filed 3–8–68.

888,830. AIM. American Institutional Developers, Inc. SN 298,096. Pub. 1–13–70. Filed 5–14–68.

888,831. TECHNIQUES. Techniques, Inc. SN 298,255. Pub. 1–13–70. Filed 5–15–68.

888,832. FAP FINANCIAL ACCOUNTING PROGRAM AND DESIGN. National Bank of America at Salina. SN 299,035. Pub. 1–13–70. Filed 5–24–68.

888,833. HOUSE OF CREATIVE CRAFTS AND DESIGN. House of Creative Crafts, Inc. SN 299,352. Pub. 1–13–70. Filed 5–29–68.

888,834. ESCORT. Technical Operations, Incorporated. SN 305,081. Pub. 1–13–70. Filed 8–13–68.

888,835. GMS. The Emerson Consultants, Inc. SN 306,902. Pub. 10–7–69. Filed 9–9–68.

888,836. NDC AND DESIGN. National Data Corporation. SN 307,278. Pub. 1–13–70. Filed 9–13–68.

888,837. BOOZ·ALLEN & HAMILTON. Booz·Allen & Hamilton Inc. SN 311,547. Pub. 1–13–70. Filed 11–7–68.

888,838. MISTER INCOME TAX TAX AND DESIGN. Ellsworth B. Dreher. SN 311,849. Pub. 1–13–70. Filed 11–12–68.

888,839. TIC-TAC ZODIAC. Curtin Associates, Inc. SN 313,809. Pub. 1–13–70. Filed 12–6–68.

888,840. BEAT THE DRUMS. Glendinning Companies, Inc. SN 313,815. Pub. 1–13–70. Filed 12–6–68.

888,841. THE AMERICAN SCENE. Glendinning Companies, Inc. SN 313,816. Pub. 1–13–70. Filed 12–6–68.

888,842. S AND GLOBE DESIGN. Sawyer Business Colleges, Inc. SN 314,364. Pub. 1–13–70. Filed 12–12–68.

888,843. GRAB-IT AND DESIGN. Dolly Madison Industries, Inc. (Delaware corporation), by merger and change of name from Dolly Madison Industries, Inc. (Minnesota corporation). SN 315,776. Pub. 1–13–70. Filed 1–3–69.

888,844. EAGLE DESIGN. Dade Wholesale Products, Inc. SN 315,885. Pub. 1–13–70. Filed 1–6–69.

888,845. OTI AND DESIGN. OTI Services, Inc. SN 318,329. Pub. 1–13–70. Filed 2–4–69.

888,846. GAMIC. Chicago and North Western Railway Company, d.b.a. Chicago and North Western Railway. SN 319,032. Pub. 1–13–70. Filed 2–13–69.

888,847. CADFAC. Chicago and North Western Railway Company, d.b.a. Chicago and North Western Railway. SN 319,033. Pub. 1–13–70. Filed 2–13–69.

888,848. PORTICO. Portico, Inc. SN 319,503. Pub. 1–13–70. Filed 2–18–69.

888,849. PORTICO RESTAURANTS AND DESIGN. Portico, Inc. SN 319,504. Pub. 1–13–70. Filed 2–18–69.

888,850. THE EXECUTIVE PROGRAM. Professional & Technical Programs, Inc. SN 323,205. Pub. 1–13–70. Filed 4–1–69.

888,851. GRACIOUS LADY. The Gracious Lady Service, Inc. SN 323,704. Pub. 1–13–70. Filed 4–4–69.

888,852. OMAHA STEAKS INTERNATIONAL AND DESIGN. Omaha Steaks International, Inc. SN 324,482. Pub. 1–13–70. Filed 4–14–69.

Class 102 — Insurance and Financial

888,853. THE BANK OF CALIFORNIA ETC. AND DESIGN. The Bank of California, National Association. SN 297,020. Pub. 1–13–70. Filed 5–1–68.

888,854. OVERLAPPING SQUARES (DESIGN). The Capital Group, Inc. SN 304,305. Pub. 1–13–70. Filed 8–5–68.

888,855. THE TWO PLUS. The Lumbermens Mutual Insurance Company. SN 321,816. Pub. 1–13–70. Filed 3–14–69.

Class 103 — Construction and Repair

888,640. (See Class 26 for this trademark.)

888,810. (See Class 100 for this trademark.)

888,856. WASH N' GO. Automotive Assets, Inc. SN 316,970. Pub. 1–13–70. Filed 1–21–69.

888,857. I INTERTHERM AND DESIGN. Intertherm, Inc. SN 333,630. Pub. 1–13–70. Filed 7–28–69.

Class 105 — Transportation and Storage

888,858. BLUE CHIP SERVICE. Trans World Airlines, Inc. SN 305,258. Pub. 1–13–70. Filed 8–15–68.

888,859. STUDENTOURS. Colpitts Travel Centers of America, Inc. SN 313,680. Pub. 1–13–70. Filed 12–5–68.

Class 106 — Material Treatment

888,860. KTD AND DESIGN. Kolsters Tool and Die, Inc. SN 298,013. Pub. 1–13–70. Filed 5–13–68.

888,861. CRYO-TREAT. The Turner & Seymour Manufacturing Company. SN 314,834. Pub. 1–13–70. Filed 12–18–68.

888,862. FOTO FAIR AND BUILDING DESIGN. Progressive Industries Corporation. SN 321,980. Pub. 1–13–70. Filed 3–17–69.

Class 107 — Education and Entertainment

888,693. (See Class 38 for this trademark.)

888,863. SPURS AND DESIGN. North Texas Baseball Club. SN 281,611. Pub. 1–13–70. Filed 10–2–67.

888,864. EYEWITNESS NEWS. Westinghouse Broadcasting Co., Inc. SN 288,902. Pub. 6–10–69. Filed 1–15–68.

888,865. HAMBLETONIAN. The Hambletonian Society, Inc. SN 293,253. Pub. 1–13–70. Filed 3–14–68.

888,866. THE DYNAMICS. Walter Bernas. SN 304,755. Pub. 1–13–70. Filed 8–9–68.

888,867. ASTROWORLD. Astroworld Corporation. SN 306,043. Pub. 1–13–70. Filed 8–27–68.

888,868. ASTROWORLD AND DESIGN. Astroworld Corporation. SN 306,044. Pub. 1–13–70. Filed 8–27–68.

888,869. MARAUDERS. James J. Boucher. SN 315,381. Pub. 1–13–70. Filed 12–30–68.

888,870. MC GRATH. Joseph E. McGrath, Jr. SN 317,358. Pub. 1–13–70. Filed 1–23–69.

888,871. ES '70 AND DESIGN. ES '70. SN 322,787. Pub. 1–13–70. Filed 3–26–69.

888,872. STANLEY CUP. National Hockey League. SN 326,176. Pub. 1–13–70. Filed 5–2–69.

888,873. TYME ARTISTS AND DESIGN. Tyme Artists. SN 327,730. Pub. 1–13–70. Filed 5–20–69.

Collective Membership Mark

Class 200

888,874. ISI INNER SPACE INSTITUTE ETC. AND DESIGN. Inner Space Institute, Inc. SN 310,783. Pub. 1–13–70. Filed 10–29–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1—Raw or Partly Prepared Materials

888,875. La Lonnie Braseth, d.b.a. Braseth's Greenhouse, Wheaton, Minn. SN 335,681. Filed P.R. 8–19–69; Am. S.R. 1–14–70.

MAGNA-CYMS

For Orchid Cut Flowers (Int. Cl. 31).
First use Aug. 19, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

888,876. Gas Energy, Inc., Brooklyn, N.Y. SN 298,251. Filed P.R. 3–14–68; Am. S.R. 12–8–69.

PILFER-PROOF

For Gas Valves (Int. Cl. 6).
First use Jan. 7, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

888,877. Alco Electronic Products Inc., Lawrence, Mass. SN 301,148. Filed P.R. 6–24–68; Am. S.R. 12–9–69.

BRITE-GLO

For Sub-Miniature Neon Lamps Used as Panel Indicators (Int. Cl. 11).
First use Apr. 19, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

888,878. Smith International, Inc., Whittier, Calif., by merger and change of name from Drilco Oil Tools, Inc., Midland, Tex. SN 289,016. Filed P.R. 1–17–68; Am. S.R. 11–19–69.

HEVI-WATE

For Drill Stem Members Useful in Rotary Boring of the Earth (Int. Cl. 7).
First use Nov. 15, 1967.

888,879. Grove Manufacturing Company, Shady Grove, Pa. SN 303,998. Filed P.R. 7–31–68; Am. S.R. 12–4–69.

HY-DRO-DRIV'N

For Self-Unloading Agricultural Forage Machine (Int. Cl. 7).
First use July 22, 1968.

888,880. Moeller Mfg., Inc., Greeley, Colo. SN 324,851. Filed P.R. 4–14–69; Am. S.R. 11–10–69.

MOELLER

For Milling Apparatus for Grinding Corn, Grain, Hay and the Like, and Component Parts Therefor (Int. Cl. 7).
First use Apr. 1, 1968.

Class 26—Measuring and Scientific Appliances

888,881. Acid-Base, Inc., Denver, Colo. SN 319,995. Filed P.R. 2–28–69; Am. S.R. 12–22–69.

THE ACID-BASE SURFACE

For Measuring Unit for Plotting Variables in Laboratory Study and Clinical Analysis of Blood and Like Fluids (Int. Cl. 9).
First use June 15, 1967.

Class 31—Filters and Refrigerators

888,882. Vacuum Barrier Corporation, Woburn, Mass. SN 322,014. Filed P.R. 3–17–69; Am. S.R. 11–21–69.

SEMIFLEX

For Cryogenic Transfer Lines (Int. Cl. 11).
First use Dec. 6, 1967.

Class 34—Heating, Lighting, and Ventilating Apparatus

888,883. Air Reduction Company, Incorporated, New York, N.Y. SN 290,373. Filed P.R. 2–6–68; Am. S.R. 12–22–69.

DOUBLE-LOK

For Welding Electrode Holder (Int. Cl. 9).
First use Jan. 28, 1965.

Class 45—Soft Drinks and Carbonated Waters

888,884. Jos. M. Linsey Corp., Somerville, Mass. SN 311,551. Filed P.R. 11–7–68; Am. S.R. 12–29–69.

"THE DRINK THAT IS GOOD ENOUGH TO EAT"

For Syrups for Making Soft Drinks (Int. Cl. 32).
First use at least as early as Oct. 8, 1968.

Class 46—Foods and Ingredients of Foods

888,885. Southwestern Fruit & Vegetable Co., Inc., McAllen, Tex., assignee of McAllen Distributing, Inc., McAllen, Tex. SN 324,648. Filed P.R. 4–16–69; Am. S.R. 12–29–69.

LIL BIT BETTER

For Fresh Vegetables (Int. Cl. 31).
First use Dec. 9, 1968.

Class 47—Wines

888,886. Noilly Prat Torino, S.p.A., d.b.a. Noilly Prat, Turin, Italy. SN 316,397. Filed P.R. 1–13–69; Am. S.R. 12–30–69.

GRAN TORINO

For Vermouth (Int. Cl. 33).
First use at least as early as February 1946; in commerce at least as early as November 1964.

Class 49—Distilled Alcoholic Liquors

888,887. Mediterranean Importing Co. Inc., Long Island City, N.Y. SN 308,024. Filed P.R. 9–23–68; Am. S.R. 9–4–69.



For Liqueur (Int. Cl. 33).
First use Aug. 23, 1968.

Class 52—Detergents and Soaps

888,888. John H. Breck, Inc., Wayne, N.J. SN 305,802. Filed P.R. 8–23–68; Am. S.R. 10–29–69.

COLOR SAVER

For Hair Shampoo (Int. Cl. 3).
First use Aug. 8, 1968.

888,889. John H. Breck, Inc., Wayne, N.J. SN 305,803. Filed P.R. 8–23–68; Am. S.R. 10–29–69.

COLOR SAVERS

For Hair Shampoo (Int. Cl. 3).
First use Aug. 8, 1968.

888,890. John H. Breck, Inc., Wayne, N.J. SN 305,805. Filed P.R. 8–23–68; Am. S.R. 10–29–69.

COLOR FRESH

For Hair Shampoo (Int. Cl. 3).
First use July 30, 1968.

TRADEMARK REGISTRATIONS RENEWED

34,322. LION IN OVAL MARK. Cl. 46 (Int. Cl. 30). 3–13–1900.
258,314. DAIRY MADE. Cl. 46 (Int. Cl. 30). 7–2–29.
263,230. REGINA. Cl. 21 (Int. Cl. 9). 11–5–29.
264,203. DIAMOND. Cl. 13 (Int. Cl. 6). 11–19–29.
264,204. REPRESENTATION OF A DIAMOND. Cl. 13 (Int. Cl. 6). 11–19–29.
264,868. CLOVER FARM. Cl. 6 (Int. Cls. 3 and 30). 12–10–29.
265,694. PUBLIX. Cl. 39 (Int. Cl. 25). 1–7–30.
265,773. "LENA" AND DRAWING. Cl. 46 (Int. Cl. 31). 1–7–30.
266,330. RAYTHEON. Cl. 21 (Int. Cl. 9). 1–14–30.
266,667. REDILITE. Cl. 8 (Int. Cl. 34). 1–28–30.
267,055. REPRESENTATION OF BELL. Cl. 43 (Int. Cl. 23). 2–11–30.
267,056. DMC. Cl. 43 (Int. Cl. 23). 2–11–30.
267,110. SHERBO. Cl. 46 (Int. Cl. 30). 2–11–30.
267,663. BUFFALO DESIGN. Cl. 16 (Int. Cl. 2). 2–25–30.
267,697. MYCOLEUM. Cl. 4 (Int. Cl. 3). 2–25–30.
267,704. WEAREVER. Cl. 37 (Int. Cl. 16). 2–25–30.
267,875. YANKEE. Cl. 23 (Int. Cls. 7 and 8). 3–4–30.
268,038. NAVAP. Cl. 18 (Int. Cl. 5). 3–4–30.
268,745. VEEDER-ROOT. Cl. 26 (Int. Cl. 9). 3–18–30.
269,854. RAINBOW. Cl. 37 (Int. Cl. 16). 4–22–30.
269,951. RUB-MY-TISM. Cl. 18 (Int. Cl. 5). 4–22–30.
270,582. 241. Cl. 13 (Int. Cl. 6). 5–6–30.
271,565. "ELECTROLUX." Cl. 21 (Int. Cl. 9). 6–10–30.
271,938. BEN BOLT. Cl. 27 (Int. Cl. 14). 6–17–30.
271,997. SORRY. Cl. 22 (Int. Cl. 28). 6–24–30.
272,064. ABENDPOST. Cl. 38 (Int. Cl. 16). 6–24–30.
272,065. SONNTAGPOST. Cl. 38 (Int. Cl. 16). 6–24–30.
443,485. CHEF-ETTE. Cl. 13 (Int. Cl. 21). 10–25–49.
443,653. RIJADOR. Cl. 32 (Int. Cl. 34). 12–27–49.
444,050. MARVALON. Cl. 20 (Int. Cl. 27). 6–27–50.
511,451. THE MASTER BARBER. Cl. 40 (Int. Cl. 21). 6–21–49.
517,617. COMFORTIZED. Cl. 32 (Int. Cl. 20). 11–15–49.
518,293. STEPHENS-ADAMSON. Cl. 23 (Int. Cl. 7). 12–6–49.
518,388. MEASURAY. Cl. 26 (Int. Cl. 9). 12–6–49.
518,619. LIFETIME. Cl. 28 (Int. Cl. 14). 12–13–49.
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764,483. INJUNHIDE. Cl. 1.
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764,523. TRU-SEAL AND DESIGN. Cl. 12.
764,525. CRESTLINE AND DESIGN. Cl. 13.
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764,536. SPANAL. Cl. 14.
764,542. CERALON. Cl. 15.
764,546. DURA-PROOF. Cl. 16.
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764,658. CORELLE. Cl. 28.
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764,675. TITAN 1000. Cl. 31.
764,679. POLY-COR. Cl. 31.
764,683. TWEE-BRAZER. Cl. 34.
764,688. U.S. ROYAL PREMIUM SAFETY PATROL. Cl. 35.
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764,850. POLYBOTTLE. Cl. 2.
764,851. HOFFMAN PLATE. Cl. 14.
764,855. RED BOOK MARKET VALUES. Cl. 38.

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519,412. ATLAS. Cl. 23. 1-3-50. Atlas Imperial Diesel Engine Co. White Motor Corporation, Cleveland, Ohio. Amended: In the statement, column 1, lines 7 and 8, the description of goods is deleted and *internal combustion engine parts* is inserted.

566,785. 76 AND DESIGN. Cl. 15. 11-18-52. Union Oil Company of California, Los Angeles, Calif. Amended to appear:



775,393. TORCH AND OVAL. Cl. 38. 8-18-64. The American Oil Company, Chicago, Ill. Amended to appear:

TORCH AND OVAL

779,469. ASTRA-SONIC. Cl. 36. 11-3-64. Pentron Electronics Corporation. The Magnavox Company, Fort Wayne, Ind. Amended to appear:

ASTRO SONIC

885,657. MULTI-KROME. Cl. A. 2-3-70. The Wool Bureau, Incorporated, New York, N.Y. Corrected: In the statement, column 2, lines 9 and 10, "solidable" should be deleted and *soluble* should be inserted.

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Aberndpost Co., the, Chicago, Ill. 272,064–5, ren. 3–31–70. Cl. 38.
Abram Lyle & Sons, Ltd., to Tate & Lyle, Ltd., London, England. 34,322, ren. 3–31–70. Cl. 46.
Acheson Industries, Inc., Port Huron, Mich. 764,542, canc. Cl. 15.
Acid-Base, Inc., Denver, Colo. 888,881. Cl. 26.
Acme Boot Mfg. Co., Inc., to Acme Boot Co., Inc., Clarksville, Tenn. 524,262, ren. 3–31–70. Cl. 39.
Acorn Insulated Wire Co., Inc., Pawtucket, R.I. 520,035, ren. 3–31–70. Cl. 21.
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Air Reduction Co., Inc., New York, N.Y. 888,883. Cl. 34.
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Ajax Electric Co., Inc., to Ajax Electric Co., Philadelphia, Pa. 522,310, ren. 3–31–70. Cl. 38.
Alco Electronic Products Inc., Lawrence, Mass. 888,877. Cl. 21.
All Tech Industries, Inc., Hialeah, Fla. 888,603, pub. 1–13–70. Cl. 22.
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Allergan Pharmaceuticals, Santa Ana, Calif. 888,560, pub. 1–13–70. Cl. 18.
Alligator Co., Inc., the, St. Louis, Mo. 888,734, pub. 1–13–70. Cl. 39.
Alside Aluminum Supply Co., from Ohio Aluminum Supply Co., Akron, Ohio. 888,536, pub. 1–13–70. Cl. 12.
American Gage & Mfg. Co., the, Dayton, Ohio. 764,807, canc. Cl. 50.
American Home Products Corp. : *See*—
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American Home Products Corp., New York, N.Y. 888,508, pub. 1–13–70. Cl. 4.
American Institutional Developers, Inc., Wyneewood, Pa. 888,830. pub. 1–13–70. Cl. 101.
American Machine & Foundry Co., New York, N.Y. 888,677, pub. 1–13–70. Cl. 35.
American Oil Co., the, Chicago, Ill., 775,393. Am. 7(d). Cl. 38.
American Optical Corp., Southbridge, Mass. 888,649, pub. 1–13–70. Cl. 26.
American Snuff Co., to Conwood Corp., Memphis, Tenn. 525,213–15, ren. 3–31–70. Cl. 17.
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Arkwright, Inc., New York, N.Y. 520,269, ren. 3–31–70. Cl. 39.
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Armstrong Daily, Inc., the : *See*—
National Racing Program, Inc.
Arnold, S. M. Inc., St. Louis, Mo. 522,937, ren. 3–31–70. Cl. 1.
Arnold, S. M. Inc., St. Louis, Mo. 888,656, pub. 1–13–70. Cl. 29.
Arvin Industries, Inc., Columbus, Ind. 888,669, pub. 1–13–70. Cl. 34.
Ashtabula Rubber Co., Ashtabula, Ohio. 888,578, pub. 1–13–70. Multiple Class (Classes 21 and 35).
Astroworld Corp., Houston, Tex. 888,867–8, pub. 1–13–70. Cl. 107.
Ates Componenti Elettronici S.p.A., Milan, Italy. 888,579, pub. 9–2–69. Cl. 21.
Athlone Industries, Inc., New York, N.Y. 888,654, pub. 1–13–70. Cl. 26.
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Attenhofer, Adolf, to A. Attenhofer A. G., Zurich, Switzerland. 518,765, ren. 3–31–70. Cl. 22.
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Avon Products, Inc., New York, N.Y. 888,798, pub. 1–13–70. Multiple Class (Classes 51 and 52).
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Bancroft, Joseph & Sons Co., New York, N.Y. 888,735, pub. 1–13–70. Cl. 39.
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Best, Richard, Pencil Co., Inc., Springfield, N.J. 521,761, ren. 3–31–70. Cl. 37.
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Brake Lining Co., Inc., Lawrence, Mass. 888,675, pub. 1–13–70. Cl. 35.
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Breck, John H., Inc., Wayne, N.J. 888,888–90. Cl. 52.
Briggs Bituminous Composition Co., Philadelphia, Pa. 888,497, pub. 1–13–70. Cl. 1.
Brite Industries Inc., Providence, R.I. 888,655, pub. 1–13–70. Cl. 28.
British Chemotheutic Products Ltd., Bradford, England. 888,569, pub. 1–13–70. Cl. 18.
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Canadian Fish & Cold Storage Co., Ltd.
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Calgon Corp., Pittsburgh, Pa. 888,607, pub. 6–24–69. Cl. 4.
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Chemagro Corp., Kansas City, Mo. 888,568, pub. 1–13–70. Cl. 18.
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Chemical Additives Co., Houston, Tex. 888,526, pub. 1–13–70. Cl. 6.
Chem-Trend Inc., Howell, Mich. 888,549, pub. 1–13–70. Cl. 15.
Chesebrough-Pond's Inc., New York, N.Y. 888,794, pub. 1–13–70. Cl. 51.
Chicago Association of Commerce & Industry, Chicago, Ill. 888,691, pub. 1–13–70. Cl. 88.
Chicago & North Western Railway Co., d.b.a. Chicago & North Western Railway, Chicago, Ill. 888,846–7, pub. 1–13–70. Cl. 101.
Ciba Ltd., Basel, Switzerland. 888,519, pub. 1–13–70. Cl. 6.
City Products Corp., Chicago, Ill. 764,589, canc. Cl. 21.
Clauss Cutlery Corp.: *See*—
Henkel-Clauss Co., The
Clay Products Association of the Southwest, Austin, Tex. 764,518, canc. Cl. 12.
Clear-View Shade Co., Chicago, Ill. 888,664, pub. 1–13–70. Cl. 32.
Clover Farm Stores Corp.: *See*—
Grocers & Producers Co., The
Colgate-Palmolive Co., New York, N.Y. 888,796, pub. 11–18–69. Cl. 51.
Colonial Dames Co., Ltd., Montebello, Calif. 764,593, canc. Cl. 22.
Colony Village Corp., Williamsburg, Iowa. 888,814, pub. 1–13–70. Cl. 100.
Colpitts Travel Centers of America, Inc., Boston, Mass. 888,859, pub. 1–13–70. Cl. 105.
Columbia Broadcasting System, Inc.: *See*—
Amplifier Corp. of America
Computer Utility Enterprises, Inc., from Sanders, Boswell & Kinser, d.b.a. PACS, Memphis, Tenn. 888,827, pub. 1–13–70. Cl. 101.
Concrete Products, Inc., Brunswick, Ga. 764,515, canc. Cl. 12.
Cone Mills Corp., Greensboro, N.C. 888,749, pub. 1–13–70. Cl. 42.
Consolidated Foods Corp.: *See*—
Electrolux, Inc.
Hover & Veltman.
Lowe, Joe, Corp.
Consolidated Royal Chemical Corp., Chicago, Ill. 520,986, ren. 3–31–70. Cl. 51.
Continental Folding Paper Box Co., Inc., Ridgefield, N.J. 764,489, canc. Cl. 2.
Continental Sensing, Inc., Melrose Park, Ill. 888,596, pub. 1–13–70. Cl. 21.
Conway Bedding Co., Inc., Chicopee, Mass. 517,617, ren. 3–31–70. Cl. 32.
Conwood Corp.: *See*—
American Snuff Co.
Cooper, Ben, Inc., Brooklyn, N.Y. 888,740, pub. 1–13–70. Cl. 39.
Coro, Inc., New York, N.Y. 764,658, canc. Cl. 28.
Cory Corp., Chicago, Ill. 888,591, pub. 1–13–70. Cl. 21.
Crackin Good Bakers, Inc.: *See*—
Carr-Consolidated Biscuit Co.
Crandall, Pierce & Co., Chicago, Ill. 888,696, pub. 1–13–70. Cl. 38.
Crane Plastics, Inc., Columbus, Ohio. 888,588, pub. 1–13–70. Cl. 12.
Cross, A. T., Co.: *See*—
Cross, A. T., Pencil Co.
Cross, A. T., Pencil Co., Providence, to A. T. Cross Co., Lincoln, R.I. 526,855, ren. 3–31–70. Cl. 37.
Crown Zellerbach Corp.: *See*—
Gaylord Container Corp.
Crystal, David, Inc., to David Crystal, Inc., New York, N.Y. 524,437, ren. 3–31–70. Cl. 39.
Cunningham, M. E., Co., Ingomar, Pa. 888,625, pub. 1–13–70. Cl. 23.
Curtin Associates, Inc., New York, N.Y. 888,839, pub. 1–13–70. Cl. 101.
D-B-S, Diversified Business Services, Inc., Springfield, Mass. 764,844, canc. Cl. 101.
Dade Wholesale Products, Inc., Opa Locka, Fla. 888,844, pub. 1–13–70. Cl. 101.
Dairy Made Ice Cream Co., Paterson, N.J., to Borden, Inc., New York, N.Y. 258,314, ren. 3–31–70. Cl. 46.
David & David, Inc., Long Island City, N.Y. 888,743, pub. 1–13–70. Cl. 40.
Davis Paint Co., Kansas City, Mo. 527,042, ren. 3–31–70. Cl. 16.
Deering Milliken, Inc., New York, N.Y. 888,750–2, pub. 1–13–70. Cl. 42.
Defiance International, Ltd., Jamaica, N.Y. 888,540, pub. 1–13–70. Multiple Class (Classes 13, 23, 27, and 31).
Delbag Luftfilter GmbH, Berlin-Halensee, Germany. 888,660, pub. 1–13–70. Cl. 31.
Delbanco Wigs, Inc., New York, N.Y. 888,742, pub. 1–13–70. Cl. 40.
De Santo, Vincent, d.b.a. Vincent Jewelers, West New York, N.J. 764,661, canc. Cl. 28.
Des Moines Register & Tribune Co., Des Moines, Iowa. 888,708, pub. 1–13–70. Cl. 38.
Diamond Expansion Bolt Co., Garwood, N.J., to General Cable Corp., New York, N.Y. 264,203–4, ren. 3–31–70. Cl. 13.
Diamond Expansion Bolt Co., Inc., Garwood, N.J., to General Cable Corp., New York, N.Y. 519,202, ren. 3–31–70. Cl. 23.
Diamond National Corp., New York, N.Y. 888,502, pub. 1–13–70. Cl. 2.
Dimare Brothers, Inc., Boston, Mass. 888,772, pub. 1–13–70. Cl. 46.
Dine-Mor Foods, Inc., Detroit, Mich. 888,762, pub. 1–13–70. Cl. 46.
Divito, Salvatore S., d.b.a. Samsa Co., Philadelphia, Pa. 764,764, canc. Cl. 40.
Doban Labs, Inc., Sunnyvale, Calif. 764,611, canc. Cl. 22.
Dr. Eugen Durrwachter Doduco, Pforzheim, Germany. 888,547, pub. 1–13–70. Cl. 14.
Dolcis Ltd.: *See*—
Upsons Ltd.
Dollfus-Mieg & Cie, Societe Anonyme, Paris, France. 267,055–6, ren. 3–31–70. Cl. 43.
Dolly Madison Industries, Inc., from Dolly Madison Industries, Inc., Philadelphia, Pa. 888,843, pub. 1–13–70. Cl. 101.
Dow Chemical Co., The, Midland, Mich. 764,557, canc. Cl. 18.
Dow Chemical Co., The, Midland, Mich. 764,559, canc. Cl. 18.
Dow Chemical Co., The, Midland, Mich. 764,561, canc. Cl. 18.
Drackett Co., The, to The Drackett Co., Cincinnati, Ohio. 519,951, ren. 3–31–70. Cl. 52.
Dreher, Ellsworth B., Denver, Colo. 888,838, pub. 1–13–70. Cl. 101.
Drilco Oil Tools, Inc.: *See*—
Smith International, Inc.
Dutch Twist Corp., King of Prussia, Pa. 888,673, pub. 1–13–70. Cl. 34.
ES '70, Washington, D.C. 888,871, pub. 1–13–70. Cl. 107.
ESB Inc., Philadelphia, Pa. 888,714, pub. 1–13–70. Cl. 39.
Eagle Electric Mfg. Co. Inc., Long Island City, N.Y. 526,052, ren. 3–31–70. Cl. 21.
East Chicago Machine Tool Corp., East Chicago, Ind. 888,631, pub. 1–13–70. Cl. 23.
Eaton Chemical Corp., Detroit, Mich. 764,830, canc. Cl. 52.
Eaton Yale & Towne Inc., Cleveland, Ohio. 888,606, pub. 1–13–70. Cl. 22.
Eberhard Faber Inc.: *See*—
Eberhard Faber Pencil Co.
Eberhard Faber Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 269,854, ren. 3–31–70. Cl. 37.
Economy Co., The, Oklahoma City, Okla. 888,680–1, pub. 1–13–70. Cl. 36.
Economy Co., The, Oklahoma City, Okla. 888,683, pub. 1–13–70. Cl. 36.
Economy Furniture, Inc., Austin, Tex. 888,666–7, pub. 1–13–70. Cl. 32.
Electro Sensors, Inc., Minneapolis, Minn. 888,652, pub. 1–13–70. Cl. 26.
Electrolux, Inc., New York, N.Y., to Consolidated Foods Corp., Chicago, Ill. 271,565, ren. 3–31–70. Cl. 21.
Electro-Seal Corp., Maywood, N.J. 888,632, pub. 1–13–70. Cl. 23.
Elite Creations, Inc., Elmhurst, N.Y. 764,597, canc. Cl. 22.
Ely & Walker, Inc., Wilmington, Del. 888,710, pub. 10–1–68. Cl. 39.
Emergency Laboratories, New York, N.Y. 74,724, canc. Cl. 18.
Emergency Laboratories, New York, N.Y. 251,982, canc. Cl. 52.
Emerson Consultants, Inc., The, New York, N.Y. 888,835, pub. 10–7–69. Cl. 101.
Engelhard Minerals & Chemicals Corp., Newark, N.J. 888,587, pub. 1–13–70. Cl. 21.
Eskimo Pie Corp., Richmond, Va. 888,779, pub. 8–19–69. Cl. 46.
Estee Lauder, Inc., New York, N.Y. 888,797, pub. 1–13–70. Multiple Class (Classes 51 and 52).
Ethyl Corp., Richmond, Va. 888,650, pub. 1–13–70. Cl. 26.
Everingham Bros. Ltd., Toronto, Ontario, Canada. 888,541, pub. 11–4–69. Cl. 13.
Eversharp, Inc., Milford, Conn. 888,628, pub. 1–13–70. Cl. 23.
Family Camera Associates, Inc., Arvada, Colo. 888,692, pub. 1–13–70. Cl. 38.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 888,525, pub. 10–21–69. Cl. 6.
Farcry Development Corp., New York, N.Y. 764,749, canc. Cl. 39.
Farnsworth Television & Radio Corp., Fort Wayne, Ind., to Capehart Corp., New York, N.Y. 524,090, ren. 3–31–70. Cl. 21.
Farrar, Straus & Giroux, Inc., New York, N.Y. 888,705, pub. 1–13–70. Cl. 38.
Faulconer, Henry A., d.b.a. Falcon Laboratories, Descanso, Calif. 764,683, canc. Cl. 34.
Fedtro, Inc., Rockville Centre, N.Y. 888,584, pub. 7–22–69. Cl. 21.
Fellows Gear Shaper Co., The, Springfield, Vt. 888,617, pub. 1–13–70. Cl. 23.
Fibre-Metal Products Co., The, Chester, Pa. 888,573, pub. 11–25–69. Cl. 19.
Filmedia, Inc., Los Angeles, Calif. 888,707, pub. 1–13–70. Cl. 38.
Filtech Corp., Franklin Park, Ill. 888,585, pub. 1–13–70. Cl. 21.

Fisons Industrial Chemicals Ltd., Loughborough, England. 888,515, pub. 1–13–70. Cl. 6.
Flygt Corp., Stamford, Conn. 888,653, pub. 1–13–70. Cl. 26.
Follett Educational Corp., Chicago, Ill. 888,699, pub. 1–13–70. Cl. 38.
Foremost-McKesson, Inc.: *See*—
McKesson & Robbins, Inc.
Foremost-McKesson, Inc., New York, N.Y. 888,807, pub. 1–13–70. Cl. 52.
Forward Industries, Inc., Miami, Fla. 764,603, canc. Cl. 22.
Foster, L. W., Sportswear Co., Inc., Philadelphia, Pa. 888,720, pub. 1–13–70. Cl. 39.
Fostoria Corp., Huntingdon Valley, Pa. 764,623, canc. Cl. 23.
Fram Corp., East Providence, R.I. 764,679, canc. Cl. 31.
Frank, Emil A., d.b.a. Frank Pattern & Mfg., Los Alamitos, Calif. 888,543, pub. 1–13–70. Cl. 13.
Franklin Optical Co., Oakland, Calif. 888,640, pub. 1–13–70. Multiple Class (Classes 26, 44, 100, and 103).
Freeman, Louis G., Co., The, Cincinnati, Ohio. 524,107, ren. 3–31–70. Cl. 23.
Frontier Products, Inc., Dothan, Ala. 764,482, canc. Cl. 1.
Fuller Laboratories, Inc., Eden Prairie, Minn. 888,554, pub. 1–13–70. Cl. 16.
Funny Co., Inc., The, Los Angeles, Calif. 764,727, canc. Cl. 38.
GAF Corp., New York, N.Y. 888,501, pub. 1–13–70. Cl. 1.
G.I. Plastics, Inc., Chicago, Ill. 888,788, pub. 10–1–68. Cl. 50.
Gallun, A. F. & Sons Corp., Milwaukee, Wis. 764,480, canc. Cl. 1.
Gantner Industries, Inc., Morton Grove, Ill. 888,663, pub. 1–13–70. Cl. 32.
Garland Knitting Mills, Jamaica Plain, Mass. 764,738, canc. Cl. 39.
Gas Energy, Inc., Brooklyn, N.Y. 888,876. Cl. 13.
Gatic S.A.I.C.F.I., Buenos Aires, Argentina. 888,709, pub. 1–13–70. Cl. 39.
Gaylord Container Corp., St. Louis, Mo., to Crown Zellerback Corp., San Francisco, Calif. 524,428, ren. 3–31–70. Cl. 2.
Geilich Tanning Co., Taunton, Mass. 764,483, canc. Cl. 1.
Gelmok Kleding N.V., Assen, Netherlands. 764,734, canc. Cl. 39.
General Batterp Corp., from General Battery & Ceramic Corp., Reading Pa. 888,589, pub. 1–13–70. Cl. 21.
General Cable Corp.: *See*—
Diamond Expansion Bolt Co.
Diamond Expansion Bolt Co., Inc.
General Dynamics Corp., New York, N.Y. 888,571, pub. 11–4–69. Cl. 19.
General Electrodynamics Corp., Garland, Tex. 888,593, pub. 1–13–70. Cl. 21.
General Foods Corp., White Plains, N.Y. 888,770, pub. 1–13–70. Cl. 46.
General Foods Corp., White Plains, N.Y. 888,774, pub. 1–13–70. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 888,784, pub. 10–28–69. Cl. 46.
General Time Corp.: *See*—
Western Clock Co.
Genesco Inc., Nashville, Tenn. 764,760, canc. Cl. 39.
Glendinning Companies, Inc., Westport, Conn. 888,840–1, pub. 1–13–70. Cl. 101.
Goldberg, Daniel A., North Bay Village, Fla. 888,602, pub. 1–13–70. Cl. 22.
Golden Gate Sauna, San Francisco, Calif. 888,728, pub. 1–13–70. Cl. 39.
Golden State Distributors, Inc., Los Angeles, Calif. 888,600, pub. 11–11–69. Cl. 22.
Governor Fastener Co., The, New York, N.Y. 888,744, pub. 1–13–70. Cl. 40.
Grace, W. R. & Co., New York, N.Y. 888,564, pub. 1–13–70. Cl. 18.
Gracious Lady Service, Inc., The, Philadelphia, Pa. 888,851, pub. 1–13–70. Cl. 101.
Grasshopper Airboats, Inc., Orlando, Fla. 888,577, pub. 1–13–70. Cl. 19.
Green Giant Co., Le Sueur, Minn. 888,773, pub. 1–13–70. Cl. 46.
Greyhound Corp., The, Chicago, Ill. 888,503, pub. 1–13–70. Cl. 3.
Greyhound Corp., The, Chicago, Ill. 888,813, pub. 1–13–70. Cl. 100.
Grocers & Producers Co., The, d.b.a. Clover Farm Stores, to Clover Farm Stores Corp., Cleveland, Ohio. 264,868, ren. 3–31–70. Cl. 6.
Grove Mfg. Co., Shady Grove, Pa. 888,879. Cl. 23.
Gulf Oil Corp., Pittsburgh, Pa. 764,481, canc. Cl. 1.
Hambletonian Society, Inc., The, Goshen, N.Y. 888,865, pub. 1–13–70. Cl. 107.
Handcraft Co., Inc., Princeton, Wis. 888,604, pub. 1–13–70. Cl. 22.
Hannah Textiles Inc., Palisades Park, N.J. 888,748, pub. 1–13–70. Cl. 42.
Hanson, Walter E., d.b.a. United Creto Co., El Paso, Tex. 888,535, pub. 8–6–68. Cl. 12.
Happy Legs, Inc., New York, N.Y. 888,736, pub. 1–13–70. Cl. 39.
Harbin, Clyde A., Whitehaven, Tenn. 888,693, pub. 1–13–70. Multiple Class (Classes 38 and 107).
Hardman, H. V. Co. (Inc.), to Hardman Inc., Belleville, N.J. 526,901, ren. 3–31–70. Cl. 6.
Hardman Inc.: *See*—
Hardman, H. V., Co. (Inc.)
Harris Paint Co., d.b.a. Harris Standard Paint Co., Tampa, Fla. 888,552, pub. 1–13–70. Cl. 16.
Hartmann Luggage Co., Lebanon, Tenn. 764,493, canc. Cl. 3.
Hat Corp. of America, New York, N.Y. 519,905, ren. 3–31–70. Cl. 39.
Hatcher, Hughes Inc., Detroit, Mich. 888,717, pub. 1–13–70. Cl. 39.
Hays Corp., The, Michigan City, Ind. 888,808, pub. 10–21–69. Cl. 100.
Heinemann Electric Co., Trenton, N.J. 888,586, pub. 1–13–70. Cl. 21.
Henkel-Clauss Co., The, to Clauss Cutlery Corp., Fremont, Ohio. 518,966, ren. 3–31–70. Cl. 44.
Hensley-Russell Inc., Dallas, Tex. 888,722, pub. 1–13–70. Cl. 39.
Hercules Chemical Co., Inc., New York, N.Y. 888,512, pub. 1–13–70. Multiple Class (Classes 6, 12, 34, and 52).
Higley Chemical Co., Dubuque, Iowa. 526,488, ren. 3–31–70. Cl. 4.
Hood, H. P. & Sons, Inc., d.b.a. H. P. Hoods & Sons, Boston, Mass. 888,782, pub. 1–13–70. Cl. 46.
House, Harvey J. Jr., d.b.a. M & H Records, Riverside, Calif. 888,685, pub. 1–13–70. Cl. 36.
House of Creative Crafts, Inc., Chattanooga, Tenn. 888,833, pub. 1–13–70. Cl. 101.
Hover & Veltman, Long Beach, Calif., to Consolidated Foods Corp., d.b.a. Joe Lowe Co., Engelwood, N.J. 267,110, ren. 3–31–70. Cl. 46.
Hunter, Sally, Alexandria, Va. 888,789, pub. 1–13–70. Cl. 50.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 888,780–1, pub. 1–13–70. Cl. 46.
Hupp, Inc.: *See*—
Richards-Wilcox Mfg. Co.
Hydro Mfg. & Sales, Inc., Missouri City, Tex. 888,624, pub. 11–4–69. Cl. 23.
Hydrol Chemical Co., Philadelphia, Pa. 764,773, canc. Cl. 44.
ITA Electronics Corp., Landsdowne, Pa. 764,692, canc. Cl. 36.
I-T-E Imperial Corp., Philadelphia, Pa. 888,545, pub. 1–13–70. Cl. 13.
Ice-Master Corp., Kansas City, Mo. 764,675, canc. Cl. 31.
Inner Space Institute, Inc., Yakima, Wash. 888,874, pub. 1–13–70. Cl. 200.
Institute of Textile Technology, Charlottesville, Va. 888,755, pub. 1–13–70. Cl. 42.
Inta-Roto, Inc., from The Inta-Roto Machine Co., Inc., Richmond, Va. 888,670, pub. 1–13–70. Cl. 34.
Inta-Roto Machine Co., Inc., The: *See*—
Inta-Roto, Inc.
Interco Inc.: *See*—
International Shoe Co.
International Automation Corp., Ann Arbor, Mich. 888,633, pub. 1–13–70. Cl. 23.
International Playtex Corp., Dover, Del. 888,729, pub. 1–13–70. Cl. 39.
International Shoe Co., to Interco Inc., St. Louis, Mo. 523,497, ren. 3–31–70. Cl. 39.
Intertherm, Inc., St. Louis, Mo. 888,674, pub. 1–13–70. Cl. 34.
Intertherm, Inc., St. Louis, Mo. 888,857, pub. 1–13–70. Cl. 103.
Jackson, Barry, Inc., New York, N.Y. 888,812, pub. 1–13–70. Multiple Class (Classes 100 and 101).
Jackson, Eric, & Son, Inc., Los Angeles, Calif. 888,595, pub. 1–13–70. Cl. 21.
James Textile Corp., The, North Bergen, N.J. 888,712, pub. 1–13–70. Cl. 39.
Jaret Imports, Inc., Brooklyn, N.Y. 888,765, pub. 1–13–70. Cl. 46.
Jelke, John F., Co., Chicago, Ill., to Lever Bros. Co., New York, N.Y. 525,668, ren. 3–31–70. Cl. 46.
Jewelsmiths International, Inc.: *See*—
Baskin Bros., Inc.
Johnson Reels, Inc., Mankato, Minn. 764,601, canc. Cl. 22.
Joslyn Mfg. & Supply Co., Chicago, Ill. 764,588, canc. Cl. 21.
KLM Cosmetic Co., Inc., Rockville Centre, N.Y. 888,791, pub. 1–13–70. Cl. 51.
Kahn, David, Inc., Deer Lake, Pa. 267,704, ren. 3–31–70. Cl. 37.
Kaiser Aluminum & Chemical Corp.: *See*—
Mexico Refractories Co.
Kamenstein, David, Inc., New York, N.Y. 888,626, pub. 1–13–70. Cl. 23.
Keity, Ben E., to Ben E. Keity Co., Fort Worth, Tex. 526,773, ren. 3–31–70. Cl. 46.
Kemin Industries, Inc., Des Moines, Iowa. 888,524, pub. 12–23–69. Cl. 6.
Kenner Products Co., Cincinnati, Ohio. 888,684, pub. 11–25–69. Cl. 36.
Kimberly-Clark Corp.: *See*—
Munising Paper Co., The.
Kimberly-Clark Corp., Neenah, Wis. 888,758, pub. 1–13–70. Cl. 44.
Kimberly-Clark Corp., Neenah, Wis. 888,804, pub. 1–13–70. Cl. 51.
Klopman Mills, Inc., Rockleigh, N.J. 888,745–7, pub. 1–13–70. Cl. 42.
Kohner Bros., Inc., East Paterson, N.J. 888,601, pub. 1–13–70. Cl. 22.
Kolsters Tool & Die, Inc., Oakland, Calif. 888,860, pub. 1–13–70. Cl. 106.
Kreisler's Metall- und Drahtwerke G.m.b.H., Stuttgart, Germany. 764,536, canc. Cl. 14.
Kreiss, Sidney J., Inc.: *See*—
Sanson Hosiery Mills, Inc.
Kresge, S. S., Co., Detroit, Mich. 888,532, pub. 1–13–70. Cl. 8.
Kresge, S. S., Co., Detroit, Mich. 888,678, pub. 1–13–70. Cl. 35.
LFR Sales Corp., Shaker Heights, Ohio. 888,533, pub. 1–13–70. Cl. 9.
L.P. Services, Inc., from Paul D. Nyberg, Wheaton, Ill. 888,700–1, pub. 1–13–70. Cl. 38.
Laclede-Christy Co., St. Louis, Mo., to H. K. Porter Co., Inc., Pittsburgh, Pa. 523,222, ren. 3–31–70. Cl. 12.
LaFayette Drug Co., Inc., d.b.a. Kotalko Sales Co., Jersey City, N.J. 426,452, canc. Cl. 51.
Lane Bryant, Inc., New York, N.Y. 888,713, pub. 1–13–70. Cl. 39.

Lapointe Machine Tool Co., The, to The Lapointe Machine Tool Co., Hudson, Mass. 525,710, ren. 3–31–70. Cl. 23.
Lashette Co., Inc., The, Natick, Mass. 764,497, canc. Cl. 5.
Latrobe Electric Steel Co., to Latrobe Steel Co., Latrobe, Pa. 519,697, ren. 3–31–70. Cl. 14.
Latrobe Steel Co.: *See*—
Latrobe Electric Steel Co.
Lear Siegler, Inc., Detroit, Mich. 888,637, pub. 1–13–70. Cl. 23.
Lehigh Valley Cooperative Farmers, d.b.a. Lehigh Valley Dairy, Allentown, Pa. 888,778, pub. 1–13–70. Cl. 46.
Lever Bros. Co.: *See*—
Jelke, John F., Co.
Lever Bros. Co., New York, N.Y. 888,805, pub. 11–4–69. Cl. 52.
Lew Mfg. Co., Coventry, R.I. 764,709, canc. Cl. 37.
Liebovitz, S., & Sons, Inc., to Publix Shirt Corp., New York, N.Y. 265,694, ren. 3–31–70. Cl. 39.
Lihap Industries, Santa Fe Springs, Calif. 888,616, pub. 1–13–70. Cl. 23.
Lilly, Eli, & Co., Indianapolis, Ind. 888,561, pub. 1–13–70. Cl. 18.
Lins, Albert, Zurich, Switzerland. 888,539, pub. 11–12–68. Cl. 13.
Linsey, Jos. M., Corp., Somerville, Mass. 888,884. Cl. 45.
Little Tyke Products Co., St. Louis, Mo. 888,599, pub. 1–13–70. Multiple Class (Classes 22 and 32).
Longchamps, Inc., New York, N.Y. 888,819, pub. 1–13–70. Cl. 100.
Louisiana State Rice Milling Co., Inc., Abbeville, La., to Riviana Foods Inc., Houston, Tex. 527,240, ren. 3–31–70. Cl. 46.
Lowe, Joe Corp., New York, N.Y., to Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 521,122, ren. 3–31–70. Cl. 46.
Lumbermens Mutual Insurance Co., The, Mansfield, Ohio. 888,855, pub. 1–13–70. Cl. 102.
Magic Marker Corp., Glendale, N.Y. 888,689, pub. 1–13–70. Cl. 37.
Malco Products, Inc., Akron, Ohio. 888,806, pub. 11–25–69. Cl. 52.
Mangel Stores Corp., New York, N.Y. 764,747, canc. Cl. 39.
Manhattan Industries, Inc., New York, N.Y. 888,726, pub. 1–13–70. Cl. 39.
Mantle's, Mickey, Country Cookin', Inc., Dallas, Tex. 888,823–4, pub. 1–13–70. Cl. 100.
Maremont Corp., Chicago, Ill. 888,622, pub. 1–13–70. Cl. 23.
Marlin Greeting Cards, Inc., San Rafael, Calif. 888,706, pub. 1–13–70. Cl. 38.
Marquette Petroleum Products, Inc., Chicago, Ill. 524,926, ren. 3–31–70. Cl. 15.
Marriott Corp., from Marriott-Hot Shoppes, Inc., Bethesda, Md. 888,759, pub. 1–13–70. Cl. 46.
Marshall Associates, Inc., Chicago, Ill. 888,592, pub. 1–13–70. Cl. 21.
Masury-Columbia Co.: *See*—
Masury-Young Co.
Masury-Young Co., Charlestown, Mass., to Masury-Columbia Co., Melrose Park, Ill. 267,697, ren. 3–31–70. Cl. 4.
Mattel, Inc., Hawthorne, Calif. 888,608–11, pub. 1–13–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 888,727, pub. 1–13–70. Cl. 39.
McAllen Distributing, Inc.: *See*—
Southwestern Fruit & Vegetable Co., Inc.
McDougall-Butler Co., Inc., Buffalo, to Bisonite Co., Inc., Tonawanda, N.Y. 267,668, ren. 3–31–70. Cl. 16.
McGrath, Joseph E., Jr., Detroit, Mich. 888,870, pub. 1–13–70. Cl. 107.
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 268,038, ren. 3–31–70. Cl. 18.
McNichols Steel Co., Detroit, Mich. 888,630, pub. 1–13–70. Cl. 23.
McQuay, Inc., Minneapolis, Minn., from The Edwin L. Wiegand Co., Pittsburgh, Pa. 888,668, pub. 4–16–68. Cl. 34.
Mead Corp., The, Dayton, Ohio. 764,712, canc. Cl. 37.
Mead Johnson & Co., Evansville, Ind. 888,771, pub. 10–28–69. Cl. 46.
Medical Emergency Donors' Indemnity Committee, Inc., Knoxville, Tenn. 764,836, canc. Cl. 100.
Medical Evaluation Data, Inc., Dallas, Tex. 888,822, pub. 1–13–70. Cl. 100.
Medics Pharmaceutical Corp., Decatur, Ga. 888,559, pub. 1–13–70. Cl. 18.
Mediterranean Importing Co. Inc., Long Island City, N.Y. 888,887. Cl. 49.
Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, 888,496, pub. 1–13–70. Multiple Class (Classes 1, 5, 6, 12, 14, and 21).
Metals Technology, Inc., Canoga Park, Calif. 764,495, canc. Cl. 4.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 519,622, ren. 3–31–70. Cl. 12.
Mia Milli Ltd., Inc., New York, N.Y. 888,711, pub. 1–13–70. Cl. 39.
Midland-Ross Corp., Cleveland, Ohio. 764,618, canc. Cl. 23.
Miracle Pet Products, Inc., Jersey City, N.J. 888,530, pub. 1–13–70. Cl. 6.
Mite Corp., New Haven, Conn. 888,582, pub. 1–13–70. Multiple Class (Classes 21, 26, and 27).
Modern Artcraft, Inc., Bridgeport, Conn. 888,598, pub. 1–13–70. Cl. 22.
Moeller Mfg., Inc., Greeley, Colo. 888,880. Cl. 23.
Monsanto Co., St. Louis, Mo. 888,542, pub. 1–13–70. Cl. 13.
Monticello Drug Co., Jacksonville, Fla. 269,951, ren. 3–31–70. Cl. 18.
Morning Report Investor Services, Inc., the, Houston, Tex. 888,825–6, pub. 1–13–70. Cl. 101.
Motorola, Inc., Franklin Park, Ill. 888,588, pub. 11–18–69. Cl. 21.
Multiprint Co., Inc., Chicago, Ill. 888,697, pub. 1–13–70. Cl. 38.
Munafo Giuseppe, Milan, Italy. 888,718, pub. 1–13–70. Multiple Class (Classes 39 and 42).
Munising Paper Co., The, Chicago, Ill., to Kimberly-Clark Corp., Neenah, Wis. 444,050, ren. 3–31–70. Cl. 20.
Myers, F. E. & Bro. Co., The, Ashland, Ohio. 764,525, canc. Cl. 13.
National Bank of America at Salina, Salina, Kans. 888,832, pub. 1–13–70. Cl. 101.
National Biscuit Co., New York, N.Y. 888,776, pub. 1–13–70. Cl. 46.
National Data Corp., Atlanta, Ga. 888,836, pub. 1–13–70. Cl. 101.
National Gypsum Co., Buffalo, N.Y. 764,519, canc. Cl. 12.
National Hockey League, Montreal, Quebec, Canada, 888,872, pub. 1–13–70. Cl. 107.
National Indoor Trapshooting Association, Springfield, Mo. 764,849, canc. Cl. 200.
National Lead Co., New York, N.Y. 888,548, pub. 10–14–69. Cl. 14.
National Market Reports, Inc., Chicago, Ill. 764,855, canc. Cl. 38.
National Pizza Corp., St. Louis, Mo. 888,785, pub. 1–13–70. Cl. 46.
National Polychemicals, Inc., Wilmington, Mass. 764,478, canc. Cl. 1.
National Racing Program, Inc., to The Armstrong Daily, Inc., New York, N.Y. 525,577, ren. 3–31–70. Cl. 38.
National Safety Council, Chicago, Ill. 888,694, pub. 1–13–70. Cl. 38.
Nee & McNulty, Inc., Tulsa, Okla. 888,553, pub. 1–13–70. Cl. 16.
Neslab Instruments, Inc., Portsmouth, N.H. 888,641, pub. 1–13–70. Cl. 26.
New Era Lithograph Co., Inc., New York, N.Y. 764,699, canc. Cl. 37.
New York Feather Co., Inc., New York, N.Y. 888,665, pub. 1–13–70. Cl. 32.
Noilly Prat Torino, S.p.A., d.b.a. Noilly Prat, Turin, Italy. 888,886. Cl. 47.
Norcross, Inc., New York, N.Y. 888,695, pub. 1–13–70. Cl. 38.
Norris, Ezra M., d.b.a. Zados Laboratories, Los Angeles, Calif. 764,552, canc. Cl. 18.
North American Rockwell Corp.: *See*—
Air-Maze Corp.
North Bro's M'F'G Co., Philadelphia, Pa., to The Stanley Works, New Britain, Conn. 267,875, ren. 3–31–70. Cl. 23.
North Carolina Board of Science and Technology. Research, Triangle Park, N.C. 888,698, pub. 1–13–70. Cl. 38.
North Texas Baseball Club, Dallas, Tex. 888,883, pub. 1–13–70. Cl. 107.
Nyberg, Paul D.: *See*—
L.P. Services, Inc.
O.K. Tire & Rubber Co., Inc., Littleton, Colo. 888,676, pub. 1–13–70. Cl. 35.
O'Connor Drug Co., Detroit, Mich. 888,563, pub. 1–13–70. Cl. 18.
Ohio Aluminum Supply Co.: *See*—
Alside Aluminum Supply Co.
Oil City Iron Works, Inc., Corsicanna, Tex. 888,671, pub. 1–13–70. Cl. 34.
Olin Corp.: *See*—
Olin Industries, Inc.
Olin Industries, Inc., East Alton, Ill., to Olin Corp., New Haven, Conn. 519,581, ren. 3–31–70. Cl. 22.
Omaha Steaks International, Inc., Omaha, Nebr. 888,852, pub. 1–13–70. Cl. 101.
Omya S.A., Paris, France. 888,520, pub. 11–18–69. Cl. 6.
Oneida Ltd., Oneida, N.Y. 888,619, pub. 1–13–70. Cl. 23.
Oti Services, Inc., New York, N.Y. 888,845, pub. 1–13–70. Cl. 101.
Otis Engineering Corp., Dallas, Tex. 888,615, pub. 1–13–70. Cl. 23.
Outdoor Step De-Icer Corp., Weymouth, Mass. 764,809, canc. Cl. 50.
Owens-Illinois, Inc., Toledo, Ohio. 888,580, pub. 1–13–70. Cl. 21.
Oxfords Shoppes, Ltd., Chicago, Ill. 888,821, pub. 1–13–70. Cl. 100.
Pabst Brewing Co.: *See*—
Premier Malt Products Co.
Pacific Hawaiian Products Co., Fullerton, Calif. 764,779, canc. Cl. 45.
Page Boy Co., Inc., Dallas, Tex. 888,732, pub. 1–13–70. Cl. 39.
Par Soap Co., to Safeway Stores, Inc., Oakland, Calif. 525,864, ren. 3–31–70. Cl. 52.
Parke, Davis & Co., Detroit, Mich. 888,558, pub. 8–26–69. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 888,567, pub. 1–13–70. Cl. 18.
Parker Bros., Inc.: *See*—
Storey, William H.
Payne, Paula, Products Co., Inc., Charlotte, N.C. 888,800, pub. 1–13–70. Cl. 51.
Penn Crete Products Co., Inc., Philadelphia, Pa. 764,546, canc. Cl. 16.
Pentron Electronics Corp. The Magnavox Co., Fort Wayne, Ind. 779,469. Am. 7(d). Cl. 36.
Perk Foods Co., Chicago, Ill. 888,783, pub. 1–13–70. Cl. 46.
Perkins Machine & Gear Co., West Springfield, Mass. 764,638, canc. Cl. 23.

Pfizer, Chas., & Co., Inc., New York, N.Y. 888,799, pub. 1–13–70. Cl. 51.
Philadelphia Bronze & Brass Corp., Philadelphia, Pa. 764,851, canc. Cl. 14.
Photo Service, Inc., Des Plaines, Ill. 764,847, canc. Cl. 106.
Pinlites Inc., Fairfield, N.J. 888,642, pub. 1–13–70. Cl. 26.
Plant Bros. Corp., San Francisco, Calif. 888,810, pub. 1–13–70. Multiple Class (Classes 100 and 103).
Pneumatic Systems, Inc., Portland, Oreg. 888,638, pub. 1–13–70. Cl. 23.
Porter, H. K., Co., Inc.: *See*—
Laclede-Christy Co.
Portico, Inc., Fort Lauderdale, Fla. 888,848–9, pub. 1–13–70. Cl. 101.
Pratt, Peter, d.b.a. Peter Pratt Enterprises, Venice, Fla. 764,808, canc. Cl. 50.
Premier Malt Products Co., Peoria Heights, Ill., to Pabst Brewing Co., d.b.a. Premier Malt Products Inc., Milwaukee, Wis. 265,778, ren. 3–31–70. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 521,420, ren. Cl. 52.
Professional & Technical Programs, Inc., New York, N.Y. 888,850, pub. 1–13–70. Cl. 101.
Progressive Industries Corp., Dayton, Ohio. 888,862, pub. 1–13–70. Cl. 106.
Progressive Steel Rule Die Co., Lynn, Mass. 888,629, pub. 1–13–70. Cl. 23.
Pronit Internacional, S.A., Jerez de la Fronter, Cadiz, Spain. 764,789, canc. Cl. 46.
Publix Shirt Corp.: *See*—
Liebovitz, S., & Sons, Inc.
Quaker Oats Co., The, Chicago, Ill. 520,049, ren. 3–31–70. Cl. 46.
Quinton Instrument Co., Seattle, Wash. 888,757, pub. 1–13–70. Cl. 44.
RBP Chemical Corp., Milwaukee, Wis. 888,511, pub. 1–13–70. Multiple Class (Classes 6 and 50).
R.D. Products, Inc., East Rochester, N.Y. 888,811, pub. 1–13–70. Cl. 100.
Racke, A., KG, Bingen (Rhine), Germany. 888,787, pub. 1–13–70. Cl. 49.
Radiant Corp., Morton Grove, Ill. 888,686, pub. 11–25–69. Cl. 36.
Ransom, Richard K., d.b.a. Hickory Farms of Ohio, Toledo, Ohio. 888,768, pub. 1–13–70. Cl. 46.
Rathermel, Gene M., Fort Dodge, Iowa. 764,726, canc. Cl. 38.
Raybestos-Manhattan, Inc., Passaic, N.J. 888,570, pub. 1–13–70. Cl. 19.
Raytheon Co.: *See*—
Raytheon Production Corp.
Raytheon Production Corp., Newton, to Raytheon Co., Lexington, Mass. 266,330, ren. 3–31–70. Cl. 21.
Recherche et Industrie Terapeutiques, Genval, Belgium. 764,562, canc. Cl. 18.
Reeves, B. M., Co., Inc., Brooklyn, N.Y. 764,796, canc. Cl. 46.
Regina Corp., the, to the Regina Corp., Rahway, N.J. 263,280, ren. 3–31–70. Cl. 21.
Republic Gear Co., Detroit, to Republic Gear Co., St. Clair, Mich. 520,808, ren. 3–31–70. Cl. 23.
Republic Stamping & Enameling Co., the, Canton, Ohio, to American Home Products Corp., New York, N.Y. 443,485, ren. 3–31–70. Cl. 13.
Revere Copper & Brass Inc., New York, N.Y. 888,544, pub. 1–13–70. Cl. 13.
Revlon, Inc., New York, N.Y. 764,817, canc. Cl. 51.
Rhode Island Catering Co., Inc., Washington, D.C. 888,816–17, pub. 1–13–70. Cl. 100.
Richards-Wilcox Mfg. Co., Aurora, Ill., to Hupp, Inc., d.b.a. Richards-Wilcox Mfg. Co., Cleveland, Ohio. 522,900, ren. 3–31–70. Cl. 21.
Richco, Inc., Cedar Grove, N.J. 764,706, canc. Cl. 37.
Riddell, Inc.: *See*—
Riddell, John T., Inc.
Riddell, John T., Inc., Chicago, to Riddell, Inc., Des Plaines Ill. 524,884, ren. 3–31–70. Cl. 39.
Riley Bros. Inc., Burlington, Iowa. 524,186, ren. 3–31–70. Cl. 15.
Rising Paper Co., Housatonic Mass. 888,690, pub. 1–13–70. Cl. 37.
Riso Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan. 888,688, pub. 1–13–70. Cl. 37.
Rival Mfg. Co., Kansas City, Mo. 764,586, canc. Cl. 21.
Riviana Foods Inc.: *See*—
Louisiana State Rice Milling Co., Inc.
Roberts & Porter Inc., Chicago, Ill. 888,534, pub. 1–13–70. Cl. 11.
Robins, A. H., Co., Inc., Richmond, Va. 888,562, pub. 1–13–70. Cl. 18.
Roddenbery, W. B., Co., Inc., Cairo, Ga. 520,857, ren. 3–31–70. Cl. 46.
Rogers, Willard F., d.b.a. Jewel Folioge, San Antonio, Tex. 764,470, canc. Cl. 1.
Rohm & Haas Co., Philadelphia, Pa. 519,778, ren. 3–31–70. Cl. 6.
Rosenberg, S. Christmas Corp., New York, N.Y. 764,806, canc. Cl. 50.
Rossini-Stevens Associates, Inc., New York, N.Y. 888,646, pub. 1–13–70. Cl. 26.
Royal Coach Inc., Dallas, Tex. 888,818, pub. 1–13–70. Cl. 100.
Rucker Industries, Inc., Jacksonville, Fla. 888,661, pub. 1–13–70. Cl. 32.
Rupp Warren Co., the, Mansfield, Ohio. 888,612, pub. 4–1–69. Cl. 23.
S.A. Cafe Imperial, Maracaibo, Venezuela. 764,783, canc. Cl. 46.
S & G Rubber Co., Inc., New York, N.Y., to Townsend Products Corp., Garwood, N.J. 511,451, ren. 3–31–70. Cl. 40.
Safeway Stores, Inc.: *See*—
Par Soap Co.
Tea Garden Products Co.
Safeway Stores, Inc., Oakland, Calif. 764,471, canc. Cl. 1.
Saki's Ltd., New York, N.Y. 888,820, pub. 1–13–70. Cl. 100.
Salen & Wicander AB, Sundbyberg, Sweden. 888,627, pub. 1–13–70. Cl. 23.
Sanson Hosiery Mills, Inc., Darby, Pa., to Sidney J. Kreiss, Inc., New York, N.Y. 525,077, ren. 3–31–70. Cl. 39.
Sawyer Business Colleges, Inc., Evanston, Ill. 888,842, pub. 1–13–70. Cl. 101.
Schering Corp., Bloomfield, N.J. 764,567, canc. Cl. 18.
Schuman & Stein, Inc., New York, N.Y. 764,759, canc. Cl. 39.
Scovill Mfg. Co., Waterbury, Conn., from Auricord Corp., Long Island City, N.Y. 888,679, pub. 10–7–69. Cl. 36.
Scroll Greetings, Inc., Oak Park, Ill. 764,729, canc. Cl. 38.
Semlac Corp., Houston, Tex. 764,582, canc. Cl. 19.
Seng Co., The, to The Seng Co., Chicago, Ill. 525,200, ren. 3–31–70. Cl. 13.
Servis Equipment Co., Inc., Dallas, Tex. 888,636, pub. 1–13–70. Cl. 23.
Shandon Scientific Co. Ltd., London, England. 888,643, pub. 1–13–70. Cl. 26.
Share Research Corp., Santa Barbara, Calif. 888,809, pub. 10–14–69. Cl. 100.
Sheffield Bronze Paint Corp., the, Cleveland Ohio. 520,533, ren. 3–31–70. Cl. 16.
Sheffield Bronze Paint Corp., the, Cleveland, Ohio. 521,283, ren. 3–31–70. Cl. 16.
Sheffield Corp., to the Bendix Corp., Dayton, Ohio. 518,388, ren. 3–31–70. Cl. 26.
Shumway Optical Instruments Corp., Rochester, N.Y. 888,645, pub. 1–13–70. Cl. 26.
Si-Ep Associates, Inc., Washington, D.C. 888,829, pub. 1–13–70. Cl. 101.
Silvain, Andre, Roubaix, Nord, France. 888,724, pub. 1–13–70. Cl. 39.
Sitroux Inc., to Cancel Inc., New York, N.Y. 524,718, ren. 3–31–70. Cl. 37.
Slaymaker Lock Co., Lancaster, Pa. 888,639, pub. 1–13–70. Cl. 25.
Sloane, W. & J., Inc., New York, N.Y. 888,662, pub. 1–13–70. Cl. 32.
Smith International, Inc., Whittier, Calif., from Drilco Oil Tools, Inc., Midland, Tex. 888,878. Cl. 23.
Smokador Mfg. Co., Inc., Bloomfield, to Baylis Industries Inc., Roselle, N.J. 443,653, ren. 3–31–70. Cl. 32.
Solar Control Products Corp., Allston, Mass. 888,498, pub. 9–16–69. Cl. 1.
Sort-A-Lope, Washington, D.C. 764,721, canc. Cl. 37.
Southwestern Fruit & Vegetable Co., Inc., from McAllen Distributing, Inc., McAllen, Tex. 888,885. Cl. 46.
Sox Unlimited, Inc., New York, N.Y. 888,715, pub. 1–13–70. Cl. 39.
Spacemaster, Inc., El Segundo, Calif. 888,575, pub. 1–13–70. Cl. 19.
Spieth-Holstechnik GmbH, Wernau, Germany. 888,597, pub. 1–13–70. Cl. 22.
Sports Industries, Inc., Irvington, N.Y. 764,602, canc. Cl. 22.
Spray-Rite Mfg. Co. Inc., West Helena, Ark. 764,614, canc. Cl. 23.
Stack, Michael B., d.b.a. Blue Dolphin Productions, Hollywood, Calif. 888,687, pub. 1–13–70. Cl. 36.
Stacoswitch, Inc., Costa Mesa, Calif. 888,594, pub. 1–13–70. Cl. 21.
Standard Knitting Mills, Inc., Knoxville, Tenn. 888,721, pub. 11–18–69. Cl. 39.
Standard Oil Co. of California, San Francisco, Calif. 888,531, pub. 1–13–70. Cl. 6.
Standard Oil Co., Flemington, N.J. 888,550, pub. 1–13–70. Cl. 15.
Standard Packaging Corp.: *See*—
Brown & Bigelow.
Standard T Chemical Co., Inc., Chicago, Ill. 888,555, pub. 1–13–70. Cl. 16.
Stanley Works, The: *See*—
North Bro's M'F'G Co.
Stanley Works, The, New Britain, Conn. 270,582, ren. 3–31–70. Cl. 13.
Stebco Products Corp., Chicago, Ill. 888,505, pub. 1–13–70. Cl. 3.
Stephens-Adamson Mfg. Co., Aurora, to Borg-Warner Corp., Chicago, Ill. 518,293, ren. 3–31–70. Cl. 23.
Sterling Drug Inc., New York, N.Y. 888,509, pub. 1–13–70. Multiple Class (Classes 5, 6, 12, and 16).
Sterling, Inc., Milwaukee, Wis. 888,644, pub. 1–13–70. Cl. 26.
Sternco Industries, Inc., Allendale, N.J. 764,547, canc. Cl. 16.
Sternco Industries, Inc., Harrison, N.J. 888,499, pub. 1–13–70. Cl. 1.
Stewart, Gerson Corp., The, Cleveland, Ohio. 764,822, canc. Cl. 52.
Stewart-Warner Corp., Chicago, Ill. 888,648, pub. 1–13–70. Cl. 26.
Storey, William H., Southend-on-Sea, England, to Parker Bros., Inc., Salem, Mass. 271,997, ren. 3–31–70. Cl. 22.
Streamline Trailer Co., South El Monte, Calif. 888,576, pub. 1–13–70. Cl. 19.
Strickland, J., & Co., Memphis, Tenn. 519,735, ren. 3–31–70. Cl. 51.
Strong Cobb Arner, Inc., Cleveland, Ohio. 888,760, pub. 1–13–70. Cl. 46.
Summers, Froelich, Inc., New York, N.Y. 888,828, pub. 1–13–70. Cl. 101.
Sun Chemical Corp., New York, N.Y. 888,521–3, pub. 7–22–69. Cl. 6.
Tape Services, Inc., Moorestown, N.J. 888,682, pub. 11–11–69. Cl. 36.
Tate & Lyle, Ltd.: *See*—
Lyle, Abram, & Sons, Ltd.

Taylor Food Products, Inc., El Segundo, Calif. 888,777, pub. 1–13–70. Cl. 46.
Tea Garden Products Co., San Francisco, to Safeway Stores, Inc., Oakland, Calif. 519,966, ren. 3–31–70. Cl. 46.
Technical Operations, to Power Sources, Inc., Burlington, Mass. 764,672, canc. Cl. 31.
Technical Operations, Inc., Burlington, Mass. 888,834, pub. 1–13–70. Cl. 101.
Techniques, Inc., Grand Rapids, Mich. 888,831, pub. 1–13–70. Cl. 101.
Teemform, Inc., New York, N.Y. 888,730, pub. 1–13–70. Cl. 39.
Textone, Inc., Los Angeles, Calif. 888,537, pub. 6–17–69. Cl. 12.
Textron Inc., Providence, R.I. 888,574, pub. 1–13–70. Cl. 19.
Textron Inc., Providence, R.I. 888,607, pub. 1–13–70. Cl. 22.
Tiny-Town Togs, Inc., New York, N.Y. 888,737, pub. 1–13–70. Cl. 39.
Torin Corp., from The Torrington Mfg. Co., Torrington, Conn. 888,623, pub. 9–23–69. Cl. 23.
Torin Corp., from The Torrington Mfg. Co., Torrington, Conn. 888,672, pub. 9–16–69. Cl. 34.
Torrington Mfg. Co., The: *See*—
Torin Corp.
Townsend Products Corp.: *See*—
S & G Rubber Co., Inc.
Toy Wonderland Mfg. Co., Detroit, Mich. 764,591, canc. Cl. 22.
Trans World Airlines, Inc., New York, N.Y. 888,858, pub. 1–13–70. Cl. 105.
Triple R Mfg., Inc., Philadelphia, Pa. 888,658, pub. 11–25–69. Cl. 31.
Turner & Seymour Mfg. Co., Torrington, Conn. 888,861, pub. 1–13–70. Cl. 106.
Turtle Wax, Inc., Chicago, Ill. 888,551, pub. 1–13–70. Cl. 15.
Twin Disc, Inc., Racine, Wis. 888,620, pub. 1–13–70. Cl. 23.
Tyme Artists, Chicago, Ill. 888,873, pub. 1–13–70. Cl. 107.
UTD Corp., from UTD Corp., Athol, Mass. 888,618, pub. 1–13–70. Cl. 23.
Union Oil Co. of California, Los Angeles, Calif. 566,785. Am. 7(d). Cl. 15.
Uniroyal, Inc.: *See*—
United States Rubber Co.
United Chemical Co., Dallas, Tex. 888,795, pub. 10–21–69. Cl. 51.
United Oil Co., Pittsburgh, Pa. 521,392, ren. 3–31–70. Cl. 15.
United Products, Inc., Griffin, Ga. 764,848, canc. Cl. 106.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 527,002, ren. 3–31–70. Cl. 6.
United States Rubber Co., New York, N.Y. 764,688, canc. Cl. 35.
United States Trunk Co., Fall River, Mass. 764,492, canc. Cl. 3.
Upsons Ltd., London, to Dolcis Ltd., Leicester, England. 524,149, ren. 3–31–70. Cl. 39.
V. F. Corp., Wyomissing, Reading, Pa. 888,731, pub. 1–13–70. Cl. 39.
Vacuum Barrier Corp., Woburn, Mass. 888,882. Cl. 31.
Valley Metal Products Co., Plainwell, Mich. 764,523, canc. Cl. 12.
Van Brode Milling Co., Inc., Clinton, Mass. 888,634–5, pub. 1–13–70. Cl. 23.
Van Leer's Vatenfabrieken N.V., Amstelveen, Netherlands. 888,500, pub. 1–13–70. Cl. 1.
Van Mark Products Corp., Detroit, Mich. 888,621, pub. 1–13–70. Cl. 23.
Veeder Industries Inc.: *See*—
Veeder-Root Inc.
Veeder-Root Inc., to Veeder Industries Inc., Hartford, Conn. 268,745, ren. 3–31–70. Cl. 26.
Vernon Book Sales Corp., Mt. Vernon, N.Y. 888,702–3, pub. 1–13–70. Cl. 38.
Viewlex, Inc., Holbrook, N.Y. 888,651, pub. 1–13–70. Cl. 26.
Vikon Chemical Co., Inc., Elon College, N.C. 888,528, pub. 1–13–70. Cl. 6.
Village Gardener, Inc., Celina, Ohio. 764,512, canc. Cl. 10.
Visible Index Corp., Long Island City, N.Y., to Barry Wright Corp., Watertown, Mass. 526,947, ren. 3–31–70. Cl. 37.
Visual Graphics Corp., New York, N.Y. 888,647, pub. 1–13–70. Cl. 26.
Walker Mfg. Co., Racine, Wis. 888,657, pub. 1–13–70. Cl. 31.
Walter, Louis & Co., Inc., Kansas City, Mo. 888,723, pub. 1–13–70. Cl. 39.
Warner-Jenkinson Mfg. Co., St. Louis, Mo. 888,514, pub. 1–13–70. Cl. 6.
Wernet Dental Mfg. Co., Inc., d.b.a. Hudson Products, Jersey City, N.J. 600,913, canc. Cl. 18.
West Virginia Pulp & Paper Co., to Westvaco Corp., New York, N.Y. 525,233, ren. 3–31–70. Cl. 21.
Western Clock Co., Peru, Ill., to General Time Corp., Phoenix, Ariz. ren. 3–31–70. Cl. 27.
Western Litho Plate & Supply Co., St. Louis, Mo. 888,790, pub. 11–25–69. Cl. 50.
Western Meat Packers, Inc., Grand Junction, Colo. 888,763, pub. 11–4–69. Cl. 46.
Western Newell Mfg. Co., Freeport, Ill. 764,527, canc. Cl. 13.
Western Union Telegraph Co., The, New York, N.Y. 888,581, pub. 1–13–70. Cl. 21.
Westinghouse Broadcasting Co., Inc., Pittsburgh, Pa. 888,864, pub. 6–10–69. Cl. 107.
Westvaco Corp.: *See*—
West Virginia Pulp & Paper Co.
White, Martha Inc., d.b.a. Hay Market Mills, Nashville, Tenn. 888,769, pub. 11–25–69. Cl. 46.
White Motor Corp., Cleveland, Ohio. 888,572, pub. 1–13–70. Cl. 19.
Wiatt, Norman Co., Los Angeles, Calif. 888,733, pub. 1–13–70. Cl. 39.
Wiegand, Edwin L., Co., The: *See*—
McQuay, Inc.
Wilke Baking Co., Inc., Beatrice, Nebr. 888,766, pub. 1–13–70. Cl. 46.
Williams, J. B., Co., Inc., New York, N.Y. 888,557, pub. 1–13–70. Cl. 18.
Wilsey-Bennett Co., San Francisco, Calif. 888,761, pub. 1–13–70. Cl. 46.
Wool Bureau, Inc., The, New York, N.Y. 885,657, cor. Cl. A.
Wright, Barry, Corp.: *See*—
Visible Index Corp.
Wyle Laboratories, Inc., Inglewood, Calif. 888,583, pub. 1–13–70. Cl. 21.
Yolen, Inc., Hialeah, Fla., 888,716, pub. 1–13–70. Cl. 39.
Zenith-Godley Co., Inc., New York, N.Y. 888,764, pub. 1–13–70. Cl. 46.
Zero Cold, Inc., Anaheim, Calif., 888,659, pub. 1–13–70. Cl. 31.
Zevo, Inc., Los Angeles, Calif. 888,767, pub. 1–13–70. Cl. 46.
Ziff-Davis Publishing Co., Chicago, Ill., to Ziff-Davis Publishing Co., New York, N.Y. 521,411, ren. 3–31–70. Cl. 38.

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